

2021 Annual Report to Shareholders

BOLDLY GROW
THE GOOD

IN BUSINESS AND LIFE

Business Review

- 2 Financial Performance
- 3 2021 Highlights
- 4 Endings and Beginnings
- 5 Chair's Message
- 6 A North American Bank
- 7 Chief Executive Officer's Message
- 10 Net-Zero Ambition
- 12 Digital First
- 14 Our Bold Commitments
- 16 Board of Directors and Executive Committee

Financial Review

- 17 Enhanced Disclosure Task Force
- 18 Management's Discussion and Analysis
- 122 Supplemental Information
- 139 Statement of Management's Responsibility for Financial Information
- 140 Independent Auditors' Report
- 143 Reports of Independent Registered Public Accounting Firm
- 146 Consolidated Financial Statements
- 151 Notes to Consolidated Financial Statements

Resources and Directories

- 136 Glossary of Financial Terms
- 212 Where to Find More Information
- IBC Shareholder Information

A purpose-driven bank...

BMO is a diversified North American financial services provider with a proud 204-year history and a clear strategy for the future. Guided by our values and driven by a deep sense of purpose, we serve more than 12 million customers through three integrated operating groups: Personal and Commercial Banking, BMO Capital Markets and BMO Wealth Management.

Our bank is focused on being innovative, agile and uniquely competitive in a fast-changing world. We're led by more than 12 million customers – individuals, families, businesses, institutional clients and communities – who inspire us to grow our own business, create value for our shareholders and advance positive social change.

12⁺ million

customers globally

8th largest

bank in North America by assets

\$988 billion

in total assets

1817

Canada's first bank, established in 1817

A future-ready bank

As the world emerges from a transformative crisis and the economy regains traction, BMO has never been better positioned for continued growth. Strong operating momentum; industry-leading customer loyalty; data-informed risk management; the flexibility to leverage our capital strength – these are the building blocks of a bank that’s ready for the future.

We help our customers achieve their goals with digitally enabled products and services designed for speed, convenience and efficiency – and powered by human advice. And we foster a winning culture in which people across BMO are aligned in our decision-making, empowered to drive long-term change and recognized for our efforts to advance the bank’s strategic priorities.

BMO has bold ambitions to accelerate our growth as a leading North American bank, one that helps to further a more inclusive society, a sustainable future, and a thriving economy in which everyone benefits.

Financial Performance

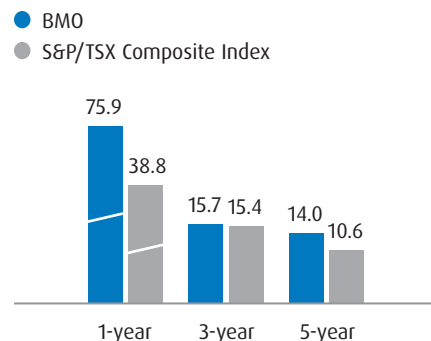
Medium-term objectives

Adjusted EPS growth of 7% to 10%	53.3%	68.0%
Adjusted ROE of 15% or more	14.9%	16.7%
Adjusted net operating leverage of 2% or more	0.4%	6.1%
Capital ratios that exceed regulatory requirements	13.7%	CET1 Ratio ²

2021 financial performance

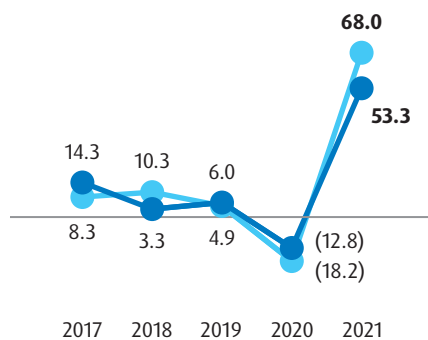
Reported¹ Adjusted¹

Total shareholder return (%)



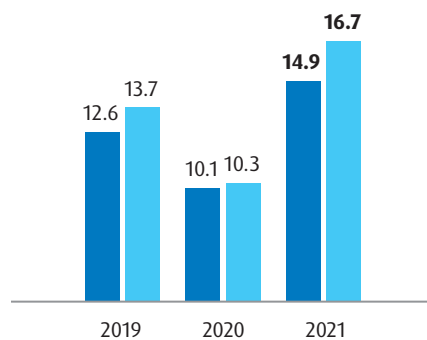
Earnings per share growth (%)

● Reported
● Adjusted¹



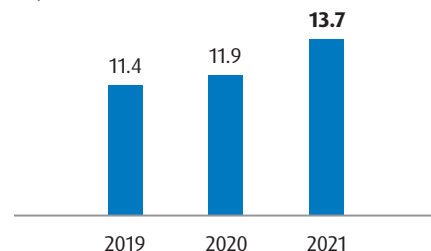
Average annual ROE (%)

● Reported
● Adjusted¹



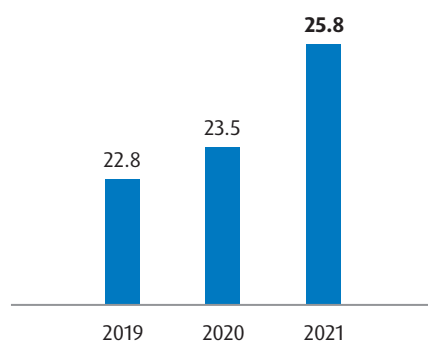
Common Equity Tier 1 Ratio (%)

Reported



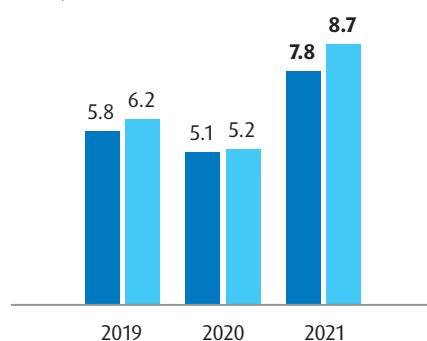
Net Revenue¹ (C\$ billions)

Reported / Adjusted

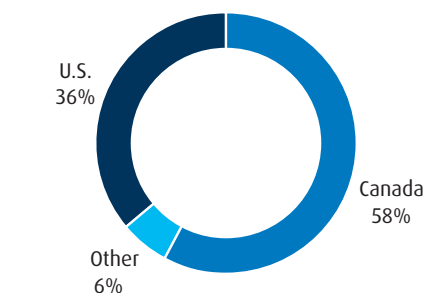


Net Income (C\$ billions)

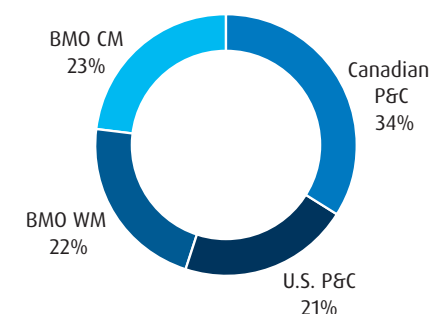
● Reported
● Adjusted¹



Reported Net Revenue¹ by Geography



Reported Net Revenue¹ by Operating Group³



¹ Net revenue and all adjusted measures are non-GAAP measures. For further information, see the Non-GAAP and Other Financial Measures section of Management's Discussion and Analysis ("MD&A"). Regarding the composition of non-GAAP and other financial measures, including supplementary financial measures, refer to the Glossary of Financial Terms in the MD&A.

² The CET1 ratio is disclosed in accordance with OSFI's Capital Adequacy Requirements (CAR) Guideline.

³ Percentages determined excluding results in Corporate Services.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Bank of Montreal brands the organization's member companies as BMO Financial Group. Note 26 of the financial statements lists the intercorporate relationships among Bank of Montreal and its significant subsidiaries.

2021 Highlights

Business driven

by purpose

Four years in a row on Ethisphere's World's Most Ethical Companies®; six years in a row on Bloomberg's Gender-Equality Index.

Leading the banking sector in sustainability

BMO is one of only two North American banks on the Dow Jones Sustainability World Index, and Corporate Knights' most sustainable bank in North America.

Diversifying our senior leadership

In the U.S., we've set a target of increasing representation of People of Color in senior roles to 30% – and we're more than two-thirds of the way there.

A clear ambition

We've made a commitment to a sustainable future, including the ambition to be our clients' lead partner in the transition to a net-zero world.

Finance for a better society

From leading the City of Toronto's \$100 million Social Bond to acting as sole agent for Sandstorm Gold Royalties' sustainability-linked loan, we are Growing the Good in finance.

BMO EMpower

US\$5 billion

for minority opportunity

By tackling barriers to financial inclusion, we're creating opportunities for success among minority businesses, communities and families in the United States.

Affordable housing

We've earmarked \$12 billion to finance housing that meets accredited affordable housing definitions across Canada – supporting CMHC's aspiration that every Canadian be in a home they can afford by 2030.

A 193-Year Dividend Record

BMO Financial Group has the longest-running dividend payout record of any company in Canada, at 193 years. BMO common shares had an annual dividend yield of 3.2% at October 31, 2021.

Dividends declared (\$ per share)

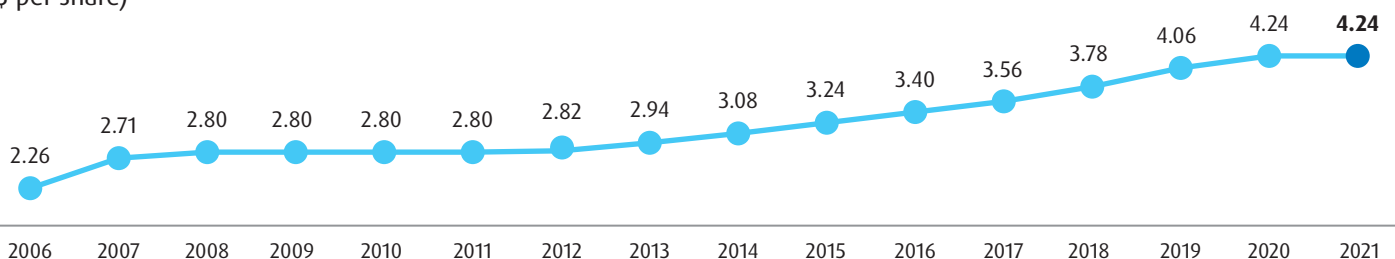
Compound annual growth rate

4.3%

BMO 15-year

4.5%

BMO 5-year



We are at a special moment in time.

As our lives return to something more familiar, our generation has the chance to build something new. We can end barriers that hold others back. Turn inequity into opportunity. Exclusion into inclusion.

At BMO, we are all coming together to ensure that as the world rebuilds, everyone benefits.

> Vlatka Puljic
Ambassador, BMO Employee Giving
Director, Project Management
NA Business Banking
Chicago, IL

Photo: Jacob Hand Photography





George A. Cope
Chair of the Board

RECENTLY, I CHAIRED A MEETING of your Board of Directors that was extraordinary for almost being ordinary.

The directors met in person.

Though we observed the COVID-19 protocols – vaccinations and testing, face coverings, physical distancing, frequent sanitizing – and met safely in the spacious auditorium at the BMO Institute For Learning, it was the first time in 18 months that we were all together, face to face. I was just completing my first full fiscal year as Chair and up to that point, since my appointment, all our meetings had been held virtually.

I saw this as a marker of how far we had come and how our world had begun to recover from the pandemic. While it is clearly far from over, we regard the prospects for a strong economic recovery to be good, and that is good for our employees, and good for our customers. For some customers, however, we recognize that the recovery may take longer – but rest assured that, as we did during the worst days of the pandemic, we will be there to stand by BMO's customers. This too is part of Boldly Growing the Good *in business and life*.

Changing the way we work

Much has changed in the past year, but perhaps most significant for BMO is the transformation in the way our customers choose to do business with us. Long before the pandemic, we had begun to establish the infrastructure to transform BMO into a Digital First bank and, while the transformation isn't yet complete, it is certainly well advanced. The board is very pleased with the energy of the management team and their relentless focus on supporting our customers, changing the way we work, and accelerating the digital transformation – as Darryl spells out in his Message to Shareholders.

Our long-standing focus on sustainability – articulated when we first set out our Sustainability Principles – has strengthened

significantly in the past year, and we can expect it will be ever-present as the world grapples with climate change and the massive transition that will be required of all of us. BMO's ambition is to be our clients' lead partner in the transition to a net-zero world, and the board is well positioned to oversee this priority.

Adding strength to strength

There were three important changes to the makeup of the Board of Directors in the past year. As I announced in last year's Annual Report, one of our longest-serving directors, **Ron Farmer**, retired from the board at last year's Annual Meeting. We continue to miss his wise counsel and good humour.

At that same meeting, we welcomed two new directors to our boardroom: **Madhu Ranganathan** from OpenText Corporation, who brings not only more than 30 years of financial leadership, but also deep understanding of the role of technology in the workplace, which is so relevant to businesses today, and **Stephen Dent**, from Birch Hill Equity Partners, who has more than 30 years of experience in private equity and deep expertise in capital allocation, strategic planning, accounting and finance. Madhu and Steve have already proven to be excellent additions to our Board of Directors.

Our 13-member board now comprises six women and seven men, in keeping with our commitment to maintain a gender-balanced board. In addition, as was the case last year, three of our four standing committees are chaired by women. I should also note that, as a reflection of our emphasis on competing vigorously on both sides of the border, we now have balanced representation on the board from both Canada and the United States – six of our directors are American and seven are Canadian. BMO generates about 40% of its earnings in the United States, which BMO continues to regard as a market with significant potential for growth. As it stands today, BMO is, by assets, the eighth largest bank on the continent, and our U.S. lines of business are the fastest-growing areas of the bank.

BMO's strategy is succeeding, and our performance last year reflects the strength of BMO's greatest asset: its people. The winning culture that prevails at BMO, grounded in our shared Purpose, positions us well to achieve our bold ambitions.

All of us on the board thank you, as shareholders, for the trust you have placed in us to represent your interests. Looking back on the past year, we are very satisfied with the bank's financial results and the progress we have made to advance our commitment to attain a sustainable future. These are a testament to the hard work of our management team and our employees, and we thank all of them for another successful year.

George A. Cope

A North American Bank

Since 1818, when we opened our first agency in New York, BMO has embraced a North American view on our business and growth opportunities. Today, our businesses are unified in strategy, Purpose and brand, and we are the only bank that runs all of its operating groups on an integrated basis on both sides of the border, driving efficiencies, scale and speed to market.

8th largest

bank in North America by assets.

Top 10 commercial lender

in North America with an integrated platform and broad-based capabilities to accelerate the growth of BMO's expertise and market presence in key regions.

36%

of revenue comes from our U.S. businesses, which represent BMO's fastest-growing geographic segment. Over 50% of this revenue is from outside our core Midwest footprint.

Fully integrated North American Treasury and Payments platform, delivering cross-border solutions.

Digital deposit capabilities in all **50 states.**

Refocusing the Wealth Management business for North American growth.

Cloud-based architecture and technologies, adopted on a North American scale for our Transportation Finance business, have allowed us to innovate quickly, efficiently and often. The success of this approach is now being leveraged across our businesses.

A culture of Growing the Good With 90% participation across the bank, employees pledged \$23 million this past year in support of United Way and other charities.

> BMO Tower
790 N Water St, Milwaukee, Wisconsin
Photo: Marty Peters Photography



Darryl White

Chief Executive Officer

WE'RE MOVING FORWARD with energy and confidence as we continue to build our high-performing, digitally enabled, future-ready bank with leading efficiency, profitability and loyalty – all powered by a winning culture and driven by our Purpose.

We're optimistic about that future. Around the world, economies are reopening as safe and effective vaccines are steadily reaching populations, slowing the spread of COVID-19. As the communities we serve turn the corner from crisis to recovery, we're focused on helping our customers regain momentum and make real financial progress. We've witnessed their resilience as they've adapted to meet the challenges the pandemic has brought.

And now, the energy of the economic recovery brings with it an unprecedented opportunity to make progress. It's a unique moment, and we can harness that energy to build a more equitable economy and a fairer world. Every day, our employees are active in their communities, supporting our customers through the recovery and beyond, with bold ambitions for the future inspired by our Purpose to Boldly Grow the Good *in business and life* for everyone.

Consistent strength through headwinds

To fulfill our Purpose, we need to be the strongest bank we can be. Strong and sustainable long-term financial performance drives our capability to grow the good. On this front, it has been an encouraging year. BMO's superior risk management and strong capital position have strategically positioned us for the economic recovery in 2021. Despite the volatility caused by the pandemic and the extraordinary operational challenges it presented, we delivered very competitive performance. Our diversified business mix across personal and commercial banking, wealth management and capital markets enabled us to deliver solid, well-balanced results. And our ongoing investments in digital technology, product innovation and advisory capabilities contributed to enhanced customer loyalty.

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP and Other Financial Measures section.

We took targeted actions to drive long-term profitability with a disciplined approach to expense management and capital allocation, and made meaningful investments to position BMO for future growth. We're proud of our achievements in significantly improving our efficiency ratio, our return on equity and our positive operating leverage over the past three years. With continued outperformance in risk management and a CET1 Ratio of 13.7%, we are poised for growth and for increasing shareholder returns.

The tapering of monetary support and fiscal stimulus intended to ease economic hardship is an encouraging sign of the economic rebound. The global economy has shown remarkable resilience in an evolving landscape of pandemic-related restrictions – and so have our customers. With vaccination rates climbing, the Canadian and U.S. economies are experiencing their strongest growth in decades.

In Canada, small businesses – hardest hit by the pandemic – are expected to lead the next leg of the recovery. And by the fall of 2021, Canada had recovered the three million jobs lost in the spring of 2020, with women's labour force participation growth leading the way; while the U.S. economy also saw job numbers rebound and unemployment rates continue to decline.

In 2021, BMO's U.S. footprint is no longer defined as the Midwest – it's the U.S.

Despite the optimism, growth has also been tempered by the pandemic's effects on labour markets, global supply-chain disruptions and surging energy prices. Even with pent-up consumer demand and savings driving increased spending, many businesses are still struggling to get back to pre-pandemic levels of activity. However, as global economies show continued resilience, there is reason for optimism as we move forward.

North American bank

We have been steadily growing our presence in the United States since the acquisition of Harris Bank in 1984, with significant acceleration over the past decade. We've expanded the breadth of our commercial banking business on a national basis across 13 industry verticals while opening offices in Atlanta, Fort Worth, Los Angeles, Denver and Orlando since 2019; all while growing to rank among the top 10 commercial banking lenders on a North American basis. We have grown our U.S. capital markets business revenue by 47% since 2019 and expanded our digital banking capabilities to serve customers in all 50 U.S. states.

In 2021, our U.S. operating segment generated 36% of BMO's revenue, with approximately half of that revenue originating outside the U.S. Midwest. Our U.S. operations are our fastest growing segment and are now generating returns and efficiency on par with the rest of the bank, with the stage set for further growth as the economy rebounds. In 2021, BMO's U.S. footprint is no longer defined as the Midwest – it's the U.S.

Digitally enabled

BMO's Digital First strategy enables greater integration between business and technology, helping us provide our customers greater convenience and take advantage of the benefits of digital scale. As an early adopter of technology and innovation in banking, we see digital as far more than a customer channel; it powers everything we do to meet our customers' needs. We're well into the next stage of digitalization across BMO, and it's having a profound effect as an enabler of both growth and client loyalty.

We're embracing the future as a digital first bank, and we have aligned our solid technology foundation and significant technology investments with our digital agenda to drive efficiency, increase our speed to market and enhance the customer experience. This has led to faster customer growth, more secure data management, and the deployment of leading cloud, data and artificial intelligence capabilities.

In a digital world, customers expect a simple, secure and convenient digital experience. We operate with speed and use

data to deliver a personalized customer experience with easy-to-use tools and easy-to-access advice. We are well-recognized for our industry-leading customer innovations, such as BMO CashTrack, Online Banking for Business, BMO Payment Hub, and BMO adviceDirect.

Our significant fintech and technology partnerships have helped us enhance our competitive position, navigate disruption and drive business outcomes. We are leveraging digital adoption to expand the markets we serve across our lines of business with integrated technology partnerships. Digital is *how* we do business.

While the future of banking is digital, a customer-centric approach is key as we continue to advance our advisory services and delivery channels for emerging North American open banking frameworks. We know that an approach that prioritizes security, transparency and customer control will enable all financial players to serve the full range of banking needs seamlessly.

Purpose-driven: Growing the good across every aspect of ESG

Our Purpose is *why* we do business. We're committed to creating a more inclusive and equitable society, especially for groups facing systemic barriers, including Black, Latinx and Indigenous colleagues, customers and communities. Last year we announced BMO's bold new diversity, equity and inclusion strategy, **Zero Barriers to Inclusion 2025**, making significant commitments to drive greater access to social and economic opportunities.

Our purpose commitment to double the good



For a thriving economy

Increasing support for small businesses, and women entrepreneurs and Canadian Indigenous and military customers



For a sustainable future

Being our clients' lead partner in the transition to a net-zero world, delivering on our commitments to sustainable financing and responsible investing



For an inclusive society

Committing to zero barriers to inclusion, supporting equal access to opportunities for our colleagues and customers, and the communities we serve

BMO is building a high performance, digitally enabled bank that's ready for the future. Anchored in our Purpose, we are driven by our strategic priorities for growth, strengthened by our approach to sustainability and guided by our values to build a foundation of trust with our stakeholders and achieve leading customer loyalty.

See MD&A page 20 for a full description of our strategy.

Our strategic priorities

Our group strategic priorities align with and support our enterprise-wide strategy, positioning us well to drive competitive performance.

- > **World-class** client loyalty and growth
- > **Winning culture** driven by alignment, empowerment and recognition
- > **Digital first** for speed, efficiency and scale
- > **Simplify** work and **eliminate complexity**
- > **Superior management** of risk and **capital** performance

Just one year in, we've made impressive progress, launching successful programs focused on increasing equity, including BMO EMpower – our US\$5 billion five-year commitment aimed at breaking down barriers faced by minority businesses, communities and families in the United States. In Canada, we announced a \$12 billion commitment to finance affordable housing over 10 years, including support for financing affordable housing and infrastructure projects for Indigenous peoples, both on- and off-reserve. And we expanded BMO for Women – a dedicated enterprise-wide program that helps remove barriers to women's empowerment, while promoting an inclusive market – to a North America scale.

We take pride in serving as a leading catalyst for change. The challenge of climate change is one that impacts us all and gives urgency to our bold commitment to create a sustainable future. This past year, we declared our ambition *to be our clients' lead partner in the transition to a net-zero world* and laid out the steps that will drive our financing activities and operations in support of this transition. We introduced the *BMO Climate Institute* – a new multi-disciplinary organization harnessing science and analytics, powered by innovative technology and industry-leading expertise. And reinforcing our commitment to finance the climate transition, we joined the Net-Zero Banking Alliance. Convened by the United Nations and including six of Canada's largest banks, this alliance supports collaborative approaches between the public and private sectors to reach net zero by 2050.

We are proud to be consistently recognized as a global leader in sustainability. Included in the Dow Jones Sustainability Index for 16 years, we reached new heights in 2021 as one of only five companies in Canada – and only two North American banks – to be named to the DJSI World Index. In 2020, we were recognized by *The Wall Street Journal* as one of the 100 most sustainably managed companies in the world and the only bank ranked among the top 50. In addition, we have been named the most sustainable bank in North America by Corporate Knights for the past two years. This is sustainability in action, and this global recognition of our progress strengthens our resolve and confirms we are on the right path, enabling us to convene partners and drive solutions on the world stage.

Future-ready

We're investing in businesses well-positioned for growth, the technologies that enable them, and the people who will deliver our market-leading financial advice. It's all part of our ambition to foster a culture of winning and be the strongest, most competitive organization we can be. Our winning culture drives all of us at BMO to perform at our best; with greater alignment, empowerment and recognition than ever before. With culture fuelling our performance, it is also changing the way we work – and that will accelerate our progress for the long term.

With a winning culture and a competitive employee value proposition, we are well positioned to attract and retain top talent in this environment. Our reputation as an employer of choice and our focus on the strategic development of our people earned BMO Harris Bank recognition as one of the World's Best Employers of 2021 by *Forbes* magazine. We're proud of our globally respected brand and our award-winning culture, which is inspiring our people to live our Purpose, while achieving their goals.

Our reputation as an employer of choice earned BMO Harris Bank recognition as one of the World's Best Employers of 2021 by *Forbes* magazine.

Energized by our winning culture, we are building greater synergy and scale to deliver winning performance. Team BMO has modelled these behaviours throughout the pandemic, as we adapted the way we work to support our customers. Our front-line employees, and those who support them, have delivered exceptional service, while other teams adjusted to remote work and never stopped serving our customers and communities.

In the face of challenging economic headwinds, we've maintained our commitment to help our customers make real financial progress and deliver on our purpose. As headwind becomes tailwind and we transition from a post-pandemic economic reopening to what comes next, we must use this moment to do our part to strengthen the financial lives of our customers and communities. By executing on our strategy and delivering the strong operational performance that leads to exceptional financial results, we will fuel our capability to grow the good for a thriving economy, a sustainable future, and a more inclusive society.



Darryl White

Net-Zero Ambition

BMO's commitment to climate action is long-standing. We understand the need to play our part in driving change, and we were one of the first banks in Canada to become carbon neutral in our operations. Our bold commitment to a sustainable future is embedded in our Purpose, and we are delivering on that commitment through the BMO Climate Institute and such initiatives as our sustainable finance strategy. Our ambition is clear and our course has been set. We aim to be our clients' lead partner in the transition to a net-zero world, and we are targeting net zero financed emissions in our lending by 2050.

BMO's Net-Zero Ambition

To be our clients' lead partner in the transition to a net-zero world

Commitment

Acting on our commitment to a sustainable future, we're playing our part to drive the transformation toward a net-zero world. This means setting targets to reduce greenhouse gas emissions from our operations and financed emissions to advance the transition to a net-zero world by 2050 and being transparent on our progress.

Capabilities

The BMO Climate Institute provides thought leadership at the intersection of climate adaptation and finance. We're leveraging our sophisticated analytical capabilities to understand the impacts of climate change and generate data-driven insights that enable our business, customers and partners to adjust and flourish.

Client Partnership

Across BMO's operating groups, we're putting customers at the centre of our strategy, offering a tailored suite of green advisory, investment and lending products and services to support their transition to a net-zero global economy.

Convening for Climate Action

As a global leader, BMO is driving insights and bringing together industry, government, researchers and investors to catalyze the climate conversation, collaborate on solutions and accelerate a socially and economically just net-zero transition.

Energy Transition Group

BMO's new Energy Transition Group helps clients achieve decarbonization by providing advisory and financing solutions for business and the broader economy in the drive to net zero.

Carbon neutral for more than a decade

BMO first achieved net zero emissions in our operations in 2010 – one of the first banks in Canada to do so.

Setting meaningful targets

We have set a new target to reduce greenhouse gas emissions from our operations by 30% by 2030, compared to a 2019 baseline. This target builds on our commitment since 2020 to match 100% of the electricity we use globally with purchases of renewable electricity.

United Nations Sustainable Development Goals (SDGs)

BMO became one of the first major Canadian banks to sign the UN Principles for Responsible Banking ([PRB](#)) in February 2021 – a key initiative of the United Nations Environment Programme Finance Initiative ([UNEP-FI](#)) that accelerates progress on SDGs in the banking sector.

Global Asset Management leadership

As a member of the Net Zero Asset Managers initiative, BMO Global Asset Management is committed to support investing aligned with net zero emissions by 2050 or sooner.

Environmental and social risk management

We serve as North American representative on the Equator Principles Association Steering Committee and we chair the Cross-Sector Biodiversity Initiative, advancing strong environmental and social risk management practices across the financial sector and broader economy.

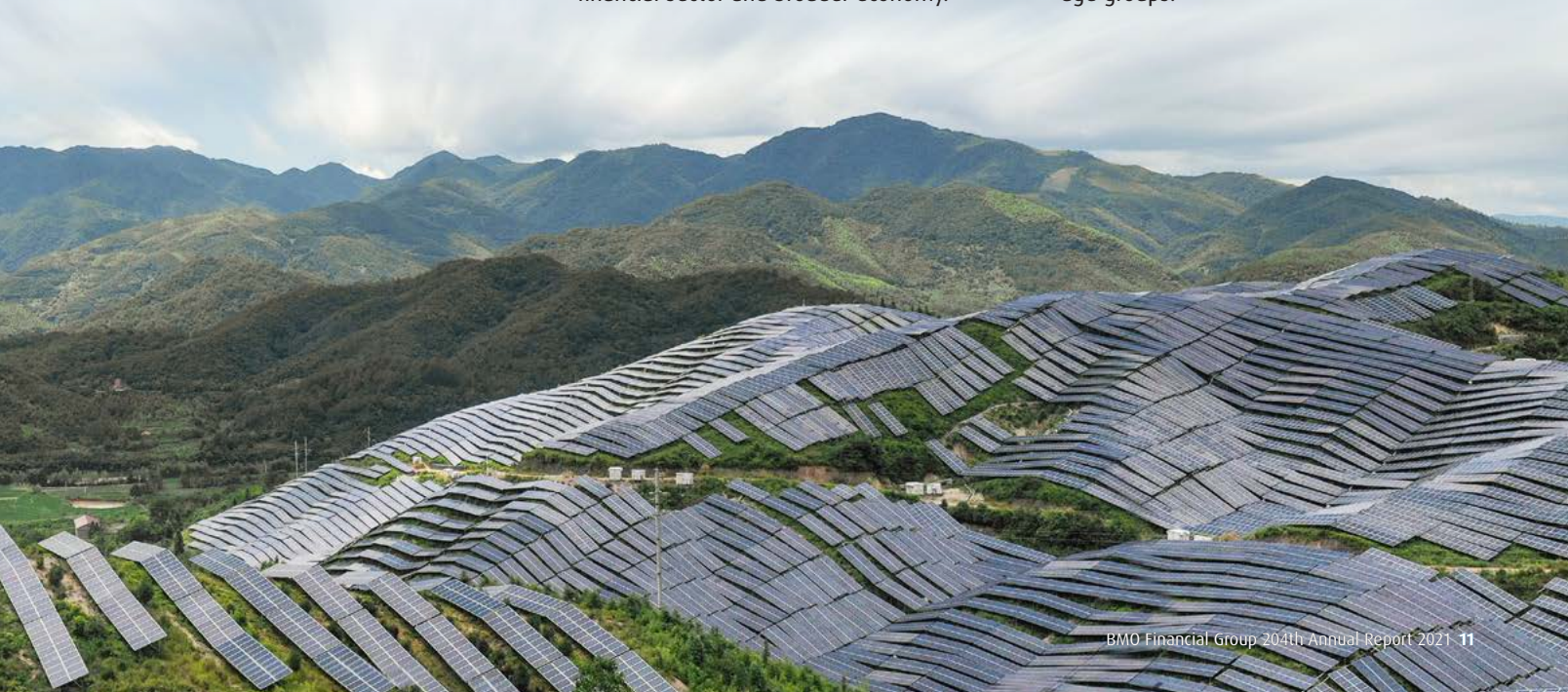


Mapping a transparent path

We have targeted net zero financed emissions in our lending by 2050 and will be establishing intermediate targets for 2030, applying the sophisticated methodologies of the Partnership for Carbon Accounting Financials and Net-Zero Banking Alliance.

Thought leadership for climate leadership

In 2021, BMO's Sustainability Leaders podcast won Gold at the annual International Business Awards and the American Business Awards. Our podcasts are shaping the sustainability conversation, especially with a younger audience: our largest listener demographics are the 28-34 and 35-44 age groups.



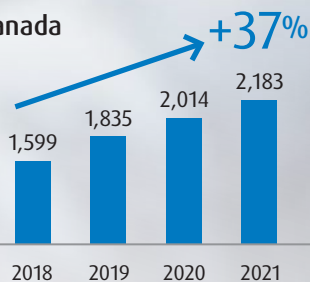
Digital First

BMO is future-ready. Our Digital First strategy is built for speed, efficiency and scale, responding to the growth in demand for banking services that meet customers where they are. Our significant investment enables BMO to provide customers with simple, digital, personalized experiences that put them in control. Yet digital isn't just a channel. It's the way we operate every part of the business, driving loyalty, growth and efficiency, enabling our employees to provide insightful service and freeing up more time for them to do what they do best: give expert advice.

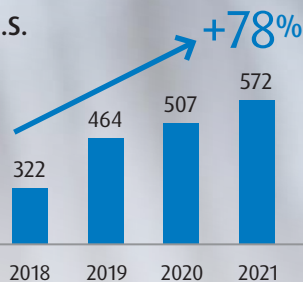



Active Mobile Users (000's)

Canada



U.S.



60%10%30%

JUN

Digital First is about our customers.

- Our investments in digital are focused on meeting customers where they are with simple, digital experiences that meet their needs. We drive progress through continuous improvement and value driven innovation.
- We use data and analytics to offer a seamless and secure digital experience, underpinned by best-in-class personal financial advice.
- We are recognized for our innovation – through capabilities like BMO Insights, which helps our customers achieve real financial progress, BMO Online Banking for Business and BMO Payment Hub – and our online brokerage BMO InvestorLine continues to be a market leader.
- We are relentlessly driving simplification, personalization, and speed by providing real-time information through our North American commercial banking platforms. By helping clients automate their processes, we let them spend more time running their businesses.

Digital First drives loyalty, efficiency and growth.

- BMO Business Xpress, which is now available to customers on both sides of the border, uses data analytics and best-in-class automatic adjudication strategies to reduce in-branch account opening to a matter of minutes. Blend, a cloud banking software firm, has helped reposition our U.S. mortgage business to be more profitable and contributed to improving efficiency in U.S. P&C Banking.
- We continue to drive self service capabilities and access to real-time information through our API Developer Platform and our single, North American digital platform, supported by a state of the art payment infrastructure. And BMO InvestorLine's new adviceDirect Preview assists online investors by providing free access to investing resources and features that enhance our offer.
- By investing significantly in security, people and platforms, BMO is able to grow across businesses and throughout North America.
- A smaller physical footprint, combined with marketing outside our core area, creates efficiencies and the opportunity to expand our share of wallet. We are now able to serve customers in all 50 U.S. states.

Digital First is not just about systems. It's how we do business.

- We operate digitally. From internal processes to client interfaces, digital shapes everything we do. It drives efficiencies and speed to market, freeing up time for our employees to provide advice and create meaningful relationships.
- We are harnessing data and artificial intelligence to deliver even more personalized experiences. By leveraging analytics, we can deliver a more seamlessly integrated value proposition to our customers.
- BMO is a leader in advancing the way business customers make and receive payments, providing more options for risk-managed, real-time, data-enriched transactions. We are transforming clearing and settlement, adding real-time payment systems – such as Canadian Real-Time Rail and FedNow – and adopting ISO 20022 data formatting for a better customer experience.

Our Bold Commitments

BMO's Purpose drives everything we do. It shapes our business strategies, product development, customer relationships and community engagement. From laying down the path to net zero emissions to breaking down the barriers to economic inclusion, we recognize that social progress and our progress are inextricably linked.



> Tamara Littlelight, Branch Manager, Greater Calgary Market and Chief Roy Whitney Onespot, Tsuut'ina Nation at the Tsuut'ina Trail

Photo: Daniel Wood



For a Thriving Economy

We are leveraging our expertise to support different communities with tailored initiatives, knowing that when they flourish, we flourish.

\$8 billion in Indigenous banking

We committed to doubling our book of Indigenous business to \$8 billion by 2025. By the fall of this year we had already reached \$6.4 billion – 80% of the way there.

Support for Small Business

We supported Canadian businesses throughout the pandemic and in their recovery. This resulted in over 54,000 approved CEBA and HASCAP applications putting over \$1.3B into the hands of entrepreneurs in need of financial relief.

Serving those who serve

We've set ourselves a target of doubling the number of Canadian defence community customers by 2025, to 100,000. In 2021 we served 81,100 men and women who serve us.

Grants for progress

We expanded our BMO Celebrating Women Grant Program, empowering women with \$200,000 in grants for projects that contribute to social, environmental and/or economic sustainability outcomes.



For a Sustainable Future

BMO has set measurable targets for driving climate-change solutions and sustainable outcomes, and we are leading the conversation on how to get there.

Catalyzing climate action

In March of this year, we launched the BMO Climate Institute, a forum that will bring together science, analytics, expertise and partners to understand and manage the financial risks and opportunities related to climate change. The Institute will be a resource for all – business, government, academia – in unlocking climate solutions.

\$300 billion for sustainable outcomes

We are well on our way to achieving BMO's 2025 goal of mobilizing \$300 billion in capital for clients pursuing sustainable outcomes, through sustainable lending, underwriting, and investment and advisory services.

\$250 million

The \$250 million BMO Impact Investment Fund is aimed at driving more sustainable outcomes by backing technologies that will help BMO and its clients proactively address sustainability and create positive impact for their stakeholders.



For an Inclusive Society

Our continued commitment to a more inclusive society is creating opportunities for all, and ensuring that we reflect the communities that sustain us.

Zero barriers to inclusion

We've increased access to capital, educational resources and partnerships for Black and Latinx entrepreneurs. Forty percent of our student opportunities are directed to BIPOC youth. Over the past year, we doubled our hiring of Indigenous staff. Colleagues, customers and communities are all benefiting from our **Zero Barriers to Inclusion 2025** strategy.

\$600,000

Our Community Giving has always been carefully shaped by intention. In 2021, we committed \$600,000 to advance Truth and Reconciliation in Canada, working with Indigenous partners to move our whole society along the road to greater social justice.

Women in senior leadership

For the last six years, more than 40% of our senior leaders have been women.

Board of Directors¹

Janice M. Babiak, CPA (US), CA (UK), CISM, CISA
Corporate Director
Board/Committees:
Audit and Conduct Review (Chair),
Governance and Nominating
Director since: 2012

Sophie Brochu, c.m.
President and Chief Executive Officer,
Hydro-Québec
Board/Committees:
Governance and Nominating,
Human Resources
Director since: 2011

Craig W. Broderick
Corporate Director
Board/Committees:
Governance and Nominating,
Risk Review (Chair)
Director since: 2018

George A. Cope, c.m.
Board/Committees:
Board Chair,
Governance and Nominating,
Human Resources
Director since: 2006

Stephen Dent
Managing Director and Co-Founder,
Birch Hill Equity Partners
Board/Committees:
Risk Review
Director since: 2021

Christine A. Edwards
Corporate Director
Board/Committees:
Governance and Nominating (Chair),
Human Resources
Director since: 2010

Dr. Martin S. Eichenbaum
Charles Moskos Professor of
Economics, Northwestern University
Board/Committees:
Audit and Conduct Review,
Risk Review
Director since: 2015

David Harquail
Chair of the Board,
Franco-Nevada Corporation
Board/Committees:
Audit and Conduct Review,
Risk Review
Director since: 2018

Linda S. Huber
Chief Financial Officer,
FactSet Research Systems Inc.
Board/Committees:
Audit and Conduct Review,
Risk Review
Director since: 2017

Eric R. La Flèche
President and Chief Executive Officer,
Metro Inc.
Board/Committees:
Human Resources
Director since: 2012

Lorraine Mitchelmore
Corporate Director
Board/Committees:
Governance and Nominating,
Human Resources (Chair),
Risk Review
Director since: 2015

Madhu Ranganathan
Executive Vice-President
and Chief Financial Officer,
OpenText Corporation
Board/Committees:
Audit and Conduct Review
Director since: 2021

Darryl White
Chief Executive Officer,
BMO Financial Group
Board/Committees:
Attends all committee meetings
as an invitee
Director since: 2017

Executive Committee¹

Darryl White
Chief Executive Officer,
BMO Financial Group

Daniel Barclay
Group Head,
BMO Capital Markets

David Casper
Chief Executive Officer,
BMO Financial Corp.
and Group Head,
North American
Commercial Banking

Patrick Cronin
Chief Risk Officer,
BMO Financial Group

Cameron Fowler
Chief Strategy and
Operations Officer,
BMO Financial Group

Sharon Haward-Laird
General Counsel,
BMO Financial Group

Ernie (Erminia) Johansson
Group Head,
North American Personal
and Business Banking

Deland Kamanga
Group Head,
BMO Wealth Management

Mona Malone
Head,
People & Culture and Chief
Human Resources Officer,
BMO Financial Group

Steve Tennyson
Chief Technology
and Operations Officer,
BMO Financial Group

Tayfun Tuzun
Chief Financial Officer,
BMO Financial Group

¹ As at November 1, 2021.

Enhanced Disclosure Task Force

On October 29, 2012, the Enhanced Disclosure Task Force (EDTF) of the Financial Stability Board published its first report, *Enhancing the Risk Disclosures of Banks*. We support the recommendations issued by EDTF for the provision of high-quality, transparent risk disclosures.

Disclosures related to the EDTF recommendations are detailed in the index below, as presented in this 2021 Annual Report, the Supplemental Financial Information (SFI) or Supplemental Regulatory Capital Information (SRC). Information within the SFI or SRC is not, and should not be considered incorporated by reference into this 2021 Annual Report.

Topic	EDTF Disclosure	Page Number		
		Annual Report	SFI	SRC
General	1. Present all risk-related information in each report, providing an index for easy navigation	74-113	Index	Index
	2. Define the bank's risk terminology and risk measures and present key parameters used	84-113,136-138		
	3. Discuss top and emerging risks for the bank	74-76		
	4. Outline plans to meet new key regulatory ratios once the applicable rules are finalized	67		
Risk Governance, Risk Management & Business Model	5. Summarize the bank's risk management organization, processes, and key functions	78-83		
	6. Describe the bank's risk culture and procedures applied to support the culture	83		
	7. Describe key risks that arise from the bank's business model and activities	81		
	8. Describe the use of stress testing within the bank's risk governance and capital frameworks	82		
Capital Adequacy and Risk-Weighted Assets (RWA)	9. Provide minimum Pillar 1 capital requirements	66-69		3-4,10
	10. Summarize information contained in the composition of capital templates and reconciliation of the accounting balance sheet to the regulatory balance sheet <ul style="list-style-type: none"> A Main Features template can also be found on BMO's website at www.bmo.com under Investor Relations and Regulatory Filings 	69		3-5
	11. Present a flow statement of movements in regulatory capital, including changes in Common Equity Tier 1, Additional Tier 1, and Tier 2 capital			6
	12. Discuss capital planning within a more general discussion of management's strategic planning	65		
	13. Provide granular information to explain how RWA relate to business activities	69-70		11
	14. Present a table showing the capital requirements for each method used for calculating RWA	69-70, 84-87		11,17,18,21-30, 37-43
	15. Tabulate credit risk in the banking book for Basel asset classes and major portfolios			17-30,37-43
	16. Present a flow statement that reconciles movements in RWA by credit risk and market risk			31,57
17. Describe the bank's Basel validation and back-testing process. Included in our SRC information is our estimated and actual loss parameter information	108		58-62	
Liquidity	18. Describe how the bank manages its potential liquidity needs and the liquidity reserve held to meet those needs	97-103		
Funding	19. Summarize encumbered and unencumbered assets in a table by balance sheet category	99	38	
	20. Tabulate consolidated total assets, liabilities and off-balance sheet commitments by remaining contractual maturity	104-105		
	21. Discuss the bank's sources of funding and describe the bank's funding strategy	100-101		
Market Risk	22. Provide a breakdown of balance sheet positions into trading and non-trading market risk measures	96		
	23. Provide qualitative and quantitative breakdowns of significant trading and non-trading market risk measures	92-96		
	24. Describe significant market risk measurement model validation procedures and back-testing and how these are used to enhance the parameters of the model	92-95,108		
	25. Describe the primary risk management techniques employed by the bank to measure and assess the risk of loss beyond reported risk measures	92-93		
Credit Risk	26. Provide information about the bank's credit risk profile	84-91,160-166	23-35	11-56
	27. Describe the bank's policies related to impaired loans and renegotiated loans	161,166		
	28. Provide reconciliations of impaired loans and the allowance for credit losses	88-89,164		
	29. Provide a quantitative and qualitative analysis of the bank's counterparty credit risk that arises from its derivative transactions	84-85,91		
	30. Provide a discussion of credit risk mitigation	84-85, 171,177,205		
Other Risks	31. Describe other risks and discuss how each is identified, governed, measured and managed	78-82, 106-113		
	32. Discuss publicly known risk events related to other risks, where material or potentially material loss events have occurred	106-113		

Management's Discussion and Analysis

BMO's Chief Executive Officer and Chief Financial Officer have signed a statement outlining management's responsibility for financial information in the annual consolidated financial statements and Management's Discussion and Analysis (MD&A). The statement also explains the roles of the Audit and Conduct Review Committee and Board of Directors in respect of that financial information.

The MD&A comments on our operations and financial condition for the years ended October 31, 2021 and 2020. The MD&A should be read in conjunction with the consolidated financial statements for the year ended October 31, 2021. The MD&A commentary is as at December 3, 2021. Unless otherwise indicated, all amounts are stated in Canadian dollars and have been derived from consolidated financial statements prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board. We also comply with interpretations of IFRS by our regulator, the Office of the Superintendent of Financial Institutions Canada. References to generally accepted accounting principles (GAAP) mean IFRS.

Effective the first quarter of 2020, we adopted IFRS 16, *Leases*, recognizing the cumulative effect of adoption in opening retained earnings with no changes to prior periods. Certain prior-period results and measures have been reclassified for methodology changes and transfers of certain businesses between operating groups.

Index

19	Caution Regarding Forward-Looking Statements	58	Review of Fourth Quarter 2021 Performance
20	About BMO	59	Summary Quarterly Earnings Trends
21	Financial Objectives and Value Measures	61	2020 Financial Performance Review
23	Supporting a Sustainable and Inclusive Future	63	Financial Condition Review
24	Financial Highlights	63	Summary Balance Sheet
25	Non-GAAP and Other Financial Measures	65	Enterprise-Wide Capital Management
29	Economic Developments and Outlook	72	Off-Balance Sheet Arrangements
30	2021 Financial Performance Review	74	Enterprise-Wide Risk Management
38	2021 Operating Groups Performance Review	114	Accounting Matters and Disclosure and Internal Control
38	Summary	114	Critical Accounting Estimates
39	Personal and Commercial Banking	119	Changes in Accounting Policies in 2021
40	Canadian Personal and Commercial Banking	119	Future Changes in Accounting Policies
44	U.S. Personal and Commercial Banking	119	Transactions with Related Parties
48	BMO Wealth Management	120	Shareholders' Auditors' Services and Fees
52	BMO Capital Markets	121	Management's Annual Report on Disclosure Controls and Procedures and Internal Control over Financial Reporting
56	Corporate Services, including Technology and Operations	122	Supplemental Information
		136	Glossary of Financial Terms

Regulatory Filings

BMO's continuous disclosure materials, including our interim consolidated financial statements and interim MD&A, audited annual consolidated financial statements and annual MD&A, Annual Information Form and Notice of Annual Meeting of Shareholders and Management Proxy Circular, are available on our website at www.bmo.com/investorrelations, on the Canadian Securities Administrators' website at www.sedar.com and on the EDGAR section of the U.S. Securities and Exchange Commission's (SEC) website at www.sec.gov. BMO's Chief Executive Officer and Chief Financial Officer certify the appropriateness and fairness of BMO's annual and interim consolidated financial statements, MD&A and Annual Information Form, the effectiveness of BMO's disclosure controls and procedures and the effectiveness of, and any material weaknesses relating to, BMO's internal control over financial reporting. Information contained in or otherwise accessible through our website (www.bmo.com), or any third-party websites mentioned herein, does not form part of this document.

Caution

The About BMO, Financial Objectives and Value Measures, and Economic Developments and Outlook sections contain certain forward-looking statements. By their nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties. Refer to the Caution Regarding Forward-Looking Statements for a discussion of such risks and uncertainties and the material factors and assumptions related to the statements set forth in such sections.

Factors That May Affect Future Results

As noted in the following Caution Regarding Forward-Looking Statements, all forward-looking statements and information, by their nature, are subject to inherent risks and uncertainties, both general and specific, which may cause actual results to differ materially from the expectations expressed in any forward-looking statement. The Enterprise-Wide Risk Management section describes a number of risks, including credit and counterparty, market, insurance, liquidity and funding, operational non-financial, legal and regulatory, strategic, environmental and social, and reputation risk. Should our risk management framework prove ineffective, there could be a material adverse impact on our financial position and results.

Caution Regarding Forward-Looking Statements

Bank of Montreal's public communications often include written or oral forward-looking statements. Statements of this type are included in this document, and may be included in other filings with Canadian securities regulators or the U.S. Securities and Exchange Commission, or in other communications. All such statements are made pursuant to the "safe harbor" provisions of, and are intended to be forward-looking statements under, the United States *Private Securities Litigation Reform Act of 1995* and any applicable Canadian securities legislation. Forward-looking statements in this document may include, but are not limited to, statements with respect to our objectives and priorities for fiscal 2022 and beyond, our strategies or future actions, our targets and commitments (including with respect to net zero emissions), expectations for our financial condition, capital position or share price, the regulatory environment in which we operate, the results of, or outlook for, our operations or for the Canadian, U.S. and international economies, and the COVID-19 pandemic, and include statements made by our management. Forward-looking statements are typically identified by words such as "will", "would", "should", "believe", "expect", "anticipate", "project", "intend", "estimate", "plan", "goal", "commit", "target", "may", "might", "schedule", "forecast" and "could" or negative or grammatical variations thereof.

By their nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties, both general and specific in nature. There is significant risk that predictions, forecasts, conclusions or projections will not prove to be accurate, that our assumptions may not be correct, and that actual results may differ materially from such predictions, forecasts, conclusions or projections. The uncertainty created by the COVID-19 pandemic has heightened this risk, given the increased challenge in making assumptions, predictions, forecasts, conclusions or projections. We caution readers of this document not to place undue reliance on our forward-looking statements, as a number of factors – many of which are beyond our control and the effects of which can be difficult to predict – could cause actual future results, conditions, actions or events to differ materially from the targets, expectations, estimates or intentions expressed in the forward-looking statements.

The future outcomes that relate to forward-looking statements may be influenced by many factors, including, but not limited to: general economic and market conditions in the countries in which we operate, including labour challenges; the severity, duration and spread of the COVID-19 pandemic, and possibly other outbreaks of disease or illness, and its impact on local, national or international economies, as well as its heightening of certain risks that may affect our future results; information, privacy and cyber security, including the threat of data breaches, hacking, identity theft and corporate espionage, as well as the possibility of denial of service resulting from efforts targeted at causing system failure and service disruption; benchmark interest rate reforms; technological changes and technology resiliency; political conditions, including changes relating to, or affecting, economic or trade matters; climate change and other environmental and social risk; the Canadian housing market and consumer leverage; inflationary pressures; global supply-chain disruptions; changes in monetary, fiscal, or economic policy; changes in laws, including tax legislation and interpretation, or in supervisory expectations or requirements, including capital, interest rate and liquidity requirements and guidance, and the effect of such changes on funding costs; weak, volatile or illiquid capital or credit markets; the level of competition in the geographic and business areas in which we operate; judicial or regulatory proceedings; the accuracy and completeness of the information we obtain with respect to our customers and counterparties; failure of third parties to comply with their obligations to us; our ability to execute our strategic plans and to complete proposed acquisitions or dispositions, including obtaining regulatory approvals; critical accounting estimates and the effects of changes to accounting standards, rules and interpretations on these estimates; operational and infrastructure risks, including with respect to reliance on third parties; changes to our credit ratings; global capital markets activities; the possible effects on our business of war or terrorist activities; natural disasters and disruptions to public infrastructure, such as transportation, communications, power or water supply; and our ability to anticipate and effectively manage risks arising from all of the foregoing factors.

We caution that the foregoing list is not exhaustive of all possible factors. Other factors and risks could adversely affect our results. For more information, please refer to the discussion in the Risks That May Affect Future Results section, and the sections related to credit and counterparty, market, insurance, liquidity and funding, operational non-financial, legal and regulatory, strategic, environmental and social, and reputation risk, in the Enterprise-Wide Risk Management section, all of which outline certain key factors and risks that may affect our future results. Investors and others should carefully consider these factors and risks, as well as other uncertainties and potential events, and the inherent uncertainty of forward-looking statements. We do not undertake to update any forward-looking statements, whether written or oral, that may be made from time to time by the organization or on its behalf, except as required by law. The forward-looking information contained in this document is presented for the purpose of assisting shareholders and analysts in understanding our financial position as at and for the periods ended on the dates presented, as well as our strategic priorities and objectives, and may not be appropriate for other purposes.

Material economic assumptions underlying the forward-looking statements contained in this document are set out in the Economic Developments and Outlook section, as well as in the Allowance for Credit Losses section. Assumptions about the performance of the Canadian and U.S. economies, as well as overall market conditions and their combined effect on our business, are material factors we consider when determining our strategic priorities, objectives and expectations for our business. In determining our expectations for economic growth, we primarily consider historical economic data, past relationships between economic and financial variables, changes in government policies, and the risks to the domestic and global economy.

About BMO

Established in 1817, BMO Financial Group (BMO, Bank of Montreal, the bank, we, our, us) is a highly diversified provider of financial products and services based in North America. We are the eighth largest bank in North America by assets, with total assets of \$988.2 billion. Our employees are engaged, our workforce is diverse, and our culture is award-winning. BMO provides a broad range of personal and commercial banking, wealth management, global markets and investment banking products and services, conducting business through three operating groups: Personal and Commercial Banking, BMO Wealth Management and BMO Capital Markets. We serve eight million customers across Canada through our Canadian personal and commercial banking segment, BMO Bank of Montreal. In the United States, we serve more than two million personal, business and commercial banking customers nationally through BMO Harris Bank, based in the U.S. Midwest. We also serve customers through our wealth management businesses – BMO Private Wealth, BMO InvestorLine, BMO Wealth Management U.S., BMO Global Asset Management and BMO Insurance. BMO Capital Markets provides a full suite of financial products and services to North American and international corporate, institutional and government clients through its Investment and Corporate Banking and Global Markets divisions.

At BMO, we continue to build a high-performance, digitally-enabled, future-ready bank. Anchored in our Purpose, we are driven by our strategic priorities for growth, strengthened by our approach to sustainability, and guided by our values to build a foundation of trust with our stakeholders and achieve leading customer loyalty.

Our Purpose: Boldly Grow the Good *in business and life*

BMO has a deep sense of purpose – to be a champion for progress and a catalyst for change. We are leveraging our position as a leading financial services provider to create opportunities for our communities and our stakeholders to make positive, sustainable change, in the belief that success can and must be mutual. Our bold commitments for a sustainable future, a thriving economy and an inclusive society are reflected in our active direct response to today's most pressing challenges.

- **Thriving economy** – Increasing support for small businesses, women entrepreneurs and Canadian Indigenous and military customers.
- **Sustainable future** – Being our clients' lead partner in the transition to a net zero world, delivering on our commitments to sustainable financing and responsible investing.
- **Inclusive society** – Working toward zero barriers to inclusion, supporting equal access to opportunities for our colleagues, customers and the communities we serve.

Our Strategic Priorities

Consistent strong performance is essential to achieving our Purpose. We aim to deliver top-tier total shareholder return and achieve our financial objectives by aligning our operations with, and executing on, our strategic priorities:

- **World-class** client loyalty and growth
- **Winning culture** driven by alignment, empowerment and recognition
- **Digital first** for speed, efficiency and scale
- **Simplify** work and **eliminate complexity**
- **Superior management** of **risk** and **capital** performance.

Our group strategic priorities align with and support our enterprise-wide strategy, positioning us well to drive competitive performance. The group strategies are outlined in the 2021 Operating Groups Performance Review.

Our Approach to Sustainability

Our commitment to sustainability is embedded in our strategy and is fundamental to our Purpose. We identify the most significant effects of our business operations, products and services on our stakeholders and the communities in which we operate. We take steps to manage our business in a manner that is consistent with our sustainability objectives, and we consider the interests of our stakeholders. We apply a variety of ESG practices to capture opportunities and manage risks in key areas such as sustainable finance, climate change, human rights, and diversity, equity and inclusion.

Our Values

Four core values shape our culture and underpin our choices and actions:

- **Integrity** – Do what is right
- **Diversity** – Learn from difference
- **Responsibility** – Make tomorrow better
- **Empathy** – Put others first.

Financial Objectives and Value Measures

Results and measures in this section are presented on a reported and an adjusted basis, and management considers both to be useful in assessing our performance. It permits readers to assess the impact of certain specified items on results for the periods presented, and to better assess results, excluding those items that may not be reflective of ongoing business performance.

Adjusted results and measures in this section, including earnings per share (EPS), EPS growth, return on equity (ROE), return on tangible common equity (ROTCE), net income, revenue, non-interest expense, efficiency ratio and operating leverage, are non-GAAP amounts, measures and ratios, and are discussed in the Non-GAAP and Other Financial Measures section.

We also present reported and adjusted revenue on a basis that is net of insurance claims, commissions and changes in policy benefit liabilities (CCPB), and we calculate our efficiency ratio and operating leverage on a similar basis. Insurance revenue can experience variability arising from fluctuations in the fair value of insurance assets, caused by movements in interest rates and equity markets, that is largely offset in CCPB. Presenting our revenue, efficiency ratio and operating leverage on a net basis allows for a better assessment of operating results.

Measures and ratios on a net revenue basis are non-GAAP. For more information on CCPB, refer to the Non-GAAP and Other Financial Measures section. Information regarding the composition of each of these measures is also provided in the Glossary of Financial Terms.

Financial Objectives

BMO's business planning process is rigorous, sets ambitious goals and considers prevailing economic conditions, our risk appetite, our customers' evolving needs and the opportunities available across our lines of business. It includes clear and direct accountability for annual performance that is measured against both internal and external benchmarks and our progress toward our strategic priorities.

We have established medium-term financial objectives for certain important performance measures, which are set out below. Medium-term is generally defined as three to five years, and performance is measured on an adjusted basis. We aim to deliver top-tier total shareholder return and achieve our financial objectives by aligning our operations with, and executing on, our strategic priorities. We consider top-tier returns to be top-quartile shareholder returns, relative to our Canadian banking peer group.

These objectives serve as guideposts as we execute on our strategic priorities, and they assume a normal business environment. Our ability to meet these objectives in any single period may be adversely affected by extraordinary developments, such as the impacts of the COVID-19 pandemic. We recognize that in managing our operations and our exposure to risk, current profitability and our ability to meet these objectives in a single period must be balanced with the need to invest in our businesses for long-term sustainability and future growth.

Our financial objectives and our performance against these objectives are outlined in the table below and described in the sections that follow. BMO's financial results in 2021 reflected continued execution on our strategic priorities, as well as improving economic conditions. Performance in fiscal 2020 reflected the negative impacts of the COVID-19 pandemic, including elevated provisions for credit losses.

Financial Objectives and Metrics

As at and for the periods ended October 31, 2021	Financial objectives (adjusted)	Reported basis			Adjusted basis (1)		
		1-year	3-year (2)	5-year (2)	1-year	3-year (2)	5-year (2)
Total shareholder return (%)	Top-tier	75.9	15.7	14.0	na	na	na
Earnings per share growth (%)	7-10%	53.3	12.3	10.8	68.0	13.0	11.5
Average return on equity (%)	15% or more	14.9	12.5	12.8	16.7	13.5	13.8
Net operating leverage (%) (3)	2% or more	0.4	1.4	2.1	6.1	3.2	2.6
Common Equity Tier 1 Ratio (%)	Exceed regulatory requirement	13.7	na	na	na	na	na

(1) Adjusted results and measures in this table are non-GAAP measures and are discussed in the Non-GAAP and Other Financial Measures section.

(2) The 3-year and 5-year EPS growth rate and net operating leverage reflect compound annual growth rates (CAGR).

(3) Net operating leverage on a reported and adjusted basis presented in this table are non-GAAP measures and are discussed in the Non-GAAP and Other Financial Measures section.

na - not applicable

Total Shareholder Return

The average annual total shareholder return (TSR) is a key measure of shareholder value, and over time, we expect that execution on our strategic priorities will drive value creation for our shareholders. The one-year, three-year and five-year average annual TSR was 75.9%, 15.7% and 14.0%, respectively, all above our Canadian peer group average (excluding BMO) of 56.1%, 15.3% and 13.6%, respectively.

The table below summarizes dividends paid on BMO's common shares over the past five years and the movements in our share price. An investment of \$1,000 in BMO common shares made at the beginning of fiscal 2017 would have been worth \$1,924 as at October 31, 2021, assuming reinvestment of dividends, for a total return of 92.4%.

Dividends declared per common share in fiscal 2021 totalled \$4.24, unchanged from the prior year, as the Office of the Superintendent of Financial Institutions' (OSFI's) restriction on dividend increases by federally regulated financial institutions effective March 13, 2020, remained in place throughout the year and was removed effective November 4, 2021. Dividends paid over a five-year period have increased at an average annual compound rate of approximately 5%.

The **average annual total shareholder return (TSR)** represents the average annual total return earned on an investment in BMO common shares made at the beginning of a fixed period. The return includes the change in share price and assumes dividends received were reinvested in additional common shares.

Total Shareholder Return

For the year ended October 31	2021	2020	2019	2018	2017	3-year CAGR (1)	5-year CAGR (1)
Closing market price per common share (\$)	134.37	79.33	97.50	98.43	98.83	10.9	9.5
Dividends paid (\$ per share)	4.24	4.21	3.99	3.72	3.52	4.5	4.8
Dividend yield (%)	3.2	5.3	4.2	3.8	3.6	nm	nm
Increase (decrease) in share price (%)	69.4	(18.6)	(0.9)	(0.4)	15.8	nm	nm
Total annual shareholder return (%) (2)	75.9	(14.6)	3.2	3.3	20.2	15.7	14.0

(1) Compound annual growth rate (CAGR) expressed as a percentage.

(2) Total annual shareholder return assumes reinvestment of quarterly dividends and therefore does not equal the sum of dividend and share price returns in the table.

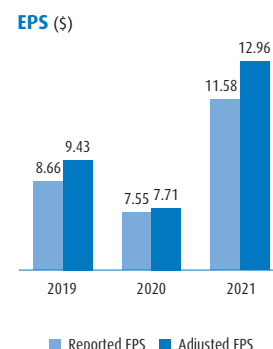
nm - not meaningful

Earnings per Share Growth

The year-over-year percentage change in earnings per share (EPS) and in adjusted EPS are our key measures for analyzing earnings growth. All references to EPS are to diluted EPS, unless otherwise indicated.

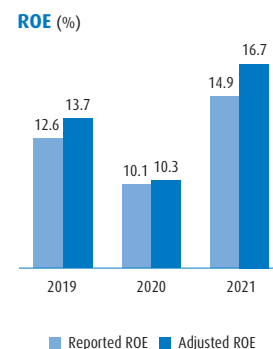
EPS was \$11.58, an increase of \$4.03 or 53% from \$7.55 in 2020. Adjusted EPS was \$12.96, an increase of \$5.25 or 68% from \$7.71 in 2020. The increase in EPS primarily reflected higher earnings. Reported net income available to common shareholders increased 55% year-over-year, while the average number of diluted common shares outstanding increased 1%.

Earnings per share (EPS) is calculated by dividing net income, after deducting preferred share dividends and distributions on other equity instruments, by the average number of common shares outstanding. Adjusted EPS is calculated in the same manner using adjusted net income. Diluted EPS, which is BMO's basis for measuring performance, adjusts for possible conversions of financial instruments into common shares if those conversions would reduce EPS, and is more fully explained in Note 23 of the consolidated financial statements.



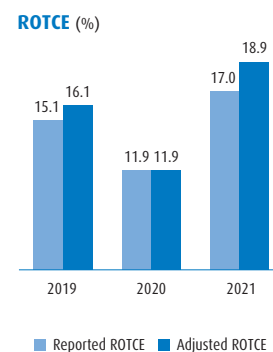
Return on Equity

Reported return on equity (ROE) was 14.9% in 2021 and adjusted ROE was 16.7%, compared with 10.1% and 10.3%, respectively, in 2020. Reported and adjusted ROE increased due to higher net income, partially offset by growth in common equity. There was an increase of \$2,660 million or 55% in reported net income available to common shareholders and an increase of \$3,453 million or 70% in adjusted net income available to common shareholders in the current year. Average common shareholders' equity increased \$2.2 billion or 5% from 2020, primarily due to growth in retained earnings, partially offset by a decrease in accumulated other comprehensive income. The reported return on tangible common equity (ROTCE) was 17.0%, compared with 11.9% in 2020, and adjusted ROTCE was 18.9%, compared with 11.9% in 2020. Book value per share increased 4% from the prior year to \$80.18, reflecting the increase in shareholders' equity.



Return on common shareholders' equity (ROE) is calculated as net income, less preferred dividends and distributions on other equity instruments, as a percentage of average common shareholders' equity. Common shareholders' equity comprises common share capital, contributed surplus, accumulated other comprehensive income (loss) and retained earnings. Adjusted ROE is calculated using adjusted net income rather than net income.

Return on tangible common equity (ROTCE) is calculated as net income available to common shareholders, adjusted for the amortization of acquisition-related intangible assets, as a percentage of average tangible common equity. Tangible common equity is calculated as common shareholders' equity, less goodwill and acquisition-related intangible assets, net of related deferred tax liabilities. Adjusted ROTCE is calculated using adjusted net income rather than net income.



Financial Highlights

(Canadian \$ in millions, except as noted)

	2021	2020	2019
Summary Income Statement (1)			
Net interest income	14,310	13,971	12,888
Non-interest revenue	12,876	11,215	12,595
Revenue	27,186	25,186	25,483
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	1,399	1,708	2,709
Revenue, net of CCPB (2)	25,787	23,478	22,774
Provision for credit losses on impaired loans	525	1,522	751
Provision for (recovery of) credit losses on performing loans	(505)	1,431	121
Total provision for credit losses (PCL)	20	2,953	872
Non-interest expense	15,509	14,177	14,630
Provision for income taxes	2,504	1,251	1,514
Net income	7,754	5,097	5,758
Adjusted net income	8,651	5,201	6,249
Common Share Data (\$, except as noted) (1)			
Basic earnings per share	11.60	7.56	8.68
Diluted earnings per share	11.58	7.55	8.66
Adjusted diluted earnings per share	12.96	7.71	9.43
Dividends declared per share	4.24	4.24	4.06
Book value per share	80.18	77.40	71.54
Closing share price	134.37	79.33	97.50
Number of common shares outstanding (in millions)			
End of period	648.1	645.9	639.2
Average basic	647.2	641.4	638.9
Average diluted	648.7	642.1	640.4
Market capitalization (\$ billions)	87.1	51.2	62.3
Dividend yield (%)	3.2	5.3	4.2
Dividend payout ratio (%)	36.5	56.1	46.8
Adjusted dividend payout ratio (%)	32.6	54.9	43.0
Financial Measures and Ratios (%) (1)			
Return on equity	14.9	10.1	12.6
Adjusted return on equity	16.7	10.3	13.7
Return on tangible common equity	17.0	11.9	15.1
Adjusted return on tangible common equity	18.9	11.9	16.1
Efficiency ratio, net of CCPB	60.1	60.4	64.2
Adjusted efficiency ratio, net of CCPB	56.5	59.8	61.4
Operating leverage, net of CCPB	0.4	6.2	(2.9)
Adjusted operating leverage, net of CCPB	6.1	2.7	0.8
Net interest margin on average earning assets	1.59	1.64	1.70
Effective tax rate	24.4	19.7	20.8
Adjusted effective tax rate	22.7	19.8	21.1
Total PCL-to-average net loans and acceptances	-	0.63	0.20
PCL on impaired loans-to-average net loans and acceptances	0.11	0.33	0.17
Liquidity coverage ratio (LCR) (3)	125	131	138
Net stable funding ratio (NSFR) (3)	118	na	na
Balance Sheet and Other Information (as at \$ millions, except as noted)			
Assets	988,175	949,261	852,195
Average earning assets	897,302	853,336	759,395
Gross loans and acceptances	474,847	464,216	452,427
Net loans and acceptances	472,283	460,913	450,577
Deposits	685,631	659,034	568,143
Common shareholders' equity	51,965	49,995	45,728
Total risk-weighted assets (4)	325,433	336,607	317,029
Assets under administration	634,713	653,319	632,193
Assets under management	523,270	482,554	471,160
Capital Ratios (%) (4)			
Common Equity Tier 1 Ratio	13.7	11.9	11.4
Tier 1 Capital Ratio	15.4	13.6	13.0
Total Capital Ratio	17.6	16.2	15.2
Leverage Ratio	5.1	4.8	4.3
Foreign Exchange Rates (\$)			
As at Canadian/U.S. dollar	1.2376	1.3319	1.3165
Average Canadian/U.S. dollar	1.2554	1.3441	1.3290

(1) Adjusted results remove certain items from reported results and are used to calculate our adjusted measures as presented in the above table. Management assesses performance on a reported basis and an adjusted basis, and considers both to be useful. Revenue, net of CCPB, and adjusted results, measures and ratios in this table are non-GAAP. For further information, refer to the Non-GAAP and Other Financial Measures section and for a composition of non-GAAP amounts, measures and ratios, as well as supplementary financial measures, refer to the Glossary of Financial Terms.

(2) We present revenue, efficiency ratio and operating leverage on a basis that is net of CCPB, which reduces the variability in insurance revenue from changes in fair value that are largely offset by changes in the fair value of policy benefit liabilities, the impact of which is reflected in CCPB.

(3) LCR and NSFR are disclosed in accordance with OSFI's Liquidity Adequacy Requirements (LAR) Guideline, as applicable.

(4) Capital ratios and risk-weighted assets are disclosed in accordance with OSFI's Capital Adequacy Requirements (CAR) Guideline, as applicable.

na - not applicable

Non-GAAP and Other Financial Measures

Results and measures in this document are presented on a GAAP basis. Unless otherwise indicated, all amounts are in Canadian dollars and have been derived from our audited annual consolidated financial statements prepared in accordance with International Financial Reporting Standards (IFRS). References to GAAP mean IFRS. We use a number of financial measures to assess our performance, as well as the performance of our operating businesses, including measures and ratios that are presented on a non-GAAP basis, as described below. We believe that these non-GAAP amounts, measures and ratios, read together with our GAAP results, provide readers with a better understanding of how management assesses results.

Non-GAAP amounts, measures and ratios do not have standardized meanings under GAAP. They are unlikely to be comparable to similar measures presented by other companies and should not be viewed in isolation from, or as a substitute for, GAAP results.

For further information regarding the composition of non-GAAP and other financial measures, including supplementary financial measures, refer to the Glossary of Financial terms.

Our non-GAAP measures broadly fall into the following categories:

Adjusted measures and ratios

Management considers both reported and adjusted results and measures useful in assessing underlying ongoing business performance. Adjusted results and measures remove certain specified items from revenue, non-interest expense and income taxes, as detailed in the following table. Adjusted results and measures presented in this document are non-GAAP. Presenting results on both a reported basis and an adjusted basis permits readers to assess the impact of certain items on results for the periods presented, and to better assess results excluding those items that may not be reflective of ongoing business performance. As such, the presentation may facilitate readers' analysis of trends. Except as otherwise noted, management's discussion of changes in reported results in this document applies equally to changes in the corresponding adjusted results.

Measures net of insurance claims, commissions and changes in policy benefit liabilities (CCPB)

We also present reported and adjusted revenue on a basis that is net of insurance claims, commissions and changes in policy benefit liabilities (CCPB), and our efficiency ratio and operating leverage are calculated on a similar basis, as reconciled in the Revenue section. Measures and ratios presented on a basis net of CCPB are non-GAAP. Insurance revenue can experience variability arising from fluctuations in the fair value of insurance assets, caused by movements in interest rates and equity markets. The investments that support policy benefit liabilities are predominantly fixed income assets recorded at fair value, with changes in fair value recorded in insurance revenue in the Consolidated Statement of Income. These fair value changes are largely offset by changes in the fair value of policy benefit liabilities, the impact of which is reflected in CCPB. The presentation and discussion of revenue, efficiency ratios and operating leverage on a net basis reduces this variability, which allows for a better assessment of operating results. For more information, refer to the Insurance Claims, Commissions and Changes in Policy Benefit Liabilities section.

Presenting results on a taxable equivalent basis (teb)

We analyze consolidated revenue on a reported basis. In addition, we analyze revenue on a taxable equivalent basis (teb) at the operating group level, consistent with the Canadian peer group. Revenue and the provision for income taxes in BMO Capital Markets and U.S. P&C are increased on tax-exempt securities to an equivalent pre-tax basis. These adjustments are offset in Corporate Services. Presenting results on a teb basis reflects how our operating groups manage their business and is useful to facilitate comparisons of income between taxable and tax-exempt sources. The effective tax rate is also analyzed on a teb basis for consistency of approach, with the offset to operating segment adjustments recorded in Corporate Services.

Tangible common equity and return on tangible common equity

Tangible common equity is calculated as common shareholders' equity less goodwill and acquisition-related intangible assets, net of related deferred tax liabilities. Return on tangible common equity is commonly used in the North American banking industry and is meaningful because it measures the performance of businesses consistently, whether they were acquired or developed organically.

Presenting results on a U.S. dollar basis

Results and measures that exclude the impact of Canadian/U.S. dollar exchange rate movements on BMO's U.S. segment are non-GAAP. Refer to the Foreign Exchange section for a discussion of the effects of changes in exchange rates on our results.

We present our U.S. P&C business results, as well as select U.S. segment information for the bank, BMO Wealth Management, BMO Capital Markets and Corporate Services, on a U.S. dollar basis. Presenting these results on a U.S. dollar basis is useful in assessing the underlying performance without the variability caused by changes in foreign exchange rates.

Non-GAAP and Other Financial Measures

(Canadian \$ in millions, except as noted)	2021	2020	2019
Reported Results			
Revenue	27,186	25,186	25,483
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	(1,399)	(1,708)	(2,709)
Revenue, net of CCPB	25,787	23,478	22,774
Provision for credit losses	(20)	(2,953)	(872)
Non-interest expense	(15,509)	(14,177)	(14,630)
Income before income taxes	10,258	6,348	7,272
Provision for income taxes	(2,504)	(1,251)	(1,514)
Net Income	7,754	5,097	5,758
Diluted EPS (\$)	11.58	7.55	8.66
Adjusting Items Impacting Revenue (Pre-tax)			
Impact of divestitures (1)	29	-	-
Adjusting Items Impacting CCPB (Pre-tax)			
Reinsurance adjustment (2)	-	-	(25)
Adjusting Items Impacting Non-Interest Expense (Pre-tax)			
Acquisition integration costs (3)	(9)	(14)	(13)
Amortization of acquisition-related intangible assets (4)	(88)	(121)	(128)
Impact of divestitures (1)	(886)	-	-
Restructuring (costs) reversals (5)	24	-	(484)
Impact of adjusting items on non-interest expense (pre-tax)	(959)	(135)	(625)
Impact of adjusting items on reported net income (pre-tax)	(930)	(135)	(650)
Adjusting Items Impacting Revenue (After-tax)			
Impact of divestitures (1)	22	-	-
Adjusting Items Impacting CCPB (After-tax)			
Reinsurance adjustment (2)	-	-	(25)
Adjusting Items Impacting Non-Interest Expense (After-tax)			
Acquisition integration costs (3)	(7)	(11)	(10)
Amortization of acquisition-related intangible assets (4)	(66)	(93)	(99)
Impact of divestitures (1)	(864)	-	-
Restructuring (costs) reversals (5)	18	-	(357)
Impact of adjusting items on non-interest expense (after-tax)	(919)	(104)	(466)
Impact of adjusting items on reported net income (after-tax)	(897)	(104)	(491)
Impact on diluted EPS (\$)	(1.38)	(0.16)	(0.77)
Adjusted Results			
Revenue	27,157	25,186	25,483
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	(1,399)	(1,708)	(2,684)
Revenue, net of CCPB	25,758	23,478	22,799
Provision for credit losses	(20)	(2,953)	(872)
Non-interest expense	(14,550)	(14,042)	(14,005)
Income before income taxes	11,188	6,483	7,922
Provision for income taxes	(2,537)	(1,282)	(1,673)
Net Income	8,651	5,201	6,249
Diluted EPS (\$)	12.96	7.71	9.43

(1) Fiscal 2021 reported net income included a \$779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business recorded in non-interest expense, a \$22 million (\$29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore recorded in non-interest revenue, and \$85 million (\$107 million pre-tax) of divestiture-related costs for both transactions recorded in non-interest expense.

(2) Fiscal 2019 reported net income included a reinsurance adjustment of \$25 million (pre-tax and after-tax) in claims, commissions and changes in policy benefit liabilities for the net impact of major reinsurance claims incurred after the announced wind-down of the reinsurance business. This reinsurance adjustment is included in BMO Wealth Management.

(3) Acquisition integration costs related to KGS-Alpha and Clearpool are recorded in non-interest expense in BMO Capital Markets.

(4) Amortization of acquisition-related intangible assets is recorded in non-interest expense in the related operating group.

(5) Fiscal 2019 reported net income included a \$357 million (\$484 million pre-tax) restructuring charge related to severance and a small amount of real estate-related costs. Fiscal 2021 reported net income included a partial reversal of restructuring charges related to severance of \$18 million (\$24 million pre-tax). Restructuring charges and the reversal were recorded in non-interest expense in Corporate Services.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Summary of Reported and Adjusted Results by Operating Segment

(Canadian \$ in millions, except as noted)	Canadian P&C	U.S. P&C	Total P&C	BMO Wealth Management	BMO Capital Markets	Corporate Services	Total Bank	U.S. Segment (1) (US\$ in millions)
2021								
Reported net income (loss)	3,237	2,189	5,426	1,474	2,140	(1,286)	7,754	2,593
Acquisition integration costs (2)	-	-	-	-	7	-	7	6
Amortization of acquisition-related intangible assets (3)	1	24	25	24	17	-	66	37
Impact of divestitures (4)	-	-	-	-	-	842	842	27
Restructuring costs (reversals) (5)	-	-	-	-	-	(18)	(18)	(13)
Adjusted net income (loss)	3,238	2,213	5,451	1,498	2,164	(462)	8,651	2,650
2020								
Reported net income (loss)	2,027	1,277	3,304	1,096	1,087	(390)	5,097	1,163
Acquisition integration costs (2)	-	-	-	-	11	-	11	8
Amortization of acquisition-related intangible assets (3)	2	39	41	34	18	-	93	49
Adjusted net income (loss)	2,029	1,316	3,345	1,130	1,116	(390)	5,201	1,220
2019								
Reported net income (loss)	2,624	1,611	4,235	1,059	1,091	(627)	5,758	1,432
Acquisition integration costs (2)	-	-	-	-	10	-	10	7
Amortization of acquisition-related intangible assets (3)	2	43	45	37	17	-	99	53
Restructuring costs (reversals) (5)	-	-	-	-	-	357	357	-
Reinsurance adjustment (6)	-	-	-	25	-	-	25	86
Adjusted net income (loss)	2,626	1,654	4,280	1,121	1,118	(270)	6,249	1,578

(1) U.S. segment results presented in U.S. dollars are non-GAAP amounts.

(2) KGS-Alpha and Clearpool pre-tax acquisition integration costs of \$9 million in fiscal 2021, \$14 million in fiscal 2020 and \$13 million in fiscal 2019 are recorded in non-interest expense in BMO Capital Markets.

(3) Amortization of acquisition-related intangible assets is recorded in non-interest expense in the related operating group. Canadian P&C recorded pre-tax amounts of \$2 million in each of fiscal 2021, fiscal 2020 and fiscal 2019. U.S. P&C recorded pre-tax amounts of \$33 million in fiscal 2021, \$53 million in fiscal 2020 and \$57 million in fiscal 2019. BMO Wealth Management recorded pre-tax amounts of \$31 million in fiscal 2021, \$43 million in fiscal 2020 and \$47 million in fiscal 2019. BMO Capital Markets recorded pre-tax amounts of \$22 million in fiscal 2021, \$23 million in fiscal 2020 and \$22 million in fiscal 2019.

(4) Fiscal 2021 reported net income included a \$779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business recorded in non-interest expense, a \$22 million (\$29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore recorded in non-interest revenue, and \$85 million (\$107 million pre-tax) of divestiture-related costs for both transactions recorded in non-interest expense.

(5) Fiscal 2019 reported net income included a \$357 million (\$484 million pre-tax) restructuring charge related to severance and a small amount of real estate-related costs. Fiscal 2021 reported net income included a partial reversal of restructuring charges related to severance of \$18 million (\$24 million pre-tax). Restructuring charges and reversal were recorded in non-interest expense in Corporate Services.

(6) Fiscal 2019 reported net income included a reinsurance adjustment of \$25 million (pre-tax and after-tax) in claims, commissions and changes in policy benefit liabilities for the net impact of major reinsurance claims incurred after the announced wind-down of the reinsurance business. This reinsurance adjustment is included in BMO Wealth Management.

Net Revenue, Efficiency Ratio and Operating Leverage

(Canadian \$ in millions, except as noted) For the year ended October 31	2021	2020	2019
Reported			
Revenue	27,186	25,186	25,483
CCPB	1,399	1,708	2,709
Revenue, net of CCPB	25,787	23,478	22,774
Non-interest expense	15,509	14,177	14,630
Efficiency ratio (%)	57.0	56.3	57.4
Efficiency ratio, net of CCPB (%)	60.1	60.4	64.2
Revenue growth (%)	7.9	(1.2)	11.3
Revenue growth, net of CCPB (%)	9.8	3.1	5.7
Non-interest expense growth (%)	9.4	(3.1)	8.6
Operating leverage (%)	(1.5)	1.9	2.7
Operating leverage, net of CCPB (%)	0.4	6.2	(2.9)
Adjusted (1)			
Revenue	27,157	25,186	25,483
Impact of adjusting items on revenue	(29)	-	-
Impact of adjusting items on CCPB	-	-	25
CCPB	1,399	1,708	2,684
Revenue, net of CCPB	25,758	23,478	22,799
Impact of adjusting items on non-interest expense	(959)	(135)	(625)
Non-interest expense	14,550	14,042	14,005
Efficiency ratio (%)	53.6	55.8	55.0
Efficiency ratio, net of CCPB (%)	56.5	59.8	61.4
Revenue growth, net of CCPB (%)	9.7	3.0	5.8
Non-interest expense growth (%)	3.6	0.3	5.0
Operating leverage, net of CCPB (%)	6.1	2.7	0.8

(1) Refer to footnotes (1) to (5) in the Non-GAAP and Other Financial Measures table for adjusting items.

Return on Equity and Return on Tangible Common Equity

(Canadian \$ in millions, except as noted)
For the year ended October 31

	2021	2020	2019
Reported net income	7,754	5,097	5,758
Dividends on preferred shares and distributions on other equity instruments	(244)	(247)	(211)
Net income available to common shareholders (A)	7,510	4,850	5,547
After-tax amortization of acquisition-related intangible assets	66	93	99
Net income available to common shareholders after adjusting for amortization of acquisition-related intangible assets (B)	7,576	4,943	5,646
After-tax impact of other adjusting items (1) (2) (3) (4)	831	11	392
Adjusted net income available to common shareholders (C)	8,407	4,954	6,038
Average common shareholders' equity (D)	50,451	48,235	44,170
Return on equity (%) (= A/D)	14.9	10.1	12.6
Adjusted return on equity (%) (= C/D)	16.7	10.3	13.7
Average tangible common equity (E) (5)	44,505	41,484	37,456
Return on tangible common equity (%) (= B/E)	17.0	11.9	15.1
Adjusted return on tangible common equity (%) (= C/E)	18.9	11.9	16.1

- (1) Fiscal 2021 reported net income included a \$779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business recorded in non-interest expense, a \$22 million (\$29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore recorded in non-interest revenue, and \$85 million (\$107 million pre-tax) of divestiture-related costs for both transactions recorded in non-interest expense.
- (2) Fiscal 2019 reported net income included a \$357 million (\$484 million pre-tax) restructuring charge related to severance and a small amount of real estate-related costs. Fiscal 2021 reported net income included a partial reversal of restructuring charges related to severance of \$18 million (\$24 million pre-tax). Restructuring charges and the reversal were recorded in non-interest expense in Corporate Services.
- (3) Acquisition integration costs related to KGS-Alpha and Clearpool are recorded in non-interest expense in BMO Capital Markets.
- (4) Amortization of acquisition-related intangible assets is recorded in non-interest expense in the related operating group.
- (5) Common shareholders' equity (D above) adjusted for goodwill of \$5,836 million (\$6,530 million in 2020 and \$6,417 million in 2019) and acquisition-related intangible assets of \$381 million (\$495 million in 2020 and \$573 million in 2019), net of related deferred tax liabilities of \$271 million (\$274 million in 2020 and \$276 million in 2019).

Capital is allocated to the operating segments based on the amount of regulatory capital required to support business activities. Unallocated capital is reported in Corporate Services. Capital allocation methodologies are reviewed annually.

Return on Equity by Operating Segment

(Canadian \$ in millions, except as noted)	2021							2020	2019
	Canadian P&C	U.S. P&C	Total P&C	BMO Wealth Management	BMO Capital Markets	Corporate Services	Total Bank	Total Bank	Total Bank
Reported									
Net income available to common shareholders	3,195	2,150	5,345	1,466	2,101	(1,402)	7,510	4,850	5,547
Total average common equity	11,147	13,522	24,669	5,899	10,913	8,970	50,451	48,235	44,170
Return on equity (%)	28.7	15.9	21.7	24.9	19.2	na	14.9	10.1	12.6
Adjusted									
Net income available to common shareholders	3,196	2,174	5,370	1,490	2,125	(578)	8,407	4,954	6,038
Total average common equity	11,147	13,522	24,669	5,899	10,913	8,970	50,451	48,235	44,170
Return on equity (%)	28.7	16.1	21.8	25.3	19.5	na	16.7	10.3	13.7

na - not applicable

Economic Developments and Outlook

Economic Developments in 2021 and Outlook for 2022 ⁽¹⁾

After contracting by 5.2% in 2020, Canada's economy is expected to grow by 4.5% in 2021, despite supply-chain disruptions and public health restrictions that were put in place through the year to suppress a resurgence in COVID-19 cases. The recovery has been supported by substantial fiscal and monetary policy stimulus, high levels of household savings, elevated prices for energy and other commodities, robust U.S. demand and strong housing market activity. Despite a rise in COVID-19 case counts and a decline in agricultural production due to the severe drought in Western Canada, real GDP grew strongly in the third quarter of 2021 after contracting in the previous quarter. While disruptions to transportation and supply chains arising from floods in British Columbia and concerns about new virus variants will restrain activity in the near term, the economy is expected to experience growth of 4.0% in 2022. Growth will be supported by substantial pent-up demand for travel and in-person activities, and by additional government spending. Exports should benefit from rising prices for commodities and a recovering global economy, with the U.S. and Eurozone economies expected to strengthen. Housing market activity will likely remain elevated, although some moderation in sales is expected due to the continued erosion of affordability. The unemployment rate is projected to fall from 6.7% in October 2021 to below 6.0% at the end of 2022, returning to pre-pandemic levels. To support the economic recovery, the Bank of Canada is expected to hold the overnight policy rate near zero for several months, before shifting to a tighter policy stance by the middle of 2022. The annual rate of consumer inflation rose to an 18-year high of 4.7% in October 2021, due to significant price increases for gasoline, food, motor vehicles and housing. The increase in inflation reflects a temporary rebound in prices during the reopening of the economy, as well as supply-chain disruptions and rising commodity prices. Inflation is expected to subside in 2022 as supply-chain disruptions abate and energy prices moderate, but will likely remain above pre-pandemic levels. Inflation could remain high for longer than expected if wages accelerate in response to labour shortages. The Canadian dollar strengthened in 2021 on rising commodity prices, and it is projected to appreciate moderately further in 2022 in response to tighter monetary policy. Industry-wide, residential mortgage balances are expected to experience continued robust growth in response to low mortgage rates, higher housing prices and steady gains in employment, although the rate of growth will likely moderate alongside housing activity in the coming quarters. While growth in consumer credit balances (excluding mortgages) has been limited by restrained consumer spending, it is anticipated to increase in step with spending as most of the remaining pandemic-related restrictions are lifted. Industry-wide, growth in non-financial corporate credit has moderated as a result of the elevated balances built up early in the pandemic, but is expected to increase moderately in the year ahead as business investment rises along with a return of confidence.

The U.S. economy is expected to grow by 5.5% in 2021 after contracting by 3.4% in 2020, and growth is expected to reach 3.5% in 2022. The resurgence in COVID-19 case counts in the summer and a reduction in motor vehicle production due to microchip shortages slowed real GDP growth in the third quarter of 2021. However, the economic expansion is well-supported by elevated household savings, higher levels of personal wealth and a robust housing market. Federal spending on infrastructure projects, along with proposed spending on childcare, education and climate measures, would (if the latter measures are enacted) provide ongoing support to the economy, although this will be partially offset by related tax increases and the winding down of income-support programs. Housing market activity is expected to remain healthy in 2022, as a result of low interest rates and rising employment. In addition, business spending is on the rise, with non-residential investment surpassing pre-pandemic levels. The unemployment rate is projected to fall from 4.6% in October 2021 to 3.5% in late 2022, returning to pre-pandemic levels. To further support the recovery in labour markets, the Federal Reserve is expected to hold interest rates steady before raising them in the fall of 2022. After falling through mid-2021, longer-term interest rates are projected to rise in response to strong economic growth and a shift toward tighter monetary policy. Rising commodity prices, supply-chain bottlenecks and a rebound in travel-related costs and spending propelled the annual consumer price index to a three-decade high of 6.2% in October 2021. We expect the inflation rate to remain elevated through the turn of the year, before falling below 3% in late 2022, as supply shortages subside and energy prices moderate. Industry-wide, residential mortgage growth will likely remain healthy due to ongoing housing market activity. Consumer credit growth has been constrained by fiscal support programs, elevated levels of household savings and limited consumption of in-person services, but it should benefit from the expected growth in personal spending. Industry-wide, non-financial corporate credit growth has been subdued, but is anticipated to pick up as business confidence strengthens.

The unpredictable course of the COVID-19 pandemic subjects the economic outlook to a high degree of uncertainty, which is likely to persist until vaccines are more widely accessible and used across the global population. The Delta variant led to an upturn in COVID-19 case counts in many countries, and the emergence of other variants could lead to increased hospitalizations and renewed shutdowns of business activity, potentially resulting in a sustained economic contraction. Other risks to the economy stem from recent concerns about the solvency of a large property developer in China, a potential flare-up in U.S./China trade tensions, possible turbulence in some emerging market economies as interest rates rise, and the possibility of higher inflation due to persistent supply shortages and rising energy costs. Escalating housing prices in Canada and the United States could also leave either economy vulnerable to a correction in the housing market.

This Economic Developments and Outlook section contains forward-looking statements. Please see the Caution Regarding Forward-Looking Statements.

(1) All periods in this section refer to the calendar year rather than fiscal year.

2021 Financial Performance Review

This section provides a review of BMO's enterprise financial performance for 2021 that focuses on the Consolidated Statement of Income in BMO's consolidated financial statements. A review of the operating groups' strategies and performance follows the enterprise review.

We use a number of financial measures to assess our performance, as well as the performance of our operating segments, including amounts, measures and ratios that are presented on a non-GAAP basis. We believe that these non-GAAP amounts, measures and ratios, read together with our GAAP results, provide readers with a better understanding of how management assesses results.

Non-GAAP amounts, measures and ratios do not have standardized meanings under GAAP. They are unlikely to be comparable to similar measures presented by other companies and should not be viewed in isolation from, or as a substitute for, GAAP results.

Further discussion of the non-GAAP amounts, measures and ratios is provided in the Non-GAAP and Other Financial Measures section.

For further information regarding the composition of non-GAAP and other financial measures, including supplementary financial measures, refer to the Glossary of Financial Terms.

Foreign Exchange

The Canadian dollar equivalents of BMO's U.S. segment results that are denominated in U.S. dollars decreased relative to 2020 due to changes in the Canadian/U.S. dollar exchange rate. The table below indicates the relevant average Canadian/U.S. dollar exchange rates and the impact of changes in those rates on BMO's U.S. segment results. References in this document to the impact of the U.S. dollar do not include U.S. dollar-denominated amounts recorded outside of BMO's U.S. segment.

Economically, our U.S. dollar income stream was not hedged against the risk of changes in foreign exchange rates during 2021, 2020 and 2019. We regularly determine whether to enter into hedging transactions in order to mitigate the impact of foreign exchange rate movements on our net income. Changes in exchange rates will affect future results measured in Canadian dollars, and the impact on those results is a function of the periods in which revenue, expenses, provisions for (recoveries of) credit losses and income taxes arise.

Refer to the Enterprise-Wide Capital Management section for a discussion of the impact that changes in foreign exchange rates can have on BMO's capital position.

Effects of Changes in Exchange Rates on BMO's U.S. Segment Reported and Adjusted Results

(Canadian \$ in millions, except as noted)	2021 vs. 2020	2020 vs. 2019
Canadian/U.S. dollar exchange rate (average)		
2021	1.2554	
2020	1.3441	1.3441
2019		1.3290
Effects on U.S. segment reported results		
Increased (Decreased) net interest income	(374)	83
Increased (Decreased) non-interest revenue	(196)	29
Increased (Decreased) revenue	(570)	112
Decreased (Increased) provision for credit losses	(95)	83
Decreased (Increased) expenses	(358)	43
Decreased (Increased) income taxes	(21)	(5)
Increased (Decreased) reported net income	(96)	(9)
Effects on U.S. segment adjusted results		
Increased (Decreased) net interest income	(374)	83
Increased (Decreased) non-interest revenue	(196)	29
Increased (Decreased) revenue	(570)	112
Decreased (Increased) provision for credit losses	(95)	83
Decreased (Increased) expenses	(351)	51
Decreased (Increased) income taxes	(23)	(7)
Increased (Decreased) adjusted net income	(101)	(15)

Adjusted results in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

Net Income

Reported net income was \$7,754 million, an increase of \$2,657 million or 52% from the prior year, and adjusted net income was \$8,651 million, an increase of \$3,450 million or 66%, reflecting a recovery from the significant adverse impacts of the COVID-19 pandemic on the global economy, our customers and our 2020 financial results. Adjusted results in the current year excluded a \$779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business, a \$22 million (\$29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore, and \$85 million (\$107 million pre-tax) of divestiture-related costs for both transactions, partially offset by an \$18 million (\$24 million pre-tax) partial reversal of restructuring charges from 2019 related to severance. In addition, adjusted net income in the current and prior years excluded the amortization of acquisition-related intangible assets and acquisition-related integration costs. For further information, refer to the Non-GAAP and Other Financial Measures section.

The increase in net income reflects the impact of lower provisions for credit losses, which were elevated in the prior year due to the impact of the COVID-19 pandemic, and revenue growth, partially offset by an increase in expenses and the impact of the weaker U.S. dollar. Net income increased in all operating groups, partially offset by a higher net loss in Corporate Services.

Canadian P&C reported net income increased \$1,210 million or 60% from the prior year, and adjusted net income increased \$1,209 million or 60%, driven by lower provisions for credit losses and strong revenue growth, partially offset by an increase in expenses. U.S. P&C reported net income increased \$912 million or 71%, and adjusted net income increased \$897 million or 68%, primarily driven by lower provisions for credit losses, strong revenue growth and a reduction in expenses. BMO Wealth Management reported net income increased \$378 million or 34%, and adjusted net income increased \$368 million or 32%, driven by higher revenue, partially offset by an increase in expenses. BMO Capital Markets reported net income increased \$1,053 million or 97%, and adjusted net income increased \$1,048 million or 94%, with recoveries of provisions for credit losses and higher revenue, partially offset by an increase in expenses. Corporate Services reported net loss was \$1,286 million and adjusted net loss was \$462 million, compared with a reported and adjusted net loss of \$390 million in the prior year. The higher reported and adjusted net loss reflected an increase in expenses, partially offset by higher revenue, driven by higher securities gains and treasury-related activities, and the impact of a less favourable tax rate in the prior year.

Further discussion is provided in the 2021 Operating Groups Performance Review section.

For further information on non-GAAP amounts, measures and ratios in this Net Income section, refer to the Non-GAAP and Other Financial Measures section.

Revenue

Reported revenue was \$27,186 million, an increase of \$2,000 million from the prior year, and adjusted revenue was \$27,157 million, an increase of \$1,971 million, both increasing 8% from the prior year. On a basis that nets insurance claims, commissions and changes in policy benefit liabilities (CCPB) against insurance revenue (net revenue), reported net revenue was \$25,787 million, an increase of \$2,309 million, and adjusted net revenue was \$25,758 million, an increase of \$2,280 million, both increasing 10% from the prior year. Adjusted revenue and adjusted net revenue in the current year excluded the \$29 million (\$22 million after-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore. The impact of the weaker U.S. dollar reduced revenue by 2%.

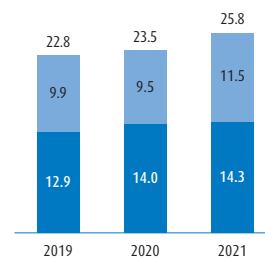
Revenue increased in BMO Capital Markets due to higher Investment and Corporate Banking revenue and higher Global Markets revenue; in Canadian P&C due to higher net interest income and non-interest revenue; and in BMO Wealth Management primarily due to growth in client assets, including stronger global markets and strong loan and deposit growth, partially offset by lower margins. Revenue decreased in U.S. P&C due to the weaker U.S. dollar, and increased on a source-currency basis due to higher net interest income and non-interest revenue. Corporate Services revenue increased from the prior year, driven by higher securities gains and treasury-related activities.

BMO analyzes revenue at the consolidated level based on GAAP revenue as reported in the consolidated financial statements, and on an adjusted basis. Operating group revenue is presented on a taxable equivalent basis (teb), with revenue and the provision for income taxes increased on tax-exempt securities to an equivalent pre-tax basis. These teb adjustments for 2021 totalled \$315 million, and were \$335 million in 2020.

Further discussion is provided in the 2021 Operating Groups Performance Review section.

For further information on non-GAAP amounts, measures and ratios, and results presented on a net revenue basis in this Revenue section, refer to the Non-GAAP and Other Financial Measures section.

Reported Net Revenue*
(\$ billions)



■ Reported Net Interest Income
■ Reported Net Non-Interest Revenue

*Numbers may not add due to rounding.

Net interest income comprises earnings on assets, such as loans and securities, including interest and certain dividend income, less interest expense paid on liabilities, such as deposits.

Net interest margin is the ratio of net interest income to average earning assets, expressed as a percentage or in basis points.

Net non-interest revenue is non-interest revenue, net of insurance claims, commissions and changes in policy benefit liabilities (CCPB).

Average earning assets represents the daily average balance of deposits at central banks, deposits with other banks, securities borrowed or purchased under resale agreements, securities, and loans over a one-year period.

Taxable equivalent basis (teb) Revenues of operating groups are presented in the MD&A on a taxable equivalent basis (teb). Revenue and the provision for income taxes are increased on tax-exempt securities to an equivalent pre-tax basis to facilitate comparisons of income between taxable and tax-exempt sources. This adjustment is offset in Corporate Services.

Revenue

(Canadian \$ in millions, except as noted) For the year ended October 31	2021	2020	2019	Change from 2020 (%)
Net interest income	14,310	13,971	12,888	2
Non-interest revenue	12,876	11,215	12,595	15
Total revenue	27,186	25,186	25,483	8
CCPB (1)	1,399	1,708	2,709	(18)
Revenue, net of CCPB (1)	25,787	23,478	22,774	10
Adjusted revenue (2) (3)	27,157	25,186	25,483	8
Adjusted CCPB (1) (2) (3)	1,399	1,708	2,684	(18)
Adjusted revenue, net of CCPB (1) (2) (3)	25,758	23,478	22,799	10

(1) Insurance revenue can experience variability arising from fluctuations in the fair value of insurance assets caused by movements in interest rates and equity markets. The investments that support policy benefit liabilities are predominantly fixed income assets recorded at fair value, with changes in fair value recorded in insurance revenue in the Consolidated Statement of Income. These fair value changes are largely offset by changes in the fair value of policy benefit liabilities, the impact of which is reflected in CCPB. The discussion of revenue on a net of CCPB basis reduces variability in results, which allows for a better discussion of operating results. For additional discussion refer to the Insurance Claims, Commissions and Changes in Policy Benefits section.

(2) Fiscal 2021 reported revenue included a \$29 million (\$22 million after-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore recorded in non-interest revenue.

(3) Fiscal 2019 reported revenue included a reinsurance adjustment of \$25 million (pre-tax and after-tax) in CCPB for the net impact of major reinsurance claims incurred after the announced wind-down of the reinsurance business. This reinsurance adjustment is recorded in BMO Wealth Management.

Revenue, net of CCPB, and adjusted results in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

Net Interest Income

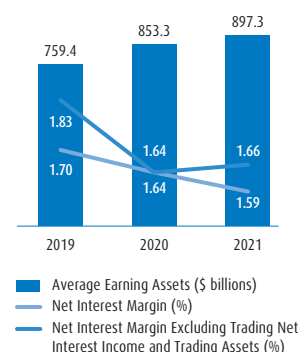
Net interest income was \$14,310 million, an increase of \$339 million or 2% from the prior year. Non-trading net interest income was \$12,457 million, an increase of \$417 million or 3%, largely due to higher net interest income in Canadian P&C and BMO Wealth Management, primarily reflecting higher balances, and in Corporate Services, partially offset by lower net interest income in BMO Capital Markets. Higher source-currency net interest income in U.S. P&C was more than offset by the impact of the weaker U.S. dollar. Trading-related interest income was \$1,853 million, a decrease of \$78 million or 4%.

Average earning assets were \$897.3 billion, an increase of \$44.0 billion or 5% from the prior year, primarily due to higher cash and securities balances and loan growth, partially offset by the impact of the weaker U.S. dollar.

BMO's overall net interest margin of 159 basis points decreased 5 basis points from the prior year, primarily driven by higher liquidity levels and lower trading-related interest income, partially offset by higher net interest margins in our P&C businesses. On a basis that excludes trading-related interest income and earning assets, net interest margin of 166 basis points increased 2 basis points, primarily driven by lower balances of low-yielding assets in BMO Capital Markets and higher net interest margins in our P&C businesses, partially offset by higher liquidity levels.

Table 3 in the Supplemental Information provides further details on net interest income and net interest margin.

Average Earning Assets and Net Interest Margin



Change in Net Interest Income, Average Earning Assets and Net Interest Margin

(Canadian \$ in millions, except as noted) For the year ended October 31	Net interest income (teb) (1)			Average earning assets (2)			Net interest margin (in basis points)		
	2021	2020	Change %	2021	2020	Change %	2021	2020	Change
Canadian P&C	6,561	6,105	7	248,215	234,953	6	264	260	4
U.S. P&C	4,268	4,345	(2)	122,166	130,190	(6)	349	334	15
Personal and Commercial Banking (P&C)	10,829	10,450	4	370,381	365,143	1	292	286	6
All other operating groups and Corporate Services (3)	3,481	3,521	(1)	526,921	488,193	8	na	na	na
Total reported	14,310	13,971	2	897,302	853,336	5	159	164	(5)
Trading net interest income and earning assets	1,853	1,931	(4)	144,865	121,205	20	na	na	na
Total excluding trading net interest income and earning assets	12,457	12,040	3	752,437	732,131	3	166	164	2
U.S. P&C (US\$ in millions)	3,400	3,231	5	97,321	96,810	1	349	334	15

(1) Operating group revenue is presented on a taxable equivalent basis (teb) in net interest income and is non-GAAP. For further information, refer to the Non-GAAP and Other Financial Measures and How BMO Reports Operating Group Results sections.

(2) Average earning assets represents the daily average balance of deposits with central banks, deposits with other banks, securities borrowed or purchased under resale agreements, securities, and loans, over a one-year period.

(3) For further information on net interest income for these other operating groups and Corporate Services, refer to the Review of Operating Groups' Performance section.

na - not applicable

Certain comparative figures have been reclassified to conform with the current year's presentation.

Non-Interest Revenue

Non-interest revenue, which comprises all revenue other than net interest income, was \$12,876 million on a reported basis, an increase of \$1,661 million or 15% from the prior year. Adjusted non-interest revenue was \$12,847 million, an increase of \$1,632 million or 15%, and excluded the \$29 million net gain on the sale of our Private Banking business in Hong Kong and Singapore. Reported non-interest revenue, net of CCPB, was \$11,477 million, an increase of \$1,970 million or 21% from the prior year, and adjusted non-interest revenue, net of CCPB, was \$11,448 million, an increase of \$1,941 million or 20%.

Non-interest revenue increased across all categories, including higher securities gains, other than trading, underwriting and advisory fee revenue, trading revenue, investment management and custodial fee revenue, mutual fund revenue and lending fee revenue, partially offset by the impact of the weaker U.S. dollar. Trading revenue is discussed in the Trading Revenue section that follows.

Gross insurance revenue decreased from the prior year, primarily due to changes in the fair value of investments, partially offset by higher annuity sales. Insurance revenue can experience variability arising from fluctuations in the fair value of insurance assets caused by movements in interest rates and equity markets. The investments that support policy benefit liabilities are predominantly fixed income and equity assets recorded at fair value, with changes in fair value recorded in insurance revenue in the Consolidated Statement of Income. The impact of these fair value changes was largely offset by changes in the fair value of policy benefit liabilities, which are reflected in the Insurance Claims, Commissions and Changes in Policy Benefits section.

We generally focus on analyzing revenue net of CCPB, given the extent to which insurance revenue can vary, and given that this variability is largely offset in CCPB.

Table 3 in the Supplemental Information provides further details on revenue and revenue growth.

Non-Interest Revenue

(Canadian \$ in millions) For the year ended October 31	2021	2020	2019	Change from 2020 (%)
Securities commissions and fees	1,107	1,036	1,023	7
Deposit and payment service charges	1,243	1,221	1,204	2
Trading revenue	296	15	298	+100
Lending fees	1,391	1,295	1,192	7
Card fees	442	358	437	23
Investment management and custodial fees	1,982	1,807	1,747	10
Mutual fund revenue	1,595	1,417	1,419	13
Underwriting and advisory fees	1,421	1,070	975	33
Securities gains, other than trading	591	124	249	+100
Foreign exchange, other than trading	167	127	166	31
Insurance revenue	1,941	2,178	3,183	(11)
Investments in associates and joint ventures	248	161	151	54
Other	452	406	551	11
Total reported	12,876	11,215	12,595	15
CCPB	(1,399)	(1,708)	(2,709)	(18)
Reported non-interest revenue, net of CCPB	11,477	9,507	9,886	21
Impact of divestitures (1)	(29)	-	-	na
Adjusted non-interest revenue	12,847	11,215	12,595	15
Reinsurance adjustment (2)	-	-	25	-
Adjusted CCPB	(1,399)	(1,708)	(2,684)	(18)
Adjusted non-interest revenue, net of CCPB	11,448	9,507	9,911	20
Insurance revenue, net of CCPB	542	470	474	15
Insurance revenue, net of adjusted CCPB	542	470	499	15

(1) Fiscal 2021 included a \$29 million (\$22 million after-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore recorded in non-interest revenue.

(2) Fiscal 2019 reported revenue included a reinsurance adjustment of \$25 million (pre-tax and after-tax) in claims, commissions and changes in policy benefit liabilities for the net impact of major reinsurance claims incurred after the announced wind-down of the reinsurance business. This reinsurance adjustment is recorded in BMO Wealth Management.

Reported and adjusted revenue measures, net of CCPB, in this section are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

Trading-Related Revenue

Trading-related revenue is dependent on, among other things, the volume of activities undertaken for clients who enter into transactions with BMO to mitigate their risks or to invest, and market conditions. We earn a spread or profit on the net sum of our client positions by profitably managing, within prescribed limits, the overall risk of our net positions. On a limited basis, we also earn revenue from our principal trading positions.

Interest and non-interest trading-related revenue on a teb basis increased \$182 million or 8% to \$2,434 million in 2021. Equities trading-related revenue increased \$578 million, due to favourable market conditions. The prior year included negative impacts related to equity linked notes-related businesses in the volatile second quarter of 2020. Interest rate trading-related revenue decreased \$182 million or 15% and foreign exchange trading-related revenue decreased \$58 million or 12%, as the prior year benefitted from higher levels of client activity driven by the reaction of market participants to the COVID-19 pandemic. Commodities trading-related revenue decreased \$124 million or 46%, reflecting a decline in client hedging activity in the energy sector. Other trading-related revenue decreased \$32 million, primarily due to lower fair value gains associated with hedging exposures on the structural balance sheet in the current year.

The Market Risk section provides more information on trading-related revenue.

Trading-related revenue includes net interest income and non-interest revenue earned from on-balance sheet and off-balance sheet positions undertaken for trading purposes. The management of these positions typically includes marking them to market on a daily basis. Trading-related revenue also includes income (expense) and gains (losses) from both on-balance sheet instruments and interest rate, foreign exchange (including spot positions), equity, commodity and credit contracts. BMO analyzes on a teb basis at the operating group level. Revenue and the provision for income taxes are increased on tax-exempt securities to an equivalent before-tax basis to facilitate comparisons of income between taxable and tax-exempt sources. This adjustment is offset in Corporate Services.

Interest and Non-Interest Trading-Related Revenue ⁽¹⁾

(Canadian \$ in millions)
(taxable equivalent basis)
For the year ended October 31

	2021	2020	2019	Change from 2020 (%)
Interest rates	1,017	1,199	700	(15)
Foreign exchange	416	474	401	(12)
Equities	852	274	526	+100
Commodities	147	271	145	(46)
Other	2	34	6	(94)
Total (teb)	2,434	2,252	1,778	8
Teb offset	285	306	257	(7)
Reported total	2,149	1,946	1,521	10
Reported as:				
Net interest income	2,138	2,237	1,480	(4)
Non-interest revenue – trading revenue	296	15	298	+100
Total (teb)	2,434	2,252	1,778	8
Teb offset	285	306	257	(7)
Reported total, net of teb offset	2,149	1,946	1,521	10

(1) Trading-related revenue is presented on a taxable equivalent basis and is a non-GAAP measure, and is discussed in the Non-GAAP and Other Financial Measures section.

Insurance Claims, Commissions and Changes in Policy Benefit Liabilities

Insurance claims, commissions and changes in policy benefit liabilities (CCPB) were \$1,399 million in 2021, compared with \$1,708 million in the prior year. CCPB decreased, primarily due to changes in the fair value of policy benefit liabilities, partially offset by the impact of higher annuity sales. The changes were largely offset in revenue.

Total Provision for Credit Losses

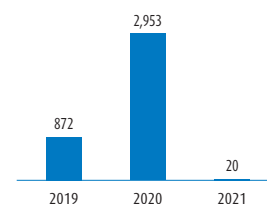
The total provision for credit losses (PCL) was \$20 million, compared with \$2,953 million in the prior year, primarily due to an improving economic outlook and more favourable credit conditions. Total PCL as a percentage of average net loans and acceptances was nil basis points, compared with 63 basis points in the prior year. PCL on impaired loans was \$525 million, a decrease of \$997 million from the prior year, largely due to lower provisions in our P&C businesses and BMO Capital Markets. PCL on impaired loans as a percentage of average net loans and acceptances was 11 basis points, compared with 33 basis points in the prior year. There was a \$505 million recovery of the provision for credit losses on performing loans in the current year, compared with a \$1,431 million provision in the prior year. The recovery in the current year largely reflected an improving economic outlook and positive credit migration, partially offset by growth in loan balances.

PCL on impaired loans decreased \$294 million in Canadian P&C, reflecting lower commercial and consumer provisions, and \$396 million in U.S. P&C, primarily due to lower commercial provisions. In BMO Capital Markets, PCL on impaired loans decreased \$299 million from the prior year. All operating groups recorded recoveries of provisions for credit losses on performing loans in the current year, compared with the provisions recorded in the prior year.

Note 4 of the consolidated financial statements provides additional information on PCL, including on a geographic basis. Table 15 in the Supplemental Information provides further segmented PCL information.

For additional information, please refer to the Allowance for Credit Losses section.

Provision for Credit Losses (\$ millions)



Provision for Credit Losses (PCL) is a charge to income that represents an amount deemed adequate by management to fully provide for impairment in a portfolio of loans and acceptances and other credit instruments, given the composition of the portfolio, the probability of default, the economic environment and the allowance for credit losses already established. PCL can comprise both a provision for credit losses on impaired loans and a provision for credit losses on performing loans. For further information, refer to the Credit and Counterparty Risk – Provision for Credit Losses and Allowance for Credit Losses sections and Note 4 of the consolidated financial statements.

Average Net Loans and Acceptances is the daily or monthly average balance of loans and customers' liability under acceptances, net of the allowance for credit losses, over a one-year period.

Provision for Credit Losses by Operating Group

(Canadian \$ in millions)	Canadian P&C	U.S. P&C	Total P&C	BMO Wealth Management	BMO Capital Markets	Corporate Services	Total Bank
2021							
Provision for (recovery of) credit losses on impaired loans	493	22	515	4	11	(5)	525
Provision for (recovery of) credit losses on performing loans	(116)	(166)	(282)	(16)	(205)	(2)	(505)
Total provision for (recovery of) credit losses	377	(144)	233	(12)	(194)	(7)	20
2020							
Provision for (recovery of) credit losses on impaired loans	787	418	1,205	4	310	3	1,522
Provision for (recovery of) credit losses on performing loans	623	441	1,064	18	349	–	1,431
Total provision for (recovery of) credit losses	1,410	859	2,269	22	659	3	2,953
2019							
Provision for (recovery of) credit losses on impaired loans	544	160	704	2	52	(7)	751
Provision for (recovery of) credit losses on performing loans	63	37	100	(2)	28	(5)	121
Total provision for (recovery of) credit losses	607	197	804	–	80	(12)	872

Certain comparative figures have been reclassified to conform with the current year's presentation.

Provision for Credit Losses Performance Ratios

	2021	2020	2019
Total PCL-to-average net loans and acceptances (annualized) (%)	–	0.63	0.20
PCL on impaired loans to average net loans and acceptances (annualized) (%)	0.11	0.33	0.17

Certain comparative figures have been reclassified to conform with the current year's presentation.

Non-Interest Expense

Reported non-interest expense was \$15,509 million, an increase of \$1,332 million or 9% from the prior year, primarily due to the impact of divestitures, including a \$779 million write-down of goodwill related to the sale of our EMEA Asset Management business and \$107 million of divestiture-related costs in the current year.

Adjusted non-interest expense was \$14,550 million, an increase of \$508 million or 4% from the prior year. Adjusted non-interest expense excluded the impact of divestitures in the current year and a \$24 million partial reversal of the restructuring charge, as well as the amortization of acquisition-related intangible assets and acquisition-related costs in both the current and prior years. The amortization of acquisition-related intangible assets was \$88 million and \$121 million in 2021 and 2020, respectively. Acquisition integration costs were \$9 million and \$14 million in 2021 and 2020, respectively.

Reported and adjusted non-interest expense increased, due to higher performance-based compensation, computer and equipment costs and professional fees, partially offset by the benefits of a continued disciplined approach to expense management and the impact of the weaker U.S. dollar, which reduced expenses by 3%.

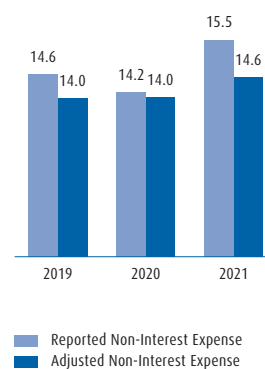
The dollar and percentage changes in expense by category are outlined in the Non-Interest Expense and Adjusted Non-Interest Expense tables below. Table 4 in the Supplemental Information provides more detail on expenses.

Performance-based compensation increased \$520 million or 20% on a reported basis, and \$505 million or 19% on an adjusted basis, reflecting improved business performance. Other employee compensation, which includes salaries, benefits and severance, decreased \$142 million or 3% on a reported basis, and \$165 million or 3% on an adjusted basis, primarily due to the impact of the weaker U.S. dollar.

Premises and equipment costs increased \$194 million or 6% on a reported basis, and \$176 million or 5% on an adjusted basis, primarily due to higher technology and real estate costs. Amortization of intangible assets on a reported basis increased \$14 million or 2%, and increased \$37 million or 7% on an adjusted basis, reflecting an increase in software amortization. Other expenses increased \$746 million or 31% on a reported basis, reflecting the impact of divestitures, and decreased \$45 million or 2% on an adjusted basis.

For further information on non-GAAP amounts, measures and ratios in this Non-Interest Expense section, refer to the Non-GAAP and Other Financial Measures section.

Non-Interest Expense
(\$ billions)



Non-Interest Expense

(Canadian \$ in millions, on a pre-tax basis)
For the year ended October 31

	2021	2020	2019	Change from 2020 (%)
Performance-based compensation	3,152	2,632	2,610	20
Acquisition integration costs	(4)	(3)	-	33
Impact of divestitures	(14)	-	-	na
Restructuring costs	-	-	(3)	na
Adjusted performance-based compensation	3,134	2,629	2,607	19
Other employee compensation	5,170	5,312	5,813	(3)
Acquisition integration costs	(5)	(6)	(13)	(17)
Impact of divestitures	(48)	-	-	na
Restructuring costs	24	-	(439)	na
Adjusted other employee compensation	5,141	5,306	5,361	(3)
Premises and equipment	3,396	3,202	2,988	6
Impact of divestitures	(18)	-	-	na
Restructuring costs	-	-	(41)	na
Adjusted premises and equipment	3,378	3,202	2,947	5
Amortization of intangible assets	634	620	554	2
Amortization of acquisition-related intangible assets	(88)	(121)	(128)	(27)
Impact of divestitures	(10)	-	-	na
Adjusted amortization of intangible assets	536	499	426	7
Other	3,157	2,411	2,665	31
Acquisition integration costs	-	(5)	-	+100
Impact of divestitures	(796)	-	-	na
Restructuring costs	-	-	(1)	na
Adjusted other	2,361	2,406	2,664	(2)
Total reported non-interest expense	15,509	14,177	14,630	9
Total adjusted non-interest expense	14,550	14,042	14,005	4

Adjusted results in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

Provision for Income Taxes and Other Taxes

(Canadian \$ in millions, except as noted)
For the year ended October 31

	2021	2020	2019
Payroll levies	355	362	354
Property taxes	36	42	37
Provincial capital taxes	36	33	35
Business taxes	10	9	9
Harmonized sales tax, GST, VAT and other sales taxes	382	397	384
Sundry taxes	1	1	1
Total government levies other than income taxes (other taxes) (1)	820	844	820
Provision for income taxes	2,504	1,251	1,514
Provision for income taxes and other taxes	3,324	2,095	2,334
Provision for income taxes and other taxes as a % of income before provision for income taxes and other taxes	30.0	29.1	28.8
Effective tax rate (%)	24.4	19.7	20.8
Adjusted effective tax rate (%)	22.7	19.8	21.1

(1) Other taxes are included in various non-interest expense categories.

Provision for income taxes and other taxes and the adjusted effective tax rate in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

The provision for income taxes and other taxes was \$3,324 million in the current year. Of this amount, \$2,060 million was incurred in Canada, with \$1,450 million included in the provision for income taxes, while the remaining \$610 million was recorded in total government levies other than income taxes (other taxes). The increase from \$2,095 million in the prior year primarily reflected a higher provision for income taxes.

The provision for income taxes presented in the Consolidated Statement of Income is based upon transactions recorded in income, regardless of when such transactions are subject to taxation by tax authorities, with the exception of the repatriation of retained earnings from subsidiaries, as outlined in Note 22 of the consolidated financial statements.

Management assesses BMO's consolidated results and the associated provision for income taxes on a GAAP basis. We assess the performance of our operating groups and associated income taxes on a taxable equivalent basis, and we report accordingly.

The provision for income taxes was \$2,504 million, compared with \$1,251 million in the prior year. The effective tax rate was 24.4%, compared with 19.7% in the prior year. The adjusted provision for income taxes was \$2,537 million, compared with \$1,282 million in the prior year. The adjusted effective tax rate⁽¹⁾ was 22.7%, compared with 19.8% in the prior year. The effective tax rate and adjusted effective tax rate were lower in the prior year primarily due to earnings mix, including the impact of lower pre-tax income in the prior year. The effective tax rate in the current year is higher than the adjusted effective tax rate due to the write-down of goodwill related to the sale of our EMEA Asset Management business in the current year.

BMO partially hedges, for accounting purposes, the foreign exchange risk arising from investments in foreign operations by funding the investments in the corresponding foreign currency. A gain or loss on hedging activities and an unrealized gain or loss on translation of foreign operations are charged or credited to other comprehensive income. For income tax purposes, a gain or loss on hedging activities results in an income tax charge or credit in the current period that is charged or credited to other comprehensive income, while the associated unrealized gain or loss on investments in foreign operations does not incur income taxes until the investments are liquidated. The income tax charge/benefit arising from a hedging gain/loss is a function of the fluctuations in exchange rates from period to period. Hedging of investments in foreign operations has given rise to an income tax expense in other comprehensive income of \$180 million in the current year, compared with a recovery of \$35 million in the prior year. Refer to Note 22 of the consolidated financial statements for further details.

Legislative changes and changes in tax policy, including their interpretation by tax authorities and the courts, may impact our earnings. Refer to the discussion in the Critical Accounting Estimates section for additional details. In the table above we disclose provision for income taxes and other taxes as a percentage of income before the provision for income taxes and other taxes, which is a non-GAAP financial ratio, to reflect the full impact of all government levies and taxes as a percentage of our income.

For further information on non-GAAP amounts, measures and ratios in this Provision for Income Taxes and Other Taxes section, refer to the Non-GAAP and Other Financial Measures section.

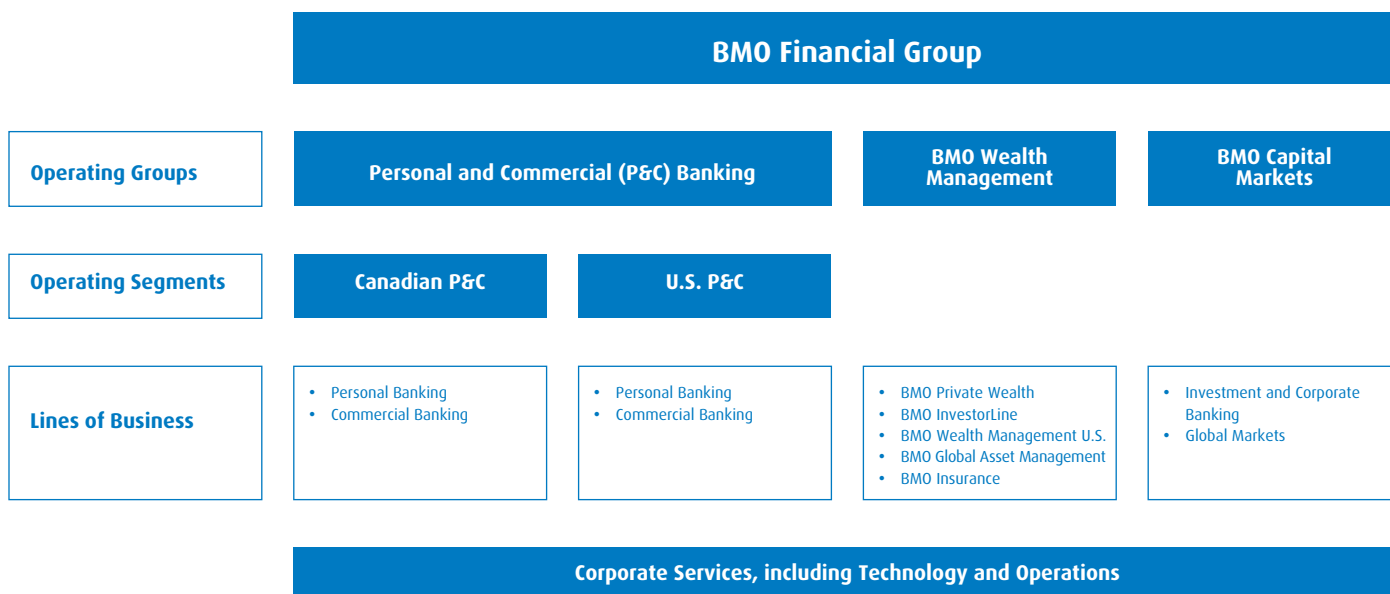
(1) The adjusted effective tax rate is computed using adjusted net income and adjusted provision for income taxes rather than reported net income in the determination of income subject to income tax.

2021 Operating Groups Performance Review

Summary

This section includes an analysis of the financial results of BMO's operating groups and descriptions of their operating segments, businesses, strategies, challenges, achievements and outlooks.

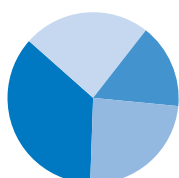
MD&A



BMO's business mix is well diversified by operating segment and by geography.

Reported Net Income by Operating Group*

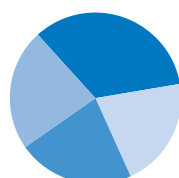
2021



- Canadian P&C 36%
- U.S. P&C 24%
- BMO Wealth Management 16%
- BMO Capital Markets 24%

Reported Net Revenue by Operating Group*

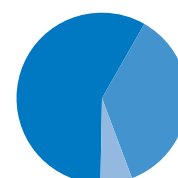
2021



- Canadian P&C 34%
- U.S. P&C 21%
- BMO Wealth Management 22%
- BMO Capital Markets 23%

Reported Net Revenue by Geography

2021



- Canada 58%
- United States 36%
- Other Countries 6%

* Percentages determined excluding results in Corporate Services.

Revenue, net of CCPB, is on a non-GAAP basis and is discussed in the Non-GAAP and Other Financial Measures section.

How BMO Reports Operating Group Results

BMO reports financial results for its three operating groups, one of which comprises two operating segments, all of which are supported by Corporate Units and Technology and Operations within Corporate Services. Operating group results include treasury-related allocations in revenue, non-interest expense allocations from Corporate Units and Technology and Operations (T&O) and allocated capital.

BMO employs funds transfer pricing and liquidity transfer pricing between Treasury and the operating groups to assign the appropriate cost and credit to funds for the appropriate pricing of loans and deposits, and to help assess the profitability performance of each line of business. These practices also capture the cost of holding supplemental liquid assets to meet contingent liquidity requirements and facilitate the management of interest rate risk and liquidity risk within our risk appetite framework and regulatory requirements. We review our transfer pricing methodologies at least annually, to align with our interest rate, liquidity and funding risk management practices.

The costs of Corporate Units and Technology and Operations services are largely allocated to the four operating segments, with any remaining amounts retained in Corporate Services. Costs directly incurred to support a specific operating group are generally allocated to that operating group. Other costs that are not directly attributable to a specific operating group are allocated across the operating groups, reasonably reflective of the level of support provided to each operating group. Cost allocation methodologies are reviewed annually.

Capital is allocated to the operating segments based on the amount of regulatory capital required to support business activities. Unallocated capital is reported in Corporate Services. Capital allocation methodologies are reviewed annually.

Periodically, certain lines of business and units within our organizational structure are realigned to support our strategic priorities. In addition, allocations of revenue, provisions for credit losses, expenses and capital are updated periodically to better align with current experience.

We analyze revenue at the consolidated level based on GAAP revenue as reported in the audited annual consolidated financial statements, rather than on a taxable equivalent basis (teb), which is consistent with our Canadian banking peer group. Like many banks, BMO analyzes revenue on a teb basis at the operating group level. Revenue and the provision for income taxes are increased on tax-exempt securities to an equivalent pre-tax basis in order to facilitate comparisons of income between taxable and tax-exempt sources. The offset to the group teb adjustments is reflected in Corporate Services revenue and provision for income taxes.

Personal and Commercial Banking ⁽¹⁾

(Canadian \$ in millions, except as noted) As at or for the year ended October 31	Canadian P&C			U.S. P&C			Total P&C		
	2021	2020	2019	2021	2020	2019	2021	2020	2019
Net interest income (teb) (2)	6,561	6,105	5,885	4,268	4,345	4,216	10,829	10,450	10,101
Non-interest revenue	2,225	1,930	2,099	1,243	1,186	1,162	3,468	3,116	3,261
Total revenue (teb)	8,786	8,035	7,984	5,511	5,531	5,378	14,297	13,566	13,362
Provision for credit losses on impaired loans	493	787	544	22	418	160	515	1,205	704
Provision for (recovery of) credit losses on performing loans	(116)	623	63	(166)	441	37	(282)	1,064	100
Total provision for (recovery of) credit losses	377	1,410	607	(144)	859	197	233	2,269	804
Non-interest expense	4,037	3,892	3,836	2,797	3,075	3,136	6,834	6,967	6,972
Income before income taxes	4,372	2,733	3,541	2,858	1,597	2,045	7,230	4,330	5,586
Provision for income taxes (teb)	1,135	706	917	669	320	434	1,804	1,026	1,351
Reported net income	3,237	2,027	2,624	2,189	1,277	1,611	5,426	3,304	4,235
Amortization of acquisition-related intangible assets (3)	1	2	2	24	39	43	25	41	45
Adjusted net income	3,238	2,029	2,626	2,213	1,316	1,654	5,451	3,345	4,280

(1) Adjusted results and teb amounts in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

(2) Taxable equivalent basis amounts of \$24 million in fiscal 2021, \$28 million in fiscal 2020 and \$34 million in fiscal 2019 are recorded in net interest income.

(3) Amortization of acquisition-related intangible assets pre-tax amounts of \$35 million in 2021, \$55 million in 2020 and \$59 million in 2019 are recorded in non-interest expense.

The Personal and Commercial Banking (P&C) operating group comprises our two retail and commercial banking operating segments, Canadian Personal and Commercial Banking (Canadian P&C) and U.S. Personal and Commercial Banking (U.S. P&C). The combined P&C banking business net income was \$5,426 million, an increase of \$2,122 million or 64% from the prior year. Adjusted net income, which excludes the amortization of acquisition-related intangible assets, was \$5,451 million, an increase of \$2,106 million or 63% from the prior year. Increases in reported and adjusted net income were primarily driven by lower provisions for credit losses, revenue growth and a reduction in expenses, partially offset by the impact of the weaker U.S. dollar. These operating segments are reviewed separately in the sections that follow.

For further information on non-GAAP amounts, measures and ratios in this 2021 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

Canadian Personal and Commercial Banking

Canadian Personal and Commercial Banking provides financial products and services to eight million customers. Personal Banking helps customers make real financial progress through a network of almost 900 branches, contact centres, digital banking platforms and more than 3,300 automated teller machines. Commercial Banking serves clients across Canada, and our commercial bankers are trusted advisors and partners to their clients, offering sector and industry expertise, local presence and a comprehensive range of commercial products and services.

Lines of Business

Personal Banking provides customers with a wide range of products and services, including chequing and savings accounts, credit cards, mortgages, personal loans, small business lending and everyday financial and investment advice, with an overall focus on providing customers with an exceptional experience in every interaction and helping them make real financial progress.

Commercial Banking provides clients with a wide range of commercial products and services, including multiple financing options and treasury and payment solutions, as well as risk management products. Commercial bankers partner with clients to anticipate their financial needs, and share expertise and knowledge to help them manage and grow their businesses.

Strategy and Key Priorities

2021 Priorities and Achievements

Key Priority: Continue to improve customer loyalty, deepen primary relationships and support customers in the new operating environment

Achievements

- Continued to maintain strong customer loyalty in Personal Banking and leading customer loyalty in Commercial Banking, as measured by Net Promoter Score
- Supported customers experiencing financial hardship since the onset of the COVID-19 pandemic through multiple programs
 - Assisted more than 82,000 small businesses with access to approximately \$4.5 billion in loans through the Canada Emergency Business Account (CEBA) program
 - Assisted nearly 1,500 clients with access to approximately \$500 million in non-revolving loans through the Highly Affected Sectors Credit Availability Program (HASCAP), in collaboration with the Business Development Bank of Canada
- Partnered with Export Development Canada to launch the Trade Expansion Lending Program (TELP), which assists export-oriented small and medium-sized businesses with faster access to working capital so that they can expand outside of Canada
- Made BMO's employee Wellness Services program available to Canadian business owners and entrepreneurs, offering services and resources that support mental, physical, social and financial health, at no additional cost

Key Priority: In Personal Banking, drive customer acquisition, build share of wallet, enhance digital capabilities and deliver a leading customer experience

Achievements

- Gained market share in key focus areas, including personal loans, retail deposits and credit cards
- Introduced a new tailored Small Business Banking bundle as part of our Canadian Defence Community Banking Program, aimed at supporting entrepreneurs from the Canadian Defence Community from start-up to succession planning
- Attracted new customers to BMO with the launch of BMO eclipse Visa Infinite™ and Visa Infinite Privilege™ credit cards, designed to meet the everyday lifestyle needs of Canadians, offering greater earning potential and more flexible rewards
- Introduced BMO Family Bundle™, a unique offering in the Canadian market, allowing customers and their family members to save on fees on their Canadian-dollar or U.S.-dollar chequing accounts
- Strengthened our digital sales and service capabilities, with more than a third of core banking products now purchased and delivered digitally, and more than 90% of service transactions completed through self-serve channels, enabling employees to focus on providing leading advisory services
- Introduced an Automated Digital Enrolment solution to help customers enrol quickly and seamlessly for commonly used mobile banking features, a first for a major Canadian financial institution. This new solution was enhanced with the launch of Selfie ID, which enables a simple digital onboarding experience
- Launched BMO CashTrack™ Insights, an artificial intelligence-driven capability that to date has offered more than 180,000 insights to customers through our mobile banking app, helping them avoid cash shortfalls or overdraft fees and make real financial progress

Key Priority: In Commercial Banking, target opportunities for growth and diversification across key sectors and businesses, invest in digital and payment capabilities and continue to leverage cross-bank collaboration

Achievements

- Named Best Commercial Bank in Canada for the seventh consecutive year by *World Finance* magazine at its 2021 Banking Awards, in recognition of our strong regional and industry focus, as well as our commitment to building customer relationships and providing innovative solutions
- Co-led the first labelled Green Loan in Canada to support the construction of a new 100% recycled containerboard facility in Ontario
- Continued to enhance our industry-leading Business Banking Xpress™ (BBX) platform, which has facilitated \$1.8 billion in lending authorizations, while building out multi-journey functionality to provide solutions to business owners quickly, in a single intuitive experience
- Launched a new Business Property Finance group to build scale and market presence rapidly in this sector
- Launched the first commercial real estate synthetic securitization offered by a Canadian bank
- Continued to advance payments modernization by deploying Lynx™, in collaboration with Payments Canada, enabling faster, simpler data-rich transactions
- Fully integrated our North American wire transfer platform, with 95% of payments processed without human intervention, resulting in higher speed, lower risk of error and a better experience for customers and employees

Key Priority: Drive efficiencies by simplifying and streamlining operations and investing in digital capabilities, while activating and driving an inclusive, high-performance culture

Achievements

- Recognized for digital innovation with the 2021 Celent Model Bank Award for financial wellness; and recognized as a category winner by BAI Canada at its 2020 Global Innovation Awards for BMO CashTrack™
- Ranked #1 by Insider Intelligence in its inaugural mobile banking ratings for digital money management, security and alerts, and in recognition of the positive effects of our digital-first approach on our customers' banking experience
- Significantly increased the capacity of our front-line branch employees by transforming the cash ecosystem and eliminating, simplifying or centralizing key administrative activities
- Continued to grow our advice-based roles, strengthening our ability to engage with customers on the financial issues that are important to them

2022 Focus

- Build on our strong franchise to drive growth and customer loyalty by continuing to invest in differentiating capabilities and delivering enhanced client experiences
 - In Personal Banking, drive top-tier customer acquisition, build leading share of wallet, and enhance the digital experience to help customers make real financial progress
 - In Commercial Banking, strengthen core market presence, accelerate growth in key sectors and continue to build share of wallet with strengthened digital capabilities
- Drive efficiencies by simplifying and streamlining operations, investing in digital capabilities and through cross-bank collaboration
- Foster an inclusive, winning culture, focused on alignment, empowerment and recognition, with a commitment to a diverse and inclusive workplace

Canadian P&C ⁽¹⁾

 (Canadian \$ in millions, except as noted)
 As at or for the year ended October 31

	2021	2020	2019
Net interest income	6,561	6,105	5,885
Non-interest revenue	2,225	1,930	2,099
Total revenue	8,786	8,035	7,984
Provision for credit losses on impaired loans	493	787	544
Provision for (recovery of) credit losses on performing loans	(116)	623	63
Total provision for credit losses	377	1,410	607
Non-interest expense	4,037	3,892	3,836
Income before income taxes	4,372	2,733	3,541
Provision for income taxes	1,135	706	917
Reported net income	3,237	2,027	2,624
Amortization of acquisition-related intangible assets ⁽²⁾	1	2	2
Adjusted net income	3,238	2,029	2,626
Adjusted non-interest expense	4,035	3,890	3,834

Key Performance Metrics and Drivers

Personal revenue	5,325	4,986	5,016
Commercial revenue	3,461	3,049	2,968
Net income growth (%)	59.7	(22.7)	2.8
Revenue growth (%)	9.4	0.6	5.2
Non-interest expense growth (%)	3.7	1.4	4.1
Adjusted non-interest expense growth (%)	3.7	1.5	4.1
Return on equity (%) ⁽³⁾	28.7	18.1	27.3
Adjusted return on equity (%) ⁽³⁾	28.7	18.1	27.3
Operating leverage (%)	5.7	(0.8)	1.1
Adjusted operating leverage (%)	5.7	(0.9)	1.1
Efficiency ratio (%)	45.9	48.4	48.1
Net interest margin on average earning assets (%)	2.64	2.60	2.65
Average earning assets	248,215	234,953	222,260
Average gross loans and acceptances	261,869	250,223	236,889
Average net loans and acceptances	260,359	248,972	236,000
Average deposits	225,555	204,942	175,125
Full-time equivalent employees	14,697	13,701	14,638

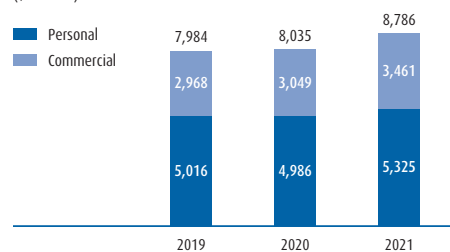
(1) Adjusted results and ratios in this table are non-GAAP amounts or ratios and are discussed in the Non-GAAP and Other Financial Measures section.

(2) Amortization of acquisition-related intangible assets pre-tax amounts of \$2 million in each of fiscal 2021, fiscal 2020 and fiscal 2019 are recorded in non-interest expense.

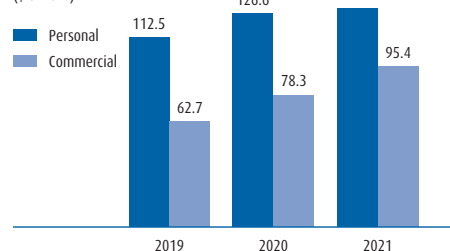
(3) Return on equity is based on allocated capital. For further information, refer to the Non-GAAP and Other Financial Measures section.

Revenue by Line of Business

(\$ millions)


Average Deposits*

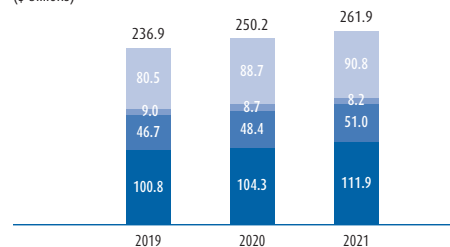
(\$ billions)



*Numbers may not add due to rounding.

Average Gross Loans and Acceptances*

(\$ billions)



*Numbers may not add due to rounding.

Financial Review

Canadian P&C reported net income was \$3,237 million, an increase of \$1,210 million or 60% from the prior year, driven by lower provisions for credit losses compared with elevated levels in the prior year and strong revenue growth, partially offset by an increase in expenses.

Total revenue was \$8,786 million, an increase of \$751 million or 9% from the prior year. Net interest income increased \$456 million or 7%, due to higher balances and higher loan margins, partially offset by lower deposit margins. Non-interest revenue increased \$295 million or 15%, with higher revenue across most categories, including higher gains on investments in our commercial business and higher card-related revenue. Personal revenue increased \$339 million or 7% from the prior year and commercial revenue increased \$412 million or 14%, both due to higher net interest income and higher non-interest revenue.

Net interest margin of 2.64% increased 4 basis points, primarily driven by higher loan margins and deposits growing faster than loans, partially offset by lower deposit margins that reflect the impact of the lower interest rate environment.

Total provision for credit losses was \$377 million, a decrease of \$1,033 million from the prior year. The provision for credit losses on impaired loans was \$493 million, a decrease of \$294 million due to lower commercial and consumer provisions. There was a \$116 million recovery of the provision for credit losses on performing loans in the current year, compared with a \$623 million provision in the prior year.

Reported non-interest expense was \$4,037 million, an increase of \$145 million or 4% from the prior year, reflecting investments in the business, including employee-related costs, as well as technology and marketing costs.

Average gross loans and acceptances increased \$11.6 billion or 5% from the prior year to \$261.9 billion. Personal loan balances increased 7% and commercial loan balances increased 2%, while credit card balances decreased 6%. Average deposits increased \$20.6 billion or 10% to \$225.6 billion, reflecting higher levels of liquidity retained by customers, as well as strong customer acquisition. Personal deposits increased 3%, with strong growth in chequing and savings account deposits, partially offset by a decline in term deposits. Commercial deposits increased 22%.

For further information on non-GAAP amounts, measures and ratios in this 2021 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

Business Environment and Outlook

Canadian P&C recorded strong results in fiscal 2021, demonstrating resilience during the pandemic and an ability to adapt quickly as the economy recovers. Our focus on supporting our customers in times of need, delivering exceptional customer service, leveraging digital capabilities by investing in new technologies, and diversifying our customer base are all key to successfully delivering on our strategy.

Canadian banking customers continued to feel the effects of the COVID-19 pandemic, with ongoing lockdowns in the first half of the year and the extension of government support programs intended to ease financial hardship. We continued to support our customers as the Canadian economy began to recover in fiscal 2021, driven by sharp increases in vaccination rates and the relaxation of public health restrictions. Deposits have continued to grow despite rising levels of customer spending, and unsecured consumer and business borrowing volumes began to grow through the year, reflected in improved loan growth across our diverse portfolio of credit products. The housing market has experienced elevated activity, resulting in strong mortgage growth, further supported by investments in our sales force. The economic recovery is expected to continue in fiscal 2022, notwithstanding the ongoing uncertainty surrounding the course of the COVID-19 pandemic and the emergence of variants, with rising levels of consumer spending and business investment supporting further growth in our personal and commercial businesses. Housing market activity is expected to moderate but remain robust, while supply-chain disruptions, labour shortages and higher inflation rates continue to generate headwinds for the industry. Interest rates are expected to remain low in the near term, which could put modest pressure on margins, before rising in the medium term and supporting margin improvement.

The Canadian financial services landscape remains highly competitive, with traditional and non-traditional competitors offering a wide range of banking products and services across physical and digital channels. Canadian P&C is well-positioned to compete in this rapidly-evolving landscape. With strong market share for our personal and commercial products and services, we continue to focus on building best-in-class customer loyalty by enhancing the customer experience with innovative products, services and digital solutions, while also improving efficiency.

The Canadian economic environment in fiscal 2021 and the outlook for fiscal 2022 are discussed in more detail in the Economic Developments and Outlook section.

Caution

This Canadian Personal and Commercial Banking section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

U.S. Personal and Commercial Banking

U.S. Personal and Commercial Banking serves more than two million customers by providing a banking experience with a human touch, while delivering a broad range of financial products and services. U.S. Personal Banking serves customers seamlessly across an extensive network of more than 520 branches, dedicated contact centres, digital banking platforms, and nationwide access to more than 40,000 automated teller machines. U.S. Commercial Banking serves clients across the United States, and our commercial bankers are trusted advisors and partners to their clients, offering sector and industry expertise, local presence and a comprehensive range of commercial products and services.

Lines of Business

Personal Banking offers a variety of products and services, including deposits, home lending, consumer credit, small business lending, credit cards and other banking services, with an overall focus on providing customers with an exceptional experience in every interaction and helping them make real financial progress.

Commercial Banking provides clients with a wide range of commercial products and services, including multiple financing options and treasury and payment solutions, as well as risk management products. Commercial bankers partner with clients to anticipate their financial needs, and share expertise and knowledge to help them manage and grow their businesses.

Strategy and Key Priorities

2021 Priorities and Achievements

Key Priority: Continue to improve customer loyalty, deepen primary relationships and support customers in the new operating environment

Achievements

- Continued to strengthen customer loyalty in Personal Banking and maintained best-in-class customer loyalty in Commercial Banking, as measured by Net Promoter Score
- Supported customers experiencing financial hardship since the onset of the COVID-19 pandemic, and provided a total of US\$6.5 billion in funding for more than 36,000 businesses through the SBA Paycheck Protection Program
- Reinforced our second-place ranking in market share for deposits in the core Chicago and Milwaukee markets, with a top-three position across our Midwest footprint
- Recognized on *Forbes* magazine's World's Best Banks 2021 list, based on a survey of consumers on key attributes, including trust, fees, digital services and financial advice
- Continued our partnership with 1871, a Chicago-based fintech private business incubator, in the WMN•FINtech program for a second year, focusing on mentoring women-led start-ups and reflecting our commitment to support an entrepreneurial innovation ecosystem
- Rated Outstanding by the Office of the Comptroller of the Currency on *Community Reinvestment Act* performance, recognizing our commitment to help support low- and moderate-income communities
- Deployed more than US\$2 billion in loans and investments as part of BMO EMpower™, a five-year US\$5 billion commitment to address key barriers faced by minority businesses and communities in the United States

Key Priority: In Personal Banking, continue to drive new customer acquisition and deposit growth, build a flagship franchise in Small Business Banking and increase digital engagement

Achievements

- Delivered strong core deposit growth, with 25% of transactions conducted through digital channels, supported by a robust product offering and pricing optimization
- Continued to enhance our Business Banking Xpress™ (BBX) platform with more than 14,000 deposit and credit accounts opened across branch and digital channels since its launch
- Launched myFinancial Compass™, a guided conversation tool that has seamlessly supported more than 275,000 advice-based conversations with high levels of customer satisfaction
- BMO Harris Smart Money™ account awarded Bank On™ certification by the Cities for Financial Empowerment Fund, recognizing it as a safe and affordable banking service for financially underserved customers
- Continued to increase digital engagement with customers, with the adoption rate rising by more than 300 basis points year-over-year and more than 75% of service transactions conducted through self-serve channels
- Introduced Savings Builder™, a rewards-based program for consumers and small businesses to help them build strong and consistent savings habits, with more than 90,000 new accounts opened to date
- Supported the removal of systemic barriers for small businesses, and empowered communities by introducing Black and Latinx and Women in Business programs

Key Priority: In Commercial Banking, strengthen core market presence and continue to build share of wallet, strengthen digital capabilities and continue to leverage cross-bank collaboration

Achievements

- Expanded our national presence with the opening of new offices in Florida and Colorado, and continued to grow in Texas, Georgia and other new markets
- Enhanced our offerings in high-value verticals such as healthcare by introducing asset-based lending and launching a multi-specialty Healthcare Council
- Continued to strengthen cross-border capabilities in order to improve the customer experience through technology platform changes related to wire transfers, receivables and billing processes
- Migrated our Transportation Finance business to Amazon Web Services (AWS), executing on our digital first strategy and our commitment to unlocking the power of machine learning to digitize and humanize the employee and customer experience

Key Priority: Drive efficiencies by simplifying and streamlining operations and investing in digital capabilities, while activating and driving an inclusive, high-performance culture

Achievements

- Expanded our relationship with financial technology leader FIS in a major multi-year modernization program that accelerates mobile digital solutions, supporting continued growth across our U.S. market
- Partnered with Lively, Inc. to introduce a new Health Savings Account experience for our customers, offering multiple investment options and providing financial tools that address rising healthcare costs
- Optimized our sales and service model to leverage cross-channel capacity across branches and contact centres
- Named one of the Best Places to Work for Disability Inclusion for the sixth consecutive year, achieving a maximum score of 100 on the Disability Equality Index
- Recognized by *Forbes* magazine as one of the Best Employers for Diversity for the third consecutive year, based on an independent survey of more than 50,000 U.S.-based employees

2022 Focus

- Build on our strong franchise to drive growth and customer loyalty by continuing to invest in differentiating capabilities and delivering enhanced client experiences
 - In Personal Banking, continue to drive new customer acquisition, increase digital engagement, and help customers make real financial progress
 - In Commercial Banking, strengthen core market presence, drive growth in expansion markets and continue to build share of wallet with strengthened digital capabilities
- Drive efficiencies by simplifying and streamlining operations, investing in digital capabilities and through cross-bank collaboration
- Foster an inclusive, winning culture, focused on alignment, empowerment and recognition, with a commitment to a diverse and inclusive workplace

U.S. P&C (1)

(Canadian \$ in millions, except as noted)
As at or for the year ended October 31

	2021	2020	2019
Net interest income (teb) (2)	4,268	4,345	4,216
Non-interest revenue	1,243	1,186	1,162
Total revenue (teb)	5,511	5,531	5,378
Provision for credit losses on impaired loans	22	418	160
Provision for (recovery of) credit losses on performing loans	(166)	441	37
Total provision for (recovery of) credit losses	(144)	859	197
Non-interest expense	2,797	3,075	3,136
Income before income taxes	2,858	1,597	2,045
Provision for income taxes (teb)	669	320	434
Reported net income	2,189	1,277	1,611
Amortization of acquisition-related intangible assets (3)	24	39	43
Adjusted net income	2,213	1,316	1,654
Adjusted non-interest expense	2,764	3,022	3,079
Average earning assets	122,166	130,190	119,640
Average gross loans and acceptances	115,025	123,002	112,904
Average net loans and acceptances	116,039	123,953	113,620
Average deposits	139,197	132,041	106,733

(US\$ in millions, except as noted)

Net interest income (teb) (4)	3,400	3,231	3,173
Non-interest revenue	990	882	875
Total revenue (teb)	4,390	4,113	4,048
Provision for credit losses on impaired loans	15	310	121
Provision for (recovery of) credit losses on performing loans	(132)	328	28
Total provision for (recovery of) credit losses	(117)	638	149
Non-interest expense	2,229	2,287	2,360
Income before income taxes	2,278	1,188	1,539
Provision for income taxes (teb)	534	237	327
Reported net income	1,744	951	1,212
Amortization of acquisition-related intangible assets (5)	19	30	32
Adjusted net income	1,763	981	1,244
Adjusted non-interest expense	2,203	2,248	2,317

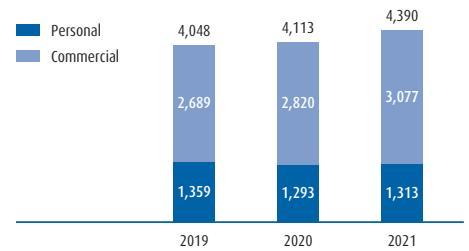
Key Performance Metrics and Drivers (US\$ basis)

Personal revenue	1,313	1,293	1,359
Commercial revenue	3,077	2,820	2,689
Net income growth (%)	83.5	(21.6)	11.7
Adjusted net income growth (%)	80.0	(21.2)	11.1
Revenue growth (%)	6.7	1.6	5.6
Non-interest expense growth (%)	(2.5)	(3.1)	2.6
Adjusted non-interest expense growth (%)	(2.0)	(3.0)	2.8
Return on equity (%) (6)	15.9	8.3	11.0
Adjusted return on equity (%) (6)	16.1	8.5	11.3
Operating leverage (teb) (%)	9.2	4.7	3.0
Adjusted operating leverage (teb) (%)	8.7	4.6	2.8
Efficiency ratio (teb) (%)	50.8	55.6	58.3
Adjusted efficiency ratio (teb) (%)	50.2	54.6	57.3
Net interest margin on average earning assets (teb) (%)	3.49	3.34	3.53
Average earning assets	97,321	96,810	90,035
Average gross loans and acceptances	92,439	92,170	85,505
Average net loans and acceptances	91,631	91,462	84,966
Average deposits	110,910	98,203	80,316
Full-time equivalent employees	6,449	6,388	6,831

- Adjusted results and ratios, teb amounts and U.S. dollar amounts and ratios in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.
- Taxable equivalent basis amounts of \$24 million in fiscal 2021, \$28 million in fiscal 2020 and \$34 million in fiscal 2019 are recorded in net interest income.
- Amortization of acquisition-related intangible assets pre-tax amounts of \$33 million in 2021, \$53 million in 2020 and \$57 million in 2019 are recorded in non-interest expense.
- Taxable equivalent basis amounts of US\$25 million in fiscal 2021, US\$20 million in fiscal 2020 and US\$25 million in fiscal 2019 are recorded in net interest income.
- Amortization of acquisition-related intangible assets pre-tax amounts of US\$26 million in 2021, US\$39 million in 2020 and US\$43 million in 2019 are recorded in non-interest expense.
- Return on equity is based on allocated capital. For further information, refer to the Non-GAAP and Other Financial Measures section.

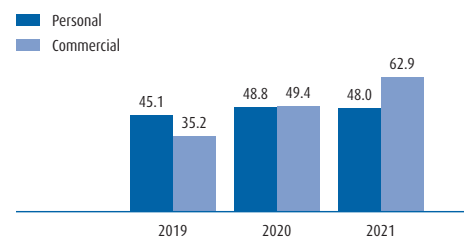
Revenue by Line of Business

(US\$ millions)



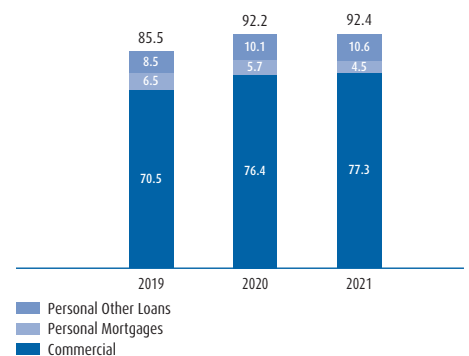
Average Deposits

(US\$ billions)



Average Gross Loans and Acceptances*

(US\$ billions)



*Personal Other Loans includes Business Banking, Indirect Auto, Credit Cards, Home Equity, Non-Strategic and other personal loans.

Financial Review

U.S. P&C reported net income was \$2,189 million, an increase of \$912 million or 71% from the prior year. The impact of the weaker U.S. dollar reduced net income growth by 12%, revenue growth by 7% and expense growth by 6%. U.S. P&C performance and metrics are presented and discussed on a U.S. dollar basis, which management views as useful in assessing the underlying performance due to the variability caused by changes in the U.S. dollar. All amounts in the remainder of this section are on a U.S. dollar basis.

Reported net income was \$1,744 million, an increase of \$793 million or 84% from the prior year, primarily driven by lower provisions for credit losses compared with elevated levels in the prior year, strong revenue growth and reduced expenses.

Total revenue was \$4,390 million, an increase of \$277 million or 7% from the prior year. Net interest income increased \$169 million or 5% due to higher loan margins, growth in deposits and accelerated Paycheck Protection Program (PPP) revenue resulting from loan forgiveness, partially offset by lower deposit product margins. The PPP was a U.S. government relief program implemented in fiscal 2020 to reduce the financial hardship caused by the COVID-19 pandemic. Non-interest revenue increased \$108 million or 12%, with higher revenue across most categories, primarily reflecting higher commercial lending-related fee revenue, advisory fee revenue and deposit fee revenue. Commercial revenue increased \$257 million or 9% due to higher net interest income and non-interest income. Personal revenue increased \$20 million or 2% due to higher net interest income.

Net interest margin of 3.49% increased 15 basis points from the prior year, primarily due to higher loan margins, deposits growing faster than loans, and accelerated PPP revenue resulting from loan forgiveness, partially offset by lower deposit margins that reflected the impact of the lower interest rate environment.

Total recovery of credit losses was \$117 million, compared with a provision of \$638 million in the prior year. The provision for credit losses on impaired loans decreased \$295 million, largely due to lower commercial provisions in the current year. There was a \$132 million recovery of the provision for credit losses on performing loans in the current year, compared with a \$328 million provision in the prior year.

Reported non-interest expense was \$2,229 million, a decrease of \$58 million or 3%, primarily due to lower operational costs in line with a continued focus on expense management, partially offset by higher employee-related costs, largely reflecting performance-based compensation.

Average gross loans and acceptances were relatively unchanged at \$92.4 billion, with commercial loan growth of 1%, offset by lower personal loan balances of 4%. The impact of the reduction in PPP loans reduced average loans and acceptances by \$0.6 billion or 1%. Average deposits increased \$12.7 billion or 13% to \$110.9 billion, reflecting higher levels of liquidity retained by customers. Commercial deposits increased 27%, while personal deposits decreased 1%, as continued growth in chequing and savings account deposits was more than offset by a decline in term deposits.

For further information on non-GAAP amounts, measures and ratios in this 2021 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

Business Environment and Outlook

The footprint of our U.S. P&C core branch network spans eight states (Illinois, Wisconsin, Missouri, Indiana, Minnesota, Kansas, Arizona and Florida). In addition, commercial banking offers targeted nationwide coverage of key specialty sectors and has offices in select regional markets, while the personal banking digital platform delivers our financial products and services nationally.

Although still impacted by the COVID-19 pandemic, the U.S. economy began to recover in fiscal 2021, gaining strength as public health restrictions were gradually lifted. Consumers and businesses continued to add to their savings, aided by government support programs and rising employment rates. Borrowing remained muted, as high levels of savings led to continued strength in deposit growth and slower loan growth.

The economy is expected to grow at a robust pace in the year ahead, although ongoing uncertainty surrounding the course of the COVID-19 pandemic, labour shortages and supply-chain disruptions are still a concern. Consumers are benefiting from elevated levels of savings and growing employment, and some additional fiscal policy stimulus is also expected. Housing market activity is expected to remain healthy in fiscal 2022, supported by rising employment rates. Corporate credit growth is expected to accelerate, as rising business confidence leads to new investments.

U.S. P&C remains committed to its customers, employees and local communities, and is well-positioned to grow despite a highly competitive environment. In commercial banking, our bankers have been working with our clients throughout the pandemic, providing them with a full range of deposit, lending and advisory solutions that are timely, relevant and supportive of their business. In personal banking, investments in technology continue to deliver improvements in speed, scale and efficiency, and are fuelling growth in digital and mobile adoption.

The U.S. economic environment in fiscal 2021 and the outlook for fiscal 2022 are discussed in more detail in the Economic Developments and Outlook section.

Caution

This U.S. Personal and Commercial Banking section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

BMO Wealth Management

BMO Wealth Management serves a full range of clients, from individuals and families to business owners and institutions, offering a wide spectrum of wealth, asset management and insurance products and services aimed at helping clients plan, grow, protect and transition their wealth. Our asset management business is focused on making a positive impact and delivering innovative client solutions.

Lines of Business

BMO Private Wealth provides full-service investing, banking and wealth advisory services to high net worth and ultra-high net worth clients, leveraging individualized financial planning and advice-based solutions such as investment management, business succession planning, trust and estate services, and philanthropy.

BMO InvestorLine leads Wealth Management's digital investing services, offering three ways for Canadian clients to invest: BMO InvestorLine's self-directed online trading platform for investors who want to be in control of their investments; BMO InvestorLine's adviceDirect™ for investors who want the freedom to make their own investment decisions with personalized advice and support; and SmartFolio™ for investors who want low-fee, professionally managed portfolios aligned with their investment objectives.

BMO Wealth Management U.S. offers financial solutions to mass affluent, high net worth and ultra-high net worth families and businesses.

BMO Global Asset Management provides investment management services to institutional, retail and high net worth investors, offering a wide range of innovative, client-focused solutions and strategies to help clients meet their investment objectives.

BMO Insurance is a diversified insurance and wealth solutions provider and a leader in pension de-risking solutions. It manufactures individual life, critical illness and annuity products, as well as segregated funds. Group creditor and travel insurance is also available to bank customers in Canada through Bank of Montreal.

Strategy and Key Priorities

2021 Priorities and Achievements

Key Priority: Deliver a differentiated client experience, providing outstanding support and working together to plan, grow, protect and transition their wealth with confidence

Achievements

- Achieved overall record-high client loyalty scores, affirming the responsiveness and expertise of our teams, the value of our holistic approach and the results of our proactive outreach in support of clients
- BMO Private Banking was named Best Private Bank in Canada by World Finance magazine for the 11th consecutive year, in recognition of our client-centric approach to navigating the complexity of managing our clients' wealth during times of uncertainty
- Continued to evolve our digital capabilities, introducing a new facial recognition option in the account opening process for BMO Nesbitt Burns clients and simplifying the digital onboarding experience for BMO InvestorLine clients, tripling our self-serve application completion rate since 2018
- BMO Wealth Management U.S. deepened its presence in the Bay Area (California), Atlanta and Dallas, continuing to expand its national reach
- Integrated our North American ultra-high net worth offerings and infrastructure with the bespoke capabilities of the BMO Family Office, a focus on alternative investments and curated client experiences
- Expanded our digital advisory capabilities with the launch of adviceDirect™ Preview and Premium, and offered access to more Canadian online investors by lowering minimum balances, allowing more commission-free trades and changing our fee structure for advisory services
- Enhanced our self-directed and adviceDirect™ trading platforms, including extended capabilities in research, education and portfolio management support, as well as simplified trading procedures
- Launched commission-free trading for self-directed clients on more than 80 exchange traded funds (ETFs)

Key Priority: Extend advantage as a solutions provider, delivering innovative asset management and insurance offerings that anticipate clients' evolving needs and exceed their expectations

Achievements

- Maintained our leadership position in Canadian ETFs, continuing to rank #1 in net new asset growth, launched a suite of Innovation Index ETFs and added to our Environmental, Social and Governance (ESG) ETF line-up
- Recognized for the sustained performance of 25 BMO funds and ETFs at the annual FundGrade A+® Awards, including 18 ETFs and seven mutual funds
- Refreshed our Global Asset Management Trading platform with improved process automation to enhance overall client experience and satisfaction
- Enhanced BMO Insurance products and services with a suite of ESG investment options for Universal Life Insurance and Segregated Funds policyholders and an accelerated underwriting process that offers important life insurance protection without requiring tests or examinations
- Reinforced our leadership position in pension de-risking, securing two of our largest transactions to date and doubling total annual premiums from the prior year

Key Priority: Build on a strong foundation and continue to evolve, simplify and digitize our businesses to drive value and efficiencies

Achievements

- Finalized the sale of our Private Banking business in Hong Kong and Singapore and the sale of EMEA Asset Management as we reposition and grow our operations across our core North American footprint
- Streamlined money management by digitizing the set-up and use of electronic fund transfers and introducing real-time cash transfers from Personal Banking accounts to BMO Nesbitt Burns accounts
- BMO Wealth Management U.S. completed the outsourcing of middle- and back-office broker dealer functions through a partnership with LPL Financial, enhancing our premium brokerage and advisory services with a more robust digital platform and innovative solutions to meet the evolving needs of our clients
- BMO InvestorLine launched a new self-serve option for opening margin and registered retirement income fund accounts

Key Priority: Activate and drive an inclusive, high-performance culture, with a commitment to building diverse and inclusive teams to bring the best of BMO to all clients

Achievements

- Launched a collaborative Wealth Sponsorship Program with insights from the chairs of the Black Professionals Network and the Latino Alliance, as part of the Wealth Racial Equity Action Plan
- Ranked first in the Stewardship and Market Education categories at the Responsible Investment Association's 2021 Leadership Awards for our efforts to extend Canadian diversity and inclusion beyond gender, as well as the development and launch of the MyESG™ analytics tool
- BMO Family Office received the 2021 Diversity in Wealth Management Award from the *Family Wealth Report*, recognizing our commitment to diversity in the workplace
- Solidified BMO's position as a premium wealth advisor for business owners by continuing the collaboration between Advisory and Commercial Banking teams to help clients navigate the uncertainty around proposed tax changes in the United States, which led to a year-over-year increase of more than 70% in revenue from clients referred by Commercial Banking

2022 Focus

- Deliver a top-tier digital wealth management offering, building on our differentiated digital advisory capabilities to provide an enhanced client experience
- Scale our leadership position in private wealth advisory services across North America to plan, grow, protect and transition our clients' wealth with confidence
- Extend our advantage as a solutions provider, expanding asset management and insurance offerings in key growth areas
- Enhance efficiencies by continuing to evolve, simplify and streamline our businesses to drive value
- Foster an inclusive, winning culture, focused on alignment, empowerment and recognition, with a commitment to a diverse and inclusive workplace

BMO Wealth Management ⁽¹⁾

 (Canadian \$ in millions, except as noted)
 As at or for the year ended October 31

	2021	2020	2019
Net interest income	982	900	935
Non-interest revenue	6,071	5,808	6,727
Total revenue	7,053	6,708	7,662
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	1,399	1,708	2,709
Revenue, net of CCPB	5,654	5,000	4,953
Provision for credit losses on impaired loans	4	4	2
Provision for (recovery of) credit losses on performing loans	(16)	18	(2)
Total provision for (recovery of) credit losses	(12)	22	-
Non-interest expense	3,716	3,519	3,523
Income before income taxes	1,950	1,459	1,430
Provision for income taxes	476	363	371
Reported net income	1,474	1,096	1,059
Amortization of acquisition-related intangible assets (2)	24	34	37
Reinsurance adjustment (3)	-	-	25
Adjusted net income	1,498	1,130	1,121
Adjusted non-interest expense	3,685	3,476	3,476

Key Performance Metrics and Drivers

Traditional wealth businesses net income	1,228	893	861
Traditional wealth businesses adjusted net income	1,252	927	898
Insurance net income	246	203	198
Insurance adjusted net income	246	203	223
Net income growth (%)	34.4	3.5	(1.1)
Adjusted net income growth (%)	32.5	0.8	0.8
Revenue growth (%)	5.1	(12.4)	21.6
Revenue growth, net of CCPB (%)	13.1	1.0	0.1
Adjusted CCPB	1,399	1,708	2,684
Revenue growth, net of adjusted CCPB (%)	13.1	0.5	0.6
Non-interest expense growth (%)	5.6	(0.1)	0.2
Adjusted non-interest expense growth (%)	6.1	-	0.3
Return on equity (%) (4)	24.9	17.1	16.7
Adjusted return on equity (%) (4)	25.3	17.7	17.7
Operating leverage, net of CCPB (%)	7.5	1.1	(0.1)
Adjusted operating leverage, net of CCPB (%)	7.0	0.5	0.3
Efficiency ratio, net of CCPB (%)	65.7	70.4	71.1
Adjusted efficiency ratio, net of CCPB (%)	65.2	69.5	69.8
Average common equity	5,899	6,364	6,321
Average assets	48,232	45,573	40,951
Average gross loans and acceptances	28,920	26,585	23,519
Average net loans and acceptances	28,880	26,547	23,487
Average deposits	51,030	43,660	36,419
Assets under administration (AUA) (5)	427,446	411,959	393,576
Assets under management (AUM)	523,270	482,554	471,160
Full-time equivalent employees	6,329	6,193	6,374

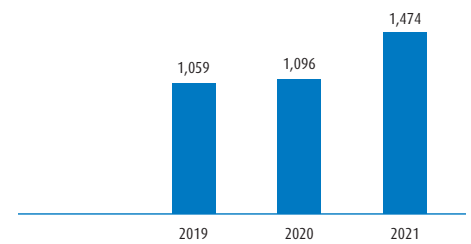
U.S. Business Select Financial Data (US\$ in millions)

Total revenue	625	583	613
Non-interest expense	489	504	512
Reported net income	104	61	77
Adjusted non-interest expense	482	495	501
Adjusted net income	109	68	85
Average net loans and acceptances	4,878	4,540	4,156
Average deposits	7,321	6,471	5,794

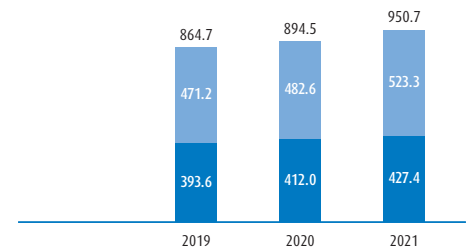
- Revenue measures, net of CCPB, adjusted results and ratios, including operating leverage and efficiency ratio, and U.S. dollar amounts in this table are on a non-GAAP basis and discussed in the Non-GAAP and Other Financial Measures section.
- Amortization of acquisition-related intangible assets pre-tax amounts of \$31 million in 2021, \$43 million in 2020 and \$47 million in 2019 are recorded in non-interest expense.
- Fiscal 2019 reported net income included a reinsurance adjustment of \$25 million (pre-tax and after-tax) for the net impact of major reinsurance claims incurred after the wind-down of the reinsurance business. This reinsurance adjustment is included in CCPB.
- Return on equity is based on allocated capital. For further information, refer to the Non-GAAP and Other Financial Measures section.
- Certain assets under management that are also administered by BMO are included in assets under administration.

Reported Net Income

(\$ millions)


AUA and AUM*

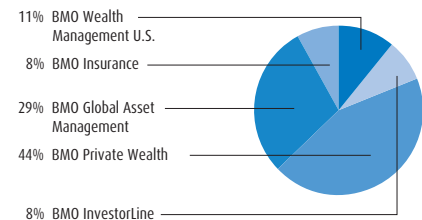
(\$ billions)


 ■ AUA
 ■ AUM

*Numbers may not add due to rounding.

2021 Net Revenue by Line of Business

(%)



Financial Review

BMO Wealth Management reported net income was \$1,474 million, an increase of \$378 million or 34% from the prior year, primarily driven by revenue growth, partially offset by an increase in expenses.

Traditional Wealth reported net income was \$1,228 million, an increase of \$335 million or 38% from the prior year. Insurance net income was \$246 million, an increase of \$43 million or 21% from the prior year.

We also present reported and adjusted revenue on a basis that is net of insurance claims, commissions and changes in policy benefit liabilities (CCPB), and we calculate our efficiency ratio and operating leverage on a similar basis. Insurance revenue can experience variability arising from fluctuations in the fair value of insurance assets, caused by movements in interest rates and equity markets, that is largely offset in CCPB. Presenting our revenue, efficiency ratio and operating leverage on a net basis allows for a better assessment of operating results.

Revenue was \$7,053 million, an increase of \$345 million or 5% from the prior year. Revenue, net of CCPB, was \$5,654 million, an increase of \$654 million or 13%. Revenue in Traditional Wealth was \$5,178 million, an increase of \$585 million or 13% from the prior year, due to higher non-interest revenue of \$503 million resulting from growth in client assets, including the favourable effects of stronger global markets, an increase in online brokerage revenue and the impact of a legal provision in the prior year, partially offset by the impact of the weaker U.S. dollar. Net interest income increased \$82 million, primarily due to strong deposit and loan growth and the impact of a legal provision in the prior year, partially offset by lower margins and the impact of the weaker U.S. dollar. Reported insurance revenue was \$1,875 million, a decrease of \$240 million or 11% from the prior year. Insurance revenue, net of CCPB, was \$476 million, an increase of \$69 million or 17%, primarily due to the impact of more favourable market movements in the current year, and business growth, partially offset by lower benefits from changes in investments to improve asset liability management and the unfavourable impact of actuarial assumption changes in the current year.

The total recovery of provisions for credit losses was \$12 million, compared with a provision of \$22 million in the prior year. The provision for credit losses on impaired loans was unchanged from the prior year. There was a \$16 million recovery of the provision for credit losses on performing loans in the current year, compared with an \$18 million provision in the prior year.

Reported non-interest expense was \$3,716 million, an increase of \$197 million or 6% from the prior year, primarily due to higher revenue-based costs, technology-related investments and a legal provision in the current year, partially offset by the impact of the weaker U.S. dollar.

Assets under management increased \$40.7 billion or 8%, and assets under administration increased \$15.5 billion or 4% from the prior year, primarily due to higher client assets, including stronger global markets, partially offset by attrition resulting from low-yielding assets and foreign exchange rate movements. Average gross loans and average deposits increased 9% and 17%, respectively.

For further information on non-GAAP amounts, measures and ratios in this 2021 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

Business Environment and Outlook

The wealth management business remains attractive and highly competitive. We are well-positioned to benefit from emerging industry trends, including the accelerated adoption of digital channels, by leveraging our planning and advisory offerings, our integrated business model, strong client loyalty and investments in our digital capabilities and sales force. Traditional competitors continue to expand their advisory sales forces and product offerings, including exchange traded funds and alternative investment solutions, to meet customers' evolving needs. Non-traditional competitors have continued to gain momentum and are differentiating their offerings by delivering an enhanced digital experience, while also entering niche markets. In fiscal 2021, BMO Wealth Management benefitted from growing momentum in both the equity markets and the economy, as continued high levels of client trading activity drove robust volume growth. Results were also impacted by the continued low interest rate environment, which has put pressure on margins, as well as clients' preference for investments that carry lower management fees. We continue to provide our clients with expert advice, as we assist them in navigating through volatile and uncertain market conditions. We have introduced new and differentiated products and enhanced our digital advisory capabilities, all of which led to strong growth in net new assets, deposits, loans and our online brokerage client base.

The outlook for equity markets could shift quickly if the economy is further impacted by supply-chain disruptions, labour shortages, rising inflation rates and geopolitical factors, including ongoing uncertainty relating to public health restrictions. Interest rates are expected to remain historically low in the near term before rising slowly, which would positively affect margins and insurance revenue. Online brokerage transaction levels moderated in the second half of fiscal 2021, but are expected to remain above pre-pandemic levels. BMO InvestorLine continues to attract new clients through digital platform enhancements, as well as the launch of adviceDirect™ Preview and Premium, and is expanding access to adviceDirect™ for more Canadians with a lower minimum investment balance required for entry.

The divestiture of our Private Banking business in Hong Kong and Singapore and the sale of our EMEA Asset Management business, which closed on November 8, 2021, will reduce revenue and expenses, improve efficiency and return on equity, and are expected to have a modest impact on our income in fiscal 2022.

The Canadian and U.S. economic environment in fiscal 2021 and the outlook for fiscal 2022 are discussed in more detail in the Economic Developments and Outlook section.

Caution

This BMO Wealth Management section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

BMO Capital Markets

BMO Capital Markets is a North American-based financial services provider offering a complete range of products and services to corporate, institutional and government clients. BMO Capital Markets has approximately 2,600 professionals in 32 locations around the world, including 18 offices in North America.

Lines of Business

Investment and Corporate Banking offers debt and equity capital-raising services to clients, as well as loan origination and syndication, balance sheet management solutions and treasury management services. The division also provides clients with strategic advice on mergers and acquisitions (M&A), restructurings and recapitalizations, trade finance and risk mitigation services to support international business activities, and a wide range of banking and other operating services tailored to North American and international financial institutions.

Global Markets offers research and access to financial markets for institutional, corporate and retail clients through an integrated suite of sales and trading solutions that include debt, foreign exchange, interest rate, credit, equity, securitization and commodities. New product development and origination services are also offered, as well as risk management advice and services to hedge against fluctuations in a variety of key inputs, including interest rates and commodities prices. In addition, Global Markets provides funding and liquidity management to clients.

Strategy and Key Priorities

2021 Priorities and Achievements

Key Priority: Expand on our strengths and capabilities to deliver value-added solutions and meet client needs

Achievements

- Continued a leadership role in M&A with strong global expertise across sectors and deep client relationships, advising on landmark transactions such as the US\$2.5 billion acquisition of Core-Mark by Performance Food Group
- Supported clients with top-tier market insights and facilitated groundbreaking initial public offerings, including Magnet Forensics and Alphawave IP; ranked #1* in Canadian Equity Capital Markets, leading high-profile financings such as Algonquin Power
- Built out a U.S. Commercial Mortgage-Backed Securities team, leveraging both our securitized products platform and our North American Real Estate banking coverage, and originated and securitized more than US\$1.2 billion in commercial real estate loans
- Maintained a long-standing global leadership position in the Metals & Mining sector, earning recognition as the Best Metals & Mining Investment Bank by *Global Finance* magazine for the 12th consecutive year
- Advanced our commitment of people and capital to serve as our clients' lead partner in the transition to a net zero world by:
 - Establishing an Energy Transition Group
 - Providing expertise and support across industries
 - Delivering industry-leading, innovative sustainable financing solutions, including the first labelled Green Loan and the first sustainability-linked bond in Canada, and ranked #1* in Canadian sustainable bond underwriting
- Recognized as a leader with top rankings* in U.S. sovereign, supranational and agency (SSA) issuances, Canadian options and Canadian structured rates, and maintained BMO's position at the forefront of U.S. secured overnight financing rate (SOFR) debt underwriting, ranking #1* since the offering was launched in 2018
- Recognized at the International Business Awards 2021 for the marketing campaigns for our digital series *Road to Recovery* and our podcast series *Sustainability Leaders*

* Rankings as in Bloomberg Professional Services' league tables.

Key Priority: Build on a solid foundation to work smarter, simplify and digitize to enhance efficiencies

Achievements

- Expanded electronic foreign exchange (eFX) capabilities, introducing new foreign-exchange functionality in our Commercial Banking platform and launching an eFX retail platform
- With the 2020 acquisition of Clearpool Group, Inc., doubled our algorithmic trading market share in Canada, simplified workflow, provided clients with a highly differentiated and customized trading experience, and expanded electronic trading capabilities to Europe
- Partnered with Riskfuel Analytics Inc. to deliver innovative artificial intelligence-based solutions that support clients as they prepare to make faster, smarter investment decisions
- Deployed technology enhancements, workflow tools and process automation to increase employee productivity. Over three years, our employees achieved real-time efficiencies that led to time savings totalling approximately three-quarters of our *Million Hour Challenge* objective
- Pivoted conferences to fully digital platforms, with corporate attendance at 18 conferences up more than 100%

Key Priority: Activate an inclusive, high-performance culture focused on clients, strong partnerships and alignment, and a commitment to diversity, equity and inclusion

Achievements

- Leveraged improvements in technology and real estate to transform our workplaces and enhance the client and employee experience across our global footprint
- Launched innovative programs and sponsorships to drive greater equity and inclusion across our workforce, industry and communities
- Launched the inaugural BMO Women in Business bond offering, the first of its kind in the Canadian market, with proceeds allocated to women-owned business lending, including financing for micro, small and medium-sized enterprises

2022 Focus

- Accelerate growth in areas where we are well-positioned and have the expertise and capabilities to deliver value-added solutions and provide an enhanced client experience
- Deploy digital-first capabilities with an increased focus on data, analytics and artificial intelligence to drive simplification and scale
- Become an industry leader in sustainable finance, providing advice and innovative solutions to help our clients reach their environmental, social and governance objectives
- Foster and drive an inclusive, winning culture, focused on alignment, empowerment and recognition, with a commitment to a diverse and inclusive workplace

BMO Capital Markets ⁽¹⁾

(Canadian \$ in millions, except as noted)
As at or for the year ended October 31

	2021	2020	2019
Net interest income (teb) (2)	3,115	3,320	2,390
Non-interest revenue	3,011	2,006	2,369
Total revenue (teb)	6,126	5,326	4,759
Provision for credit losses on impaired loans	11	310	52
Provision for (recovery of) credit losses on performing loans	(205)	349	28
Total provision for (recovery of) credit losses	(194)	659	80
Non-interest expense	3,436	3,236	3,279
Income before income taxes	2,884	1,431	1,400
Provision for income taxes (teb)	744	344	309
Reported net income	2,140	1,087	1,091
Acquisition integration costs (3)	7	11	10
Amortization of acquisition-related intangible assets (4)	17	18	17
Adjusted net income	2,164	1,116	1,118
Adjusted non-interest expense	3,405	3,199	3,244

Key Performance Metrics and Drivers

Global Markets revenue	3,605	3,222	2,704
Investment and Corporate Banking revenue	2,521	2,104	2,055
Net income growth (%)	96.9	(0.4)	(5.9)
Adjusted net income growth (%)	94.1	(0.2)	(4.7)
Revenue growth (%)	15.0	11.9	8.5
Non-interest expense growth (%)	6.2	(1.3)	13.9
Adjusted non-interest expense growth (%)	6.4	(1.4)	13.4
Return on equity (%) (5)	19.2	9.2	9.9
Adjusted return on equity (%) (5)	19.5	9.5	10.1
Operating leverage (teb) (%)	8.8	13.2	(5.4)
Adjusted operating leverage (teb) (%)	8.6	13.3	(4.9)
Efficiency ratio (teb) (%)	56.1	60.8	68.9
Adjusted efficiency ratio (teb) (%)	55.6	60.1	68.2
Average common equity	10,913	11,353	10,430
Average assets	372,475	369,518	342,626
Average gross loans and acceptances	59,385	68,698	60,819
Average net loans and acceptances	58,909	68,303	60,731
Full-time equivalent employees	2,597	2,678	2,772

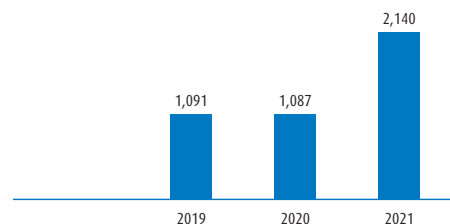
U.S. Business Select Financial Data (US\$ in millions)

Total revenue (teb)	2,373	1,865	1,609
Non-interest expense	1,288	1,152	1,197
Reported net income	857	279	292
Adjusted net income	876	299	312
Adjusted non-interest expense	1,263	1,125	1,171
Average assets	127,619	116,307	107,185
Average net loans and acceptances	25,249	26,161	21,662

- (1) Adjusted results and ratios, teb amounts and U.S. dollar amounts in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.
- (2) Taxable equivalent basis amounts of \$291 million in fiscal 2021, \$307 million in fiscal 2020 and \$262 million in fiscal 2019 are recorded in net interest income.
- (3) KGS-Alpha and Clearpool pre-tax acquisition integration costs of \$9 million in 2021, \$14 million in 2020 and \$13 million in 2019 are recorded in non-interest expense.
- (4) Amortization of acquisition-related intangible assets pre-tax amounts of \$22 million in 2021, \$23 million in 2020 and \$22 million in 2019 are recorded in non-interest expense.
- (5) Return on equity is based on allocated capital. For further information, refer to the Non-GAAP and Other Financial Measures section.

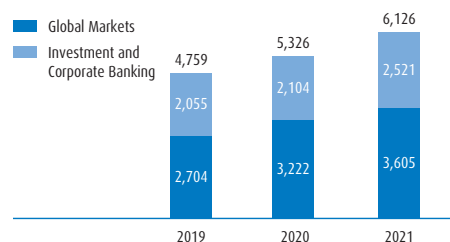
Reported Net Income

(\$ millions)



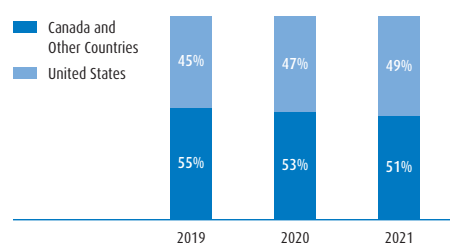
Revenue by Line of Business

(\$ millions)



Revenue by Geography

(%)



Financial Review

BMO Capital Markets reported net income was \$2,140 million, an increase of \$1,053 million or 97% from the prior year. Recoveries of provisions for credit losses and revenue growth were partially offset by an increase in expenses.

Revenue was \$6,126 million, an increase of \$800 million or 15% from the prior year. Global Markets revenue increased \$383 million or 12%, primarily due to higher equities trading revenue, as well as higher levels of new equity and debt issuances, partially offset by lower interest rate and commodities trading revenue and the impact of the weaker U.S. dollar. The prior year included negative impacts from equity linked notes-related businesses. Investment and Corporate Banking revenue increased \$417 million or 20%, primarily due to higher net securities gains and underwriting and advisory revenue, partially offset by lower corporate banking-related revenue and the impact of the weaker U.S. dollar. The prior year was impacted by markdowns on the held-for-sale loan portfolio.

Total recovery of credit losses was \$194 million, compared with a provision for credit losses of \$659 million in the prior year. The provision for credit losses on impaired loans was \$11 million, a decrease of \$299 million from the prior year. There was a recovery of the provision for credit losses on performing loans of \$205 million in the current year, compared with a provision of \$349 million in the prior year.

Reported non-interest expense was \$3,436 million, an increase of \$200 million or 6% from the prior year. The increase was largely due to higher performance-based compensation, partially offset by the impact of the weaker U.S. dollar and lower travel and business development costs.

Average gross loans and acceptances decreased \$9.3 billion or 14% from the prior year to \$59.4 billion, primarily due to lower loan utilizations, the impact of the weaker U.S. dollar and the announced wind-down of our non-Canadian energy portfolio.

For further information on non-GAAP amounts, measures and ratios in this 2021 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

Business Environment and Outlook

In fiscal 2021, BMO Capital Markets continued to execute on a strategy that leverages its balanced, diversified and client-focused business model, while maintaining disciplined risk management. The business benefitted from ongoing high levels of client activity, robust equity prices and favourable conditions for investment banking services, all of which contributed to strong results, despite lingering uncertainty surrounding the COVID-19 pandemic and the emergence of new variants, the normalization of market volatility, the low interest rate environment and muted loan demand.

BMO Capital Markets is emerging from the pandemic as a stronger, more efficient and better-integrated organization. Looking ahead to fiscal 2022, the pace of economic recovery remains uncertain, despite high rates of vaccination in certain regions. Supply-chain disruptions, labour shortages and higher inflation rates continue to generate headwinds for our business. However, mergers and acquisitions activity is expected to remain robust, as it benefits from active private equity funds and supportive debt and equity markets. BMO Capital Markets' strategy remains unchanged: a sharp focus on clients, aiming to be their valued financial partner – leveraging talent, innovative solutions and capital to help them achieve their goals while deploying digital-first solutions that drive simplification and scale. With a leading position in Canada and strong momentum in the United States, our investments in product offerings and capabilities that help us serve clients, particularly where BMO has core strengths and opportunities, are building a solid foundation for profitable growth and sustainable returns. In addition, BMO Capital Markets' disciplined and integrated approach to risk management, along with continued investments in technology infrastructure, is expected to position the business well to adapt to evolving regulatory and compliance requirements in the coming years. BMO Capital Markets has also made sustainability and sustainable finance a core part of its strategy, providing innovative financing solutions and advice to support clients in the accelerating shift to a more sustainable economy.

The Canadian and U.S. economic environment in fiscal 2021 and the outlook for fiscal 2022 are discussed in more detail in the Economic Developments and Outlook section.

Caution

This BMO Capital Markets section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Corporate Services, including Technology and Operations

Corporate Services consists of Corporate Units and Technology and Operations (T&O). Corporate Units provide enterprise-wide expertise, governance and support in a variety of areas, including strategic planning, risk management, treasury, finance, legal and regulatory compliance, human resources, communications, marketing, real estate and procurement. T&O develops, monitors, manages and maintains governance of information technology, including data and analytics, and provides cyber security and operations services.

Corporate Services focuses on enterprise-wide priorities related to maintaining a sound risk and control environment and regulatory compliance, including the management, assessment and monitoring of BMO's investment portfolios, funding, liquidity and capital activities, and credit, foreign exchange and interest rate risks. In support of the operating segments, Corporate Services develops and implements enterprise-wide processes, systems and controls to maintain operating efficiency and enable our businesses to adapt and meet their customer experience objectives.

The costs of Corporate Units and T&O services are largely allocated to the four operating segments (Canadian P&C, U.S. P&C, BMO Wealth Management and BMO Capital Markets), with any remaining amounts retained in Corporate Services results. As such, Corporate Services results largely reflect the impact of residual treasury-related activities, the elimination of taxable equivalent adjustments, and residual unallocated expenses.

Achievements

- Advanced BMO's digital first operating model by delivering digitally driven customer experiences through various initiatives
- Continued to advance the capabilities of our Financial Crimes Unit (FCU) to respond to a heightened and evolving threat landscape by further integrating our cyber, fraud, physical security and crisis management functions into a single cohesive security team. Technology, people and process areas of focus included enhancing detection and response capabilities, improving identity and access management, and ensuring resilience against virtual and physical attacks
- Supported an accelerated adoption of cloud-based solutions, strengthened cloud service delivery partnerships and built out a foundational platform to equip BMO with a new generation of security and monitoring capabilities and the flexibility to adapt in an ever-changing security landscape
- Further enhanced our artificial intelligence and data and analytics capabilities across the bank, and supported business initiatives that have earned global recognition and awards. Research and exploration focused on emerging technology innovation is continuing, as new opportunities are identified
- Sustained delivery of critical technology services and operations across the enterprise, continuously improving foundational capabilities to build resilience and scalability and elevate the overall technology-enabled experience for customers and employees
- Continued to focus on elevating the employee experience through enterprise digital technology tools, and on facilitating a prudent return to the workplace

Corporate Services, including Technology and Operations ⁽¹⁾

(Canadian \$ in millions, except as noted)
As at or for the year ended October 31

	2021	2020	2019
Net interest income before group teb offset	(301)	(364)	(242)
Group teb offset	(315)	(335)	(296)
Net interest income (teb)	(616)	(699)	(538)
Non-interest revenue	326	285	238
Total revenue (teb)	(290)	(414)	(300)
Provision for (recovery of) credit losses on impaired loans	(5)	3	(7)
Provision for (recovery of) credit losses on performing loans	(2)	-	(5)
Total provision for (recovery of) credit losses	(7)	3	(12)
Non-interest expense	1,523	455	856
Income (loss) before income taxes	(1,806)	(872)	(1,144)
Recovery of income taxes (teb)	(520)	(482)	(517)
Reported net loss	(1,286)	(390)	(627)
Impact of divestitures (2)	842	-	-
Restructuring costs (reversals) (3)	(18)	-	357
Adjusted net loss (4)	(462)	(390)	(270)
Adjusted total revenue (teb) (4)	(319)	(414)	(300)
Adjusted non-interest expense (4)	661	455	372
Full-time equivalent employees	13,791	14,400	14,898

U.S. Business Select Financial Data (US\$ in millions)

Total revenue	(26)	(116)	(37)
Total provision for (recovery of) credit losses	(6)	3	(4)
Non-interest expense	182	97	192
Recovery of income taxes	(90)	(88)	(76)
Reported net loss	(112)	(128)	(149)
Adjusted total revenue	(26)	(116)	(37)
Adjusted non-interest expense	164	97	76
Adjusted net loss	(98)	(128)	(63)

(1) Adjusted results and ratios, teb amounts and U.S. dollar amounts in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

(2) Fiscal 2021 reported net income included a \$779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business recorded in non-interest expense, a \$22 million (\$29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore recorded in non-interest revenue, and \$85 million (\$107 million pre-tax) of divestiture-related costs for both transactions recorded in non-interest expense.

(3) Fiscal 2019 reported net income included a \$357 million (\$484 million pre-tax) restructuring charge related to severance and a small amount of real estate-related costs. Fiscal 2021 reported net income included a partial reversal of restructuring charges related to severance of \$18 million (\$24 million pre-tax). Restructuring charges and the partial reversal were recorded in non-interest expense.

(4) Adjusted results exclude the impact of the items described in footnotes (2) and (3).

Financial Review

Corporate Services reported net loss was \$1,286 million and adjusted net loss was \$462 million, compared with a reported and adjusted net loss of \$390 million in the prior year. Adjusted results in the current year excluded the impact of divestitures of \$842 million (\$857 million pre-tax), including a \$779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business, a \$22 million (\$29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore, and \$85 million (\$107 million pre-tax) of divestiture-related costs for both transactions, as well as an \$18 million (\$24 million pre-tax) partial reversal of restructuring charges recorded in 2019 related to severance. The higher reported and adjusted net loss reflected an increase in expenses, partially offset by higher revenue that was driven by higher securities gains and treasury-related activities, and the impact of a less favourable tax rate in the prior year.

For further information on non-GAAP amounts, measures and ratios in this 2021 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

Review of Fourth Quarter 2021 Performance

Q4 2021 vs. Q4 2020

Net Income

Reported net income was \$2,159 million, an increase of \$575 million or 36% from the prior year, and adjusted net income was \$2,226 million, an increase of \$616 million or 38%. Adjusted results in the current quarter excluded expenses of \$52 million (\$62 million pre-tax) from the impact of divestitures related to the sale of our EMEA Asset Management business and the sale of our Private Banking business in Hong Kong and Singapore. Adjusted results also excluded the amortization of acquisition-related intangible assets and acquisition integration costs in both the current and prior years. Reported EPS was \$3.23, an increase of \$0.86 from the prior year, and adjusted EPS was \$3.33, an increase of \$0.92.

Results were driven by strong revenue growth and the impact of lower provisions for credit losses, partially offset by an increase in expenses. All operating groups recorded higher net income, while Corporate Services recorded a higher net loss.

Revenue

Reported revenue was \$6,573 million, an increase of \$587 million or 10% from the prior year. On a basis that nets insurance claims, commissions and changes in policy benefit liabilities (CCPB) against insurance revenue (net revenue), revenue was \$6,476 million, an increase of \$490 million or 8% from the prior year.

Revenue increased in Canadian P&C due to higher net interest income and higher non-interest revenue, in BMO Wealth Management, largely from growth in client assets, including stronger global markets, partially offset by lower insurance revenue, in BMO Capital Markets due to higher Investment and Corporate Banking revenue, partially offset by lower Global Markets revenue, and in U.S. P&C due to higher net interest income and higher non-interest revenue. Corporate Services revenue decreased from the prior year. The impact of the weaker U.S. dollar decreased total revenue by 2%.

Insurance Claims, Commissions and Changes in Policy Benefit Liabilities

Insurance claims, commissions and changes in policy benefit liabilities (CCPB) were \$97 million, compared with \$nil in the prior year. The increase was largely due to changes in the fair value of policy benefit liabilities. CCPB decreased \$887 million from the prior quarter due to changes in the fair value of policy benefit liabilities. The changes were largely offset in revenue.

Provision for Credit Losses

Total recovery of the provision for credit losses was \$126 million, compared with a provision for credit losses of \$432 million in the prior year. The total recovery of the provision for credit losses as a percentage of average net loans and acceptances ratio was 11 basis points, compared with a provision for credit losses ratio of 37 basis points in the prior year. The provision for credit losses on impaired loans was \$84 million, a decrease of \$255 million from \$339 million in the prior year. The provision for credit losses on impaired loans as a percentage of average net loans and acceptances ratio was 7 basis points, compared with 29 basis points in the prior year. There was a \$210 million recovery of the provision for credit losses on performing loans in the current quarter, compared with a \$93 million provision in the prior year. The \$210 million recovery in the current quarter largely reflected an improving economic outlook and positive credit migration, partially offset by growth in loan balances, while the \$93 million provision in the prior year reflected a more severe adverse scenario, partially offset by an improving economic outlook and reduced balances.

Non-Interest Expense

Reported non-interest expense was \$3,803 million, an increase of \$255 million or 7% from the prior year, including \$62 million of expenses from the impact of divestitures in the current year. Adjusted non-interest expense was \$3,720 million, an increase of \$205 million or 6%. The increase in expenses was primarily due to higher employee-related costs, including performance-based costs, travel and business development costs, computer and equipment costs, and professional fees, partially offset by the impact of the weaker U.S. dollar that decreased expenses by 2%.

Provision for Income Taxes

The provision for income taxes was \$640 million, an increase of \$218 million from the prior year, and the effective tax rate was 22.9%, compared with 21.1% in the prior year. The adjusted provision for income taxes was \$656 million, an increase of \$227 million from the prior year, and the adjusted effective tax rate was 22.7%, compared with 21.1% in the prior year. The effective tax rate and adjusted effective tax rate were lower in the prior year primarily due to earnings mix, including the impact of lower pre-tax income in the prior year.

Q4 2021 vs. Q3 2021

Reported net income decreased \$116 million or 5% from the prior quarter, and adjusted net income decreased \$66 million or 3%. Adjusted results in the prior quarter excluded divestiture costs of \$18 million (\$24 million pre-tax) and a partial reversal of previously recorded restructuring charges related to severance of \$18 million (\$24 million pre-tax), as well as the amortization of acquisition-related intangible assets and acquisition integration costs. Results were primarily driven by lower revenue and an increase in expenses, partially offset by the impact of a larger recovery of the provision for credit losses. Net income increased in Canadian P&C and was partially offset by decreases in U.S. P&C, BMO Wealth Management and BMO Capital Markets. Corporate Services recorded a higher net loss.

Revenue was \$6,573 million, a decrease of \$989 million or 13% from the prior quarter. Revenue, net of CCPB, was \$6,476 million, a decrease of \$102 million or 2%. Reported non-interest expense increased \$119 million or 3% from the prior quarter. Adjusted non-interest expense increased \$58 million or 2%. Total recovery of the provision for credit losses was \$126 million, compared with a recovery of \$70 million in the prior quarter.

For further information on non-GAAP amounts, measures and ratios in this Review of Fourth Quarter 2021 Performance section, refer to the Non-GAAP and Other Financial Measures section.

Summary Quarterly Earnings Trends

Summarized Statement of Income and Quarterly Financial Measures ⁽¹⁾

(Canadian \$ in millions, except as noted)	Q4-2021	Q3-2021	Q2-2021	Q1-2021	Q4-2020	Q3-2020	Q2-2020	Q1-2020
Net interest income (teb)	3,756	3,521	3,455	3,578	3,530	3,535	3,518	3,388
Non-interest revenue	2,817	4,041	2,621	3,397	2,456	3,654	1,746	3,359
Revenue (teb)	6,573	7,562	6,076	6,975	5,986	7,189	5,264	6,747
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	97	984	(283)	601	-	1,189	(197)	716
Revenue, net of CCPB (teb)	6,476	6,578	6,359	6,374	5,986	6,000	5,461	6,031
Provision for credit losses on impaired loans	84	71	155	215	339	446	413	324
Provision for (recovery of) credit losses on performing loans	(210)	(141)	(95)	(59)	93	608	705	25
Total provision for (recovery of) credit losses	(126)	(70)	60	156	432	1,054	1,118	349
Non-interest expense	3,803	3,684	4,409	3,613	3,548	3,444	3,516	3,669
Income before provision for income taxes	2,799	2,964	1,890	2,605	2,006	1,502	827	2,013
Provision for income taxes (teb)	640	689	587	588	422	270	138	421
Reported net income (see below)	2,159	2,275	1,303	2,017	1,584	1,232	689	1,592
Acquisition integration costs (2)	1	2	2	2	3	4	2	2
Amortization of acquisition-related intangible assets (3)	14	15	18	19	23	23	24	23
Impact of divestitures (4)	52	18	772	-	-	-	-	-
Restructuring costs (reversals) (5)	-	(18)	-	-	-	-	-	-
Adjusted net income (see below)	2,226	2,292	2,095	2,038	1,610	1,259	715	1,617
Operating group reported net income								
Canadian P&C reported net income	921	815	764	737	647	319	362	699
Amortization of acquisition-related intangible assets (3)	-	-	1	-	1	-	1	-
Canadian P&C adjusted net income	921	815	765	737	648	319	363	699
U.S. P&C reported net income	512	553	542	582	324	263	339	351
Amortization of acquisition-related intangible assets (3)	6	6	5	7	9	10	10	10
U.S. P&C adjusted net income	518	559	547	589	333	273	349	361
BMO Wealth Management reported net income	369	401	346	358	320	341	144	291
Amortization of acquisition-related intangible assets (3)	4	5	7	8	8	8	9	9
BMO Wealth Management adjusted net income	373	406	353	366	328	349	153	300
BMO Capital Markets reported net income	536	558	563	483	379	426	(74)	356
Acquisition integration costs (2)	1	2	2	2	3	4	2	2
Amortization of acquisition-related intangible assets (3)	4	4	5	4	5	5	4	4
BMO Capital Markets adjusted net income	541	564	570	489	387	435	(68)	362
Corporate Services reported net loss	(179)	(52)	(912)	(143)	(86)	(117)	(82)	(105)
Impact of divestitures (4)	52	18	772	-	-	-	-	-
Restructuring costs (reversals) (5)	-	(18)	-	-	-	-	-	-
Corporate Services adjusted net loss	(127)	(52)	(140)	(143)	(86)	(117)	(82)	(105)
Basic earnings per share (\$) (6) (7)	3.24	3.42	1.91	3.03	2.37	1.81	1.00	2.38
Diluted earnings per share (\$) (6) (7)	3.23	3.41	1.91	3.03	2.37	1.81	1.00	2.37
Adjusted diluted earnings per share (\$)	3.33	3.44	3.13	3.06	2.41	1.85	1.04	2.41
Net interest margin on average earning assets (%)	1.62	1.57	1.59	1.59	1.60	1.59	1.69	1.67
PCL-to-average net loans and acceptances (annualized) (%)	(0.11)	(0.06)	0.05	0.14	0.37	0.89	0.94	0.31
PCL on impaired loans-to-average net loans and acceptances (annualized) (%)	0.07	0.06	0.13	0.19	0.29	0.38	0.35	0.29
Effective tax rate (%)	22.9	23.2	31.1	22.6	21.1	18.0	16.6	20.9
Adjusted effective tax rate (%)	22.7	23.2	22.1	22.6	21.1	18.2	16.7	21.0
Canadian/U.S. dollar average exchange rate (\$)	1.2546	1.2316	1.2512	1.2841	1.3217	1.3584	1.3811	1.3161

- Revenue measures, net of CCPB, adjusted results and ratios teb amounts, and U.S. dollar amounts in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.
- Acquisition integration costs related to the acquired BMO Transportation Finance business are charged to Corporate Services, since the acquisition impacts both Canadian and U.S. P&C businesses. Acquisition integration costs related to KGS-Alpha and Clearpool are reported in BMO Capital Markets. Acquisition integration costs are recorded in non-interest expense.
- Amortization of acquisition-related intangible assets is charged to non-interest expense in the related operating group.
- Q2-2021 reported net income included the impact of divestitures, comprising a \$747 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business recorded in non-interest expense, a \$22 million (\$29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore recorded in non-interest revenue, and \$47 million (\$53 million pre-tax) of divestiture-related costs for both transactions recorded in non-interest expense. The impact of divestitures for these transactions was \$18 million (\$24 million pre-tax) in Q3-2021 and \$52 million (\$62 million pre-tax) in Q4-2021 recorded in non-interest expense in Corporate Services.
- Q3-2021 reported net income included a partial reversal of restructuring charges related to severance of \$18 million (\$24 million pre-tax). Restructuring charges and reversal were recorded in non-interest expense in Corporate Services.
- Earnings per share (EPS) is calculated using net income after deducting total dividends on preferred shares and distributions on other equity instruments. For more information on EPS, refer to Note 23 of the consolidated financial statements.
- Net income and earnings from our business operations are attributable to shareholders by way of EPS and diluted EPS. Adjusted EPS and adjusted diluted EPS are non-GAAP measures. For further information, refer to the Non-GAAP and Other Financial Measures section.

Financial performance in recent quarters has generally been trending upward, due to improving economic conditions and good operating momentum across our businesses, including lower provisions for credit losses, strong revenue growth and improved efficiency. While results in 2020 were negatively impacted by the significant adverse effects of the COVID-19 pandemic on the global economy, a reduction in interest rates and lower levels of consumer and business activity and borrowing, economic conditions subsequently rebounded and continue to improve. However, the unpredictable course of the COVID-19 pandemic, including the emergence of variants and a possible resurgence of cases globally, contributes to ongoing economic uncertainty.

Reported results in the second quarter of 2021 included a write-down of goodwill related to the sale of our EMEA Asset Management business and a net gain on the sale of our Private Banking business in Hong Kong and Singapore. The last three quarters of 2021 reflected the impact of divestitures related to these transactions. The third quarter of 2021 also included a partial reversal of a restructuring charge recorded in 2019. All periods included the amortization of acquisition-related intangible assets and acquisition integration costs.

Total revenue growth reflects the benefits of our diversified businesses. Revenue growth in the P&C businesses was initially negatively impacted by the COVID-19 pandemic, the low interest rate environment and lower non-interest revenue due to lower levels of client activity, which have been rising in the most recent quarters as public health restrictions have been relaxed. Canadian P&C benefitted from strong growth in residential mortgages and home equity lines of credit, reflecting higher levels of housing market activity. Revenue in U.S. P&C on a source-currency basis rebounded in 2021, driven by higher loan spreads and Paycheck Protection Program revenue, and has remained relatively stable over the last four quarters due to more muted industry loan growth. In BMO Wealth Management, Traditional Wealth revenue performance has been supported by stronger global markets. Insurance revenue, net of CCPB, is subject to variability, primarily resulting from changes in interest rates and equity markets. BMO Capital Markets recorded year-over-year revenue growth in seven of the past eight quarters, primarily reflecting higher trading and underwriting revenue due to robust client activity, while the second quarter of 2020 was negatively impacted by volatile market conditions resulting from the COVID-19 pandemic. Revenue in the fourth quarter of 2021 reflected good performance in all operating groups. Revenue growth has also been impacted by changes in the strength of the U.S. dollar.

In 2020, we recorded higher provisions for credit losses in all businesses, primarily due to the impact of the COVID-19 pandemic, including higher provisions for credit losses on performing loans in the wake of the economic downturn brought on by the pandemic. In 2021, we recorded lower provisions for credit losses on impaired loans, as well as recoveries of provisions for credit losses on performing loans, which reflected the improving economic outlook and more favourable credit conditions.

Non-interest expense reflected our focus on expense management and efficiency improvement. In recent quarters, non-interest expense growth has been driven by higher performance-based compensation reflecting improved revenue performance, and higher technology and marketing costs, partially offset by lower net COVID-19 related costs, as well as lower travel costs due to the continued impact of the pandemic. Expenses were also impacted by changes in the strength of the U.S. dollar.

The effective tax rate has varied with legislative changes; changes in tax policy, including their interpretation by tax authorities and the courts; earnings mix, including the relative proportion of earnings attributable to the different jurisdictions in which we operate, the level of pre-tax income, and the level of tax-exempt income from securities. The effective tax rate in 2021 was impacted by the write-down of goodwill related to the sale of our EMEA Asset Management business.

For further information on non-GAAP amounts, measures and ratios in this Summary Quarterly Earnings Trends section, refer to the Non-GAAP and Other Financial Measures section.

2020 Financial Performance Review

The preceding discussions in the MD&A focused on BMO's performance in fiscal 2021. This section summarizes BMO's performance in fiscal 2020, relative to fiscal 2019. Certain prior-year data has been reclassified to conform with the presentation in 2021, including changes resulting from transfers between operating groups. Further information on these reclassifications is provided in the How BMO Reports Operating Group Results section.

(Canadian \$ in millions)	Canadian P&C	U.S. P&C	Total P&C	BMO Wealth Management	BMO Capital Markets	Corporate Services	Total Bank
2020							
Net interest income (teb) (1)	6,105	4,345	10,450	900	3,320	(699)	13,971
Non-interest revenue	1,930	1,186	3,116	5,808	2,006	285	11,215
Revenue	8,035	5,531	13,566	6,708	5,326	(414)	25,186
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	-	-	-	1,708	-	-	1,708
Revenue, net of CCPB	8,035	5,531	13,566	5,000	5,326	(414)	23,478
Provision for credit losses	1,410	859	2,269	22	659	3	2,953
Non-interest expense	3,892	3,075	6,967	3,519	3,236	455	14,177
Income (loss) before income taxes (teb) (1)	2,733	1,597	4,330	1,459	1,431	(872)	6,348
Provision for (recovery of) income taxes	706	320	1,026	363	344	(482)	1,251
Net income (loss)	2,027	1,277	3,304	1,096	1,087	(390)	5,097
Acquisition integration costs	-	-	-	-	11	-	11
Amortization of acquisition-related intangible assets	2	39	41	34	18	-	93
Restructuring costs	-	-	-	-	-	-	-
Reinsurance adjustment	-	-	-	-	-	-	-
Adjusted net income (loss)	2,029	1,316	3,345	1,130	1,116	(390)	5,201
2019							
Net interest income (teb) (1)	5,885	4,216	10,101	935	2,390	(538)	12,888
Non-interest revenue	2,099	1,162	3,261	6,727	2,369	238	12,595
Revenue	7,984	5,378	13,362	7,662	4,759	(300)	25,483
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	-	-	-	2,709	-	-	2,709
Revenue, net of CCPB	7,984	5,378	13,362	4,953	4,759	(300)	22,774
Provision for (recovery of) credit losses	607	197	804	-	80	(12)	872
Non-interest expense	3,836	3,136	6,972	3,523	3,279	856	14,630
Income (loss) before income taxes (teb) (1)	3,541	2,045	5,586	1,430	1,400	(1,144)	7,272
Provision for (recovery of) income taxes	917	434	1,351	371	309	(517)	1,514
Net income (loss)	2,624	1,611	4,235	1,059	1,091	(627)	5,758
Acquisition integration costs	-	-	-	-	10	-	10
Amortization of acquisition-related intangible assets	2	43	45	37	17	-	99
Restructuring costs	-	-	-	-	-	357	357
Reinsurance adjustment	-	-	-	25	-	-	25
Adjusted net income (loss)	2,626	1,654	4,280	1,121	1,118	(270)	6,249

(1) BMO analyzes revenue on a teb basis at the operating group level, with the offset to the group teb adjustments recorded in Corporate Services non-interest revenue and provision for income taxes. Revenue measures, net of CCPB, adjusted results and ratios, teb amounts and U.S. dollar amounts in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

Net Income

Reported net income in 2020 was \$5,097 million, a decrease of \$661 million or 11% from \$5,758 million in 2019. Adjusted net income was \$5,201 million, a decrease of \$1,048 million or 17% from \$6,249 million in 2019. Adjusted net income in both 2020 and 2019 excluded the amortization of acquisition-related intangible assets and acquisition-related costs. Adjusted net income in 2019 also excluded a restructuring charge, primarily severance-related, and the net impact of major reinsurance claims resulting from Japanese typhoons incurred after the announced wind-down of the reinsurance business. The decline in adjusted net income reflected the impact of higher provisions for credit losses, which increased \$2,081 million pre-tax or \$1,531 million after tax, partially offset by higher revenue, while adjusted expenses were relatively unchanged. Decreases in net income were recorded in the P&C businesses, while net income in BMO Capital Markets and BMO Wealth Management was largely unchanged from 2019. In Corporate Services, the reported net loss decreased from 2019, while the adjusted net loss increased.

Return on Equity

Reported return on equity (ROE) in 2020 was 10.1% and adjusted ROE was 10.3%, compared with 12.6% and 13.7%, respectively, in 2019. Reported and adjusted ROE decreased in 2020, primarily due to lower net income and higher common equity. There was a decrease of \$697 million or 13% in reported net income available to common shareholders, and a decrease of \$1,084 million or 18% in adjusted net income available to common shareholders from 2019. Average common shareholders' equity increased \$4.1 billion or 9% from 2019, primarily due to growth in retained earnings and accumulated other comprehensive income.

Revenue

Reported revenue in 2020 was \$25,186 million, a decrease of \$297 million from \$25,483 million in 2019. On a basis that nets insurance claims, commissions and changes in policy benefit liabilities (CCPB) against insurance revenue (net revenue), revenue was \$23,478 million, an increase of \$704 million or 3%. Revenue, net of adjusted CCPB, increased \$679 million or 3% from the prior year, and excluded the \$25 million net impact of major reinsurance claims in 2019. The increase in revenue was largely driven by strong performance in BMO Capital Markets, primarily due to increased trading revenue, and revenue growth in the P&C businesses and BMO Wealth Management, partially offset by a decrease in Corporate Services revenue.

Canadian P&C

Revenue increased \$51 million or 1% from 2019, due to higher average balances across most products, partially offset by lower margins reflecting the low interest rate environment, and lower non-interest revenue, largely due to lower credit card fee revenue and deposit fee revenue.

U.S. P&C

Revenue increased \$153 million or 3% from 2019 on a Canadian dollar basis. On a U.S. dollar basis, revenue increased \$65 million or 2%, primarily due to growth in average deposit and loan balances, as well as higher loan margins and higher non-interest revenue, partially offset by lower deposit product margins, reflecting the impact of lower interest rates.

BMO Wealth Management

Revenue, net of reported and adjusted CCPB, increased \$47 million or 1% on a reported basis and \$22 million on an adjusted basis from 2019. Revenue in Traditional Wealth increased \$38 million, primarily due to higher elevated online brokerage revenue and growth in client assets, net of fee pressure, partially offset by a legal provision in 2020 and lower net interest income, as the benefits of strong loan and deposit growth were more than offset by lower margins. Insurance revenue, net of reported and adjusted CCPB, increased \$9 million on a reported basis and decreased \$16 million on an adjusted basis, primarily due to higher creditor insurance claims.

BMO Capital Markets

Revenue increased \$567 million or 12% from 2019. Global Markets revenue increased, primarily due to higher revenue from interest rate trading, commodities trading and foreign exchange trading, partially offset by a decrease in equities trading revenue. Investment and Corporate Banking revenue increased, primarily due to higher corporate banking-related revenue and equity underwriting revenue, partially offset by lower net securities gains and advisory revenue, as well as markdowns on the held-for-sale loan portfolio.

Corporate Services

Revenue decreased \$114 million from 2019, primarily due to lower treasury-related revenue, reflecting the impact of elevated levels of customer deposits.

Insurance Claims, Commissions and Changes in Policy Benefit Liabilities

Reported and adjusted insurance claims, commissions and changes in policy benefit liabilities (CCPB) were \$1,708 million in 2020, compared with reported CCPB of \$2,709 million and adjusted CCPB of \$2,684 million in the prior year. Adjusted CCPB excluded the \$25 million net impact of major reinsurance claims in the prior year. CCPB decreased, primarily due to lower increases in the fair value of policy benefit liabilities in 2020 as a result of a smaller decrease in long-term interest rates compared with 2019, lower annuity sales, lower underlying business growth and weaker equity markets. The decrease related to the fair value of policy benefit liabilities was largely offset in revenue.

Provision for Credit Losses

The total provision for credit losses was \$2,953 million in 2020, an increase of \$2,081 million from \$872 million in 2019. The provision for credit losses on impaired loans was \$1,522 million in 2020, an increase of \$771 million from \$751 million in 2019, reflecting higher provisions in all of our businesses, primarily due to the economic impact of the COVID-19 pandemic. There was a \$1,431 million provision for credit losses on performing loans in 2020, an increase of \$1,310 million from \$121 million in 2019. The increase in the provision for credit losses on performing loans in 2020 largely reflected the impact of the COVID-19 pandemic on the macroeconomic outlook and the impact of a more difficult and uncertain environment on credit conditions, as well as a more severe adverse scenario and an increase in the adverse scenario weighting.

Non-Interest Expense

Non-interest expense was \$14,177 million in 2020, a decrease of \$453 million from 2019, primarily due to the impact of the \$484 million (\$357 million after-tax) restructuring charge in 2019. Adjusted non-interest expense in 2020 was \$14,042 million, relatively unchanged from 2019, with the benefits of a disciplined approach to expense management, including the net impact of the COVID-19 pandemic on expenses, and lower employee-related expenses largely offsetting higher premises and equipment costs. Adjusted non-interest expense excluded the restructuring charge in 2019, as well as the amortization of acquisition-related intangible assets and acquisition integration costs in both 2020 and 2019. The amortization of acquisition-related intangible assets was \$121 million and \$128 million in 2020 and 2019, respectively, and acquisition integration costs were \$14 million and \$13 million in 2020 and 2019, respectively.

Provision for Income Taxes

The provision for income taxes was \$1,251 million in 2020, compared with \$1,514 million in 2019. The effective tax rate in 2020 was 19.7%, compared with 20.8% in 2019. The adjusted provision for income taxes was \$1,282 million in 2020, compared with \$1,673 million in 2019. The adjusted effective tax rate in 2020 was 19.8%, compared with 21.1% in 2019. The lower effective tax rate and adjusted effective tax rate in 2020 were due to earnings mix, including lower pre-tax income.

For further information on non-GAAP amounts, measures and ratios in this 2020 Financial Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

Financial Condition Review

Summary Balance Sheet

(Canadian \$ in millions)
As at October 31

	2021	2020	2019
Assets			
Cash and interest bearing deposits with banks	101,564	66,443	56,790
Securities	232,849	234,260	189,438
Securities borrowed or purchased under resale agreements	107,382	111,878	104,004
Net loans	458,262	447,420	426,984
Derivative instruments	36,713	36,815	22,144
Other assets	51,405	52,445	52,835
Total assets	988,175	949,261	852,195
Liabilities and Equity			
Deposits	685,631	659,034	568,143
Derivative instruments	30,815	30,375	23,598
Securities lent or sold under repurchase agreements	97,556	88,658	86,656
Other liabilities	109,757	106,185	115,727
Subordinated debt	6,893	8,416	6,995
Equity	57,523	56,593	51,076
Total liabilities and equity	988,175	949,261	852,195

Certain comparative figures have been reclassified to conform with the current year's presentation.

Overview

Total assets of \$988.2 billion increased \$38.9 billion from October 31, 2020. The weaker U.S. dollar decreased assets by \$30.6 billion, excluding the impact on derivative assets. Total liabilities of \$930.7 billion increased \$38.0 billion from the prior year. The weaker U.S. dollar decreased liabilities by \$28.4 billion, excluding the impact on derivative liabilities. Total equity of \$57.5 billion increased \$0.9 billion from October 31, 2020.

Cash and Interest Bearing Deposits with Banks

Cash and interest bearing deposits with banks increased \$35.1 billion, primarily due to higher balances held with central banks, driven by customer deposit growth in excess of loan growth, and a change in the mix of liquid assets, with lower securities borrowed or purchased under resale agreements and lower securities balances, partially offset by the impact of the weaker U.S. dollar.

Securities

(Canadian \$ in millions)
As at October 31

	2021	2020	2019
Trading	104,411	97,834	85,903
Fair value through profit or loss (1)	14,210	13,568	13,704
Fair value through other comprehensive income – Debt and equity (2)	63,123	73,407	64,515
Amortized cost (3)	49,970	48,466	24,472
Investments in associates and joint ventures	1,135	985	844
Total securities	232,849	234,260	189,438

(1) Comprises \$3,038 million mandatorily measured at FVTPL (\$2,420 million as at October 31, 2020 and \$2,899 million as at October 31, 2019) and \$11,172 million designated at fair value (\$11,148 million as at October 31, 2020 and \$10,805 million as at October 31, 2019).

(2) Includes allowances for credit losses on debt securities recorded at fair value through other comprehensive income of \$2 million as at October 31, 2021 (\$4 million as at October 31, 2020 and \$2 million as at October 31, 2019).

(3) Net of allowances for credit losses of \$2 million (\$1 million as at both October 31, 2020 and October 31, 2019).

Securities decreased \$1.4 billion, as higher levels of client activity in BMO Capital Markets were more than offset by the impact of the weaker U.S. dollar and treasury activities in Corporate Services.

Securities Borrowed or Purchased Under Resale Agreements

Securities borrowed or purchased under resale agreements decreased \$4.5 billion, primarily driven by a change in the mix of liquid assets, which included an increase in cash and interest bearing deposits with banks, and the impact of the weaker U.S. dollar, partially offset by higher balances in BMO Capital Markets as a result of client activity.

Net Loans

(Canadian \$ in millions)
As at October 31

	2021	2020	2019
Residential mortgages	135,750	127,024	123,740
Non-residential mortgages	17,195	16,741	15,731
Consumer instalment and other personal	77,164	70,148	67,736
Credit cards	8,103	7,889	8,859
Businesses and government	222,614	228,921	212,768
Gross loans	460,826	450,723	428,834
Allowance for credit losses	(2,564)	(3,303)	(1,850)
Total net loans	458,262	447,420	426,984

Certain comparative figures have been reclassified to conform with the current year's presentation.

Net loans increased \$10.8 billion. Residential mortgages increased \$8.7 billion, with growth in Canadian P&C driven by an active housing market, partially offset by lower balances in U.S. P&C, including the impact of the weaker U.S. dollar. Consumer instalment and other personal loans increased \$7.0 billion, with growth in the P&C businesses and BMO Wealth Management partially offset by the impact of the weaker U.S. dollar. Business and government loans decreased \$6.3 billion, as growth in the P&C businesses was more than offset by the impact of the weaker U.S. dollar and lower balances in BMO Capital Markets, including the impact of declining balances in the non-Canadian energy portfolio. Non-residential mortgages increased \$0.5 billion, due to growth in BMO Capital Markets and U.S. P&C, partially offset by the impact of the weaker U.S. dollar. Credit cards increased \$0.2 billion, reflecting higher balances in Canadian P&C.

Table 7 in the Supplemental Information provides a comparative summary of loans by geographic location and product. Table 9 provides a comparative summary of net loans in Canada by province and industry. Loan quality is discussed in the Credit Quality Information section, and further details on loans are provided in Notes 4, 6 and 24 of the consolidated financial statements.

Derivative Financial Assets

Derivative financial assets decreased \$0.1 billion, due to a decrease in the fair value of interest rate and equity contracts, largely offset by an increase in the fair value of commodities and foreign exchange contracts. Further details on derivative financial assets are provided in Note 8 of the consolidated financial statements.

Other Assets

Other assets primarily includes customers' liability under acceptances, goodwill and intangible assets, precious metals, premises and equipment, current and deferred tax assets, accounts receivable and prepaid expenses. Other assets decreased \$1.0 billion, due to a reduction in precious metals balances resulting from client activity in BMO Capital Markets, the impact of the weaker U.S. dollar and the write-down of goodwill related to the sale of our EMEA Asset Management business, partially offset by an increase in pension assets, as well as growth in insurance-related assets and customers' liability under acceptances. Certain comparative figures have been reclassified to conform with the current year's presentation. Further details on other assets are provided in Notes 11 and 12 of the consolidated financial statements.

Deposits

(Canadian \$ in millions)
As at October 31

	2021	2020	2019
Banks	26,611	38,825	23,816
Businesses and government	442,248	400,679	343,157
Individuals	216,772	219,530	201,170
Total deposits	685,631	659,034	568,143

Deposits increased \$26.6 billion. Business and government deposits increased \$41.6 billion, reflecting growth in customer deposits across all operating groups and higher levels of funding requirements for client-driven activity in our trading businesses, partially offset by the impact of the weaker U.S. dollar. Deposits by banks decreased \$12.2 billion, primarily due to Bank of Canada term repo funding maturities. Deposits by individuals decreased \$2.8 billion, due to the impact of the weaker U.S. dollar and lower balances in U.S. P&C, partially offset by growth in BMO Wealth Management and Canadian P&C. Further details on the composition of deposits are provided in Note 13 of the consolidated financial statements and in the Liquidity and Funding Risk section.

Derivative Financial Liabilities

Derivative financial liabilities increased \$0.4 billion, due to an increase in the fair value of equity and foreign exchange contracts, partially offset by a decrease in the fair value of interest rate and commodities contracts.

Securities Lent or Sold Under Repurchase Agreements

Securities lent or sold under repurchase agreements increased \$8.9 billion, driven by higher levels of client activity in BMO Capital Markets, partially offset by the impact of the weaker U.S. dollar and Bank of Canada term repo funding maturities.

Other Liabilities

Other liabilities primarily include securities sold but not yet purchased, securitization and structured entities liabilities, acceptances, insurance-related liabilities and accounts payable. Other liabilities increased \$3.6 billion, primarily reflecting an increase in securities sold but not yet purchased due to higher levels of client activity in BMO Capital Markets, and increases in cash collateral received, acceptances and insurance-related liabilities, partially offset by the impact of the weaker U.S. dollar and lower securitization liabilities.

Further details on the composition of other liabilities are provided in Note 14 of the consolidated financial statements.

Subordinated Debt

Subordinated debt decreased \$1.5 billion from the prior year, reflecting redemptions, net of a new issuance. Further details on the composition of subordinated debt are provided in Note 15 of the consolidated financial statements.

Equity

(Canadian \$ in millions)
As at October 31

	2021	2020	2019
Share capital			
Preferred shares and other equity instruments	5,558	6,598	5,348
Common shares	13,599	13,430	12,971
Contributed surplus	313	302	303
Retained earnings	35,497	30,745	28,725
Accumulated other comprehensive income	2,556	5,518	3,729
Total equity	57,523	56,593	51,076

Total equity increased \$0.9 billion, with a \$4.8 billion increase in retained earnings and a \$0.2 billion increase in common shares, largely offset by a \$3.0 billion decrease in accumulated other comprehensive income and a \$1.0 billion decrease in preferred shares and other equity instruments. Retained earnings increased as a result of net income earned in the year, partially offset by dividends and distributions on other equity instruments. Accumulated other comprehensive income decreased, primarily due to the impact of higher interest rates on cash flow hedges and the impact of the weaker U.S. dollar on the translation of net foreign operations, partially offset by an improvement in the position of our pension and other employee future benefit plans due to an increase in the value of pension plan assets and the impact of higher interest rates on the pension liability. Preferred shares and other equity instruments decreased due to redemptions in the year.

The Consolidated Statement of Changes in Equity in the consolidated financial statements provides a summary of items that increase or reduce total equity, while Note 16 of the consolidated financial statements provides details on the components of, and changes in, share capital. Details on our enterprise-wide capital management practices and strategies can be found below.

Enterprise-Wide Capital Management

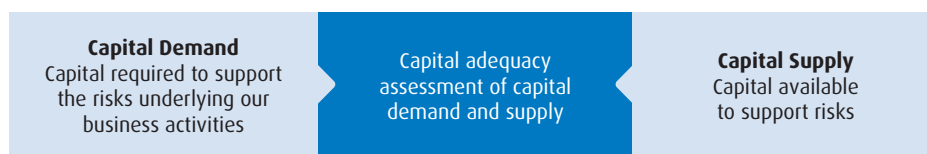
Capital Management

Objective

BMO is committed to a disciplined approach to capital management that balances the interests and requirements of shareholders, regulators, depositors, fixed income investors and rating agencies. Our objective is to maintain a strong capital position in a cost-effective structure that:

- Is appropriate given BMO's target regulatory capital ratios and internal assessment of required economic capital
- Underpins BMO's operating groups' business strategies
- Supports depositor, investor and regulator confidence, while building long-term shareholder value
- Is consistent with BMO's target credit ratings.

Framework



The principles and key elements of our capital management framework are outlined in our Capital Management Corporate Policy and in the annual capital plan, which includes the results of the comprehensive Internal Capital Adequacy Assessment Process (ICAAP).

ICAAP is an integrated process that involves the application of stress testing and other tools to evaluate capital adequacy on both a regulatory and an economic capital basis. The results of this process are used in the establishment of capital targets and the implementation of capital strategies that take into consideration the strategic direction and risk appetite of the enterprise. The capital plan is developed considering the results of ICAAP and in conjunction with the annual business plan, promoting alignment between business and risk strategies, regulatory and economic capital requirements and the availability of capital. Enterprise-wide stress testing and scenario analysis are conducted in order to assess the impact of various stress conditions on our risk profile and capital requirements. The capital management framework seeks to ensure that the bank is adequately capitalized given the risks it takes in the normal course of business, as well as under stress, and supports the determination of limits, targets and performance measures that are used to manage balance sheet positions, risk levels and capital requirements at both the consolidated entity and operating group levels. We evaluate assessments of actual and forecast capital adequacy against our capital plan throughout the year, and we update the plan to reflect changes in business activities, risk profile, the operating environment or regulatory expectations.

We allocate capital to operating groups in order to evaluate business performance, and we consider capital implications in our strategic, tactical and transactional decision-making. By allocating capital to operating groups, setting and monitoring capital limits and metrics, and measuring the groups' performance against these limits and metrics, we seek to optimize risk-adjusted return to shareholders, while maintaining a well-capitalized position. This approach aims to protect our stakeholders from the risks inherent in our various businesses, while still allowing the flexibility to deploy resources in support of the strategic growth activities of the operating groups.

Refer to the Enterprise-Wide Risk Management section for further discussion of the risks underlying our business activities.

Governance

The Board of Directors, either directly or in conjunction with its Risk Review Committee, provides ultimate oversight and approval of capital management, including the bank's Capital Management Corporate Policy framework, capital plan and capital adequacy assessments. The Board of Directors regularly reviews the bank's capital position and key capital management activities, and the Risk Review Committee reviews the capital adequacy assessment results determined by ICAAP. The Capital Management Committee provides senior management oversight, including the review of significant capital management policies, issues and activities and, along with the Risk Management Committee, the capital required to support the execution of our enterprise-wide strategy. Finance and Risk Management are responsible for the design and implementation of the corporate policies and frameworks related to capital and risk management, as well as the ICAAP. The Corporate Audit Division, as the third line of defence, verifies adherence to controls and identifies opportunities to strengthen the bank's processes. Refer to the Enterprise-Wide Risk Management Framework section for further discussion.

Regulatory Capital Requirements

Regulatory capital requirements for BMO are determined in accordance with guidelines issued by the Office of the Superintendent of Financial Institutions (OSFI), which are based on the Basel III framework developed by the Basel Committee on Banking Supervision (BCBS). The minimum risk-based capital ratios set out in OSFI's Capital Adequacy Requirements (CAR) Guideline are a 4.5% Common Equity Tier 1 (CET1) Ratio, 6% Tier 1 Capital Ratio and 8% Total Capital Ratio. In addition to the minimum capital requirements, OSFI also requires domestic systemically important banks (D-SIBs), including BMO, to hold Pillar 1 and Pillar 2 buffers, which are meant to be used as a normal first response in periods of stress. Pillar 1 buffers include a Capital Conservation Buffer of 2.5%, a D-SIB Common Equity Tier 1 surcharge of 1.0%, and a Countercyclical Buffer (which can range from 0% to 2.5%, depending on a bank's exposure to jurisdictions that have activated the buffer). The Domestic Stability Buffer (DSB), a Pillar 2 buffer that can range from 0% to 2.5%, is currently set at 2.5% as of October 31, 2021. The minimum Leverage Ratio set out in OSFI's Leverage Requirements (LR) Guideline is 3.0%. OSFI's capital requirements are summarized in the following table.

(% of risk-weighted assets or leverage exposures)	Minimum capital requirements	Pillar 1 Capital Buffers (1)	Domestic Stability Buffer (2)	OSFI capital requirements including capital buffers	BMO Capital and Leverage Ratios as at October 31, 2021
Common Equity Tier 1 Ratio	4.5%	3.5%	2.5%	10.5%	13.7%
Tier 1 Capital Ratio	6.0%	3.5%	2.5%	12.0%	15.4%
Total Capital Ratio	8.0%	3.5%	2.5%	14.0%	17.6%
Leverage Ratio	3.0%	na	na	3.0%	5.1%

(1) The minimum 4.5% CET1 Ratio requirement is augmented by 3.5% in Pillar 1 Capital Buffers, which can absorb losses during periods of stress. Pillar 1 Capital Buffers include a 2.5% Capital Conservation Buffer, a 1.0% Common Equity Tier 1 Surcharge for D-SIBs and a Countercyclical Buffer, as prescribed by OSFI (immaterial for the fourth quarter of 2021). If a bank's capital ratios fall within the range of this combined buffer, restrictions on discretionary distributions of earnings (such as dividends, share repurchases and discretionary compensation) would ensue, with the degree of such restrictions varying according to the position of the bank's ratios within the buffer range.

(2) OSFI requires all D-SIBs to maintain a DSB against Pillar 2 risks associated with systemic vulnerabilities. The DSB can range from 0% to 2.5% of total RWA and was set at 2.5% as at October 31, 2021. Breaches of the DSB will not result in a bank being subject to automatic constraints on capital distributions.

na - not applicable

Regulatory Capital and Total Loss Absorbing Capacity Ratios

The **Common Equity Tier 1 Ratio** reflects CET1 Capital divided by Risk-Weighted Assets (RWA).

The **Tier 1 Capital Ratio** reflects Tier 1 Capital divided by RWA.

The **Total Capital Ratio** reflects Total Capital divided by RWA.

The **Leverage Ratio** reflects Tier 1 Capital divided by leverage exposures (LE), which consist of on-balance sheet items and specified off-balance sheet items, net of specified adjustments.

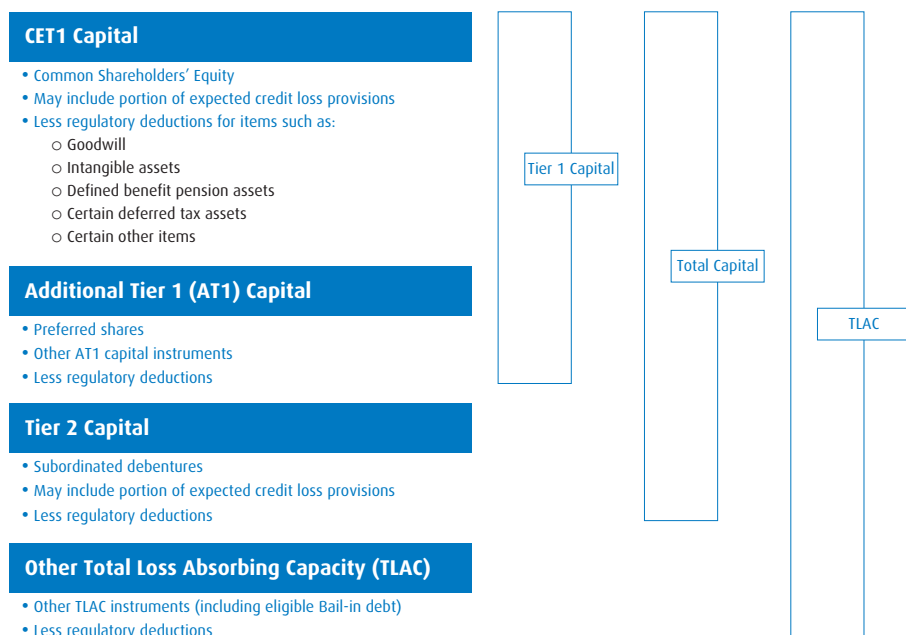
The **Total Loss Absorbing Capacity (TLAC) Ratio** reflects TLAC divided by RWA.

The **TLAC Leverage Ratio** reflects TLAC divided by LE.

Refer to the Glossary of Financial Terms for definitions of ratios and their components.

Regulatory Capital and Total Loss Absorbing Capacity Elements

BMO maintains a capital structure that is diversified across instruments and tiers to provide an appropriate mix of loss absorbency. The major components of regulatory capital and total loss absorbing capacity are summarized as follows:



OSFI's CAR Guideline implemented the non-viability contingent capital (NVCC) provisions set out by the BCBS, which require the conversion of certain capital instruments into a variable number of common shares in the event that OSFI announces that a bank is, or is about to become, non-viable, or if the federal or a provincial government in Canada publicly announces that the bank has accepted, or has agreed to accept, a capital injection or equivalent support to avoid non-viability.

Under OSFI's CAR Guideline, non-common share capital instruments that do not meet Basel III requirements, including NVCC requirements, will be fully phased out by 2022. The impact on the bank will be nominal.

Under Canada's Bank Recapitalization (Bail-In) Regime, eligible senior debt issued on or after September 23, 2018 is subject to statutory conversion requirements. Canada Deposit Insurance Corporation has the power to trigger the conversion of bail-in debt into common shares. This statutory conversion supplements NVCC securities, which must be converted, in full, prior to the conversion of bail-in debt. The minimum TLAC requirements set by OSFI are a risk-based TLAC Ratio of 24.0% of RWA, including a 2.5% DSB, and a TLAC Leverage Ratio of 6.75%, effective November 1, 2021. As at October 31, 2021, our TLAC Ratio was 27.8% and our TLAC Leverage Ratio was 9.3%, disclosed in accordance with OSFI's TLAC Guideline.

Risk-Weighted Assets

RWA measure a bank's exposures, weighted for their relative risk and calculated in accordance with OSFI's regulatory capital rules. RWA are calculated for credit, market and operational risks based on OSFI's prescribed rules.

We primarily use the Advanced Internal Ratings Based (AIRB) Approach to determine credit RWA in our portfolio. The AIRB Approach utilizes sophisticated techniques to measure RWA at the exposure level based on sound risk management principles, including estimates of the probability of default, the loss given default and exposure at default risk parameters, term to maturity and asset class type, as prescribed by the OSFI rules. These risk parameters are determined using historical portfolio data supplemented by benchmarking, as appropriate, and are updated periodically. Validation procedures related to these parameters are in place in order to quantify and differentiate risks appropriately. Credit RWA related to certain Canadian and U.S. portfolios are determined under the Standardized Approach, using prescribed risk weights based on external ratings, counterparty type or product type.

Our market risk RWA are primarily determined using the more advanced Internal Models Approach, but the Standardized Approach is used for some exposures.

Beginning in fiscal 2020, OSFI required BMO, along with the other banks that have been approved to use the Advanced Measurement Approach, to change to the Basel II Standardized Approach for determining enterprise operational risk regulatory capital requirements in the interim period prior to implementation of the new Basel III Standardized Measurement Approach, part of the Basel III reforms.

We are subject to a capital floor as prescribed in OSFI's CAR Guideline. In calculating regulatory capital ratios, there is a requirement to increase RWA when an amount calculated under the Standardized Approach (covering RWA and allowances) is higher than the result of a similar calculation under the more risk-sensitive modelled approach. The capital floor was not operative for the bank in fiscal 2021 and fiscal 2020.

Regulatory Capital Developments

Domestic Implementation of the Basel III Reforms

On March 11, 2021, OSFI restarted the implementation of the Basel III reforms by launching an industry consultation on proposed regulatory changes reflecting the latest and final round of Basel III reforms in its capital, leverage and related disclosure guidelines for banks. Proposals in the consultation include a three-year phase-in of the capital floor factor, starting at 65% in 2023 and increasing 2.5% per year to 72.5% in 2026, and a leverage ratio buffer for D-SIBs, set at 50% of the D-SIB Common Equity Tier 1 Surcharge, currently 1.0%, for a minimum Leverage Ratio requirement of 3.5% and a minimum TLAC Leverage Ratio requirement of 7.25% when the leverage ratio buffer comes into effect.

On June 18, 2021, OSFI launched an industry consultation on proposed regulatory changes to the treatment of credit valuation adjustments (CVA) and market risk hedges of other valuation adjustments, as part of the ongoing Basel III reforms.

On November 29, 2021, OSFI announced a deferral in the timing for the domestic implementation of the final Basel III reforms and changes to Pillar 3 disclosure requirements by one quarter from the first quarter to the second quarter of fiscal 2023.

COVID-19 Related Modifications

As part of a coordinated effort by federal agencies to address the market disruptions posed by the COVID-19 pandemic, OSFI announced a suite of modifications to capital requirements, effective the second quarter of 2020, to afford institutions further flexibility in addressing the disruptions, while promoting financial resilience and economic stability. During fiscal 2021, OSFI has either unwound, or provided guidance on the unwinding, of these temporary modifications.

Regulatory Expectations on Dividend Increases and Share Repurchases

Effective November 4, 2021, OSFI announced that institutions may resume regular dividend increases and common share repurchases that have been restricted since March 13, 2020.

Leverage Ratio

On August 12, 2021, OSFI confirmed that the temporary exclusion of sovereign-issued securities from the leverage ratio exposure measure for deposit-taking institutions (DTIs) will end on December 31, 2021. Central bank reserves will continue to be excluded.

Domestic Stability Buffer

On June 17, 2021, OSFI set the level of the Domestic Stability Buffer (DSB) at 2.5%, an increase from 1.0%, effective October 31, 2021. The increase reflects OSFI's view that key vulnerabilities, such as household and corporate debt levels, remain elevated and in some cases have increased since March 2020, while the economic and market disruptions stemming from the COVID-19 pandemic have abated and banks' capital levels have remained resilient.

Stressed Value-at-Risk (VaR) Multipliers under Market Risk

Effective May 1, 2021, the SVaR multiplier for market risk capital requirements, which was temporarily reduced to a minimum value of one, returned to the pre-pandemic minimum value of three.

Government of Canada's Highly Affected Sectors Credit Availability Program

On January 27, 2021, OSFI advised that loans to businesses through the Government of Canada's Highly Affected Sectors Credit Availability Program (HASCAP) can be treated as exposures to the Government of Canada. DTIs must include the entire amount of the loan in the leverage ratio calculation.

Regulatory Capital Review

BMO is well capitalized, with capital ratios that exceed OSFI's published requirements for large Canadian banks, including a 2.5% DSB. Our CET1 Ratio was 13.7% as at October 31, 2021, compared with 11.9% as at October 31, 2020. The CET1 Ratio increased from the end of fiscal 2020, primarily driven by strong internal capital generation.

Our Tier 1 Capital and Total Capital Ratios were 15.4% and 17.6%, respectively, as at October 31, 2021, compared with 13.6% and 16.2%, respectively, as at October 31, 2020. The Tier 1 Capital and Total Capital Ratios were higher, primarily due to the factors impacting the CET1 Ratio, partially offset by the redemptions of Additional Tier 1 and Tier 2 capital instruments, respectively.

The impact of foreign exchange rate movements on capital ratios was largely offset. Our investments in foreign operations are primarily denominated in U.S. dollars, and the foreign exchange impact of U.S.-dollar-denominated RWA and capital deductions may result in variability in the bank's capital ratios. We may manage the impact of foreign exchange rate movements on our capital ratios, and did so during fiscal 2021. Any such activities could also impact BMO's book value and return on equity.

Our Leverage Ratio was 5.1% as at October 31, 2021, an increase from 4.8% as at October 31, 2020, as higher Tier 1 Capital was partially offset by higher leverage exposures. Leverage exposures increased from the prior year, driven by business growth, partially offset by the impact from foreign exchange rate movements.

While the ratios discussed above reflect our consolidated capital base, we conduct business through a variety of corporate structures, including subsidiaries. A framework is in place such that capital and funding are managed appropriately at the subsidiary level.

As a U.S. bank intermediate holding company classified as a Category IV institution, our subsidiary BMO Financial Corp. (BFC) is subject to the Comprehensive Capital Analysis and Review (CCAR) and Dodd-Frank Act Stress Test (DFAST) requirements of the Federal Reserve Board (FRB) on a biennial basis, beginning with CCAR 2020.

BFC elected to participate in the FRB's 2021 CCAR exercise, even though it was not required to as a Category IV institution. On June 24, 2021, the FRB released its 2021 CCAR and DFAST results, and on August 5, 2021, announced individual large bank capital requirements, which were effective October 1, 2021. The capital requirement for BFC determined by the FRB was a CET1 Ratio of 7.5%, including the 4.5% minimum CET1 Ratio and a 3.0% stress capital buffer (SCB), which is significantly reduced from the previous 6.0%. BFC is well capitalized, with a strong CET1 Ratio of 13.9% as at September 30, 2021.

Regulatory Capital ⁽¹⁾

(Canadian \$ in millions)
As at October 31

	2021	2020
Common Equity Tier 1 Capital: instruments and reserves		
Directly issued qualifying common share capital plus related stock surplus	13,912	13,732
Retained earnings	35,497	30,745
Accumulated other comprehensive income (and other reserves)	2,556	5,518
Goodwill and other intangibles (net of related tax liability)	(7,130)	(8,402)
Other common equity Tier 1 capital deductions	(344)	(1,516)
Common Equity Tier 1 Capital (CET1)	44,491	40,077
Additional Tier 1 Capital: instruments		
Directly issued qualifying Additional Tier 1 instruments plus related stock surplus	5,558	5,558
Directly issued capital instruments subject to phase-out from Additional Tier 1 Capital	-	290
Additional Tier 1 instruments (and CET1 instruments not otherwise included) issued by subsidiaries and held by third parties (amount allowed in group AT1)	-	-
<i>of which: instruments issued by subsidiaries subject to phase-out</i>	-	-
Total regulatory adjustments applied to Additional Tier 1 Capital	(83)	(85)
Additional Tier 1 Capital (AT1)	5,475	5,763
Tier 1 Capital (T1 = CET1 + AT1)	49,966	45,840
Tier 2 Capital: instruments and provisions		
Directly issued qualifying Tier 2 instruments plus related stock surplus	6,747	8,270
Directly issued capital instruments subject to phase-out from Tier 2 Capital	141	146
Tier 2 instruments (and CET1 and AT1 instruments not otherwise included) issued by subsidiaries and held by third parties (amount allowed in group Tier 2)	-	-
<i>of which: instruments issued by subsidiaries subject to phase-out</i>	-	-
General allowance	398	458
Total regulatory adjustments to Tier 2 Capital	(51)	(53)
Tier 2 Capital (T2)	7,235	8,821
Total Capital (TC = T1 + T2)	57,201	54,661
Risk-Weighted Assets and Leverage Ratio Exposures		
Risk-Weighted Assets	325,433	336,607
Leverage Ratio Exposures	976,690	953,640
Capital Ratios (%)		
Common Equity Tier 1 Ratio	13.7	11.9
Tier 1 Capital Ratio	15.4	13.6
Total Capital Ratio	17.6	16.2
Leverage Ratio	5.1	4.8

(1) Disclosed in accordance with OSFI's CAR Guideline and LR Guideline, as applicable. Non-qualifying Additional Tier 1 and Tier 2 Capital instruments are being phased out at a rate of 10% per year from January 1, 2013 to January 1, 2022.

Our CET1 Capital was \$44.5 billion as at October 31, 2021, compared with \$40.1 billion as at October 31, 2020. CET1 Capital increased, driven by retained earnings growth and a lower goodwill deduction due to the write-down in the second quarter of fiscal 2021 related to the sale of our EMEA Asset Management business, partially offset by a decline in accumulated other comprehensive income, primarily from the impact of foreign exchange rate movements.

Tier 1 Capital and Total Capital were \$50.0 billion and \$57.2 billion, respectively, as at October 31, 2021, compared with \$45.8 billion and \$54.7 billion, respectively, as at October 31, 2020. The increase in Tier 1 Capital was primarily due to the factors impacting CET1 Capital, partially offset by preferred share redemptions. Total Capital was higher, primarily due to the factors impacting Tier 1 Capital and an issuance of subordinated notes, which was partially offset by redemptions.

Risk-Weighted Assets

RWA were \$325.4 billion as at October 31, 2021, a decrease from \$336.6 billion as at October 31, 2020. Credit Risk RWA were \$272.9 billion as at October 31, 2021, a decrease from \$289.0 billion as at October 31, 2020, primarily due to positive asset quality changes and the impact of foreign exchange rate movements, partially offset by increased asset size. As noted above, the impact of foreign exchange rate movements is largely offset in the CET1 Ratio. Market Risk RWA were \$12.1 billion as at October 31, 2021, an increase from \$9.3 billion as at October 31, 2020, primarily attributable to the removal of OSFI's regulatory measures in response to the COVID-19 pandemic, as well as changes in portfolio composition during the year. Operational Risk RWA were \$40.5 billion as at October 31, 2021, an increase from \$38.3 billion as at October 31, 2020, primarily from growth in our average gross income.

(Canadian \$ in millions)
 As at October 31

2021

2020

	2021	2020
Credit Risk		
Wholesale		
Corporate, including specialized lending	117,876	131,396
Corporate small and medium-sized enterprises	43,562	45,121
Sovereign	5,369	6,259
Bank	4,345	4,264
Retail		
Residential mortgages, excluding home equity line of credit	8,712	9,275
Home equity line of credit	5,241	5,430
Qualifying revolving retail	6,515	5,917
Other retail, excluding small and medium-sized enterprises	15,406	14,507
Retail small and medium-sized enterprises	9,544	9,689
Equity		
Trading book	13,066	15,567
Securitization	4,570	5,761
Other credit risk assets – non-counterparty managed assets	22,587	20,050
Scaling factor for credit risk assets under AIRB Approach (1)	12,324	12,908
Total Credit Risk	272,858	288,917
Market Risk	12,066	9,348
Operational Risk	40,509	38,342
Risk-Weighted Assets	325,433	336,607

(1) The scaling factor is applied to RWA amounts for credit risk under the Advanced Internal Ratings Based (AIRB) Approach.

Economic Capital

Economic capital is an expression of the enterprise's capital demand requirement relative to its view of the economic risks in its underlying business activities. It represents management's estimation of the likely magnitude of economic losses that could occur should severely adverse situations arise. Economic loss is the loss in economic or market value incurred over a specified time horizon at a defined confidence level, relative to the expected loss over the same time horizon. Economic capital is calculated for various types of risk, including credit, market (trading and non-trading), operational, business and insurance, based on a one-year time horizon using a defined confidence level.

Economic Capital and RWA by Operating Group and Risk Type

(As at October 31, 2021)

	BMO Financial Group			
Operating Groups	Personal and Commercial Banking	BMO Wealth Management	BMO Capital Markets	Corporate Services
Economic Capital by Risk Type (%)				
Credit	76%	36%	60%	86%
Market	7%	20%	25%	14%
Operational/Other	17%	44%	15%	-
RWA by Risk Type (Canadian \$ in millions)				
Credit	172,892	17,563	67,904	14,499
Market	-	42	12,024	-
Operational	22,243	6,749	11,517	-

Capital Management Activities

On December 3, 2021, we announced our intention, subject to the approval of OSFI and the Toronto Stock Exchange, to establish a new normal course issuer bid (NCIB) for up to 22.5 million common shares. The NCIB is a regular part of our capital management strategy. Once approvals are obtained, the share repurchase program will permit us to purchase BMO common shares for the purpose of cancellation. The timing and amount of purchases under the NCIB are subject to regulatory approvals and to management discretion, based on factors such as market conditions and capital levels. We will consult with OSFI before making purchases under the NCIB.

During fiscal 2021, we issued approximately 1.6 million common shares through the exercise of stock options.

During fiscal 2021, we completed Tier 1 and Tier 2 Capital instrument issuances and redemptions, as outlined in the table below.

Capital Instrument Issuances and Redemptions

(in millions) As at October 31, 2021	Issuance or redemption date	Number of shares	Amount
Common shares issued			
Stock options exercised		1.6	\$ 122
Tier 1 Capital			
Redemption of Non-Cumulative Perpetual Class B Preferred Shares, Series 35	November 25, 2020	6.0	\$ 150
Redemption of Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 36	November 25, 2020	0.6	\$ 600
Redemption of Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 25	August 25, 2021	9.4	\$ 236
Redemption of Non-Cumulative Floating Rate Class B Preferred Shares, Series 26	August 25, 2021	2.6	\$ 54
Tier 2 Capital			
Redemption of Series H Medium-Term Notes, Second Tranche	December 8, 2020		\$1,000
Redemption of Series I Medium-Term Notes, First Tranche	June 1, 2021		\$1,250
Issuance of Series K Medium-Term Notes, First Tranche	July 22, 2021		\$1,000

If an NVCC trigger event were to occur, NVCC capital instruments would be converted into BMO common shares pursuant to automatic conversion formulas, with a conversion price based on the greater of: (i) a floor price of \$5.00; and (ii) the current market price of BMO common shares at the time of the trigger event (calculated using a 10-day weighted average). Based on a floor price of \$5.00, these NVCC capital instruments would be converted into approximately 3.2 billion BMO common shares, assuming no accrued interest and no declared and unpaid dividends.

Further details on subordinated debt and share capital are provided in Notes 15 and 16 of the consolidated financial statements.

Outstanding Shares and NVCC Capital Instruments

As at October 31	Number of shares or dollar amount (in millions)	Dividends declared per share		
		2021	2020	2019
Common shares	648	\$ 4.24	\$ 4.24	\$ 4.06
Class B Preferred shares				
Series 25 (1)	-	\$ 0.34	\$ 0.45	\$ 0.45
Series 26 (1)	-	\$ 0.23	\$ 0.52	\$ 0.70
Series 27*	\$ 500	\$ 0.96	\$ 0.96	\$ 0.98
Series 29*	\$ 400	\$ 0.91	\$ 0.91	\$ 0.96
Series 31*	\$ 300	\$ 0.96	\$ 0.96	\$ 0.95
Series 33*	\$ 200	\$ 0.76	\$ 0.90	\$ 0.95
Series 35* (2)	-	-	\$ 1.25	\$ 1.25
Series 36* (2)	-	-	\$58.50	\$58.50
Series 38*	\$ 600	\$ 1.21	\$ 1.21	\$ 1.21
Series 40*	\$ 500	\$ 1.13	\$ 1.13	\$ 1.13
Series 42*	\$ 400	\$ 1.10	\$ 1.10	\$ 1.10
Series 44*	\$ 400	\$ 1.21	\$ 1.21	\$ 1.44
Series 46*	\$ 350	\$ 1.28	\$ 1.28	\$ 0.77
Additional Tier 1 Capital Notes*				
4.8% Additional Tier 1 Capital Notes	US\$ 500	na	na	na
4.3% Limited Recourse Capital Notes, Series 1 (3)	\$1,250	na	na	na
Medium-Term Notes* (4)				
Series I – Second Tranche	\$ 850	na	na	na
3.803% Subordinated Notes	US\$1,250	na	na	na
4.338% Subordinated Notes	US\$ 850	na	na	na
Series J – First Tranche	\$1,000	na	na	na
Series J – Second Tranche	\$1,250	na	na	na
Series K – First Tranche	\$1,000	na	na	na
Stock options				
Vested	2.6			
Non-vested	3.1			

* Convertible into common shares.

(1) Redeemed in August 2021.

(2) Redeemed in November 2020.

(3) Convertible into common shares by virtue of recourse to the Preferred Shares Series 48. Refer to Note 16 of the consolidated financial statements for conversion details.

(4) Note 15 of the consolidated financial statements includes details on the NVCC Medium-Term Notes.

na – not applicable

Note 16 of the consolidated financial statements includes details on share capital and other equity instruments.

Dividends

Dividends declared per common share in fiscal 2021 totalled \$4.24, unchanged from the prior year. Annual dividends declared represented 36.5% of reported net income and 32.6% of adjusted net income available to common shareholders on a last twelve-month basis.

Our target dividend payout range (common share dividends as a percentage of net income available to shareholders, less preferred share dividends and distributions on other equity instruments, based on earnings over the last twelve months) is 40% to 50%, providing shareholders with a competitive dividend yield. Our target dividend payout range seeks to provide shareholders with stable income, while retaining sufficient earnings to support anticipated business growth, fund strategic investments and support capital adequacy. OSFI's restriction on dividend increases effective March 13, 2020 remained in place throughout the year. Effective November 4, 2021, OSFI advised that institutions may resume regular dividend increases and common share repurchases.

At year-end, our common shares provided a 3.2% annualized dividend yield based on the year-end closing share price. On December 3, 2021, we announced that the Board of Directors had declared a quarterly dividend on common shares of \$1.33 per share, an increase of \$0.27 per share or 25% from the prior quarter and prior year. The dividend is payable on February 28, 2022 to shareholders of record on February 1, 2022.

Shareholder Dividend Reinvestment and Share Purchase Plan

Common shareholders may elect to have their cash dividends reinvested in common shares of BMO, in accordance with the Shareholder Dividend Reinvestment and Share Purchase Plan (DRIP).

During fiscal 2021, common shares to supply the DRIP were purchased on the open market. In the first and second quarters of fiscal 2020, common shares to supply the DRIP were purchased on the open market. In the third and fourth quarters of fiscal 2020, common shares to supply the dividend reinvestment feature of the DRIP were issued from treasury at a 2% discount from their then-current market price.

Eligible Dividends Designation

For the purposes of the *Income Tax Act (Canada)* and any similar provincial and territorial legislation, BMO designates all dividends paid or deemed to be paid on both its common and preferred shares as "eligible dividends", unless indicated otherwise.

Caution

This Enterprise-Wide Capital Management section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Off-Balance Sheet Arrangements

We enter into a number of off-balance sheet arrangements in the normal course of operations, which include Structured Entities (SEs), Credit Instruments and Guarantees.

Structured Entities and Securitization

We carry out certain business activities through arrangements involving SEs, using them to obtain sources of liquidity by securitizing certain of our financial assets, secure customer transactions, or pass our credit risk to holders of the vehicles' securities. For example, we enter into transactions with SEs in which we transfer assets, including mortgage loans, mortgage-backed securities, credit card loans, real estate lines of credit, auto loans and equipment loans, in order to obtain alternate sources of funding or as part of our trading activities. Note 6 of the consolidated financial statements describes the loan securitization activities carried out through third-party programs such as the Canada Mortgage Bond Program. Note 7 of the consolidated financial statements provides further details of our interests in both consolidated and unconsolidated SEs. Under IFRS, we consolidate a SE if we control the entity. We consolidate our own securitization vehicles and certain capital and funding vehicles. We do not consolidate our Canadian customer securitization vehicles, certain capital vehicles, various BMO-managed funds or various other structured entities where investments are held. Effective October 31, 2021, we concluded that we no longer control our U.S. Customer Securitization Vehicle and have therefore deconsolidated this vehicle. Further details on U.S. and Canadian customer securitization vehicles are provided below.

BMO-Sponsored Securitization Vehicles

We sponsor various vehicles that fund assets originated either by us (which are then securitized through a bank securitization vehicle) or by our customers (which are then securitized through three Canadian customer securitization vehicles and one U.S. customer securitization vehicle). The bank earns fees for providing services related to these customer securitization vehicles, including liquidity, distribution and financial arrangement fees for supporting the ongoing operations of the vehicles. These fees totalled approximately \$132 million in 2021 (\$117 million in 2020).

Canadian Customer Securitization Vehicles

The customer securitization vehicles we sponsor in Canada provide customers with access to financing either from us or from the asset-backed commercial paper (ABCP) markets. Customers sell either their assets or an interest in their assets into these vehicles, which then issue ABCP to either investors or us in order to fund the purchases. The sellers remain responsible for servicing the transferred assets and are first to absorb any losses realized on those assets. We are not responsible for servicing or absorbing the first loss and none of the sellers are affiliated with BMO.

Our exposure to potential losses arises from the purchase of ABCP issued by the vehicles, any related derivative contracts entered into with the vehicles, and the liquidity support provided to the market-funded vehicles. We use the credit adjudication process in deciding whether to enter into these arrangements, just as when extending credit in the form of a loan.

Two of these customer securitization vehicles are market-funded, while the third is funded directly by the bank. We do not control these entities and therefore they are not consolidated. Further information on the consolidation of customer securitization vehicles is provided in Note 7 of the consolidated financial statements. No losses were recorded on any of our exposures to these vehicles in 2021 and 2020.

The market-funded vehicles had a total of \$3.6 billion of ABCP outstanding as at October 31, 2021 (\$4.7 billion in 2020). The ABCP issued by the market-funded vehicles is rated R-1(high) by DBRS and P1 by Moody's. Our purchases of ABCP, as distributing agent of ABCP issued by the market-funded vehicles, totalled \$24 million during the year ended October 31, 2021 (\$75 million in 2020).

We provide committed liquidity support facilities for the market-funded vehicles totalling \$4.8 billion as at October 31, 2021 (\$5.6 billion in 2020). This amount comprises part of the commitments outlined in Note 24 of the consolidated financial statements. All of these facilities remain undrawn. The assets of each of these market-funded vehicles consist primarily of exposure to diversified pools of Canadian automobile-related receivables and Canadian insured and conventional residential mortgages. These two asset classes represent 62% (76% in 2020) of the aggregate assets of these vehicles.

U.S. Customer Securitization Vehicle

We sponsor one market-funded customer securitization vehicle in the United States that provides customers with access to financing in the U.S. ABCP market. Customers sell either their assets or an interest in their assets into this vehicle, which then issues ABCP to investors in order to fund the purchases. The sellers remain responsible for servicing the assets involved in the related financing and are first to absorb any losses realized on those assets. We are not responsible for servicing or absorbing the first loss and none of the sellers are affiliated with BMO.

Our exposure to potential losses arises from the purchase of ABCP issued by the vehicle, any related derivative contracts entered into with the vehicle, and the liquidity support provided to the vehicle. We use the credit adjudication process in deciding whether to enter into these arrangements, just as when extending credit in the form of a loan. No losses were recorded on any of our exposures to the vehicle in 2021 and 2020.

Effective October 31, 2021, we concluded that we no longer control this vehicle, and therefore deconsolidated this vehicle, as our involvement has changed from principal to agent, as reflected primarily by the change in our exposure to its variable returns. We derecognized US\$3,148 million (\$3,896 million) of assets and US\$2,967 million (\$3,672 million) of liabilities from our consolidated balance sheet on loss of control. We concurrently recognized US\$176 million (\$218 million) in securities, representing the carrying value of our interest in the vehicle's ABCP (we held US\$140 million as at October 31, 2020, which was previously eliminated upon consolidation), and US\$5 million (\$6 million) in other assets. No gain or loss was recognized in our consolidated income statement as a result of deconsolidating this vehicle. Further information on the consolidation of customer securitization vehicles is provided in Note 7 of the consolidated financial statements.

The vehicle had US\$3.1 billion of ABCP outstanding as at October 31, 2021 (US\$2.5 billion in 2020). The ABCP issued by the vehicle is rated A1 by S&P and P1 by Moody's.

We provide committed liquidity support facilities to the vehicle, with the undrawn amount totalling US\$6.5 billion as at October 31, 2021 (US\$5.5 billion in 2020). This amount comprises part of the commitments outlined in Note 24 of the consolidated financial statements. The assets of this vehicle consist primarily of exposure to diversified pools of U.S. automobile-related receivables and equipment loans and leases. These two asset classes represent 82% (85% in 2020) of the aggregate assets of the vehicle.

Credit Instruments

In order to meet the financial needs of our clients, we use a variety of off-balance sheet credit instruments. These include guarantees and standby letters of credit, which represent our obligation to make payments to third parties on behalf of a customer if the customer is unable to make the required payments or meet other contractual requirements. We also write documentary and commercial letters of credit, which represent agreements to honour drafts presented by a third party upon completion of specified activities. Commitments to extend credit are off-balance sheet arrangements that represent our commitment to customers to grant them credit in the form of loans or other financings for specific amounts and maturities, subject to meeting certain conditions.

There are a large number of credit instruments outstanding at any time. Our customers are broadly diversified, and we do not anticipate events or conditions that would cause a significant number of customers to fail to perform in accordance with the terms of their contracts. We use the credit adjudication process in deciding whether to enter into these arrangements, just as when extending credit in the form of a loan. We monitor off-balance sheet credit instruments in order to avoid undue concentrations in any geographic region or industry.

The maximum amount payable by BMO in relation to these credit instruments was approximately \$202 billion as at October 31, 2021 (\$209 billion in 2020). However, this amount is not representative of our likely credit exposure or the liquidity requirements for these instruments, as it does not take into account customer behaviour, which suggests that only a portion of customers would utilize the facilities related to these instruments, nor does it take into account any amounts that could be recovered under recourse and collateral provisions.

For the credit commitments outlined in the preceding paragraphs, in the absence of an event that triggers a default, early termination by BMO may result in a breach of contract.

Further information on these instruments can be found in Note 24 of the consolidated financial statements.

Guarantees

Guarantees include contracts under which we may be required to make payments to a counterparty based on changes in the value of an asset, liability or equity security that the counterparty holds. Contracts under which we may be required to make payments if a third party does not perform according to the terms of a contract, and contracts under which we provide indirect guarantees of indebtedness, are also considered guarantees. In the normal course of business, we enter into a variety of guarantees, including standby letters of credit, backstop and other liquidity facilities, and derivatives contracts or instruments (including, but not limited to, credit default swaps), as well as indemnification agreements.

The maximum amount payable by BMO in relation to these guarantees was approximately \$40 billion as at October 31, 2021 (\$31 billion in 2020). However, this amount is not representative of our likely exposure, as it does not take into account customer behaviour, which suggests that only a portion of the guarantees would require us to make any payments, nor does it take into account any amounts that could be recovered under recourse and collateral provisions.

For a more detailed discussion of these arrangements, refer to Note 24 of the consolidated financial statements.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Caution

This Off-Balance Sheet Arrangements section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Enterprise-Wide Risk Management

As a diversified financial services company providing banking, wealth management, capital markets and insurance services, BMO is exposed to a variety of risks that are inherent in its business activities. A disciplined and integrated approach to managing risk is fundamental to the success of its operations. Our risk management framework provides independent risk oversight across the enterprise and is integral to building competitive advantage.

Enterprise-Wide Risk Management outlines BMO's approach to managing the key financial risks and other related risks that it faces, as discussed in the following sections:

74	Risks That May Affect Future Results	97	Liquidity and Funding Risk
78	Risk Management Overview	106	Operational Non-Financial Risk
78	Enterprise-Wide Risk Management Framework	109	Legal and Regulatory Risk
84	Credit and Counterparty Risk	111	Strategic Risk
92	Market Risk	111	Environmental and Social Risk
97	Insurance Risk	113	Reputation Risk

Text and tables presented in a blue-tinted font in the Enterprise-Wide Risk Management section of the MD&A form an integral part of the 2021 audited annual consolidated financial statements. They present required disclosures as set out by the International Accounting Standards Board in IFRS 7, *Financial Instruments – Disclosures*, which permits cross-referencing between the notes to the consolidated financial statements and the MD&A. Refer to Note 1 and Note 5 of the consolidated financial statements.

Risks That May Affect Future Results

Top and Emerging Risks That May Affect Future Results

BMO is exposed to a variety of evolving internal and external events which can have an impact on our overall risk profile. These events can have the potential to affect our business, the results of our operations and our financial condition. The integral tasks in the risk management process are to proactively identify, assess, manage, monitor and report on a broad spectrum of risks arising from these events. The identification of specific types of risk involves several forums for discussion with the Board of Directors, senior management and business thought leaders, and combines both bottom-up and top-down approaches. The assessment of risks is supported by scenario analysis and can inform the development of action plans related to our exposure to certain events.

Particular attention has been given to the following risks, reflecting their potential to materially impact the bank's financial results, strategic direction or reputation.

General Economic Conditions

Our earnings are affected by the general economic conditions prevailing in Canada, the United States and other jurisdictions in which we conduct business. In the past year, as global economies continue to recover from the effects of the COVID-19 pandemic, growth in real GDP in both Canada and the United States has been strong, although growth in Canadian GDP in the second quarter of 2021 was hampered by new public health restrictions. Businesses and individuals have benefitted from the support of government programs intended to lessen the economic impact of the pandemic, and these programs, along with a reopening of the economies, have resulted in positive credit migration. The recovery faces headwinds generated by ongoing disruptions to global supply chains, trade and travel, as well as price and wage inflation and labour market challenges. The emergence of new variants of the COVID-19 virus also poses a threat to economic recovery. While vaccine efficacy remains high against most COVID-19 variants, particularly in limiting more severe cases, vaccination rates in North America are below the level required for general immunity.

These factors, as well as rising geopolitical tensions (described in Geopolitical Risk and Escalating Trade Disputes below), could cause growth rates in North American economies to decline through the coming year. Management continues to review the economic environment in which we operate, to identify significant changes in key economic variables. In the event of a significant change in economic conditions, management will assess our portfolio and business strategies and develop contingency plans to address any adverse developments.

Cyber Security Risk

We are exposed to common banking security risks, given our ever-increasing reliance on internet and cloud technologies, coupled with the remote work environment and extensive dependence on advanced digital technologies to process data. Cyber security risks include the threat of data loss resulting in potential exposure of customer or employee information, identity theft and fraud. Ransomware or denial of service attacks could result in system failure and service disruption. Threat campaigns are becoming increasingly organized and sophisticated, with reported data breaches, often through third-party suppliers, that negatively impact the company's brand and reputation. BMO is keeping pace by investing in the Financial Crimes Unit and technological infrastructure. These include a state-of-the-art security hub and a "follow-the-sun" operating model, equipping our team to detect and address security threats across North America, Europe and Asia in order to keep our customers' and employees' data secure.

Benchmark Interest Rate Reform

Interbank offered rates (IBORs) have been the subject of numerous global regulatory proposals and reforms over the past few years. Most significantly, the U.K. Financial Conduct Authority (FCA) has announced that it will no longer compel banks to submit to the London Interbank Offered Rate (LIBOR) after 2021. As a result, the industry must transition from LIBOR and other IBORs to alternative reference rates (ARRs) in multiple jurisdictions, a shift that will impact financial market participants globally across many products and asset classes.

Transition efforts in connection with these reforms are complex, with significant risks and challenges that could result in increased volatility, pricing changes or illiquidity in markets for instruments that currently rely on IBORs. The transition could have adverse consequences for all market participants, including BMO as both a holder and an issuer of IBOR-based instruments, such as the potential for heightened exposure to financial, operational non-financial, legal and regulatory, and reputation risks.

BMO has established an enterprise IBOR Transition Office (ITO) to coordinate and oversee the transition from IBORs to ARRs, with a focus on managing and mitigating internal risks, while maintaining a positive client experience. The ITO, sponsored and supported by senior management, is responsible for running the enterprise-wide transition program across all lines of business and corporate areas. The ITO has a global mandate to properly prepare BMO for the discontinuation or unavailability of LIBOR and other IBORs.

As part of its mandate, the ITO is tracking client, industry and regulatory engagement, financial contract changes, internal and external communications, technology and operations modifications, introduction of new products, migration of existing clients, and program strategy and governance. In addition, the ITO continues to monitor the development and usage of ARRs across the industry, including the Secured Overnight Financing Rate (SOFR). As the market has developed, we have begun to add ARR-based products to our suite of offerings.

On March 5, 2021, the FCA confirmed that LIBOR settings will no longer be provided by any administrator after December 31, 2021 for all sterling, euro, Swiss franc and Japanese yen settings, as well as the one-week and two-month USD LIBOR settings. The remaining USD LIBOR settings will no longer be provided after June 30, 2023. The extension of certain USD LIBOR settings to June 30, 2023 applies only to legacy contracts, with new issuances transitioning from LIBOR and other IBORs to alternative reference rates by December 31, 2021. This announcement followed the completion of the ICE Benchmark Administration consultation regarding the process and timing for the orderly wind-down of LIBOR for legacy contracts. The ITO has adjusted the project plan accordingly to align with these extended timelines, and continues to monitor changes and updates from regulators and industry working groups in order to facilitate a smooth and timely transition for BMO and its clients.

Technology Resiliency

We continue to innovate and invest in enhancing our technological capabilities in order to keep customers' data secure and to meet and exceed their expectations, as the adoption of digital banking continues to grow. In addition to existing technology risks, the COVID-19 pandemic has introduced new challenges, as our customers, employees and suppliers have come to rely on technology platforms and the Internet of Things to manage and support their personal, business and investment banking activities. Given the extent to which BMO's operations rely on technology, it is important to maintain platforms that provide high levels of operational reliability and resiliency, particularly with respect to business-critical systems. Technology innovations, such as advanced data management, analytical tools and artificial intelligence, are being leveraged to provide insights that will improve the way we do business and serve our customers.

Geopolitical Risk and Escalating Trade Disputes

Geopolitical risk remains elevated as a result of strained relations among many countries, including the United States and China and Iran. Heightened geopolitical risk can give rise to shifts in global capital flows, which may lead to market disruptions and lower levels of investment, trade and global economic growth. Our core banking portfolio has limited direct exposure outside North America; however, our core customers depend on sustained economic growth and trade. To mitigate exposure to geopolitical risk, we maintain a diversified portfolio that is continually monitored and tested, in addition to contingency plans that we may establish to address any possible adverse developments.

Rising protectionism and anti-globalization sentiment in the United States and other countries have compounded supply-chain disruptions, and may hinder global growth. In particular, despite the Phase One trade agreement between the United States and China reached in early 2020, trade tensions between the two countries have remained elevated, which could adversely affect business investment and could prove especially problematic for commodity-producing countries such as Canada. Trade disputes have also arisen between Canada and China over the past several years. Within North America, the Canada-United States-Mexico Agreement (CUSMA) has reduced, but not eliminated, uncertainty about continental trading arrangements and disputes between those nations.

Although it is difficult to predict and mitigate the potential economic and financial effects of trade-related events on the Canadian and U.S. economies, we actively monitor global and North American trends and continually assess our businesses in the context of these trends. We stress test our portfolios, business plans and capital adequacy against severely adverse scenarios arising from trade-related shocks, and we establish contingency plans and mitigation strategies to address and offset the consequences of possible adverse political and economic developments.

BMO's credit exposure by geographic region is set out in Tables 7, 8 and 11 to 13 in the Supplemental Information and in Note 4 of the consolidated financial statements.

Climate Change and Other Environmental and Social Risks

BMO faces risks related to environmental events and extreme weather conditions that could potentially disrupt our operations, impact customers and counterparties, and result in lower earnings and higher losses. Factors contributing to heightened environmental risks include the impacts of climate change and the continued intensification of development in areas of greater environmental sensitivity. Business continuity management plans provide us with the capability to restore, maintain and manage critical operations and processes in the event of a business disruption.

BMO also faces risks related to borrowers that experience losses or increases in their operating costs as a result of climate-related litigation or policies, such as carbon emissions pricing, or that experience lower revenue as new and emerging technologies disrupt or displace demand for certain commodities, products and services. We are playing an active role in helping our clients transition to a net zero world, in part through our new BMO Climate Institute and our dedicated Energy Transition Group.

BMO supports the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD), and employs the TCFD framework to enhance its understanding and disclosure of the evolving impact of risks associated with climate change, together with possible mitigation strategies. In October 2021, we joined the Net-Zero Banking Alliance, an industry-led global initiative to support and accelerate concerted efforts to address climate change, facilitating collaborative approaches between the public and private sectors. We continue to build our internal capacity to conduct climate change scenario analysis in line with the TCFD recommendations, and we are expanding this program to evaluate both physical and transition risks across a selection of climate-sensitive portfolios. These efforts will help identify potential material financial risks and will inform our business strategy in relation to climate change going forward.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Legal and regulatory, business or reputation risks could arise from actual or perceived actions, or inaction, in our operations and those of our customers in relation to climate change and other environmental and social risk issues, or our disclosures related to these matters. Risks related to these issues could also affect our customers, suppliers or other stakeholders, which could heighten business or reputation risks. Globally, climate-related litigation or enforcement measures could arise from new and more detailed obligations to manage and report climate-related risks.

Refer to the Environmental and Social Risk section for further discussion of these risks.

Canadian Housing Market and Consumer Leverage

Risks related to household debt and housing affordability have increased with a sharp rise in home prices as the housing market rebounded strongly in early 2021, following a decline in activity in the initial phase of the COVID-19 pandemic. The lower interest rate environment should underpin the continuing strong demand in housing markets. However, several factors, such as higher unemployment rates and limited affordability, could potentially weigh on sales activity and home prices in the future. The housing market is also at risk of a correction if prices continue to rise faster than incomes, especially when interest rates begin to move upward. In addition, the pandemic has the potential to drive permanent changes in consumer behaviours and preferences, as well as changes in how and where work is performed, including more widespread adoption of remote working arrangements. Such changes have the potential to cause structural shifts in the demand for housing based on geographic and other characteristics, and could affect the viability of income-generating investment properties. These changes could dampen sales activity, home prices and property values within the existing portfolio.

Household debt levels are at record highs, which could impede new borrowing and increase our exposure to risk across personal lending products. In addition, housing affordability continues to be a challenge, especially in the Greater Toronto Area (GTA) and Greater Vancouver Area (GVA) and their surrounding regions, which represents an ongoing barrier to entry for potential first-time home buyers. Moderately higher levels of unemployment will also weigh on household incomes, especially if current government support programs are wound down or eliminated, which would reduce overall household purchasing power. The heightened level of economic uncertainty could also cause households to continue to focus on building savings.

Potential reductions in home sales activity, particularly in the GTA and GVA, would impact mortgage origination volumes and, if property values were to decline, reduce the value of collateral backing loans, which could result in higher provisions for credit losses. It is not possible to accurately predict the full impact of recent economic and policy changes or any potential future changes, but BMO's prudent lending practices, which include the application of additional underwriting scrutiny on higher-value and higher loan-to-value transactions and the setting and close monitoring of regional, property type and customer segment concentration limits, support the soundness of the bank's Canadian real estate lending portfolio. Further, stress test analysis suggests that even significant price declines and extremely challenging economic conditions would result in manageable losses, mainly due to insurance coverage and the significant level of equity built up in seasoned loans.

Inflation

As the economic recovery from the COVID-19 pandemic continues, inflation rates have seen significant increases in North America, rising above the target ranges for the Bank of Canada and the Federal Reserve during 2021. A significant portion of the upward pressure on prices is attributable to the rising costs of energy, food, motor vehicles and housing, as well as the challenges involved in reopening the economy and persistent supply-chain disruptions. Inflation increases are expected to be largely transitory, assuming supply-chain disruptions ease and commodity prices moderate. However, a sustained upward trajectory in the inflation rate would have an impact on BMO's operations and our clients, and could impact our earnings due to higher provisions for credit losses and higher operating costs. We continue to monitor inflationary pressures in North America and assess any potential effects on our portfolios, interest margins and operating costs.

Other Factors That May Affect Future Results

Fiscal and Monetary Policies and Other Economic Conditions in the Countries in which BMO Conducts Business

BMO's earnings are affected by the fiscal and monetary policies and other economic conditions prevailing in Canada, the United States and other jurisdictions in which we do business. These policies and conditions may have the effect of reducing profitability and increasing uncertainty in specific businesses and markets, which may affect customers and counterparties, and potentially contribute to a greater risk of default. Changes in fiscal and monetary policies are difficult to anticipate. Higher levels of government and business debt resulting from the pandemic have the potential to create future vulnerabilities that could impact our markets and our business. Fluctuations in interest rates could have an impact on our earnings, the value of our investments, the credit quality of our loans to customers and counterparty exposure, and the capital markets that we access.

Changes in the value of the Canadian dollar relative to the U.S. dollar have affected, and could in the future continue to affect, the results of clients with significant foreign earnings or input costs. Our investments in foreign operations are primarily denominated in U.S. dollars, and the foreign exchange impact of U.S.-dollar-denominated risk-weighted assets and capital deductions may result in variability in our capital ratios. Refer to the Enterprise-Wide Capital Management section. The value of the Canadian dollar relative to the U.S. dollar will also affect the contribution of U.S. operations to Canadian-dollar profitability.

Hedging positions may be taken to manage interest rate exposures and partially offset the effects of Canadian dollar/U.S. dollar exchange rate fluctuations on the bank's financial results. Refer to the Foreign Exchange section and the Market Risk section for a more complete discussion of foreign exchange and interest rate risk exposures.

Regulatory Requirements

The financial services industry is highly regulated, and BMO has experienced changes and increasing complexity in regulatory requirements, as governments and regulators around the world continue to pursue major reforms intended to strengthen the stability of the financial system and protect key markets and participants. As a result, there is the potential for higher capital requirements and additional regulatory compliance costs, which could lower returns and affect growth. These reforms could also affect the cost and availability of funding and the extent of the bank's market-making activities. Regulatory reforms may also impact fees and other revenues for certain operating groups. In addition, differences in laws and regulations enacted by various national regulatory authorities may provide advantages to international competitors that could affect our ability to compete, and lead to loss of market share. We monitor such developments, and other potential changes, so that we are well-positioned to respond and implement any necessary changes.

Failure to comply with applicable legal and regulatory requirements could result in legal proceedings, financial losses, regulatory sanctions, enforcement actions, an inability to execute business strategies, a decline in investor and customer confidence, and damage to our reputation. Refer to the Legal and Regulatory Risk section for a more complete discussion of BMO's management of legal and regulatory risk.

Tax Legislation and Interpretations

Legislative changes and changes in tax policy, including their interpretation by tax authorities and the courts, may impact earnings. Tax laws, as well as interpretations of tax laws and policy by tax authorities, may change as a result of efforts by the Canadian federal government, other G20 governments, and the Organisation for Economic Co-operation and Development to increase taxes, broaden the tax base globally and improve tax-related reporting. Refer to the Critical Accounting Estimates section for further discussion of income taxes and deferred taxes.

Changes to Business Portfolio

BMO may, from time to time, acquire companies, businesses and assets as part of its overall business strategy. We conduct thorough due diligence before completing such acquisitions. However, some acquisitions may not perform in line with our financial or strategic objectives or expectations. Our ability to successfully complete an acquisition may be subject to regulatory and shareholder approvals, and it may not be possible to determine when, if or on what terms the necessary approvals will be granted. Changes in the competitive and economic environment, as well as other factors, may result in reductions in revenue or profitability, while higher than anticipated integration costs and failure to realize expected cost savings after an acquisition could also adversely affect earnings. Integration costs may increase as a result of regulatory costs related to an acquisition, other unanticipated costs that were not identified in the due diligence process, or demands on management time that are more significant than anticipated, as well as unexpected delays in implementing certain plans that in turn lead to delays in achieving full integration. Successful post-acquisition performance depends on retaining the clients and key employees of acquired companies and businesses and on integrating key systems and processes without disruption, and there can be no assurance that we will always succeed in doing so.

BMO also evaluates potential dispositions of assets and businesses that may no longer meet strategic objectives. When we sell assets or withdraw from a business, we may encounter difficulty in finding buyers or alternative exit strategies on acceptable terms or in a timely manner, which could delay the achievement of strategic objectives. We may also dispose of assets or a business on terms that are less desirable than anticipated or result in adverse operational or financial impacts, or greater disruption than expected, and the impact of the divestiture on revenue growth may be larger than projected. Dispositions may be subject to the satisfaction of conditions and the granting of governmental or regulatory approvals on acceptable terms, which, if not satisfied or obtained, may prevent the completion of a disposition as intended, or at all.

Critical Accounting Estimates and Accounting Standards

BMO prepares its consolidated financial statements in accordance with IFRS. Changes that the International Accounting Standards Board makes from time to time may materially affect the way we record and report financial results. Significant accounting policies and future changes in accounting policies are discussed in the Changes in Accounting Policies in 2021 and Future Changes in Accounting Policies sections, as well as in Note 1 of the consolidated financial statements.

The application of IFRS requires management to make significant judgments and estimates that affect the carrying amounts of certain assets and liabilities, certain amounts reported in net income, and other related disclosures. In making these judgments and estimates, we rely on the best information available at the time. However, it is possible that circumstances may change, new information may become available or models may prove to be imprecise.

BMO's financial results could be affected for the period during which any such new information or change in circumstances becomes apparent, and the extent of the impact could be significant. More information is included in the Critical Accounting Estimates section.

Caution

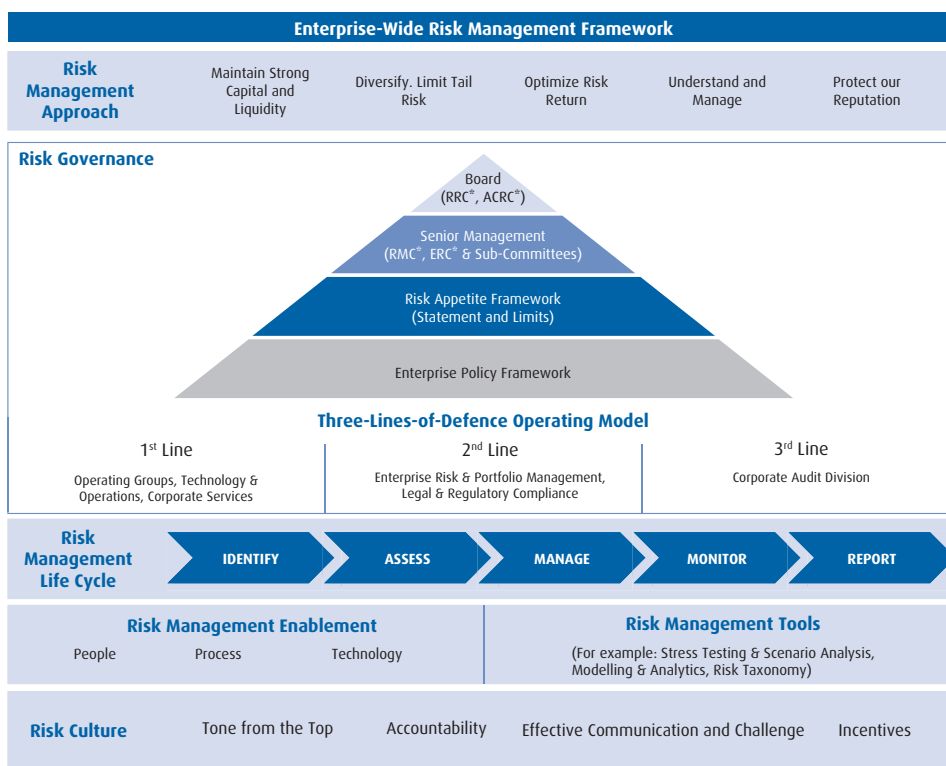
The Risks That May Affect Future Results section and the remainder of this Enterprise-Wide Risk Management section contain forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements. Other factors beyond BMO's control that may affect its future results are noted in the Caution Regarding Forward-Looking Statements. BMO cautions that the preceding discussion of risks that may affect future results is not exhaustive.

Risk Management Overview

BMO's integrated and disciplined approach to risk management is fundamental to the success of our business. Our Enterprise Risk and Portfolio Management (ERPM) group oversees the implementation and operation of the Enterprise-Wide Risk Management Framework (ERMF), and provides independent review and oversight across the enterprise on risk-related issues, in order to achieve prudent and measured risk-taking that is integrated with business strategy. All elements of the ERMF function together to support informed and effective risk management, while striking an appropriate balance between risk and return.

Enterprise-Wide Risk Management Framework

The ERMF guides risk-taking activities in order to align them with customer needs, shareholder expectations and regulatory requirements. The ERMF also sets out our approach to risk management: maintain strong capital and liquidity, diversify and limit tail risk, optimize risk return, understand and manage the risks we face, and protect our reputation. Our approach to risk governance is outlined in the ERMF, which incorporates our Risk Management Life Cycle, guiding our efforts to identify, assess, manage, monitor and report on our material risks. The ERMF is supported by our people, processes and technology, leveraging tools, including modelling and analytics, stress testing and scenario analysis, and our Risk Taxonomy. All elements of the ERMF are supported by our risk culture. The ERMF provides for the direct management of each individual risk type, as well as the management of risk on an integrated basis.



* RRC: Risk Review Committee, ACRC: Audit and Conduct Review Committee, RMC: Risk Management Committee, ERC: Enterprise Regulatory Committee

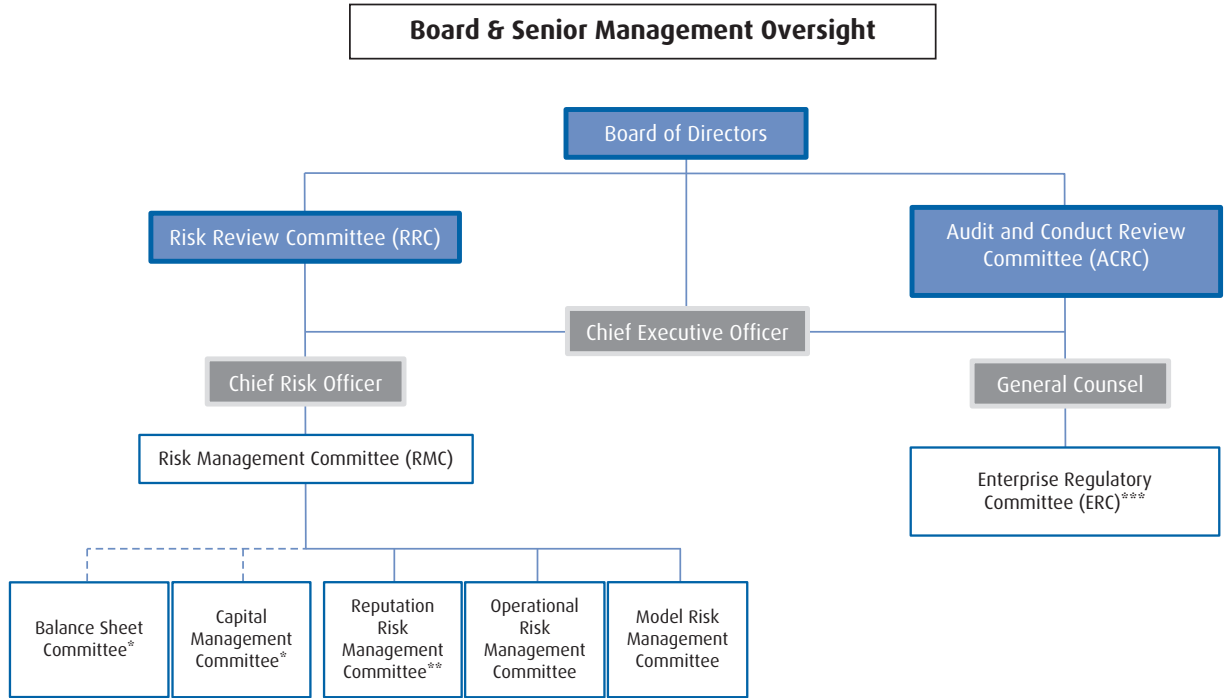
Risk Governance

The ERMF outlines a governance approach that includes robust Board of Directors and senior management oversight, a Risk Appetite Framework, the Enterprise Policy Framework and the corresponding roles in the three-lines-of-defence operating model.

Board of Directors and Senior Management Oversight

Specific Board-approved policies govern our approach to the management of material risks, and oversight is provided at all levels of the enterprise through a hierarchy of committees and individual responsibilities, as outlined in the following diagram. The Board seeks to ensure that corporate objectives are supported by a sound risk strategy and an effective ERMF that is appropriate to the nature, scale, complexity and risk profile of our operations. The Board also has overall responsibility for the bank's governance framework and corporate culture. Senior management reviews and discusses significant risk issues and action plans as they arise in the implementation of the enterprise-wide strategy, providing risk oversight and governance of the risks taken across the enterprise and the processes through which such risks are identified, assessed, managed (and mitigated), monitored and reported in accordance with policies, and held within limits and risk tolerances.

The ERMF is reviewed on a regular basis by the Risk Review Committee (RRC) of the Board, in order to provide oversight and guide risk-taking activities.



* The Balance Sheet Committee (BSC) and Capital Management Committee (CMC) are sub-committees of the Asset and Liability Management Committee (ALCO). However, in matters related to Structural Market Risk, Liquidity & Funding Risk, and the Internal Capital Adequacy Assessment Process (ICAAP), BSC and CMC report to RMC.

** Committee is chaired by the General Counsel.

*** Committee is co-chaired by the General Counsel and Chief Risk Officer.

In addition to the Board of Directors and senior management oversight, appropriate risk governance, supported by the three lines of defence, is in place in all material businesses and entities. In each of the operating groups and in Corporate Services, which includes Technology and Operations, management is the first line of defence, responsible for governance and controls, and the implementation and operation of risk management processes and procedures that provide effective risk management. ERPM and Legal & Regulatory Compliance, as the second line of defence, oversee the implementation and operation of risk management processes and procedures, and monitor and test risk outcomes against our risk appetite and management expectations, in order to determine whether risk outcomes are consistent with return expectations. Corporate Audit Division, as the third line of defence, provides independent assessment of the effectiveness of internal controls that support the risk management and governance processes. Individual governance committees establish and monitor further risk limits, consistent with Board-approved limits.

Board of Directors is responsible for supervising the management of the business and affairs of BMO. The Board, either directly or through its committees, is responsible for oversight in the following areas: strategic planning; defining risk appetite; identifying and managing risk; managing capital; fostering a culture of integrity; internal controls; succession planning and evaluation of senior management; communication; public disclosure; and corporate governance.

Risk Review Committee of the Board of Directors (RRC) assists the Board in fulfilling its risk management oversight responsibilities. This includes leading BMO's risk culture; overseeing the identification and management of BMO's risks; adherence by operating groups to risk management corporate policies and standards; compliance with risk-related regulatory requirements; and evaluating the Chief Risk Officer (CRO), including input into succession planning for the CRO. The ERMF is reviewed on a regular basis by the RRC in order to provide guidance for the governance of risk-taking activities.

Audit and Conduct Review Committee of the Board of Directors (ACRC) assists the Board in fulfilling its oversight responsibilities for the integrity of BMO's financial reporting; the effectiveness of BMO's internal controls; the qualifications, independence and performance of the independent auditors; BMO's compliance with laws and regulations; transactions involving related parties; conflicts of interest and confidential information; and standards of business conduct and ethics.

Chief Executive Officer (CEO) is directly accountable to the Board for all of BMO's risk-taking activities. The CEO is supported by the CRO and the ERPm group.

Chief Risk Officer (CRO) reports directly to the CEO and is head of ERPm and chair of RMC. The CRO is responsible for providing independent review and oversight of enterprise-wide risks and leadership on risk issues, developing and maintaining the RMF and fostering a strong risk culture across the enterprise.

Risk Management Committee (RMC) is BMO management's senior risk committee. RMC reviews and discusses significant risk issues and action plans as they arise in the implementation of the enterprise-wide strategy. RMC provides risk oversight and governance at the highest levels of management. This committee is chaired by the CRO, and its members include the heads of the operating groups, the CEO, the Chief Financial Officer (CFO) and the General Counsel.

RMC Sub-Committees have oversight responsibility for the risk implications and balance sheet impacts of management strategies, governance practices, risk measurement, model risk management and contingency planning. RMC and its sub-committees provide oversight of the risks taken across the enterprise and the processes through which such risks are identified, assessed, managed, monitored, mitigated and reported in accordance with policies, and held within limits and risk tolerances.

Enterprise Risk and Portfolio Management (ERPm), as the risk management second line of defence, provides risk management oversight, effective challenge and independent assessment of risk and risk-taking activities. ERPm supports a disciplined approach to risk-taking by fulfilling its responsibilities for independent transactional approval and portfolio management, policy formulation, risk reporting, stress testing, modelling and risk education. This approach promotes consistency in risk management practices and standards across the enterprise, and verifies that any accepted risks are consistent with BMO's risk appetite.

Operating Groups and Corporate Services, including Technology and Operations, are responsible for effectively managing risks by identifying, assessing, managing, monitoring, mitigating and reporting on risk within their respective operations and lines of business in accordance with their established risk appetite. They exercise business judgment and maintain effective policies, processes and internal controls, so that significant risk issues are escalated and reviewed by ERPm. Individual governance committees and ERPm establish and monitor risk limits that are consistent with, and subordinate to, the Board-approved limits.

Risk Appetite Framework

BMO's Risk Appetite Framework consists of its Risk Appetite Statement and the delineation of roles and responsibilities of senior management and the Board of Directors, and is supported by corporate policies, standards and guidelines, including related risk limits, concentration levels and controls defined therein. Risk appetite defines the amount of risk that the bank is willing to assume given its guiding principles, thereby supporting the pursuit of sound business initiatives, appropriate returns and targeted growth. Risk appetite is integrated with strategic and capital planning and performance management. The Risk Appetite Statement consists of both qualitative and quantitative specifications of our appetite for material risks. Key risk metrics are outlined for material risks, which include specific thresholds that allow senior management and the Board of Directors to monitor the current risk profile relative to risk appetite. On an annual basis, the RMC submits the Risk Appetite Statement and key risk metrics to the RRC, which in turn reviews and recommends them to the Board of Directors for approval. The Risk Appetite Statement is articulated and applied consistently across the enterprise, with operating groups and key businesses and entities developing their own respective risk appetite statements within this framework.

We believe that risk management is every employee's responsibility. This is guided by five key principles that drive our approach to managing risk across the enterprise and comprise our Risk Appetite Statement.

- **Understand and Manage** by only taking risks that are transparent and understood.
- **Protect BMO's Reputation** by adhering to principles of honesty, integrity, respect and high ethical standards in line with our Code of Conduct.
- **Diversify. Limit Tail Risk** by targeting a business mix that minimizes earnings volatility and exposure to low-probability, high-impact events.
- **Maintain Strong Capital and Liquidity** that meet, or exceed, regulatory requirements and market expectations.
- **Optimize Risk Return** by managing risk-adjusted exposures and making decisions that create value for shareholders.

Risk Limits

Risk limits are set so that risk-taking activities remain within BMO’s risk appetite, and balance risk diversification, exposure to loss and risk-adjusted returns. These limits inform business strategies and decisions, and are reviewed and approved by the Board of Directors or management committees, as appropriate, based on the level and granularity of the limits. They include:

- **Credit and Counterparty Risk** – limits on group and single-name exposures and material country, industry and portfolio/product segments.
- **Market Risk** – limits on economic value and earnings exposures to stress scenarios and significant market movements, as well as limits on value at risk and stress related to trading and underwriting activities.
- **Insurance Risk** – limits on policy exposures and reinsurance arrangements.
- **Liquidity and Funding Risk** – minimum limits governing the internal liquidity stress testing scenario, minimum regulatory liquidity ratio requirements, and maximum levels of asset pledging and wholesale funding, as well as limits related to liability diversification and credit and liquidity facility exposures.
- **Operational Risk** – key metrics for measuring operational and other non-financial risks.

The Board of Directors, after considering recommendations from the RRC and the RMC, annually reviews and approves key risk limits and then delegates overall authority for these limits to the CEO. The CEO in turn delegates more specific authorities to the senior executives of the operating groups (first line of defence), who are responsible for the management of risk in their respective operations, and to the CRO. These delegated authorities allow risk officers to set risk tolerances, approve geographic and industry sector exposure limits within defined parameters, and establish underwriting and inventory limits for trading and investment banking activities. The criteria under which more specific authorities may be delegated across the organization, as well as the requirements relating to the documentation, communication and monitoring of those specific delegated authorities, are set out in corporate policies and standards.

Enterprise Policy Framework

The Enterprise Policy Framework includes a comprehensive set of corporate policies, each of which is approved by the RRC, as well as corporate standards issued pursuant to those corporate policies that have been reviewed by the RMC and approved by senior management. Corporate policies and standards collectively outline the principles, expectations, and roles and responsibilities of senior management for ensuring that key risks are identified, assessed, managed (including mitigation), monitored and reported. Corporate policies and standards are reviewed and updated at a minimum every two years.

The Enterprise Policy Framework also includes supporting directives and procedures that apply across the first and second lines of defence to operationalize the requirements, roles and responsibilities, and activities outlined in those corporate policies and standards.

Three-Lines-of-Defence Operating Model

Our ERMF is operationalized through the three-lines-of-defence approach to managing risk, as described below:

- Operating groups and Corporate Services, which includes Technology and Operations, are our first line of defence. They are accountable for the risks arising from their businesses, operations and exposures. They are expected to pursue business opportunities within their established risk appetite and to identify, assess, manage (including mitigation), monitor and report on all risks in, or arising from, their businesses, operations and exposures. The first line discharges its responsibilities by applying risk management and reporting methodologies, and is responsible for establishing appropriate internal controls in accordance with the ERMF and for monitoring the effectiveness of such controls. These processes and controls help ensure businesses act within their delegated risk-taking authority and risk limits, as set out in corporate policies and the Risk Appetite Framework. Corporate Services, which includes Technology and Operations, while part of our first line of defence, may also operate in a governance capacity when specific roles and responsibilities are assigned to individuals or groups under the Enterprise Policy Framework.
- The second line of defence comprises ERPM and Legal & Regulatory Compliance. The second line provides independent oversight, effective challenge and independent assessment of risks and risk management practices, including transaction, product and portfolio risk management decisions, processes and controls in the first line of defence. The second line establishes enterprise-wide risk management policies, infrastructure, processes, methodologies and practices that the first and second lines use to identify, assess, manage (including mitigation), monitor and report risks across the enterprise.
- Corporate Audit Division is the third line of defence. It provides an independent assessment of the effectiveness of internal controls across the enterprise, including controls that support the risk management and governance processes.

Risk Taxonomy

A Risk Taxonomy is maintained to document the key risks to which BMO is exposed. As a key risk management tool, the Risk Taxonomy reflects our Tier 1 risks, as set out in the diagram below, and provides foundational support across the risk management life cycle in relation to each of these key risks. Our Risk Taxonomy incorporates exposures to financial risks (Credit and Counterparty Risk, Market Risk, Insurance Risk and Liquidity and Funding Risk), non-financial risks (Operational Risk and Legal and Regulatory Risk) and transverse risks, which intersect with both financial and non-financial risks (Strategic Risk, Environmental and Social Risk and Reputation Risk). We maintain sub-categories under each Tier 1 risk in order to support effective risk management practices as part of the overall ERMF.

Financial Risk				Non-Financial Risk		Transverse Risk		
Credit and Counterparty Risk	Market Risk	Insurance Risk	Liquidity and Funding Risk	Operational Risk	Legal and Regulatory Risk	Strategic Risk	Environmental and Social Risk	Reputation Risk

Risk Management Life Cycle

Risk Identification, Assessment and Management

Risk identification is an integral step in recognizing the key inherent risks that BMO faces, assessing the potential for loss and then acting to mitigate this potential. Our Risk Taxonomy identifies key risks, supporting the implementation of our Risk Appetite Framework and assisting in identifying the primary risk categories for which stress capital consumption is estimated. Risk review and approval processes are established based on the nature, size and complexity of the risks involved. Generally, these involve a formal review and approval by either an individual or a committee that is independent of the originator. Delegated authorities and approvals by category are outlined below.

- **Portfolio transactions** – transactions are approved through risk assessment processes for all types of transactions at all levels of the enterprise, which include operating group recommendations and ERPM approval of credit risk, and transactional and position limits for market risk.
- **Structured transactions** – new structured products and transactions with significant legal and regulatory, accounting or tax implications are reviewed by the Global Markets Risk Committee, as appropriate, and are also reviewed through the operational risk management process if they involve structural or operational complexity that may give rise to significant operational risk. Transactions that may give rise to reputation risk are reviewed by the Reputation Risk Management Committee.
- **Investment initiatives** – documentation of risk assessments is formalized through the investment spending approval process, and is reviewed and approved by Corporate Services based on the initiative's investment spend and inherent risk.
- **New products and services** – procedures for the approval of new or modified products and services offered to customers are the responsibility of the first line of defence, including appropriate senior business leaders, and are reviewed and approved by subject matter experts and senior managers in Corporate Services, as well as by other senior management committees.

Risk Monitoring and Reporting

Risk-Based Capital Assessment

Two measures of risk-based capital are used by BMO: economic capital and advanced-approach regulatory capital. Both are aggregate measures of the risk that the bank assumes in pursuit of its financial objectives, and they enable the evaluation of returns on a risk-adjusted basis. Our operating model provides for the direct management of each type of risk, as well as the management of all material risks on an integrated basis. Measuring the economic profitability of transactions or portfolios involves a combination of both expected and unexpected losses to assess the extent and correlation of risk before authorizing new exposures. Both expected and unexpected loss measures for a transaction or a portfolio reflect current market conditions, the inherent risk in the position and, as appropriate, its credit quality. Risk-based capital methods and material models are reviewed at least annually and updated as appropriate. The risk-based capital models provide a forward-looking estimate of the difference between the maximum potential loss in economic (or market) value and expected loss, measured over a specified time interval and using a defined confidence level.

Stress Testing

Stress testing is a key element of the risk and capital management frameworks. It is integrated into our enterprise and group risk appetite statements and embedded in our management processes. To evaluate risks, we regularly test a range of scenarios, which vary in frequency, severity and complexity, in portfolios and businesses across the enterprise. In addition, we participate in regulatory stress tests in multiple jurisdictions. Governance of the stress testing framework resides with senior management, including the Enterprise Stress Testing Committee. This committee comprises business, risk and finance executives, and is accountable for reviewing and challenging enterprise-wide scenarios and stress test results. Stress testing and enterprise-wide scenarios associated with the Internal Capital Adequacy Assessment Process (ICAAP), including recommendations for actions that the enterprise could take in order to manage the impact of a stress event, are established by senior management and presented to the Board of Directors. Stress testing associated with the Horizontal Capital Review (HCR), which is a U.S. regulatory requirement for BMO Financial Corp. (BFC), is similarly governed at the BFC level.

Quantitative models and tools, along with qualitative approaches, are utilized to assess the impact of changes in the macroeconomic environment on the income statement and balance sheet and the resilience of the bank's capital over a forecast horizon. Models utilized for stress testing are approved and governed under the Model Risk Management Framework, and are used to establish a better understanding of our risks and to test our capital adequacy.

Enterprise Stress Testing

Enterprise stress testing supports BMO's ICAAP and target-setting through analysis of the potential effects of low-frequency, high-severity events on earnings, the balance sheet, and liquidity and capital positions. Scenario selection is a multi-step process that considers material and idiosyncratic risks and the potential impact of new or emerging trends on risk profiles, as well as the macroeconomic environment. Scenarios may be defined by senior management or regulators. The economic impacts are determined by the Economics group, which translates the scenarios into macroeconomic and market variables that include, but are not limited to, GDP growth, yield curve estimates, unemployment rates, real estate prices, stock index growth and changes in corporate profits. These macroeconomic variables drive stress loss models, tools and qualitative assessments that are applied to determine estimated stress impacts. The scenarios are used by operating, risk and finance groups to assess a broad range of financial impacts that could arise under a specific stress, as well as the ordinary course and extraordinary actions that would be anticipated in response to that stress.

Stress test results, including mitigating actions, are benchmarked and challenged by relevant business units and senior management, including the Enterprise Stress Testing Committee.

Targeted Portfolio and Ad Hoc Stress Testing

BMO's stress testing framework integrates stress testing at the line of business, portfolio, industry, geographic and product level, and embeds it in strategy, business planning and decision-making. Targeted portfolio, industry and geographic analysis is conducted by ERPM and the lines of business to test risk appetite, limits, concentration and strategy. Ad hoc stress testing is conducted in response to changing economic or market conditions and in order to assess business strategies.

Climate-Related Scenario Analysis

We have established a climate-related scenario analysis program to explore climate-specific vulnerabilities in order to enhance our resilience to climate-related risks, in line with the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) recommendations. The climate-related scenario analysis program leverages existing risk capabilities in combination with climate-specific expertise. Evolving industry practices are examined and used to inform this work, with the goal of strengthening our ability to evaluate climate-related risks. In the past year, we have applied scenario analysis to certain sectors in our portfolios to determine the potential impacts of physical and transition risks. BMO is also participating in Phase III of the United Nations Environment Programme Finance Initiative (UNEP-FI) to evaluate and test climate scenario analysis methodologies.

Risk Culture

The Enterprise Culture and Conduct Framework sets out BMO's approach to managing and mitigating potential misconduct. Misconduct is behaviour that falls short of legal, professional, internal conduct and ethical standards. Similar to BMO's approach to other non-financial risks, this framework is supported by the ERMF and our focus on maintaining a strong risk culture. BMO reports on various metrics related to culture and conduct, and engages with other control frameworks across the enterprise and in all of the jurisdictions in which it operates.

Risk culture is the set of shared norms, attitudes and behaviours related to risk awareness, risk-taking and risk management at BMO. Sound risk culture consistently supports appropriate behaviours and judgments about risk-taking and promotes effective risk management and alignment of risk-taking activities with BMO's Risk Appetite. Our risk culture informs and supports our overall culture. We have a long-standing commitment to high ethical standards, grounded in values of integrity, empathy, diversity and responsibility. Our Purpose – to Boldly Grow the Good *in business and life* – is underpinned by our values. The Purpose defines BMO as an organization and is the foundation of our position and our operations. ERPM is responsible for the development and promotion of a healthy, strong risk culture across the enterprise. In pursuing this mandate, ERPM works closely with Legal & Regulatory Compliance and its Ethics & Conduct Office, as well as People & Culture. BMO's risk culture is founded on four guiding principles that together reinforce its effectiveness across the bank: Tone from the Top, Accountability, Effective Communication and Challenge, and Incentives:

- **Tone from the Top:** Our risk culture is grounded in an approach to risk management that encourages openness, constructive challenge and personal accountability. Each member of senior management plays a critical role in fostering this strong risk culture among all employees, by effectively communicating this responsibility and by the example of their own actions. The Board of Directors oversees BMO's corporate objectives, and seeks to ensure they are supported by a sound risk strategy and an effective ERMF that is appropriate to the nature, scale, complexity and risk profile of our operations.
- **Accountability:** BMO's ERMF is anchored in the three-lines-of-defence approach to managing risk. Our risk culture also encourages the escalation of concerns associated with potential or emerging risks to senior management, so that they can be evaluated and appropriately addressed. BMO encourages and supports an environment in which concerns can be raised without retaliation.
- **Effective Communication and Challenge:** Timely and transparent sharing of information is integral to engaging stakeholders in key decisions and strategy discussions, bringing added rigour and discipline to BMO's decision-making. This not only leads to the timely identification, escalation and resolution of issues, but also encourages open communication, independent challenge and an understanding of the key risks faced by the organization, so that employees are equipped and empowered to make decisions and take action in a coordinated and consistent manner, supported by a strong monitoring and control framework.
- **Incentives:** Compensation and other incentives are aligned with prudent risk-taking. These are designed to reward the appropriate use of capital and respect for the rules and principles of the ERMF, and do not encourage excessive risk-taking. Risk managers have input into the design of incentive programs that may have an effect on risk-taking. We also maintain training programs that are designed to foster a deep understanding of BMO's capital and risk management frameworks across the enterprise, providing employees and management with the tools and insights they need to fulfill their responsibilities for independent oversight, regardless of their role in the organization.

Credit and Counterparty Risk

Credit and counterparty risk is the potential for credit loss due to the failure of an obligor (i.e., a borrower, endorser, guarantor or counterparty) to repay a loan or honour another predetermined financial obligation.

Credit and counterparty risk underlies every lending activity that we enter into, and also arises in the holding of investment securities, transactions related to trading and other capital markets products, and activities related to securitization. Credit risk and counterparty risk comprise the most significant measurable risk we face. Proper management of credit risk is integral to our success, since failure to effectively manage credit risk could have an immediate and significant impact on earnings, financial condition and reputation.

Credit and Counterparty Risk Governance

The objective of the Credit Risk Management Framework is to ensure that all material credit risks to which the enterprise is exposed are identified, measured, managed, monitored and reported. The Risk Review Committee (RRC) has oversight of the management of all material risks that we face at BMO, including the Credit Risk Management Framework. The Credit Risk Management Framework incorporates governing principles that are defined in a series of corporate policies and standards and are applied to specific operating procedures. These policies and standards are reviewed on a regular basis and modified as necessary to keep them current and consistent with our risk appetite. The structure, limits (both notional and capital-based), collateral requirements, monitoring, reporting and ongoing management of credit exposures are all governed by these credit risk management principles.

Lending officers in the operating groups are responsible for recommending credit decisions based on the completion of appropriate due diligence, and they assume accountability for the related risks. In some instances, relatively small transactions may be assessed by automated decision-making, or they may be approved by first-line underwriters with appropriate training, independence and oversight. Credit officers in Enterprise Risk Portfolio Management (ERPM) approve larger or higher risk credit transactions and are accountable for providing an objective independent assessment of the lending recommendations and risks assumed by the lending officers. All of these individuals in the first and second lines of defence are subject to a lending qualification process and operate in a disciplined environment with clear delegation of decision-making authority, including individually delegated lending limits where appropriate, which are reviewed annually or more frequently, as needed. The Board of Directors annually delegates to the CEO discretionary lending limits for further specific delegation to senior officers. Credit decision-making is conducted at the management level appropriate to the size and risk of each transaction, in accordance with an extensive range of corporate policies, standards and procedures governing the conduct of activities in which credit risk arises. Corporate Audit Division reviews and tests management processes and controls and samples credit transactions in order to assess adherence to acceptable lending standards as set out in BMO's Risk Appetite Statement, as well as compliance with all applicable governing policies, standards and procedures.

For corporate and commercial obligors presenting a higher than normal risk of default, we have in place formal policies that outline the framework for managing such accounts and the specialized groups that manage them. We strive to identify borrowers in financial difficulty early, and every effort is made to bring such accounts back to an acceptable level of risk through the exercise of good business judgment and the implementation of sound and constructive workout solutions. Obligor accounts are managed on a case-by-case basis, which involves the application of judgment by the specialized groups.

All credit risk exposures are subject to regular monitoring. Performing corporate and commercial accounts are reviewed on a regular basis, no less frequently than annually, with most subject to internal monitoring triggers that, if breached, result in an interim review.

The frequency of review increases in accordance with the likelihood and size of potential credit losses, and deteriorating higher-risk situations are referred to specialized account management groups for closer attention, as appropriate. In addition, regular portfolio and sector reviews are carried out, including stress testing and scenario analysis based on current, emerging or prospective risks, such as the COVID-19 pandemic. Reporting is provided at least quarterly, and more frequently where appropriate, to RRC and senior management committees in order to keep them informed of credit risk developments in our credit and investment portfolios, including changes in credit risk concentrations, watchlist accounts, impaired loans, provisions for credit losses, negative credit migration and significant emerging credit risk issues. This supports RRC and senior management committees in any related decisions they may make.

Counterparty credit risk (CCR) involves a bilateral risk of loss because the market value of a transaction can be positive or negative for either counterparty. CCR exposures are subject to the credit oversight, limit framework and approval process outlined above. However, given the nature of the risk, CCR exposures are monitored under the market risk framework. In order to reduce our exposure to CCR, exposures are often collateralized, and trades may be cleared through a regulated central counterparty (CCP), which reduces overall systemic risk by standing between counterparties, maximizing netting across trades and insulating counterparties from each other's defaults. CCPs mitigate default risk of any member through the use of margin requirements (both initial and variation) and a default management process, including a default fund and other provisions. Our exposures to CCPs are subject to the same credit risk governance, monitoring and rating framework we apply to all other corporate accounts.

Credit and Counterparty Risk Management

Collateral Management

Collateral is used for credit risk mitigation purposes to minimize losses that would otherwise be incurred in the event of a default. Depending on the type of borrower or counterparty, the assets available and the structure and term of the credit obligations, collateral can take various forms. For corporate and commercial borrowers, collateral can take the form of pledges of the assets of a business, such as accounts receivable, inventory, machinery or real estate, or personal assets pledged in support of guarantees. For trading counterparties, BMO may enter into legally enforceable netting agreements for on-balance sheet credit exposures, when possible. In the securities financing transaction business (including repurchase agreements and securities lending), we take eligible financial collateral that we control and can readily liquidate.

Collateral for BMO's derivatives trading counterparty exposures primarily comprises cash and eligible liquid securities that are monitored and revalued on a daily basis. Collateral is obtained under the contractual terms of standardized industry documentation.

With limited exceptions, we utilize the International Swaps and Derivatives Association Inc. Master Agreement, frequently with a Credit Support Annex, to document our collateralized trading relationships with counterparties for over-the-counter (OTC) derivatives that are not centrally cleared.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Credit Support Annexes entitle a party to demand a transfer of collateral (or other credit support) when its OTC derivatives exposure to the other party exceeds an agreed threshold. Collateral to be transferred can include variation margin or initial and variation margin. Credit Support Annexes contain, among other measures, provisions setting out acceptable types of collateral and a method for their valuation (discounts are often applied to the market values), as well as thresholds, whether or not the collateral can be re-pledged by the recipient and how interest is to be calculated.

Many G20 jurisdictions continue to implement new regulations that require certain counterparties with significant exposures to OTC derivatives to post or collect prescribed types and amounts of collateral for uncleared OTC derivatives transactions. For additional discussion, refer to Derivatives Reform.

To document our contractual securities financing relationships with counterparties, we utilize master repurchase agreements for repurchase transactions, and master securities lending agreements for securities lending transactions.

On a periodic basis, collateral is subject to revaluation based on the specific asset type. For loans, the value of collateral is initially established at the time of origination, and the frequency of revaluation is dependent on the type of collateral. For commercial real estate collateral, a full external appraisal of the property is typically obtained at the time of loan origination, unless the exposure is below a specified threshold amount, in which case an internal evaluation and a site inspection are conducted. Internal evaluations may consider property tax assessments, purchase prices, real estate listings or realtor opinions. The case for an updated appraisal is reviewed annually, with consideration given to the borrower risk rating, existing tenants and lease contracts, as well as current market conditions.

In the event a loan is classified as impaired, and depending on its size, a current external appraisal, evaluation or restricted use appraisal is obtained and updated every 12 months while the loan is classified as impaired. In Canada, for residential real estate that has a loan-to-value (LTV) ratio of less than 80%, an external property appraisal is routinely obtained at the time of loan origination. We may use an external service provided by Canada Mortgage and Housing Corporation or an automated valuation model from a third-party appraisal management provider to assist with determining either the current value of a property or the need for a full property appraisal.

For insured residential mortgages in Canada with an LTV ratio greater than 80%, the default insurer is responsible for confirming the lending value.

Portfolio Management and Concentrations of Credit and Counterparty Risk

Our credit risk governance policies require an acceptable level of diversification to help ensure we avoid undue concentrations of credit risk. Concentrations of credit risk may exist if a number of clients are engaged in similar activities, are located in the same geographic region or have similar economic characteristics such that their ability to meet contractual obligations could be similarly affected by changes in economic, political or other conditions. Limits may be specified for several portfolio dimensions, including industry, specialty segment (e.g., hedge funds and leveraged lending), country, product and single-name concentrations. The diversification of our credit exposure may be supplemented by the purchase or sale of credit protection through guarantees, insurance or credit default swaps.

Our credit assets consist of a well-diversified portfolio representing millions of clients, the majority of them individual consumers and small to medium-sized businesses. From an industry viewpoint, on a drawn loans and commitments basis, our most significant exposure as at October 31, 2021 was to individual consumers, comprising \$280,087 million (\$259,289 million in 2020).

Wrong-Way Risk

Wrong-way risk occurs when our exposure to a counterparty or the magnitude of our potential loss is highly correlated with the counterparty's probability of default. Specific wrong-way risk arises when the credit quality of the counterparty and the market risk factors affecting collateral or other risk mitigants display a high correlation, and general wrong-way risk arises when the credit quality of the counterparty, for non-specific reasons, is highly correlated with macroeconomic or other factors that affect the value of the risk mitigant. Our procedures require that specific wrong-way risk be identified in transactions and accounted for in the assessment of risk, including any heightened level of exposure.

Credit and Counterparty Risk Measurement

BMO quantifies credit risk at both the individual borrower or counterparty level and the portfolio level. In order to limit earnings volatility, manage expected credit losses and minimize unexpected losses, credit risk is assessed and measured using the following risk-based parameters:

- **Exposure at Default (EAD)** represents an estimate of the outstanding amount of a credit exposure at the time a default may occur.
- **Loss Given Default (LGD)** is a measure of BMO's economic loss, such as the amount that may not be recovered in the event of a default, presented as a proportion of the exposure at default.
- **Probability of Default (PD)** represents the likelihood that a borrower or counterparty will go into default over a one-year time horizon.
- **Expected Loss (EL)** is a measure representing the loss that is expected to occur in the normal course of business in a given period of time. EL is calculated as a function of EAD, LGD and PD.

Under Basel III, the Office of the Superintendent of Financial Institutions (OSFI) permits three approaches for the measurement of credit risk: Standardized, Foundation Internal Ratings Based and Advanced Internal Ratings Based (AIRB). BMO primarily uses the AIRB Approach to determine credit risk-weighted assets (RWA) in its portfolios, including portfolios of the bank's subsidiary BMO Financial Corp. Refer to the Supplementary Regulatory Capital Information disclosure for details regarding the total EAD of Retail and Wholesale exposures under AIRB capital treatment. The remaining exposures reflect waivers and exemptions to the AIRB Approach and are measured under the Standardized Approach, subject to OSFI's approval. We continue to transition all material exposures in this category to the AIRB Approach. For securitization exposures, we apply the Basel hierarchy of approaches, including the Securitization Internal Ratings Based Approach and the External Ratings Based Approach, as well as the Standardized Approach.

BMO's regulatory capital and economic capital frameworks both use EAD to assess credit and counterparty risk. Exposures are classified as follows:

- Drawn exposures include loans, acceptances, deposits with regulated financial institutions and certain securities. For off-balance sheet amounts and undrawn amounts, EAD includes an estimate of any further amounts that may be drawn at the time of default.
- Undrawn commitments cover all unutilized authorizations associated with the drawn loans noted above, including those which are unconditionally cancellable. EAD for undrawn commitments is model-generated, based on internal empirical data.
- OTC derivatives are those in proprietary accounts that result in exposure to credit risk in addition to market risk. EAD for OTC derivatives is calculated inclusive of collateral.
- Other off-balance sheet exposures include items such as guarantees, standby letters of credit and documentary credits. EAD for other off-balance sheet items is based on management's best estimate.
- Repo-style transactions include repos, reverse repos and securities lending transactions, which represent both asset and liability exposures. EAD for repo-style transactions is the calculated exposure, net of collateral.
- Capital is calculated based on exposures that, where applicable, have been redistributed to a more favourable PD band or LGD measure, or a different Basel asset class, as a result of the application of credit risk mitigation and a consideration of credit risk mitigants, including collateral and netting.

Total credit exposures at default by industry sector, as at October 31, 2021 and 2020, based on the Basel III classifications, are as follows:

(Canadian \$ in millions)	Drawn (3)		Commitments (undrawn) (3)		OTC derivatives (4)		Other off-balance sheet items (3)		Repo-style transactions (4) (5)		Total (1)	
	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020
Financial institutions	187,011	142,254	26,933	24,302	16,331	19,611	6,808	6,520	28,968	22,866	266,051	215,553
Governments	67,207	78,506	1,606	1,579	4,011	4,892	400	590	3,226	2,624	76,450	88,191
Manufacturing	27,002	27,789	16,470	16,696	1,649	1,741	1,784	1,714	-	-	46,905	47,940
Real estate	43,524	40,202	9,830	9,735	1,032	1,383	1,189	973	-	-	55,575	52,293
Retail trade	16,270	19,835	4,646	4,809	289	487	592	604	-	-	21,797	25,735
Service industries	44,367	47,468	16,126	15,443	1,238	2,033	2,998	3,116	-	-	64,729	68,060
Wholesale trade	14,372	15,295	5,199	5,455	282	423	694	600	-	-	20,547	21,773
Oil and gas	6,075	9,659	5,468	7,212	10,281	4,753	1,377	1,792	-	-	23,201	23,416
Individual	224,348	206,370	55,655	52,829	-	-	84	90	-	-	280,087	259,289
Utilities	7,412	8,869	10,864	11,779	1,273	2,259	2,950	2,805	-	-	22,499	25,712
Others (2)	37,071	36,446	17,177	14,900	1,588	1,001	4,732	5,295	-	-	60,568	57,642
Total exposure at default (6)	674,659	632,693	169,974	164,739	37,974	38,583	23,608	24,099	32,194	25,490	938,409	885,604

(1) Credit exposure excluding equity, securitization and other assets, such as non-significant investments, goodwill, deferred tax asset and intangibles.

(2) Includes industries having a total exposure of less than 2%.

(3) Represents gross credit exposures without accounting for any collateral.

(4) Credit exposure at default is inclusive of collateral.

(5) Impact of collateral on the credit exposure for repo-style transactions is \$208,635 million (\$205,212 million in 2020).

(6) Excludes exposures arising from derivative and repo-style transactions that are cleared through CCPs totalling \$18,440 million (\$16,901 million in 2020).

Prior-period amounts for certain sectors have been adjusted to align with the current year's presentation, which better classifies the realigned sectors.

Risk Rating Systems

BMO's risk rating systems are designed to assess and measure the risk of any exposure.

Credit risk-based parameters are reviewed, validated and monitored regularly. The monitoring is on a quarterly basis for both the wholesale and retail models. Refer to the Model Risk section for a discussion of model risk mitigation processes. Since the onset of the COVID-19 pandemic, the bank has performed proactive reviews to assess the impact of the pandemic on the retail portfolios and on certain sectors in the wholesale portfolios.

Retail (Consumer and Small Business)

The retail portfolios comprise a diversified group of individual customer accounts and include residential mortgages, personal loans, credit cards, auto loans and small business loans. These loans are managed in pools of homogeneous risk exposures for risk rating purposes. Decision support systems are developed using established statistical techniques and expert systems for underwriting and monitoring purposes. Adjudication models, behavioural scorecards, decision trees and expert knowledge are combined to generate optimal credit decisions in a centralized and automated environment.

The retail risk rating system assesses risk based on individual loan characteristics. We have a range of internally developed PD, LGD and EAD models for each of the major retail portfolios. The major product lines within each of the retail portfolios are modelled separately, so that the risk-based parameters capture the distinct nature of each product. The models, in general, are designed based on internal historical data recorded over a multi-year period that includes at least one full economic cycle, in compliance with regulatory requirements. Adjustments are incorporated into the parameters, as appropriate, to account for uncertainties. The retail parameters are tested and calibrated on an annual basis, if required, to incorporate additional data points and recent experience in the parameter estimation process. Our largest retail portfolios are the Canadian mortgage, Canadian home equity line of credit and Canadian retail credit card portfolios. Risk drivers used in the retail capital models may include customer attributes such as delinquency status and credit scores, and account attributes such as loan amount and utilization.

A PD estimate is assigned to each homogeneous pool to reflect the long-run average of one-year default rates over the economic cycle.

An LGD estimate is calculated by discounting future recovery payments to the time of default, including collection costs.

An EAD estimate is calculated as the balance at default divided by the credit limit at the beginning of the year. For non-revolving products, such as mortgages, EAD is equal to 100% of the current outstanding balance and has no undrawn component.

For capital purposes, the LGD and EAD estimates are calibrated to reflect a downturn scenario. The PD, LGD and EAD estimates are updated annually and recalibrated as required, by comparing the estimates to observed historical experience.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Retail Credit Probability of Default Bands by Risk Rating

Risk profile	Probability of default band
Exceptionally low	≤ 0.05%
Very low	> 0.05% to 0.20%
Low	> 0.20% to 0.75%
Medium	> 0.75% to 7.00%
High	> 7.00% to 99.99%
Default	100%

Wholesale (Corporate, Commercial, Bank and Sovereign)

Within our wholesale portfolios, an enterprise-wide risk rating framework is applied to all sovereign, bank, corporate and commercial counterparties. One key element of this framework is the assignment of appropriate borrower or counterparty risk ratings (BRRs). We have a range of internally designed general and sector-specific BRR models, as well as portfolio-level LGD and EAD models for each of the corporate, commercial, bank and sovereign portfolios.

The BRR models capture the key financial and non-financial characteristics of the borrowers and generate a borrower-level rating that reflects the rank order of the default risk. The models are primarily designed by using internal data, supplemented with judgment as necessary, for low-default portfolios.

BRRs are assessed and assigned at the time of loan origination, and reassessed when borrowers request changes to credit facilities or events trigger a review, such as an external rating change or covenant breach. BRRs are reviewed no less frequently than annually, and more frequent reviews are conducted for borrowers with less acceptable risk ratings. The assigned ratings are mapped to a PD reflecting the likelihood of default over a one-year time horizon. As a borrower migrates between risk ratings, the PD associated with the borrower changes.

We employ a master scale with 14 BRRs above default, and PDs are assigned to each rating within an asset class to reflect the long-run average of one-year default rates over the economic cycle, supplemented by external benchmarking, as necessary.

An LGD estimate captures the priority of claim, collateral, product and sector characteristics of the credit facility extended to a borrower. LGD estimates are at the facility level.

An EAD estimate captures the facility type, sector and utilization rate characteristics of the credit facility extended to a borrower. EAD estimates are at the facility level. The EAD credit conversion factor is calculated for eligible facilities by comparing amounts drawn at the time of default and one year prior to default. The authorization and the drawn amount, one year prior to default, are used to split each facility into its respective drawn and undrawn portion, where applicable.

LGD and EAD models have been developed for each asset class using internal data recorded over a multi-year period that includes at least one full economic cycle, in compliance with regulatory requirements. Results are benchmarked using external data when necessary and adjustments are incorporated into the parameters, as appropriate, to account for uncertainties. For capital purposes, the LGD and EAD parameters are calibrated to reflect downturn conditions. The PD, LGD and EAD estimates are updated annually and recalibrated as required, by comparing the estimates to observed historical experience.

As demonstrated in the table below, our internal risk rating system can be aligned with those of external rating agencies.

Wholesale Borrower Risk Rating Scale

BMO rating	Moody's Investors Service implied equivalent	Standard & Poor's implied equivalent
Acceptable		
I-1 to I-7	Aaa to Baa3	AAA to BBB-
S-1 to S-4	Ba1 to B1	BB+ to B+
Watchlist		
P-1 to P-3	B2 to Ca	B to CC
Default / Impaired		
D-1 to D-4	C	C to D

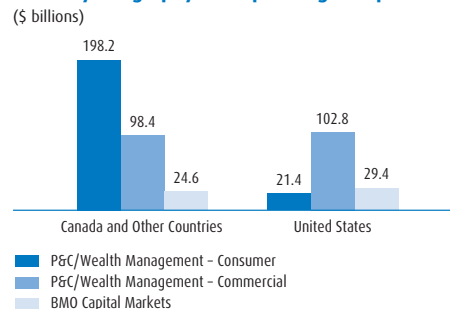
Credit Quality Information

Portfolio Review

Total enterprise-wide outstanding credit risk exposures were \$938.4 billion as at October 31, 2021, with \$505.7 billion recorded in Canada, \$381.7 billion in the United States and \$51.0 billion in other jurisdictions. This represents an increase of \$52.8 billion or 6% from the prior year ⁽¹⁾.

BMO's loan book continues to be well-diversified by industry and geographic region. Gross loans and acceptances increased \$10.6 billion or 2% from the prior year to \$474.8 billion as at October 31, 2021. The geographic mix of BMO's Canadian and U.S. portfolios represented 66.0% and 32.4% of total loans, respectively, compared with 62.5% and 34.9% in the prior year. The loan portfolio is well-diversified, with the consumer loan portfolio representing 46.5% of the total portfolio, an increase from 44.2% in the prior year, and business and government loans representing 53.5% of the total portfolio, a decrease from 55.8% in the prior year.

Loans by Geography and Operating Group



(1) Certain comparative figures have been reclassified to conform with the current year's presentation.

Loan Maturities and Interest Rate Sensitivity

The following table presents gross loans and acceptances by contractual maturity and by country of ultimate risk:

(Canadian \$ in millions)	1 year or less		Over 1 year to 5 years		Over 5 years		Total	
	2021	2020	2021	2020	2021	2020	2021	2020
Canada								
Consumer	45,592	52,346	146,158	122,938	7,836	7,381	199,586	182,665
Commercial and corporate (excluding real estate)	59,141	71,350	25,786	16,724	1,508	723	86,435	88,797
Commercial real estate	11,101	7,397	15,050	10,142	1,571	1,275	27,722	18,814
United States	54,896	45,575	72,585	88,143	26,170	28,171	153,651	161,889
Other countries	5,449	10,846	1,762	999	242	206	7,453	12,051
Total	176,179	187,514	261,341	238,946	37,327	37,756	474,847	464,216

The following table presents net loans and acceptances by interest rate sensitivity:

(Canadian \$ in millions)	2021	2020
Fixed rate	234,697	237,596
Floating rate	223,565	209,824
Non-interest sensitive (1)	14,021	13,493
Total	472,283	460,913

(1) Non-interest sensitive comprises customers' liability under acceptances.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Further details on BMO's loan book, including detailed breakdowns by industry and geographic region, can be found in Tables 7 to 15 in the Supplemental Information. Details of our credit exposures are presented in Note 4 of the consolidated financial statements.

Real Estate Secured Lending

Residential mortgage and home equity line of credit (HELOC) exposures continue to be of interest in the current environment. We regularly perform stress testing on our residential mortgage and HELOC portfolios to evaluate the potential effects of high-impact events. These stress tests incorporate scenarios ranging from moderately to severely adverse. The credit losses forecast in these tests vary with the severity of the scenario and are currently considered to be manageable.

Leveraged Finance

We define leveraged finance loans as loans and mezzanine financing provided to private equity-owned businesses for which our assessment indicates a higher level of credit risk. We have some exposure to leveraged finance loans, which represented 1.9% of total assets, with \$19.0 billion outstanding as at October 31, 2021 (1.7% and \$16.4 billion, respectively, in 2020). Of this amount, 27.0% of leveraged finance loans, with \$5.2 billion outstanding as at October 31, 2021 (26% and \$4.3 billion, respectively, in 2020), were well-secured by high-quality assets. In addition, \$417 million or 2.2% of all leveraged finance loans were classified as impaired as at October 31, 2021 (\$786 million or 4.8% in 2020).

Provision for Credit Losses

Total provision for credit losses was \$20 million in the current year, compared with \$2,953 million in the prior year, reflecting an improved economic outlook and more favourable credit conditions. Detailed discussions of PCL, including historical PCL trends, are provided in Table 15 in the Supplemental Information and in Note 4 of the consolidated financial statements.

Gross Impaired Loans

Total gross impaired loans and acceptances (GIL) were \$2,169 million in 2021, a decrease of 40% from \$3,638 million in 2020. The largest decreases in impaired loans were recorded in the oil and gas and retail trade industries. GIL as a percentage of gross loans and acceptances was 0.46% in 2021, compared with 0.78% in the prior year.

Factors contributing to the change in GIL are outlined in the table below. Loans classified as impaired during the year decreased to \$1,775 million from \$4,649 million in 2020, reflecting lower impaired loan formations in the oil and gas, retail trade and service industries. On a geographic basis, Canada accounted for most impaired loan formations, comprising 75% of total formations in 2021, compared with 39% in 2020.

Detailed breakdowns of impaired loans by geographic region and industry can be found in Table 11 in the Supplemental Information and in Note 4 of the consolidated financial statements.

Changes in Gross Impaired Loans ⁽¹⁾ and Acceptances

(Canadian \$ in millions, except as noted)
For the year ended October 31

	2021	2020	2019
GIL, beginning of year	3,638	2,629	1,936
Classified as impaired during the year	1,775	4,649	2,686
Transferred to not impaired during the year	(821)	(719)	(604)
Net repayments	(1,618)	(1,728)	(800)
Amounts written off	(584)	(1,047)	(528)
Recoveries of loans and advances previously written off	-	-	-
Disposals of loans	(79)	(147)	(57)
Foreign exchange and other movements	(142)	1	(4)
GIL, end of year	2,169	3,638	2,629
GIL as a % of gross loans and acceptances	0.46	0.78	0.58

(1) GIL excludes purchased credit impaired loans.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Allowance for Credit Losses

We employ a disciplined approach to provisioning and loan loss evaluation across all loan portfolios, with the prompt identification of problem loans being a key risk management objective. We maintain both an allowance on impaired loans and an allowance on performing loans, in accordance with IFRS. An allowance on performing loans is maintained to cover impairment in the existing portfolio for loans that have not yet been individually identified as impaired. Our approach to establishing and maintaining the allowance on performing loans is based on the requirements of IFRS, considering the guideline issued by our regulator, OSFI. Under the IFRS 9 expected credit loss (ECL) methodology, an allowance is recorded for ECL on financial assets regardless of whether there has been an actual loss event. We recognize a loss allowance at an amount generally based on 12 months of ECL, if the credit risk at the reporting date has not increased significantly since initial recognition (Stage 1). We record ECL over the remaining life of performing financial assets that are considered to have experienced a significant increase in credit risk (Stage 2).

ECL is calculated on a probability-weighted basis, based on three different economic scenarios, and is a function of PD, EAD and LGD estimates calibrated to meet the requirements for calculating ECL for a specific financial asset. The timing of the loss is also considered, and ECL is estimated by incorporating forward-looking economic information and by applying experienced credit judgment to reflect factors not captured in ECL models. An allowance on impaired loans is maintained to reduce the carrying value of individually identified impaired loans (Stage 3) to the expected recoverable amount.

We maintain an allowance for credit losses (ACL) at a level that we consider appropriate to absorb credit-related losses. As at October 31, 2021, the total ACL was \$2,958 million, a decrease of \$856 million from the prior year, reflecting lower allowances on both performing loans and impaired loans. The allowance on impaired loans was \$511 million as at October 31, 2021, and the allowance on performing loans was \$2,447 million. These amounts included an allowance on impaired loans of \$13 million and an allowance on performing loans of \$381 million related to undrawn commitments and letters of credit that are considered other credit instruments and recorded in other liabilities. The allowance on impaired loans decreased \$228 million from \$739 million in the prior year, and our coverage ratio remained adequate, with ACL on impaired loans as a percentage of GIL of 23.0%, compared with 20.0% in 2020. This ratio can change quarter-over-quarter due to variability in the write-down of loans and the related allowance. The allowance on performing loans decreased \$628 million to \$2,447 million from \$3,075 million in the prior year, primarily driven by an improving economic outlook, positive credit migration and movements in foreign exchange rates, partially offset by the impact of the uncertain environment on future credit conditions, including adoption of a higher adverse scenario weight, as well as a more severe adverse scenario and portfolio growth.

Further details on the continuity in ACL by each product type can be found in Tables 12 and 13 in the Supplemental Information, and in Note 4 of the consolidated financial statements.

European Exposures

BMO's geographic exposures are subject to a country risk management framework that incorporates economic and political assessments and management of exposures within limits based on product, entity and country of ultimate risk. Our exposure to European countries as at October 31, 2021, including Greece, Ireland, Italy, Portugal and Spain (GIIPS), is set out in the tables that follow.

The table below outlines total net portfolio exposures for funded lending, securities (including credit default swap (CDS) activity), repo-style transactions and derivatives. Funded lending is detailed by counterparty type, as well as by total commitments compared with the funded amount, in the following tables.

European Exposure by Country and Counterparty ⁽¹⁾

(Canadian \$ in millions) As at October 31, 2021		Funded lending ⁽²⁾				Securities ^{(3) (4)}				Repo-style transactions and derivatives ^{(5) (6)}				Total net exposure
Country	Total	Bank	Corporate	Sovereign	Total	Bank	Corporate	Sovereign	Total	Bank	Corporate	Sovereign	Total	
GIIPS														
Greece	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ireland ⁽⁷⁾	483	-	-	-	-	8	52	-	60	-	-	-	-	543
Italy	13	-	-	-	-	1	-	-	1	-	-	-	-	14
Portugal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spain	432	49	3	-	52	6	2	-	8	-	-	-	-	492
Total - GIIPS	928	49	3	-	52	15	54	-	69	-	-	-	-	1,049
Eurozone (excluding GIIPS)														
France	136	19	-	596	615	14	5	5	24	-	-	-	-	775
Germany	259	532	44	772	1,348	212	2	-	214	-	-	-	-	1,821
Netherlands	397	338	-	-	338	659	149	-	808	-	-	-	-	1,543
Other ⁽⁸⁾	425	-	1	74	75	16	16	4	36	-	-	-	-	536
Total - Eurozone (excluding GIIPS)	1,217	889	45	1,442	2,376	901	172	9	1,082	-	-	-	-	4,675
Rest of Europe														
Norway	341	-	-	123	123	-	4	30	34	-	-	-	-	498
Sweden	18	156	4	336	496	3	-	-	3	-	-	-	-	517
Switzerland	371	-	-	-	-	36	15	-	51	-	-	-	-	422
United Kingdom	1,773	112	246	4,396	4,754	135	620	59	814	-	-	-	-	7,341
Other ⁽⁸⁾	-	41	-	15	56	9	5	4	18	-	-	-	-	74
Total - Rest of Europe	2,503	309	250	4,870	5,429	183	644	93	920	-	-	-	-	8,852
Total - All of Europe ⁽⁹⁾	4,648	1,247	298	6,312	7,857	1,099	870	102	2,071	-	-	-	-	14,576
As at October 31, 2020														
Country	Total	Bank	Corporate	Sovereign	Total	Bank	Corporate	Sovereign	Total	Bank	Corporate	Sovereign	Total	Total net exposure
Total - GIIPS	611	53	1	-	54	8	225	3	236	-	-	-	-	901
Total - Eurozone (excluding GIIPS)	1,329	944	77	1,038	2,059	111	306	10	427	-	-	-	-	3,815
Total - Rest of Europe	3,185	622	710	7,212	8,544	779	593	58	1,430	-	-	-	-	13,159
Total - All of Europe ⁽⁹⁾	5,125	1,619	788	8,250	10,657	898	1,124	71	2,093	-	-	-	-	17,875

(1) BMO has the following indirect exposures to Europe as at October 31, 2021:

- Collateral of €976 million to support trading activity in securities (€79 million from GIIPS) and €284 million of cash collateral held.
- Guarantees of \$11 billion (\$248 million to GIIPS).

(2) Funded lending includes loans.

(3) Securities include cash products, insurance investments and traded credit.

(4) BMO's total net notional CDS exposure (embedded as part of the securities exposure in this table) to Europe was \$167 million, with no net single-name* CDS exposure to GIIPS as at October 29, 2021 (*includes a net position of \$131 million (bought protection) on a CDS Index, of which 12% comprises GIIPS domiciled entities).

(5) Repo-style transactions are primarily with bank counterparties for which BMO holds collateral (\$41 billion for Europe as at October 31, 2021).

(6) Derivatives amounts are marked-to-market, incorporating transaction netting where master netting agreements with counterparties have been entered into, and collateral offsets for counterparties where a Credit Support Annex is in effect.

(7) Does not include Irish subsidiary reserves the bank is required to maintain with the Irish Central Bank of \$104 million as at October 31, 2021.

(8) Other Eurozone exposure includes five countries with less than \$300 million net exposure. Other European exposure is distributed across four countries as at October 31, 2021.

(9) Of BMO's total net direct exposure to Europe, approximately 93% was to counterparties in countries with a rating of Aa2/AAA from at least one of Moody's or S&P.

European Lending Exposure by Country and Counterparty ⁽⁹⁾

(Canadian \$ in millions) Country	Lending ⁽²⁾						
	Funded lending as at October 31, 2021			As at October 31, 2021		As at October 31, 2020	
	Bank	Corporate	Sovereign	Commitments	Funded	Commitments	Funded
GIIPS							
Greece	-	-	-	-	-	-	-
Ireland ⁽⁷⁾	-	483	-	641	483	531	474
Italy	13	-	-	13	13	15	15
Portugal	-	-	-	-	-	-	-
Spain	91	341	-	505	432	206	122
Total - GIIPS	104	824	-	1,159	928	752	611
Eurozone (excluding GIIPS)							
France	134	2	-	264	136	386	240
Germany	157	102	-	406	259	607	391
Netherlands	73	324	-	436	397	397	374
Other ⁽⁸⁾	93	332	-	425	425	403	324
Total - Eurozone (excluding GIIPS)	457	760	-	1,531	1,217	1,793	1,329
Rest of Europe							
Norway	27	314	-	665	341	1,158	638
Sweden	16	2	-	76	18	117	16
Switzerland	19	352	-	429	371	602	505
United Kingdom	9	1,764	-	2,668	1,773	4,809	1,959
Other ⁽⁸⁾	-	-	-	31	-	100	67
Total - Rest of Europe	71	2,432	-	3,869	2,503	6,786	3,185
Total - All of Europe ⁽⁹⁾	632	4,016	-	6,559	4,648	9,331	5,125

Refer to footnotes in the table above.

Derivative Transactions

The following table presents the notional amounts of BMO's over-the-counter (OTC) derivative contracts, comprising those which are centrally cleared and settled through a designated clearing house or central counterparty (CCP) and those which are non-centrally cleared.

CCPs are established under the supervision of central banks or other similar regulatory authorities and, as financial market infrastructure, must satisfy certain financial resilience requirements. Generally speaking, to centrally clear, we acquire a membership in the CCP and, in addition to providing collateral to protect the CCP against risk related to BMO, we are exposed to risk as a member for our contribution to a default fund. We may also be called on to make additional contributions or provide other support in the event another member defaults.

The notional amounts of our derivatives represent the amount to which a rate or price is applied in order to calculate the amount of cash that must be exchanged under each contract. Notional amounts do not represent assets or liabilities and therefore are not recorded in the Consolidated Balance Sheet. The fair values of OTC derivative contracts are recorded in the Consolidated Balance Sheet.

Over-the-Counter Derivative Contracts ^(Notional amounts)

(Canadian \$ in millions)	Non-centrally cleared		Centrally cleared		Total	
	2021	2020	2021	2020	2021	2020
As at October 31						
Interest Rate Contracts						
Swaps	379,117	442,727	3,772,174	3,892,564	4,151,291	4,335,291
Forward rate agreements	2,919	2,890	144,738	514,442	147,657	517,332
Purchased options	69,491	57,833	-	-	69,491	57,833
Written options	68,155	64,728	-	-	68,155	64,728
Total interest rate contracts	519,682	568,178	3,916,912	4,407,006	4,436,594	4,975,184
Foreign Exchange Contracts						
Cross-currency swaps	85,912	96,813	-	-	85,912	96,813
Cross-currency interest rate swaps	513,421	540,688	-	-	513,421	540,688
Forward foreign exchange contracts	441,107	449,701	48,319	44,939	489,426	494,640
Purchased options	54,051	38,985	94	82	54,145	39,067
Written options	54,045	41,286	102	41	54,147	41,327
Total foreign exchange contracts	1,148,536	1,167,473	48,515	45,062	1,197,051	1,212,535
Commodity Contracts						
Swaps	28,892	30,613	-	-	28,892	30,613
Purchased options	4,526	5,728	-	-	4,526	5,728
Written options	3,132	3,704	-	-	3,132	3,704
Total commodity contracts	36,550	40,045	-	-	36,550	40,045
Equity Contracts	99,471	60,502	7	2	99,478	60,504
Credit Default Swaps						
Purchased	778	1,386	11,580	6,021	12,358	7,407
Written	179	510	4,979	1,285	5,158	1,795
Total credit default swaps	957	1,896	16,559	7,306	17,516	9,202
Total	1,805,196	1,838,094	3,981,993	4,459,376	5,787,189	6,297,470

Market Risk

Market risk is the potential for adverse changes in the value of our assets and liabilities resulting from changes in market variables such as interest rates, foreign exchange rates, equity and commodity prices and their implied volatilities, and credit spreads, and includes the risk of credit migration and default in our trading book.

Market risk arises from our trading and underwriting activities, as well as our structural banking activities. The magnitude and importance of these activities to the enterprise, along with the potential volatility of market variables, call for diligent governance and a robust market risk management framework that seeks to provide effective identification, measurement, reporting and control of market risk exposures.

Trading and Underwriting Market Risk Governance

Our market risk-taking activities are subject to an extensive governance framework. The Risk Review Committee (RRC) provides oversight of the management of market risk on behalf of the Board of Directors and approves limits governing market risk exposures that are consistent with our risk appetite. The Risk Management Committee (RMC) regularly reviews and discusses significant market risk exposures and positions, and provides ongoing senior management oversight of our risk-taking activities. Both of these committees are kept apprised of specific market risk exposures and other factors that could expose us to unusual, unexpected or unquantified risks associated with market exposures, as well as other current and emerging market risks. In addition, all businesses and individuals authorized to conduct trading and underwriting activities on behalf of BMO are required to work within our governance framework and, as part of their first-line-of-defence responsibilities, they must adhere to all relevant corporate policies, standards and procedures and maintain and manage market risk exposures within specified limits and risk tolerances. In support of our risk governance framework, our market risk management framework comprises processes, infrastructure and supporting documentation, which together support the identification, assessment, independent monitoring and control of our market risk exposures.

Trading and Underwriting Market Risk

Our trading and underwriting businesses give rise to market risk associated with buying and selling financial products in the course of meeting customer needs, including market-making and related financing activities, and assisting clients to raise funds by way of securities issuance.

Identification and Assessment of Trading and Underwriting Market Risk

As the first step in the management of market risk, thorough assessment processes are in place to identify market risk exposures associated with both new products and the evolving risk profile of existing products, including on- and off-balance sheet positions, trading and non-trading positions, and market risk exposures arising from the domestic and foreign operations of our operating groups.

Reflecting the multi-dimensional nature of market risk, various metrics and techniques are then employed to measure identified market risk exposures. These metrics primarily include Value at Risk, Stressed Value at Risk, and regulatory and economic capital attribution, as well as stress testing. Other techniques include the analysis of the sensitivity of our trading and underwriting portfolios to various market risk factors and the review of position concentrations, notional values and trading losses.

Value at Risk (VaR) measures the maximum loss likely to be experienced in the trading and underwriting portfolios, measured at a 99% confidence level over a one-day holding period. VaR is calculated for specific classes of risk in BMO's trading and underwriting activities related to interest rates, foreign exchange rates, credit spreads, equity and commodity prices and their implied volatilities.

Stressed Value at Risk (SVaR) measures the maximum loss likely to be experienced in the trading and underwriting portfolios, measured at a 99% confidence level over a one-day holding period, with model inputs calibrated to historical data from a period of significant financial stress. SVaR is calculated for specific classes of risk in BMO's trading and underwriting activities related to interest rates, foreign exchange rates, credit spreads, equity and commodity prices and their implied volatilities.

Incremental Risk Charge (IRC) complements the VaR and SVaR metrics and represents an estimate of the default and migration risks of non-securitization products held in the trading book with exposure to interest rate risk, measured over a one-year horizon at a 99.9% confidence level.

A consistent set of VaR and SVaR models is used for both management and regulatory purposes across all BMO Financial Group legal entities in which trading or underwriting activities are conducted.

We use a variety of methods to verify the integrity of our risk models, including the application of back-testing against hypothetical losses and approval by an independent model validation team. This testing is aligned with defined regulatory expectations, and its results confirm the reliability of our models. The volatility data and correlations that underpin our models are updated frequently, so that risk metrics reflect current conditions. Selection of the period of significant financial stress for SVaR incorporates historical events, including the COVID-19 pandemic.

Probabilistic stress testing and scenario analysis are used to determine the potential impact of low-frequency, high-severity events on our portfolios. The scenarios incorporate hypothetical and historical events, and consider the performance of our portfolios under a variety of market conditions. Scenarios are amended, added or removed to refine our risk measurement, for example to reflect the market volatility in 2020 and 2021 due to the COVID-19 pandemic, and the results are reported to the lines of business, the RMC and the RRC on a regular basis.

VaR, SVaR, IRC and stress testing should not be viewed as definitive predictors of the maximum amount of losses that could occur in any one day, as their results are based on models and estimates and are subject to confidence levels, and the estimates could be exceeded under unforeseen market conditions.

Back-testing assumes there are no changes in the previous day's closing positions and then isolates the effects of each day's price movements against those closing positions. Our VaR model is back-tested daily, and the one-day 99% confidence level VaR at the local and consolidated BMO levels is compared with the estimated daily profit and loss (P&L) that would be recorded if the portfolio composition remained unchanged. If this P&L result is negative and its absolute value is greater than the previous day's VaR, a back-testing exception occurs. Each exception is investigated, explained and documented, and the back-testing results are reviewed by senior management and reported to our regulators.

Although it is a useful indicator of risk, as with any model-driven metric, VaR has limitations, including the assumption that all positions can be liquidated within the assumed one-day holding period, which may not be the case under illiquid market conditions. Generally, market liquidity horizons are reviewed for suitability and updated where appropriate for relevant risk metrics. Further limitations of the VaR metric include the assumption that historical data can be used as a proxy to forecast future market events, and the fact that VaR calculations are based upon portfolio positions at the close of business and do not reflect the impact of intra-day trading activity.

Monitoring and Control of Trading and Underwriting Market Risk

Limits are applied to VaR, SVaR and other risk metrics, and the limits are subject to regular monitoring and reporting, with breaches escalated to the appropriate level of management. Risk profiles of our trading and underwriting activities are maintained within our risk appetite and supporting limits, and are monitored and reported to traders, management, senior executives and Board committees. Other significant controls include the independent valuation of financial assets and liabilities, as well as compliance with our Model Risk Management Framework to mitigate model risk.

Trading Market Risk Measures

Trading VaR and SVaR

Average Total Trading VaR was marginally higher year-over-year, as the market impact of the COVID-19 pandemic remained within the historical period used for VaR for most of the year, and growth in mortgage trading increased interest rate risk. VaR declined in the second half of 2021, as the historical period used for VaR moved past the second and third quarters of 2020 and the market volatility prevailing at that time. Average Total SVaR declined year-over-year due to reduced exposure to risk in our equity option books.

Total Trading Value at Risk (VaR) Summary ^{(1) (2) (3)}

As at or for the year ended October 31 (pre-tax Canadian \$ equivalent in millions)	2021				2020			
	Year-end	Average	High	Low	Year-end	Average	High	Low
Commodity VaR	1.8	2.7	6.2	1.1	5.5	2.5	5.8	0.6
Equity VaR	10.8	14.9	24.9	10.0	16.4	16.0	37.2	4.2
Foreign exchange VaR	0.5	2.2	6.4	0.5	4.2	3.4	6.8	0.8
Interest rate VaR (4)	15.2	27.1	52.5	9.8	40.7	23.1	42.0	5.4
Debt-specific risk	3.0	3.3	5.4	1.9	3.9	3.8	7.6	1.6
Diversification	(12.8)	(19.7)	nm	nm	(25.5)	(20.3)	nm	nm
Total Trading VaR	18.5	30.5	53.5	15.3	45.2	28.5	53.4	8.1
Total Trading SVaR	55.8	45.7	65.4	36.3	45.2	50.8	87.1	29.2

(1) One-day measure using a 99% confidence interval. Gains are presented in brackets and losses are presented as positive numbers.

(2) Stressed VaR is produced weekly.

(3) In Q1-2020, a new measurement approach was introduced for VaR and SVaR, which separated the previously reported credit VaR into interest rate VaR for general credit spread risk and for debt-specific risk. Total Trading VaR and SVaR no longer reflect diversification benefits from debt-specific risk.

(4) Interest rate VaR includes general credit spread risk.

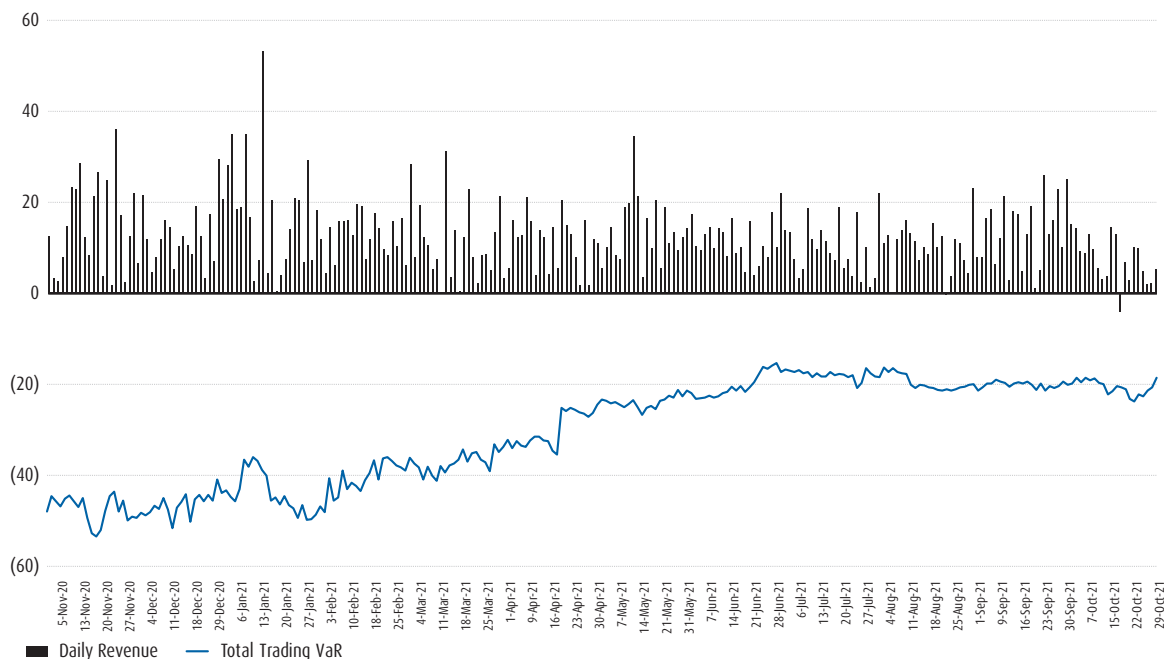
nm - not meaningful

Trading Net Revenue

The charts below present daily net revenues plotted against Total Trading VaR, along with a representation of daily net revenue distribution. In 2021, net trading losses were incurred on two days, and we experienced the largest loss on October 19, 2021. A combination of high market volatility, which had a negative impact on some of our positions, and lower than usual customer activity contributed to the losses for the two days.

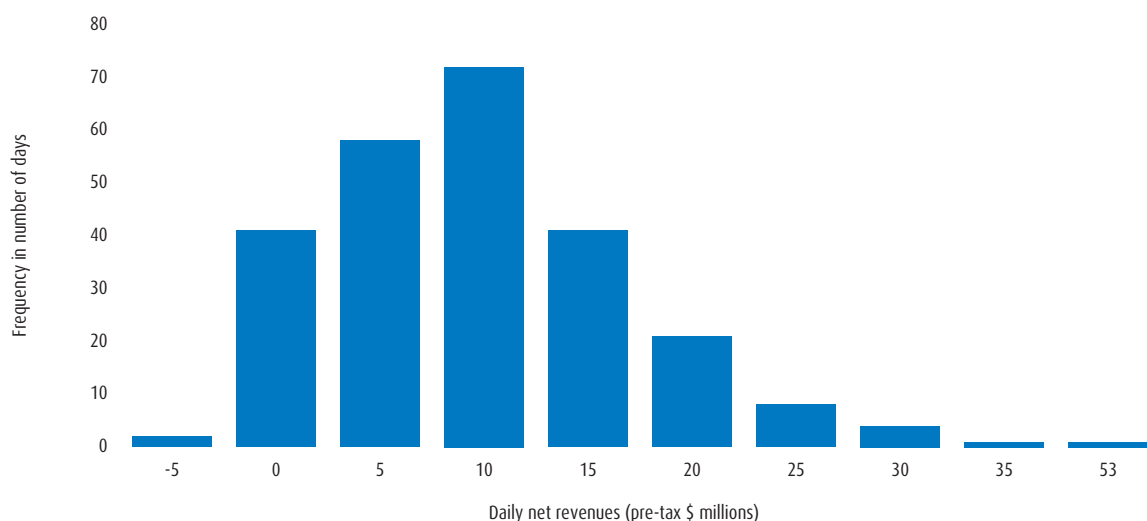
Trading Net Revenues versus Value at Risk

November 1, 2020 to October 31, 2021 (pre-tax basis, Canadian \$ in millions)



Frequency Distribution of Daily Net Revenues

November 1, 2020 to October 31, 2021 (Canadian \$ in millions)



Structural (Non-Trading) Market Risk

Structural market risk comprises interest rate risk arising from our banking activities (such as loans and deposits) and foreign exchange risk arising from our foreign currency operations and exposures.

Structural Market Risk Governance

BMO's Corporate Treasury group is responsible for the ongoing management of structural market risk across the enterprise, with independent oversight provided by the Market Risk group. In addition to Board-approved limits on earnings at risk and economic value sensitivities to changes in interest rates, more granular management limits are in place to guide the daily management of this risk.

The RRC oversees structural market risk management, regularly reviews structural market risk positions and annually approves the structural market risk plan and limits. The RMC and Asset Liability Committee provide regular ongoing senior management oversight of risk positions and activity.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Structural Market Risk Measurement

Interest Rate Risk

Structural interest rate risk arises when changes in interest rates affect the market value, cash flows and earnings of assets and liabilities related to our banking activities. The objective of structural interest rate risk management is to maintain high-quality earnings and maximize sustainable product spreads, while managing the risk to the economic value of our net assets arising from changes in interest rates.

Structural interest rate risk primarily comprises interest rate mismatch risk and product embedded option risk.

Interest rate mismatch risk arises when there are differences in the scheduled maturities, repricing dates or reference rates of assets, liabilities and derivatives. The net interest rate mismatch, representing residual assets funded by common shareholders' equity, is managed to a target profile through interest rate swaps and securities.

Product embedded option risk arises when product features allow customers to alter cash flows, such as scheduled maturity or repricing dates, usually in response to changes in market conditions. Product embedded options include loan prepayments, deposit redemption privileges and committed rates on unadvanced mortgages. Product embedded options and associated customer behaviours are captured in risk modelling, and hedging programs may be used to manage this risk to low levels.

Structural interest rate risk is measured using simulations, earnings sensitivity and economic value sensitivity analysis, stress testing and gap analysis, in addition to other treasury risk metrics.

Earnings Sensitivity is a measure of the impact of potential changes in interest rates on the projected 12-month pre-tax net income of a portfolio of assets, liabilities and off-balance sheet positions in response to prescribed parallel interest rate movements, with interest rates floored at zero.

Economic Value Sensitivity is a measure of the impact of potential changes in interest rates on the market value of a portfolio of assets, liabilities and off-balance sheet positions in response to prescribed parallel interest rate movements, with interest rates floored at zero.

The models that measure structural interest rate risk incorporate projected changes in interest rates and predict the likely reaction of our customers to these changes. For customer loans and deposits with scheduled maturity and repricing dates (such as mortgages and term deposits), the models measure the extent to which customers are likely to use embedded options to alter those scheduled terms. For customer loans and deposits without scheduled maturity and repricing dates (such as credit card loans and chequing accounts), exposure is measured using models that adjust for elasticity in product pricing and reflect historical and forecasted trends in balances. The results of these structural market risk models, by their nature, have inherent uncertainty, as they reflect potential anticipated pricing and customer behaviours, which may differ from actual experience. These models have been developed using statistical analysis and are independently validated and periodically updated through regular model performance assessment, back-testing and ongoing dialogue with the lines of business. Models developed to predict customer behaviour are also used to support product pricing. All models are subject to BMO's Model Risk Management Framework, which is described in more detail in the Enterprise-Wide Risk Management Framework section.

Structural interest rate earnings sensitivity and economic value sensitivity to an immediate parallel increase or decrease in the yield curve are disclosed in the table below. As a result of the low interest rate environment, earnings and economic value sensitivities to declining interest rates commencing as at April 30, 2020 are measured using a 25 basis point decline.

There were no significant changes in the structural market risk management framework during the year.

Structural economic value sensitivity to rising interest rates primarily reflects a lower market value for fixed rate loans. Structural economic value sensitivity to falling interest rates primarily reflects the impact of a higher market value for fixed rate loans and minimum modelled client deposit rates. Structural economic value exposure to rising interest rates and the benefits of falling interest rates increased relative to October 31, 2020, primarily due to modelled deposit pricing being more rate-sensitive at higher projected interest rate levels, following the increase in term market rates during the year. Structural earnings sensitivity quantifies the potential impact of interest rate changes on structural balance sheet pre-tax net income over the next 12 months. Structural earnings sensitivity to falling interest rates primarily reflects the risk of fixed and floating rate loans repricing at lower rates and the more limited ability to reduce deposit pricing as rates fall. Structural earnings exposure to falling interest rates increased in 2021 relative to 2020, largely due to customer deposit growth. The benefits to structural earnings of rising interest rates primarily reflect the positive impact of widening deposit margins as interest rates rise, and this exposure increased in 2021 relative to 2020, largely due to customer deposit growth.

Structural Interest Rate Sensitivity ⁽¹⁾

(Pre-tax Canadian \$ equivalent in millions)	Economic value sensitivity				Earnings sensitivity over the next 12 months			
	October 31, 2021		October 31, 2020		October 31, 2021		October 31, 2020	
	Canada (3) (4)	United States	Total (4)	Total (4)	Canada (3) (4)	United States	Total (4)	Total (4)
100 basis point increase	(894.0)	(565.1)	(1,459.1)	(1,085.1)	51.9	331.8	383.7	285.8
25 or 100 basis point decrease (2)	202.0	62.9	264.9	100.0	(59.2)	(82.4)	(141.6)	(98.2)

(1) Losses are presented in brackets and gains are presented as positive numbers.

(2) Due to the low interest rate environment, starting April 30, 2020, economic value sensitivity and earnings sensitivity to declining interest rates are measured using a 25 basis point decline.

(3) Includes Canadian dollar and other currencies.

(4) Measures reflect revised modelling assumptions effective January 31, 2021. Prior periods have been updated to reflect the revised approach and to conform with the current year's presentation.

Insurance Market Risk

Insurance market risk includes interest rate and equity market risk arising from our insurance business activities. A 100 basis point increase in interest rates as at October 31, 2021 would result in an increase in earnings before tax of \$48 million (\$39 million as at October 31, 2020). A 25 basis point decrease in interest rates as at October 31, 2021 would result in a decrease in earnings before tax of \$12 million (\$9 million as at October 31, 2020). A 10% increase in equity market values as at October 31, 2021 would result in an increase in earnings before tax of \$22 million (\$51 million as at October 31, 2020). A 10% decrease in equity market values as at October 31, 2021 would result in a decrease in earnings before tax of \$22 million (\$53 million as at October 31, 2020). We may enter into hedging arrangements to offset the impact of changes in equity market values on our earnings, and we did so during the 2021 fiscal year. The impact of insurance market risk on earnings is reflected in insurance claims, commissions and changes in policy benefit liabilities in our Consolidated Statement of Income, and the corresponding change in the fair value of BMO's policy benefit liabilities is reflected in other liabilities in our Consolidated Balance Sheet. The impact of insurance market risk is not reflected in the table above.

Foreign Exchange Risk

Structural foreign exchange risk arises primarily from translation risk related to our net investment in U.S. operations and from transaction risk associated with U.S.-dollar-denominated net income.

Translation risk represents the impact that changes in foreign exchange rates could have on our reported shareholders' equity and capital ratios. We may enter into arrangements to offset the impact of foreign exchange rate movements on our capital ratios, and we did so during the 2021 fiscal year. Refer to the Enterprise-Wide Capital Management section for further discussion.

Transaction risk represents the impact that fluctuations in the Canadian dollar/U.S. dollar exchange rate could have on the Canadian dollar equivalent of BMO's U.S.-dollar-denominated financial results. Exchange rate fluctuations will affect future results measured in Canadian dollars and the impact on those results is a function of the periods during which revenues, expenses and provisions for credit losses arise. Hedging positions may be taken to partially offset the pre-tax effects of Canadian dollar/U.S. dollar exchange rate fluctuations on financial results, although no hedges were executed in the current or prior year. If future results are consistent with results in 2021, each one cent increase (decrease) in the Canadian dollar/U.S. dollar exchange rate would be expected to increase (decrease) the Canadian dollar equivalent of U.S. segment net income before income taxes for the year by \$34 million, in the absence of hedging transactions. Refer to the Foreign Exchange section for a more complete discussion of the effects of changes in foreign exchange rates on our results.

Linkages between Balance Sheet Items and Market Risk Disclosures

The table below presents items reported on the Consolidated Balance Sheet that are subject to market risk, comprising balances that are subject to either traded risk or non-traded risk measurement techniques.

(Canadian \$ in millions)	As at October 31, 2021				As at October 31, 2020				Primary risk factors for non-traded risk balances
	Subject to market risk				Subject to market risk				
	Consolidated Balance Sheet	Traded risk (1)	Non-traded risk (2)	Not subject to market risk	Consolidated Balance Sheet	Traded risk (1)	Non-traded risk (2)	Not subject to market risk	
Assets Subject to Market Risk									
Cash and cash equivalents	93,261	-	93,261	-	57,408	-	57,408	-	Interest rate
Interest bearing deposits with banks	8,303	94	8,209	-	9,035	217	8,818	-	Interest rate
Securities	232,849	104,412	128,437	-	234,260	97,723	136,537	-	Interest rate, credit spread, equity
Securities borrowed or purchased under resale agreements	107,382	-	107,382	-	111,878	-	111,878	-	Interest rate
Loans (net of allowance for credit losses)	458,262	3,665	454,597	-	447,420	2,416	445,004	-	Interest rate, foreign exchange
Derivative instruments	36,713	34,350	2,363	-	36,815	32,457	4,358	-	Interest rate, foreign exchange
Customers' liability under acceptances	14,021	-	14,021	-	13,493	-	13,493	-	Interest rate
Other assets	37,384	3,359	16,970	17,055	38,952	5,446	16,105	17,401	Interest rate
Total Assets	988,175	145,880	825,240	17,055	949,261	138,259	793,601	17,401	
Liabilities Subject to Market Risk									
Deposits	685,631	22,665	662,966	-	659,034	18,074	640,960	-	Interest rate, foreign exchange
Derivative instruments	30,815	27,875	2,940	-	30,375	26,355	4,020	-	Interest rate, foreign exchange
Acceptances	14,021	-	14,021	-	13,493	-	13,493	-	Interest rate
Securities sold but not yet purchased	32,073	32,073	-	-	29,376	29,376	-	-	
Securities lent or sold under repurchase agreements	97,556	-	97,556	-	88,658	-	88,658	-	Interest rate
Other liabilities	63,663	85	63,165	413	63,316	118	62,964	234	Interest rate
Subordinated debt	6,893	-	6,893	-	8,416	-	8,416	-	Interest rate
Total Liabilities	930,652	82,698	847,541	413	892,668	73,923	818,511	234	

(1) Primarily comprises balance sheet items that are subject to the trading and underwriting risk management framework and recorded at fair value through profit or loss.

(2) Primarily comprises balance sheet items that are subject to the structural balance sheet insurance risk management framework and secured financing transactions.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Insurance Risk

Insurance risk is the potential for loss as a result of actual experience differing from that assumed when an insurance product was designed and priced, and comprises claims risk, policyholder behaviour risk and expense risk.

Insurance risk generally entails the inherent unpredictability that can arise from the assumption of long-term policy liabilities or from uncertainty regarding future events. Insurance provides protection against the financial consequences of insured risks by transferring those risks to the insurer (under specific terms and conditions) in exchange for premiums. Insurance risk is inherent in all of our insurance products: life insurance, annuities (which include the pension risk transfer business), accident and sickness insurance, and creditor insurance, as well as the reinsurance business. Insurance risk consists of:

- Claims risk – the risk that the actual magnitude or frequency of claims will differ from those assumed in the pricing or underwriting process, including mortality risk, morbidity risk, longevity risk and catastrophe risk;
- Policyholder behaviour risk – the risk that the behaviour of policyholders in regard to premium payments, withdrawals or loans, policy lapses and surrenders, and other voluntary terminations will differ from the behaviour assumed in the pricing process; and
- Expense risk – the risk that actual expenses arising from acquiring and administering policies and processing claims will exceed the expenses assumed in the pricing process.

Our risk governance practices provide effective independent oversight and control of risk within BMO Insurance. BMO Insurance's risk management framework addresses the identification, assessment, management and reporting of risks. The framework includes: the Risk Appetite Statement and key risk metrics; insurance risk policies and processes, including limits; capital requirements; stress testing; risk reports; the Own Risk and Solvency Assessment; and ongoing monitoring of experience. Senior management within the various lines of business uses this framework as the first line of defence, and has the primary responsibility for managing insurance risk. Second-line-of-defence oversight is provided by the CRO, BMO Insurance, who reports to the Head of Market Risk and Chief Risk Officer, BMO Capital Markets. Internal risk committees, the boards of directors of the BMO Insurance subsidiaries and senior management provide senior governance and review. In particular, the Risk Committee of BMO Insurance oversees and reports on risk management activities on a quarterly basis to the insurance companies' boards of directors. In addition, the Audit and Conduct Review Committee of the Board acts as the Audit and Conduct Review Committee for BMO Life Insurance Company.

A robust product approval process is a cornerstone of the BMO Insurance risk management framework, as it identifies, assesses and mitigates risks associated with new insurance products or changes to existing products. This process, along with guidelines and practices for underwriting and claims management, promotes the effective identification, assessment and management of insurance risk. Reinsurance transactions that transfer insurance risk from BMO Insurance to independent reinsurance companies also mitigate exposure to insurance risk by diversifying risk and limiting claims. BMO Insurance has exited the Property & Casualty Reinsurance market, with the last remaining treaty having terminated in January 2021, and this has significantly reduced our exposure to catastrophic claims. However, a certain portion of our exposure to the risk of catastrophic claims remains as the portfolio runs off and until all outstanding claims that were made prior to the treaty termination dates are settled and paid.

Given that much of the life insurance portfolio is reinsured and that we have a well-balanced portfolio of life insurance products and annuities forming a natural hedge for exposures to insurance risk, claims related to the COVID-19 pandemic have not had a material impact on BMO Insurance's financial results to date. As part of our overall Risk Management Framework within BMO Insurance, claims related to the COVID-19 pandemic continue to be tracked separately from other types of claims.

Caution

This Insurance Risk section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Liquidity and Funding Risk

Liquidity and funding risk is the potential for loss if we are unable to meet our financial commitments in a timely manner at reasonable prices as they become due. Financial commitments include liabilities to depositors and suppliers, and lending, investment and pledging commitments.

Managing liquidity and funding risk is integral to maintaining enterprise soundness and safety, depositor confidence and earnings stability. It is BMO's policy to maintain sufficient liquid assets and funding capacity to meet our financial commitments, even in times of stress.

Liquidity and Funding Risk Governance

The Corporate Treasury group and the operating groups, as the first line of defence, are responsible for the ongoing identification, assessment and management of liquidity and funding risk. The Corporate Treasury group is responsible for monitoring and reporting liquidity and funding risk across the enterprise, and develops and recommends for approval the Liquidity and Funding Risk Management Framework and the related risk appetite and limits, monitors compliance with relevant corporate policies, and assesses the impact of market events on liquidity and funding requirements on an ongoing basis.

Enterprise Risk and Portfolio Management, as the second line of defence, provides oversight, independent risk assessment and effective challenge of liquidity and funding management frameworks, policies, limits, monitoring and reporting across the enterprise.

The Risk Management Committee (RMC) and Balance Sheet Committee (BSC) provide senior management oversight and also review and discuss significant liquidity and funding policies, issues and developments that arise in the pursuit of BMO's strategic priorities. The Risk Review Committee (RRC) provides oversight of the management of liquidity and funding risk, annually approves the applicable policies, limits and contingency plan, and regularly reviews liquidity and funding positions.

Liquidity and Funding Risk Management

BMO's Liquidity and Funding Risk Management Framework is defined and authorized under Board-approved corporate policies and management-approved standards. These policies and standards set out key management principles, liquidity and funding metrics and related limits, as well as roles and responsibilities for the management of liquidity and funding risk across the enterprise.

We have a robust limit structure in place in order to manage liquidity and funding risk. Limits define the risk appetite for the key Stress Net Liquidity Position (Stress NLP) measure, regulatory liquidity ratios, secured and unsecured funding appetite (for both trading and structural activities), and enterprise collateral pledging. Limits also establish the tolerance for concentrations of maturities, as well as requirements for counterparty liability diversification, business pledging activity, and the size and type of uncommitted and committed credit and liquidity facilities that may be outstanding.

Operating within these limits helps to confirm that liquidity and funding risk is appropriately managed. An enterprise-wide contingency plan designed to facilitate effective management in the event of a disruption is also in place. Early warning indicators identified in the contingency plan are regularly monitored in order to detect any signs of rising levels of liquidity or funding risk in the market, or other risks specific to BMO.

BMO legal entities include regulated and foreign subsidiaries and branches, and as a result, movements of funds between entities in the corporate group are subject to, among other things, the liquidity, funding and capital adequacy requirements of these entities. As such, liquidity and funding positions are managed on both a consolidated and key legal entity basis. Liquidity and funding risk management policies and limits, which are informed by the laws and regulations that apply to each entity, are in place for key legal entities, and positions are regularly reviewed at the key legal entity level to confirm compliance with applicable laws and regulations.

We managed liquidity and funding risk appropriately during 2021, as customer deposit flows were robust throughout the year, while loan volumes increased in the second half of the year, reflecting an increase in our customers' borrowing activities. Our liquidity metrics, including the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR), exceeded internal and regulatory requirements throughout 2021.

Liquidity and Funding Risk Measurement

A key component of liquidity risk management is the measurement of liquidity risk under stress. We use Stress NLP as a key measure of liquidity risk. Stress NLP represents the amount by which liquid assets exceed potential funding needs under a severe combined enterprise-specific and systemic stress scenario. Potential funding needs may arise from obligations to repay retail, commercial and wholesale deposits that are withdrawn or not renewed, or to fund drawdowns on available credit and liquidity lines, as well as from obligations to pledge collateral due to ratings downgrades or market volatility, along with the continuing need to fund new assets and strategic investments. Potential funding needs are quantified by applying factors to various business activities based on management's view of the relative level of liquidity risk related to each activity. These factors vary by deposit or classification (e.g., retail, small business, non-financial corporate or wholesale counterparties) and deposit type (e.g., insured, uninsured, operational or non-operational deposits), as well as by commitment type (e.g., uncommitted or committed credit or liquidity facilities by counterparty type). The stress scenario also considers the time horizon over which liquid assets can be monetized and management's assessment of the liquidity value of those assets under conditions of market stress. These funding needs are assessed under severe systemic and enterprise-specific stress scenarios, and a combination thereof.

Stress testing results are evaluated against our stated risk tolerance and are considered in management decisions on limit-setting and internal liquidity transfer pricing, and they also help to inform and shape the design of business plans and contingency plans. The Liquidity and Funding Risk Management Framework is integrated with enterprise-wide stress testing.

In addition to Stress NLP, we regularly monitor positions in relation to the limits and liquidity ratios noted in the Liquidity and Funding Risk Management section above. These include regulatory metrics such as the LCR, Net Cumulative Cash Flow and NSFR.

Unencumbered Liquid Assets

Unencumbered liquid assets include high-quality assets that are marketable, can be pledged as security for borrowings, and can be converted to cash in a time frame that meets liquidity and funding requirements. Liquid assets are primarily held in our trading businesses, as well as in supplemental liquidity pools that are maintained for contingent liquidity risk management purposes. The liquidity value recognized for different asset classes under BMO's risk management framework reflects management's assessment of the liquidity value of those assets under a severe stress scenario. Liquid assets held in our trading businesses include cash on deposit with central banks, short-term deposits with other financial institutions, highly-rated debt securities, equity securities and short-term reverse repurchase agreements. Supplemental liquidity pool assets predominantly comprise cash on deposit with central banks, securities and short-term reverse repurchase agreements of highly-rated Canadian federal and provincial government debt and U.S. federal government and agency debt. Substantially all supplemental liquidity pool assets meet the definition of high-quality liquid assets under Basel III. Approximately 65% of the supplemental liquidity pool is held at the parent bank level in assets denominated in Canadian dollars or U.S. dollars, with the majority of the remaining supplemental liquidity pool held at our U.S. bank entity, BMO Harris Bank, in U.S.-dollar-denominated assets. The size of the supplemental liquidity pool is integrated with our assessment of liquidity risk. To meet local regulatory requirements, certain legal entities maintain their own minimum liquidity positions. There may be legal and regulatory restrictions on BMO's ability to use liquid assets held at one legal entity to support the liquidity requirements of another legal entity.

In the ordinary course of business, we may encumber a portion of cash and securities holdings as collateral in support of trading activities and participation in clearing and payment systems in Canada and abroad. In addition, we may receive liquid assets as collateral and may re-pledge these assets in exchange for cash or as collateral in support of trading activities. Net unencumbered liquid assets, defined as on-balance sheet assets, such as BMO-owned cash and securities and securities borrowed or purchased under resale agreements, plus other off-balance sheet eligible collateral received, less collateral encumbered, totalled \$317.3 billion as at October 31, 2021, compared with \$306.1 billion as at October 31, 2020. The increase in unencumbered liquid assets was primarily due to higher cash balances, partially offset by lower securities balances. Net unencumbered liquid assets are primarily held at the parent bank level, at BMO Harris Bank, and in our broker/dealer operations. In addition to liquid assets, we have access to the Bank of Canada's lending assistance programs, the Federal Reserve Bank discount window in the United States, and European Central Bank standby liquidity facilities. We do not rely on central bank facilities as a source of available liquidity when assessing the soundness of our liquidity position.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

In addition to cash and securities holdings, we may also pledge other assets, including mortgages and loans, to raise long-term secured funding. As part of the Liquidity and Funding Risk Management Framework, a Pledging of Assets Corporate Policy sets out the framework and pledging limits for financial and non-financial assets.

BMO's total encumbered assets and unencumbered liquid assets are summarized in the table below. Refer to Note 24 of the consolidated financial statements for further information on pledged assets.

Liquid Assets

(Canadian \$ in millions)	As at October 31, 2021					As at October 31, 2020
	Bank-owned assets	Other cash and securities received	Total gross assets (1)	Encumbered assets	Net unencumbered assets (2)	Net unencumbered assets (2)
Cash and cash equivalents	93,261	-	93,261	110	93,151	57,297
Deposits with other banks	8,303	-	8,303	-	8,303	9,035
Securities and securities borrowed or purchased under resale agreements						
Sovereigns / Central banks / Multilateral development banks	95,213	98,488	193,701	117,291	76,410	105,295
NHA mortgage-backed securities and U.S. agency mortgage-backed securities and collateralized mortgage obligations	54,757	5,641	60,398	19,976	40,422	36,844
Corporate and other debt	22,557	21,513	44,070	8,740	35,330	33,985
Corporate equity	60,322	55,063	115,385	66,876	48,509	47,465
Total securities and securities borrowed or purchased under resale agreements	232,849	180,705	413,554	212,883	200,671	223,589
NHA mortgage-backed securities (reported as loans at amortized cost) (3)	19,645	-	19,645	4,519	15,126	16,199
Total liquid assets	354,058	180,705	534,763	217,512	317,251	306,120

(1) Gross assets include bank-owned assets and cash and securities received from third parties.

(2) Net unencumbered liquid assets are defined as total gross assets less encumbered assets.

(3) Under IFRS, National Housing Act (NHA) mortgage-backed securities that include mortgages owned by BMO as the underlying collateral are classified as loans. Unencumbered NHA mortgage-backed securities have liquidity value and are included as liquid assets under BMO's Liquidity and Funding Management Framework. This amount is shown as a separate line item, NHA mortgage-backed securities.

Asset Encumbrance

(Canadian \$ in millions) As at October 31, 2021	Total gross assets (1)	Encumbered (2)		Net unencumbered	
		Pledged as collateral	Other encumbered	Other unencumbered (3)	Available as collateral (4)
Cash and deposits with other banks	101,564	-	110	-	101,454
Securities (5)	433,199	180,955	36,447	13,064	202,733
Loans	438,617	53,485	1,171	238,283	145,678
Other assets					
Derivative instruments	36,713	-	-	36,713	-
Customers' liability under acceptances	14,021	-	-	14,021	-
Premises and equipment	4,454	-	-	4,454	-
Goodwill	5,378	-	-	5,378	-
Intangible assets	2,266	-	-	2,266	-
Current tax assets	1,588	-	-	1,588	-
Deferred tax asset	1,287	-	-	1,287	-
Other assets	22,411	6,436	-	15,975	-
Total other assets	88,118	6,436	-	81,682	-
Total assets	1,061,498	240,876	37,728	333,029	449,865

(Canadian \$ in millions) As at October 31, 2020	Total gross assets (1)	Encumbered (2)		Net unencumbered	
		Pledged as collateral	Other encumbered	Other unencumbered (3)	Available as collateral (4)
Cash and deposits with other banks	66,443	-	111	-	66,332
Securities (5)	425,777	149,955	36,034	12,766	227,022
Loans	425,100	58,168	806	227,830	138,296
Other assets					
Derivative instruments	36,815	-	-	36,815	-
Customers' liability under acceptances	13,493	-	-	13,493	-
Premises and equipment	4,183	-	-	4,183	-
Goodwill	6,535	-	-	6,535	-
Intangible assets	2,442	-	-	2,442	-
Current tax assets	1,260	-	-	1,260	-
Deferred tax asset	1,473	-	-	1,473	-
Other assets	23,059	6,344	-	16,715	-
Total other assets	89,260	6,344	-	82,916	-
Total assets	1,006,580	214,467	36,951	323,512	431,650

(1) Gross assets include on-balance sheet and off-balance sheet assets.

(2) Pledged as collateral refers to the portion of on-balance sheet assets and other cash and securities that is pledged through repurchase agreements, securities lending, derivative contracts, minimum required deposits at central banks, and requirements associated with participation in clearing houses and payment systems. Other encumbered assets include assets that are restricted for legal or other reasons, such as restricted cash and short sales.

(3) Other unencumbered assets include select liquid asset holdings that management believes are not readily available to support BMO's liquidity requirements. These include securities of \$13.1 billion as at October 31, 2021, which include securities held at BMO's insurance subsidiary, significant equity investments and certain investments held at BMO's merchant banking business. Other unencumbered assets include mortgages and loans that may be securitized to access secured funding.

(4) Loans included in available as collateral represent loans currently lodged at central banks that could potentially be used to access central bank funding. Loans available for pledging as collateral do not include other sources of additional liquidity that may be realized from BMO's loan portfolio, such as incremental securitization, covered bond issuances and FHLB advances.

(5) Includes securities, securities borrowed or purchased under resale agreements and NHA mortgage-backed securities (reported as loans at amortized cost).

Certain comparative figures have been reclassified to conform with the current year's presentation.

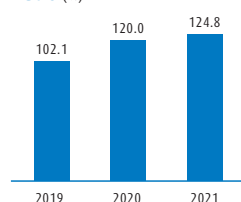
Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Funding Strategy

BMO's funding strategy requires that secured and unsecured wholesale funding used to support loans and less liquid assets must have a term (typically maturing in two to ten years) that will support the effective term to maturity of these assets. Secured and unsecured wholesale funding for liquid trading assets is largely shorter term (maturing in one year or less), is aligned with the liquidity of the assets being funded, and is subject to limits on aggregate maturities that are permitted across different periods. Supplemental liquidity pools are funded largely with wholesale term funding.

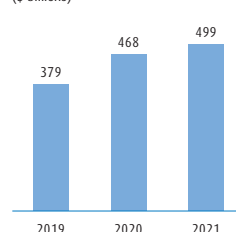
We maintain a large and stable base of customer deposits that, in combination with our strong capital base, is a source of strength. This supports the maintenance of a sound liquidity position and reduces reliance on wholesale funding. Customer deposits totalled \$498.9 billion as at October 31, 2021, increasing from \$468.0 billion in 2020, with strong growth across both retail and commercial deposits. We also receive non-marketable deposits from corporate and institutional customers in support of certain trading activities. These deposits totalled \$26.0 billion as at October 31, 2021, an increase from \$22.8 billion as at October 31, 2020.

Customer Deposits and Capital-to-Customer Loans Ratio (%)



Our large customer base and strong capital position reduce our reliance on wholesale funding.

Customer Deposits (\$ billions)



Customer deposits provide a strong funding base.

Total secured and unsecured wholesale funding outstanding, which largely consists of negotiable marketable securities, was \$190.4 billion as at October 31, 2021, with \$48.8 billion sourced as secured funding and \$141.6 billion sourced as unsecured funding. Total wholesale funding outstanding was largely unchanged from the prior year. The mix and maturities of BMO's wholesale term funding are outlined later in this section. Additional information on deposit maturities can be found. We maintain a sizeable portfolio of unencumbered liquid assets, totalling \$317.3 billion as at October 31, 2021 and \$306.1 billion as at October 31, 2020, that can be monetized to meet potential funding requirements, as described in the Unencumbered Liquid Assets section.

Wholesale Funding Maturities ⁽¹⁾

(Canadian \$ in millions)	As at October 31, 2021					As at October 31, 2020			
	Less than 1 month	1 to 3 months	3 to 6 months	6 to 12 months	Subtotal less than 1 year	1 to 2 years	Over 2 years	Total	Total
Deposits from banks	2,861	463	95	2	3,421	-	-	3,421	6,760
Certificates of deposit and commercial paper	6,812	18,006	22,399	24,650	71,867	31	-	71,898	59,298
Bearer deposit notes	705	659	1,000	-	2,364	-	-	2,364	2,502
Asset-backed commercial paper (ABCP)	-	-	-	-	-	-	-	-	3,167
Senior unsecured medium-term notes	1,430	593	4,923	5,079	12,025	11,292	28,520	51,837	56,480
Senior unsecured structured notes (2)	-	-	2	-	2	65	5,115	5,182	3,221
Covered bonds and securitizations	-	352	1,275	892	2,519	4,466	13,143	20,128	20,394
Mortgage and HELOC securitizations	-	2,166	-	3,596	5,762	10,677	6,966	23,405	24,632
Other asset-backed securitizations (3)	-	1,313	-	73	1,386	2,019	1,911	5,316	6,255
Subordinated debt	-	-	-	-	-	-	6,892	6,892	8,416
Total	11,808	23,552	29,694	34,292	99,346	28,550	62,547	190,443	191,125
Of which:									
Secured	-	3,831	1,275	4,561	9,667	17,162	22,020	48,849	54,448
Unsecured	11,808	19,721	28,419	29,731	89,679	11,388	40,527	141,594	136,677
Total (4)	11,808	23,552	29,694	34,292	99,346	28,550	62,547	190,443	191,125

(1) Wholesale unsecured funding primarily includes funding raised through the issuance of marketable, negotiable instruments. Wholesale funding excludes deposits and covered bonds issued to access central bank programs, repo transactions and bankers' acceptances, which are disclosed in the Contractual Maturities of Assets and Liabilities and Off-Balance Sheet Commitments section, and also excludes ABCP issued by certain ABCP conduits that are not consolidated for financial reporting purposes. Effective Q4-2021, one of the ABCP conduits that we had previously consolidated is no longer consolidated and therefore is not included in this table.

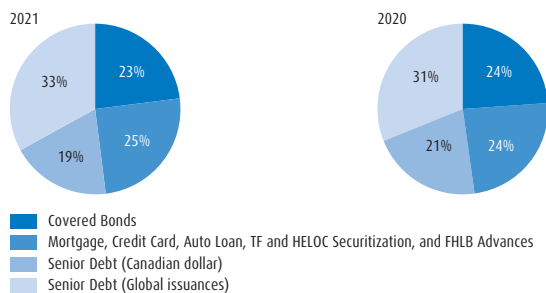
(2) Primarily issued to institutional investors.

(3) Includes credit card, auto and transportation finance loan securitizations.

(4) Total wholesale funding consists of Canadian-dollar-denominated funding totalling \$47.3 billion and U.S.-dollar-denominated and other foreign-currency-denominated funding totalling \$143.1 billion as at October 31, 2021.

Diversification of our wholesale term funding sources is an important part of our overall liquidity management strategy. Our wholesale term funding activities are well-diversified by jurisdiction, currency, investor segment, instrument type and maturity profile. We maintain ready access to long-term wholesale funding through various borrowing programs, including a European Note Issuance Program, Canadian, Australian and U.S. Medium-Term Note programs, Canadian and U.S. mortgage securitizations, Canadian credit card loans, auto loans and home equity line of credit (HELOC) securitizations, U.S. transportation finance loans, covered bonds, and Canadian and U.S. senior unsecured deposits.

Wholesale Capital Market Term Funding Composition (%)



Our wholesale term funding plan seeks to ensure sufficient funding capacity is available to execute business strategies. The funding plan considers expected maturities, as well as asset and liability growth projected for businesses in our forecasting and planning processes, and assesses funding needs in relation to the sources available. The funding plan is reviewed annually by the BSC and RMC and approved by the RRC, and is regularly updated to reflect actual results and incorporate updated forecast information.

In April 2018, the Government of Canada published the final regulations on Canada’s Bank Recapitalization (Bail-In) Regime, which became effective on September 23, 2018. Bail-in debt includes senior unsecured debt issued directly by BMO, on or after September 23, 2018, that has an original term greater than 400 days and is marketable, subject to certain exceptions. We are required to meet minimum Total Loss Absorbing Capacity (TLAC) Ratio requirements effective November 1, 2021. Our TLAC Ratio exceeds the regulatory minimum as at October 31, 2021. For more information on Canada’s Bail-In Regime and TLAC requirements, refer to Regulatory Capital Developments under Enterprise-Wide Capital Management.

Credit Ratings

The credit ratings assigned to BMO’s short-term and senior long-term debt securities by external rating agencies are important for the bank in raising both capital and funding to support its business operations. Maintaining strong credit ratings allows us to access the wholesale markets at competitive pricing levels. Should BMO’s credit ratings experience a downgrade, our cost of funding would likely increase and our access to funding and capital through the wholesale markets could be reduced. A material downgrade of BMO’s ratings could also have other consequences, including those set out in Note 8 of the consolidated financial statements.

The credit ratings assigned to BMO’s senior debt by rating agencies are indicative of high-grade, high-quality issues. During the third quarter of fiscal 2021, Moody’s, Standard & Poor’s (S&P), DBRS and Fitch affirmed their ratings for BMO. Moody’s, S&P and DBRS have a stable outlook on BMO and Fitch has a negative outlook.

As at October 31, 2021

Rating agency	Short-term debt	Senior debt (1)	Long-term deposits / Legacy senior debt (2)	Subordinated debt (NVCC)	Outlook
Moody’s	P-1	A2	Aa2	Baa1(hyb)	Stable
S&P	A-1	A-	A+	BBB+	Stable
Fitch	F1+	AA-	AA	A	Negative
DBRS	R-1 (high)	AA (low)	AA	A (low)	Stable

(1) Subject to conversion under the Bank Recapitalization (Bail-In) Regime.

(2) Long-term deposits / Legacy senior debt includes senior debt issued prior to September 23, 2018 and senior debt issued on or after September 23, 2018 that is excluded from the Bank Recapitalization (Bail-In) Regime.

We are required to deliver collateral to certain counterparties in the event of a downgrade of BMO’s current credit rating. The incremental collateral required is based on mark-to-market exposure, collateral valuations and collateral threshold arrangements, as applicable. As at October 31, 2021, we would be required to provide additional collateral to counterparties totalling \$142 million, \$354 million and \$762 million as a result of a one-notch, two-notch and three-notch downgrade, respectively.

Liquidity Coverage Ratio

The Liquidity Coverage Ratio (LCR) is calculated in accordance with OSFI's Liquidity Adequacy Requirements Guideline and is summarized in the following table. The average daily LCR for the quarter ended October 31, 2021 was 125%. The LCR is calculated on a daily basis as the ratio of the stock of High-Quality Liquid Assets (HQLA) held to total net stressed cash outflows over the next 30 calendar days. The average daily LCR in fiscal 2021 decreased from 131% in the fourth quarter of the prior year, primarily due to a decrease in HQLA and higher net cash outflows. While banks are required to maintain an LCR greater than 100% in normal conditions, they are also expected to be able to utilize HQLA during a period of stress, which may result in an LCR of less than 100% during such a period. BMO's HQLA primarily comprise cash, highly-rated debt issued or backed by governments, highly-rated covered bonds and non-financial corporate debt, and non-financial equities that are part of a major stock index. Net cash flows include outflows from deposits, secured and unsecured wholesale funding, commitments and potential collateral requirements, offset by permitted inflows from loans, securities lending activities and other non-HQLA debt maturing over a 30-day horizon. Weightings prescribed by the Office of the Superintendent of Financial Institutions (OSFI) are applied to cash flows and HQLA to arrive at the weighted values and the LCR. The LCR is only one measure of a bank's liquidity position and does not fully capture all of its liquid assets or the funding alternatives that may be available during a period of stress. BMO's total liquid assets are shown in the Liquid Assets table.

	For the quarter ended October 31, 2021	
	Total unweighted value (average) (1) (2)	Total weighted value (average) (2) (3)
(Canadian \$ in billions, except as noted)		
High-Quality Liquid Assets		
Total high-quality liquid assets (HQLA)	*	194.4
Cash Outflows		
Retail deposits and deposits from small business customers, of which:		
Stable deposits	231.3	15.4
Less stable deposits	114.3	3.4
Unsecured wholesale funding, of which:	117.0	12.0
Operational deposits (all counterparties) and deposits in networks of cooperative banks	259.2	124.0
Non-operational deposits (all counterparties)	128.9	32.1
Unsecured debt	103.1	64.7
Secured wholesale funding	27.2	27.2
Additional requirements, of which:	*	22.5
Outflows related to derivatives exposures and other collateral requirements	178.8	34.7
Outflows related to loss of funding on debt products	11.7	4.4
Credit and liquidity facilities	1.9	1.9
Other contractual funding obligations	165.2	28.4
Other contingent funding obligations	1.2	-
Total cash outflows	425.0	8.1
	*	204.7
Cash Inflows		
Secured lending (e.g., reverse repos)	138.9	33.4
Inflows from fully performing exposures	8.6	4.7
Other cash inflows	10.6	10.6
Total cash inflows	158.1	48.7
		Total adjusted value (4)
Total HQLA		194.4
Total net cash outflows		156.0
Liquidity Coverage Ratio (%)		125
For the quarter ended October 31, 2020		
Total HQLA		197.5
Total net cash outflows		150.7
Liquidity Coverage Ratio (%)		131

* Disclosure is not required under the LCR disclosure standard.

(1) Unweighted values are calculated at market value (for HQLA) or as outstanding balances maturing or callable within 30 days (for inflows and outflows).

(2) Values are calculated based on the simple average of the daily LCR over 61 business days in the fourth quarter of 2021.

(3) Weighted values are calculated after the application of the weightings prescribed under the OSFI Liquidity Adequacy Requirements (LAR) Guideline for HQLA and cash inflows and outflows.

(4) Adjusted values are calculated based on total weighted values after applicable caps, as defined in the LAR Guideline.

Net Stable Funding Ratio

The Net Stable Funding Ratio (NSFR) is a regulatory liquidity metric that assesses the stability of a bank's funding profile in relation to the liquidity value of its assets and is calculated in accordance with OSFI's Liquidity Adequacy Requirements Guideline. The NSFR is defined as the ratio between the amount of available stable funding (ASF) and the amount of required stable funding (RSF). ASF represents the proportion of own and third-party resources that are expected to be reliably available over a one-year horizon (including customer deposits and long-term wholesale funding). Unlike the LCR, which is a short-term metric, the NSFR assesses a bank's medium-term and long-term resilience. The stable funding requirements for each institution are set by OSFI based on the liquidity and maturity characteristics of its balance sheet assets and off-balance sheet exposures. Weightings prescribed by OSFI are applied to notional asset and liability balances to determine ASF and RSF and the NSFR. Canadian domestic systemically important banks (D-SIBs), including BMO, are required to maintain a minimum NSFR of 100%, effective January 1, 2020, and to publicly disclose their NSFR, effective in the quarter ended January 31, 2021. BMO's NSFR was 118% as at October 31, 2021, exceeding the regulatory minimum.

	For the quarter ended October 31, 2021				
	Unweighted value by residual maturity				Weighted value (2)
	No maturity (1)	Less than 6 months	6 to 12 months	Over 1 year	
(Canadian \$ in billions, except as noted)					
Available Stable Funding (ASF) Item					
Capital:	-	-	-	65.2	65.2
Regulatory capital	-	-	-	65.1	65.1
Other capital instruments	-	-	-	0.1	0.1
Retail deposits and deposits from small business customers:	211.3	28.4	12.1	31.0	263.2
Stable deposits	105.4	13.9	6.1	6.3	125.4
Less stable deposits	105.9	14.5	6.0	24.7	137.8
Wholesale funding:	237.8	184.9	39.3	72.3	201.8
Operational deposits	131.4	-	-	-	65.7
Other wholesale funding	106.4	184.9	39.3	72.3	136.1
Liabilities with matching interdependent assets	-	1.6	0.9	14.3	-
Other liabilities:	2.0	*	*	45.8	5.0
NSFR derivative liabilities	*	*	*	8.1	*
All other liabilities and equity not included in the above categories	2.0	32.6	0.2	4.9	5.0
Total ASF	*	*	*	*	535.2
Required Stable Funding (RSF) Item					
Total NSFR high-quality liquid assets (HQLA)	*	*	*	*	22.9
Deposits held at other financial institutions for operational purposes	-	-	-	-	-
Performing loans and securities:	147.1	133.4	46.0	251.8	372.2
Performing loans to financial institutions secured by Level 1 HQLA	-	50.8	1.9	-	3.5
Performing loans to financial institutions secured by non-Level 1 HQLA and unsecured performing loans to financial institutions	24.3	51.0	7.7	10.8	44.7
Performing loans to non-financial corporate clients, loans to retail and small business customers, and loans to sovereigns, central banks and PSEs, of which:	87.0	25.6	25.0	119.0	196.7
With a risk weight of less than or equal to 35% under the Basel II standardized approach for credit risk	-	-	-	-	-
Performing residential mortgages, of which:	12.6	5.0	11.3	111.2	97.9
With a risk weight of less than or equal to 35% under the Basel II standardized approach for credit risk	12.6	4.7	11.0	108.5	95.0
Securities that are not in default and do not qualify as HQLA, including exchange-traded equities	23.2	1.0	0.1	10.8	29.4
Assets with matching interdependent liabilities	-	1.6	0.9	14.3	-
Other assets:	15.7	*	*	36.3	41.7
Physical traded commodities, including gold	3.4	*	*	*	2.9
Assets posted as initial margin for derivative contracts and contributions to default funds of CCPs	*	*	*	10.6	9.0
NSFR derivative assets	*	*	*	9.8	1.7
NSFR derivative liabilities before deduction of variation margin posted	*	*	*	0.6	0.6
All other assets not included in the above categories	12.3	2.4	0.2	12.7	27.5
Off-balance sheet items	*	*	*	469.7	16.6
Total RSF	*	*	*	*	453.4
Net Stable Funding Ratio (%)	*	*	*	*	118

* Disclosure is not required under the NSFR disclosure standard.

(1) Items to be reported in the "no maturity" column do not have a stated maturity. These may include, but are not limited to, items such as non-maturity deposits, short positions, open maturity positions, non-HQLA equities, physical traded commodities and demand loans.

(2) Weighted values are calculated after the application of the weights prescribed under the OSFI LAR Guideline for ASF and RSF.

Contractual Maturities of Assets and Liabilities and Off-Balance Sheet Commitments

The tables below show the remaining contractual maturities of on-balance sheet assets and liabilities and off-balance sheet commitments. The contractual maturity of financial assets and liabilities is an input to, but is not necessarily consistent with, the expected maturity of assets and liabilities that is used in the management of liquidity and funding risk. We forecast asset and liability cash flows, under both normal market conditions and a number of stress scenarios, to manage liquidity and funding risk. Stress scenarios include assumptions for loan repayments, deposit withdrawals, and credit commitment and liquidity facility drawdowns by counterparty and product type. Stress scenarios also consider the time horizon over which liquid assets can be monetized and the related discounts ("haircuts") and potential collateral requirements that may result from both market volatility and credit rating downgrades, among other assumptions.

	2021									
(Canadian \$ in millions)	0 to 1 month	1 to 3 months	3 to 6 months	6 to 9 months	9 to 12 months	1 to 2 years	2 to 5 years	Over 5 years	No maturity	Total
On-Balance Sheet Financial Instruments										
Assets										
Cash and cash equivalents	91,736	-	-	-	-	-	-	-	1,525	93,261
Interest bearing deposits with banks	3,529	1,440	1,172	1,753	409	-	-	-	-	8,303
Securities	5,286	4,742	5,116	3,383	2,692	17,512	43,571	90,225	60,322	232,849
Securities borrowed or purchased under resale agreements	70,080	22,873	11,362	1,602	766	699	-	-	-	107,382
Loans (1)										
Residential mortgages	458	1,081	2,109	4,373	4,879	22,170	91,146	9,396	138	135,750
Consumer instalment and other personal	215	419	639	1,166	1,110	5,732	31,613	13,518	22,752	77,164
Credit cards	-	-	-	-	-	-	-	-	8,103	8,103
Business and government	12,082	7,667	7,697	10,496	10,213	29,303	81,377	14,413	66,561	239,809
Allowance for credit losses	-	-	-	-	-	-	-	-	(2,564)	(2,564)
Total loans, net of allowance	12,755	9,167	10,445	16,035	16,202	57,205	204,136	37,327	94,990	458,262
Other Assets										
Derivative instruments	2,752	4,924	2,187	1,809	1,634	7,525	8,787	7,095	-	36,713
Customers' liability under acceptances	11,574	2,428	19	-	-	-	-	-	-	14,021
Other	2,002	461	140	4	3	5	1	5,097	29,671	37,384
Total other assets	16,328	7,813	2,346	1,813	1,637	7,530	8,788	12,192	29,671	88,118
Total Assets	199,714	46,035	30,441	24,586	21,706	82,946	256,495	139,744	186,508	988,175

	2021									
(Canadian \$ in millions)	0 to 1 month	1 to 3 months	3 to 6 months	6 to 9 months	9 to 12 months	1 to 2 years	2 to 5 years	Over 5 years	No maturity	Total
Liabilities and Equity										
Deposits (2)(3)										
Banks	9,047	4,581	4,193	746	389	-	-	26	7,629	26,611
Business and government	16,894	26,861	29,665	21,345	16,213	24,249	35,707	17,113	254,201	442,248
Individuals	3,944	6,399	8,630	6,766	7,697	9,529	10,022	2,786	160,999	216,772
Total deposits	29,885	37,841	42,488	28,857	24,299	33,778	45,729	19,925	422,829	685,631
Other liabilities										
Derivative instruments	2,771	3,651	2,379	1,508	1,444	5,723	7,140	6,199	-	30,815
Acceptances	11,574	2,428	19	-	-	-	-	-	-	14,021
Securities sold but not yet purchased (4)	32,073	-	-	-	-	-	-	-	-	32,073
Securities lent or sold under repurchase agreements (4)	73,190	17,199	3,994	3,103	70	-	-	-	-	97,556
Securitization and structured entities' liabilities	21	1,737	1,527	648	486	7,240	9,791	4,036	-	25,486
Other	10,121	1,632	116	109	162	944	1,277	3,509	20,307	38,177
Total other liabilities	129,750	26,647	8,035	5,368	2,162	13,907	18,208	13,744	20,307	238,128
Subordinated debt	-	-	-	-	-	-	25	6,868	-	6,893
Total Equity	-	-	-	-	-	-	-	-	57,523	57,523
Total Liabilities and Equity	159,635	64,488	50,523	34,225	26,461	47,685	63,962	40,537	500,659	988,175

(1) Loans receivable on demand have been included under no maturity.

(2) Deposits payable on demand and payable after notice have been included under no maturity.

(3) Deposits totalling \$20,991 million as at October 31, 2021 have a fixed maturity date; however, they can be redeemed early (either fully or partially) by customers without penalty. These are classified as payable on a fixed date due to their stated contractual maturity date. BMO does not expect a significant amount to be redeemed before maturity.

(4) Presented based on their earliest maturity date.

	2021									
(Canadian \$ in millions)	0 to 1 month	1 to 3 months	3 to 6 months	6 to 9 months	9 to 12 months	1 to 2 years	2 to 5 years	Over 5 years	No maturity	Total
Off-Balance Sheet Commitments										
Commitments to extend credit (1)	1,674	4,935	8,374	13,308	14,498	33,749	99,639	4,571	-	180,748
Letters of credit (2)	1,196	4,083	4,358	3,815	4,806	1,980	3,304	104	-	23,646
Backstop liquidity facilities	189	137	293	1,073	1,578	2,709	6,088	828	-	12,895
Leases	-	-	-	-	1	3	22	222	-	248
Securities lending	3,909	-	-	-	-	-	-	-	-	3,909
Purchase obligations	16	38	47	44	60	139	217	41	-	602

(1) Commitments to extend credit exclude personal lines of credit and credit cards that are unconditionally cancellable at BMO's discretion. A large majority of these commitments expire without being drawn upon. As a result, the total contractual amounts may not be representative of the funding likely to be required for these commitments.

(2) Letters of credit can be drawn down at any time. These are classified based on their stated contractual maturity date.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

2020

(Canadian \$ in millions)	0 to 1 month	1 to 3 months	3 to 6 months	6 to 9 months	9 to 12 months	1 to 2 years	2 to 5 years	Over 5 years	No maturity	Total
On-Balance Sheet Financial Instruments										
Assets										
Cash and cash equivalents	56,434	-	-	-	-	-	-	-	974	57,408
Interest bearing deposits with banks	3,901	1,673	1,266	1,204	991	-	-	-	-	9,035
Securities	4,838	5,804	7,817	6,263	4,678	15,730	54,846	85,949	48,335	234,260
Securities borrowed or purchased under resale agreements	79,354	17,030	12,111	2,172	708	503	-	-	-	111,878
Loans (1)										
Residential mortgages	984	2,082	3,500	5,957	5,168	18,929	79,503	10,726	175	127,024
Consumer instalment and other personal Credit cards	646	511	963	1,107	1,014	4,642	25,538	12,211	23,516	70,148
Business and government	13,708	10,000	9,083	15,951	9,465	34,171	76,163	14,819	62,302	245,662
Allowance for credit losses	-	-	-	-	-	-	-	-	(3,303)	(3,303)
Total loans, net of allowance	15,338	12,593	13,546	23,015	15,647	57,742	181,204	37,756	90,579	447,420
Other Assets										
Derivative instruments	3,400	5,472	2,111	1,140	915	4,369	9,393	10,015	-	36,815
Customers' liability under acceptances	9,609	3,633	251	-	-	-	-	-	-	13,493
Other	1,873	580	188	20	13	16	4	4,530	31,728	38,952
Total other assets	14,882	9,685	2,550	1,160	928	4,385	9,397	14,545	31,728	89,260
Total Assets	174,747	46,785	37,290	33,814	22,952	78,360	245,447	138,250	171,616	949,261

2020

(Canadian \$ in millions)	0 to 1 month	1 to 3 months	3 to 6 months	6 to 9 months	9 to 12 months	1 to 2 years	2 to 5 years	Over 5 years	No maturity	Total
Liabilities and Equity										
Deposits (2)(3)										
Banks	13,499	3,982	13,106	455	463	7	-	28	7,285	38,825
Business and government	24,056	21,813	33,713	13,862	17,567	20,070	45,287	11,129	213,182	400,679
Individuals	4,295	11,509	13,019	11,086	10,192	7,778	12,709	2,007	146,935	219,530
Total deposits	41,850	37,304	59,838	25,403	28,222	27,855	57,996	13,164	367,402	659,034
Other liabilities										
Derivative instruments	1,374	4,499	1,684	1,171	1,088	3,911	8,588	8,060	-	30,375
Acceptances	9,609	3,633	251	-	-	-	-	-	-	13,493
Securities sold but not yet purchased (4)	29,376	-	-	-	-	-	-	-	-	29,376
Securities lent or sold under repurchase agreements (4)	69,142	10,747	7,439	878	-	452	-	-	-	88,658
Securitization and structured entities' liabilities	30	1,656	334	2,810	1,169	4,946	12,577	3,367	-	26,889
Other	10,301	804	102	109	181	798	1,326	3,706	19,100	36,427
Total other liabilities	119,832	21,339	9,810	4,968	2,438	10,107	22,491	15,133	19,100	225,218
Subordinated debt	-	-	-	-	-	-	-	8,416	-	8,416
Total Equity	-	-	-	-	-	-	-	-	56,593	56,593
Total Liabilities and Equity	161,682	58,643	69,648	30,371	30,660	37,962	80,487	36,713	443,095	949,261

(1) Loans receivable on demand have been included under no maturity

(2) Deposits payable on demand and payable after notice have been included under no maturity.

(3) Deposits totalling \$27,353 million as at October 31, 2020 have a fixed maturity date; however, they can be redeemed early (either fully or partially) by customers without penalty. These are classified as payable on a fixed date due to their stated contractual maturity date. BMO does not expect a significant amount to be redeemed before maturity.

(4) Presented based on their earliest maturity date.

Certain comparative figures have been reclassified to conform with the current year's presentation.

2020

(Canadian \$ in millions)	0 to 1 month	1 to 3 months	3 to 6 months	6 to 9 months	9 to 12 months	1 to 2 years	2 to 5 years	Over 5 years	No maturity	Total
Off-Balance Sheet Commitments										
Commitments to extend credit (1)	1,859	5,662	11,251	12,499	14,681	33,239	101,078	3,654	-	183,923
Letters of credit (2)	1,019	3,793	4,355	3,708	4,861	2,481	3,849	112	-	24,178
Backstop liquidity facilities	-	-	-	-	-	-	5,601	-	-	5,601
Leases	-	-	3	3	3	38	158	786	-	991
Securities lending	4,349	-	-	-	-	-	-	-	-	4,349
Purchase obligations	14	27	38	38	56	162	179	62	-	576

(1) Commitments to extend credit exclude personal lines of credit and credit cards that are unconditionally cancellable at BMO's discretion. A large majority of these commitments expire without being drawn upon. As a result, the total contractual amounts may not be representative of the funding likely to be required for these commitments.

(2) Letters of credit can be drawn down at any time. These are classified based on their stated contractual maturity date.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Caution

This Liquidity and Funding Risk section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Operational Non-Financial Risk

Operational non-financial risk (ONFR) encompasses a wide range of non-financial risks, including those related to business change, customer trust, reputation, and data that can result in financial loss. These losses can stem from inadequate or failed internal processes or systems, human error or misconduct, and external events that may directly or indirectly impact our credit or investment portfolios. These risks include technology risk, fraud risk, business continuity risk and human resources risk, but exclude legal and regulatory risk, credit risk, market risk, liquidity risk and other types of financial risk.

Operational non-financial risk is inherent in all of our business and banking activities and can lead to significant impacts on our operating and financial results, including financial loss, restatements and damage to BMO's reputation. Like other financial services organizations that operate in multiple jurisdictions, we are exposed to a variety of operational risks arising from the potential for failures of our internal processes, technology systems and employees, as well as from external threats. Potential losses may result from process and control failures, theft and fraud, unauthorized transactions by employees, regulatory non-compliance, business disruption, information security breaches, cyber security threats, exposure to risks related to third-party relationships, and damage to physical assets. Given the large volume of transactions that we process on a daily basis, and the complexity and speed of our business operations, there is a possibility that certain operational or human errors may be repeated or compounded before they are discovered and rectified.

ONFR is not only inherent in our business and banking activities, it is also inherent in the processes and controls used to manage risks. There is the possibility that errors will occur, as well as the possibility that a failure in our internal processes or systems could lead to financial loss and reputational harm. Shortcomings or failures of internal processes, systems or employees, or of services and products provided by third parties, including any of our financial, accounting or other data processing systems, could lead to financial loss or restatements and damage BMO's reputation.

The nature of the business also exposes us to the risk of theft and fraud when we enter into credit transactions with customers or counterparties. In extending credit, BMO relies on the accuracy and completeness of any information provided by, and any other representations made by, customers and counterparties. While we conduct appropriate due diligence on such customer information and, where practicable and economically feasible, engage valuation experts and other experts or sources of information to assist in assessing the value of collateral and other customer risks, our financial results may be adversely impacted if the information provided by customers or counterparties is materially misleading and this is not discovered during the due diligence process.

We have established various risk management frameworks to manage and mitigate these risks, including internal controls, limits and governance processes. However, despite the contingency plans we have in place to maintain the ability to serve our clients and minimize disruptions and adverse impacts, and the contingency plans our third-party service providers have in place, our ability to conduct business may be adversely affected by a disruption to the infrastructure that supports both our operations and the communities in which we do business, including but not limited to disruption caused by public health emergencies or terrorist acts.

We regularly review our top and emerging risks, and assess our preparedness to proactively manage the risks we face or could face in the future. Consistent with the management of risk across the enterprise, we employ a three-lines-of-defence approach in managing our non-financial risk.

Refer to the Top and Emerging Risks That May Affect Future Results section for further discussion of these and other risks.

Operational Non-Financial Risk Governance

The Operational Risk Committee (ORC), a sub-committee of the Risk Management Committee (RMC), is the primary governance committee exercising oversight of all ONFR management matters. As part of its governance responsibilities, the ORC provides effective challenge to the corporate policies, standards, directives, operating guidelines, methodologies and tools that comprise the governing principles of the Non-Financial Risk Management Framework (NFRMF). The documentation that gives effect to these governing principles is reviewed on a regular basis in order to confirm that it incorporates sound governance practices and is consistent with BMO's risk appetite. Regular analysis and reporting of our enterprise operational risk profile to the various committees (ORC, RMC and Risk Review Committee (RRC)) are important elements of our risk governance framework. Enterprise operational risk reporting provides an integrated view of top and emerging risks, trends in loss data, capital consumption, key risk indicators and operating group profiles. We continue to invest in our reporting platforms and support timely and comprehensive reporting capabilities in order to enhance risk transparency and facilitate the proactive management of operational risk exposures.

Operational Non-Financial Risk Management

As the first line of defence, the operating groups and Corporate Services, including Technology and Operations, are accountable for the day-to-day management of non-financial risk, including the Chief Risk Officers of our businesses, who provide governance and oversight for their respective business units, together with Corporate Services, which provides additional governance and oversight in certain targeted areas. Independent risk management oversight is provided by the Operational Non-Financial Risk Management (ONFRM) team, which is responsible for ONFR strategy, tools and policies, and for second-line oversight, effective challenge and governance. ONFRM establishes and maintains the NFRMF, which defines the processes to be used by the first line of defence to identify, assess, manage, mitigate, monitor and report on key operational risk exposures, losses and near-miss operational risk events with significant potential impact. In addition, the NFRMF defines the processes by which ONFRM, as the second line of defence, guides, supports, monitors, assesses and communicates with the first line in its management of ONFR. Operational Risk Officers within ONFRM independently assess group operational risk profiles, identify material exposures and potential weaknesses in processes and controls, and recommend appropriate mitigation strategies and actions. Executing the NFRMF strategy also involves continuing to strengthen our risk culture by promoting greater awareness and understanding of non-financial risk across all three lines of defence, learning from loss events and near-misses, and providing related training and communication, as well as day-to-day execution and oversight of the NFRMF. We also continue to strengthen our second-line-of-defence support and oversight with an enhanced Non-Financial Risk Operating Model, which takes a differentiated approach based on the nature of the underlying risk and existing organizational structures.

Through the implementation and oversight of the NFRMF, we seek to maintain an operational risk profile that is consistent with our risk appetite and supported by adequate capital, while continuing to adapt to ongoing changes by focusing on enhanced operational resilience. Operational resilience is more than recovery from a disaster, it is the ability to identify and monitor risks in order to either prevent any related incidents or minimize their impact. It involves BMO's ability to deal with unpredictable events and adapt to changes in external circumstances.

Operational resilience is not a defensive strategy, but a positive, forward-looking strategic posture, which allows us to take measured risks with confidence and prepares us to withstand challenges in the market arising from both expected and unexpected events.

The following are the key programs, methodologies and processes set out in the NFRMF that assist us in the ongoing review of our operational risk profile:

- **Risk Control Self-Assessment** is an established process used by our operating groups to identify the key risks associated with their businesses and the controls required for risk mitigation. It provides a forward-looking view of the impact of the business environment and internal controls on operating group risk profiles, supporting the proactive prevention, mitigation and management of risk.
- BMO's **Initiative Assessment and Approval Process (IAAP)** is used to assess, document and approve qualifying initiatives when a new business, service or product is developed, or existing services and products are enhanced. The process addresses requirements for due diligence, approval, monitoring and reporting at all levels of the organization.
- Material trends, metrics and risk assessments comprising **Key Risk Indicators, Issues Management** and **Internal Loss Data Events** are integral components of the operational risk profile and are utilized to assess specific risk exposures in relation to BMO's overall risk appetite.
- **Scenario analysis** assesses the potential impact of severe negative events on key risks and critical business processes in order to inform risk management. Scenarios help management identify and understand the impact of large-scale events, including events that have a low frequency of occurrence but a high severity of impact, as well as environmental stresses, and develop mitigation measures or controls that will help manage tail risk.
- Effective **business continuity management** prepares us to recover, maintain and manage critical operations and processes in the event of a business disruption, thereby minimizing any adverse effects on our customers and other stakeholders.
- BMO's **Corporate Risk & Insurance team** provides a second layer of mitigation for certain operational risk exposures. We purchase insurance when required by law, regulation or contractual agreement, and when it is economically attractive and practicable to mitigate our risks, in order to provide adequate protection against unexpected material loss.

The following are examples of ONFR that may adversely affect BMO's business and financial results. As a result of the COVID-19 pandemic and the new remote working arrangements that have emerged for employees and third parties, a number of risks remain elevated, such as cyber security, information security and privacy risks. For more information, refer to the Top and Emerging Risks That May Affect Future Results section.

Cyber Security Risk

Information security is integral to BMO's business activities, brand and reputation. As technology rapidly evolves and the connectivity of devices expands, cyber threats and risks change. These threats and risks include breaches of, or disruptions to, our systems or operations, as well as unauthorized access, use or dissemination of our information or information pertaining to our customers or employees. We continue to build out the capabilities of our Financial Crimes Unit, demonstrating a commitment to bringing together cyber defence and fraud and physical security functions. In addition, we are enhancing processes to make them more resilient, while strengthening our ability to prevent, detect and recover from cyber security threats in order to keep our customers' and employees' data secure. We continue to examine and benchmark practices across our peer groups and other industries, conduct third-party assessments, develop and evaluate the effectiveness of our key controls, and invest in both technology and human resources. We also work with various third-party security and software suppliers to bolster our internal resources and technology capabilities in order to strengthen our resiliency in a rapidly evolving threat landscape.

Technology Disruption and Resiliency

Technology is the backbone of our operations, and we continue to innovate and invest in enhancing our technological capabilities in order to keep customers' data secure and to meet and exceed their expectations, as the adoption of digital banking continues to grow. In addition to existing technology risks, the COVID-19 pandemic has introduced unprecedented challenges and new emerging risks, as our clients, employees and suppliers have come to rely on technology platforms and the Internet of Things to manage and support their personal, business and investment banking activities. Given the extent to which BMO's operations rely on technology, it is important to maintain platforms that provide high levels of operational reliability and resiliency, particularly with respect to business-critical systems. Technology innovations, such as advanced data management, analytical tools and artificial intelligence, are being leveraged to provide insights that will improve the way we do business and serve our customers.

Third-Party Risk

BMO continues to use third parties in order to gain rapid access to new technologies, increase efficiencies, and improve competitiveness and performance. This increases our reliance on third parties and sub-contractors to effectively deliver products and services to our customers, and exposes us to the risk of business disruption and financial loss stemming from the breakdown of processes and controls at third parties and their sub-contractors. To manage this risk, we have in place an enterprise-wide risk management program designed to identify, assess, manage and report on risks stemming from the use of third parties through all stages of the third-party life cycle. This program is underpinned by a robust Third-Party Risk Management Framework that establishes minimum requirements for the identification, assessment, management, monitoring and reporting of this risk, in line with our organizational strategy and risk appetite. We continue to enhance our third-party risk management capabilities to help maintain robust risk management, operational resiliency and compliance with relevant regulatory requirements.

Anti-Money Laundering

Compliance with all Anti-Money Laundering, Anti-Terrorist Financing (AML/ATF) and sanctions measures is an integral part of safeguarding BMO, our customers and the communities in which we operate. We are committed to managing AML/ATF and sanctions risks effectively, and complying with all relevant laws and regulations. Risks related to non-compliance with these requirements can include enforcement action, legal action and damage to our reputation. Under the direction of the Chief Anti-Money Laundering Officer (CAMLO), BMO's AML/ATF and sanctions compliance program promotes effective governance and oversight across all of our businesses, and establishes appropriate policies, risk assessments and training, including mandatory annual training for all employees. BMO's AML/ATF and sanctions compliance program applies analytics, technology and professional expertise in order to deter, detect and report suspicious activity. The CAMLO regularly reports to the Audit and Conduct Review Committee (ACRC) of the Board of Directors and to senior management on the effectiveness of the AML compliance program. Amendments to Canada's AML/ATF regulations that came into effect in June 2021 are intended to improve the effectiveness of Canada's AML/ATF regime and further align it with international standards. We remain committed to effective compliance and the ongoing effort to protect the financial system and the communities in which we operate.

Model Risk

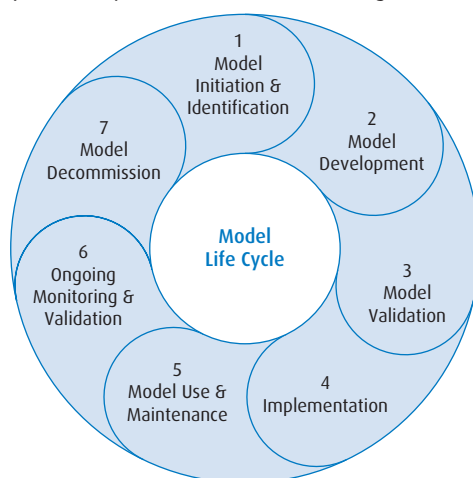
Model risk is the potential for adverse consequences resulting from decisions that are based on incorrect or misused model results. These adverse consequences can include financial loss, poor business decision-making and damage to reputation.

Model risk arises from the use of quantitative analytical tools that apply statistical, mathematical, economic, algorithmic or other advanced techniques, such as artificial intelligence (AI) and machine learning (ML), to process input data and generate quantitative estimates. We use these analytical tools, which range from very simple models that produce straightforward estimates to highly sophisticated models that value complex transactions or generate a broad range of forward-looking estimates. These models produce results that are used to inform business, risk and capital management decision-making, and to assist in making daily lending, trading, underwriting, funding, investment and operational decisions.

These quantitative analytical tools provide important insights and are effective when used within a framework that identifies key assumptions and limitations, while controlling and mitigating model risk. In addition to applying judgment to evaluate the reliability of model results, we mitigate model risk by maintaining strong controls over the development, validation, implementation and use of all our models across the enterprise. We also seek to ensure that qualitative model overlays and non-statistical approaches to evaluating risks are intuitive, experience-based, well-documented and subject to effective challenge by those with sufficient expertise and knowledge, in order to deliver reasonable results.

Model Risk Management Framework

Risk is inherent in models because model results are estimates which rely on statistical, mathematical or other quantitative techniques that approximate reality to transform data into estimates or forecasts of future outcomes. Model risk also arises from the potential for misuse of models or model results. Model risk is governed at BMO by the enterprise-wide Model Risk Management Framework.



The Model Risk Management Framework sets out an end-to-end approach for model risk governance across the model life cycle and helps manage model risk within the limits of our risk appetite. The framework includes BMO's Model Risk Corporate Policy, Model Risk Guidelines and supporting operating procedures, which outline explicit principles for managing model risk, detail model risk management processes, and define the roles and responsibilities of all stakeholders across the model life cycle. Model owners, developers and users serve as the first line of defence, while the Model Risk group is the second line of defence, and the Corporate Audit Division is the third line of defence.

Our Model Risk group is responsible for developing and maintaining a risk-based Model Risk Management Framework that meets regulatory expectations, as well as for oversight of the effectiveness of model processes, model inventory and the overall aggregation, assessment and reporting of model risk. This framework incorporates the management of risks arising from advances in automated decision-making, such as algorithmic trading, as well as AI and ML. Our Model Risk Management Committee (MRMC), a sub-committee of the RMC, is a cross-functional group representing all key stakeholders across the enterprise. The MRMC meets regularly to help direct BMO's use of models, to oversee the development, implementation and maintenance of the Model Risk Management Framework, to provide effective challenge and to discuss governance of the enterprise's models.

Outcomes Analysis and Back-Testing

Once models are validated, approved and in use, they are subject to ongoing monitoring, including outcomes analysis, at varying frequencies. As a key component of outcomes analysis, back-testing compares model results against actual observed outcomes. Variances between model forecasts and actual observed outcomes are measured against defined risk materiality thresholds and tolerance ranges, which may result in actions such as model review and parameter recalibration, as appropriate. This analysis serves to confirm the validity of a model's performance over time. Controls are in place to address identified issues and enhance our models' overall performance.

All models used within BMO are subject to validation and ongoing monitoring to confirm that they are being used in accordance with our framework. This framework applies to a wide variety of models, ranging from market, credit and non-financial risk models to stress testing, pricing and valuation, and anti-money laundering models.

Non-Financial Risk Measurement

Beginning in fiscal 2020, the Office of the Superintendent of Financial Institutions permitted BMO, along with other AMA-approved banks, to use the Basel II Standardized Approach for determining regulatory capital requirements for enterprise operational risk in the interim period prior to implementation of the new Standardized Measurement Approach, as part of the final Basel III reforms. We expect to transition to the new Basel III Standardized Measurement Approach for regulatory capital reporting in February 2023.

Caution

This Operational Non-Financial Risk section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Legal and Regulatory Risk

Legal and regulatory risk is the potential for loss or harm resulting from a failure to comply with laws or satisfy contractual obligations or regulatory requirements. This includes the risk of failure to: comply with the law (in letter or in spirit) or maintain standards of care; implement legal or regulatory requirements; enforce or comply with contractual terms; assert non-contractual rights; effectively manage disputes; or act in a manner so as to maintain our reputation.

The success of BMO's business relies in part on our ability to manage our exposure to legal and regulatory risk. The financial services industry is highly regulated and subject to strict enforcement of legal and regulatory requirements. Banks globally continue to be subject to fines and penalties for a number of regulatory and conduct issues, and we are exposed to risks in connection with regulatory and governmental inquiries, investigations and enforcement actions. As rulemaking and supervisory expectations continue to evolve, we monitor developments to enable BMO to respond and implement changes as required.

Under the direction of BMO's General Counsel, our Legal & Regulatory Compliance group maintains enterprise-wide frameworks that identify, assess, manage, monitor and report on legal and regulatory issues. We identify applicable laws and regulations and potential risks, recommend mitigation strategies and actions, conduct internal investigations, and oversee legal proceedings and enforcement actions. BMO is subject to legal proceedings, including investigations by regulators, arising in the ordinary course of business, and the unfavourable resolution of any such legal proceedings could have a material adverse effect on our business, financial condition, results of operations, cash flows, capital position or credit ratings; require material changes in our operations; result in loss of customers; and damage our reputation. The volume of legal proceedings and the amount of damages and penalties assessed in such legal proceedings could increase in the future. We are required to disclose material legal proceedings to which we are a party. Our disclosure controls and procedures are designed to provide reasonable assurance that all relevant information is gathered and reported to senior management on a timely basis so that appropriate decisions can be made regarding public disclosure. In assessing the materiality of legal proceedings, factors considered include a case-by-case assessment of specific facts and circumstances, our past experience and the opinions of legal experts. However, some legal proceedings may be highly complex, and include novel or untested legal claims or theories. The outcome of such proceedings may be difficult to anticipate until late in the proceedings, which may last several years. Certain businesses are also subject to fiduciary requirements, including policies and practices that address the responsibilities of a business to a customer (such as service requirements and expectations, customer suitability determinations, disclosure obligations and communications).

Safeguarding our customers, employees, information and assets from exposure to criminal risk is an important priority. Criminal risk is the potential for loss or harm resulting from a failure to comply with criminal laws, which could include acts by employees against BMO, acts by external parties against BMO and acts by external parties using BMO to engage in unlawful conduct, such as fraud, theft, money laundering, violence, cyber-crime, bribery and corruption.

BMO's Anti-Corruption Office, through its global program, has articulated key principles and procedures necessary for the effective oversight of compliance with anti-corruption legislation in the jurisdictions in which we operate. These include guidance on both identifying and avoiding corrupt practices and rigorously investigating allegations of corrupt activity.

Governments and regulators around the world continue to focus on anti-money laundering and related concerns, raising their expectations concerning the quality and efficacy of anti-money laundering programs and penalizing institutions that fail to meet these expectations. Under the direction of the Chief Anti-Money Laundering Officer (CAMLO), BMO's Anti-Money Laundering Office is responsible for the governance, oversight and assessment of principles and procedures designed to help ensure compliance with laws and regulations and internal risk parameters related to anti-money laundering, anti-terrorist financing and sanctions measures. For additional discussion regarding BMO's operational non-financial risk management practices with respect to anti-money laundering measures, refer to the Anti-Money Laundering section.

All of these frameworks reflect the three-lines-of-defence operating model described previously. The operating groups and Corporate Services, including Technology and Operations, manage day-to-day risks by complying with corporate policies and standards, while Legal & Regulatory Compliance units specifically aligned with each of the operating groups provide advice and independent legal and regulatory risk management oversight.

Heightened regulatory and supervisory scrutiny has a significant impact on the way we conduct business. Working with the operating groups and Corporate Services, including Technology and Operations, Legal & Regulatory Compliance assesses and analyzes the implications of regulatory and supervisory changes. We devote substantial resources to the implementation of systems and processes required to comply with new regulations, which may also help us meet the needs and demands of our customers. Failure to comply with applicable legal and regulatory requirements may result in legal proceedings, financial losses, regulatory sanctions, enforcement actions, an inability to execute our business strategies, a decline in investor and customer confidence, and damage to our reputation.

We recognize that our business is built on BMO's reputation for good conduct. In recognition of this, we have adopted a wide range of practices beyond BMO's Code of Conduct to support the ethical conduct of our employees. BMO's Ethical Culture and Conduct Framework sets out our approach to managing and mitigating potential misconduct. Misconduct is behaviour that falls short of legal, professional, internal conduct and ethical standards. Similar to our approach to other non-financial risks, this framework is supported by our Enterprise-Wide Risk Management Framework and our focus on maintaining a strong risk culture. For further discussion, refer to the Risk Culture section.

We continue to respond to other global regulatory developments, including capital and liquidity requirements. Other global regulatory developments include over-the-counter (OTC) derivatives reform, consumer protection measures and specific financial reforms, including proposed reforms in respect of the assessment, management and disclosure of climate-related financial risk, which are discussed in further detail below. For additional discussion of the regulatory developments relating to capital management and liquidity and funding risk, refer to the Enterprise-Wide Capital Management section and the Liquidity and Funding Risk section. For a discussion of the impact of certain other regulatory developments, refer to: Critical Accounting Estimates - Income Taxes and Deferred Tax Assets; Tax Legislation and Interpretations; Fiscal and Monetary Policies and Other Economic Conditions in the Countries in which BMO Conducts Business; and Benchmark Interest Rate Reform.

Consumer and Investor Protection – Regulators around the world continue to focus on consumer protection measures, including with respect to seniors and other vulnerable customers, interactions with consumers, and standards of conduct for individuals in the financial services industry. In Canada, these measures include amending the *Bank Act* to implement the Financial Consumer Protection Framework and amending the *Financial Consumer Agency of Canada Act* to strengthen the mandate and powers of the Financial Consumer Agency of Canada. Additionally, investor protection reforms to the Canadian securities regulatory regime are also proceeding. Canadian securities regulatory reforms include: client-focused reforms, which enhance requirements regarding conflict of interest disclosure, suitability, know-your-product, know-your-client, relationship disclosure, training and record-keeping; a ban on trailing commissions paid to dealers that do not make a suitability determination and a ban on deferred sales charges; and enhanced protection for older and vulnerable clients. In the United States, banking regulators have heightened focus on matters pertaining to racial equity and consumer protection, especially as they relate to the economic recovery of the communities we serve in the aftermath of the COVID-19 pandemic. Key consumer concerns, including fair lending, and unfair, deceptive or abusive acts or practices (UDAAP) issues, are the subject of heightened regulatory scrutiny in bank examination programs.

U.S. Regulatory Reform – In May 2018, the U.S. Congress passed the *Economic Growth, Regulatory Relief, and Consumer Protection Act* (EGRRCP), which made changes to the *Dodd-Frank Wall Street Reform and Consumer Protection Act*, including raising the threshold for heightened prudential standards. In October 2019, the U.S. federal banking agencies finalized rules pursuant to EGRRCP that modify capital and liquidity requirements, single-counterparty credit limits and prudential standards for bank holding companies and foreign banking organizations, including BMO. In two separate rulemakings, in November 2019 and June 2020, the U.S. federal banking agencies finalized rules amending the restrictions on proprietary trading and the ownership and sponsorship of private investment funds by banks and their affiliates. In 2021, the new U.S. administration appointed new leadership at several U.S. federal agencies, and additional appointments are expected. Each such new appointee may initiate or modify future regulatory reforms. Furthermore, due to congressional leadership changes as a result of the 2020 U.S. election, there is the possibility that new legislation could result in further regulatory changes. We continue to monitor the rulemaking activities at all relevant agencies.

Other Regulatory Initiatives Impacting Financial Services in Canada – The Department of Finance Canada is undertaking a consultation process regarding the merits of open banking, which would allow Canadian consumers and small businesses to direct federally regulated financial institutions to disclose their banking information through a secure mechanism to entities that meet information security and other requirements. Effective August 31, 2021, a new *Pay Equity Act* and related regulations require banks to establish a functional pay equity plan within three years. Implementing regulations are required for other earlier amendments to the *Bank Act* that will allow banks to undertake broader financial technology activities. As part of the 2021 federal budget process, the Department of Finance Canada launched consultations regarding the reduction of interchange fees that would benefit small businesses. These consultations precede any legislative modification to interchange fees, which were previously reduced by legislation in 2018.

Climate Change and Environmental, Social and Governance (ESG) Matters – We continue to monitor rulemaking activities of securities regulatory authorities and engage in programs and consultations in respect of risk management and disclosures related to ESG matters, as well as climate-related litigation trends. Globally, we are also monitoring the emergence of formal supervisory regulatory frameworks governing climate change risk analysis and reporting, including in Canada, the United States, the United Kingdom and the European Union.

Privacy – There is an increasing focus on data privacy regulation related to the use and safeguarding of personal information, and we continue to advance our privacy program to comply with these evolving requirements. In Canada, significant reform to federal privacy laws is expected, including new regulatory powers and penalties for breaching the digital privacy rights of individuals. In Quebec, Bill 64 has been adopted and will modernize the province's private-sector privacy regime and give new powers to privacy regulators to impose administrative monetary penalties. Ontario is also considering private-sector privacy legislation. Outside of Canada, large fines and settlements have been imposed for breaches of privacy rights and for failures to comply with regulatory privacy requirements, demonstrating heightened regulatory vigilance and enforcement. The *California Consumer Privacy Act* (CCPA) came into effect on January 1, 2020, and is currently the most comprehensive privacy law at the state level in the United States. The CCPA includes new and expanded privacy rights for California residents, including access and deletion rights with respect to their personal information. Other states have introduced privacy legislation, leading to a growing patchwork of privacy laws in the United States. In the European Union, new standard contractual clauses have been introduced to address the EU Commission's concerns regarding the transfer of personal data to countries lacking adequate privacy protection. In China, data localization and cross-border transfer rules remain complex. For additional discussion regarding privacy, refer to the Cyber Security, Information Security and Privacy Risk section and the Operational Non-Financial Risk – Cyber Security Risk section.

Derivatives Reform – G20 jurisdictions continue to implement new regulations as part of the OTC derivatives regulatory reform program. We continue to monitor and prepare for the impact of OTC derivatives regulatory changes relating to margin, clearing, execution and business conduct rules.

COVID-19 Pandemic – The COVID-19 pandemic has caused unprecedented disruption to global economies. There have been wide-ranging responses to support individuals, businesses and local and national economies through governmental and regulatory actions, emergency orders and regulatory relief. We have been engaged with our regulators around the world on the pandemic response, including our participation in various relief programs. For additional discussion, refer to the General Economic Conditions section, and the Regulatory Capital Developments – COVID-19 Related Modifications section.

The General Counsel and the Chief Compliance Officer regularly report to the Audit and Conduct Review Committee (ACRC) of the Board of Directors and senior management on the effectiveness of our Enterprise Compliance Program. The program uses a risk-based approach to identify, assess and manage compliance with applicable laws and regulations. The program directs operating groups and Corporate Services to maintain policies, procedures and controls that address these laws and regulations. Under the direction of the Chief Compliance Officer, we identify and report on gaps and deficiencies, and we track remedial action plans. The CAMLO also regularly reports to the ACRC.

All BMO employees must regularly complete legal and regulatory training on topics such as anti-corruption, anti-money laundering and privacy policies, standards and procedures. This is done in conjunction with our Code of Conduct training, which tests employees' knowledge and understanding of the behaviour required of employees of BMO.

Caution

This Legal and Regulatory Risk section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Strategic Risk

Strategic risk is the potential for loss or harm due to changes in the external business environment and failure to respond appropriately to these changes as a result of inaction, ineffective strategies or poor implementation of strategies. Strategic risk also includes business risk, which arises from the specific business activities of the enterprise, and the effects these could have on its earnings.

Strategic risk arises from external risks inherent in the business environment within which BMO operates, as well as from the potential for loss if we are unable to address those external risks effectively. While external strategic risks – including economic, geopolitical, regulatory, technological, social and competitive risks – cannot be controlled, the likelihood and magnitude of their impact can be limited through an effective strategic management framework, and certain of these risks, including economic, geopolitical and regulatory risks, can be assessed through stress testing.

BMO's Corporate Strategy team oversees the strategic planning process and works with the lines of business, along with ERP, Finance and Corporate Services, to identify, monitor and mitigate strategic risk across the enterprise. Our rigorous strategic risk management framework encourages a consistent approach to developing strategies and incorporates information related to financial commitments.

The Corporate Strategy team works with the lines of business and key corporate stakeholders during the strategy development process to promote consistency and adherence to strategic management standards, including a consideration of the results of stress testing as an input into strategic decision-making. The potential impacts of changes in the business environment, including macroeconomic developments, broad industry trends and the actions of existing and new competitors, are considered in this process and inform strategic decisions within each line of business. Enterprise and group strategies are reviewed with the Executive Committee and the Board of Directors annually in interactive sessions that challenge assumptions and strategies in the context of both the current and the potential future business environment.

Business risk, as a component of strategic risk, encompasses the potential causes of earnings volatility that are distinct from credit, market or non-financial risk factors. BMO's profitability, and hence value, may be eroded by changes in the business environment or by failures of strategy or execution due to changing client expectations or relatively ineffective responses to industry changes. Within BMO, each operating group is responsible for controlling its respective business risk by assessing, managing and mitigating any risks arising from changes in its business volumes, cost structures and potential competitor actions, among other factors.

The ability to implement the strategic plans developed by management influences our financial performance. Performance objectives established through the strategic management process are monitored regularly and reported on quarterly, using both leading and lagging indicators of performance, so that strategies can be reviewed and adjusted where necessary. Regular strategic and financial updates are also reviewed closely in order to identify any significant emerging risk issues.

Environmental and Social Risk

Environmental and social risk (E&S risk) is the potential for loss or harm, directly or indirectly, resulting from environmental or social impacts or concerns, including climate change, related to BMO, our customers, suppliers or clients, and our impact on the environment and society.

Environmental and social factors may give rise to the risk of direct and indirect impacts over both the short and long term, including but not limited to: climate change; pollution and waste; energy, water and other resource usage; biodiversity and land use; human rights; diversity, equity and inclusion; labour standards; community health, safety and security; land acquisition and involuntary resettlement; Indigenous peoples' rights and consultation; and cultural heritage. We may be indirectly exposed to the risk of financial loss or reputational harm if our customers, suppliers or clients are affected by environmental or social factors such that they are unable to meet their financial or other obligations to us. Environmental and social factors may also give rise to the risk of reputational harm, for instance if we are perceived to not effectively respond to those factors.

We continue to monitor and respond to the rapidly evolving E&S risk-related regulatory and supervisory frameworks, guidance and consultation, including developments in respect of the assessment, management and disclosure of climate-related financial risk in applicable jurisdictions, among them Canada, the United States, the United Kingdom and the European Union. For further discussion, refer to the Legal and Regulatory Risk section.

Governance

At the Board of Directors level, the Risk Review Committee (RRC) and the Audit and Conduct Review Committee (ACRC) provide oversight of our strategic E&S objectives and risk management. The Board meets with the Chief Sustainability Officer and General Counsel as necessary, to review key sustainability issues and trends as they relate to us and the financial services industry in general. Climate change risk and disclosure training is available to all Board of Directors members, including members of our subsidiaries' boards.

The ACRC charter includes a duty to assess the effectiveness of our governance of sustainability issues. The ACRC meets with the Chief Sustainability Officer and General Counsel to review and discuss key sustainability topics. A key role of the ACRC is to review and approve our Sustainability Report and Public Accountability Statement. The ACRC also provides guidance on the strategy, action plans, performance objectives and targets related to our operational footprint and sustainable finance commitments, and works to ensure management is adequately addressing opportunities associated with the transition to a lower-carbon economy.

The RRC assists the Board of Directors in fulfilling its risk management oversight responsibilities, including overseeing the identification, assessment and management of our E&S risks. Upon recommendation from the RRC, the Board of Directors annually approves our enterprise E&S risk appetite statement and associated key risk metrics.

BMO's General Counsel is responsible for our Sustainability program and sits on BMO's Executive Committee. Our Sustainability Council comprises senior leaders from the lines of business and Corporate Services across the organization, and provides oversight and leadership for our sustainability strategy, including our Net Zero Ambition (described under E&S Risk Management below). The Sustainability team is responsible for coordinating the development and maintenance of an enterprise-wide strategy that meets our overarching environmental and social responsibilities.

The Chief Risk Officer (CRO) reports to the RRC on E&S risk matters, including climate change. Enterprise Risk and Portfolio Management (ERPM) provides risk management oversight, supporting a disciplined approach to risk-taking in independent transaction approval and portfolio management, policy formulation, risk reporting, scenario analysis, modelling and risk education. The CRO and the Risk Management team report to the RRC periodically on E&S risk matters, including climate change.

E&S Risk Management

In recognition of its unique characteristics, E&S risk is classified in BMO's Risk Taxonomy as a transverse risk. As part of our Enterprise-Wide Risk Management Framework and Credit Risk Management Framework, we include provisions for governance and accountabilities, enhanced due diligence, and provisions for escalations and exceptions. We have also developed a qualitative risk appetite statement on E&S risks, including climate change.

Led by BMO's Chief Sustainability Officer, the Sustainability team works in partnership with the lines of business (including the BMO Capital Markets Sustainable Finance team and the BMO Global Asset Management team) and Corporate Services (including Risk Management) to manage E&S risk within our organization and to make progress toward achieving our sustainability goals. BMO's Net Zero Ambition is one of those goals. Our Net Zero Ambition is to be our clients' lead partner in the transition to a net zero world, and is supported by four pillars: Commitment, Capabilities, Client Partnership and Convening for Climate Action. The team reports quarterly to the Sustainability Council on key developments in sustainability and climate change and engages with external stakeholders to better understand the social consequences and environmental impacts of our operations and financing decisions.

BMO is a signatory to the Equator Principles, the United Nations (UN) Principles for Responsible Banking (UNPRB) and the UN Principles for Responsible Investment (UNPRI), and is a member of the Partnership for Carbon Accounting Financials (PCAF), as well as the Net-Zero Banking Alliance (NZBA). These voluntary frameworks may include process and reporting requirements that are intended to be voluntary, or they may adopt a "comply-or-explain" approach. We may also be exposed to reputation risk in the event that we do not fully implement these frameworks, either as a result of our own actions or due to external factors.

- The Equator Principles serve as a common baseline and framework for financial institutions to identify, assess and manage E&S risks that may arise in project financing. We apply this credit risk management framework to identify, assess and manage the E&S risk in these transactions.
- UNPRB provides a framework for a sustainable banking system and is the only sustainability framework for banks that is applicable across the enterprise, providing guidance at the strategic, portfolio and transaction levels across all lines of business. The UNPRB enables any financial institution genuinely committed to sustainable and responsible banking to set targets that are within the context of its capabilities and current financial and operational position.
- UNPRI is a framework that encourages sustainable investing through the integration of environmental, social and governance considerations into investment decision-making and ownership practices.
- PCAF is a global partnership of financial institutions working together to develop and implement a harmonized approach to assessing and disclosing the greenhouse gas (GHG) emissions associated with loans and investments.
- NZBA is an industry-led, UN-convened organization of banks supporting the implementation of decarbonization strategies and the development of an internationally coherent framework and guidelines for banks committed to aligning their lending and investment portfolios with net zero emissions by 2050.

E&S factors continue to be integrated into existing risk management frameworks. We evaluate the E&S risks associated with credit and counterparty transactions and exposures, and we apply enhanced due diligence processes to transactions with clients operating in higher risk sectors. We also avoid doing business with borrowers that have poor track records in E&S risk management. Transactions with significant environmental or social concerns may be escalated to BMO's Reputation Risk Management Committee for consideration.

Our Sustainability team also partners with the Procurement and Corporate Real Estate groups on operational sustainability. Together these groups are responsible for establishing and maintaining an operational environmental management approach, including the application of the framework set out in ISO 14001, and for setting objectives and targets that are intended to align our operations with our sustainability performance goals.

To keep informed of emerging environmental and social risks, we participate in global forums with our peers and maintain an open dialogue with our external stakeholders. BMO is a member of, and actively engaged in, sustainability-focused working groups of the United Nations Environment Programme – Finance Initiative (UNEP-FI), serves on the Steering Committee of the Equator Principles Association, and chairs the Cross-Sector Biodiversity Initiative.

Climate Change

We recognize that climate change poses potential risks to our organization, our clients and the communities in which we operate. In response, in March 2021, we announced the establishment of the BMO Climate Institute. It brings together our existing internal capabilities and external experts and provides a platform for collaboration to accelerate progress in our respective areas of work and to develop climate mitigation and adaptation solutions for our clients.

In line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), we recognize that climate change exposes the world to physical risks and transition risks.

Physical risks are risks associated with a changing climate, resulting in both acute and chronic physical effects. These risks may include an increase in the frequency and intensity of weather-related events, such as storms, floods, wildfires and heatwaves, or longer-term changes, such as temperature changes, rising sea levels and changes in soil productivity. To date, key climate change indicators, weather-related events and associated scientific research indicate that global exposure to climate change risks may be accelerating.

Transition risks are risks associated with the shift to a net zero carbon economy. These risks may arise from climate-related policy changes, technological changes and behavioural changes involving carbon-pricing mechanisms or a shift in consumer preferences toward lower-carbon products and services. We continue to closely monitor policy, technological and behavioural changes, some of which may unfold more rapidly than others as consumers, clients, investors, governments and communities act to enhance their resiliency to climate-related risks.

We consider the physical and transition risks arising from climate change to be transverse risk drivers that impact all of the material risks in our Risk Taxonomy, namely credit and counterparty risk, market risk, insurance risk, liquidity and funding risk, operational non-financial risk, legal and regulatory risk, reputation risk and strategic risk. Accordingly, we are integrating climate change considerations into our Enterprise-Wide Risk Management Framework.

To identify, assess and manage specific climate-related risks arising from our customer and client relationships, we follow internal guidelines that outline the scope of E&S risk and establish procedures, including enhanced due diligence, to determine the extent of our exposure to any such risk. Our Environmental and Social Risk Financing Guideline includes direction on developing an understanding of specific climate change impacts on borrowers and their operations, including regulatory and/or legislative changes. To avoid over-exposure to any one sector or geographic region that might be exposed to climate-related risks, we maintain a diversified lending portfolio. We continue to conduct sector-specific reviews across our lending portfolio to assess exposure to climate-sensitive industries. As a signatory to the Equator Principles, we have implemented the EP4 framework, which includes requirements related to climate change for transactions within its scope.

We are developing a climate change scenario analysis program, in line with the TCFD recommendations, analyzing both physical and transition risks for a selection of climate-sensitive lending portfolios. We plan to continue expanding such analyses across sectors and risk types, in line with internal policies and any applicable regulatory requirements. Going forward, this evolving scenario analysis program will inform our process for climate-related risk assessment.

The GHG Protocol Corporate Standard classifies a company's greenhouse gas (GHG) emissions under three scopes. Scope 1 emissions are direct emissions from owned or controlled sources, Scope 2 emissions are indirect emissions from the generation of purchased energy and Scope 3 emissions are indirect emissions (not included in Scope 2) that occur in the value chain of the reporting company. We track and analyze our Scope 1 and Scope 2 emissions, as well as Scope 3 emissions associated with our waste generation and business travel. We also have an ongoing operational approach to GHG emissions quantification and energy efficiency.

We continue to assess the credibility, reliability, comparability and decision-making usefulness of various measurement, assessment and reporting approaches, as well as how they could be incorporated into our climate risk management program and associated disclosures.

Codes of Conduct and Statement on Human Rights

BMO's Board-approved Code of Conduct reflects our commitment to manage our business responsibly. Our Statement on Human Rights describes our approach to human rights in the context of the UN Guiding Principles on Business and Human Rights. We report publicly under the United Kingdom *Modern Slavery Act 2015*, and we have in place a Supplier Code of Conduct, which outlines our standards for integrity, fair dealing and sustainability. We expect our suppliers to be aware of, understand and respect the principles of our Supplier Code of Conduct.

Reporting

We have supported the TCFD since 2018, and we have adopted the framework of the TCFD to guide climate-related financial disclosures, as set out in our Climate Report. Our Sustainability Report is prepared in accordance with the Global Reporting Initiative (GRI) Standards (core option) and the GRI Financial Services Sector Disclosure, and integrates the disclosure frameworks of the TCFD and the Sustainability Accounting Standards Board. This report includes the Public Accountability Statements for Bank of Montreal, Bank of Montreal Mortgage Corporation, BMO Life Assurance Company and BMO Life Insurance Company, outlining certain aspects of Bank of Montreal's contributions, and the contributions of its affiliates with operations in Canada, to the Canadian economy and society. These statements meet the requirements of the Canadian federal government's Public Accountability Statement regulations. Selected environmental and social indicators in the Sustainability Report are assured by the shareholders' auditors.

Caution

This Environmental and Social Risk section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Reputation Risk

Reputation risk is the potential for loss or harm to the BMO brand. It can arise even if other risks are managed effectively.

Our reputation is built on our commitment to high standards of business conduct and is one of our most valuable assets. By protecting and maintaining our reputation, we safeguard our brand, increase shareholder value, reduce our cost of capital, improve employee engagement, and preserve our customers' loyalty and trust.

We manage risks to our reputation by considering the potential reputational impact of all business activities, including strategy development and implementation, transactions and initiatives, product and service offerings, and events or incidents impacting BMO, as well as day-to-day decision-making and conduct. We consider our reputation in everything that we do.

BMO's Code of Conduct is the foundation of our ethical culture and it provides employees with guidance on the behaviour that is expected of them, so that they can make the right choice in decisions that affect our customers and stakeholders. Continual reinforcement of the principles set out in the Code of Conduct minimizes risks to our reputation that may result from poor decisions or behaviour. Recognizing that non-financial risks can have a negative effect that is as significant as the effect of financial risks, we actively promote a culture which encourages employees to raise concerns and supports them in doing so, with zero tolerance for retaliation.

In our corporate governance practices and Enterprise-Wide Risk Management Framework, we have put specific controls in place to manage risks to our reputation. We seek to identify activities or events that could impact our reputation with customers, regulators or other stakeholders. Where we identify a potential risk to our reputation, we take steps to assess and manage that risk. Instances of significant or heightened exposure to reputation risk are escalated to BMO's Reputation Risk Management Committee for review. As misconduct can impact our reputation, the Chief Ethics and Conduct Officer, who is responsible for enterprise-wide reporting on employee conduct, escalates instances of misconduct involving significant reputation risk to BMO's Reputation Risk Management Committee, as appropriate.

Accounting Matters and Disclosure and Internal Control

Critical Accounting Estimates

The most significant assets and liabilities for which we must make estimates include: allowance for credit losses; financial instruments measured at fair value; pension and other employee future benefits; impairment of securities; income taxes and deferred tax assets; goodwill and intangible assets; insurance-related liabilities; and provisions, including legal provisions. We make judgments in assessing whether substantially all risks and rewards have been transferred in respect of transfers of financial assets and whether we control structured entities (SEs). These judgments are discussed in Notes 6 and 7 of the consolidated financial statements. Note 17 of the consolidated financial statements provides further details on the estimates and judgments made in determining the fair value of financial instruments. If actual results were to differ from estimates, the impact would be recorded in future periods.

The extent of the continuing impact of the COVID-19 pandemic on the Canadian and U.S. economies remains uncertain and difficult to predict, including government and regulatory responses to the pandemic, which could vary by country and region. By their very nature, the judgments and estimates that we make for the purposes of preparing financial statements relate to matters that are inherently uncertain. However, we have detailed policies and control procedures that are intended to ensure the judgments made in estimating these amounts are well controlled, independently reviewed and consistently applied from period to period. We believe that the estimates of the value of our assets and liabilities are appropriate.

For a more detailed discussion of the use of estimates, refer to Note 1 of the consolidated financial statements.

Allowance for Credit Losses

The allowance for credit losses consists of allowances on impaired loans, which represent estimated losses related to impaired loans in the portfolio provided for but not yet written off, and allowances on performing loans, which is our best estimate of impairment in the existing portfolio for loans that have not yet been individually identified as impaired. Our approach to establishing and maintaining the allowance on performing loans is based on the requirements of IFRS, considering the guideline issued by the Office of the Superintendent of Financial Institutions. Under the IFRS 9 expected credit loss (ECL) methodology, an allowance is recorded for expected credit losses on financial assets regardless of whether there has been actual impairment. ECL is calculated on a probability-weighted basis, based on the economic scenarios described below, and is calculated for each exposure in the portfolio as a function of the probability of default (PD), exposure at default (EAD) and loss given default (LGD), with the timing of the loss also considered. Where there has been a significant increase in credit risk, lifetime ECL is recorded; otherwise 12 months of ECL is generally recorded. The determination of a significant increase in credit risk considers many different factors and will vary by product and risk segment. The main factors considered in making this determination are the change in PD since origination and certain other criteria, such as 30-day past due and watchlist status. We may apply experienced credit judgment to reflect factors not captured in the results produced by the ECL models, as we deem necessary. We applied experienced credit judgment to reflect the continuing impact of the uncertain environment on credit conditions and the economy as a result of the COVID-19 pandemic. We have controls and processes in place to govern the ECL process, including judgments and assumptions used in the determination of the allowance on performing loans. These judgments and assumptions will change over time, and the impact of any such change will be recorded in future periods.

In establishing our allowance on performing loans, we attach probability weightings to three economic scenarios, which are representative of our view of economic and market conditions – a base scenario, which in our view represents the most probable outcome, as well as benign and adverse scenarios, all developed by our Economics group. The adverse scenario is also described below, with the focus on such a scenario, given continued economic uncertainty. The allowance on performing loans is sensitive to changes in economic forecasts and the probability weight assigned to each forecast scenario. When changes in economic performance in the forecasts are measured, we use real GDP as the basis, which acts as the key driver for movements in many of the other economic and market variables used, including the equity volatility index (VIX), corporate BBB credit spreads, unemployment rates, housing price indices and consumer credit. In addition, we also consider industry-specific variables, where applicable. Many of the variables have a high degree of interdependency and, as such, there is no one single factor to which the allowances as a whole are sensitive. Holding all else equal, as economic variables worsen, the allowance on performing loans would increase and conversely, as they improve, the allowance would decrease. In addition, assuming all variables are held constant, an increase in loan balances or a deterioration in the credit quality of the loan portfolio would both drive an increase in the allowance on performing loans.

Our total allowance for credit losses as at October 31, 2021 was \$2,958 million (\$3,814 million as at October 31, 2020) and comprises an allowance on performing loans of \$2,447 million and an allowance on impaired loans of \$511 million (\$3,075 million and \$739 million, respectively, as at October 31, 2020). The allowance on performing loans decreased \$628 million year-over-year, primarily driven by an improving economic outlook, positive credit migration and movements in foreign exchange rates, partially offset by the impact of the uncertain environment on future credit conditions, including adoption of a higher adverse scenario weighting as well as a more severe adverse scenario, and portfolio growth.

As at October 31, 2021, our base case scenario depicts a stronger economic forecast in both Canada and the United States. In Canada, annual real GDP growth averages 4.0% over the next 12 months as a result of policy stimulus, easing of pandemic restrictions, and a reduction in supply-chain disruptions, combined with a wave of pent-up demand. Annual real GDP growth is expected to average 3.9% over the following 12 months, as the economic recovery continues and spending returns to more normal levels. The Canadian unemployment rate is forecasted to decline steadily, though remains elevated, averaging 6.6% over the next 12 months and 5.7% over the following year. The U.S. economy is expected to follow a similar trajectory over the next 12 months, albeit with a higher level of growth compared with Canada at 4.8%, given a larger policy stimulus and an initially faster vaccine rollout. Real GDP is expected to grow 2.7% in the following 12 months. The U.S. unemployment rate is forecasted to average 4.7% over the next 12 months and then fall to 3.7% in the following year. Our base case economic forecast as at October 31, 2020 depicted more moderate economic growth in both Canada and the United States over the near-term projection period. If we assume a 100% base case economic forecast and include the impact of loan migration by restaging, with other assumptions held constant, including the application of experienced credit judgment, the allowance on performing loans would be approximately \$1,725 million as at October 31, 2021 (\$2,375 million as at October 31, 2020), compared with the reported allowance on performing loans of \$2,447 million (\$3,075 million as at October 31, 2020).

As at October 31, 2021, our adverse case economic forecast depicts a contracting economy, with annual average real GDP declining in both Canada and the United States over the next 12 months by 2.7% and 1.2%, respectively, with both contracting at a rate of 1.1% in the following 12 months. The adverse case scenario assumes a sustained large increase in COVID-19 cases, accompanied by renewed restrictions on a broad range of activities leading to a decline in consumer and business confidence, and prolonged supply-chain disruptions. Unemployment rates remain elevated in both Canada and the United States, increasing from an average of 10.8% over the next 12 months to an average of 12.7% in the following year in Canada, and from 8.5% to 11.0% in the United States over the same period. Despite adopting a more severe adverse scenario during fiscal 2021, the adverse case economic outlook as at October 31, 2020 depicted a more severe economic contraction in Canada and the United States compared with the adverse case as at October 31, 2021, due to the improvement in economic conditions year-over-year. If we assume a 100% adverse economic forecast and include the impact of loan migration by restaging, with other assumptions held constant, including the application of experienced credit judgment, the allowance on performing loans would be approximately \$3,825 million as at October 31, 2021 (\$4,875 million as at October 31, 2020), compared with the reported allowance on performing loans of \$2,447 million (\$3,075 million as at October 31, 2020).

The following tables show the key economic variables used to estimate the allowance on performing loans during the forecast period. The values shown represent the national annual average levels or growth rates for the next 12 months and the subsequent 12 months following each reporting period for all scenarios. While the values disclosed below are national variables, we use regional variables in the underlying models where appropriate.

All figures are annual average values	As at October 31, 2021					
	Benign scenario		Base scenario		Adverse scenario	
	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months
Real GDP growth rates (1)						
Canada	6.3%	5.5%	4.0%	3.9%	(2.7)%	(1.1)%
United States	7.1%	4.0%	4.8%	2.7%	(1.2)%	(1.1)%
Corporate BBB 10-year spread						
Canada	1.4%	1.7%	1.8%	2.0%	3.6%	4.4%
United States	0.9%	1.1%	1.2%	1.5%	4.2%	4.5%
Unemployment rates						
Canada	6.0%	4.9%	6.6%	5.7%	10.8%	12.7%
United States	4.2%	3.2%	4.7%	3.7%	8.5%	11.0%
Housing price index (1)						
Canada (2)	18.2%	10.2%	15.1%	5.2%	(6.4)%	(18.0)%
United States (3)	14.6%	6.7%	12.3%	4.3%	(6.1)%	(15.5)%

All figures are annual average values	As at October 31, 2020					
	Benign scenario		Base scenario		Adverse scenario	
	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months
Real GDP growth rates (1)						
Canada	3.7%	6.4%	1.8%	4.2%	(4.4)%	(1.1)%
United States	1.6%	6.0%	(0.4)%	4.0%	(5.1)%	(1.2)%
Corporate BBB 10-year spread						
Canada	1.8%	1.9%	2.2%	2.2%	3.6%	4.5%
United States	1.7%	1.7%	2.0%	2.0%	3.9%	4.1%
Unemployment rates						
Canada	7.4%	6.1%	8.9%	7.5%	12.7%	13.9%
United States	6.4%	4.8%	8.0%	6.0%	11.5%	12.8%
Housing price index (1)						
Canada (2)	10.3%	7.7%	7.2%	2.8%	(1.2)%	(8.7)%
United States (3)	4.6%	4.5%	2.4%	2.1%	(2.4)%	(6.2)%

(1) Real gross domestic product and housing price index are four-quarter averages of year-over-year growth rates.

(2) In Canada, we use the HPI Benchmark Composite.

(3) In the United States, we use the National Case-Shiller House Price Index.

The table below shows our expectations for the real GDP year-over-year growth rates for the base case in Canada and the United States to trend by calendar quarter. In addition, the table includes the real GDP level compared with calendar Q4 2019, which marked the quarterly peak in real GDP prior to the beginning of the pandemic in calendar Q1 2020, expressed as a percentage.

Calendar quarter ended	December 31, 2021	March 31, 2022	June 30, 2022	September 30, 2022	December 31, 2022	March 31, 2023	June 30, 2023	September 30, 2023
Real GDP growth rates year-over-year								
Canada	3.4%	3.4%	5.1%	5.2%	4.4%	3.5%	2.6%	2.1%
United States	5.5%	4.6%	3.7%	3.1%	2.7%	2.5%	2.4%	2.3%
Real GDP level compared to calendar Q4 2019								
Canada	100.2%	101.6%	103.0%	104.0%	104.6%	105.1%	105.6%	106.1%
United States	103.1%	103.8%	104.6%	105.3%	105.9%	106.5%	107.0%	107.6%

The ECL approach requires the recognition of credit losses generally based on 12 months of expected losses for performing loans (Stage 1) and the recognition of lifetime expected losses for performing loans that have experienced a significant increase in credit risk since origination (Stage 2). Under the current probability-weighted scenarios and based on the current risk profile of loan exposures, if all performing loans were in Stage 1, our models would generate an allowance on performing loans of approximately \$1,775 million (\$2,300 million in 2020), compared with the reported allowance on performing loans of \$2,447 million (\$3,075 million in 2020).

Information on the Provision for Credit Losses for the years ended October 31, 2021 and 2020 can be found in the Total Provision for Credit Losses section. Additional information on the process and methodology for determining the allowance for credit losses can be found in the discussion of Credit and Counterparty Risk, as well as in Note 4 of the consolidated financial statements.

Financial Instruments Measured at Fair Value

We record assets and liabilities classified as trading, assets and liabilities designated at fair value, derivatives, certain equity and debt securities and securities sold but not yet purchased at fair value. Fair value represents an estimate of the amount we would receive, or would be required to pay in the case of a liability, in an orderly transaction between willing parties at the measurement date. We employ a fair value hierarchy to categorize the inputs we use in valuation techniques to measure fair value. The extent of our use of quoted market prices (Level 1), internal models with observable market information (Level 2) and internal models without observable market information (Level 3) in the valuation of loans, securities, derivative assets and liabilities, and liabilities recorded at fair value as at October 31, 2021, as well as a sensitivity analysis of Level 3 financial instruments, is disclosed in Note 17 of the consolidated financial statements. For instruments that are valued using models, we consider all reasonable available information and maximize the use of observable market data.

Valuation Product Control (VPC), a group independent of the trading lines of business, seeks to ensure that the fair values at which financial instruments are recorded are materially accurate by:

- Developing and maintaining valuation policies, procedures and methodologies in accordance with regulatory requirements and IFRS
- Establishing official rate sources for valuation data inputs, and
- Providing independent review of portfolios for which prices supplied by traders are used for valuation

When VPC determines that adjustments to valuations are needed to better reflect fair value estimates based on data inputs from its official rate sources, the adjustments are subject to review and approval by the Valuation Steering Committee (VSC).

The VSC is our senior management valuation committee. It meets at least monthly to address the more challenging valuation issues related to our portfolios, approves valuation methodology changes as needed to enhance fair value estimates, and acts as a key forum for the discussion of sources of valuation uncertainty and how these have been addressed by management.

As at October 31, 2021, the total valuation adjustments were a net decrease in value of \$124 million for financial instruments carried at fair value on the Consolidated Balance Sheet (a net decrease of \$117 million as at October 31, 2020).

Pension and Other Employee Future Benefits

Our pension and other employee future benefits expense is calculated by independent actuaries using assumptions determined by management. Differences between actual experience and the assumptions used are recognized in other comprehensive income.

Pension and other employee future benefits expense and the related obligations are sensitive to changes in discount rates. We determine discount rates at each year end for all plans, using high-quality corporate bonds with terms matching the plans' specific cash flows.

Additional information regarding accounting for pension and other employee future benefits, including a sensitivity analysis for key assumptions, is included in Note 21 of the consolidated financial statements.

Impairment of Securities

We have investments in associates and joint ventures, which we review at each quarter-end reporting period in order to identify and evaluate those that show indications of possible impairment. For these investments, a significant or prolonged decline in the fair value of a security to an amount below its cost is objective evidence of impairment.

Debt securities measured at amortized cost or fair value through other comprehensive income (FVOCI) are assessed for impairment using the expected credit loss model. For securities determined to have low credit risk, the allowance for credit losses is measured at a 12-month expected credit loss.

Additional information regarding accounting for debt securities measured at amortized cost or FVOCI, other securities, the related allowance for credit losses and the determination of fair value is included in Note 3 and Note 17 of the consolidated financial statements.

Income Taxes and Deferred Tax Assets

Our approach to tax is guided by our Statement on Tax Principles, elements of which are described below, and governed by our tax risk management framework, which is implemented through internal controls and processes. We operate with due regard to risks, including tax and reputation risks. We actively seek to identify, assess, manage (including mitigation), monitor and report any tax risks that may arise in order to understand our financial exposure. Our intention is to comply fully with tax laws. We consider all applicable laws in connection with commercial activities, and where tax laws change in our business or for our customers, we adapt and make changes accordingly. We monitor applicable tax-related developments, including legislative proposals, case law and guidance from tax authorities. When an interpretation or application of tax laws is not clear, we take well-reasoned positions based on available case law and administrative positions of tax authorities, and we engage external advisors when necessary. We do not engage in tax planning that does not have commercial substance. We do not knowingly work with customers we believe use tax strategies to evade taxes. We are committed to maintaining productive relationships and cooperating with tax authorities on all tax matters. We seek to resolve disputes in a collaborative manner; however, when our interpretation of tax law differs from that of tax authorities, we are prepared to defend our position.

The provision for income taxes is calculated based on the expected tax treatment of transactions recorded in either the Consolidated Statement of Income or the Consolidated Statement of Changes in Equity. In determining the provision for income taxes, we interpret tax legislation, case law and administrative positions in numerous jurisdictions and, based on our judgment, we record the estimate of the amount required to settle tax obligations. We also make assumptions about the expected timing of the reversal of deferred tax assets and liabilities. If the interpretations and assumptions differ from those of tax authorities or if the timing of reversals is not as expected, the provision for income taxes could increase or decrease in future periods. The amount of any such increase or decrease cannot be reasonably estimated.

Deferred tax assets are recognized only when it is probable that sufficient taxable profit will be available in future periods against which deductible temporary differences or unused tax losses and tax credits may be utilized. We are required to assess whether it is probable that deferred income tax assets will be realized. Factors used to assess the probability of realization are past experience of income and capital gains, forecasts of future net income before taxes, and the remaining expiration period of tax loss carry forwards and tax credits. Changes in assessment of these factors could increase or decrease the provision for income taxes in future periods.

If income tax rates increase or decrease in future periods in a jurisdiction, the provision for income taxes for future periods will increase or decrease accordingly. Furthermore, deferred tax assets and liabilities will increase or decrease as income tax rates increase or decrease, respectively, and will result in an income tax impact. For example, an increase in the Canadian or U.S. federal tax rate would increase our respective net deferred tax asset, which would result in one-time corresponding tax benefits to net income. In addition, an increase in the Canadian or U.S. federal tax rate would decrease our annual net income. The size of this annual net income decrease and any impact on the respective net deferred tax asset is uncertain at this point and will be dependent on many factors, including the tax rates enacted and their timing, phase-in provisions and details regarding any legislation and its interpretation.

Canadian tax authorities have reassessed us for additional income tax and interest in an amount of approximately \$1,210 million, to date, in respect of certain 2011-2016 Canadian corporate dividends. Those reassessments denied certain dividend deductions on the basis that the dividends were received as part of a “dividend rental arrangement”. The tax rules raised by the Canadian tax authorities were prospectively addressed in the 2015 and 2018 Canadian federal budgets. In October 2021, we filed Notices of Appeal with the Tax Court of Canada and the matter is now in litigation. We expect to be reassessed in future years for significant additional income tax for similar activities. We remain of the view that our tax filing positions were appropriate and intend to challenge all reassessments. However, if such challenges are unsuccessful, the additional expense would negatively impact net income.

Additional information regarding accounting for income taxes is included in Note 22 of the consolidated financial statements.

Goodwill and Intangible Assets

Goodwill is assessed for impairment at least annually. This assessment includes a comparison of the carrying value and the recoverable amount of each of our cash-generating units (CGUs) in order to verify that the recoverable amount of the CGU is greater than its carrying value. If the carrying value were to exceed the recoverable amount of the CGU, an impairment calculation would be performed. The recoverable amount of a CGU is the higher of its fair value less costs to sell and its value in use.

Fair value less costs to sell was used to perform the impairment test in all periods. In determining fair value less costs to sell, we employ a discounted cash flow model, consistent with that used when a business is acquired. This model is dependent on assumptions related to revenue growth, discount rates, synergies achieved on acquisition and the availability of comparable acquisition data. Changes in any of these assumptions would affect the determination of fair value for each of our CGUs in a different manner. Management must exercise judgment and make assumptions in determining fair value. In particular, we have considered the impact of the COVID-19 pandemic in the current year by updating key assumptions accordingly, including the estimated cost of capital, discount rates and actual and future business performance of our CGUs. Differences in judgments and assumptions could affect the determination of fair value and any resulting impairment write-down.

During the year, we recognized a goodwill write-down of \$779 million (\$nil in 2020) due to the implied valuation from the definitive agreement to sell our EMEA Asset Management business (part of our Wealth Management CGU) to Ameriprise and our allocation of goodwill to the business being sold. As at October 31, 2021, no goodwill impairment was recorded for the other CGUs as the estimated fair value of the CGUs was greater than their carrying value.

Intangible assets with definite lives are amortized to income on either a straight-line or an accelerated basis over a period not exceeding 15 years, depending on the nature of the asset. We test intangible assets with definite lives for impairment when circumstances indicate that the carrying value may not be recoverable.

Intangible assets with indefinite lives are tested annually for impairment. If an intangible asset is determined to be impaired, it will be written down to its recoverable amount, the higher of value in use and fair value less costs to sell, when this is less than the carrying value.

Additional information regarding the composition of goodwill and intangible assets is included in Note 11 of the consolidated financial statements.

Insurance-Related Liabilities

Insurance claims and policy benefit liabilities represent current claims and estimates of future insurance policy obligation liabilities. Liabilities for life insurance contracts are determined using the Canadian Asset Liability Method, which incorporates best-estimate assumptions for mortality, morbidity, policy lapses, surrenders, future investment yields, policy dividends, administration costs and margins for adverse deviation. These assumptions are reviewed at least annually and updated to reflect actual experience and market conditions. The most significant potential impact on the valuation of these liabilities would result from a change in the assumptions for interest rates and equity market values. If the assumed future interest rates were to increase by one percentage point, earnings before tax would increase by approximately \$48 million. A reduction of one percentage point would lower earnings before tax by approximately \$48 million. If the assumed equity market value increased by 10%, earnings before tax would increase by approximately \$22 million. A reduction of 10% would lower earnings before tax by approximately \$22 million.

Additional information on insurance-related liabilities is provided in Note 14 of the consolidated financial statements, and information on insurance risk is provided in the Insurance Risk section.

Provisions

A provision is recognized if, as a result of a past event, we have a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are recorded at the best estimate of the amount required to settle any obligation as at the balance sheet date, considering the risks and uncertainties surrounding the obligation. For example, BMO and its subsidiaries are involved in various legal actions in the ordinary course of business. Factors considered in making the estimate for any obligation related to these legal actions include a case-by-case assessment of specific facts and circumstances, past experience and the opinions of legal experts. Management and internal and external experts are involved in estimating any amounts that may be required. Certain provisions also relate to restructuring initiatives that we have undertaken. These restructuring provisions are recorded at management's best estimate of the amounts that will ultimately be paid out.

The actual costs of settling some obligations may be substantially higher or lower than the amount of the provisions.

Additional information regarding provisions is included in the Legal and Regulatory Risk section and in Note 24 of the consolidated financial statements.

Leases

We enter into leases as a lessee for which we recognize a lease liability and a corresponding right-of-use asset. In calculating our lease liability and corresponding right-of-use asset, we assess whether a contract is a lease by determining if we have the right to control the asset based on our ability to make decisions or direct how and for what purpose the asset is used. In accounting for leases, we must evaluate the lease term based on the terms of the lease contract, including any extension or termination options that we are reasonably certain to exercise based on the economic rationale underlying the decision. In addition, for leases where the interest cost is explicitly stated, we must estimate our incremental borrowing rate to discount the related lease liabilities, based on our expected costs of secured borrowing for the lease term.

Additional information on leases is provided in Note 9 of the consolidated financial statements.

Transfer of Financial Assets

We sell Canadian mortgage loans to third-party Canadian securitization programs, including the Canada Mortgage Bond Program, and directly to third-party investors under the National Housing Act Mortgage-Backed Securities program. During 2020, we also participated in programs offered by the Canadian and U.S. governments in response to the COVID-19 pandemic to support businesses facing economic hardship, including the Canada Emergency Business Account (CEBA) program and the Business Development Bank of Canada (BDC) Co-Lending program. We assess whether substantially all of the risks and rewards of the loans have been transferred in order to determine if they qualify for derecognition. Where we continue to be exposed to substantially all of the prepayment, interest rate and/or credit risk associated with the securitized loans, they do not qualify for derecognition. We continue to recognize the loans, and we recognize the related cash proceeds as secured financing on our Consolidated Balance Sheet.

Additional information concerning the transfer of financial assets is included in the Off-Balance Sheet Arrangements section, as well as in Note 6 of the consolidated financial statements.

Consolidation of Structured Entities

In the normal course of business, we enter into arrangements with SEs, using them to secure customer transactions or transfer assets to obtain sources of liquidity by securitizing financial assets, or pass our credit risk to holders of the vehicles' securities. For example, we enter into transactions with SEs where we transfer assets, including mortgage loans, mortgage-backed securities, credit card loans, real estate lines of credit, auto loans and equipment loans, in order to obtain alternate sources of funding, or as part of our trading activities. We are required to consolidate a SE if we control the SE. We control a SE when we have power over the SE, exposure or rights to variable returns as a result of our involvement, and the ability to exercise power to affect the amount of those returns.

Additional information concerning interests in SEs is included in the Off-Balance Sheet Arrangements section, as well as in Note 7 of the consolidated financial statements.

Caution

This Critical Accounting Estimates section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Changes in Accounting Policies in 2021

IBOR Reform — Phase 2 amendments

Effective November 1, 2020, we early adopted Phase 2 amendments to IFRS 9, *Financial Instruments*, IAS 39, *Financial Instruments: Recognition and Measurement* (IAS 39), IFRS 7, *Financial Instruments: Disclosures*, and IFRS 4, *Insurance Contracts*, as well as IFRS 16, *Leases*. These amendments address issues that arise from the implementation of IBOR reform, where IBORs are replaced with alternative benchmark rates.

For financial instruments at amortized cost, the amendments introduce a practical expedient such that if a change in the contractual cash flows is as a result of IBOR reform and occurs on an economically equivalent basis, the change will be accounted for by updating the effective interest rate with no immediate gain or loss recognized. The amendments also provide additional temporary relief from the application of specific IAS 39 hedge accounting requirements to hedging relationships affected by IBOR reform. For example, there is an exception from the requirement to discontinue hedge accounting as a result of changes to hedge documentation required solely by IBOR reform. The amendments also require additional disclosure that allows users to understand the impact of IBOR reform on our financial instruments and risk management strategy.

Further details are provided in Note 1 of the consolidated financial statements.

Conceptual Framework

Effective November 1, 2020, we adopted the revised Conceptual Framework (Framework), which sets out the fundamental concepts for financial reporting to ensure consistency in standard-setting decisions and that similar transactions are treated in a similar way, so as to provide useful information to users of financial statements. The revised Framework had no impact on our accounting policies.

Future Changes in Accounting Policies

IFRS 17, *Insurance Contracts* (IFRS 17)

In June 2020, the IASB issued amendments to IFRS 17, *Insurance Contracts* (IFRS 17). The amendments include a deferral of the effective date for IFRS 17, resulting in a new adoption date for the bank of November 1, 2023 instead of November 1, 2022. They also include amendments to simplify and revise certain requirements, and provide additional transition relief. We continue to assess the impact of the standard on our future financial results. Further information on these amendments can be found in Note 1 of the consolidated financial statements.

Caution

This Future Changes in Accounting Policies section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Transactions with Related Parties

In the ordinary course of business, we provide banking services to key management personnel on the same terms that we offer these services to preferred customers. Key management personnel are defined as those persons having authority and responsibility for planning, directing and/or controlling the activities of an entity, being the directors and the most senior executives of the bank. Banking services are provided to joint ventures and equity-accounted investees on the same terms offered to customers for these services. We also offer employees a subsidy on annual credit card fees.

Details of our investments in joint ventures and associates and the compensation of key management personnel are disclosed in Note 27 of the consolidated financial statements.

Shareholders' Auditors' Services and Fees

Review of Shareholders' Auditors

The Audit and Conduct Review Committee (ACRC) is responsible for the appointment, compensation and oversight of the shareholders' auditors and conducts an annual assessment of the performance and effectiveness of the shareholders' auditors, considering factors such as: the quality of the services provided by the engagement team of the shareholders' auditors during the audit period; the qualifications, experience and geographical reach relevant to serving BMO Financial Group; the quality of communications received from the shareholders' auditors; and the independence, objectivity and professional skepticism of the shareholders' auditors.

The ACRC believes that it has a robust review process in place to monitor audit quality and oversee the work of the shareholders' auditors, including the lead audit partner, which includes:

- Annually reviewing the audit plan in two separate meetings, including a consideration of the impact of business risks on the audit plan and an assessment of the reasonableness of the audit fee
- Reviewing the qualifications of the senior engagement team members
- Monitoring the execution of the audit plan of the shareholders' auditors, with emphasis on the more complex and challenging areas of the audit
- Reviewing and evaluating the audit findings, including in camera sessions
- Evaluating audit quality and performance, including recent Canadian Public Accountability Board (CPAB) and Public Company Accounting Oversight Board (PCAOB) inspection reports on the shareholders' auditors and their peer firms
- At a minimum, holding quarterly meetings with the chair of the ACRC and the lead audit partner to discuss audit-related issues independently of management
- Performing a comprehensive review of the shareholders' auditors every five years, and performing an annual review between these comprehensive reviews, following the guidelines set out by the Chartered Professional Accountants of Canada (CPA Canada) and the CPAB.

In 2021, an annual review of the shareholders' auditors was completed. Input was sought from ACRC members and management on areas such as communication effectiveness, industry insights, audit performance, independence and professional skepticism. In addition, the most recent comprehensive review was completed in 2020, based on the latest recommendations of CPA Canada and CPAB. These reviews focused on: (i) the independence, objectivity and professional skepticism of the shareholders' auditors; (ii) the quality of the engagement team; and (iii) the quality of communications and interactions with the shareholders' auditors. As a result of the review, the ACRC was satisfied with the performance of the shareholders' auditors.

Independence of the shareholders' auditors is overseen by the ACRC in accordance with BMO's Auditor Independence Standard. The ACRC also ensures that the lead audit partner rotates out of that role after five consecutive years and does not return to that role for a further five years.

Pre-Approval Policies and Procedures

As part of BMO Financial Group's corporate governance practices, the ACRC oversees the application of its policy limiting the services provided by the shareholders' auditors that are not related to their role as auditors. All services must comply with our Auditor Independence Standard, as well as professional standards and securities regulations governing auditor independence. The ACRC pre-approves the types of services (permitted services) that can be provided by the shareholders' auditors, as well as the annual audit plan, which includes fees for specific types of services. For permitted services that are not included in the pre-approved annual audit plan, approval to proceed with the engagement is obtained in accordance with our Auditor Independence Standard.

Shareholders' Auditors' Fees

(Canadian \$ in millions) Fees (1)	2021	2020
Audit fees	25.2	22.3
Audit-related fees (2)	3.4	2.9
Tax services fees (3)	0.1	0.1
All other fees (4)	1.3	1.5
Total	30.0	26.8

(1) The classification of fees is based on applicable Canadian securities laws and U.S. Securities and Exchange Commission definitions.

(2) Includes fees paid for specified procedures on BMO's Proxy Circular and other services, and French translation of financial statements, related continuous disclosures and other public documents containing financial information.

(3) Includes fees paid for tax compliance services provided to various BMO-managed investment company complexes.

(4) Includes other fees paid by BMO-managed investment company complexes.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Management's Annual Report on Disclosure Controls and Procedures and Internal Control over Financial Reporting

Disclosure Controls and Procedures

Disclosure controls and procedures are designed to provide reasonable assurance that all relevant information is gathered and reported to senior management, including the Chief Executive Officer (CEO) and the Chief Financial Officer (CFO), on a timely basis, so that appropriate decisions can be made regarding public disclosure.

As at October 31, 2021, under the supervision of the CEO and the CFO, BMO Financial Group's (BMO) management evaluated the effectiveness of the design and operation of its disclosure controls and procedures, as defined in Canada by *National Instrument 52-109, Certification of Disclosure in Issuers' Annual and Interim Filings*, and in the United States by Rule 13a-15(e) under the *Securities Exchange Act of 1934* (the Exchange Act). Based on this evaluation, the CEO and the CFO have concluded that the bank's disclosure controls and procedures were effective as at October 31, 2021.

Internal Control over Financial Reporting

Internal control over financial reporting is a process designed under the supervision of the bank's CEO and CFO, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements in accordance with IFRS and the requirements of the Securities and Exchange Commission (SEC) in the United States, as applicable. Management is responsible for establishing and maintaining adequate internal control over financial reporting for BMO.

Internal control over financial reporting at BMO includes policies and procedures that:

- Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of BMO
- Are designed to provide reasonable assurance that transactions are recorded as necessary to permit preparation of the consolidated financial statements in accordance with IFRS and the requirements of the SEC in the United States, as applicable, and that receipts and expenditures of BMO are being made only in accordance with authorizations by management and directors of BMO, and
- Are designed to provide reasonable assurance that any unauthorized acquisition, use or disposition of BMO's assets that could have a material effect on the consolidated financial statements is prevented or detected in a timely manner

Because of its inherent limitations, internal control over financial reporting can provide only reasonable assurance and may not prevent or detect misstatements. Furthermore, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the related policies and procedures may deteriorate.

BMO's management, under the supervision of the CEO and the CFO, has evaluated the effectiveness of internal control over financial reporting using the framework and criteria established in *Internal Control - Integrated Framework*, issued by the Committee of Sponsoring Organizations of the Treadway Commission in May 2013 (2013 COSO Framework). Based on this evaluation, management has concluded that internal control over financial reporting was effective as at October 31, 2021.

At the request of BMO's Audit and Conduct Review Committee, KPMG LLP (the shareholders' auditors), an independent registered public accounting firm, has conducted an audit of the effectiveness of our internal control over financial reporting. The audit report states in its conclusion that, in KPMG's opinion, BMO maintained, in all material respects, effective internal control over financial reporting as at October 31, 2021, in accordance with the criteria established in the 2013 COSO Framework.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the year ended October 31, 2021 that have materially affected, or are reasonably likely to materially affect, the adequacy and effectiveness of our internal control over financial reporting.

Supplemental Information

Certain comparative figures have been reclassified to conform with the current year's presentation and for changes in accounting policies. Refer to Note 1 of the consolidated financial statements.

Certain measures and ratios as provided in this section are non-GAAP as indicated. For further information on non-GAAP measures and ratios, please refer to the Non-GAAP and Other Financial Measures section.

For further information regarding the composition of non-GAAP and other financial measures, including supplementary financial measures, refer to the Glossary of Financial Terms.

Table 1: Shareholder Value and Other Statistical Information

As at or for the year ended October 31	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Market Price per Common Share (\$)										
High	138.67	104.75	106.51	109.00	104.15	87.92	84.39	85.71	73.90	61.29
Low	78.82	55.76	86.25	93.60	83.58	68.65	64.01	67.04	56.74	53.15
Close	134.37	79.33	97.50	98.43	98.83	85.36	76.04	81.73	72.62	59.02
Common Share Dividends										
Dividends declared per share (\$)	4.24	4.24	4.06	3.78	3.56	3.40	3.24	3.08	2.94	2.82
Dividend payout ratio (%) (1)	36.5	56.1	46.8	46.1	44.9	49.0	49.2	47.8	47.5	46.0
Dividend yield (%)	3.2	5.3	4.2	3.8	3.6	4.0	4.3	3.8	4.0	4.8
Dividends on common shares (\$ millions)	2,746	2,723	2,594	2,424	2,312	2,191	2,087	1,991	1,904	1,820
Total Shareholder Return (%)										
Five-year average annual return	14.0	5.1	7.8	10.5	15.5	12.5	9.5	15.5	17.0	4.2
Three-year average annual return	15.7	(3.1)	8.6	13.3	10.9	9.9	13.5	16.7	11.5	10.8
One-year return	75.9	(14.6)	3.2	3.3	20.2	17.0	(3.0)	17.1	28.8	5.2
Common Share Information										
Number outstanding (in thousands)										
End of year	648,136	645,889	639,232	639,330	647,816	645,761	642,583	649,050	644,130	650,730
Average basic	647,163	641,424	638,881	642,930	649,650	644,049	644,916	645,860	648,476	644,407
Average diluted	648,676	642,128	640,360	644,913	651,961	646,126	647,141	648,475	649,806	648,615
Book value per share (\$)	80.18	77.40	71.54	64.73	61.91	59.57	56.31	48.18	43.22	39.41
Market capitalization (\$ billions)	87.1	51.2	62.3	62.9	64.0	55.1	48.9	53.0	46.8	38.4
Price-to-earnings multiple	11.6	10.5	11.3	12.0	12.5	12.3	11.6	12.8	11.8	9.7
Price-to-adjusted earnings multiple	10.4	10.3	10.3	10.9	12.1	11.4	10.9	12.4	11.7	9.9
Market-to-book value multiple	1.68	1.02	1.36	1.52	1.60	1.43	1.35	1.70	1.66	1.47
Balances (\$ millions)										
Total assets	988,175	949,261	852,195	773,293	709,604	687,960	641,881	588,659	537,044	524,684
Average assets	981,140	942,450	833,252	754,295	722,626	707,122	664,391	593,928	555,431	543,931
Average net loans and acceptances	463,235	466,886	433,170	387,005	370,899	356,528	318,823	290,621	263,596	246,129
Average common shareholders' equity (1)	50,451	48,235	44,170	39,754	38,962	36,997	34,135	29,680	26,956	24,863
Goodwill and acquisition-related intangible assets	(5,946)	(6,750)	(6,714)	(6,628)	(6,818)	(7,101)	(6,720)	(5,303)	(4,097)	(4,066)
Average tangible common equity (1) (2)	44,505	41,485	37,456	33,126	32,144	29,896	27,415	24,377	22,859	20,797
Return on Equity and Assets										
Return on equity (%) (1)	14.9	10.1	12.6	13.3	13.2	12.1	12.5	14.0	14.9	15.9
Adjusted return on equity (%) (1) (2)	16.7	10.3	13.7	14.6	13.6	13.1	13.3	14.4	15.0	15.5
Return on tangible common equity (%) (1) (2)	17.0	11.9	15.1	16.2	16.3	15.3	15.8	17.3	17.9	19.4
Adjusted return on tangible common equity (%) (1) (2)	18.9	11.9	16.1	17.5	16.4	16.1	16.4	17.4	17.7	18.5
Return on average assets (%) (1)	0.79	0.54	0.69	0.72	0.74	0.65	0.66	0.72	0.74	0.75
Adjusted return on average assets (%) (1) (2)	0.88	0.55	0.75	0.79	0.76	0.71	0.70	0.74	0.75	0.73
Return on average risk-weighted assets (%) (3)	2.38	1.51	1.86	1.97	1.98	1.71	1.84	1.85	1.93	1.96
Adjusted return on average risk-weighted assets (%) (3)	2.66	1.54	2.01	2.16	2.04	1.85	1.96	1.91	1.94	1.92
Other Statistical Information										
Employees (4)										
Canada	30,350	29,296	30,438	29,982	29,647	29,643	30,669	30,587	30,303	30,797
United States	12,090	12,492	13,487	13,943	14,071	14,147	14,316	14,845	14,694	14,963
Other	1,423	1,572	1,588	1,529	1,482	1,444	1,368	1,346	634	512
Total	43,863	43,360	45,513	45,454	45,200	45,234	46,353	46,778	45,631	46,272
Bank branches										
Canada	877	877	891	908	926	942	939	934	933	930
United States	524	528	561	571	573	576	592	615	626	638
Other	4	4	4	4	4	4	4	4	4	3
Total	1,405	1,409	1,456	1,483	1,503	1,522	1,535	1,553	1,563	1,571
Automated banking machines										
Canada	3,312	3,268	3,370	3,387	3,315	3,285	3,442	3,016	2,900	2,596
United States	1,539	1,552	1,597	1,441	1,416	1,314	1,319	1,322	1,325	1,375
Total	4,851	4,820	4,967	4,828	4,731	4,599	4,761	4,338	4,225	3,971

The adoption of new IFRS standards in 2014, 2015, 2018 and 2020 only impacted our results prospectively.

(1) For further information regarding the composition of non-GAAP and other financial measures, including supplementary financial measures, refer to the Glossary of Financial Terms.

(2) These measures are non-GAAP. Further information on the use of non-GAAP measures and ratios is provided in the Non-GAAP and Other Financial Measures section.

(3) Risk-weighted assets are disclosed in accordance with OSFI's Capital Adequacy Requirements (CAR) Guideline.

(4) Reflects full-time equivalent number of employees, comprising full-time and part-time employees and adjustments for overtime hours.

Table 2: Summary Income Statement and Growth Statistics

(\$ millions, except as noted) For the year ended October 31	2021	2020	2019	2018	2017	5-year CAGR	10-year CAGR
Reported Results							
Revenue	27,186	25,186	25,483	22,905	22,107	5.3	6.1
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	(1,399)	(1,708)	(2,709)	(1,352)	(1,538)	(1.9)	2.3
Revenue, net of CCPB (1)	25,787	23,478	22,774	21,553	20,569	5.8	6.3
Provision for credit losses	(20)	(2,953)	(872)	(662)	(746)	nm	nm
Non-interest expense	(15,509)	(14,177)	(14,630)	(13,477)	(13,192)	3.7	5.9
Income before income taxes	10,258	6,348	7,272	7,414	6,631	12.4	9.9
Provision for income taxes	(2,504)	(1,251)	(1,514)	(1,961)	(1,292)	17.9	11.1
Net income	7,754	5,097	5,758	5,453	5,339	10.9	9.6
Attributable to equity holders of the bank	7,754	5,097	5,758	5,453	5,337	10.9	9.8
Attributable to non-controlling interest in subsidiaries	-	-	-	-	2	nm	nm
Net income	7,754	5,097	5,758	5,453	5,339	10.9	9.8
Adjusting Items impacting Revenue (Pre-tax)							
Impact of divestitures	29	-	-	-	-	na	na
Adjusting Items impacting Provision for Credit Losses (Pre-tax)							
Decrease in the collective allowance for credit losses	-	-	-	-	76	na	na
Adjusting Items impacting CCPB (Pre-tax)							
Reinsurance adjustment	-	-	(25)	-	-	na	na
Adjusting Items impacting Non-Interest Expense (Pre-tax)							
Acquisition integration costs	(9)	(14)	(13)	(34)	(87)	na	na
Amortization of acquisition-related intangible assets	(88)	(121)	(128)	(116)	(149)	na	na
Impact of divestitures	(886)	-	-	-	-	na	na
Restructuring (costs) reversals	24	-	(484)	(260)	(59)	na	na
Benefit from the remeasurement of an employee benefit liability	-	-	-	277	-	na	na
Adjusting items included in reported pre-tax income	(930)	(135)	(650)	(133)	(219)	na	na
Impact on tax of adjusting items	33	31	159	(396)	61	na	na
Total of adjusting items included in reported net income after tax	(897)	(104)	(491)	(529)	(158)	na	na
Impact on diluted EPS (\$)	(1.38)	(0.16)	(0.77)	(0.82)	(0.25)	na	na
Adjusted Results (1)							
Revenue	27,157	25,186	25,483	22,905	22,107	5.2	6.2
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	(1,399)	(1,708)	(2,684)	(1,352)	(1,538)	(1.9)	2.3
Revenue, net of CCPB	25,758	23,478	22,799	21,553	20,569	5.7	6.5
Provision for credit losses	(20)	(2,953)	(872)	(662)	(822)	nm	nm
Non-interest expense	(14,550)	(14,042)	(14,005)	(13,344)	(12,897)	3.1	5.6
Income before income taxes	11,188	6,483	7,922	7,547	6,850	12.3	10.3
Provision for income taxes	(2,537)	(1,282)	(1,673)	(1,565)	(1,353)	15.2	10.8
Net income	8,651	5,201	6,249	5,982	5,497	11.5	10.2
Attributable to equity holders of the bank	8,651	5,201	6,249	5,982	5,495	11.5	10.2
Attributable to non-controlling interest in subsidiaries	-	-	-	-	2	nm	nm
Adjusted net income	8,651	5,201	6,249	5,982	5,497	11.5	10.2
Earnings per Share (EPS) (\$)							
Basic	11.60	7.56	8.68	8.19	7.93	10.8	9.0
Diluted	11.58	7.55	8.66	8.17	7.90	10.8	9.1
Adjusted diluted (1)	12.96	7.71	9.43	8.99	8.15	11.5	9.8
Year-over-Year Growth-Based Statistical Information (%)							
Net income growth	52.1	(11.5)	5.6	2.1	15.3	na	na
Adjusted net income growth (1)	66.3	(16.8)	4.5	8.8	9.5	na	na
Diluted EPS growth	53.3	(12.8)	6.0	3.3	14.3	na	na
Adjusted diluted EPS growth (1)	68.0	(18.2)	4.9	10.3	8.3	na	na

Five-year and ten-year CAGR based on CGAAP in 2011 and IFRS in 2016 and 2021.

The adoption of new IFRS standards in 2018 and 2020 only impacted our results prospectively.

(1) These measures are non-GAAP. Further information on the use of non-GAAP measures and ratios is provided in the Non-GAAP and Other Financial Measures section.

nm - not meaningful

na - not applicable

Table 3: Revenue and Revenue Growth

(\$ millions, except as noted)
For the year ended October 31

	2021	2020	2019	2018	2017	5-year CAGR	10-year CAGR
Net Interest Income	14,310	13,971	12,888	11,438	11,275	5.5	6.7
Year-over-year growth (%)	2.4	8.4	12.7	1.4	3.0	na	na
Net Interest Margin (1)							
Average earning assets	897,302	853,336	759,395	682,991	646,799	7.6	8.3
Net interest margin (%)	1.59	1.64	1.70	1.67	1.74	na	na
Non-Interest Revenue							
Securities commissions and fees	1,107	1,036	1,023	1,025	964	3.8	(0.9)
Deposit and payment service charges	1,243	1,221	1,204	1,134	1,109	3.1	4.1
Trading revenues	296	15	298	705	84	20.2	(6.0)
Lending fees	1,391	1,295	1,192	997	917	10.1	8.9
Card fees	442	358	437	428	329	2.2	(4.3)
Investment management and custodial fees	1,982	1,807	1,747	1,749	1,627	4.9	14.9
Mutual fund revenues	1,595	1,417	1,419	1,473	1,411	3.2	9.7
Underwriting and advisory fees	1,421	1,070	975	943	1,044	11.5	10.7
Securities gains, other than trading	591	124	249	239	171	47.8	12.1
Foreign exchange, other than trading	167	127	166	182	191	0.6	2.6
Insurance revenue	1,941	2,178	3,183	1,879	2,070	(0.8)	3.3
Investments in associates and joint ventures	248	161	151	167	386	12.1	nm
Other revenues	452	406	551	546	529	(1.7)	2.6
Total Non-Interest Revenue	12,876	11,215	12,595	11,467	10,832	5.2	5.4
Year-over-year non-interest revenue growth (%)	14.8	(11.0)	9.8	5.9	8.2	na	na
Non-interest revenue as a % of total revenue	47.4	44.5	49.4	50.1	49.0	na	na
Adjusted Non-Interest Revenue (2)	12,847	11,215	12,595	11,467	10,832	4.9	5.4
Year-over-year adjusted non-interest revenue growth (%)	14.5	(11.0)	9.8	5.9	7.3	na	na
Adjusted non-interest revenue as a % of total adjusted revenue (2)	47.3	44.5	49.4	50.1	49.0	na	na
Total Revenue	27,186	25,186	25,483	22,905	22,107	5.3	6.1
Year-over-year total revenue growth (%)	7.9	(1.2)	11.3	3.6	5.5	na	na
Total Revenue, net of CCPB (2)	25,787	23,478	22,774	21,553	20,569	5.8	6.3
Year-over-year total revenue growth, net of CCPB (%) (2)	9.8	3.1	5.7	4.8	5.9	na	na
Total Adjusted Revenue (2)	27,157	25,186	25,483	22,905	22,107	5.2	6.2
Year-over-year total adjusted revenue growth (%) (2)	7.8	(1.2)	11.3	3.6	5.1	na	na
Total Adjusted Revenue, net of CCPB (2)	25,758	23,478	22,799	21,553	20,569	5.7	6.5
Year-over-year total adjusted revenue growth, net of CCPB (%) (2)	9.7	3.0	5.8	4.8	5.5	na	na

Five-year and ten-year CAGR based on CGAAP in 2011 and IFRS in 2016 and 2021.

The adoption of new IFRS standards in 2018 and 2020 only impacted our results prospectively.

(1) Net interest margin is calculated based on average earning assets, which represents the daily average balance of deposits at central banks, deposits with other banks, securities borrowed or purchased under resale agreements, securities, and loans, over a one-year period.

(2) These measures are non-GAAP. Further information on the use of non-GAAP measures is provided in the Non-GAAP and Other Financial Measures section.

na - not applicable

nm - not meaningful

Table 4: Non-Interest Expense, Expense-to-Revenue Ratio and Provision for Income Taxes and Other Taxes

(\$ millions, except as noted) For the year ended October 31	2021	2020	2019	2018	2017	5-year CAGR	10-year CAGR
Non-Interest Expense (1)							
Employee compensation							
Salaries	4,041	4,163	4,762	4,176	3,996	(0.2)	4.3
Performance-based compensation	3,152	2,632	2,610	2,510	2,386	6.7	7.3
Employee benefits	1,129	1,149	1,051	775	1,086	2.0	6.2
Total employee compensation	8,322	7,944	8,423	7,461	7,468	2.4	5.6
Premises and equipment (2)							
Rental of real estate	231	225	595	526	494	(13.9)	(4.4)
Premises, furniture and fixtures	794	771	283	345	282	18.7	9.9
Property taxes	36	42	37	38	39	(3.0)	1.9
Computers and equipment	2,335	2,164	2,073	1,844	1,676	8.9	10.3
Total premises and equipment	3,396	3,202	2,988	2,753	2,491	7.3	8.0
Other expenses							
Travel and business development	397	384	545	519	540	(4.9)	0.4
Communications	264	304	296	282	286	(2.1)	0.2
Professional fees	607	555	568	572	569	2.8	(0.3)
Other	1,889	1,168	1,256	1,387	1,353	6.7	8.0
Total other expenses	3,157	2,411	2,665	2,760	2,748	3.2	4.0
Amortization of intangible assets	634	620	554	503	485	7.4	10.6
Total Non-Interest Expense	15,509	14,177	14,630	13,477	13,192	3.7	5.9
Year-over-year total non-interest expense growth (%)	9.4	(3.1)	8.6	2.2	2.1	na	na
Total Adjusted Non-Interest Expense (3)	14,550	14,042	14,005	13,344	12,897	3.1	5.6
Year-over-year total adjusted non-interest expense growth (%)	3.6	0.3	5.0	3.5	3.5	na	na
Non-interest expense-to-revenue ratio (Efficiency ratio) (%) (4)	57.0	56.3	57.4	58.8	59.7	na	na
Adjusted non-interest expense-to-revenue ratio (Adjusted efficiency ratio) (%) (3) (4)	53.6	55.8	55.0	58.3	58.3	na	na
Efficiency ratio, net of CCPB (%) (3) (4)	60.1	60.4	64.2	62.5	64.1	na	na
Adjusted efficiency ratio, net of CCPB (%) (3) (4)	56.5	59.8	61.4	61.9	62.7	na	na
Provision for Income Taxes and Other Taxes							
Payroll levies	355	362	354	328	322	1.9	5.7
Property taxes	36	42	37	38	39	(3.0)	1.9
Provincial capital taxes	36	33	35	29	29	3.3	(2.1)
Business taxes	10	9	9	8	8	6.9	4.0
Harmonized sales tax, GST, VAT and other sales taxes	382	397	384	350	330	3.8	5.0
Sundry taxes	1	1	1	1	1	nm	nm
Total government levies other than income taxes (other taxes) (1)	820	844	820	754	729	2.5	4.6
Provision for income taxes	2,504	1,251	1,514	1,961	1,292	17.9	11.1
Provision for Income Taxes and Other Taxes	3,324	2,095	2,334	2,715	2,021	12.7	9.0
Provision for income taxes and other taxes as a % of income before total government levies and taxes (1) (3)	30.0	29.1	28.8	33.3	27.5	na	na
Effective tax rate (%)	24.4	19.7	20.8	26.5	19.5	na	na
Adjusted effective tax rate (%) (3)	22.7	19.8	21.1	20.7	19.8	na	na

Five-year and ten-year CAGR based on CGAAP in 2011 and IFRS in 2016 and 2021.

The adoption of new IFRS standards in 2018 and 2020 only impacted our results prospectively.

(1) Other taxes are included in various non-interest expense categories. Total provision for income taxes and other taxes is a non-GAAP financial measure. Information regarding the usefulness of this measure is provided in the Provision for Income and Other Taxes section of the annual MD&A.

(2) Effective 2020, the bank adopted IFRS 16. Prior periods have not been restated. Depreciation on the right-of-use assets has been recorded in premises, furniture and fixtures. Previously most of our real estate leases were classified as operating leases, with rent expense recorded in rental of real estate.

(3) These measures and ratios are non-GAAP. Further information is provided in the Non-GAAP and Other Financial Measures section. A quantitative reconciliation of revenue net of CCPB and all adjusted results for all years presented is provided in Table 2.

(4) For further information regarding the composition of non-GAAP and other financial measures, including supplementary financial measures, refer to the Glossary of Financial Terms.

na - not applicable

nm - not meaningful

Table 5: Average Assets, Liabilities and Interest Rates

(\$ millions, except as noted) For the year ended October 31	2021			2020			2019		
	Average balances	Average interest rate (%)	Interest income/expense	Average balances	Average interest rate (%)	Interest income/expense	Average balances	Average interest rate (%)	Interest income/expense
Assets									
Canadian Dollar									
Deposits with other banks and other interest bearing assets	34,255	0.23	79	13,605	0.33	45	2,972	2.03	60
Securities	90,140	1.79	1,618	94,343	2.32	2,186	83,042	2.66	2,210
Securities borrowed or purchased under resale agreements	43,375	0.44	190	44,460	1.05	468	39,074	2.10	820
Loans									
Residential mortgages	122,661	2.58	3,168	114,374	2.88	3,296	109,289	3.04	3,317
Non-residential mortgages	5,368	3.19	171	5,556	3.38	188	5,637	3.43	194
Personal and credit cards	66,247	4.26	2,823	62,920	4.95	3,116	60,680	5.49	3,333
Business and government	82,858	3.37	2,796	73,596	3.79	2,787	62,965	4.10	2,580
Total loans	277,134	3.23	8,958	256,446	3.66	9,387	238,571	3.95	9,424
Total Canadian dollar	444,904	2.44	10,845	408,854	2.96	12,086	363,659	3.44	12,514
U.S. Dollar and Other Currencies									
Deposits with other banks and other interest bearing assets	68,612	0.18	124	61,050	0.62	376	47,001	1.72	808
Securities	145,504	1.61	2,345	124,567	2.24	2,794	109,072	3.05	3,331
Securities borrowed or purchased under resale agreements	62,250	0.39	245	66,109	0.85	560	65,943	2.11	1,391
Loans									
Residential mortgages	8,055	3.02	243	10,499	3.35	352	11,554	3.67	424
Non-residential mortgages	10,684	3.18	339	10,792	3.71	401	9,356	4.75	445
Personal and credit cards	13,344	3.86	516	13,659	4.37	597	11,907	4.91	585
Business and government	141,003	3.71	5,230	155,229	3.96	6,149	139,192	4.78	6,654
Total loans	173,086	3.66	6,328	190,179	3.94	7,499	172,009	4.71	8,108
Total U.S. dollar and other currencies	449,452	2.01	9,042	441,905	2.54	11,229	394,025	3.46	13,638
Other non-interest bearing assets	86,784			91,691			75,568		
Total All Currencies									
Total assets and interest income	981,140	2.03	19,887	942,450	2.47	23,315	833,252	3.14	26,152
Liabilities									
Canadian Dollar									
Deposits									
Banks	9,616	0.35	33	11,715	0.68	80	4,905	1.02	50
Business and government	157,226	0.69	1,091	136,976	1.24	1,704	113,502	1.88	2,133
Individuals	142,833	0.44	622	135,175	0.87	1,181	120,852	1.05	1,269
Total deposits	309,675	0.56	1,746	283,866	1.04	2,965	239,259	1.44	3,452
Securities sold but not yet purchased and securities lent or sold under repurchase agreements (1)	55,415	0.91	506	49,676	1.50	747	44,815	2.56	1,146
Subordinated debt and other interest bearing liabilities	26,704	2.23	597	26,387	2.69	711	25,099	2.70	677
Total Canadian dollar	391,794	0.73	2,849	359,929	1.23	4,423	309,173	1.71	5,275
U.S. Dollar and Other Currencies									
Deposits									
Banks	24,200	0.33	80	22,856	1.05	241	24,534	2.41	592
Business and government	272,380	0.45	1,234	244,449	0.99	2,424	211,970	1.79	3,802
Individuals	71,795	0.22	160	77,930	0.78	609	71,005	1.08	770
Total deposits	368,375	0.40	1,474	345,235	0.95	3,274	307,509	1.68	5,164
Securities sold but not yet purchased and securities lent or sold under repurchase agreements (1)	74,376	1.35	1,005	80,656	1.54	1,243	76,889	2.91	2,235
Subordinated debt and other interest bearing liabilities	13,593	1.83	249	18,207	2.22	404	19,896	2.96	590
Total U.S. dollar and other currencies	456,344	0.60	2,728	444,098	1.11	4,921	404,294	1.98	7,989
Other non-interest bearing liabilities	76,708			84,683			70,916		
Total All Currencies									
Total liabilities and interest expense	924,846	0.60	5,577	888,710	1.05	9,344	784,383	1.69	13,264
Shareholders' equity	56,294			53,740			48,869		
Total Liabilities, Interest Expense and Shareholders' Equity									
	981,140	0.57	5,577	942,450	0.99	9,344	833,252	1.59	13,264
Net interest margin									
- based on earning assets		1.59			1.64			1.70	
- based on total assets		1.46			1.48			1.55	
Net interest income									
			14,310			13,971			12,888

(1) For the years ended October 31, 2021, 2020 and 2019, the maximum amount of securities lent or sold under repurchase agreements at any month end amounted to \$102,567 million, \$106,695 million and \$96,399 million, respectively.

Table 6: Volume/Rate Analysis of Changes in Net Interest Income

(\$ millions) For the year ended October 31	2021/2020			2020/2019		
	Increase (decrease) due to change in			Increase (decrease) due to change in		
	Average balance	Average rate	Total	Average balance	Average rate	Total
Assets						
Canadian Dollar						
Deposits with other banks and other interest bearing assets	69	(35)	34	216	(231)	(15)
Securities	(98)	(470)	(568)	301	(325)	(24)
Securities borrowed or purchased under resale agreements	(11)	(267)	(278)	113	(465)	(352)
Loans						
Residential mortgages	239	(367)	(128)	154	(175)	(21)
Non-residential mortgages	(6)	(11)	(17)	(3)	(3)	(6)
Personal and credit cards	165	(458)	(293)	123	(340)	(217)
Business and government	350	(341)	9	436	(229)	207
Total loans	748	(1,177)	(429)	710	(747)	(37)
Change in Canadian dollar interest income	708	(1,949)	(1,241)	1,340	(1,768)	(428)
U.S. Dollar and Other Currencies						
Deposits with other banks and other interest bearing assets	46	(298)	(252)	242	(674)	(432)
Securities	469	(918)	(449)	473	(1,010)	(537)
Securities borrowed or purchased under resale agreements	(32)	(283)	(315)	3	(834)	(831)
Loans						
Residential mortgages	(82)	(27)	(109)	(39)	(33)	(72)
Non-residential mortgages	(4)	(58)	(62)	68	(112)	(44)
Personal and credit cards	(13)	(68)	(81)	86	(74)	12
Business and government	(564)	(355)	(919)	767	(1,272)	(505)
Total loans	(663)	(508)	(1,171)	882	(1,491)	(609)
Change in U.S. dollar and other currencies interest income	(180)	(2,007)	(2,187)	1,600	(4,009)	(2,409)
Total All Currencies						
Change in total interest income (a)	528	(3,956)	(3,428)	2,940	(5,777)	(2,837)
Liabilities						
Canadian Dollar						
Deposits						
Banks	(15)	(32)	(47)	70	(40)	30
Business and government	252	(865)	(613)	441	(870)	(429)
Individuals	67	(626)	(559)	150	(238)	(88)
Total deposits	304	(1,523)	(1,219)	661	(1,148)	(487)
Securities sold but not yet purchased and securities lent or sold under repurchase agreements	86	(327)	(241)	125	(524)	(399)
Subordinated debt and other interest bearing liabilities	9	(123)	(114)	35	(1)	34
Change in Canadian dollar interest expense	399	(1,973)	(1,574)	821	(1,673)	(852)
U.S. Dollar and Other Currencies						
Deposits						
Banks	14	(175)	(161)	(40)	(311)	(351)
Business and government	277	(1,467)	(1,190)	582	(1,960)	(1,378)
Individuals	(48)	(401)	(449)	75	(236)	(161)
Total deposits	243	(2,043)	(1,800)	617	(2,507)	(1,890)
Securities sold but not yet purchased and securities lent or sold under repurchase agreements	(97)	(141)	(238)	109	(1,101)	(992)
Subordinated debt and other interest bearing liabilities	(102)	(53)	(155)	(50)	(136)	(186)
Change in U.S. dollar and other currencies interest expense	44	(2,237)	(2,193)	676	(3,744)	(3,068)
Total All Currencies						
Change in total interest expense (b)	443	(4,210)	(3,767)	1,497	(5,417)	(3,920)
Change in total net interest income (a - b)	85	254	339	1,443	(360)	1,083

Table 7: Net Loans and Acceptances – Segmented Information ⁽¹⁾⁽²⁾

(\$ millions)	Canada					United States					Other countries				
As at October 31	2021	2020	2019	2018	2017	2021	2020	2019	2018	2017	2021	2020	2019	2018	2017
Consumer															
Residential mortgages	128,020	117,886	112,448	107,956	106,647	7,718	9,122	11,275	11,645	8,587	-	-	-	-	-
Credit cards	7,642	7,391	8,289	7,788	7,550	461	498	570	541	521	-	-	-	-	-
Consumer instalment and other personal loans	63,841	57,288	55,311	52,706	51,637	13,232	12,286	11,752	9,918	9,798	-	469	537	458	373
Total consumer	199,503	182,565	176,048	168,450	165,834	21,411	21,906	23,597	22,104	18,906	-	469	537	458	373
Total business and government	113,895	107,408	106,020	92,927	82,632	132,087	139,573	135,550	110,934	97,478	7,453	11,568	10,212	9,153	11,270
Total loans and acceptances, net of allowance for credit losses on impaired loans	313,398	289,973	282,068	261,377	248,466	153,498	161,479	159,147	133,038	116,384	7,453	12,037	10,749	9,611	11,643
Allowance for credit losses on performing loans (3)	(1,143)	(1,323)	(740)	(689)	(799)	(910)	(1,225)	(630)	(574)	(641)	(13)	(28)	(17)	(6)	-
Total net loans and acceptances	312,255	288,650	281,328	260,688	247,667	152,588	160,254	158,517	132,464	115,743	7,440	12,009	10,732	9,605	11,643

Table 8: Net Impaired Loans and Acceptances (NIL) – Segmented Information ⁽²⁾⁽⁴⁾

(\$ millions, except as noted)	Canada					United States					Other countries				
As at October 31	2021	2020	2019	2018	2017	2021	2020	2019	2018	2017	2021	2020	2019	2018	2017
Consumer															
Residential mortgages	216	225	233	185	206	123	168	164	171	161	-	-	-	-	-
Consumer instalment and other personal loans	83	89	138	126	127	113	146	194	252	293	-	-	-	-	-
Total consumer	299	314	371	311	333	236	314	358	423	454	-	-	-	-	-
Business and government	551	726	336	235	248	585	1,487	1,101	597	762	-	70	-	-	30
Total impaired loans and acceptances, net of allowance for credit losses on impaired loans	850	1,040	707	546	581	821	1,801	1,459	1,020	1,216	-	70	-	-	30
Condition Ratios (1)															
NIL as a % of net loans and acceptances	0.27	0.36	0.25	0.21	0.23	0.54	1.12	0.92	0.77	1.05	-	0.58	-	-	0.26
NIL as a % of net loans and acceptances															
Consumer	0.15	0.17	0.21	0.18	0.20	1.10	1.43	1.52	1.91	2.40	-	-	-	-	-
Business and government	0.48	0.68	0.32	0.25	0.30	0.44	1.07	0.81	0.54	0.78	-	0.61	-	-	0.27

(1) Aggregate Net Loans and Acceptances balances are net of allowance for credit losses on performing loans and impaired loans (excluding those related to off-balance sheet instruments and undrawn commitments). The Consumer and Business and government Net Loans and Acceptances balances are net of allowance for credit losses on impaired loans only (excluding those related to off-balance sheet instruments and undrawn commitments).

(2) Segmented credit information by geographic area is based upon the country of ultimate risk.

(3) Prior periods have not been restated to reflect the adoption of IFRS 9 in 2018. IFRS 9 has been applied prospectively.

(4) Net Impaired Loans and Acceptances are net of allowance for credit losses on impaired loans (excluding those related to off-balance sheet instruments and undrawn commitments).

Table 9: Net Loans and Acceptances – Segmented Information ⁽¹⁾⁽²⁾⁽³⁾

Total					(\$ millions) As at October 31	2021	2020	2019	2018	2017
2021	2020	2019	2018	2017	Net Loans and Acceptances by Province					
135,738	127,008	123,723	119,601	115,234	Atlantic provinces	15,996	15,105	14,601	13,925	13,686
8,103	7,889	8,859	8,329	8,071	Quebec	48,090	43,859	42,985	40,177	38,802
					Ontario	136,638	124,526	119,629	109,575	103,152
					Prairie provinces	51,460	50,634	51,639	48,634	46,853
77,073	70,043	67,600	63,082	61,808	British Columbia and territories	60,071	54,526	52,474	48,377	45,174
220,914	204,940	200,182	191,012	185,113	Total net loans and acceptances in Canada	312,255	288,650	281,328	260,688	247,667
253,435	258,549	251,782	213,014	191,380	Net Business and Government Loans by Industry					
					Commercial real estate	43,259	39,990	36,707	31,028	26,479
					Construction (non-real estate)	4,367	4,799	4,943	3,916	3,916
474,349	463,489	451,964	404,026	376,493	Retail trade	16,924	20,480	23,085	20,403	18,496
					Wholesale trade	14,727	15,715	16,939	14,814	11,612
					Agriculture	13,739	13,549	13,268	12,321	11,114
(2,066)	(2,576)	(1,387)	(1,269)	(1,440)	Communications	787	771	840	729	625
					Financing products	1,084	3,927	4,124	4,439	5,060
472,283	460,913	450,577	402,757	375,053	Manufacturing	28,034	28,171	27,334	22,870	19,824
					Mining	1,832	2,496	2,524	1,936	1,344
					Oil and gas	5,905	9,445	10,051	7,227	6,551
					Transportation	12,952	12,921	12,390	10,973	10,496
					Utilities	7,263	8,496	8,153	5,958	4,392
					Forest products	780	1,012	1,152	840	835
					Service industries	45,019	47,769	45,730	38,348	33,705
					Financial	52,531	44,986	40,880	32,463	32,265
					Government	1,720	2,121	1,801	1,460	1,470
					Other	2,512	1,901	1,861	3,289	3,196
						253,435	258,549	251,782	213,014	191,380

Table 10: Net Impaired Loans and Acceptances – Segmented Information ⁽³⁾⁽⁴⁾

Total					(\$ millions) As at October 31	2021	2020	2019	2018	2017
2021	2020	2019	2018	2017	Net Impaired Business and Government Loans					
339	393	397	356	367	Commercial real estate	56	78	49	45	45
196	235	332	378	420	Construction (non-real estate)	58	86	21	18	39
535	628	729	734	787	Retail trade	143	407	56	50	36
1,136	2,283	1,437	832	1,040	Wholesale trade	38	69	76	42	97
					Agriculture	190	313	291	193	238
					Communications	1	9	6	-	-
					Financing products	-	147	-	-	-
1,671	2,911	2,166	1,566	1,827	Manufacturing	130	225	191	77	70
					Mining	2	30	-	1	1
0.35	0.63	0.48	0.39	0.49	Oil and gas	63	366	356	57	143
					Transportation	73	112	119	90	156
					Utilities	2	1	2	2	6
0.24	0.31	0.36	0.38	0.43	Forest products	2	7	2	-	2
0.45	0.88	0.57	0.39	0.54	Service industries	344	387	240	191	181
					Financial	12	41	28	66	2
					Government	2	3	-	-	3
					Other	20	2	-	-	21
						1,136	2,283	1,437	832	1,040

(1) Aggregate Net Loans and Acceptances are net of allowance for credit losses on performing loans and impaired loans (excluding those related to off-balance sheet instruments and undrawn commitments). The Consumer and Business and government Net Loans and Acceptances balances are net of allowance for credit losses on impaired loans only (excluding those related to off-balance sheet instruments and undrawn commitments).

(2) Segmented credit information by geographic area is based upon the country of ultimate risk.

(3) Prior period information for certain sectors has been adjusted to align with the current year's presentation, which better classifies the realigned sectors.

(4) Net Impaired Loans and Acceptances are net of allowance for credit losses on impaired loans (excluding those related to off-balance sheet instruments and undrawn commitments).

Table 11: Changes in Gross Impaired Loans – Segmented Information ⁽¹⁾⁽²⁾

(\$ millions, except as noted)	Canada					United States					Other countries					
	As at October 31	2021	2020	2019	2018	2017	2021	2020	2019	2018	2017	2021	2020	2019	2018	2017
Gross impaired loans and acceptances																
(GIL), beginning of year																
Consumer	414	497	426	439	407	335	385	470	508	585	-	-	-	-	-	-
Business and government	929	417	309	354	380	1,876	1,330	731	869	1,009	84	-	-	50	2	
Total GIL, beginning of year	1,343	914	735	793	787	2,211	1,715	1,201	1,377	1,594	84	-	-	50	2	
Additions to impaired loans and acceptances																
Consumer	712	723	895	836	697	134	165	244	274	360	-	-	-	-	-	-
Business and government	616	1,097	323	321	281	313	2,571	1,224	647	799	-	93	-	-	56	
Total additions	1,328	1,820	1,218	1,157	978	447	2,736	1,468	921	1,159	-	93	-	-	56	
Reductions to impaired loans and acceptances (3)																
Consumer	(547)	(554)	(586)	(628)	(479)	(162)	(136)	(242)	(212)	(301)	-	-	-	-	-	-
Business and government	(636)	(366)	(171)	(282)	(259)	(1,231)	(1,528)	(466)	(573)	(692)	(84)	(9)	-	(49)	(7)	
Total reductions due to net repayments and other	(1,183)	(920)	(757)	(910)	(738)	(1,393)	(1,664)	(708)	(785)	(993)	(84)	(9)	-	(49)	(7)	
Write-offs (4)																
Consumer	(197)	(252)	(238)	(221)	(186)	(51)	(79)	(87)	(100)	(136)	-	-	-	-	-	-
Business and government	(96)	(219)	(44)	(84)	(48)	(240)	(497)	(159)	(212)	(247)	-	-	-	(1)	(1)	
Total write-offs	(293)	(471)	(282)	(305)	(234)	(291)	(576)	(246)	(312)	(383)	-	-	-	(1)	(1)	
Gross impaired loans and acceptances, end of year																
Consumer	382	414	497	426	439	256	335	385	470	508	-	-	-	-	-	-
Business and government	813	929	417	309	354	718	1,876	1,330	731	869	-	84	-	-	50	
Total GIL, end of year	1,195	1,343	914	735	793	974	2,211	1,715	1,201	1,377	-	84	-	-	50	
Condition Ratios																
GIL as a % of Gross Loans																
Consumer	0.19	0.23	0.28	0.25	0.26	1.19	1.53	1.63	2.12	2.69	-	-	-	-	-	-
Business and government	0.71	0.86	0.39	0.33	0.43	0.54	1.34	0.98	0.67	0.89	-	0.73	-	-	0.44	
Total Loans and Acceptances	0.38	0.46	0.32	0.28	0.32	0.63	1.37	1.08	0.91	1.18	-	0.70	-	-	0.43	

(1) GIL excludes Purchased Credit Impaired Loans.

(2) Segmented credit information by geographic area is based upon the country of ultimate risk.

(3) Includes amounts returning to performing status, sales, repayments, the impact of foreign exchange, and offsets for consumer write-offs that are not recognized as formations.

(4) Excludes certain loans that are written off directly and not classified as new formations.

Total

2021	2020	2019	2018	2017
749	882	896	947	992
2,889	1,747	1,040	1,273	1,391
3,638	2,629	1,936	2,220	2,383
846	888	1,139	1,110	1,057
929	3,761	1,547	968	1,136
1,775	4,649	2,686	2,078	2,193
(709)	(690)	(828)	(840)	(780)
(1,951)	(1,903)	(637)	(904)	(958)
(2,660)	(2,593)	(1,465)	(1,744)	(1,738)
(248)	(331)	(325)	(321)	(322)
(336)	(716)	(203)	(297)	(296)
(584)	(1,047)	(528)	(618)	(618)
638	749	882	896	947
1,531	2,889	1,747	1,040	1,273
2,169	3,638	2,629	1,936	2,220
0.29	0.37	0.44	0.47	0.51
0.60	1.11	0.69	0.49	0.66
0.46	0.78	0.58	0.48	0.59

Table 12: Changes in Allowance for Credit Losses – Segmented Information ⁽¹⁾⁽²⁾

(\$ millions, except as noted)	Canada					United States					Other countries					
	As at October 31	2021	2020	2019	2018	2017	2021	2020	2019	2018	2017	2021	2020	2019	2018	2017
Allowance for credit losses (ACL), beginning of year																
Consumer	1,073	749	725	705	595	217	200	230	301	254	-	-	-	-	-	-
Business and government	782	303	255	317	471	1,696	821	648	566	793	46	21	12	29	1	-
Total ACL, beginning of year	1,855	1,052	980	1,022	1,066	1,913	1,021	878	867	1,047	46	21	12	29	1	-
Provision for credit losses (3)																
Consumer	201	801	470	416	394	(48)	86	1	(9)	74	-	-	-	-	-	-
Business and government	117	685	93	28	37	(211)	1,336	302	243	220	(32)	29	9	(21)	21	-
Total provision for credit losses	318	1,486	563	444	431	(259)	1,422	303	234	294	(32)	29	9	(21)	21	-
Recoveries																
Consumer	127	117	120	127	134	64	63	104	75	81	-	-	-	-	-	-
Business and government	23	20	4	5	10	19	52	62	51	40	-	-	-	3	-	-
Total recoveries	150	137	124	132	144	83	115	166	126	121	-	-	-	3	-	-
Write-offs																
Consumer	(442)	(556)	(551)	(515)	(501)	(72)	(108)	(113)	(125)	(157)	-	-	-	-	-	-
Business and government	(96)	(219)	(44)	(84)	(48)	(240)	(497)	(159)	(212)	(247)	-	-	-	(1)	(1)	-
Total write-offs	(538)	(775)	(595)	(599)	(549)	(312)	(605)	(272)	(337)	(404)	-	-	-	(1)	(1)	-
Other, including foreign exchange rate changes																
Consumer	(52)	(38)	(15)	(8)	(10)	(28)	(24)	(22)	(12)	(23)	-	-	-	-	-	-
Business and government	(34)	(7)	(5)	(11)	(27)	(153)	(16)	(32)	-	(114)	1	(4)	-	2	(1)	-
Total Other, including foreign exchange rate changes	(86)	(45)	(20)	(19)	(37)	(181)	(40)	(54)	(12)	(137)	1	(4)	-	2	(1)	-
ACL, end of year																
Consumer	907	1,073	749	725	612	133	217	200	230	229	-	-	-	-	-	-
Business and government	792	782	303	255	443	1,111	1,696	821	648	692	15	46	21	12	20	-
Total ACL, end of year	1,699	1,855	1,052	980	1,055	1,244	1,913	1,021	878	921	15	46	21	12	20	-
Net write-offs as a % of average loans and acceptances (4)	un	un	un	un	un	un	un	un	un	un	un	un	un	un	un	un

Table 13: Allocation of Allowance for Credit Losses – Segmented Information ⁽¹⁾⁽⁵⁾

(\$ millions, except as noted)	Canada					United States					Other countries					
	As at October 31	2021	2020	2019	2018	2017	2021	2020	2019	2018	2017	2021	2020	2019	2018	2017
Consumer																
Residential mortgages	7	11	10	9	12	5	5	7	10	12	-	-	-	-	-	-
Consumer instalment and other personal loans	76	89	116	106	94	15	16	20	37	42	-	-	-	-	-	-
Total consumer	83	100	126	115	106	20	21	27	47	54	-	-	-	-	-	-
Business and government	262	203	81	74	106	133	389	229	134	107	-	14	-	-	20	-
Total allowance for credit losses on impaired loans	345	303	207	189	212	153	410	256	181	161	-	14	-	-	20	-
Allowance for credit losses on performing loans (3)	1,143	1,323	740	689	799	910	1,225	630	574	641	13	28	17	6	-	-
Allowance for credit losses	1,488	1,626	947	878	1,011	1,063	1,635	886	755	802	13	42	17	6	20	-
Coverage Ratios																
Allowance for credit losses on impaired loans as a % of gross impaired loans and acceptances																
Total	28.9	22.6	22.6	25.7	26.7	15.7	18.5	14.9	15.1	11.7	-	16.7	-	-	40.0	-
Consumer	21.7	24.2	25.4	27.0	24.1	7.8	6.3	7.0	10.0	10.6	-	-	-	-	-	-
Business and government	32.2	21.9	19.4	23.9	29.9	18.5	20.7	17.2	18.3	12.3	-	16.7	-	-	40.0	-

(1) Segmented credit information by geographic area is based upon country of ultimate risk.

(2) Prior periods have not been restated to reflect the adoption of IFRS 9 in 2018. IFRS 9 has been applied prospectively.

(3) Excludes provision for credit losses on other assets.

(4) Aggregate Net Loans and Acceptances balances are net of allowance for credit losses on performing loans and impaired loans (excluding those related to off-balance sheet instruments).

(5) Amounts exclude allowance for credit losses included in Other Liabilities.

un – unavailable

Total

2021	2020	2019	2018	2017
1,290	949	955	1,006	849
2,524	1,145	915	912	1,265
3,814	2,094	1,870	1,918	2,114
153	887	471	407	468
(126)	2,050	404	250	278
27	2,937	875	657	746
191	180	224	202	215
42	72	66	59	50
233	252	290	261	265
(514)	(664)	(664)	(640)	(658)
(336)	(716)	(203)	(297)	(296)
(850)	(1,380)	(867)	(937)	(954)
(80)	(62)	(37)	(20)	(33)
(186)	(27)	(37)	(9)	(142)
(266)	(89)	(74)	(29)	(175)
1,040	1,290	949	955	841
1,918	2,524	1,145	915	1,155
2,958	3,814	2,094	1,870	1,996
0.13	0.24	0.13	0.17	0.19

Total

2021	2020	2019	2018	2017
12	16	17	19	24
91	105	136	143	136
103	121	153	162	160
395	606	310	208	233
498	727	463	370	393
2,066	2,576	1,387	1,269	1,440
2,564	3,303	1,850	1,639	1,833
23.0	20.0	17.6	19.1	17.7
16.1	16.2	17.3	18.1	16.9
25.8	21.0	17.7	20.0	18.3

Table 14: Allowance for Credit Losses on Impaired Loans – Segmented Information

(\$ millions) As at October 31	2021	2020	2019	2018	2017
Business and Government					
Allowance for Credit Losses on Impaired Loans by Industry					
Commercial real estate	11	11	9	8	15
Construction (non-real estate)	9	18	8	16	14
Retail trade	90	53	11	17	14
Wholesale trade	36	35	52	23	17
Agriculture	23	36	22	16	11
Communications	5	8	7	-	-
Financing products	-	-	-	-	-
Manufacturing	47	67	35	20	51
Mining	-	10	-	-	-
Oil and gas	77	184	48	17	42
Transportation	17	32	30	31	13
Utilities	1	-	-	-	2
Forest products	2	5	-	1	1
Service industries	73	132	79	46	51
Financial	3	7	3	1	2
Government	-	1	1	-	-
Other	1	7	5	12	-
Total business and government (1)	395	606	310	208	233

Table 15: Provision for Credit Losses – Segmented Information (2)

(\$ millions) For the year ended October 31	2021	2020	2019	2018	2017
Consumer					
Residential mortgages	16	17	16	19	11
Cards	194	261	246	216	232
Consumer instalment and other personal loans	158	226	201	231	232
Total consumer	368	504	463	466	475
Business and Government					
Commercial real estate	7	6	5	(2)	(4)
Construction (non-real estate)	3	70	1	-	25
Retail trade	38	73	(2)	10	29
Wholesale trade	18	22	54	18	24
Agriculture	2	30	27	37	31
Communications	(2)	1	7	-	(1)
Financing products	-	-	-	-	-
Manufacturing	41	128	25	20	28
Mining	(9)	10	-	-	-
Oil and gas	18	293	51	(24)	9
Transportation	11	116	67	74	108
Utilities	1	1	1	(3)	-
Forest products	2	6	-	(1)	-
Service industries	30	243	68	87	102
Financial	(4)	(6)	(35)	(4)	(3)
Government	-	-	1	-	-
Other	1	25	18	22	(1)
Total business and government	157	1,018	288	234	347
Total provision for credit losses on impaired loans	525	1,522	751	700	822
Provision for credit losses on performing loans (3)	(505)	1,431	121	(38)	(76)
	20	2,953	872	662	746
Performance Ratios (%)					
PCL-to-average net loans and acceptances	0.00	0.63	0.20	0.17	0.20
PCL on impaired loans to segmented average net loans and acceptances					
Consumer	0.17	0.25	0.24	0.25	0.26
Business and government	0.06	0.39	0.12	0.12	0.18
PCL on impaired loans-to-average net loans and acceptances	0.11	0.33	0.17	0.18	0.22

(1) Amounts exclude allowance for credit losses included in Other Liabilities.

(2) Prior period information for certain sectors has been adjusted to align with the current year's presentation, which better classifies the realigned sectors.

(3) Prior periods have not been restated to reflect the adoption of IFRS 9 in 2018. IFRS 9 has been applied prospectively.

Table 16: Average Deposits

(\$ millions, except as noted)	2021		2020		2019	
	Average balance	Average rate paid (%)	Average balance	Average rate paid (%)	Average balance	Average rate paid (%)
Deposits Booked in Canada						
Demand deposits – interest bearing	48,372	0.58	35,643	0.82	24,211	1.18
Demand deposits – non-interest bearing	74,505	–	56,936	–	47,849	–
Payable after notice	122,916	0.20	101,870	0.63	86,531	1.24
Payable on a fixed date	173,030	1.31	194,456	1.86	173,337	2.33
Total deposits booked in Canada	418,823	0.67	388,905	1.17	331,928	1.63
Deposits Booked in the United States and Other Countries						
Banks located in the United States and other countries (1)	21,237	0.36	20,927	1.07	23,563	2.41
Governments and institutions in the United States and other countries	8,705	0.16	8,852	0.91	12,253	1.97
Other demand deposits	17,778	0.08	16,321	0.27	14,484	0.86
Other deposits payable after notice or on a fixed date	211,507	0.15	194,096	0.69	164,540	1.38
Total deposits booked in the United States and other countries	259,227	0.16	240,196	0.70	214,840	1.49
Total average deposits	678,050	0.47	629,101	0.99	546,768	1.58

As at October 31, 2021, 2020 and 2019, deposits by foreign depositors in our Canadian bank offices amounted to \$58,396 million, \$52,433 million and \$46,766 million, respectively.

(1) Net interest margin is calculated based on average earning assets, which represents the daily average balance of deposits at central banks, deposits with other banks, securities borrowed or purchased under resale agreements, securities, and loans, over a one-year period.

Glossary of Financial Terms

Adjusted Earnings and Measures

- *Adjusted Revenue* – calculated as revenue excluding the impact of certain non-recurring items, as set out in the Non-GAAP and Other Financial Measures section.
- *Adjusted Non-Interest Expense* – calculated as non-interest expense excluding the impact of certain non-recurring items, as set out in the Non-GAAP and Other Financial Measures section.
- *Adjusted Net Income* – calculated as net income excluding the impact of certain non-recurring items, as set out in the Non-GAAP and Other Financial Measures section.

Management considers both reported and adjusted results to be useful in assessing underlying ongoing business performance.

Adjusted Effective Tax Rate is calculated as adjusted provision for income taxes divided by adjusted income before provision for income taxes.

Allowance for Credit Losses represents an amount deemed appropriate by management to absorb credit-related losses on loans and acceptances and other credit instruments, in accordance with applicable accounting standards. *Allowance on Performing Loans* is maintained to cover impairment in the existing portfolio for loans that have not yet been individually identified as impaired. *Allowance on Impaired Loans* is maintained to reduce the carrying value of individually identified impaired loans to the expected recoverable amount.

Assets under Administration and Assets under Management refers to assets administered or managed by a financial institution that are beneficially owned by clients and therefore not reported on the balance sheet of the administering or managing financial institution.

Asset-Backed Commercial Paper (ABCP) is a short-term investment. The commercial paper is backed by assets such as trade receivables, and is generally used for short-term financing needs.

Average annual total shareholder return (TSR) represents the average annual total return earned on an investment in BMO common shares made at the beginning of a fixed period. The return includes the change in share price and assumes dividends received were reinvested in additional common shares.

Average Earning Assets represents the daily average balance of deposits at central banks, deposits with other banks, securities borrowed or purchased under resale agreements, securities, and loans over a one-year period.

Bail-In Debt is senior unsecured debt subject to the Canadian Bail-In Regime. Bail-in debt includes senior unsecured debt issued directly by the bank on or after September 23, 2018,

which has an original term greater than 400 days and is marketable, subject to certain exceptions. Some or all of this debt may be statutorily converted into common shares of the bank under the Bail-In Regime if the bank enters resolution.

Bankers' Acceptances (BAs) are bills of exchange or negotiable instruments drawn by a borrower for payment at maturity and accepted by a bank. BAs constitute a guarantee of payment by the bank and can be traded in the money market. The bank earns a "stamping fee" for providing this guarantee.

Basis Point is one one-hundredth of a percentage point.

Common Equity Tier 1 (CET1) Capital comprises common shareholders' equity less deductions for goodwill, intangible assets, pension assets, certain deferred tax assets and other items, which may include a portion of expected credit loss provisions.

Common Equity Tier 1 (CET1) Ratio is calculated as CET1 Capital, which comprises common shareholders' equity, net of deductions for goodwill, intangible assets, pension assets, certain deferred tax assets and other items, which may include a portion of expected credit loss provisions, divided by risk-weighted assets. The CET1 Ratio is calculated in accordance with OSFI's Capital Adequacy Requirements (CAR) Guideline.

Common Shareholders' Equity is the most permanent form of capital. For regulatory capital purposes, common shareholders' equity comprises common shareholders' equity, net of capital deductions.

Corporate Services consists of Corporate Units and Technology and Operations (T&O). Corporate Units provide enterprise-wide expertise, governance and support in a variety of areas, including strategic planning, risk management, finance, legal and regulatory compliance, human resources, communications, marketing, real estate and procurement. T&O develops, monitors, manages and maintains governance of information technology, including data and analytics, and also provides cyber security and operations services.

Credit and Counterparty Risk is the potential for credit loss due to the failure of an obligor (i.e., a borrower, endorser, guarantor or counterparty) to repay a loan or honour another predetermined financial obligation.

Derivatives are contracts with a value that is derived from movements in underlying interest or foreign exchange rates, equity or commodity prices or other indices. Derivatives allow for the transfer, modification or reduction of current or expected risks from changes in rates and prices.

Dividend Payout Ratio represents common share dividends as a percentage of net income

available to common shareholders. It is computed by dividing dividends per share by basic earnings per share. Adjusted dividend payout ratio is calculated in the same manner, using adjusted net income.

Earnings per Share (EPS) is calculated by dividing net income, after deducting preferred share dividends and distributions on other equity instruments, by the average number of common shares outstanding. Adjusted EPS is calculated in the same manner, using adjusted net income. Diluted EPS, which is BMO's basis for measuring performance, adjusts for possible conversions of financial instruments into common shares if those conversions would reduce EPS, and is more fully explained in Note 23 of the consolidated financial statements.

Earnings Sensitivity is a measure of the impact of potential changes in interest rates on the projected 12-month pre-tax net income of a portfolio of assets, liabilities and off-balance sheet positions in response to prescribed parallel interest rate movements, with interest rates floored at zero.

Economic Capital is an expression of the enterprise's capital demand requirement relative to its view of the economic risks in its underlying business activities. It represents management's estimation of the likely magnitude of economic losses that could occur should severely adverse situations arise. Economic capital is calculated for various types of risk, including credit, market (trading and non-trading), operational non-financial, business and insurance, based on a one-year time horizon using a defined confidence level.

Economic Value Sensitivity is a measure of the impact of potential changes in interest rates on the market value of a portfolio of assets, liabilities and off-balance sheet positions in response to prescribed parallel interest rate movements, with interest rates floored at zero.

Efficiency Ratio (or Expense-to-Revenue Ratio) is a measure of productivity. It is calculated as non-interest expense divided by total revenue, expressed as a percentage. The adjusted efficiency ratio is calculated in the same manner, utilizing adjusted total revenue and non-interest expense.

Efficiency Ratio, net of CCPB, is calculated as non-interest expense divided by total revenue, net of insurance claims, commissions and changes in policy benefit liabilities (CCPB), expressed as a percentage. The adjusted efficiency ratio, net of CCPB, is calculated in the same manner, utilizing adjusted total revenue, net of CCPB, and non-interest expense.

Environmental and Social Risk (E&S risk) is the potential for loss or harm, directly or indirectly, resulting from environmental or social impacts or concerns, including climate change, related to BMO, our customers, suppliers or clients, and our impact on the environment and society.

Fair Value is the amount of consideration that would be agreed upon in an arm's-length transaction between knowledgeable, willing parties who are under no compulsion to act in an orderly market transaction.

Forwards and Futures are contractual agreements to either buy or sell a specified amount of a currency, commodity, interest-rate-sensitive financial instrument or security at a specified price and date in the future. Forwards are customized contracts transacted in the over-the-counter market. Futures are transacted in standardized amounts on regulated exchanges and are subject to daily cash margin requirements.

Gross impaired loans and acceptances (GIL) are calculated as the credit impaired balance of loans and customers' liability under acceptances, excluding purchased credit impaired loans.

Hedging is a risk management technique used to neutralize, manage or offset interest rate, foreign currency, equity, commodity or credit risk exposures arising from normal banking activities.

Impaired Loans are loans for which there is no longer reasonable assurance of the timely collection of principal or interest.

Incremental Risk Charge (IRC) complements the VaR and SVaR metrics and represents an estimate of the default and migration risks of non-securitization products held in the trading book with exposure to interest rate risk, measured over a one-year horizon at a 99.9% confidence level.

Insurance Risk is the potential for loss as a result of actual experience differing from that assumed when an insurance product was designed and priced, and comprises claims risk, policyholder behaviour risk and expense risk.

Insurance Revenue, net of CCPB, is insurance revenue, net of insurance claims, commissions and changes in policy benefit liabilities (CCPB).

Legal and Regulatory Risk is the potential for loss or harm resulting from a failure to comply with laws or satisfy contractual obligations or regulatory requirements. This includes the risk of failure to: comply with the law (in letter or in spirit) or maintain standards of care; implement legal or regulatory requirements; enforce or comply with contractual terms; assert non-contractual rights; effectively manage disputes; or act in a manner so as to maintain our reputation.

Leverage Exposures (LE) consist of on-balance sheet items and specified off-balance sheet items, net of specified adjustments.

Leverage Ratio reflects Tier 1 Capital divided by LE.

Liquidity and Funding Risk is the potential for loss if we are unable to meet our financial commitments in a timely manner at reasonable prices as they become due. Financial commitments include liabilities to depositors

and suppliers, and lending, investment and pledging commitments.

Liquidity Coverage Ratio (LCR) is a Basel III regulatory metric calculated as the ratio of high-quality liquid assets to total net stressed cash outflows over a thirty-day period under a stress scenario prescribed by OSFI.

Market Risk is the potential for adverse changes in the value of our assets and liabilities resulting from changes in market variables such as interest rates, foreign exchange rates, equity and commodity prices and their implied volatilities, and credit spreads, and includes the risk of credit migration and default in our trading book.

Mark-to-Market represents the valuation of financial instruments at fair value (as defined above) as of the balance sheet date.

Model Risk is the potential for adverse consequences resulting from decisions that are based on incorrect or misused model results. These adverse consequences can include financial loss, poor business decision-making and damage to reputation.

Net Interest Income comprises earnings on assets, such as loans and securities, including interest and certain dividend income, less interest expense paid on liabilities, such as deposits. Net interest income excluding trading, is on a basis that excludes trading-related interest income and earning assets.

Net Interest Margin is the ratio of net interest income to average earning assets, expressed as a percentage or in basis points. Net interest margin is sometimes computed using average total assets. Net interest margin excluding trading, is computed in the same manner excluding trading related interest income and earning assets.

Net Non-Interest Revenue is non-interest revenue, net of insurance claims, commissions and changes in policy benefit liabilities (CCPB).

Notional Amount refers to the principal amount used to calculate interest and other payments under derivative contracts. The principal amount does not change hands under the terms of a derivative contract, except in the case of cross-currency swaps.

Off-Balance Sheet Financial Instruments consist of a variety of financial arrangements offered to clients, which include credit derivatives, written put options, backstop liquidity facilities, standby letters of credit, performance guarantees, credit enhancements, commitments to extend credit, securities lending, documentary and commercial letters of credit, and other indemnifications.

Office of the Superintendent of Financial Institutions Canada (OSFI) is the government agency responsible for regulating banks, insurance companies, trust companies, loan companies and pension plans in Canada.

Operating Leverage is the difference between revenue and expense growth rates. Adjusted operating leverage is the difference between adjusted revenue and adjusted expense growth rates.

Operating Leverage, net of CCPB, is the difference between revenue, net of CCPB (net revenue), and expense growth rates. Adjusted net operating leverage is the difference between adjusted revenue, net of CCPB, and adjusted expense growth rates.

Operational Non-Financial Risk (ONFR) encompasses a wide range of non-financial risks, including those related to business change, customer trust, reputation and data that can result in financial loss. These losses can stem from inadequate or failed internal processes or systems, human error or misconduct, and external events that may directly or indirectly impact our credit or investment portfolios. These risks include technology risk, fraud risk, business continuity risk and human resources risk, but exclude legal and regulatory risk, credit risk, market risk, liquidity risk and other types of financial risk.

Options are contractual agreements that convey to the purchaser the right but not the obligation to either buy or sell a specified amount of a currency, commodity, interest-rate-sensitive financial instrument or security at a fixed future date or at any time within a fixed future period.

Pre-Provision, Pre-Tax Earnings (PPPT) is calculated as income before income taxes and provision for credit losses. We use PPPT on both a reported and adjusted basis to assess our ability to generate sustained earnings growth excluding credit losses, which are impacted by the cyclical nature of a credit cycle.

Provision for Credit Losses (PCL) is a charge to income that represents an amount deemed adequate by management to fully provide for impairment in a portfolio of loans and acceptances and other credit instruments, given the composition of the portfolio, the probability of default, the economic environment and the allowance for credit losses already established. PCL can comprise both a provision for credit losses on impaired loans and a provision for credit losses on performing loans. For more information, refer to the Provision for Credit Losses and Allowance for Credit Losses sections and Note 4 of the consolidated financial statements.

Reputation Risk is the potential for loss or harm to the BMO brand. It can arise even if other risks are managed effectively.

Return on Equity or Return on Common Shareholders' Equity (ROE) is calculated as net income, less preferred dividends and distributions on other equity instruments, as a percentage of average common shareholders' equity. Common shareholders' equity comprises common share capital, contributed surplus, accumulated other comprehensive income (loss) and retained earnings. Adjusted ROE is calculated using adjusted net income rather than net income.

Return on Tangible Common Equity (ROTCE) is calculated as net income available to common shareholders, adjusted for the amortization of acquisition-related intangible assets, as a percentage of average tangible common equity. Adjusted ROTCE is calculated using adjusted net income rather than net income.

Risk-Weighted Assets (RWA) are defined as on-balance sheet and off-balance sheet exposures that are risk-weighted based on guidelines established by OSFI. The measure is used for capital management and regulatory reporting purposes.

Securities Borrowed or Purchased under Resale Agreements are low-cost, low-risk instruments, often supported by the pledge of cash collateral, which arise from transactions that involve the borrowing or purchasing of securities.

Securities Lent or Sold under Repurchase Agreements are low-cost, low-risk liabilities, often supported by cash collateral, which arise from transactions that involve the lending or selling of securities.

Securitization is the practice of selling pools of contractual debts, such as residential mortgages, auto loans and credit card debt obligations, to third parties or trusts, which then typically issue a series of asset-backed securities to investors to fund the purchase of the contractual debts.

Strategic Risk is the potential for loss or harm due to changes in the external business environment and failure to respond appropriately to these changes as a result of inaction, ineffective strategies or poor implementation of strategies. Strategic risk also includes business risk, which arises from the specific business activities of the enterprise, and the effects these could have on its earnings.

Stressed Value at Risk (SVaR) measures the maximum loss likely to be experienced in the trading and underwriting portfolios, measured at a 99% confidence level over a one-day holding period, with model inputs calibrated to historical data from a period of significant financial stress. SVaR is calculated for specific classes of risk in BMO's trading and underwriting activities related to interest rates, foreign exchange rates, credit spreads, equity and commodity prices and their implied volatilities.

Structured Entities (SEs) include entities for which voting or similar rights are not the dominant factor in determining control of the entity. BMO is required to consolidate a SE if it controls the entity by having power over the entity, exposure to variable returns as a result of its involvement and the ability to exercise power to affect the amount of those returns.

Structural (Non-Trading) Market Risk comprises interest rate risk arising from banking activities

(loans and deposits) and foreign exchange risk arising from foreign currency operations and exposures.

Swaps are contractual agreements between two parties to exchange a series of cash flows. The various swap agreements that BMO enters into are as follows:

- *Commodity swaps* – counterparties generally exchange fixed-rate and floating-rate payments based on a notional value of a single commodity.
- *Credit default swaps* – one counterparty pays the other a fee in exchange for an agreement by the other counterparty to make a payment if a credit event occurs, such as bankruptcy or failure to pay.
- *Cross-currency interest rate swaps* – fixed-rate and floating-rate interest payments and principal amounts are exchanged in different currencies.
- *Cross-currency swaps* – fixed-rate interest payments and principal amounts are exchanged in different currencies.
- *Equity swaps* – counterparties exchange the return on an equity security or a group of equity securities for a return based on a fixed or floating interest rate or the return on another equity security or group of equity securities.
- *Interest rate swaps* – counterparties generally exchange fixed-rate and floating-rate interest payments based on a notional value in a single currency.
- *Total return swaps* – one counterparty agrees to pay or receive from the other cash amounts based on changes in the value of a reference asset or group of assets, including any returns such as interest earned on these assets, in exchange for amounts that are based on prevailing market funding rates.

Tangible Common Equity is calculated as common shareholders' equity, less goodwill and acquisition-related intangible assets, net of related deferred tax liabilities.

Taxable Equivalent Basis (teb): Revenues of operating groups are presented in the MD&A on a taxable equivalent basis (teb). Revenue and the provision for income taxes are increased on tax-exempt securities to an equivalent pre-tax basis to facilitate comparisons of income between taxable and tax-exempt sources. The effective tax rate is also analyzed on a teb basis for consistency of approach, with the offset to operating segment adjustments recorded in Corporate Services.

Tier 1 Capital comprises CET1 Capital and **Additional Tier 1 (AT1) Capital**. AT1 Capital consists of preferred shares and other AT1 Capital instruments, less regulatory deductions.

Tier 1 Capital Ratio reflects Tier 1 Capital divided by risk-weighted assets.

Tier 2 Capital comprises subordinated debentures and may include certain credit loss provisions, less regulatory deductions.

Total Capital includes Tier 1 and Tier 2 Capital.

Total Capital Ratio reflects Total Capital divided by risk-weighted assets.

Total Loss Absorbing Capacity (TLAC) comprises Total Capital and senior unsecured debt subject to the Canadian Bail-In Regime, less regulatory deductions. The largest Canadian banks are required to meet the minimum TLAC Ratio and TLAC Leverage Ratio effective November 1, 2021, as calculated under OSFI's TLAC Guideline.

Total Loss Absorbing Capacity (TLAC) Ratio reflects TLAC divided by risk-weighted assets.

Total Loss Absorbing Capacity (TLAC) Leverage Ratio reflects TLAC divided by leverage exposures.

Total Shareholder Return: The three-year and five-year average annual total shareholder return (TSR) represents the average annual total return earned on an investment in BMO common shares made at the beginning of a three-year and five-year period, respectively. The return includes the change in share price and assumes dividends received were reinvested in additional common shares. The one-year TSR also assumes that dividends were reinvested in shares.

Trading and Underwriting Market Risk is associated with buying and selling financial products in the course of meeting customer requirements, including market-making and related financing activities, and assisting clients to raise funds by way of securities issuance.

Trading-Related Revenue includes net interest income and non-interest revenue earned from on-balance sheet and off-balance sheet positions undertaken for trading purposes. The management of these positions typically includes marking them to market on a daily basis. Trading-related revenue also includes income (expense) and gains (losses) from both on-balance sheet instruments and interest rate, foreign exchange (including spot positions), equity, commodity and credit contracts.

Value-at-Risk (VaR) measures the maximum loss likely to be experienced in the trading and underwriting portfolios, measured at a 99% confidence level over a one-day holding period. VaR is calculated for specific classes of risk in BMO's trading and underwriting activities related to interest rates, foreign exchange rates, credit spreads, equity and commodity prices and their implied volatilities.

Statement of Management's Responsibility for Financial Information

Management of Bank of Montreal (the bank) is responsible for the preparation and presentation of the annual consolidated financial statements, Management's Discussion and Analysis (MD&A) and all other information in the Annual Report.

The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board and meet the applicable requirements of the Canadian Securities Administrators (CSA) and the Securities and Exchange Commission (SEC) in the United States. The financial statements also comply with the provisions of the *Bank Act (Canada)* and related regulations, including interpretations of IFRS by our regulator, the Office of the Superintendent of Financial Institutions Canada. The MD&A has been prepared in accordance with the requirements of securities regulators, including National Instrument 51-102 *Continuous Disclosure Obligations* of the CSA.

The consolidated financial statements and information in the MD&A necessarily include amounts based on informed judgments and estimates of the expected effects of current events and transactions with appropriate consideration to materiality. In addition, in preparing the financial information we must interpret the requirements described above, make determinations as to the relevancy of information to be included, and make estimates and assumptions that affect reported information. The MD&A also includes information regarding the impact of current transactions and events, sources of liquidity and capital resources, operating trends, risks and uncertainties. Actual results in the future may differ materially from our present assessment of this information because events and circumstances in the future may not occur as expected.

The financial information presented in the bank's Annual Report is consistent with that in the consolidated financial statements.

In meeting our responsibility for the reliability and timeliness of financial information, we maintain and rely on a comprehensive system of internal controls, including organizational and procedural controls, disclosure controls and procedures, and internal control over financial reporting. Our system of internal controls includes written communication of our policies and procedures governing corporate conduct and risk management; comprehensive business planning; effective segregation of duties; delegation of authority and personal accountability; escalation of relevant information for decisions regarding public disclosure; careful selection and training of personnel; and accounting policies that we regularly update. Our internal controls are designed to provide reasonable assurance that transactions are authorized, assets are safeguarded and proper records are maintained and that we are in compliance with all regulatory requirements. The system of internal controls is further supported by a compliance function, which is designed to ensure that we and our employees comply with securities legislation and conflict of interest rules, and by an internal audit staff, which conducts periodic audits of all aspects of our operations.

As of October 31, 2021, we, as the bank's Chief Executive Officer and Chief Financial Officer, have determined that the bank's internal control over financial reporting is effective. We have certified Bank of Montreal's annual filings with the CSA and with the SEC pursuant to National Instrument 52-109, *Certification of Disclosure in Issuers' Annual and Interim Filings* and the *Securities Exchange Act of 1934*.

In order to provide their audit opinions on our consolidated financial statements and on the bank's internal control over financial reporting, the Shareholders' Auditors audit our system of internal controls over financial reporting and conduct work to the extent that they consider appropriate. Their audit opinion on the bank's internal control over financial reporting as of October 31, 2021 is set forth on page 145.

The Board of Directors, based on recommendations from its Audit and Conduct Review Committee, reviews and approves the financial information contained in the Annual Report, including the MD&A. The Board of Directors and its relevant committees oversee management's responsibilities for the preparation and presentation of financial information, maintenance of appropriate internal controls, compliance with legal and regulatory requirements, management and control of major risk areas, and assessment of significant and related party transactions.

The Audit and Conduct Review Committee, which is comprised entirely of independent directors, is also responsible for selecting the Shareholders' Auditors and reviewing the qualifications, independence and performance of both the Shareholders' Auditors and internal audit. The Shareholders' Auditors and the bank's Chief Auditor have full and free access to the Board of Directors, its Audit and Conduct Review Committee and other relevant committees to discuss audit, financial reporting and related matters.

The Office of the Superintendent of Financial Institutions Canada conducts examinations and inquiries into the affairs of the bank as are deemed necessary to ensure that the provisions of the *Bank Act*, with respect to the safety of the depositors, are being duly observed and that the bank is in sound financial condition.



Darryl White
Chief Executive Officer



Tayfun Tuzun
Chief Financial Officer

Toronto, Canada
December 3, 2021

Independent Auditors' Report

To the Shareholders of Bank of Montreal

Opinion

We have audited the consolidated financial statements of Bank of Montreal (the Bank), which comprise:

- the consolidated balance sheets as at October 31, 2021 and October 31, 2020;
- the consolidated statements of income for each of the years in the three-year period ended October 31, 2021;
- the consolidated statements of comprehensive income for each of the years in the three-year period ended October 31, 2021;
- the consolidated statements of changes in equity for each of the years in the three-year period ended October 31, 2021;
- the consolidated statements of cash flows for each of the years in the three-year period ended October 31, 2021;
- and notes to the consolidated financial statements, including a summary of significant accounting policies

(Hereinafter referred to as the consolidated financial statements).

In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Bank as at October 31, 2021 and October 31, 2020, and its consolidated financial performance and its consolidated cash flows for each of the years in the three-year period ended October 31, 2021 in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board.

Basis for Opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the *Auditors' Responsibilities for the Audit of the Consolidated Financial Statements* section of our auditors' report.

We are independent of the Bank in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in Canada and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the year ended October 31, 2021. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

We have determined the matters described below to be the key audit matters to be communicated in our auditors' report.

Assessment of the Allowances for Credit Losses for Loans

Refer to Notes 1 and 4 to the consolidated financial statements.

The Bank's allowance for credit losses (ACL) as at October 31, 2021 was \$2,958 million. The Bank's ACL consists of allowances for impaired loans and allowances for performing loans (APL), both calculated under the IFRS 9 Financial Instruments expected credit losses framework. APL is calculated for each exposure in the loan portfolio as a function of the key modeled inputs being probability of default (PD), exposure at default (EAD) and loss given default (LGD). In establishing APL, the Bank's methodology attaches probability weightings to three economic scenarios, which represent the Bank's judgment about a range of forecast economic variables – a base case scenario being the Bank's view of the most probable outcome, as well as benign and adverse scenarios. Where there has been a significant increase in credit risk, lifetime APL is recorded; otherwise 12 months of APL is generally recorded. The Bank's methodology for determining significant increase in credit risk is based on the change in PD between the origination date and reporting date and is assessed using probability weighted scenarios. The Bank uses experienced credit judgment (ECJ) to reflect factors not captured in the results produced by the APL models.

We identified the assessment of the ACL for loans as a key audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty in the Bank's key modeled inputs, methodology and judgments and their resulting impact on the APL, as described above, including impacts of the COVID-19 pandemic. Assessing the APL also required significant auditor attention and complex auditor judgment to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those procedures.

The following are the primary procedures we performed to address this key audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Bank's APL process, with the involvement of credit risk, economics, and information technology professionals with specialized skills, industry knowledge and relevant experience. This included internal controls related to (1) monitoring and periodic validation of the models used to derive the key modeled inputs, (2) monitoring of the methodology for identifying significant increase in credit risk, and (3) review of the economic variables, probability weighting of scenarios and ECJ. We also tested the controls over the Bank's APL process related to loan reviews for determination of loan risk grades for wholesale loans. We involved credit risk and economics professionals with specialized skills, industry knowledge and relevant experience, who assisted in evaluating the (1) key modeled inputs and APL methodology including the determination of significant increases in credit risk by evaluating the methodology for compliance with IFRS 9 and re-calculating model monitoring tests in respect of the key modeled inputs and thresholds used for significant increases in credit risk, (2) economic variables and probability weighting of scenarios used in the models by assessing the variables and scenarios against external economic data, and (3) ECJ overlays to the APL used by the Bank by applying our knowledge of the industry and credit judgment to assess management's judgments. For a selection of wholesale loans, we developed an independent estimate of the loan risk grades using the Bank's borrower risk rating scale, and compared that to the Bank's assigned loan risk grade.

Assessment of the Measurement of the Fair Value of Certain Securities

Refer to Notes 1, 3 and 17 to the consolidated financial statements.

The Bank's securities portfolio included \$181,744 million of securities as at October 31, 2021 that are measured at fair value. Included in these amounts are certain securities for which the Bank determines fair value using models and third-party net asset valuations (NAVs) that use significant unobservable market information. Unobservable inputs require the use of significant judgment. Certain of the significant unobservable inputs used in the valuation of such securities are NAVs and prepayment rates.

We identified the assessment of the measurement of the fair value of certain securities as a key audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty in the significant unobservable inputs. Significant auditor attention and complex auditor judgment was required to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those procedures.

The following are the primary procedures we performed to address this key audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Bank's process to determine the fair value of certain securities with the involvement of valuation and information technology professionals with specialized skills, industry knowledge and relevant experience. This included controls related to (1) the assessment of rate sources used in independent price verification, and (2) segregation of duties and access controls. We also evaluated the design and tested the operating effectiveness of the controls related to the 1) review of third-party NAVs, and 2) independent price verification. We tested, with involvement of valuation professionals with specialized skills, industry knowledge and relevant experience, the fair value of a selection of securities, for which prepayment rates are used in valuation, by developing an independent estimate of fair value and comparing it to the fair value determined by the Bank. For a selection of securities, we compared the NAVs to external information.

Assessment of Income Tax Uncertainties

Refer to Notes 1 and 22 to the consolidated financial statements.

In determining the provision for income taxes, the Bank interprets tax legislation, case law and administrative positions, and, based on its judgment, records a provision for an estimate of the amount required to settle tax obligations.

We identified the assessment of income tax uncertainties as a key audit matter. Significant auditor judgment was required because there was a high degree of subjectivity in assessing the need to record a provision, based on interpretation of tax legislation, case law and administrative positions, for these uncertainties and estimating the amount of such provision, if necessary. This required significant auditor attention and complex auditor judgment to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those audit procedures.

The following are the primary procedures we performed to address this key audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Bank's process for evaluating income tax uncertainties with the involvement of tax professionals with specialized skills, industry knowledge and relevant experience. This included controls related to the 1) identification of tax uncertainties based on interpretation of tax legislation, case law and administrative positions, and 2) determination of the best estimate of the provision required, if any, to settle these uncertainties. We involved tax professionals with specialized skills, industry knowledge and relevant experience, who assisted in 1) evaluating, based on their knowledge and experience, the Bank's interpretations of tax legislation, case law and administrative positions and the assessment of certain tax uncertainties and expected outcomes, including, if applicable, the measurement thereof, 2) reading advice obtained by the Bank from external specialists and evaluating its impact on the Bank's provision, if necessary, and 3) reading correspondence with taxation authorities and evaluating its impact on the Bank's provision, if necessary.

Assessment of Insurance-related Liabilities

Refer to Notes 1 and 14 to the consolidated financial statements.

The Bank's insurance-related liabilities as at October 31, 2021 were \$12,845 million. The Bank determines the liabilities for life insurance contracts by applying the Canadian Asset Liability Method for Insurance Contracts, which incorporates best-estimate assumptions. Certain significant assumptions include mortality, policy lapses and future investment yields.

We identified the assessment of insurance-related liabilities as a key audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty in the significant assumptions. Significant and complex auditor judgment was required to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those audit procedures.

The following are the primary procedures we performed to address this key audit matter. With the assistance of actuarial professionals with specialized skills, industry knowledge and relevant experience, we evaluated the design and tested the operating effectiveness of internal controls over assessment of the significant assumptions. We involved these actuarial professionals also in testing the significant assumptions by examining the Bank's internal and external experience studies for policy lapses and mortality, and examining management's calculations and comparing certain inputs into the future investment yields to externally available data.

Other Information

Management is responsible for the other information. Other information comprises:

- the information included in Management's Discussion and Analysis filed with the relevant Canadian Securities Commissions.
- the information, other than the consolidated financial statements and the auditors' report thereon, included in a document entitled the "Annual Report".

Our opinion on the consolidated financial statements does not cover the other information and we do not and will not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit and remain alert for indications that the other information appears to be materially misstated.

We obtained the information included in Management's Discussion and Analysis and the Annual Report filed with the relevant Canadian Securities Commissions as at the date of this auditors' report. If, based on the work we have performed on this other information, we conclude that there is a material misstatement of this other information, we are required to report that fact in the auditors' report. We have nothing to report in this regard.

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with IFRS as issued by the International Accounting Standards Board, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Bank's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Bank or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Bank's financial reporting process.

Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the consolidated financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit.

We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Bank's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Bank's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Bank to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.
- Provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Bank to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.
- Determine, from the matters communicated with those charged with governance, those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditors' report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our auditors' report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.


Chartered Professional Accountants, Licensed Public Accountants

The engagement partner on the audit resulting in this auditors' report is Reinhard Dotzlaw.

Toronto, Canada
December 3, 2021

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Bank of Montreal

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Bank of Montreal (the Bank) as at October 31, 2021 and 2020, the related consolidated statements of income, comprehensive income, changes in equity and cash flows for each of the years in the three-year period ended October 31, 2021, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Bank as at October 31, 2021 and 2020, and its financial performance and its cash flows for each of the years in the three-year period ended October 31, 2021, in conformity with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Bank's internal control over financial reporting as of October 31, 2021, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated December 3, 2021 expressed an unqualified opinion on the effectiveness of the Bank's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Bank's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Bank in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the Audit and Conduct Review Committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Assessment of the Allowances for Credit Losses for Loans

As discussed in Notes 1 and 4 to the consolidated financial statements, the Bank's allowance for credit losses (ACL) as at October 31, 2021 was \$2,958 million. The Bank's ACL consists of allowances for impaired loans and allowances for performing loans (APL), both calculated under the IFRS 9 Financial Instruments expected credit losses framework. APL is calculated for each exposure in the loan portfolio as a function of the key modeled inputs being probability of default (PD), exposure at default (EAD) and loss given default (LGD). In establishing APL, the Bank's methodology attaches probability weightings to three economic scenarios, which represent the Bank's judgment about a range of forecast economic variables – a base case scenario being the Bank's view of the most probable outcome, as well as benign and adverse scenarios. Where there has been a significant increase in credit risk, lifetime APL is recorded; otherwise 12 months of APL is generally recorded. The Bank's methodology for determining significant increase in credit risk is based on the change in PD between the origination date and reporting date and is assessed using probability weighted scenarios. The Bank uses experienced credit judgment (ECJ) to reflect factors not captured in the results produced by the APL models.

We identified the assessment of the ACL for loans as a critical audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty in the Bank's key modeled inputs, methodology and judgments and their resulting impact on the APL, as described above, including impacts of the COVID-19 pandemic. Assessing the APL also required significant auditor attention and complex auditor judgment to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those procedures.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Bank's APL process, with the involvement of credit risk, economics, and information technology professionals with specialized skills, industry knowledge and relevant experience. This included internal controls related to (1) monitoring and periodic validation of the models used to derive the key modeled inputs, (2) monitoring of the methodology for identifying significant increase in credit risk, and (3) review of the economic variables, probability weighting of scenarios and ECJ. We also tested the controls over the Bank's APL process related to loan reviews for determination of loan risk grades for wholesale loans. We involved credit risk and economics professionals with specialized skills, industry knowledge and relevant experience, who assisted in evaluating the (1) key modeled inputs and APL methodology including the determination of significant increases in credit risk by evaluating the methodology for compliance with IFRS 9 and re-calculating model monitoring tests in respect of the key modeled inputs and thresholds used for significant increases in credit risk, (2) economic variables and probability weighting of scenarios used in the models by assessing the variables and scenarios against external economic data, and (3) ECJ overlays to the APL used by the Bank by applying our knowledge of the industry and credit judgment to assess management's judgments. For a selection of wholesale loans, we developed an independent estimate of the loan risk grades using the Bank's borrower risk rating scale, and compared that to the Bank's assigned loan risk grade.

Assessment of the Measurement of the Fair Value of Certain Securities

As discussed in Notes 1, 3 and 17 to the consolidated financial statements, the Bank's securities portfolio included \$181,744 million of securities as at October 31, 2021 that are measured at fair value. Included in these amounts are certain securities for which the Bank determines fair value using models and third-party net asset valuations (NAVs) that use significant unobservable market information. Unobservable inputs require the use of significant judgment. Certain of the significant unobservable inputs used in the valuation of such securities are NAVs and prepayment rates.

We identified the assessment of the measurement of the fair value of certain securities as a critical audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty in the significant unobservable inputs. Significant auditor attention and complex auditor judgment was required to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those procedures.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Bank's process to determine the fair value of certain securities with the involvement of valuation and information technology professionals with specialized skills, industry knowledge and relevant experience. This included controls related to (1) the assessment of rate sources used in independent price verification, and (2) segregation of duties and access controls. We also evaluated the design and tested the operating effectiveness of the controls related to the 1) review of third-party NAVs, and 2) independent price verification. We tested, with involvement of valuation professionals with specialized skills, industry knowledge and relevant experience, the fair value of a selection of securities, for which prepayment rates are used in valuation, by developing an independent estimate of fair value and comparing it to the fair value determined by the Bank. For a selection of securities, we compared the NAVs to external information.

Assessment of Income Tax Uncertainties

As discussed in Notes 1 and 22 to the consolidated financial statements, in determining the provision for income taxes, the Bank interprets tax legislation, case law and administrative positions, and, based on its judgment, records a provision for an estimate of the amount required to settle tax obligations.

We identified the assessment of income tax uncertainties as a critical audit matter. Significant auditor judgment was required because there was a high degree of subjectivity in assessing the need to record a provision, based on interpretation of tax legislation, case law and administrative positions, for these uncertainties and estimating the amount of such provision, if necessary. This required significant auditor attention and complex auditor judgment to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those audit procedures.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Bank's process for evaluating income tax uncertainties with the involvement of tax professionals with specialized skills, industry knowledge and relevant experience. This included controls related to the 1) identification of tax uncertainties based on interpretation of tax legislation, case law and administrative positions, and 2) determination of the best estimate of the provision required, if any, to settle these uncertainties. We involved tax professionals with specialized skills, industry knowledge and relevant experience, who assisted in 1) evaluating, based on their knowledge and experience, the Bank's interpretations of tax legislation, case law and administrative positions and the assessment of certain tax uncertainties and expected outcomes, including, if applicable, the measurement thereof, 2) reading advice obtained by the Bank from external specialists and evaluating its impact on the Bank's provision, if necessary, and 3) reading correspondence with taxation authorities and evaluating its impact on the Bank's provision, if necessary.

Assessment of Insurance-Related Liabilities

As discussed in Notes 1 and 14 to the consolidated financial statements, the Bank's insurance-related liabilities as at October 31, 2021 were \$12,845 million. The Bank determines the liabilities for life insurance contracts by applying the Canadian Asset Liability Method for Insurance Contracts, which incorporates best-estimate assumptions. Certain significant assumptions include mortality, policy lapses and future investment yields.

We identified the assessment of insurance-related liabilities as a critical audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty in the significant assumptions. Significant and complex auditor judgment was required to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those audit procedures.

The following are the primary procedures we performed to address this critical audit matter. With the assistance of actuarial professionals with specialized skills, industry knowledge and relevant experience, we evaluated the design and tested the operating effectiveness of internal controls over assessment of the significant assumptions. We involved these actuarial professionals also in testing the significant assumptions by examining the Bank's internal and external experience studies for policy lapses and mortality, and examining management's calculations and comparing certain inputs into the future investment yields to externally available data.

The logo for KPMG LLP, featuring the letters 'KPMG' in a stylized blue font with 'LLP' in a smaller font below it, all underlined with a blue line.

Chartered Professional Accountants, Licensed Public Accountants

We have served as the Bank's auditor since 2004 and as joint auditor for the prior 14 years.

Toronto, Canada
December 3, 2021

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Bank of Montreal

Opinion on Internal Control over Financial Reporting

We have audited Bank of Montreal's internal control over financial reporting as of October 31, 2021, based on the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our opinion, Bank of Montreal (the Bank) maintained, in all material respects, effective internal control over financial reporting as of October 31, 2021, based on the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Bank as at October 31, 2021 and 2020, the related consolidated statements of income, comprehensive income, changes in equity and cash flows for each of the years in the three-year period ended October 31, 2021, and the related notes (collectively, the consolidated financial statements) and our report dated December 3, 2021 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Bank's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Disclosure Controls and Procedures and Internal Control over Financial Reporting, on page 121 of Management's Discussion and Analysis. Our responsibility is to express an opinion on the Bank's internal control over financial reporting based on our audit.

We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Bank in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

The logo for KPMG LLP, featuring the letters 'KPMG' in a stylized blue font with 'LLP' in a smaller blue font to the right, all underlined with a blue horizontal line.

Chartered Professional Accountants, Licensed Public Accountants

Toronto, Canada

December 3, 2021

Consolidated Statement of Income

For the Year Ended October 31 (Canadian \$ in millions, except as noted)	2021	2020	2019
Interest, Dividend and Fee Income			
Loans	\$ 15,727	\$ 17,945	\$ 19,824
Securities (Note 3) (1)	3,963	4,980	5,541
Deposits with banks	197	390	787
	19,887	23,315	26,152
Interest Expense			
Deposits	3,220	6,239	8,616
Subordinated debt	195	265	279
Other liabilities (Note 14)	2,162	2,840	4,369
	5,577	9,344	13,264
Net Interest Income	14,310	13,971	12,888
Non-Interest Revenue			
Securities commissions and fees	1,107	1,036	1,023
Deposit and payment service charges	1,243	1,221	1,204
Trading revenues (Note 17)	296	15	298
Lending fees	1,391	1,295	1,192
Card fees	442	358	437
Investment management and custodial fees	1,982	1,807	1,747
Mutual fund revenues	1,595	1,417	1,419
Underwriting and advisory fees	1,421	1,070	975
Securities gains, other than trading (Note 3)	591	124	249
Foreign exchange gains, other than trading	167	127	166
Insurance revenue	1,941	2,178	3,183
Investments in associates and joint ventures	248	161	151
Other	452	406	551
	12,876	11,215	12,595
Total Revenue	27,186	25,186	25,483
Provision for Credit Losses (Note 4)	20	2,953	872
Insurance Claims, Commissions and Changes in Policy Benefit Liabilities (Note 14)	1,399	1,708	2,709
Non-Interest Expense			
Employee compensation (Notes 20 and 21)	8,322	7,944	8,423
Premises and equipment (Note 9)	3,396	3,202	2,988
Amortization of intangible assets (Note 11)	634	620	554
Travel and business development	397	384	545
Communications	264	304	296
Professional fees	607	555	568
Other (Note 10)	1,889	1,168	1,256
	15,509	14,177	14,630
Income Before Provision for Income Taxes	10,258	6,348	7,272
Provision for income taxes (Note 22)	2,504	1,251	1,514
Net Income	\$ 7,754	\$ 5,097	\$ 5,758
Earnings Per Common Share (Canadian \$) (Note 23)			
Basic	\$ 11.60	\$ 7.56	\$ 8.68
Diluted	11.58	7.55	8.66
Dividends per common share	4.24	4.24	4.06

(1) Includes interest income on securities measured at fair value through other comprehensive income and amortized cost, calculated using the effective interest rate method, of \$889 million for the year ended October 31, 2021 (\$1,532 million in 2020 and \$1,853 million in 2019).

The accompanying notes are an integral part of these consolidated financial statements.

Certain comparative figures have been reclassified to conform with the current year's presentation.



Darryl White
Chief Executive Officer



Jan Babiak
Chair, Audit and Conduct Review Committee

Consolidated Statement of Comprehensive Income

For the Year Ended October 31 (Canadian \$ in millions)	2021	2020	2019
Net Income	\$ 7,754	\$ 5,097	\$ 5,758
Other Comprehensive Income (Loss), net of taxes (Note 22)			
Items that may subsequently be reclassified to net income			
Net change in unrealized gains (losses) on fair value through OCI debt securities			
Unrealized gains (losses) on fair value through OCI debt securities arising during the year	(161)	410	412
Reclassification to earnings of (gains) in the year	(43)	(81)	(72)
	(204)	329	340
Net change in unrealized gains (losses) on cash flow hedges			
Gains (losses) on derivatives designated as cash flow hedges arising during the year	(1,380)	1,513	1,444
Reclassification to earnings of (gains) losses on derivatives designated as cash flow hedges	(414)	(47)	143
	(1,794)	1,466	1,587
Net gains (losses) on translation of net foreign operations			
Unrealized gains (losses) on translation of net foreign operations	(2,207)	373	(11)
Unrealized gains (losses) on hedges of net foreign operations	496	(96)	(13)
	(1,711)	277	(24)
Items that will not be reclassified to net income			
Unrealized gains on fair value through OCI equity securities arising during the year	20	-	1
Gains (losses) on remeasurement of pension and other employee future benefit plans	923	(255)	(552)
Gains (losses) on remeasurement of own credit risk on financial liabilities designated at fair value	(196)	(28)	75
	747	(283)	(476)
Other Comprehensive Income (Loss), net of taxes (Note 22)	(2,962)	1,789	1,427
Total Comprehensive Income	\$ 4,792	\$ 6,886	\$ 7,185

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Balance Sheet

As at October 31 (Canadian \$ in millions)	2021	2020
Assets		
Cash and Cash Equivalents (Note 2)	\$ 93,261	\$ 57,408
Interest Bearing Deposits with Banks (Note 2)	8,303	9,035
Securities (Note 3)		
Trading	104,411	97,834
Fair value through profit or loss	14,210	13,568
Fair value through other comprehensive income	63,123	73,407
Debt securities at amortized cost	49,970	48,466
Investments in associates and joint ventures	1,135	985
	232,849	234,260
Securities Borrowed or Purchased Under Resale Agreements (Note 4)	107,382	111,878
Loans (Notes 4 and 6)		
Residential mortgages	135,750	127,024
Consumer instalment and other personal	77,164	70,148
Credit cards	8,103	7,889
Business and government	239,809	245,662
	460,826	450,723
Allowance for credit losses (Note 4)	(2,564)	(3,303)
	458,262	447,420
Other Assets		
Derivative instruments (Note 8)	36,713	36,815
Customers' liability under acceptances (Note 12)	14,021	13,493
Premises and equipment (Notes 1 and 9)	4,454	4,183
Goodwill (Note 11)	5,378	6,535
Intangible assets (Note 11)	2,266	2,442
Current tax assets	1,588	1,260
Deferred tax assets (Note 22)	1,287	1,473
Other (Note 12)	22,411	23,059
	88,118	89,260
Total Assets	\$ 988,175	\$ 949,261
Liabilities and Equity		
Deposits (Note 13)	\$ 685,631	\$ 659,034
Other Liabilities		
Derivative instruments (Note 8)	30,815	30,375
Acceptances (Note 14)	14,021	13,493
Securities sold but not yet purchased (Note 14)	32,073	29,376
Securities lent or sold under repurchase agreements (Note 6)	97,556	88,658
Securitization and structured entities' liabilities (Notes 6 and 7)	25,486	26,889
Current tax liabilities	221	126
Deferred tax liabilities (Note 22)	192	108
Other (Notes 1 and 14)	37,764	36,193
	238,128	225,218
Subordinated Debt (Note 15)	6,893	8,416
Total Liabilities	930,652	892,668
Equity		
Preferred shares and other equity instruments (Note 16)	5,558	6,598
Common shares (Note 16)	13,599	13,430
Contributed surplus	313	302
Retained earnings (Note 1)	35,497	30,745
Accumulated other comprehensive income	2,556	5,518
Total Equity	57,523	56,593
Total Liabilities and Equity	\$ 988,175	\$ 949,261

The accompanying notes are an integral part of these consolidated financial statements.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Consolidated Statement of Changes in Equity

For the Year Ended October 31 (Canadian \$ in millions)	2021	2020	2019
Preferred Shares and Other Equity Instruments (Note 16)			
Balance at beginning of year	\$ 6,598	\$ 5,348	\$ 4,340
Issued during the year	-	1,250	1,008
Redeemed during the year	(1,040)	-	-
Balance at End of Year	5,558	6,598	5,348
Common Shares (Note 16)			
Balance at beginning of year	13,430	12,971	12,929
Issued under the Shareholder Dividend Reinvestment and Share Purchase Plan	-	471	-
Issued under the Stock Option Plan	122	40	62
Repurchased for cancellation and/or treasury shares sold/purchased	47	(52)	(20)
Balance at End of Year	13,599	13,430	12,971
Contributed Surplus			
Balance at beginning of year	302	303	300
Stock option expense, net of options exercised (Note 20)	10	(1)	-
Other	1	-	3
Balance at End of Year	313	302	303
Retained Earnings			
Balance at beginning of year	30,745	28,725	25,850
Impact from adopting IFRS 16 (Note 1)	-	(59)	na
Net income	7,754	5,097	5,758
Dividends on preferred shares and distributions payable on other equity instruments (Note 16)	(244)	(247)	(211)
Dividends on common shares (Note 16)	(2,746)	(2,723)	(2,594)
Equity issue expense and premium paid on redemption of preferred shares	(6)	(3)	(8)
Common shares repurchased for cancellation (Note 16)	-	-	(70)
Net discount on sale of treasury shares	(6)	(45)	-
Balance at End of Year	35,497	30,745	28,725
Accumulated Other Comprehensive Income on Fair Value through OCI Securities, net of taxes (Note 22)			
Balance at beginning of year	355	26	(315)
Unrealized gains (losses) on fair value through OCI debt securities arising during the year	(161)	410	412
Unrealized gains on fair value through OCI equity securities arising during the year	20	-	1
Reclassification to earnings of (gains) during the year	(43)	(81)	(72)
Balance at End of Year	171	355	26
Accumulated Other Comprehensive Income on Cash Flow Hedges, net of taxes (Note 22)			
Balance at beginning of year	1,979	513	(1,074)
Gains (losses) on derivatives designated as cash flow hedges arising during the year (Note 8)	(1,380)	1,513	1,444
Reclassification to earnings of (gains) losses on derivatives designated as cash flow hedges in the year	(414)	(47)	143
Balance at End of Year	185	1,979	513
Accumulated Other Comprehensive Income on Translation of Net Foreign Operations, net of taxes (Note 22)			
Balance at beginning of year	3,980	3,703	3,727
Unrealized gains (losses) on translation of net foreign operations	(2,207)	373	(11)
Unrealized gains (losses) on hedges of net foreign operations	496	(96)	(13)
Balance at End of Year	2,269	3,980	3,703
Accumulated Other Comprehensive Income (Loss) on Pension and Other Employee Future Benefit Plans, net of taxes (Note 22)			
Balance at beginning of year	(638)	(383)	169
Gains (losses) on remeasurement of pension and other employee future benefit plans (Note 21)	923	(255)	(552)
Balance at End of Year	285	(638)	(383)
Accumulated Other Comprehensive (Loss) on Own Credit Risk on Financial Liabilities Designated at Fair Value, net of taxes (Note 22)			
Balance at beginning of year	(158)	(130)	(205)
Gains (losses) on remeasurement of own credit risk on financial liabilities designated at fair value	(196)	(28)	75
Balance at End of Year	(354)	(158)	(130)
Total Accumulated Other Comprehensive Income	2,556	5,518	3,729
Total Equity	\$ 57,523	\$ 56,593	\$ 51,076

na - not applicable due to IFRS 16 adoption on November 1, 2019.

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statement of Cash Flows

For the Year Ended October 31 (Canadian \$ in millions)	2021	2020	2019
Cash Flows from Operating Activities			
Net Income	\$ 7,754	\$ 5,097	\$ 5,758
Adjustments to determine net cash flows provided by (used in) operating activities			
Provision on securities, other than trading (Note 3)	1	2	1
Net (gain) on securities, other than trading (Note 3)	(592)	(126)	(250)
Net (increase) decrease in trading securities	(10,447)	(10,276)	13,816
Provision for credit losses (Note 4)	20	2,953	872
Change in derivative instruments – (Increase) decrease in derivative asset	542	(12,229)	6,902
– Increase (decrease) in derivative liability	529	5,614	(3,774)
Amortization of premises and equipment (Note 9)	791	801	435
Amortization of other assets	140	197	216
Amortization of intangible assets (Note 11)	634	620	554
Write-down of goodwill (Notes 10 and 11)	779	-	-
Net decrease in deferred tax asset (Note 22)	127	111	483
Net increase (decrease) in deferred tax liability (Note 22)	85	26	(15)
Net (increase) decrease in current tax asset	(539)	(55)	354
Net increase in current tax liability	143	62	6
Change in accrued interest – (Increase) decrease in interest receivable	75	178	(299)
– Increase (decrease) in interest payable	(366)	(352)	313
Changes in other items and accruals, net	723	(4,501)	(1,255)
Net increase in deposits	52,244	88,341	48,009
Net (increase) in loans	(23,748)	(21,941)	(43,381)
Net increase (decrease) in securities sold but not yet purchased	3,545	2,972	(2,524)
Net increase in securities lent or sold under repurchase agreements	12,866	824	20,358
Net (increase) in securities borrowed or purchased under resale agreements	(289)	(7,104)	(19,396)
Net increase (decrease) in securitization and structured entities' liabilities	(968)	(378)	2,120
Net Cash Provided by Operating Activities	44,049	50,836	29,303
Cash Flows from Financing Activities			
Net increase (decrease) in liabilities of subsidiaries	-	(8,113)	(1,227)
Proceeds from issuance of covered bonds (Note 13)	4,396	4,425	4,168
Redemption/buyback of covered bonds (Note 13)	(4,074)	(6,231)	(3,765)
Proceeds from issuance of subordinated debt (Note 15)	1,000	1,250	1,000
Repayment of subordinated debt (Note 15)	(2,250)	-	(1,000)
Proceeds from issuance of preferred shares and other equity instruments net of issuance cost (Note 16)	-	1,247	1,000
Redemption of preferred shares (Note 16)	(1,046)	-	-
Net proceeds from issuance (repurchase) of common shares and sale (purchase) of treasury shares	159	(76)	54
Common shares repurchased for cancellation (Note 16)	-	-	(90)
Cash dividends and distributions paid	(2,980)	(2,475)	(2,752)
Repayment of lease liabilities (1)	(327)	(331)	na
Net Cash (Used in) Financing Activities	(5,122)	(10,304)	(2,612)
Cash Flows from Investing Activities			
Net (increase) decrease in interest bearing deposits with banks	144	(979)	329
Purchases of securities, other than trading	(49,620)	(86,659)	(63,496)
Maturities of securities, other than trading	27,377	19,982	13,154
Proceeds from sales of securities, other than trading	22,720	36,900	31,561
Premises and equipment – net (purchases) (Note 9)	(484)	(399)	(478)
Purchased and developed software – net (purchases) (Note 11)	(499)	(633)	(650)
Acquisitions (Note 10)	-	(186)	-
Net proceeds from divestitures (Note 10)	63	-	-
Net Cash (Used in) Investing Activities	(299)	(31,974)	(19,580)
Effect of Exchange Rate Changes on Cash and Cash Equivalents	(2,775)	47	(450)
Net increase in Cash and Cash Equivalents	35,853	8,605	6,661
Cash and Cash Equivalents at Beginning of Year	57,408	48,803	42,142
Cash and Cash Equivalents at End of Year (Note 2)	\$ 93,261	\$ 57,408	\$ 48,803
Supplemental Disclosure of Cash Flow Information			
Net cash provided by operating activities includes:			
Interest paid in the year (2)	\$ 5,864	\$ 9,679	\$ 12,956
Income taxes paid in the year	\$ 2,167	\$ 1,537	\$ 1,209
Interest received in the year	\$ 18,323	\$ 21,576	\$ 23,966
Dividends received in the year	\$ 1,732	\$ 1,856	\$ 1,740

(1) Prior to adoption of IFRS 16, repayments of lease liabilities were included in Net Cash Provided by Operating Activities.

(2) Includes dividends paid on securities sold but not yet purchased.

na – not applicable

The accompanying notes are an integral part of these consolidated financial statements.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Note 1: Basis of Presentation

Bank of Montreal (the bank or BMO) is a chartered bank under the *Bank Act (Canada)* and is a public company incorporated in Canada. We are a highly diversified financial services company, providing a broad range of personal and commercial banking, wealth management and investment banking products and services. The bank's head office is at 129 rue Saint-Jacques, Montreal, Quebec. Our executive offices are at 100 King Street West, 1 First Canadian Place, Toronto, Ontario. Our common shares are listed on the Toronto Stock Exchange (TSX) and the New York Stock Exchange.

We have prepared these consolidated financial statements in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). We also comply with interpretations of IFRS by our regulator, the Office of the Superintendent of Financial Institutions of Canada (OSFI).

Our consolidated financial statements have been prepared on a historic cost basis, except for the revaluation of the following items: assets and liabilities held for trading; financial assets and liabilities measured or designated at fair value through profit or loss (FVTPL); financial assets measured or designated at fair value through other comprehensive income (FVOCI); financial assets and financial liabilities designated as hedged items in qualifying fair value hedge relationships; cash-settled share-based payment liabilities; defined benefit pension and other employee future benefit liabilities; and insurance-related liabilities.

These consolidated financial statements were authorized for issue by the Board of Directors on December 3, 2021.

Basis of Consolidation

These consolidated financial statements are inclusive of the financial statements of our subsidiaries as at October 31, 2021. We conduct business through a variety of corporate structures, including subsidiaries, structured entities (SEs), associates and joint ventures. Subsidiaries are those entities where we exercise control through our ownership of the majority of the voting shares. We also hold interests in SEs, which we consolidate when we control the SEs. These are more fully described in Note 7. All of the assets, liabilities, revenues and expenses of our subsidiaries and consolidated SEs are included in our consolidated financial statements. All intercompany transactions and balances are eliminated on consolidation.

We hold investments in associates where we exert significant influence over operating and financing decisions (generally companies in which we own between 20% and 50% of the voting shares). These are accounted for using the equity method. The equity method is also applied to our investments in joint ventures, which are entities where we exercise joint control through an agreement with other shareholders. Under the equity method of accounting, investments are initially recorded at cost, and the carrying amount is increased or decreased to recognize our share of investee net income or loss, including other comprehensive income or loss. Additional information regarding accounting for investments in associates and joint ventures is included in Note 3.

Significant Accounting Policies

To facilitate a better understanding of our consolidated financial statements, we have disclosed our significant accounting policies throughout the following notes with the related financial disclosures by major caption:

Note	Topic	Page	Note	Topic	Page
1	Basis of Presentation	151	16	Equity	186
2	Cash and Interest Bearing Deposits with Banks	157	17	Fair Value of Financial Instruments and Trading-Related Revenue	188
3	Securities	157	18	Offsetting of Financial Assets and Financial Liabilities	195
4	Loans and Allowance for Credit Losses	160	19	Capital Management	195
5	Risk Management	167	20	Employee Compensation – Share-Based Compensation	196
6	Transfers of Financial Assets	167	21	Employee Compensation – Pension and Other Employee Future Benefits	198
7	Structured Entities	168	22	Income Taxes	201
8	Derivative Instruments	171	23	Earnings Per Share	204
9	Premises and Equipment	179	24	Commitments, Guarantees, Pledged Assets, Provisions and Contingent Liabilities	204
10	Acquisitions and Divestitures	180	25	Operating and Geographic Segmentation	207
11	Goodwill and Intangible Assets	181	26	Significant Subsidiaries	210
12	Other Assets	182	27	Related Party Transactions	211
13	Deposits	183			
14	Other Liabilities	184			
15	Subordinated Debt	185			

Translation of Foreign Currencies

We conduct business in a variety of foreign currencies and present our consolidated financial statements in Canadian dollars, which is our functional currency. Monetary assets and liabilities, as well as non-monetary assets and liabilities measured at fair value that are denominated in foreign currencies, are translated into Canadian dollars at the exchange rate in effect at the balance sheet date. Non-monetary assets and liabilities not measured at fair value are translated into Canadian dollars at historical rates. Revenues and expenses denominated in foreign currencies are translated using the average exchange rate for the year.

Unrealized gains and losses arising from translating our net investment in foreign operations into Canadian dollars, net of related hedging activities and applicable income taxes, are included in our Consolidated Statement of Comprehensive Income within net gains (losses) on translation of net foreign operations. When we dispose of a foreign operation such that control, significant influence or joint control is lost, the cumulative amount of the translation gain (loss) and any applicable hedging activities and related income taxes is reclassified to our Consolidated Statement of Income as part of the gain or loss on disposition.

Foreign currency translation gains and losses on equity securities measured at FVOCI that are denominated in foreign currencies are included in accumulated other comprehensive income on FVOCI equity securities, net of taxes, in our Consolidated Statement of Changes in Equity. All other foreign currency translation gains and losses are included in foreign exchange gains, other than trading, in our Consolidated Statement of Income as they arise.

From time to time, we enter into foreign exchange hedge contracts to reduce our exposure to changes in the value of foreign currencies. Realized and unrealized gains and losses that arise on the mark-to-market of foreign exchange contracts related to economic hedges are included in non-interest revenue in our Consolidated Statement of Income. Changes in the fair value of derivative contracts that qualify as accounting hedges are recorded in our Consolidated Statement of Comprehensive Income within net change in unrealized gains (losses) on derivatives designated as cash flow hedges, with the spot/forward differential (the difference between the foreign currency exchange rate at the inception of the contract and the rate at the end of the contract) recorded in interest income (expense) over the term of the hedge.

Revenue

Dividend Income

Dividend income is recognized when the right to receive payment is established. This is the ex-dividend date for listed equity securities.

Fee Income

Securities commissions and fees are earned in BMO Wealth Management and BMO Capital Markets on brokerage transactions executed for customers, generally as a fixed fee per share traded, and the commissions and related clearing expense are recognized on trade date. There are also fees based on a percentage of the customer's portfolio holdings that entitle clients to investment advice and a certain number of trades which are recorded over the period to which they relate.

Deposit and payment service charges are primarily earned in Personal and Commercial Banking and include monthly account maintenance fees and other activity-based fees earned on deposit and cash management services. Fees are recognized over time when account maintenance and cash management services are provided, or at a point in time when an income-generating activity is performed.

Card fees arise in Personal and Commercial Banking and primarily include interchange income, late fees and annual fees. Card fees are recorded when the related services are provided, except for annual fees, which are recorded evenly throughout the year. Interchange income is calculated as a percentage of the transaction amount and/or a fixed price per transaction, as established by the payment network, and is recognized when the card transaction is settled. Reward costs for our cards are recorded as a reduction in card fees.

Investment management and custodial fees are earned in BMO Wealth Management and are based primarily on the balance of assets under management or assets under administration, as at the period end, for investment management, custodial, estate and trustee services provided. Fees are recorded over the period the services are performed.

Mutual fund revenues arise in BMO Wealth Management and are earned on fund management services which are primarily calculated and recorded based on a percentage of the fund's net asset value. The fees are recorded over the period the services are performed.

Underwriting and advisory fees are earned in BMO Capital Markets and arise from securities offerings in which we act as an underwriter or agent, structuring and administering loan syndications, and fees earned from providing merger-and-acquisition services and structuring advice. Underwriting and advisory fees are generally recognized when the services are completed.

Leases

We are lessors in both financing leases and operating leases. Leases are classified as financing leases if they transfer substantially all the risks and rewards incidental to ownership of the leased asset to the lessee. Otherwise they are classified as operating leases, as we retain substantially all the risks and rewards of asset ownership.

As lessor in a financing lease, a loan is recognized equal to the investment in the lease, which is calculated as the present value of the minimum payments to be received from the lessee, discounted at the interest rate implicit in the lease, plus any unguaranteed residual value we expect to recover at the end of the lease. Finance lease income is recognized in interest, dividend and fee income, loans, in our Consolidated Statement of Income.

Assets under operating leases are recorded in other assets in our Consolidated Balance Sheet. Rental income is recognized on a straight-line basis over the term of the lease in non-interest revenue, other, in our Consolidated Statement of Income. Depreciation on these assets is recognized on a straight-line basis over the life of the lease in non-interest expense, other, in our Consolidated Statement of Income.

Refer to Note 9 for our policy on lessee accounting.

Assets Held-for-Sale

Non-current non-financial assets classified as held-for-sale are measured at the lower of their carrying amount and fair value less costs to sell and are presented within other assets in our Consolidated Balance Sheet. Subsequent to its initial classification, a non-current asset is no longer depreciated or amortized, and any subsequent write-down in fair value less costs to sell is recognized in non-interest revenue, other, in our Consolidated Statement of Income.

Changes in Accounting Policies

Interbank Offered Rate (IBOR) Reform – Phase 2 Amendments

Effective November 1, 2020, we early adopted the IASB's IBOR Phase 2 amendments to IFRS 9 *Financial Instruments* (IFRS 9), IAS 39 *Financial Instruments: Recognition and Measurement* (IAS 39), IFRS 7 *Financial Instruments: Disclosures* (IFRS 7) and IFRS 4 *Insurance Contracts*, as well as IFRS 16 *Leases*. These amendments address issues that arise from implementation of IBOR reform, where IBORs will be replaced with alternative benchmark rates.

For financial instruments at amortized cost, the amendments introduce a practical expedient such that if a change in the contractual cash flows is as a direct consequence of IBOR reform and occurs on an economically equivalent basis, the change will be accounted for by updating the effective interest rate with no immediate gain or loss recognized. The amendments also provide additional temporary relief from applying specific IAS 39 hedge accounting requirements to hedging relationships affected by IBOR reform. For example, there is an exemption from the requirement to discontinue hedge accounting when changes to hedge documentation are solely the result of IBOR reform.

With the cessation dates for London Interbank Offered Rate (LIBOR) determined and the transition from IBORs to alternative reference rates (ARRs) well underway, and as both a holder and an issuer of IBOR-based instruments, BMO is exposed to increased financial, operational, legal and regulatory, and reputational risks. Additionally, other IBORs may be subject to discontinuance, changes in methodology, increased volatility or decreased liquidity. These risks arise principally from updating systems and processes to capture new ARR, amending contracts or existing fallback clauses for new ARR, managing the client transition to ARR and the resulting impact on economic risk management, as well as updating hedge designations as the new ARR emerge. In order to manage those risks, an enterprise IBOR Transition Office (ITO) has been established to coordinate and oversee the transition from IBORs to ARR, with a focus on managing and mitigating internal risks, as well as managing our client relationships. The ITO, sponsored and supported by senior management, is responsible for running the enterprise-wide program, covering all of BMO's lines of business and corporate areas. The ITO has a global mandate to ensure that we properly prepare for the discontinuation or unavailability of LIBOR and other IBORs. As part of its mandate, the ITO continues to address the bank's industry and regulatory engagement, client and financial contract changes, internal and external communications, technology and operations modifications, introduction of new products, migration of existing clients, program strategy and governance, and to evaluate financial reporting impacts, including impacts on hedge accounting. In addition, the ITO continues to monitor the development and usage of ARR across the industry, including the Alternative Reference Rate Committee's formal recommendation of the CME Group's forward-looking Secured Overnight Financing Rate (SOFR) Term Rates. As the market continues to develop, we have added and will continue to add ARR-based products to our suite of offerings.

We adhered to the International Swaps and Derivatives Association Fallbacks Protocol (ISDA Protocol), which took effect on January 25, 2021. The ISDA Protocol provides specific fallbacks depending on whether the relevant IBOR (for example, USD LIBOR or GBP LIBOR) has been permanently discontinued or is temporarily unavailable. It provides an efficient amendment mechanism that allows mutually adhering counterparties to incorporate these fallback provisions into legacy derivative contracts. Also, we continue to incorporate contractual fallback provisions in new IBOR-based cash products in order to ensure there is an alternative benchmark rate at the time of the relevant IBOR cessation.

The table below presents quantitative information for financial instruments that referenced certain IBORs as at November 1, 2020, the date of adoption for Phase 2 relief, and either were due to mature after December 31, 2021 or are demand facilities that will be subject to remediation to amend the benchmark interest rate. Financial instruments that reference rates in multi-rate jurisdictions, including the Canadian Dollar Offered Rate (CDOR), the EURO Interbank Offered Rate and Australian Bank Bill Swap Rate, are excluded from both tables below. In the case of CDOR, financial instruments indexed to 6-month and 12-month CDOR tenors were discontinued on May 17, 2021, while other tenors of CDOR will continue as a benchmark rate. As at November 1, 2020, we did not hold any material positions in either of these CDOR tenors.

(Canadian \$ in millions)	November 1, 2020		
	USD LIBOR	GBP LIBOR	Other (1)
Non-derivative assets (2)	100,521	868	1,225
Non-derivative liabilities (2)	7,435	692	-
Derivative notional amounts (3)(4)	1,570,534	20,972	6,702
Authorized and committed loan commitments (5)(6)	68,449	194	23,633

(1) Includes CHF LIBOR, EONIA and JPY LIBOR.

(2) All amounts are presented based on contractual amounts outstanding with the exception of securities, recorded in non-derivative assets, which are presented based on carrying value.

(3) Notionals amounts represent the amount to which a rate or price is applied in order to calculate the amount of cash that must be exchanged under the contract. Notional amounts do not represent assets or liabilities and therefore are not recorded in our Consolidated Balance Sheet.

(4) Includes certain cross-currency swap positions where both the pay and receive legs currently reference an IBOR. For those derivatives, the table above includes the notional amounts for both the pay and receive legs in the relevant columns aligning with the IBOR exposure.

(5) Excludes personal lines of credit and credit cards that are unconditionally cancellable at our discretion. A large majority of these commitments expire without being drawn upon. As a result, the total contractual amounts may not be representative of the funding likely to be required for these commitments.

(6) Other includes loan commitments where our customers have the option to draw from their facility in multiple currencies. Amounts drawn will be subject to prevailing IBORs for the foreign currency, including those that are in scope of IBOR reform.

On March 5, 2021, the Financial Conduct Authority (FCA) confirmed that LIBOR settings will cease to be provided by any administrator immediately after December 31, 2021 for all sterling, euro, Swiss franc and Japanese yen settings as well as the 1-week and 2-month USD LIBOR settings. The remaining USD LIBOR settings will cease to be provided immediately after June 30, 2023. U.S. prudential regulators have issued supervisory guidance that the extension of these certain USD LIBOR settings to June 30, 2023 applies only to legacy contracts; new issuances of LIBOR-based instruments must cease by December 31, 2021. The ITO adjusted all impacted project plans to align with these extended timelines. As a result of the extension of the cessation date for certain USD LIBOR settings, more contracts will expire prior to cessation and therefore the number and value of contracts that will be subject to remediation efforts have been reduced.

On November 16, 2021, the FCA confirmed that it will allow the temporary use of synthetic sterling and yen LIBOR rates in all legacy LIBOR contracts, excluding cleared derivatives, that have not been changed before December 31, 2021. We are still in the process of remediating our contracts but do not expect any material exposure to synthetic LIBOR rates at this time.

The following table presents quantitative information for financial instruments that referenced certain IBORs as at October 31, 2021, which were either due to mature after June 30, 2023 for USD LIBOR settings other than 1-week and 2-month US LIBOR, or after December 31, 2021 for all other in-scope IBORs, or are demand facilities with no maturity date. Changes in our exposures during fiscal 2021 did not result in significant changes to the risks arising from transition since adoption of these Phase 2 amendments. In the normal course of business, our exposures may continue to fluctuate with no significant impact expected on our IBOR conversion plans.

(Canadian \$ in millions)	October 31, 2021		
	USD LIBOR	GBP LIBOR	Other (1)
Non-derivative assets (2)	91,991	730	844
Non-derivative liabilities (2)	3,043	678	-
Derivative notional amounts (3)(4)	1,340,121	28,385	4,898
Authorized and committed loan commitments (5)(6)(7)	62,174	241	15,047

(1) Includes CHF LIBOR, EONIA and JPY LIBOR.

(2) All amounts are presented based on contractual amounts outstanding with the exception of securities, recorded in non-derivative assets, which are presented based on carrying value.

(3) Notional amounts represent the amount to which a rate or price is applied in order to calculate the amount of cash that must be exchanged under the contract. Notional amounts do not represent assets or liabilities and therefore are not recorded in our Consolidated Balance Sheet.

(4) Includes certain cross-currency swap positions where both the pay and receive legs currently reference an IBOR. For those derivatives, the table above includes the notional amounts for both the pay and receive legs in the relevant columns aligning with the IBOR exposure.

(5) Excludes personal lines of credit and credit cards that are unconditionally cancellable at our discretion. A large majority of these commitments expire without being drawn upon. As a result, the total contractual amounts may not be representative of the funding likely to be required for these commitments.

(6) Other includes loan commitments where our customers have the option to draw from their facility in multiple currencies. Amounts drawn will be subject to prevailing IBORs for the foreign currency, including those that are in scope of IBOR reform.

(7) Commitments also include backstop liquidity facilities provided by the bank to external parties.

Conceptual Framework

Effective November 1, 2020, we adopted the revised Conceptual Framework (Framework), which sets out the fundamental concepts for financial reporting to ensure consistency in standard-setting decisions and that similar transactions are treated in a similar way, so as to provide useful information to users of financial statements. The revised Framework had no impact on our accounting policies.

Leases

Effective November 1, 2019, we adopted IFRS 16 *Leases* (IFRS 16), whereby lessees are required to recognize a liability for the present value of future lease payments and record a corresponding asset on the balance sheet for most leases. There were minimal changes to the accounting from the lessor's perspective.

The main impact for the bank is that leases related to real estate are now recorded on the balance sheet. Previously, most of our real estate leases were classified as operating leases, and we recorded the lease expense over the lease term with no asset or liability recorded on the balance sheet other than related leasehold improvements.

On transition, we calculated the right-of-use asset as if we had always applied IFRS 16 for a selection of leases; for the remaining leases, we set the right-of-use asset equal to the lease liability. We will continue to record lease expense for low dollar value leases over the lease term with no corresponding right-of-use asset or lease liability. In addition, we combined lease and non-lease components (for example maintenance and utilities that have fixed payments) in the calculation of right-of-use assets and lease liabilities when applicable. We elected to exclude intangibles from the scope of lease accounting.

On transition, we recognized the cumulative effect of adopting IFRS 16 in opening retained earnings as at November 1, 2019 with no changes to prior periods. The impact to the Consolidated Balance Sheet as at November 1, 2019 was an increase in premises and equipment of \$1,965 million, an increase in other liabilities of \$2,024 million, and a decrease in retained earnings of \$80 million (\$59 million after tax).

The following table sets out a reconciliation of our operating lease commitments as disclosed under IAS 17 *Leases* as at October 31, 2019, which were used to derive the lease liabilities as at November 1, 2019.

(Canadian \$ in millions)	November 1, 2019
Operating lease commitments at October 31, 2019 as disclosed in our consolidated financial statements	3,800
Discounted using the incremental borrowing rate at November 1, 2019	(310)
Finance lease liabilities recognized as at October 31, 2019	41
Exemption for low-value asset leases	(13)
Extension and termination options reasonably certain to be exercised	37
Executory costs not included in the lease liability	(166)
Leases signed but not yet started	(1,222)
Lease liabilities recognized at November 1, 2019	2,167

When measuring lease liabilities, we discounted lease payments using our incremental borrowing rate at November 1, 2019. The weighted-average rate applied was 2.52%.

Uncertainty Over Income Tax Treatments

Effective November 1, 2019, we adopted IFRIC 23 *Uncertainty Over Income Tax Treatments*. The interpretation clarifies the recognition and measurement requirements in IAS 12 *Income Taxes* when there is uncertainty over income tax treatments. The interpretation had no impact on our financial results on adoption.

Revenue

Effective November 1, 2018, we adopted IFRS 15 *Revenue from Contracts with Customers* (IFRS 15). We elected to retrospectively present prior periods as if IFRS 15 had always been applied. Under IFRS 15, the primary impact is the reclassification of amounts within the Consolidated Statement of Income. As a result, loyalty rewards and cash promotion costs on cards previously recorded in non-interest expense are presented as a reduction in non-interest revenue. In addition, when customers reimburse us for certain out-of-pocket expenses incurred on their behalf, we now record the

reimbursement in non-interest revenue. Previously, these reimbursements were recorded as a reduction in the related expense. There is minimal impact to net income as IFRS 15 does not require discounting of loyalty reward liabilities and we now amortize the costs to obtain card customers, which were previously expensed as incurred.

Use of Estimates and Judgments

The preparation of the consolidated financial statements requires management to use estimates and assumptions that affect the carrying amounts of certain assets and liabilities, certain amounts reported in net income and other related disclosures.

The most significant assets and liabilities for which we must make estimates and judgments include the allowance for credit losses; financial instruments measured at fair value; pension and other employee future benefits; impairment of securities; income taxes and deferred tax assets; goodwill and intangible assets; insurance-related liabilities; provisions, including legal proceedings and restructuring charges; transfers of financial assets and consolidation of structured entities; and leases. We make judgments in assessing the business model for financial assets as well as whether substantially all risks and rewards have been transferred in respect of transfers of financial assets and whether we control SEs, as discussed in Notes 6 and 7, respectively. If actual results were to differ from the estimates, the impact would be recorded in future periods.

The extent of the continuing impact of the COVID-19 pandemic on the Canadian and U.S. economies remains uncertain and difficult to predict, including government and regulatory responses to the pandemic, which could vary by country and region. The pandemic's impact on BMO's business, results of operations, reputation, financial performance and condition, including the potential for credit, counterparty and mark-to-market losses, its credit ratings and regulatory capital and liquidity ratios, as well as impacts to its customers and competitors, will depend on future developments, which remain uncertain. By their very nature, the judgments and estimates we make for the purposes of preparing our financial statements relate to matters that are inherently uncertain. However, we have detailed policies and internal controls that are intended to ensure that these judgments and estimates are well controlled and independently reviewed, and that our policies are consistently applied from period to period. We believe that our estimates of the value of our assets and liabilities are appropriate as at October 31, 2021.

Allowance for Credit Losses

The expected credit loss (ECL) model requires the recognition of credit losses generally based on 12 months of expected losses for performing loans and the recognition of lifetime losses on performing loans that have experienced a significant increase in credit risk since origination.

The determination of a significant increase in credit risk takes into account many different factors and varies by product and risk segment. The bank's methodology for determining significant increase in credit risk is based on the change in probability of default (PD) between origination and reporting date, assessed using probability-weighted scenarios as well as certain other criteria, such as 30-day past due and watchlist status. The assessment of a significant increase in credit risk requires experienced credit judgment.

In determining whether there has been a significant increase in credit risk and in calculating the amount of expected credit losses, we must rely on estimates and exercise judgment regarding matters for which the ultimate outcome is unknown. These judgments include changes in circumstances that may cause future assessments of credit risk to be materially different from current assessments, which could require an increase or decrease in the allowance for credit losses. The calculation of expected credit losses includes the explicit incorporation of forecasts of future economic conditions. We have developed models incorporating specific macroeconomic variables that are relevant to each portfolio. Key economic variables for our retail portfolios include primary operating markets of Canada, the United States (U.S.) and regional markets where considered significant. Forecasts are developed internally by our Economics group, considering external data and our view of future economic conditions. We exercise experienced credit judgment to incorporate multiple economic forecasts which are probability-weighted in the determination of the final expected credit loss. The allowance is sensitive to changes in both economic forecasts and the probability weight assigned to each forecast scenario.

Additional information regarding the allowance for credit losses is included in Note 4.

Financial Instruments Measured at Fair Value

Fair value measurement techniques are used to value various financial assets and financial liabilities, and are also used in performing impairment testing on certain non-financial assets.

Additional information regarding our fair value measurement techniques is included in Note 17.

Pension and Other Employee Future Benefits

Our pension and other employee future benefit expense is calculated by our independent actuaries using assumptions determined by management. If actual experience were to differ from the assumptions used, we would recognize this difference in other comprehensive income.

Pension and other employee future benefit expense, plan assets and defined benefit obligations are also sensitive to changes in discount rates. We determine discount rates for all of our plans using high-quality AA rated corporate bond yields with terms matching the plans' specific cash flows.

Additional information regarding our accounting for pension and other employee future benefits is included in Note 21.

Impairment of Securities

We review investments in associates and joint ventures at each quarter-end reporting period to identify and evaluate investments that show indications of possible impairment. For these equity securities, a significant or prolonged decline in the fair value of a security below its cost is objective evidence of impairment.

Debt securities measured at amortized cost or FVOCI are assessed for impairment using the expected credit loss model. For securities determined to have low credit risk, the allowance for credit losses is measured at a 12-month expected credit loss.

Additional information regarding our accounting for debt securities measured at amortized cost or FVOCI and investments in associates and joint ventures, allowance for credit losses and the determination of fair value is included in Notes 3 and 17.

Income Taxes and Deferred Tax Assets

The provision for income taxes is calculated based on the expected tax treatment of transactions recorded in either our Consolidated Statement of Income or Consolidated Statement of Changes in Equity. In determining the provision for income taxes, we interpret tax legislation, case law and administrative positions in numerous jurisdictions and, based on our judgment, record our estimate of the amount required to settle tax obligations. We also make assumptions about the expected timing of the reversal of deferred tax assets and liabilities. If our interpretations and assumptions

differ from those of tax authorities or if the timing of reversals is not as expected, our provision for income taxes could increase or decrease in future periods. The amount of any such increase or decrease cannot be reasonably estimated.

Deferred tax assets are recognized only when it is probable that sufficient taxable profit will be available in future periods against which deductible temporary differences or unused tax losses and tax credits may be utilized. We are required to assess whether it is probable that our deferred tax assets will be realized. The factors used to assess the probability of realization are our past experience of income and capital gains, our forecast of future net income before taxes, and the remaining expiration period of tax loss carryforwards and tax credits. Changes in our assessment of these factors could increase or decrease our provision for income taxes in future periods.

Additional information regarding our accounting for income taxes is included in Note 22.

Goodwill and Intangible Assets

For the purpose of impairment testing, goodwill is allocated to our groups of cash-generating units (CGUs), which represent the lowest level within the bank at which goodwill is monitored for internal management purposes. Impairment testing is performed at least annually, by comparing the carrying values and the recoverable amounts of the CGUs to which goodwill has been allocated to determine whether the recoverable amount of each group is greater than its carrying value. If the carrying value of the group were to exceed its recoverable amount, an impairment calculation would be performed. The recoverable amount of a CGU is the higher of its fair value less costs to sell and value in use.

In determining fair value less costs to sell, we employ a discounted cash flow model consistent with those used when we acquire businesses. This model is dependent on assumptions related to revenue growth, discount rates, synergies achieved on acquisition and the availability of comparable acquisition data. Changes in any of these assumptions would affect the determination of fair value for each of the business units in a different manner. Management must exercise judgment and make assumptions in determining fair value less costs to sell, and differences in judgment and assumptions could affect the determination of fair value and any resulting impairment write-down.

Intangible assets with a definite life are amortized to income on either a straight-line or an accelerated basis over a period not exceeding 15 years, depending on the nature of the asset. We test definite-life intangible assets for impairment when circumstances indicate the carrying value may not be recoverable. Indefinite-life intangible assets are tested annually for impairment. If any intangible assets are determined to be impaired, we write them down to their recoverable amount, the higher of value in use and fair value less costs to sell, when this is less than the carrying value.

Additional information regarding goodwill and intangible assets is included in Note 11.

Insurance-Related Liabilities

Insurance claims and policy benefit liabilities represent current claims and estimates of future insurance policy benefit liabilities. Liabilities for life insurance contracts are determined using the Canadian Asset Liability Method, which incorporates best-estimate assumptions for mortality, morbidity, policy lapses, surrenders, future investment yields, policy dividends, administration costs and margins for adverse deviation. These assumptions are reviewed at least annually and updated to reflect actual experience and market conditions. The most significant impact on the valuation of a liability would result from a change in the assumption for future investment yields.

Additional information regarding insurance-related liabilities is included in Note 14.

Provisions

A provision, including for legal proceedings and restructuring charges, is recognized if, as a result of a past event, the bank has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are recorded at the best estimate of the amounts required to settle the obligation as at the balance sheet date, taking into account the risks and uncertainties associated with the obligation. Management and external experts are involved in estimating any provision, as necessary. The actual costs of settling some obligations may be substantially higher or lower than the amounts of the provisions.

Additional information regarding provisions is included in Note 24.

Transfer of Assets and Consolidation of Structured Entities

We enter into transactions in which we transfer assets, typically mortgage loans, mortgage-backed securities, and credit card loans, to a structured entity or third party to obtain alternate sources of funding or as part of our trading activities. We assess whether substantially all of the risks and rewards of or control over the assets have been transferred to determine if they qualify for derecognition. Where we continue to be exposed to substantially all of the repayment, interest rate and/or credit risk associated with the securitized assets, they do not qualify for derecognition. We continue to recognize the assets and the related cash proceeds as secured financings in our Consolidated Balance Sheet.

For securitization vehicles sponsored by the bank, the vehicles typically have limited decision-making authority. The structure of these vehicles limits the activities they can undertake, the types of assets they can hold and the funding of their activities. We control and consolidate these vehicles when we have the key decision-making powers necessary to obtain the majority of the benefits from their activities.

For certain investments in limited partnerships, we exercise judgment in determining whether we control an entity. Based on an assessment of our interests and rights, we have determined that we do not control certain entities, even though we may have an ownership interest greater than 50%. This may be the case when we are not the general partner in an arrangement and the general partner's rights most significantly affect the returns of the entity. Additionally, we have determined that we control certain entities despite having an ownership interest of less than 50%. This may be the case when we are the general partner in an arrangement and the general partner's rights most significantly affect the returns of the entity.

Transferred assets are discussed in greater detail in Note 6 and structured entities are discussed in greater detail in Notes 7 and 20.

Leases

We enter into leases as a lessee for which we recognize a lease liability and a corresponding right-of-use asset. In calculating our lease liability and corresponding right-of-use asset, we assess whether a contract is a lease by determining if we have the right to control the asset based on our ability to make decisions or direct how and for what purpose the asset is used. We evaluate the lease term based on the terms of the lease contract, including any extension or termination options that we are reasonably certain to exercise based on the economic rationale underlying the decision. We make estimates in determining the incremental borrowing rate that is used to discount lease liabilities, based on our expected costs of secured borrowing for the lease term.

Future Changes in IFRS

Insurance Contracts

In June 2020, the IASB issued amendments to IFRS 17 *Insurance Contracts* (IFRS 17), which included a deferral of the effective date, resulting in a new adoption date for the bank of November 1, 2023 instead of November 1, 2022. The amendments also simplify some requirements, such as excluding certain credit cards from the scope of IFRS 17 and providing a policy choice to exclude certain loan contracts from IFRS 17, allowing us to continue accounting for them as we do today. We continue to assess the impact of the standard on our future financial results.

Note 2: Cash and Interest Bearing Deposits with Banks

Cash and Cash Equivalents

(Canadian \$ in millions)	2021	2020
Cash and deposits with banks (1)	91,377	55,926
Cheques and other items in transit, net	1,884	1,482
Total cash and cash equivalents	93,261	57,408

(1) Includes deposits with the Bank of Canada, the U.S. Federal Reserve and other central banks.

Cheques and Other Items in Transit, Net

Cheques and other items in transit are recorded at cost and represent the net position of the uncleared cheques and other items in transit between us and other banks.

Cash Restrictions

Certain of our foreign operations are required to maintain reserves or minimum balances with central banks in their respective countries of operation, totalling \$110 million as at October 31, 2021 (\$111 million as at October 31, 2020).

Interest Bearing Deposits with Banks

Deposits with banks are recorded at amortized cost and include acceptances we have purchased that were issued by other banks. Interest income earned on these deposits is recorded on an accrual basis.

Note 3: Securities

Securities are divided into six types, each with a different purpose and accounting treatment. The types of securities we hold are as follows:

Trading securities are securities purchased for resale over a short period of time. Trading securities are recorded at fair value through profit or loss. Transaction costs and changes in fair value are recorded in our Consolidated Statement of Income in trading revenues.

Fair value through profit or loss securities are measured at fair value, with changes in fair value and related transaction costs recorded in our Consolidated Statement of Income in securities gains, other than trading, except as noted below. This category includes the following:

Securities Designated at FVTPL

In order to qualify for this designation, the security must have a reliably measurable fair value, and the designation eliminates or significantly reduces the inconsistent treatment that would otherwise arise from measuring the gains and losses on a different basis. Securities must be designated on initial recognition, and the designation is irrevocable. If these securities were not designated at FVTPL, they would be accounted for at either FVOCI or amortized cost.

We designate certain securities held by our insurance subsidiaries that support our insurance liabilities at fair value through profit or loss, since the actuarial calculation of insurance liabilities is based on the fair value of the investments supporting them. This designation aligns the accounting result with the way the portfolio is managed on a fair value basis. The change in fair value of the securities is recorded in non-interest revenue, insurance revenue, and the change in fair value of the liabilities is recorded in insurance claims, commissions and changes in policy benefit liabilities. The fair value of these investments of \$11,172 million as at October 31, 2021 (\$11,148 million as at October 31, 2020) is recorded in securities in our Consolidated Balance Sheet. The impact of recording these investments at fair value through profit or loss was a decrease of \$202 million in non-interest revenue, insurance revenue, for the year ended October 31, 2021 (an increase of \$281 million and an increase of \$1,006 million in 2020 and 2019, respectively).

Securities Mandatorily Measured at FVTPL

Securities managed on a fair value basis, but not held for trading, or debt securities with cash flows that do not represent solely payments of principal and interest and equity securities not held for trading or designated at FVOCI are classified as FVTPL. The fair value of these investments of \$3,038 million as at October 31, 2021 (\$2,420 million as at October 31, 2020) is recorded in securities in our Consolidated Balance Sheet.

Debt securities at FVOCI are debt securities purchased with the objective of both collecting contractual cash flows and selling the securities.

The securities' cash flows represent solely payments of principal and interest. These securities may be sold in response to or in anticipation of changes in interest rates and any resulting prepayment risk, changes in credit risk, changes in foreign currency risk or changes in funding sources or terms, or in order to meet liquidity needs.

Debt securities measured at FVOCI are initially recorded at fair value plus transaction costs. They are subsequently measured at fair value, with unrealized gains and losses recorded in our Consolidated Statement of Comprehensive Income until the security is sold or impaired. Gains and losses on disposal and impairment losses (recoveries) are recorded in our Consolidated Statement of Income in non-interest revenue, securities gains, other than trading. Interest income earned is recorded in our Consolidated Statement of Income in interest, dividend and fee income, securities, using the effective interest method.

Equity securities at FVOCI are equity securities for which we have elected to record changes in the fair value of the instrument in other comprehensive income as opposed to fair value through profit or loss. Gains or losses recorded on these instruments will never be recognized in profit or loss. Equity securities measured at FVOCI are not subject to an impairment assessment.

Debt securities at amortized cost are debt securities purchased with the objective of collecting contractual cash flows, and those cash flows represent solely payments of principal and interest. These securities are initially recorded at fair value plus transaction costs and are subsequently measured at amortized cost using the effective interest method. Impairment losses (recoveries) are recorded in our Consolidated Statement of Income in non-interest revenue, securities gains, other than trading. Interest income earned and amortization of premiums, discounts and transaction costs are recorded in our Consolidated Statement of Income in interest, dividend and fee income, securities.

Investments in associates and joint ventures are accounted for using the equity method of accounting. Investments in associates are those in which we exert significant influence over operating and financing decisions; generally companies in which we own between 20% and 50% of the voting shares. Investments in joint ventures are where we have joint control. Our share of the net income or loss, including any impairment losses, is recorded in non-interest revenue, investments in associates and joint ventures in our Consolidated Statement of Income. Any other comprehensive income amounts are reflected in the relevant sections of our Consolidated Statement of Comprehensive Income.

We account for all of our securities transactions using settlement date accounting in our Consolidated Balance Sheet. Changes in fair value between the trade date and settlement date are recorded in net income, except for those related to securities measured at FVOCI, which are recorded in other comprehensive income.

Impairment Review

Debt securities at amortized cost or FVOCI are assessed for impairment using the ECL model, with the exception of those determined to have low credit risk, where the allowance for credit losses is measured at a 12-month expected credit loss. A debt security is considered to have low credit risk if it has a low risk of default, the borrower has a strong capacity to meet its contractual cash flow obligations in the near term and adverse changes in economic and business conditions in the longer term may, but will not necessarily, reduce the ability of the borrower to fulfill its contractual cash flow obligations.

Debt securities at amortized cost totalling \$49,970 million as at October 31, 2021 (\$48,466 million as at October 31, 2020) are net of allowances for credit losses of \$2 million as at October 31, 2021 (\$1 million as at October 31, 2020).

Debt securities at FVOCI totalling \$62,991 million as at October 31, 2021 (\$73,314 million as at October 31, 2020) are net of allowances for credit losses of \$2 million as at October 31, 2021 (\$4 million as at October 31, 2020).

Fair Value Measurement

For traded securities, quoted market value is considered to be fair value. Quoted market value is based on bid or ask prices, depending on which is the most appropriate to measure fair value. Where market quotes are not available, we use estimation techniques to determine fair value. Additional information regarding fair value measurement techniques is included in Note 17.

Remaining Term to Maturity of Securities

The following table shows the remaining term to maturities of securities.

	Term to maturity						2021	2020
	Within 1 year	1 to 3 years	3 to 5 years	5 to 10 years	Over 10 years	No maturity	Total	Total
Trading Securities								
Issued or guaranteed by:								
Canadian federal government	1,292	2,039	1,669	1,603	993	-	7,596	10,900
Canadian provincial and municipal governments	894	843	583	701	2,817	-	5,838	8,335
U.S. federal government	1,733	3,620	1,849	1,803	577	-	9,582	8,418
U.S. states, municipalities and agencies	259	24	11	106	58	-	458	503
Other governments	525	520	534	247	72	-	1,898	2,516
NHA MBS, U.S. agency MBS and CMO (1)	23	140	183	243	13,465	-	14,054	12,297
Corporate debt	1,940	1,955	2,245	2,695	1,059	-	9,894	11,041
Trading loans	-	87	35	38	-	-	160	67
Corporate equity	-	-	-	-	-	54,931	54,931	43,757
Total trading securities	6,666	9,228	7,109	7,436	19,041	54,931	104,411	97,834
FVTPL Securities								
Issued or guaranteed by:								
Canadian federal government	679	28	-	10	146	-	863	601
Canadian provincial and municipal governments	-	47	5	84	1,244	-	1,380	1,429
U.S. federal government	38	-	-	-	-	-	38	44
Other governments	-	66	26	-	-	-	92	94
NHA MBS, U.S. agency MBS and CMO (1)	-	-	-	9	-	-	9	3
Corporate debt	226	67	310	969	6,132	-	7,704	7,897
Corporate equity	-	-	-	-	-	4,124	4,124	3,500
Total FVTPL securities	943	208	341	1,072	7,522	4,124	14,210	13,568
FVOCI Securities								
Issued or guaranteed by:								
Canadian federal government								
Amortized cost	4,073	4,714	4,175	75	50	-	13,087	22,240
Fair value	4,073	4,740	4,131	73	48	-	13,065	22,450
Yield (%)	1.40	1.71	1.29	1.10	1.60	-	1.48	1.44
Canadian provincial and municipal governments								
Amortized cost	1,329	1,168	166	300	10	-	2,973	4,628
Fair value	1,334	1,189	163	291	10	-	2,987	4,747
Yield (%)	1.02	1.82	1.28	1.95	2.75	-	1.45	1.46
U.S. federal government								
Amortized cost	997	1,458	3,817	12,827	1,942	-	21,041	16,881
Fair value	1,008	1,477	3,951	12,652	1,938	-	21,026	17,694
Yield (%)	2.16	1.94	2.08	1.12	1.95	-	1.48	1.73
U.S. states, municipalities and agencies								
Amortized cost	635	1,144	784	707	764	-	4,034	5,132
Fair value	640	1,171	806	724	773	-	4,114	5,276
Yield (%)	2.06	2.05	2.08	2.03	1.28	-	1.91	1.96
Other governments								
Amortized cost	2,807	2,406	735	528	-	-	6,476	7,222
Fair value	2,814	2,443	728	517	-	-	6,502	7,381
Yield (%)	0.89	1.48	0.93	1.85	-	-	1.19	1.63
NHA MBS (1)								
Amortized cost	87	411	603	-	21	-	1,122	1,583
Fair value	87	415	602	-	21	-	1,125	1,629
Yield (%)	1.18	1.74	0.88	-	1.56	-	1.23	1.79
U.S. agency MBS and CMO (1)								
Amortized cost	43	135	527	2,040	8,149	-	10,894	10,600
Fair value	44	139	555	2,082	8,191	-	11,011	10,903
Yield (%)	2.28	2.56	3.04	1.66	0.96	-	1.22	1.62
Corporate debt								
Amortized cost	1,231	683	907	268	58	-	3,147	3,153
Fair value	1,234	706	901	264	56	-	3,161	3,234
Yield (%)	0.85	2.26	1.04	2.14	3.35	-	1.37	1.72
Corporate equity								
Cost	-	-	-	-	-	103	103	90
Fair value	-	-	-	-	-	132	132	93
Total cost or amortized cost	11,202	12,119	11,714	16,745	10,994	103	62,877	71,529
Total fair value	11,234	12,280	11,837	16,603	11,037	132	63,123	73,407
Yield (%)	1.27	1.78	1.62	1.28	1.18	-	1.42	1.61
Amortized Cost Securities								
Issued or guaranteed by:								
Canadian federal government								
Amortized cost	277	4,781	1,966	60	-	-	7,084	6,238
Fair value	283	4,799	1,981	57	-	-	7,120	6,260
Canadian provincial and municipal governments								
Amortized cost	527	1,644	2,230	1,241	-	-	5,642	5,650
Fair value	539	1,654	2,304	1,226	-	-	5,723	5,706
U.S. federal government								
Amortized cost	851	2,278	1,613	891	-	-	5,633	8,785
Fair value	857	2,261	1,576	895	-	-	5,589	8,805
Other governments								
Amortized cost	375	689	283	66	-	-	1,413	1,480
Fair value	388	690	278	64	-	-	1,420	1,485
NHA MBS, U.S. agency MBS and CMO (1)								
Amortized cost	90	740	2,665	4,031	21,031	-	28,557	24,769
Fair value	93	752	2,657	4,044	20,761	-	28,307	25,198
Corporate debt								
Amortized cost	256	603	588	145	49	-	1,641	1,544
Fair value	257	608	591	146	49	-	1,651	1,555
Total amortized cost	2,376	10,735	9,345	6,434	21,080	-	49,970	48,466
Total fair value	2,417	10,764	9,387	6,432	20,810	-	49,810	49,009
Investments in associates and joint ventures								
Carrying value	-	-	-	-	-	1,135	1,135	985
Total carrying value or amortized cost of securities	21,187	32,290	28,509	31,687	58,637	60,293	232,603	232,382
Total carrying value of securities	21,219	32,451	28,632	31,545	58,680	60,322	232,849	234,260
Total by Currency (in Canadian \$ equivalent)								
Canadian dollar	10,341	15,845	13,510	6,225	12,351	27,661	85,933	100,544
U.S. dollar	9,034	16,268	14,775	25,034	46,207	29,104	140,422	125,795
Other currencies	1,844	338	347	286	122	3,557	6,494	7,921
Total securities	21,219	32,451	28,632	31,545	58,680	60,322	232,849	234,260

(1) These amounts are supported by insured mortgages or issued by U.S. agencies and government-sponsored enterprises. NHA refers to the National Housing Act, MBS refers to mortgage-backed securities and CMO refers to collateralized mortgage obligations.

Yields in the table above are calculated using the cost of the security and the contractual interest rate associated with each security, adjusted for any amortization of premiums and discounts. Tax effects are not taken into consideration. The term to maturity included in the table above is based on the contractual maturity date of the security. Actual maturities could differ, as issuers may have the right to call or prepay obligations.

Unrealized Gains and Losses on FVOCI Securities

The following table summarizes unrealized gains and losses:

(Canadian \$ in millions)				2021		2020		
	Cost or amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value	Cost or amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
Issued or guaranteed by:								
Canadian federal government	13,087	62	84	13,065	22,240	211	1	22,450
Canadian provincial and municipal governments	2,973	29	15	2,987	4,628	119	-	4,747
U.S. federal government	21,041	282	297	21,026	16,881	844	31	17,694
U.S. states, municipalities and agencies	4,034	85	5	4,114	5,132	147	3	5,276
Other governments	6,476	55	29	6,502	7,222	168	9	7,381
NHA MBS	1,122	6	3	1,125	1,583	46	-	1,629
U.S. agency MBS and CMO	10,894	151	34	11,011	10,600	307	4	10,903
Corporate debt	3,147	34	20	3,161	3,153	91	10	3,234
Corporate equity	103	29	-	132	90	3	-	93
Total	62,877	733	487	63,123	71,529	1,936	58	73,407

Unrealized gains (losses) may be offset by related (losses) gains on hedge contracts.

Interest, Dividend and Fee Income

Interest, dividend and fee income has been included in our Consolidated Statement of Income as follows, excluding investments in associates and joint ventures and trading securities. Related income for trading securities is included under Trading-Related Revenue in Note 17.

(Canadian \$ in millions)	2021	2020	2019
FVTPL	22	17	34
FVOCI	470	959	1,585
Amortized cost	419	573	268
Total	911	1,549	1,887

Non-Interest Revenue

Net gains and losses from securities, excluding gains and losses on trading securities, have been included in our Consolidated Statement of Income as follows:

(Canadian \$ in millions)	2021	2020	2019
FVTPL securities	535	30	164
FVOCI securities (1)			
Gross realized gains	170	109	209
Gross realized (losses)	(113)	(13)	(123)
Impairment losses	(1)	(2)	(1)
Securities gains, other than trading (2)	591	124	249

(1) Gains (losses) are net of (losses) gains on hedge contracts.

(2) The following amounts of income related to our insurance operations were included in non-interest revenue, insurance revenue, in our Consolidated Statement of Income: Interest, dividend and fee income of \$379 million, \$416 million and \$407 million for the years ended October 31, 2021, 2020 and 2019, respectively; securities gains, other than trading, from FVOCI securities of \$1 million, \$19 million and \$11 million for the years ended October 31, 2021, 2020 and 2019, respectively; and securities gains (losses), other than trading, from securities designated at FVTPL of \$(202) million, \$281 million and \$1,006 million for the years ended October 31, 2021, 2020 and 2019, respectively.

Gains and losses on trading securities are included in trading-related revenue in Note 17.

Note 4: Loans and Allowance for Credit Losses

Loans

Loans are initially measured at fair value plus directly attributable costs, and are subsequently measured at amortized cost using the effective interest method where the cash flows of those loans represent solely payments of principal and interest, otherwise those loans are measured at FVTPL.

Where the loans are held with the objective of both collecting contractual cash flows and selling the loans, and the cash flows represent solely payments of principal and interest, these loans are measured at FVOCI. The effective interest method allocates interest income over the expected term of the loan by applying the effective interest rate to the carrying amount of the loan. The effective interest rate is defined as the rate that exactly discounts estimated future cash receipts through the expected term of the loan to the net carrying amount of the loan. Under the effective interest method, the amount recognized in interest, dividend and fee income, loans, varies over the term of the loan based on the principal outstanding. The treatment of interest income for impaired loans is described below.

Securities Borrowed or Purchased Under Resale Agreements

Securities borrowed or purchased under resale agreements represent the amounts we will receive as a result of our commitment to return or resell securities that we have borrowed or purchased, back to the original lender or seller, on a specified date at a specified price. We account for these instruments as if they were loans.

Lending Fees

Lending fees primarily arise in Personal and Commercial Banking and BMO Capital Markets. The accounting treatment for lending fees varies depending on the transaction. Some loan origination, restructuring and renegotiation fees are recorded as interest income over the term of the loan, while other lending fees are taken into income at the time of loan origination. Commitment fees are calculated as a percentage of the facility balance at the end of each period. The fees are recorded as interest income over the term of the loan, unless we believe the loan commitment will not be used. In the latter case, commitment fees are recorded as lending fees earned over the commitment period. Loan syndication fees are payable and included in lending fees at the time the syndication is completed, unless the yield on any loans we retain is less than that of other comparable lenders involved in the financing. In the latter case, an appropriate portion of the syndication fee is recorded as interest income over the term of the loan.

Impaired Loans

We classify a loan as impaired (Stage 3) when one or more loss events have occurred, such as bankruptcy, payment default or when collection of the full amount of principal and interest is no longer reasonably assured. Generally, consumer loans in both Canada and the U.S. are classified as impaired when payment is contractually 90 days past due, or one year past due for residential mortgages if guaranteed by the Government of Canada. Credit card loans are immediately written off when principal or interest payments are 180 days past due, and are not reported as impaired. In Canada, consumer instalment loans, other personal loans and some small business loans are normally written off when they are one year past due. In the U.S., all consumer loans are generally written off when they are 180 days past due, except for non-real estate term loans, which are generally written off when they are 120 days past due. For the purpose of measuring the amount to be written off, the determination of the recoverable amount includes an estimate of future recoveries.

Corporate and commercial loans are classified as impaired when we determine there is no longer reasonable assurance that principal or interest will be collected in their entirety on a timely basis. Generally, we consider corporate and commercial loans to be impaired when payments are 90 days past due. Corporate and commercial loans are written off following a review on an individual loan basis that confirms all reasonable recovery attempts have been exhausted.

A loan will be reclassified to performing status when we determine that there is reasonable assurance of full and timely repayment of interest and principal in accordance with the terms and conditions of the loan, and that none of the criteria for classification of the loan as impaired continues to apply.

Loans are in default when the borrower is unlikely to pay its credit obligations in full without recourse by the bank, such as realizing security, or when the borrower's payments are more than 90 days past due (180 days for credit card loans). Overdrafts are considered to be past due once the customer has breached an advised limit or has been advised of a limit lower than currently outstanding or, in the case of retail overdrafts, has not brought the overdraft down to a \$nil balance within a specified time period.

Once a loan is identified as impaired, we continue to recognize interest income based on the original effective interest rate on the loan amount net of its related allowance. In the periods following the recognition of impairment, adjustments to the allowance for these loans reflecting the time value of money are recognized as interest income. Interest income on impaired loans of \$71 million was recognized for the year ended October 31, 2021 (\$96 million in 2020 and \$80 million in 2019).

During the year ended October 31, 2021, we recorded a net loss of \$10 million before tax (loss of \$46 million in 2020 and gain of \$11 million in 2019) on the sale of impaired and written off loans.

Allowance for Credit Losses (ACL)

The allowance for credit losses recorded in our Consolidated Balance Sheet is maintained at a level that we consider adequate to absorb credit-related losses on our loans and other credit instruments. The allowance for credit losses amounted to \$2,958 million as at October 31, 2021 (\$3,814 million in 2020), of which \$2,564 million (\$3,303 million in 2020) was recorded in loans and \$394 million (\$511 million in 2020) was recorded in other liabilities in our Consolidated Balance Sheet.

Significant changes in the gross balances, including originations, maturities and repayments in the normal course of operations, impact the allowance for credit losses.

Allowance on Performing Loans

We maintain an allowance in order to cover impairment in the existing portfolio for loans that have not yet been individually identified as impaired. Our approach to establishing and maintaining the allowance on performing loans is based on the requirements of IFRS, considering guidelines issued by OSFI.

Under the IFRS 9 ECL methodology, an allowance is recorded for expected credit losses on financial assets regardless of whether there has been an actual impairment. We recognize a loss allowance at an amount generally equal to 12-month expected credit losses, if the credit risk at the reporting date has not increased significantly since initial recognition (Stage 1). We will record expected credit losses over the remaining life of performing financial assets which are considered to have experienced a significant increase in credit risk (Stage 2).

The determination of a significant increase in credit risk takes into account many different factors and varies by product and risk segment. The bank's methodology for determining significant increase in credit risk is based on the change in probability of default (PD) between origination and reporting date, assessed using probability-weighted scenarios as well as certain other criteria, such as 30-days past due and watchlist status.

For each exposure, ECL is a function of PD, exposure at default (EAD) and loss given default (LGD), with the timing of the loss also considered, and is estimated by incorporating forward-looking economic information and through the use of experienced credit judgment to reflect factors not captured in ECL models.

PD represents the likelihood that a loan will not be repaid and will go into default in either a 12-month horizon for Stage 1 or a lifetime horizon for Stage 2. PD for each individual instrument is modelled based on historical data and is estimated based on current market conditions and reasonable and supportable information about future economic conditions.

EAD is modelled based on historical data and represents an estimate of the amount of credit exposure outstanding at the time a default may occur. For off-balance sheet and undrawn amounts, EAD includes an estimate of any further amounts to be drawn at the time of default.

LGD is the amount that may not be recovered in the event of default and is modelled based on historical data and reasonable and supportable information about future economic conditions, where appropriate. LGD takes into consideration the amount and quality of any collateral held.

We consider past events, current market conditions and reasonable supportable forward-looking information about future economic conditions in determining the amount of expected losses. In assessing information about possible future economic conditions, we utilize multiple economic scenarios, including our base case scenario, which in our view represents the most probable outcome, as well as benign and adverse scenarios, all of which are developed by our Economics group. Key economic variables used in the determination of the allowance for credit losses reflect the geographic diversity of our portfolios, where appropriate.

In considering the lifetime of a loan, the contractual period of the loan, including prepayment, extension and other options, is generally used. For revolving instruments, such as credit cards, which may not have a defined contractual period, the lifetime is based on historical behaviour.

Our ECL methodology also requires the use of experienced credit judgment to incorporate the estimated impact of factors that are not captured in the modelled ECL results. We applied experienced credit judgment to reflect the continuing impact of the uncertain environment on credit conditions and the economy as a result of the COVID-19 pandemic.

Allowance on Impaired Loans

We maintain an allowance on individually identified impaired loans (Stage 3) of \$498 million as at October 31, 2021 (\$727 million as at October 31, 2020) on our gross impaired loans of \$2,169 million as at October 31, 2021 (\$3,638 million as at October 31, 2020), to reduce their carrying value to an expected recoverable amount of \$1,671 million as at October 31, 2021 (\$2,911 million as at October 31, 2020).

We review our loans on an ongoing basis to assess whether any loans should be classified as impaired and whether an allowance or write-off should be recorded (excluding credit card loans, which are written off when principal or interest payments are 180 days past due). The review of individually significant problem loans is conducted at least quarterly by the account managers, each of whom assesses the ultimate collectability and estimated recoveries for a specific loan based on all events and conditions that are relevant to the loan. This assessment is then reviewed and approved by an independent credit officer.

Individually Significant Impaired Loans

To determine the amount we expect to recover from an individually significant impaired loan, we use the value of the estimated future cash flows discounted at the loan's original effective interest rate. The determination of estimated future cash flows of a collateralized impaired loan reflects the expected realization of the underlying security, net of expected costs and any amounts legally required to be paid to the borrower. Security can vary by type of loan and may include cash, securities, real estate properties, accounts receivable, guarantees, inventory or other capital assets.

Individually Insignificant Impaired Loans

Residential mortgages and consumer instalment and other personal loans are individually insignificant and may be assessed individually or collectively for losses at the time of impairment, taking into account historical loss experience and expectations of future economic conditions. Collectively assessed loans are grouped together by similar risk characteristics, such as type of instrument, geographic location, industry, type of collateral and term to maturity.

Loans: Credit Risk Exposure

The following table sets out our credit risk exposure for all loans carried at amortized cost, FVOCI or FVTPL as at October 31, 2021 and 2020.

Stage 1 represents those performing loans carried with up to a 12-month expected credit loss, Stage 2 represents those performing loans carried with a lifetime expected credit loss, and Stage 3 represents those loans with a lifetime expected credit loss that are credit impaired.

(Canadian \$ in millions)	2021				2020			
	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3	Total
Loans: Residential mortgages								
Exceptionally low	4	-	-	4	1	-	-	1
Very low	94,566	179	-	94,745	79,295	429	-	79,724
Low	23,471	1,293	-	24,764	24,490	2,481	-	26,971
Medium	12,066	2,250	-	14,316	11,560	6,461	-	18,021
High	167	306	-	473	172	446	-	618
Not rated	1,051	46	-	1,097	1,132	148	-	1,280
Impaired	-	-	351	351	-	-	409	409
Gross residential mortgages	131,325	4,074	351	135,750	116,650	9,965	409	127,024
Allowance for credit losses	46	39	12	97	51	75	16	142
Carrying amount	131,279	4,035	339	135,653	116,599	9,890	393	126,882
Loans: Consumer instalment and other personal								
Exceptionally low	1,487	37	-	1,524	1,550	31	-	1,581
Very low	30,672	8	-	30,680	26,645	37	-	26,682
Low	21,660	534	-	22,194	20,935	585	-	21,520
Medium	13,336	3,607	-	16,943	10,324	4,334	-	14,658
High	661	1,375	-	2,036	429	1,470	-	1,899
Not rated	3,450	50	-	3,500	3,372	96	-	3,468
Impaired	-	-	287	287	-	-	340	340
Gross consumer instalment and other personal	71,266	5,611	287	77,164	63,255	6,553	340	70,148
Allowance for credit losses	113	333	91	537	134	429	105	668
Carrying amount	71,153	5,278	196	76,627	63,121	6,124	235	69,480
Loans: Credit cards (1)								
Exceptionally low	2,532	-	-	2,532	2,252	-	-	2,252
Very low	450	-	-	450	1,106	15	-	1,121
Low	1,801	66	-	1,867	899	148	-	1,047
Medium	1,743	663	-	2,406	1,611	899	-	2,510
High	75	287	-	362	58	377	-	435
Not rated	486	-	-	486	524	-	-	524
Impaired	-	-	-	-	-	-	-	-
Gross credit cards	7,087	1,016	-	8,103	6,450	1,439	-	7,889
Allowance for credit losses	67	209	-	276	61	272	-	333
Carrying amount	7,020	807	-	7,827	6,389	1,167	-	7,556
Loans: Business and government (2)								
Acceptable								
Investment grade	144,807	1,446	-	146,253	125,216	3,576	-	128,792
Sub-investment grade	85,375	14,534	-	99,909	88,745	30,108	-	118,853
Watchlist	-	6,137	-	6,137	-	8,621	-	8,621
Impaired	-	-	1,531	1,531	-	-	2,889	2,889
Gross business and government	230,182	22,117	1,531	253,830	213,961	42,305	2,889	259,155
Allowance for credit losses	529	730	395	1,654	510	1,044	606	2,160
Carrying amount	229,653	21,387	1,136	252,176	213,451	41,261	2,283	256,995
Gross total loans and acceptances	439,860	32,818	2,169	474,847	400,316	60,262	3,638	464,216
Net total loans and acceptances	439,105	31,507	1,671	472,283	399,560	58,442	2,911	460,913
Commitments and financial guarantee contracts								
Acceptable								
Investment grade	154,975	2,367	-	157,342	139,732	1,935	-	141,667
Sub-investment grade	46,827	8,164	-	54,991	44,443	20,421	-	64,864
Watchlist	-	2,453	-	2,453	-	4,861	-	4,861
Impaired	-	-	682	682	-	-	1,261	1,261
Allowance for credit losses	195	186	13	394	211	288	12	511
Carrying amount (3)(4)	201,607	12,798	669	215,074	183,964	26,929	1,249	212,142

(1) Credit card loans are immediately written off when principal or interest payments are 180 days past due, and as a result are not reported as impaired in Stage 3.

(2) Includes customers' liability under acceptances.

(3) Represents the total contractual amounts of undrawn credit facilities and other off-balance sheet exposures, excluding personal lines of credit and credit cards that are unconditionally cancellable at our discretion.

(4) Certain commercial borrower commitments are conditional and may include recourse to parties.

Certain comparative figures have been reclassified to conform with the current year's presentation.

The following table shows the continuity in the loss allowance, by product type, for the years ended October 31, 2021 and 2020. Transfers represent the amount of ECL that moved between stages during the year, for example, moving from a 12-month (Stage 1) to a lifetime (Stage 2) ECL measurement basis. Net remeasurements represent the ECL impact due to transfers between stages, as well as changes in economic forecasts and credit quality. Model changes include new calculation models or methodologies.

(Canadian \$ in millions)				2021				2020
	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3	Total
Loans: Residential mortgages								
Balance as at beginning of year	51	75	26	152	15	33	38	86
Transfer to Stage 1	62	(53)	(9)	-	25	(22)	(3)	-
Transfer to Stage 2	(4)	21	(17)	-	(3)	10	(7)	-
Transfer to Stage 3	-	(13)	13	-	-	(5)	5	-
Net remeasurement of loss allowance	(93)	24	29	(40)	6	70	22	98
Loan originations	38	-	-	38	14	-	-	14
Derecognitions and maturities	(7)	(12)	-	(19)	(3)	(6)	-	(9)
Model changes	-	-	-	-	(3)	(5)	-	(8)
Total Provision for Credit Losses (PCL) (1)	(4)	(33)	16	(21)	36	42	17	95
Write-offs (2)	-	-	(12)	(12)	-	-	(11)	(11)
Recoveries of previous write-offs	-	-	11	11	-	-	8	8
Foreign exchange and other	(1)	(2)	(22)	(25)	-	-	(26)	(26)
Balance as at end of year	46	40	19	105	51	75	26	152
Loans: Consumer instalment and other personal								
Balance as at beginning of year	148	454	105	707	89	333	136	558
Transfer to Stage 1	297	(287)	(10)	-	189	(180)	(9)	-
Transfer to Stage 2	(30)	66	(36)	-	(25)	86	(61)	-
Transfer to Stage 3	(7)	(94)	101	-	(4)	(96)	100	-
Net remeasurement of loss allowance	(289)	247	103	61	(148)	315	196	363
Loan originations	86	-	-	86	49	-	-	49
Derecognitions and maturities	(27)	(49)	-	(76)	(18)	(38)	-	(56)
Model changes	(48)	26	-	(22)	16	33	-	49
Total PCL (1)	(18)	(91)	158	49	59	120	226	405
Write-offs (2)	-	-	(236)	(236)	-	-	(320)	(320)
Recoveries of previous write-offs	-	-	86	86	-	-	87	87
Foreign exchange and other	(2)	(6)	(22)	(30)	-	1	(24)	(23)
Balance as at end of year	128	357	91	576	148	454	105	707
Loans: Credit cards								
Balance as at beginning of year	110	321	-	431	80	225	-	305
Transfer to Stage 1	194	(194)	-	-	152	(152)	-	-
Transfer to Stage 2	(28)	28	-	-	(32)	32	-	-
Transfer to Stage 3	(1)	(172)	173	-	(1)	(178)	179	-
Net remeasurement of loss allowance	(191)	292	21	122	(100)	429	82	411
Loan originations	39	-	-	39	18	-	-	18
Derecognitions and maturities	(7)	(29)	-	(36)	(6)	(25)	-	(31)
Model changes	-	-	-	-	(1)	(10)	-	(11)
Total PCL (1)	6	(75)	194	125	30	96	261	387
Write-offs (2)	-	-	(266)	(266)	-	-	(333)	(333)
Recoveries of previous write-offs	-	-	94	94	-	-	85	85
Foreign exchange and other	(2)	(1)	(22)	(25)	-	-	(13)	(13)
Balance as at end of year	114	245	-	359	110	321	-	431
Loans: Business and government								
Balance as at beginning of year	658	1,258	608	2,524	338	496	311	1,145
Transfer to Stage 1	505	(496)	(9)	-	180	(172)	(8)	-
Transfer to Stage 2	(101)	172	(71)	-	(184)	195	(11)	-
Transfer to Stage 3	(2)	(97)	99	-	(8)	(285)	293	-
Net remeasurement of loss allowance	(549)	334	138	(77)	227	1,106	744	2,077
Loan originations	329	-	-	329	208	-	-	208
Derecognitions and maturities	(140)	(214)	-	(354)	(85)	(128)	-	(213)
Model changes	(5)	(19)	-	(24)	(30)	8	-	(22)
Total PCL (1)	37	(320)	157	(126)	308	724	1,018	2,050
Write-offs (2)	-	-	(336)	(336)	-	-	(716)	(716)
Recoveries of previous write-offs	-	-	42	42	-	-	72	72
Foreign exchange and other	(33)	(83)	(70)	(186)	12	38	(77)	(27)
Balance as at end of year	662	855	401	1,918	658	1,258	608	2,524
Total as at end of year	950	1,497	511	2,958	967	2,108	739	3,814
Comprised of: Loans	755	1,311	498	2,564	756	1,820	727	3,303
Other credit instruments (3)	195	186	13	394	211	288	12	511

(1) Excludes PCL on other assets of \$(7) million for the year ended October 31, 2021 (\$16 million in 2020).

(2) Generally, we continue to seek recovery on amounts that were written off during the year, unless the loan is sold, we no longer have the right to collect or we have exhausted all reasonable efforts to collect.

(3) Other credit instruments, including off-balance sheet items, are recorded in other liabilities in our Consolidated Balance Sheet.

Loans and allowance for credit losses by geographic region as at October 31, 2021 and 2020 are as follows:

(Canadian \$ in millions)	2021				2020			
	Gross amount	Allowance for credit losses on impaired loans (2)	Allowance for credit losses on performing loans (3)	Net amount	Gross amount	Allowance for credit losses on impaired loans (2)	Allowance for credit losses on performing loans (3)	Net amount
By geographic region (1):								
Canada	299,905	345	1,143	298,417	276,975	303	1,323	275,349
United States	153,479	153	910	152,416	161,725	410	1,225	160,090
Other countries	7,442	-	13	7,429	12,023	14	28	11,981
Total	460,826	498	2,066	458,262	450,723	727	2,576	447,420

(1) Geographic region is based upon the country of ultimate risk.

(2) Excludes allowance for credit losses on impaired loans of \$13 million for other credit instruments, which is included in other liabilities (\$12 million as at October 31, 2020).

(3) Excludes allowance for credit losses on performing loans of \$381 million for other credit instruments, which is included in other liabilities (\$499 million as at October 31, 2020).

Certain comparative figures have been reclassified to conform with the current year's presentation.

Impaired (Stage 3) loans, including the related allowances, as at October 31, 2021 and 2020 are as follows:

(Canadian \$ in millions)	2021			2020		
	Gross impaired amount (3)	Allowance for credit losses on impaired loans (4)	Net impaired amount (3)	Gross impaired amount (3)	Allowance for credit losses on impaired loans (4)	Net impaired amount (3)
Residential mortgages	351	12	339	409	16	393
Consumer instalment and other personal	287	91	196	340	105	235
Business and government (1)	1,531	395	1,136	2,889	606	2,283
Total	2,169	498	1,671	3,638	727	2,911
By geographic region (2):						
Canada	1,195	345	850	1,343	303	1,040
United States	974	153	821	2,211	410	1,801
Other countries	-	-	-	84	14	70
Total	2,169	498	1,671	3,638	727	2,911

(1) Includes customers' liability under acceptances.

(2) Geographic region is based upon the country of ultimate risk.

(3) Gross impaired loans and net impaired loans exclude purchased credit impaired loans.

(4) Excludes allowance for credit losses on impaired loans of \$13 million for other credit instruments, which is included in other liabilities (\$12 million as at October 31, 2020).

Loans Past Due Not Impaired

Loans that are past due but not classified as impaired are loans where our customers have failed to make payments when contractually due but for which we expect the full amount of principal and interest payments to be collected, or loans which are held at fair value. The following table presents loans that are past due but not classified as impaired as at October 31, 2021 and 2020. Loans less than 30 days past due are excluded as they are not generally representative of the borrowers' ability to meet their payment obligations.

(Canadian \$ in millions)	2021			2020		
	30 to 89 days	90 days or more	Total	30 to 89 days	90 days or more	Total
Residential mortgages	404	14	418	543	43	586
Credit card, consumer instalment and other personal	279	59	338	345	65	410
Business and government	264	33	297	330	22	352
Total	947	106	1,053	1,218	130	1,348

Fully secured loans with amounts between 90 and 180 days past due that we have not classified as impaired totalled \$36 million and \$53 million as at October 31, 2021 and 2020, respectively.

ECL Sensitivity and Key Economic Variables

The allowance for performing loans is sensitive to changes in both economic forecasts and the probability-weight assigned to each forecast scenario. Many of the factors have a high degree of interdependency, although there is no single factor to which loan impairment allowances as a whole are sensitive.

As at October 31, 2021, our base case scenario depicts a stronger economic forecast in both Canada and the United States compared to the base case economic forecast as at October 31, 2020, which depicted more moderate economic growth over the near-term projection period. If we assumed a 100% base case economic forecast and included the impact of loan migration by restaging, with other assumptions held constant including the application of experienced credit judgment, the allowance for performing loans would be approximately \$1,725 million as at October 31, 2021 (\$2,375 million as at October 31, 2020) compared to the reported allowance for performing loans of \$2,447 million (\$3,075 million as at October 31, 2020).

As at October 31, 2021, our adverse case economic forecast depicts a contracting economy with annual average real GDP declining in both Canada and the United States. Despite adopting a more severe adverse scenario during fiscal 2021, the adverse case economic outlook as at October 31, 2020 depicted a more severe economic contraction in Canada and the United States compared with the adverse case as at October 31, 2021 due to the improvement in economic conditions year over year. If we assumed a 100% adverse economic forecast and included the impact of loan migration by restaging, with other assumptions held constant including the application of experienced credit judgment, the allowance for performing loans would be approximately \$3,825 million as at October 31, 2021 (\$4,875 million as at October 31, 2020) compared to the reported allowance for performing loans of \$2,447 million (\$3,075 million as at October 31, 2020).

Actual results in a recession will differ as our portfolio will change through time due to migration, growth, risk mitigation actions and other factors. In addition, our allowance will reflect the three economic scenarios used in assessing the allowance, with weightings attached to adverse and benign scenarios often unequally weighted and the weightings will change through time.

The following table shows the key economic variables used to estimate the allowance on performing loans during the forecast period. The values shown represent the national annual average levels or growth rates for the next 12 months and subsequent 12 months following each reporting period for all scenarios. While the values disclosed below are national variables, we use regional variables in the underlying models and consider factors impacting particular industries where appropriate.

All figures are average annual values	As at October 31, 2021						As at October 31, 2020					
	Benign scenario		Base scenario		Adverse scenario		Benign scenario		Base scenario		Adverse scenario	
	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months
Real GDP growth rates (1)												
Canada	6.3%	5.5%	4.0%	3.9%	(2.7)%	(1.1)%	3.7%	6.4%	1.8%	4.2%	(4.4)%	(1.1)%
United States	7.1%	4.0%	4.8%	2.7%	(1.2)%	(1.1)%	1.6%	6.0%	(0.4)%	4.0%	(5.1)%	(1.2)%
Corporate BBB 10-year spread												
Canada	1.4%	1.7%	1.8%	2.0%	3.6%	4.4%	1.8%	1.9%	2.2%	2.2%	3.6%	4.5%
United States	0.9%	1.1%	1.2%	1.5%	4.2%	4.5%	1.7%	1.7%	2.0%	2.0%	3.9%	4.1%
Unemployment rates												
Canada	6.0%	4.9%	6.6%	5.7%	10.8%	12.7%	7.4%	6.1%	8.9%	7.5%	12.7%	13.9%
United States	4.2%	3.2%	4.7%	3.7%	8.5%	11.0%	6.4%	4.8%	8.0%	6.0%	11.5%	12.8%
Housing Price Index												
Canada (2)	18.2%	10.2%	15.1%	5.2%	(6.4)%	(18.0)%	10.3%	7.7%	7.2%	2.8%	(1.2)%	(8.7)%
United States (3)	14.6%	6.7%	12.3%	4.3%	(6.1)%	(15.5)%	4.6%	4.5%	2.4%	2.1%	(2.4)%	(6.2)%

(1) Real gross domestic product (GDP) and housing price index are four quarter averages of year-over-year growth rates.

(2) In Canada, we use the HPI Benchmark Composite.

(3) In the United States, we use the National Case-Shiller House Price Index.

The ECL approach requires the recognition of credit losses generally based on 12 months of expected losses for performing loans (Stage 1) and the recognition of lifetime expected losses on performing loans that have experienced a significant increase in credit risk since origination (Stage 2). Under our current probability-weighted scenarios, if all our performing loans were in Stage 1, our models would generate an allowance for performing loans of approximately \$1,775 million compared to the reported allowance for performing loans of \$2,447 million as at October 31, 2021 (\$2,300 million compared to the reported allowance for performing loans of \$3,075 million as at October 31, 2020).

Renegotiated Loans

From time to time we modify the contractual terms of a loan due to the poor financial condition of the borrower. We assess renegotiated loans for impairment consistent with our existing policies for impairment. When renegotiation leads to significant concessions being granted, and the concessions are for economic or legal reasons related to the borrower's financial difficulty that we would not otherwise consider, the loan is classified as impaired. We consider one or a combination of the following to be significant concessions: (1) a reduction of the stated interest rate, (2) an extension of the maturity date or dates at a stated interest rate lower than the current market rate for a new loan with similar terms, or (3) forgiveness of principal or accrued interest.

Renegotiated loans remain in performing status if the modifications are not considered to be significant or are returned to performing status when none of the criteria for classification as impaired continues to apply.

The carrying value of loans with lifetime allowance for credit losses modified during the year ended October 31, 2021 was \$37 million (\$8,649 million in 2020, which included modifications for COVID-19 payment deferrals of \$8,485). Modified loans of \$21 million (\$49 million in 2020 and \$36 million in 2019) were written off during the year ended October 31, 2021. As at October 31, 2021, \$29 million (\$1,469 million as at October 31, 2020) of loans previously modified saw their loss allowance during the year change from lifetime to 12-month expected credit loss.

Foreclosed Assets

Property or other assets that we receive from borrowers to satisfy their loan commitments are classified as either held for own use or held for sale according to management's intention, recorded initially at fair value for assets held for own use and at the lower of carrying value or fair value less costs to sell for any assets held for sale. Assets held for own use are subsequently accounted for in accordance with the relevant asset classification and assets held for sale are assessed for impairment.

During the year ended October 31, 2021, we foreclosed on impaired loans and received \$27 million of real estate properties that we classified as held for sale (\$44 million in 2020). As at October 31, 2021, real estate properties held for sale totalled \$11 million (\$27 million as at October 31, 2020). These properties are disposed of when considered appropriate.

Collateral

Collateral is used to manage credit risk related to securities borrowed or purchased under resale agreements, residential mortgages, consumer instalment and other personal loans, and business and government loans. Additional information on our collateral requirements is included in Notes 14 and 24, as well as in the blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis within this report.

Note 5: Risk Management

We have an enterprise-wide approach to the identification, measurement, monitoring and control of risks faced across our organization. The key risks related to our financial instruments are classified as credit and counterparty, market, and liquidity and funding risk. The COVID-19 pandemic continues to impact certain risks as outlined in the Enterprise Wide Risk Management section of our Management's Discussion and Analysis and where those risks are related to financial instruments, they have been included in the blue-tinted font as referenced below.

Credit and Counterparty Risk

Credit and counterparty risk is the potential for loss due to the failure of a borrower, endorser, guarantor or counterparty to repay a loan or honour another predetermined financial obligation. Credit risk arises predominantly with respect to loans, over-the-counter and centrally cleared derivatives and other credit instruments. This is the most significant measurable risk that we face.

Our risk management practices and key measures are disclosed in the blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis within this report. Additional information on credit risk related to loans and derivatives is included in Notes 4 and 8, respectively.

Market Risk

Market risk is the potential for adverse changes in the value of our assets and liabilities resulting from changes in market variables such as interest rates, credit spreads, foreign exchange rates, equity and commodity prices and their implied volatilities, and includes the risk of credit migration and default in our trading book. We incur market risk in our trading and underwriting activities, as well as in our structural banking activities.

Our market risk management practices and key measures are disclosed in the blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis within this report.

Liquidity and Funding Risk

Liquidity and funding risk is the potential for loss if we are unable to meet our financial commitments in a timely manner at reasonable prices as they become due. It is our policy to ensure that sufficient liquid assets and funding capacity are available to meet financial commitments, including liabilities to depositors and suppliers, as well as lending, investment and pledging commitments, even in times of stress. Managing liquidity and funding risk is essential to maintaining enterprise soundness and safety, depositor confidence and earnings stability.

Our liquidity and funding risk management practices and key measures are disclosed in the blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis within this report.

Note 6: Transfers of Financial Assets

Loan Securitization

We sell Canadian residential mortgages to third-party Canadian securitization programs, including the Canada Mortgage Bond program, directly to third-party investors under the National Housing Act Mortgage-Backed Securities (NHA MBS) program and under our own program. In 2020, we also participated in the Government of Canada's Insured Mortgage Purchase Program, launched as part of its response to COVID-19. We assess whether substantially all of the risks and rewards of or control over the loans have been transferred to determine whether they qualify for derecognition.

Under these programs, we are entitled to the payment over time of the excess of the sum of interest and fees collected from customers, in connection with the mortgages that were sold, over the yield paid to investors, less credit losses and other costs. We also act as counterparty in interest rate swap agreements where we pay the interest due to Canada Mortgage Bond holders and receive the interest on the underlying mortgages, which are converted into MBS through the NHA MBS program and sold to Canada Housing Trust. Since we continue to be exposed to substantially all the prepayment, interest rate and credit risk associated with the securitized mortgages, they do not qualify for derecognition. We continue to recognize the mortgages and the related cash proceeds as secured financing in our Consolidated Balance Sheet. The interest and fees collected, net of the yield paid to investors, are recorded in net interest income using the effective interest method over the term of the securitization. Credit losses associated with the mortgages are recorded in the provision for credit losses. During the year ended October 31, 2021, we sold \$7,614 million of mortgages to these programs (\$6,644 million in 2020).

The following table presents the carrying amounts and fair values of transferred assets that did not qualify for derecognition and the associated liabilities:

(Canadian \$ in millions)	2021		2020	
	Carrying amount (1)	Fair value	Carrying amount (1)	Fair value
Assets				
Trading securities (2)	997		345	
Residential mortgages	7,847		8,453	
Other related assets (3)	10,009		10,363	
Total	18,853	18,859	19,161	19,357
Associated liabilities (4)	18,208	18,323	18,617	19,213

(1) Carrying amount of loans is net of allowance, where applicable.

(2) Trading securities represent collateralized mortgage obligations issued by third-party sponsored vehicles, where we do not substantially transfer all the risks and rewards of ownership to third-party investors.

(3) Other related assets represent payments received on account of mortgages pledged under securitization programs that have not yet been applied against the associated liabilities. The payments received are held in permitted instruments on behalf of the investors in the securitization vehicles until principal payments are required to be made on the associated liabilities. In order to compare all assets supporting the associated liabilities, this amount is added to the carrying amount of the securitized assets in the table above.

(4) Associated liabilities are recognized in Securitization and structured entities' liabilities in our Consolidated Balance Sheet.

Continuing Involvement in Transferred Financial Assets that Qualify for Derecognition

We retain the mortgage servicing rights, representing our continuing involvement, for certain mortgage loans purchased or originated in the U.S. which are sold and derecognized. During the year ended October 31, 2021, we sold and derecognized \$631 million of these loans (\$720 million in

2020 and \$460 million in 2019) and recognized a \$32 million gain (\$33 million in 2020 and \$15 million in 2019) in non-interest revenue, other. As at October 31, 2021, the carrying value of the mortgage servicing rights was \$29 million (\$29 million as at October 31, 2020) and the fair value was \$28 million (\$30 million as at October 31, 2020).

We retain the residual interests, representing our continuing involvement, for certain commercial mortgage loans purchased or originated in the U.S. which are sold and derecognized. During the year ended October 31, 2021, we sold and derecognized \$1,252 million of these loans (\$56 million in 2020 and \$nil in 2019) and recognized a gain of \$3 million upon transfer (\$nil in 2020 and \$nil in 2019). The carrying values of our retained interests classified as debt securities at amortized cost and loans were \$7 million and \$7 million, respectively, as at October 31, 2021 (\$2 million and \$nil as at October 31, 2020). Fair value was equal to carrying value on these dates.

In addition, we hold U.S. government agency collateralized mortgage obligations (CMOs) issued by third-party sponsored vehicles, which we may further securitize by packaging them into new CMOs prior to selling to third-party investors. Where we do not substantially transfer all the risks and rewards of ownership to third-party investors, we continue to recognize these CMOs and the related cash proceeds as secured financing in our Consolidated Balance Sheet. During the year, we sold CMOs that qualified for derecognition, where retained interests represent our continuing involvement and are managed as part of larger portfolios held for either trading, liquidity or hedging purposes. Where we sold these CMOs, the associated gains and losses are recognized in non-interest revenue, trading revenues. As at October 31, 2021, the fair value of our retained interests in these CMOs was \$3 million, classified as trading securities in our Consolidated Balance Sheet (\$28 million as at October 31, 2020). Refer to Note 3 for further information.

Other Transferred Financial Assets

In the second quarter of 2020, the Canadian Government launched the Canada Emergency Business Account Program as part of its response to COVID-19, in which we issued loans that are funded by the government. We determined these loans qualify for derecognition, as substantially all the risks and rewards were transferred; therefore, we do not recognize these loans in our Consolidated Balance Sheet.

Securities Lent or Sold Under Repurchase Agreements

Securities lent or sold under repurchase agreements represent short-term funding transactions in which we sell securities that we own and simultaneously commit to repurchase the same securities at a specified price on a specified date in the future. We retain substantially all the risks and rewards associated with the securities and we continue to recognize them in our Consolidated Balance Sheet, with the obligation to repurchase these securities recorded as secured borrowing transactions at the amount owing. The carrying value of these securities approximates the carrying value of the associated liabilities due to their short-term nature. As at October 31, 2021, the carrying values of securities lent and securities sold under repurchase agreements were \$9,662 million and \$87,894 million, respectively (\$7,696 million and \$80,962 million, respectively, as at October 31, 2021). The interest expense related to these liabilities is recorded on an accrual basis in interest expense, other liabilities, in our Consolidated Statement of Income.

Note 7: Structured Entities

We enter into certain transactions in the ordinary course of business which involve the establishment of SEs to facilitate or secure customer transactions and to obtain alternate sources of funding. We are required to consolidate a SE if we control the entity. We control a SE when we have power over the SE, exposure to variable returns as a result of our involvement, and the ability to exercise power to affect the amount of our returns.

In assessing whether we control a SE, we consider the entire arrangement to determine the purpose and design of the SE, the nature of any rights held through contractual arrangements, and whether we are acting as principal or agent.

We perform a reassessment of consolidation if facts and circumstances indicate that there have been changes to one or more of the elements of control over the SE. In the event such reassessment results in a loss of control, we will de-recognize the related assets (including goodwill), liabilities, and non-controlling interest at their carrying amounts and recognize any consideration received or retained interest at fair value with any differential recognized as gain or loss in our Consolidated Statement of Income. Information regarding our basis of consolidation is included in Note 1.

Consolidated Structured Entities

Bank Securitization Vehicles

We use securitization vehicles to securitize our Canadian credit card loans, Canadian real estate lines of credit, Canadian auto loans and U.S. equipment loans in order to obtain alternate sources of funding. The structure of these vehicles limits the activities they can undertake and the types of assets they can hold, and the vehicles have limited decision-making authority. The vehicles issue term asset-backed securities (ABS) to fund their activities. We control and consolidate these vehicles, as we have the key decision-making powers necessary to obtain the majority of the benefits of their activities.

The following table presents the carrying amounts and fair values of transferred assets that did not qualify for derecognition and the associated liabilities issued by our bank securitization vehicles:

(Canadian \$ in millions)	2021		2020	
	Carrying amount (1)	Fair value	Carrying amount (1)	Fair value
Assets				
Credit cards	7,106	7,106	6,825	6,825
Consumer instalment and other personal (2)	5,228	5,238	6,291	6,312
Business and government	250	253	484	484
Total	12,584	12,597	13,600	13,621
Associated liabilities (3)	7,278	7,341	8,272	8,416

(1) Carrying amount of loans is net of allowance.

(2) Includes real estate lines of credit and auto loans.

(3) Associated liabilities are recognized in Securitization and structured entities' liabilities in our Consolidated Balance Sheet.

U.S. Customer Securitization Vehicle

We sponsor one customer securitization vehicle, Fairway Financial Company LLC, (also referred to as a bank-sponsored multi-seller conduit) that provides our customers with alternate sources of funding through the securitization of their assets. This vehicle provides clients with access to financing in the asset-backed commercial paper (ABCP) markets by allowing them to either sell their assets directly into the vehicle or indirectly by selling an interest in the securitized assets into the vehicle, which then issues ABCP to investors in order to fund the purchases. The sellers remain responsible for servicing the transferred assets and are first to absorb any losses realized on those assets. We are not responsible for servicing or absorbing the first loss and none of the sellers are affiliated with BMO. We earn fees for providing services related to the securitizations, including liquidity, distribution and financial arrangement fees for supporting the ongoing operations of the vehicle. Effective October 31, 2021, we concluded we no longer control this vehicle and have deconsolidated our investment, as our relationship has changed from principal to agent as reflected primarily in the change to our exposure to variable returns. We derecognized \$3,896 million of assets and \$3,672 million of liabilities from our consolidated balance sheet on loss of control. We concurrently recognized \$218 million in Securities, representing the carrying value of our interest in the vehicle, and \$6 million in Other Assets. No gain or loss was recognized in our consolidated income statement as a result of deconsolidating this entity.

We provide committed liquidity support facilities to this vehicle, which may require that we provide additional financing to the vehicle in the event that certain events occur. The total committed undrawn amount under these facilities as at October 31, 2021 was \$8,095 million (\$7,340 million as at October 31, 2020).

Our interest in this vehicle as at October 31, 2021 has been included in the Unconsolidated Structured Entities table below.

Capital and Funding Vehicles

We sponsor the Trust established in connection with the issuance of \$1,250 million 4.3% Limited Recourse Capital Notes Series 1 (LRCN), which holds \$1,250 million of BMO issued Non-cumulative, 5-year Rate Reset Class B Preferred Shares, Series 48 (Non-Viability Contingent Capital (NVCC)), issued concurrently with the LRCN. We determined that we control and therefore consolidate this vehicle as we are exposed to its variable returns and have key decision-making powers over its activities. Refer to Note 16 for further information.

We have a funding vehicle, created under the covered bond program, that was established to guarantee payments due to bondholders on bonds issued by us. We sell assets to this funding vehicle in exchange for an intercompany loan. Refer to Note 13 for further information on our covered bond deposit liabilities.

We may also use capital vehicles to transfer our credit exposure on certain loan assets. We purchase credit protection against eligible credit events from these vehicles. The vehicles collateralize their obligation through the issuance of guarantee-linked notes. Loan assets are not sold or assigned to the vehicles and remain on our Consolidated Balance Sheet. During the year, we redeemed all guaranteed linked notes issued by these vehicles. Consequently, as at October 31, 2021, \$nil of guaranteed linked notes issued by these vehicles were included in deposits in our Consolidated Balance Sheet (\$120 million at October 31, 2020).

For those vehicles that purchase assets from us or are designed to pass on our credit risk, we have determined that, based on the rights of the arrangements or through our equity interest, we have significant exposure to the variable returns of the vehicles, and we control and therefore consolidate these vehicles. Additional information related to notes issued by, and assets sold to, these vehicles is provided in Notes 13 and 24, respectively.

Other

We have other consolidated structured entities, created to meet the bank's and customers needs. Aside from the exposure resulting from our involvement as a sponsor, the bank does not have other contractual or non-contractual arrangements to provide financial support to these consolidated structured entities.

Unconsolidated Structured Entities

The table below presents amounts related to our interests in unconsolidated SEs:

(Canadian \$ in millions)	2021			2020		
	Canadian and U.S. customer securitization vehicles (1) (3)	Capital vehicles	Other securitization vehicles	Canadian customer securitization vehicles (1)	Capital vehicles	Securitization vehicles
Interests recorded on our Consolidated Balance Sheet						
Cash and cash equivalents	63	1,210	-	46	1,173	-
Trading securities	24	-	58	75	-	72
FVTPL securities	218	-	-	158	-	-
FVOCI securities	464	-	-	291	-	-
Amortized cost securities	-	-	93	-	-	102
Derivatives	2	-	-	22	-	-
Other	5	-	-	-	39	-
	776	1,210	151	592	1,212	174
Deposits	63	1,210	-	46	1,173	-
Other	-	22	-	-	25	-
Exposure to loss (2)	14,208	-	151	7,015	1	174
Total assets of the entities	8,116	1,234	5,686	5,265	1,198	2,560

(1) Securities held that are issued by our Canadian and U.S. customer securitization vehicles are comprised of asset-backed commercial paper and are classified as trading securities, FVTPL securities and FVOCI securities.

(2) Exposure to loss represents securities held, undrawn liquidity facilities, any remaining unfunded committed amounts to the BMO funded vehicle, derivative assets and other assets.

(3) Includes the U.S. customer securitization vehicle, Fairway Financial Company LLC, which was deconsolidated on a prospective basis during fiscal 2021.

Canadian Customer Securitization Vehicles

We sponsor customer securitization vehicles (also referred to as bank-sponsored multi-seller conduits) that provide our customers with alternate sources of funding through the securitization of their assets. These vehicles provide clients with access to financing either from BMO or in the ABCP markets by allowing them to either sell their assets directly into the vehicle or indirectly by selling an interest in the securitized assets into the vehicle, which then issues ABCP to either investors or BMO to fund the purchases. The sellers remain responsible for servicing the transferred assets and are first to absorb any losses realized on those assets. We are not responsible for servicing or absorbing the first loss and none of the sellers are affiliated with BMO. We earn fees for providing services related to the securitizations, including liquidity, distribution and financial arrangement fees for supporting the ongoing operations of the vehicles. We have determined that we do not control these entities, as their key relevant activity, the servicing of program assets, does not reside with us.

We provide liquidity facilities to the market-funded vehicles, which may require that we provide additional financing to the vehicles in the event that certain events occur. The total committed and undrawn amount under these liquidity facilities and any undrawn amounts of the BMO funded vehicle as at October 31, 2021 was \$5,400 million (\$6,469 million as at October 31, 2020).

Capital Vehicles

We also use capital vehicles to pass our credit risk to security holders of the vehicles. In these situations, we are not exposed to significant default or credit risk. Our remaining exposure to variable returns is less than that of the note holders in these vehicles, who are exposed to our default and credit risk. We are not required to consolidate these vehicles.

Other Securitization Vehicles

Other securitization vehicles include holdings in asset-backed securitizations. Where we sponsor SEs that securitize MBS into CMOs, we may have interests through our holdings of CMOs but do not consolidate the SEs as we do not have power to direct their relevant activities. These include government-sponsored agency securities such as U.S. government agency issuances. In determining whether we are a sponsor of a SE, we consider both qualitative and quantitative factors, including the purpose and nature of the entity, and our initial and continuing involvement. Subsequent to the securitization, we sell the CMOs to third parties. Our maximum exposure to loss is limited to our on-balance sheet investments in these entities, included in the table above.

Where the asset-backed instruments in these securitizations are transferred to third parties, but we retain substantially all risks and rewards related to the transferred assets, we continue to recognize the transferred assets with the related cash proceeds recognized as secured financing in our Consolidated Balance Sheet. As at October 31, 2021, these transferred assets were carried at fair value totalling \$53 million (\$69 million as at October 31, 2020) with \$nil million (\$nil million as at October 31, 2020) recognized in securitization and structured entities' liabilities, also carried at fair value.

Where the asset-backed instruments in these securitizations are transferred to third parties and qualify for derecognition, we record the related gains or losses in non-interest revenue, trading revenues. We may also retain an interest in the CMOs sold, which represents our continuing involvement. As at October 31, 2021, we held retained interests of \$5 million (\$3 million as at October 31, 2020) carried at fair value on our Consolidated Balance Sheet.

During the year ended October 31, 2021, we sold \$2,549 million of MBS to these sponsored securitization vehicles (\$5,797 million in 2020), where we divested all interests in the securitized MBSs and any gains and losses were recorded in non-interest revenue, trading revenues.

BMO Managed Funds

We have established a number of funds that we also manage. We assess whether or not we control these funds based on the economic interest we have in the funds, including investments in the funds and management fees earned from the funds, and any investors' rights to remove us as investment manager. We only consolidate those funds that we control. Our total interest in unconsolidated BMO managed funds was \$1,345 million at October 31, 2021 (\$1,718 million in 2020), with \$321 million included in FVTPL securities and \$1,024 million included in trading securities as at October 31, 2021 (\$444 million and \$1,274 million, respectively, in 2020) in our Consolidated Balance Sheet.

Other Structured Entities

We purchase and hold investments in a variety of third-party SEs, including exchange-traded funds, mutual funds, limited partnerships investment trusts and government-sponsored ABS vehicles, which are recorded in securities in our Consolidated Balance Sheet. We are considered to have an interest in these investments through our holdings and because we may act as a counterparty in certain derivatives contracts. We are not the investment manager or the sponsor of any of these investments. We are generally a passive investor and do not have power over the key decision-making activities of these investments. Our maximum exposure to loss from our investments is limited to the carrying amounts of our investments and any unutilized commitment we have provided.

Sponsored Structured Entities

We may be deemed to be the sponsor of a SE if we are involved in its design, legal set-up or marketing. We may also be deemed to be the sponsor of a SE if market participants would reasonably associate the entity with us. Any interests in securitization vehicles we have sponsored are disclosed in the interests in unconsolidated structured entities table above.

Financial Support Provided to Structured Entities

During the years ended October 31, 2021 and 2020, we did not provide any financial or non-financial support to any consolidated or unconsolidated SEs when we were not contractually obligated to do so. Furthermore, we have no intention of providing such support in the future.

Note 8: Derivative Instruments

Derivative instruments are financial contracts that derive their value from underlying changes in interest rates, foreign exchange rates or other financial or commodity prices or indices.

Derivative instruments are either regulated exchange-traded contracts or negotiated over-the-counter contracts. We use these instruments for trading purposes, as well as to manage our exposures, mainly to foreign currency and interest rate fluctuations, as part of our asset/liability management program.

Types of Derivatives

Swaps

Swaps are contractual agreements between two parties to exchange a series of cash flows. The various swap agreements that we enter into are as follows:

- Interest rate swaps – counterparties generally exchange fixed and floating rate interest payments based on a notional value in a single currency.
- Cross-currency swaps – fixed rate interest payments and principal amounts are exchanged in different currencies.
- Cross-currency interest rate swaps – fixed and/or floating rate interest payments and principal amounts are exchanged in different currencies.
- Commodity swaps – counterparties generally exchange fixed and floating rate payments based on a notional value of a single commodity.
- Equity swaps – counterparties exchange the return on an equity security or a group of equity securities for the return based on a fixed or floating interest rate or the return on another equity security or group of equity securities.
- Credit default swaps – one counterparty pays the other a fee in exchange for that other counterparty agreeing to make a payment if a credit event occurs, such as bankruptcy or failure to pay.
- Total return swaps – one counterparty agrees to pay or receive from the other cash amounts based on changes in the value of a reference asset or group of assets, including any returns such as interest earned on these assets, in exchange for amounts that are based on prevailing market funding rates.

Forwards and Futures

Forwards and futures are contractual agreements to either buy or sell a specified amount of a currency, commodity, interest rate-sensitive financial instrument or security at a specified price and date in the future.

Forwards are customized contracts transacted in the over-the-counter market. Futures are transacted in standardized amounts on regulated exchanges and are subject to daily cash margining.

Options

Options are contractual agreements that convey to the purchaser the right but not the obligation to either buy or sell a specified amount of a currency, commodity, interest-rate-sensitive financial instrument or security at a fixed future date or at any time within a fixed future period.

For options written by us, we receive a premium from the purchaser for accepting market risk.

For options purchased by us, we pay a premium for the right to exercise the option. Since we have no obligation to exercise the option, our primary exposure to risk is the potential credit risk if the writer of an over-the-counter contract fails to meet the terms of the contract.

Caps, collars and floors are specialized types of written and purchased options. They are contractual agreements in which the writer agrees to pay the purchaser, based on a specified notional amount, the difference between the market rate and the prescribed rate of the cap, collar or floor. The writer receives a premium for selling this instrument.

A swaption is an option granting its owner the right but not the obligation to enter into an underlying swap.

A futures option is an option contract in which the underlying instrument is a single futures contract.

The main risks associated with these derivative instruments are related to exposure to movements in interest rates, foreign exchange rates, credit quality, value of the underlying financial instrument or commodity, as applicable, and the possible inability of counterparties to meet the terms of the contracts.

Embedded Derivatives

From time to time, we purchase or issue financial instruments containing embedded derivatives. The embedded derivative in a financial liability is separated from the host contract and carried at fair value if the economic characteristics of the derivative are not closely related to those of the host contract, the terms of the embedded derivative are the same as those of a stand-alone derivative, and the combined contract is not measured at fair value. To the extent that we cannot reliably identify and measure the embedded derivative, the entire contract is carried at fair value, with changes in fair value reflected in income. Embedded derivatives in certain of our equity linked notes are accounted for separately from the host instrument.

Contingent Features

Certain over-the-counter derivative instruments contain provisions that link the amount of collateral we are required to post or pay to our credit ratings as determined by the major credit rating agencies. If our credit ratings were to be downgraded, certain counterparties to these derivative instruments could demand immediate and ongoing collateralization on derivative liability positions or request immediate payment. The aggregate fair value of all derivative instruments with collateral posting requirements that were in a liability position as at October 31, 2021 was \$4,537 million (\$6,560 million as at October 31, 2020), for which we have posted collateral of \$3,921 million (\$5,967 million in 2020).

Risks Hedged

Interest Rate Risk

We manage interest rate risk through interest rate futures, interest rate swaps and options, which are linked to and adjust the interest rate sensitivity of a specific asset, liability, forecasted transaction or firm commitment, or a specific pool of transactions with similar risk characteristics.

Foreign Currency Risk

We manage foreign currency risk through currency futures, foreign currency options, cross-currency swaps, foreign exchange spot transactions, forward contracts and deposits denominated in foreign currencies.

Equity Price Risk

We manage equity price risk through total return swaps.

Trading Derivatives

Trading derivatives include derivatives entered into with customers to accommodate their risk management needs, market-making to facilitate customer-driven demand for derivatives, derivatives transacted on a limited basis to generate trading income from our principal trading positions, and certain derivatives that we enter into as part of our risk management strategy that do not qualify as hedges for accounting purposes ("economic hedges").

We structure and market derivative products to enable customers to transfer, modify or reduce current or expected exposure to risks.

Principal trading activities include market-making and positioning activities. Market-making involves quoting bid and offer prices to other market participants with the intention of generating revenues based on spread and volume. Positioning activities involve managing market risk positions with the expectation of profiting from favourable movements in prices, rates or indices.

Trading derivatives are recorded at fair value. Realized and unrealized gains and losses are generally recorded in non-interest revenue, trading revenues, in our Consolidated Statement of Income. Unrealized gains and losses on derivatives used to economically hedge certain exposures may be recorded in the Consolidated Statement of Income in the same line as the unrealized gains and losses arising from the exposures. Unrealized gains on trading derivatives are recorded as derivative instrument assets and unrealized losses are recorded as derivative instrument liabilities in our Consolidated Balance Sheet.

We may also economically hedge a portion of our U.S. dollar earnings through forward foreign exchange contracts and/or options to minimize fluctuations in our consolidated net income due to the translation of our U.S. dollar earnings. These contracts are recorded at fair value, with changes in fair value recorded in non-interest revenue, trading revenues, in our Consolidated Statement of Income.

Fair Value of Trading and Hedging Derivatives

Fair value represents point-in-time estimates that may change in subsequent reporting periods due to market conditions or other factors. A discussion of the fair value measurement of derivatives is included in Note 17.

Fair values of our derivative instruments are as follows:

(Canadian \$ in millions)	2021			2020		
	Gross assets	Gross liabilities	Net	Gross assets	Gross liabilities	Net
Trading						
Interest Rate Contracts						
Swaps	6,132	(4,323)	1,809	10,510	(7,585)	2,925
Forward rate agreements	42	(105)	(63)	29	(276)	(247)
Purchased options	641	-	641	667	-	667
Written options	-	(520)	(520)	-	(714)	(714)
Futures	-	(3)	(3)	3	(18)	(15)
Foreign Exchange Contracts (1)						
Cross-currency swaps	1,438	(1,207)	231	2,080	(1,428)	652
Cross-currency interest rate swaps	8,595	(5,827)	2,768	4,151	(4,207)	(56)
Forward foreign exchange contracts	3,505	(3,925)	(420)	3,611	(2,954)	657
Purchased options	381	-	381	346	-	346
Written options	-	(384)	(384)	-	(312)	(312)
Commodity Contracts						
Swaps	5,916	(1,256)	4,660	2,162	(1,733)	429
Purchased options	1,383	-	1,383	373	-	373
Written options	-	(815)	(815)	-	(456)	(456)
Futures	319	(120)	199	53	(144)	(91)
Equity Contracts						
Purchased	-	(3)	(3)	11	(6)	5
Written	-	(4)	(4)	-	(8)	(8)
Total fair value - trading derivatives	34,350	(27,875)	6,475	32,457	(26,355)	6,102
Hedging						
Interest Rate Contracts (2)						
Cash flow hedges - swaps	354	(1,166)	(812)	2,602	(43)	2,559
Fair value hedges - swaps	903	(662)	241	1,118	(2,257)	(1,139)
Total swaps	1,257	(1,828)	(571)	3,720	(2,300)	1,420
Foreign Exchange Contracts						
Cash flow hedges	1,020	(1,112)	(92)	638	(1,710)	(1,072)
Fair value hedges	-	-	-	-	(1)	(1)
Net investment hedges	46	-	46	-	-	-
Total foreign exchange contracts	1,066	(1,112)	(46)	638	(1,711)	(1,073)
Equity Contracts						
Cash flow hedges	40	-	40	-	(9)	(9)
Total equity contracts	40	-	40	-	(9)	(9)
Total fair value - hedging derivatives (3)	2,363	(2,940)	(577)	4,358	(4,020)	338
Total fair value - trading and hedging derivatives	36,713	(30,815)	5,898	36,815	(30,375)	6,440
Less: impact of master netting agreements	(20,952)	20,952	-	(19,302)	19,302	-
Total	15,761	(9,863)	5,898	17,513	(11,073)	6,440

(1) Gold contracts are included with foreign exchange contracts.

(2) We held no bond futures as at October 31, 2021 (the fair value of bond futures designated in fair value hedge relationships rounded down to \$nil as at October 31, 2020).

(3) The fair values of hedging derivatives wholly or partially offset the changes in fair values of the related on-balance sheet financial instruments.

Assets are shown net of liabilities to customers where we have a legally enforceable right to offset amounts and we intend to settle contracts on a net basis.

Notional Amounts of Trading Derivatives

The notional amounts of our derivatives represent the amount to which a rate or price is applied in order to calculate the amount of cash that must be exchanged under the contract. Notional amounts do not represent assets or liabilities and therefore are not recorded in our Consolidated Balance Sheet.

(Canadian \$ in millions)	2021			2020		
	Exchange traded	Over-the-counter	Total	Exchange traded	Over-the-counter	Total
Interest Rate Contracts						
Swaps	-	3,976,428	3,976,428	-	4,148,257	4,148,257
Forward rate agreements	-	147,657	147,657	-	517,332	517,332
Purchased options	10,611	69,491	80,102	24,683	57,833	82,516
Written options	3,621	68,155	71,776	3,796	64,728	68,524
Futures	232,972	-	232,972	297,578	-	297,578
Total interest rate contracts	247,204	4,261,731	4,508,935	326,057	4,788,150	5,114,207
Foreign Exchange Contracts (1)						
Cross-currency swaps	-	45,482	45,482	-	47,805	47,805
Cross-currency interest rate swaps	-	506,791	506,791	-	534,752	534,752
Forward foreign exchange contracts	-	489,081	489,081	-	494,640	494,640
Purchased options	1,762	54,145	55,907	1,673	39,067	40,740
Written options	4,735	54,147	58,882	2,346	41,327	43,673
Futures	222	-	222	1,608	-	1,608
Total foreign exchange contracts	6,719	1,149,646	1,156,365	5,627	1,157,591	1,163,218
Commodity Contracts						
Swaps	-	28,892	28,892	-	30,613	30,613
Purchased options	10,020	4,526	14,546	4,846	5,728	10,574
Written options	11,000	3,132	14,132	6,514	3,704	10,218
Futures	39,448	-	39,448	39,011	-	39,011
Total commodity contracts	60,468	36,550	97,018	50,371	40,045	90,416
Equity Contracts	106,302	98,962	205,264	110,274	60,202	170,476
Credit Contracts						
Purchased	-	12,358	12,358	-	7,407	7,407
Written	-	5,158	5,158	-	1,795	1,795
Total	420,693	5,564,405	5,985,098	492,329	6,055,190	6,547,519

(1) Gold contracts are included with foreign exchange contracts.

Table excludes loan commitment derivatives with notional of \$5,613 million (\$2,603 million as at October 31, 2020).

Derivatives Used in Hedge Accounting

In accordance with our risk management strategy, we enter into various derivative contracts to hedge our interest rate, foreign currency and equity price exposures. We also use deposits, cross-currency swaps and foreign exchange forwards to hedge foreign currency exposure in our net investment in foreign operations.

When the hedged item is accounted for at FVTPL, there is a natural offset within the income statement with the related derivative. However, when we manage risks incumbent in instruments that are accounted for at amortized cost, including loans and deposits, or FVOCI debt securities we use hedge accounting in order to eliminate the mismatch between the hedged item and the mark to market derivative.

To the extent these instruments used to manage risk qualify for hedge accounting, we designate them in accounting hedge relationships. Our structural market risk strategies, including our approach to managing interest rate and foreign exchange risk, are included in the blue-tinted font in the Structural (Non-Trading) Market Risk section of Management's Discussion and Analysis within this report. In addition, our exposure to foreign exchange rate risk is discussed in the Foreign Exchange Risk section of Management's Discussion and Analysis. Our exposure to equity price risk and our approach to managing it are discussed in the Other Share-Based Compensation, Mid-Term Incentive Plans section of Note 20.

By using derivatives to hedge exposures to interest rates, foreign currency exchange rates, and equity prices, we are also exposed to the credit risk of the derivative counterparty. We mitigate credit risk by entering into transactions with high-quality counterparties, requiring the counterparties to post collateral, entering into master netting agreements, or settling through centrally cleared counterparties.

In order to qualify as an accounting hedge, the hedging relationship must be designated and formally documented at its inception, detailing the particular risk management objective and strategy for the hedge and the specific asset, liability or cash flow being hedged, as well as how effectiveness is to be assessed. Changes in the fair value of the derivative must be highly effective in offsetting changes in the fair value or changes in the amount of future cash flows of the hedged item. We evaluate hedge effectiveness at the inception of the hedging relationship and on an ongoing basis, retrospectively and prospectively, primarily using a quantitative statistical regression analysis. We consider a hedging relationship highly effective when all of the following criteria are met: correlation between the variables in the regression is at least 0.8; the slope of the regression is within a 0.8 to 1.25 range; and the confidence level of the slope is at least 95%. The practice is different for our net investment hedge, discussed in the Net Investment Hedges section below.

Any ineffectiveness in the hedging relationship is recognized as it arises in non-interest revenue, other, in our Consolidated Statement of Income.

Under the IASB's Phase 1 Amendments to IAS 39 and IFRS 7, certain hedge accounting requirements were modified to provide relief from the uncertainty arising from IBOR reform during the period prior to replacement of IBORs. These amendments include allowing us to assume the interest rate benchmarks which are the basis for cash flows of the hedged item and hedging instrument are not altered as a result of IBOR reform, thereby allowing hedge accounting to continue. They also provide an exception from the requirement to discontinue hedge accounting if a hedging relationship does not meet the effectiveness requirements solely as a result of IBOR reform. We continue to apply these amendments as at October 31, 2021, with application ending at the earlier of the discontinuation of the impacted hedging relationship and when there is no longer uncertainty arising from IBOR reform over the timing and amount of IBOR-based cash flows.

The following table outlines the notional amounts, and average rates of derivatives and the carrying amounts of deposits designated as hedging instruments, by term to maturity, hedge type, and risk type, where applicable.

(Canadian \$ in millions, except as noted)		Remaining term to maturity					2021	2020
		Within 1 year	1 to 3 years	3 to 5 years	5 to 10 years	Over 10 years	Total	Total
Cash Flow Hedges								
Interest rate risk – Interest rate swaps								
Notional amount (1)		24,639	24,172	18,145	25,733	1,463	94,152	92,296
Average fixed interest rate		0.60%	1.20%	1.15%	1.26%	1.68%	1.06%	1.39%
Foreign exchange risk – Cross-currency swaps and foreign exchange forwards (2)								
CAD-USD pair (3)								
Notional amount		6,668	17,446	7,091	6,836	251	38,292	43,381
Average fixed interest rate		1.67%	2.33%	1.43%	1.53%	3.02%	1.91%	1.92%
Average exchange rate: CAD-USD		1.3031	1.3283	1.2606	1.3420	1.3122	1.3137	1.3219
CAD-EUR pair								
Notional amount		3,843	8,634	-	1,839	201	14,517	17,299
Average fixed interest rate		2.60%	1.91%	-	1.89%	2.97%	2.10%	2.17%
Average exchange rate: CAD-EUR		1.5382	1.5025	-	1.4711	1.4870	1.5078	1.5008
Other currency pairs								
Notional amount (4)		1,908	3,673	4,474	-	-	10,055	7,104
Average fixed interest rate		2.51%	2.76%	2.03%	-	-	2.39%	2.63%
Average exchange rate:								
CAD-Non USD/EUR		1,4245	1,2229	1,6710	-	-	1,4606	1,2923
Equity price risk – Total return swap								
Notional amount		515	-	-	-	-	515	302
Fair Value Hedges								
Interest rate risk – Interest rate swaps								
Notional amount (5)		11,740	30,534	19,555	16,777	2,105	80,711	94,738
Average fixed interest rate		0.97%	1.30%	1.18%	1.20%	1.71%	1.21%	1.47%
Interest rate risk – Bond futures (exchange-traded derivatives)								
Notional amount		-	-	-	-	-	-	48
Average price in dollars		-	-	-	-	-	-	126
Foreign exchange risk – Cross-currency swaps								
USD-GBP pair								
Notional amount (6)		-	-	-	-	-	-	39
Average fixed interest rate		-	-	-	-	-	-	0.66%
Average exchange rate: USD-GBP		-	-	-	-	-	-	1.3024
Net Investment Hedges								
Foreign exchange risk – Cross-currency swaps and foreign exchange forwards								
CAD-GBP pair								
Notional amount		153	1,132	-	-	-	1,285	-
Foreign exchange risk – Deposit liabilities								
USD denominated deposit – carrying amount		5,964	-	-	-	-	5,964	8,219
GBP denominated deposit – carrying amount		728	-	-	-	-	728	892

(1) The notional amount of the interest rate swaps likely subject to IBOR reform that mature after June 30, 2023 was \$35,519 million of USD LIBOR as at October 31, 2021. We had a notional amount of \$48,825 million as at October 31, 2020, likely subject to IBOR reform that were to mature after December 31, 2021, the cessation date at the time of adoption of the Phase 1 amendments.

(2) Under certain hedge strategies using cross-currency swaps, a CAD leg is inserted to create two swaps designated as separate hedges (for example, a EURO-USD cross-currency swap split into EURO-CAD and CAD-USD cross-currency swaps). The relevant notional amount is grossed up in this table, as the cross-currency swaps are disclosed by CAD-foreign currency pair.

(3) Includes CAD-AUD, CAD-CHF, CAD-CNH, CAD-GBP or CAD-HKD cross-currency swaps where applicable.

(4) The notional amount of the cross-currency swaps likely subject to IBOR reform that mature after December 31, 2021 was \$718 million of GBP LIBOR as at October 31, 2021 (\$718 million as at October 31, 2020).

(5) The notional amount of the interest rate swaps likely subject to IBOR reform that mature after June 30, 2023 was \$43,642 million of USD LIBOR. We had a notional amount of \$55,130 million of USD LIBOR as at October 31, 2020, likely subject to IBOR reform that were to mature after December 31, 2021, the cessation date at the time of adoption of the Phase 1 amendments. The notional amount of GBP LIBOR interest rate swaps that mature after December 31, 2021 was \$nil million as at October 31, 2021 (\$41 million as at October 31, 2020).

(6) The notional amount of the cross-currency swaps likely subject to IBOR reform that mature after June 30, 2023 was \$nil million of USD LIBOR as at October 31, 2021. We had a notional amount of \$39 million of USD LIBOR as at October 31, 2020, likely subject to IBOR reform that were to mature after December 31, 2021, the cessation date at the time of adoption of the Phase 1 amendments.

Cash Flow Hedges

Cash flow hedges modify exposure to variability in cash flows for variable interest rate bearing instruments, foreign currency denominated assets and liabilities and certain cash-settled share-based payment grants subject to equity price risk. We use interest rate swaps with or without embedded options, cross-currency swaps, and total return swaps to hedge this variability. We hedge the full amount of foreign exchange risk, but interest rate risk is hedged only to the extent of benchmark interest rates. The benchmark interest rate is a component of interest rate risk that is observable in the relevant financial markets, for example LIBOR or Bankers' Acceptances (BA) rate.

We determine the amount of the exposure to which hedge accounting is applied by assessing the potential impact of changes in interest rates, foreign exchange rates, and equity prices on the future cash flows of floating rate loans and deposits, foreign currency denominated assets and liabilities and certain cash-settled share-based payments. This assessment is performed using analytical techniques, such as simulation, sensitivity analysis, stress testing and gap analysis.

We record interest that we pay or receive on these cash flow hedge derivatives as an adjustment to net interest income in our Consolidated Statement of Income over the life of the hedge.

The accounting mismatch that would otherwise occur is eliminated by recording changes in the fair value of the derivative that offset changes in the fair value of the hedged item for the designated hedged risk in other comprehensive income. Hedge ineffectiveness, the portion of the change in fair value of the derivative that does not offset changes in the fair value of the hedged item, is recorded directly in non-interest revenue, other, in our Consolidated Statement of Income as it arises.

For cash flow hedges that are discontinued before the end of the original hedge term, the cumulative unrealized gain or loss recorded in other comprehensive income is amortized to our Consolidated Statement of Income in net interest income for interest rate swaps and in employee compensation for total return swaps as the hedged item is recorded in earnings. The entire unrealized gain or loss is recognized immediately in net interest income in our Consolidated Statement of Income, if the hedged item is sold or settled. In general, we do not terminate our foreign exchange hedges before maturity.

For cash flow hedges, we use a hypothetical derivative to measure the hedged risk of floating rate loans, deposits, foreign currency denominated assets and liabilities, or share-based payment grants. This hypothetical derivative matches the critical terms of the hedged items identically, and it perfectly offsets the hedged cash flow.

In our cash flow hedge relationships, the main sources of ineffectiveness are differences in interest rate indices, tenor and reset/settlement frequencies between the hedging instrument and the hedged item.

Net Investment Hedges

Net investment hedges mitigate our exposure to foreign currency exchange rate fluctuations related to our net investment in foreign operations.

Deposits denominated in foreign currencies, cross-currency swaps and foreign exchange forwards are designated as a hedging instrument for a portion of the net investment in foreign operations. We designate the spot rate component of our hedging instrument in net investment hedge. The foreign currency translation of our net investment in foreign operations and the effective portion of the corresponding hedging instrument are recorded in unrealized gains (losses) on translation of net foreign operations in other comprehensive income, instead of through the income statement in the case of the hedging instrument if hedge accounting were not elected.

The effectiveness of our net investment hedge is determined using the dollar offset method with spot foreign currency rates. As the notional amount of the hedging instruments and the hedged net investment in foreign operations are the same, there is no source of ineffectiveness in these hedging relationships.

For cash flow hedges and net investment hedges, the following tables contain information related to items designated as hedging instruments, hedged items and hedge ineffectiveness for the years ended October 31, 2021 and October 31, 2020.

(Canadian \$ in millions)

2021

	Carrying amount of hedging instruments (1)		Hedge ineffectiveness		
	Asset	Liability	Gains (losses) on hedging derivatives used to calculate hedge ineffectiveness (2)	Gains (losses) on hypothetical derivatives used to calculate hedge ineffectiveness (2)	Ineffectiveness recorded in non-interest revenue - other
Cash Flow Hedges					
Interest rate risk - Interest rate swaps	354	(1,166)	(2,467)	2,447	(5)
Foreign exchange risk - Cross-currency swaps and foreign exchange forwards	1,020	(1,112)	276	(276)	-
Equity price risk - Total return swaps	40	-	313	(313)	-
	1,414	(2,278)	(1,878)	1,858	(5)
Net Investment Hedges					
Foreign exchange risk - Cross-currency swaps and foreign exchange forwards	46	-	29	(29)	-
Foreign exchange risk - Deposit liabilities	-	(6,692)	647	(647)	-
Total	1,460	(8,970)	(1,202)	1,182	(5)

2020

Cash Flow Hedges					
Interest rate risk - Interest rate swaps	2,602	(43)	2,516	(2,520)	4
Foreign exchange risk - Cross-currency swaps and foreign exchange forwards	638	(1,710)	(315)	315	-
Equity price risk - Total return swaps	-	(9)	(108)	108	-
	3,240	(1,762)	2,093	(2,097)	4
Net Investment Hedges					
Foreign exchange risk - Cross-currency swaps and foreign exchange forwards	-	(9,111)	(131)	131	-
Foreign exchange risk - Deposit liabilities	-	(9,111)	(131)	131	-
Total	3,240	(10,873)	1,962	(1,966)	4

(1) Represents the unrealized gains (losses) recorded as part of the derivative instruments in assets and liabilities, respectively, in our Consolidated Balance Sheet.

(2) Represents life to date amounts.

For cash flow hedges and net investment hedges, the following tables contain information related to impacts in our Consolidated Statement of Comprehensive Income, on a pre-tax basis for the years ended October 31, 2021 and October 31, 2020.

(Canadian \$ in millions)

2021

	Balance October 31, 2020	Gains / (losses) recognized in OCI	Amount reclassified to net income as the hedged item affects net income	Balance in cash flow hedge AOCI / net foreign operations AOCI		
				Balance October 31, 2021 (1)	Active hedges	Discontinued hedges
Cash Flow Hedges						
Interest rate risk	3,529	(2,462)	(489)	578	(921)	1,499
Foreign exchange risk	(759)	266	10	(483)	(483)	-
Equity price risk	(50)	313	(84)	179	179	-
	2,720	(1,883)	(563)	274	(1,225)	1,499
Net Investment Hedges						
Foreign exchange risk	(1,939)	676	-	(1,263)	(1,263)	-
Total	781	(1,207)	(563)	(989)	(2,488)	1,499

(Canadian \$ in millions)

2020

	Balance October 31, 2019	Gains / (losses) recognized in OCI	Amount reclassified to net income as the hedged item affects net income	Balance in cash flow hedge AOCI / net foreign operations AOCI		
				Balance October 31, 2020 (1)	Active hedges	Discontinued hedges
Cash Flow Hedges						
Interest rate risk	1,156	2,512	(139)	3,529	2,359	1,170
Foreign exchange risk	(444)	(350)	35	(759)	(759)	-
Equity price risk	17	(108)	41	(50)	(50)	-
	729	2,054	(63)	2,720	1,550	1,170
Net Investment Hedges						
Foreign exchange risk	(1,808)	(131)	-	(1,939)	(1,939)	-
Total	(1,079)	1,923	(63)	781	(389)	1,170

(1) Tax balance related to cash flow hedge accumulated other comprehensive income was \$(89) million, and \$(741) million as at October 31, 2020.

Fair Value Hedges

Fair value hedges modify exposure to changes in a fixed rate instrument's fair value caused by changes in interest rates. These hedges economically convert fixed rate assets and liabilities to floating rate. We use cross-currency swaps, interest rate swaps, and bond futures to hedge interest rate risk, including benchmark interest rates, inherent in fixed rate securities, a portfolio of mortgages, deposits and subordinated debt and other liabilities.

The carrying value of fixed rate assets or liabilities that are part of a hedging relationship are adjusted for the change in value of the risk being hedged. To the extent that the change in the fair value of the derivative does not offset changes in the fair value of the hedged item for the risk being hedged, the net amount (hedge ineffectiveness) is recorded directly in non-interest revenue, other, in our Consolidated Statement of Income.

For fair value hedges that are discontinued, we cease adjusting the hedged item. The cumulative fair value adjustment of the hedged item is then amortized to net interest income over the hedged item's remaining term to maturity. If the hedged item is sold or settled, the cumulative fair value adjustment is included in the gain or loss on sale or settlement.

In our fair value hedge relationships, the main sources of ineffectiveness are our own credit risk on the fair value of the swap, and the difference in terms such as fixed interest rate or reset/settlement frequency between the swap and the hedged item.

The amounts relating to derivatives designated as fair value hedging instruments, hedged items and hedge ineffectiveness for the years ended October 31, 2021 and 2020 are as follows:

(Canadian \$ in millions)

	Carrying amount of hedging derivatives (1)		Hedge ineffectiveness			Accumulated amount of fair value hedge gains (losses) on hedged items		
	Asset	Liability	Gains (losses) on hedging derivatives used to calculate hedge ineffectiveness	Gains (losses) on hedged item used to calculate hedge ineffectiveness	Ineffectiveness recorded in non-interest revenue - other	Carrying amount of the hedged item (2)	Active hedges	Discontinued hedges
Fair Value Hedge (3)								
Interest rate swaps	903	(662)	-	-	-	-	-	-
Cross-currency swaps	-	-	-	-	-	-	-	-
Securities and loans	-	-	1,649	(1,654)	(5)	49,789	156	62
Deposits, subordinated debt and other liabilities	-	-	(644)	638	(6)	(31,530)	(121)	(91)
Total	903	(662)	1,005	(1,016)	(11)	18,259	35	(29)
Fair Value Hedge (3)								
Interest rate swaps	1,118	(2,257)	-	-	-	-	-	-
Cross-currency swaps	-	(1)	-	-	-	-	-	-
Securities and loans	-	-	(1,791)	1,794	3	58,608	2,762	25
Deposits, subordinated debt and other liabilities	-	-	622	(620)	2	(39,950)	(943)	8
Total	1,118	(2,258)	(1,169)	1,174	5	18,658	1,819	33

2020

(1) Represents the unrealized gains (losses) within derivative instruments in assets and liabilities, respectively, in the Consolidated Balance Sheet.

(2) Represents the carrying value in the Consolidated Balance Sheet and includes amortized cost, before allowance for credit losses, plus fair value hedge adjustments, except for FVOCI securities that are carried at fair value.

(3) \$nil for bond futures designated in fair value hedge relationships as at October 31, 2021 (all amounts in the table round down to \$nil as at October 31, 2020).

Derivative-Related Market Risk

Derivative instruments are subject to market risk. Market risk arises from the potential for a negative impact on the balance sheet and/or statement of income due to adverse changes in the value of derivative instruments as a result of changes in certain market variables. These variables include interest rates, credit spreads, foreign exchange rates, equity and commodity prices and their implied volatilities, credit migration and default. We strive to limit market risk by employing comprehensive governance and management processes for all market risk-taking activities.

Derivative-Related Credit Risk

Derivative instruments are subject to credit risk arising from the possibility that counterparties may default on their obligations. The credit risk associated with a derivative is normally a small fraction of the notional amount of the derivative instrument. Derivative contracts generally expose us to potential credit loss if changes in market rates affect the counterparty's position unfavourably and the counterparty defaults on payment. The credit risk is represented by the positive fair value of the derivative instrument. We strive to limit credit risk by dealing with counterparties that we believe are creditworthy, and we manage our credit risk for derivatives using the same credit risk process that is applied to loans and other credit assets.

We also pursue opportunities to reduce our exposure to credit losses on derivative instruments, through collateral and by entering into master netting agreements with counterparties. The credit risk associated with favourable contracts is mitigated by legally enforceable master netting agreements to the extent that unfavourable contracts with the same counterparty must be settled concurrently with favourable contracts.

Exchange-traded derivatives have limited potential for credit exposure, as they are settled net daily with each exchange.

Terms used in the credit risk tables below are as follows:

Replacement cost captures the loss that would occur if a counterparty were to default in the present or at a future time, assuming that the closeout and replacement of transactions occur instantaneously, assuming no recovery on the value of those transactions in bankruptcy.

Credit risk equivalent represents the total replacement cost plus an amount representing the potential future credit exposure adjusted by a multiplier 1.4, as outlined in OSFI's Capital Adequacy Guideline.

Risk-weighted assets represent the credit risk equivalent, weighted on the basis of the creditworthiness of the counterparty, and considering collateral, netting and other credit risk mitigants, as prescribed by OSFI.

(Canadian \$ in millions)	2021			2020		
	Replacement cost (1)	Credit risk equivalent (1)	Risk-weighted assets	Replacement cost (1)	Credit risk equivalent (1)	Risk-weighted assets
Interest Rate Contracts						
Over-the-counter						
Swaps	2,636	6,936	1,422	5,228	10,713	3,380
Forward rate agreements	667	2,545	826	1,153	3,332	1,479
Purchased options	16	72	81	2	55	12
Written options	20	105	70	68	206	150
	3,339	9,658	2,399	6,451	14,306	5,021
Exchange traded						
Futures	71	141	3	22	83	2
Purchased options	2	4	-	45	66	1
Written options	2	4	-	3	4	-
	75	149	3	70	153	3
Total interest rate contracts	3,414	9,807	2,402	6,521	14,459	5,024
Foreign Exchange Contracts (2)						
Over-the-counter						
Swaps	1,087	4,609	987	872	5,581	794
Forward foreign exchange contracts	769	6,649	883	1,032	7,859	823
Purchased options	93	270	104	68	196	95
Written options	11	115	38	5	76	27
	1,960	11,643	2,012	1,977	13,712	1,739
Exchange traded						
Futures	1	2	-	1	2	-
Purchased options	15	22	-	12	17	-
Written options	26	37	1	12	18	-
	42	61	1	25	37	-
Total foreign exchange contracts	2,002	11,704	2,013	2,002	13,749	1,739
Commodity Contracts						
Over-the-counter						
Swaps	4,357	8,183	2,148	1,424	4,215	2,119
Purchased options	1,537	2,601	457	117	746	257
Written options	6	175	51	1	234	74
	5,900	10,959	2,656	1,542	5,195	2,450
Exchange traded						
Futures	1,829	3,244	65	635	1,612	33
Purchased options	474	721	14	373	562	11
Written options	463	727	15	221	363	7
	2,766	4,692	94	1,229	2,537	51
Total commodity contracts	8,666	15,651	2,750	2,771	7,732	2,501
Equity Contracts						
Over-the-counter	467	9,754	2,663	563	8,010	2,399
Exchange traded	3,873	7,938	159	5,958	10,135	203
Total equity contracts	4,340	17,692	2,822	6,521	18,145	2,602
Credit Contracts						
Total	277	721	79	272	741	75
Total	18,699	55,575	10,066	18,087	54,826	11,941

(1) Replacement cost and credit risk equivalent are presented after the impact of master netting agreements and calculated using the Standardized Approach for Counterparty Credit Risk (SA-CCR) in accordance with the Capital Adequacy Requirements (CAR) Guideline issued by OSFI. Table therefore excludes loan commitment derivatives.

(2) Gold contracts are included in foreign exchange contracts.

Term to Maturity

Our derivative contracts have varying maturity dates. The remaining contractual terms to maturity for the notional amounts of our derivative contracts are set out below:

(Canadian \$ in millions)	Term to maturity					2021	2020
	Within 1 year	1 to 3 years	3 to 5 years	5 to 10 years	Over 10 years	Total notional amounts	Total notional amounts
Interest Rate Contracts							
Swaps	1,421,335	1,162,256	710,856	657,830	199,014	4,151,291	4,335,291
Forward rate agreements, futures and options	350,532	138,390	25,879	14,969	2,737	532,507	965,998
Total interest rate contracts	1,771,867	1,300,646	736,735	672,799	201,751	4,683,798	5,301,289
Foreign Exchange Contracts (1)							
Swaps	137,841	196,488	121,635	110,545	32,824	599,333	637,501
Forward foreign exchange contracts	474,834	13,016	1,341	208	27	489,426	494,640
Futures	213	9	-	-	-	222	1,608
Options	104,031	8,799	1,959	-	-	114,789	84,413
Total foreign exchange contracts	716,919	218,312	124,935	110,753	32,851	1,203,770	1,218,162
Commodity Contracts							
Swaps	12,709	14,622	1,495	66	-	28,892	30,613
Futures	20,577	17,258	1,540	73	-	39,448	39,011
Options	16,358	11,936	384	-	-	28,678	20,792
Total commodity contracts	49,644	43,816	3,419	139	-	97,018	90,416
Equity Contracts	141,028	48,206	14,534	1,780	232	205,780	170,778
Credit Contracts (2)	298	866	9,635	6,325	392	17,516	9,202
Total notional amount	2,679,756	1,611,846	889,258	791,796	235,226	6,207,882	6,789,847

(1) Gold contracts are included with foreign exchange contracts.

(2) Under the SA-CCR, excludes loan commitment derivatives.

Note 9: Premises and Equipment

We record all owned premises and equipment at cost less accumulated depreciation, and less any accumulated impairment, except land, which is recorded at cost. Buildings, computer equipment and operating system software, other equipment and leasehold improvements are depreciated on a straight-line basis over their estimated useful lives. When the major components of a building have different useful lives, they are accounted for separately and depreciated over each component's estimated useful life. The maximum estimated useful lives we use to depreciate our assets are as follows:

Buildings	10 to 40 years
Computer equipment and operating system software	5 to 7 years
Other equipment	10 years
Leasehold improvements	Lease term to a maximum of 10 years

Depreciation methods, useful lives and the residual values of premises and equipment are reviewed annually for any change in circumstances and are adjusted if appropriate. At each reporting period, we review whether there are any indications that premises and equipment need to be tested for impairment. If there is an indication that an asset may be impaired, we test for impairment by comparing the asset's carrying value to its recoverable amount. The recoverable amount is calculated as the higher of the value in use and the fair value less costs to sell. Value in use is the present value of the future cash flows expected to be derived from the asset. An impairment charge is recorded when the recoverable amount is less than the carrying value. There were write-downs of premises and equipment of \$36 million due to impairment during the year ended October 31, 2021 (\$4 million in 2020 and \$nil in 2019). Gains and losses on disposal are included in non-interest expense, premises and equipment, in our Consolidated Statement of Income.

Leases

When we enter into a new arrangement as a lessee, a right-of-use asset is recognized equal to the lease liability, which is calculated based on the future lease payments discounted at our incremental borrowing rate over the lease term. The lease term is based on the non-cancellable period and includes any options to extend or terminate which we are reasonably certain to exercise.

The right-of-use asset is depreciated on a straight-line basis, based on the shorter of the useful life of the underlying asset or the lease term, and is adjusted for impairment losses, if any.

The lease liability accretes interest over the lease term, using the effective interest method, with the associated interest expense recognized in interest expense, other liabilities, in our Consolidated Statement of Income. The lease liability is remeasured when decisions are made to exercise options under the lease arrangement or when the likelihood of exercising an option within the lease changes. Refer to Note 14 for further information.

Amounts relating to leases of low value are expensed when incurred in non-interest expense, premises and equipment, in our Consolidated Statement of Income.

Prior to the adoption of IFRS 16, net rent expense reported in non-interest expense, premises and equipment, in our Consolidated Statement of Income for the year ended October 31, 2019 was \$600 million.

The total cost and associated accumulated depreciation for premises and equipment owned and leased are set out below:

	2021						2020							
	Land	Buildings	Computer equipment	Other equipment	Leasehold improvements	Right-of-use assets (1)	Total	Land	Buildings	Computer equipment	Other equipment	Leasehold improvements	Right-of-use assets (1)	Total
Cost														
Balance at beginning of year	112	1,454	2,481	904	1,769	2,580	9,300	109	1,534	2,470	973	1,615	na	6,701
Impact from adopting IFRS 16 (1) (2)	-	-	-	-	-	-	-	-	(23)	(65)	-	-	2,053	1,965
Additions/lease modifications	-	52	193	53	192	731	1,221	8	53	168	41	167	559	996
Disposals (3)	(6)	(44)	(349)	(245)	(44)	(29)	(717)	(6)	(116)	(104)	(122)	(28)	(22)	(398)
Foreign exchange and other	(7)	(108)	(33)	(27)	24	(81)	(232)	1	6	12	12	15	(10)	36
Balance at end of year	99	1,354	2,292	685	1,941	3,201	9,572	112	1,454	2,481	904	1,769	2,580	9,300
Accumulated Depreciation and Impairment														
Balance at beginning of year	-	936	1,888	680	1,250	363	5,117	-	961	1,786	742	1,157	na	4,646
Impact from adopting IFRS 16 (1) (2)	-	-	-	-	-	-	-	-	-	(27)	-	-	27	-
Disposals (3)	-	(46)	(345)	(245)	(41)	(29)	(706)	-	(93)	(100)	(120)	(25)	(22)	(360)
Depreciation	-	52	217	51	105	366	791	-	64	218	52	107	360	801
Foreign exchange and other (4)	-	(75)	(36)	(15)	24	18	(84)	-	4	11	6	11	(2)	30
Balance at end of year	-	867	1,724	471	1,338	718	5,118	-	936	1,888	680	1,250	363	5,117
Net carrying value	99	487	568	214	603	2,483	4,454	112	518	593	224	519	2,217	4,183

(1) Effective November 1, 2019, we adopted IFRS 16 Leases, recognizing the cumulative effect of adoption in opening retained earnings with no changes to prior periods (refer to Note 1).

(2) Includes net book value of buildings transferred to right-of-use assets.

(3) Includes fully depreciated assets written off.

(4) Includes impairment charges.

na - not applicable due to IFRS 16 adoption.

Note 10: Acquisitions and Divestitures

Acquisitions

The cost of an acquisition is measured at the fair value of the consideration transferred, including contingent consideration. Acquisition-related costs are recognized as an expense in the period in which they are incurred. The identifiable assets acquired and liabilities assumed and contingent consideration are measured at their fair values at the date of acquisition. Goodwill is measured as the excess of the aggregate of the consideration transferred over the net of the fair value of identifiable assets acquired and liabilities assumed. The results of operations of acquired businesses are included in our consolidated financial statements beginning on the date of acquisition.

Clearpool Group Inc.

On April 6, 2020, we completed the acquisition of Clearpool Group Inc. (Clearpool), a New York-based provider of electronic trading solutions, operating in the United States and Canada, for cash consideration of US\$139 million (CAD\$196 million) plus contingent consideration of approximately US\$7 million (CAD\$11 million) based on meeting certain revenue targets over four years. The acquisition was accounted for as a business combination, and the acquired business and corresponding goodwill are included in our Capital Markets reporting segment.

As part of this acquisition, we acquired intangible assets of \$85 million and goodwill of \$132 million. The intangible assets are being amortized over three to eight years. Goodwill related to this acquisition is not deductible for tax purposes.

The fair values of the assets acquired and liabilities assumed at the date of acquisition are as follows:

(Canadian \$ in millions)	Clearpool
Goodwill and intangible assets	217
Other assets	44
Total assets	261
Liabilities	54
Purchase price	207

The purchase price allocation for Clearpool has been completed.

Divestitures

Non-current non-financial assets (and disposal groups) are classified as held-for-sale if their carrying amount will be recovered principally through a sale transaction rather than through continuing use. These assets meet the criteria for classification as held-for-sale if they are available for immediate sale in their present condition and their sale is considered highly probable to occur within one year. Non-current non-financial assets classified as held-for-sale are measured at the lower of their carrying amount and fair value less costs to sell. Any subsequent write-down to fair value less costs to sell is recognized in non-interest expense in our Consolidated Statement of Income. Any subsequent increase in the fair value less costs to sell, to the extent this does not exceed the cumulative write-down or impact the impairment previously allocated to goodwill, is also recognized in non-interest expense. Gains on disposals are recognized in non-interest income.

Private Bank, Asia

On April 30, 2021, we completed the sale of our Private Banking business in Hong Kong and Singapore, part of our BMO Wealth Management operating segment, to J. Safra Sarasin Group. The business sold is not considered material to the bank.

EMEA and U.S. Asset Management

On November 8, 2021, we completed the sale of our EMEA asset management business, part of our BMO Wealth Management operating segment, to Ameriprise Financial Inc. (Ameriprise) for £615 million (CAD\$1,042 million) in an all-cash transaction. The transaction with Ameriprise includes the opportunity for certain BMO asset management clients in the U.S. to move to Ameriprise, with the transfers expected to be completed in the first calendar quarter of fiscal 2022, subject to client consent. As this transaction met the accounting requirements of assets held-for-sale, whereby the assets and liabilities are measured at lower of fair value, less costs to sell, and carrying value at each reporting period end until disposal, we recognized a write-down of goodwill related to these businesses of \$779 million in fiscal 2021. The write-down was included in non-interest expense, other, in our Consolidated Statement of Income and was reported in the Corporate Services segment. As at November 8, 2021, assets and liabilities of approximately \$1,696 million and \$527 million, respectively, in relation to our EMEA asset management business have been derecognized. In connection with the completion of the sale, we will recognize a loss of \$28 million in the first quarter of fiscal 2022 relating to foreign currency translation reclassified from accumulated other comprehensive income in equity to net income.

Taplin, Canida & Habacht LLC

On July 27, 2021, we entered into an agreement to sell Taplin, Canida & Habacht, LLC, part of our U.S. asset management business to Loop Capital. The transaction is expected to close in the first quarter of fiscal 2022, subject to customary closing conditions. The business sold is not considered material to the bank.

Note 11: Goodwill and Intangible Assets

Goodwill

When we complete an acquisition, we allocate the purchase price paid to the assets acquired, including identifiable intangible assets, and the liabilities assumed. Any portion of the consideration transferred that is in excess of the fair value of those net assets is considered to be goodwill. Goodwill is not amortized and is instead tested for impairment annually.

In performing the impairment test, we utilize the fair value less costs to sell for each group of CGUs based on discounted cash flow projections. Cash flows were projected for the first 10 years based on actual operating results, expected future business performance and past experience. Beyond 10 years, cash flows were assumed to grow at perpetual annual rates of up to 3.0% (2.5% in 2020). The discount rates we applied in determining the recoverable amounts in 2021 ranged from 6.8% to 11.0% (6.0% to 10.3% in 2020), and were based on our estimate of the cost of capital for each CGU. The cost of capital for each CGU was estimated using the Capital Asset Pricing Model, based on the historical betas of publicly traded peer companies that are comparable to the CGU. We use significant judgment to determine inputs to the discounted cash flow model, which are most sensitive to changes in future cash flows, discount rates and terminal growth rates applied to cash flows beyond the forecast period.

The key assumptions described above may change as market and economic conditions change. However, we estimate that reasonably possible changes in these assumptions are not expected to cause the recoverable amounts of our CGUs to decline below their carrying amounts.

We recognized a write-down of goodwill of \$779 million during the year ended October 31, 2021 (\$nil in 2020) due to the valuation implied from the definitive agreement to sell our EMEA asset management business to Ameriprise and management's allocation of goodwill to the business being sold. Refer to Note 10 for further information.

A continuity of our goodwill by group of CGUs for the years ended October 31, 2020 and 2021 is as follows:

(Canadian \$ in millions)	Personal and Commercial Banking			BMO Wealth Management		BMO Capital Markets	Total
	Canadian P&C	U.S. P&C	Total	Traditional Wealth Management	Insurance	Total	
Balance – October 31, 2019	97	3,796	3,893	2,145	2	2,147	6,340
Acquisitions during the year	–	–	–	–	–	–	132
Foreign exchange and other (1)	–	45	45	23	–	23	63
Balance – October 31, 2020	97	3,841	3,938	2,168	2	2,170	6,535
Dispositions during the year	–	–	–	(21)	–	(21)	(21)
Foreign exchange and other (1)	–	(274)	(274)	(837)	–	(837)	(1,136)
Balance – October 31, 2021	97 (2)	3,567 (3)	3,664	1,310 (4)	2 (5)	1,312	5,378

(1) Other changes in goodwill included the effects of translating goodwill denominated in foreign currencies into Canadian dollars and purchase accounting adjustments related to prior-year purchases.

(2) Relates primarily to bcpbank Canada, Diners Club, Aver Media LP and GE Transportation Finance.

(3) Relates primarily to First National Bank & Trust, Ozaukee Bank, Merchants and Manufacturers Bancorporation, Inc., Diners Club, AMCORE, M&I and GE Transportation Finance.

(4) Relates to BMO Nesbitt Burns Inc., Guardian Group of Funds Ltd., Pyrford International Limited, LGM Investments Limited, M&I, myCFO, Inc., Stoker Ostler Wealth Advisors, Inc., CTC Consulting LLC, and

F&C Asset Management plc. Included in Foreign exchange and other is a write-down of \$779 million of goodwill attributable to the sale of our EMEA asset management business. Refer to Note 10.

(5) Relates to AIG.

(6) Relates to Gerard Klauer Mattison, BMO Nesbitt Burns Inc., Paloma Securities L.L.C., M&I, Greene Holcomb Fisher, KGS-Alpha Capital Markets and Clearpool.

Intangible Assets

Intangible assets related to our acquisitions are initially recorded at their fair value at the acquisition date and subsequently at cost less accumulated amortization. Software is recorded at cost less accumulated amortization. Amortization expense is recorded in amortization of intangible assets in our Consolidated Statement of Income. The following table presents the changes in the balance of these intangible assets:

(Canadian \$ in millions)	Customer relationships	Core deposits	Software - amortizing	Software under development	Other	Total
Cost as at October 31, 2019	760	951	4,836 (1)	402	638	7,587
Additions (disposals)	-	-	(20)	458	(17)	421
Transfers	-	-	582	(582)	-	-
Foreign exchange and other	7	11	18 (1)	2	-	38
Cost as at October 31, 2020	767	962	5,416	280	621	8,046
Additions (disposals)	(9)	-	(248)	426	2	171
Transfers	-	-	498	(498)	-	-
Foreign exchange and other	(39)	(68)	(118)	(4)	(22)	(251)
Cost as at October 31, 2021	719	894	5,548 (1)	204	601	7,966

(1) Includes \$4,798 million of internally generated software as at October 31, 2021 (\$4,458 million as at October 31, 2020).

The following table presents the accumulated amortization of our intangible assets:

(Canadian \$ in millions)	Customer relationships	Core deposits	Software - amortizing	Software under development	Other	Total
Accumulated amortization at October 31, 2019	551	878	3,361 (1)	-	373	5,163
Amortization	52	46	478	-	44	620
Disposals	-	-	(173)	-	(38)	(211)
Foreign exchange and other	13	9	15	-	(5)	32
Accumulated amortization at October 31, 2020	616	933	3,681 (1)	-	374	5,604
Amortization	35	27	530	-	42	634
Disposals	(5)	-	(308)	-	(28)	(341)
Foreign exchange and other	(30)	(66)	(82)	-	(19)	(197)
Accumulated amortization at October 31, 2021	616	894	3,821 (1)	-	369	5,700
Carrying value at October 31, 2021	103	-	1,727	204	232	2,266
Carrying value at October 31, 2020	151	29	1,735	280	247	2,442

(1) Includes \$3,231 million of internally generated software as at October 31, 2021 (\$2,909 million as at October 31, 2020).

Intangible assets are amortized to income over the period during which we believe the assets will benefit us, on either a straight-line or an accelerated basis, over a period not to exceed 15 years. We have \$166 million as at October 31, 2021 (\$172 million as at October 31, 2020) in intangible assets with indefinite lives that relate primarily to fund management contracts.

The useful lives of intangible assets are reviewed annually for any changes in circumstances. We test definite-life intangible assets for impairment when events or changes in circumstances indicate that their carrying value may not be recoverable. Indefinite-life intangible assets are tested annually for impairment. If any intangible assets are determined to be impaired, we write them down to their recoverable amount, the higher of value in use and fair value less costs to sell.

There were write-downs of software-related intangible assets of \$9 million during the year ended October 31, 2021 (\$5 million in 2020 and \$10 million in 2019).

Note 12: Other Assets

Customers' Liability Under Acceptances

Acceptances represent a form of negotiable short-term debt issued by our customers, which we guarantee for a fee. The fees earned are recorded in non-interest revenue, lending fees in our Consolidated Statement of Income over the term of the acceptance. The amount potentially due under acceptances is recorded in other liabilities in our Consolidated Balance Sheet. We record the bank's equivalent claim against our customers in the event of a call on these commitments in other assets in our Consolidated Balance Sheet.

Other

The components of other within other assets are as follows:

(Canadian \$ in millions)	2021	2020
Accounts receivable, prepaid expenses and other items	3,302	2,942
Accrued interest receivable	1,452	1,586
Bank owned life insurance policies	4,096	4,352
Leased vehicles, net of accumulated amortization	415	677
Cash collateral	6,436	6,344
Due from clients, dealers and brokers	353	161
Insurance-related assets	2,080	1,507
Other employee future benefits assets (Note 21)	40	38
Pension asset (Note 21)	947	124
Precious metals (1)	3,290	5,328
Total	22,411	23,059

(1) Precious metals are recorded at their fair value based on quoted prices in active markets.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Note 13: Deposits

(Canadian \$ in millions)	Payable on demand				2021	2020
	Interest bearing	Non-interest bearing	Payable after notice	Payable on a fixed date (3)		
Deposits by:						
Banks (1)	5,009	1,887	733	18,982	26,611	38,825
Business and government	50,779	54,740	148,682	188,047	442,248	400,679
Individuals	4,895	36,679	119,425	55,773	216,772	219,530
Total (2) (4)	60,683	93,306	268,840	262,802	685,631	659,034
Booked in:						
Canada	51,465	83,952	129,370	162,529	427,316	407,926
United States	8,929	9,284	138,267	76,350	232,830	220,292
Other countries	289	70	1,203	23,923	25,485	30,816
Total	60,683	93,306	268,840	262,802	685,631	659,034

(1) Includes regulated and central banks.

(2) Includes structured notes and metal deposits designated at FVTPL.

(3) Includes \$35,959 million of senior unsecured debt as at October 31, 2021 subject to the Bank Recapitalization (Bail-In) regime (\$25,651 million as at October 31, 2020). The Bail-In regime provides certain statutory powers to the Canada Deposit Insurance Corporation, including the ability to convert specified eligible shares and liabilities into common shares if the bank becomes non-viable.

(4) Included in deposits as at October 31, 2021 and 2020 are \$342,967 million and \$322,951 million, respectively, of deposits denominated in U.S. dollars, and \$29,937 million and \$32,254 million, respectively, of deposits denominated in other foreign currencies.

Deposits payable on demand are comprised primarily of our customers' chequing accounts, on some of which we pay interest. Our customers need not notify us prior to withdrawing money from their chequing accounts. Deposits payable after notice are comprised primarily of our customers' savings accounts, on which we pay interest. Deposits payable on a fixed date are comprised of:

- Various investment instruments purchased by our customers to earn interest over a fixed period, such as retail and small business term deposits, wholesale funding, and guaranteed investment certificates. Deposits totalling \$20,991 million as at October 31, 2021 (\$27,353 million as at October 31, 2020) can be early redeemed (either fully or partially) by customers without penalty. As we do not expect a significant amount to be redeemed before maturity, we have classified them as payable on a fixed date, based on their remaining contractual maturities.
- Commercial paper, which totalled \$13,834 million as at October 31, 2021 (\$8,358 million as at October 31, 2020).
- Covered bonds, which totalled \$23,495 million as at October 31, 2021 (\$24,699 million as at October 31, 2020).

The following table presents the maturity schedule for deposits payable on a fixed date:

(Canadian \$ in millions)	Within 1 year	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	Over 5 years	Total
As at October 31, 2021	163,370	33,778	24,826	8,908	11,995	19,925	262,802
As at October 31, 2020	192,617	27,855	30,053	18,260	9,683	13,164	291,632

We have unencumbered liquid assets of \$317,251 million to support these and other deposit liabilities (\$306,120 million as at October 31, 2020).

The following table presents deposits payable on a fixed date and greater than one hundred thousand dollars:

(Canadian \$ in millions)	Canada	United States	Other	Total
As at October 31, 2021	140,002	72,399	23,921	236,322
As at October 31, 2020	158,475	72,186	27,799	258,460

The following table presents the maturity schedule for deposits payable on a fixed date and greater than one hundred thousand dollars, which are booked in Canada:

(Canadian \$ in millions)	Less than 3 months	3 to 6 months	6 to 12 months	Over 12 months	Total
As at October 31, 2021		20,626	12,761	20,933	85,682
As at October 31, 2020		18,081	29,679	28,109	158,475

Structured Note Liabilities

Most of our structured note liabilities included in deposits have been designated at fair value through profit or loss, which aligns the accounting result with the way the portfolio is managed. The change in fair value of these structured notes is recorded in non-interest revenue, trading revenues with the changes in fair value due to own credit risk recognized in other comprehensive income. The impact of changes in our own credit risk is measured based on movements in our own credit spread year over year.

The following table presents fair value and changes in fair value of structured note liabilities:

(Canadian \$ in millions)	Fair value	Notional amount due at contractual maturity	Change in fair value recorded in the consolidated Statement of Income (1)	Change in fair value due to own credit risk recorded in OCI (before tax)	Cumulative change in fair value due to own credit risk recorded in AOCI (before tax)
As at October 31, 2021	22,665	22,448	(1,310)	(240)	(408)
As at October 31, 2020	18,073	19,175	1,319	(26)	(168)

(1) Change in fair value may be offset by related change in fair value on hedge contracts.

Note 14: Other Liabilities

Acceptances

Acceptances represent a form of negotiable short-term debt that is issued by our customers, which we guarantee for a fee. The fees earned are recorded in non-interest revenue, lending fees in our Consolidated Statement of Income over the term of the acceptance. The amount potentially due under acceptances is recorded in other liabilities in our Consolidated Balance Sheet. We record the bank's equivalent claim against our customers in the event of a call on these commitments in other assets in our Consolidated Balance Sheet.

Securities Lending and Borrowing

Securities lending and borrowing transactions are generally collateralized by securities or cash. Cash advanced or received as collateral is recorded in securities borrowed or purchased under resale agreements, or other liabilities, securities lent or sold under repurchase agreements, respectively. Interest earned on cash collateral is recorded in interest, dividend and fee income in our Consolidated Statement of Income, and interest expense on cash collateral is recorded in interest expense, other liabilities, in our Consolidated Statement of Income. The transfer of the securities to counterparties is only reflected in our Consolidated Balance Sheet if the risks and rewards of ownership have also been transferred. Securities borrowed are not recognized in our Consolidated Balance Sheet unless they are then sold to third parties, in which case the obligation to return the securities is recorded at fair value in securities sold but not yet purchased, with any gains or losses recorded in non-interest revenue, trading revenues.

Securities Sold But Not Yet Purchased

Securities sold but not yet purchased represent our obligations to deliver securities that we did not own at the time of sale. These obligations are recorded at their fair value. Adjustments to the fair value as at the balance sheet date and gains and losses on the settlement of these obligations are recorded in trading revenues in our Consolidated Statement of Income.

Securitization and Structured Entities' Liabilities

Securitization and structured entities' liabilities include notes issued by our consolidated bank securitization vehicles and liabilities associated with the securitization of our Canadian mortgage loans as part of the Canada Mortgage Bond program, the National Housing Act Mortgage-Backed Securities program and our own programs. Additional information on our securitization programs and associated liabilities is provided in Notes 6 and 7. These liabilities are initially measured at fair value plus any directly attributable costs and are subsequently measured at amortized cost. The interest expense related to these liabilities is recorded in interest expense, other liabilities, in our Consolidated Statement of Income.

Other

The components of other within other liabilities are as follows:

(Canadian \$ in millions)	2021	2020
Accounts payable, accrued expenses and other items	9,444	8,208
Accrued interest payable	960	1,359
Allowance for credit losses on off-balance sheet items	394	511
Cash collateral	6,733	6,596
Insurance-related liabilities	12,845	12,441
Lease liabilities (1)	2,743	2,409
Other employee future benefits liability (Note 21)	1,094	1,147
Payable to brokers, dealers and clients	3,413	2,969
Pension liability (Note 21)	138	553
Total	37,764	36,193

(1) Effective November 1, 2019, we adopted IFRS 16 Leases, recognizing the cumulative effect of adoption in opening retained earnings with no changes to prior periods (Note 1).

Insurance-Related Liabilities

We are engaged in insurance businesses related to life insurance, annuities, which includes pension risk, accident and sickness, creditor insurance, and reinsurance. We designate the obligation related to certain investment contracts in our insurance business at fair value through profit or loss, which eliminates a measurement inconsistency that would otherwise arise from measuring the investment contract liabilities and offsetting changes in the fair value of the investments supporting them on a different basis. The change in fair value of these investment contract liabilities is recorded in insurance claims, commissions and changes in policy benefit liabilities with the exception of changes in our own credit risk recognized in other comprehensive income. The impact of changes in our own credit risk is measured based on movements in our own credit spread year over year. Changes in the fair value of investments backing these investment contract liabilities are recorded in non-interest revenue, insurance revenue.

The following table presents fair value and changes in fair value in our investment contract liabilities.

(Canadian \$ in millions)	Fair value	Notional amount due at contractual maturity	Change in fair value recorded in the Consolidated Statement of Income	Change in fair value due to own credit risk recorded in OCI (before tax)	Cumulative change in fair value due to own credit risk recognized in AOCI (before tax)
As at October 31, 2021	1,046	1,526	(81)	(26)	(72)
As at October 31, 2020	1,168	1,594	88	(12)	(46)

Insurance claims and policy benefit liabilities represent current claims and estimates of future insurance policy benefit liabilities. Liabilities for life insurance contracts are determined using the Canadian Asset Liability Method, which incorporates best-estimate assumptions for mortality, morbidity, policy lapses, surrenders, future investment yields, policy dividends, administration costs and margins for adverse deviation. These assumptions are reviewed at least annually and updated to reflect actual experience and market conditions.

A reconciliation of the change in insurance-related liabilities is as follows:

(Canadian \$ in millions)	2021	2020
Insurance-related liabilities, beginning of year	12,441	11,581
Increase (decrease) in life insurance policy benefit liabilities from:		
New business	765	476
In-force policies	(306)	182
Changes in actuarial assumptions and methodology	(72)	(58)
Foreign currency	(2)	-
Net increase in life insurance policy benefit liabilities	385	600
Change in other insurance-related liabilities	19	260
Insurance-related liabilities, end of year	12,845	12,441

Reinsurance

In the ordinary course of business, our insurance subsidiaries reinsure risks to other insurance and reinsurance companies in order to provide greater diversification, limit loss exposure to large risks, and provide additional capacity for future growth. These ceding reinsurance arrangements do not relieve our insurance subsidiaries of their direct obligation to the insured parties. We evaluate the financial condition of the reinsurers and monitor their credit ratings to minimize our exposure to losses from reinsurer insolvency.

Reinsurance premiums ceded are recorded net against direct premium income and are included in non-interest revenue, insurance revenue, in our Consolidated Statement of Income for the years ended October 31, 2021, 2020 and 2019, as shown in the table below:

(Canadian \$ in millions)	2021	2020	2019
Direct premium income	2,050	1,582	1,944
Ceded premiums	(408)	(154)	(158)
	1,642	1,428	1,786

Lease Liabilities

Beginning November 1, 2019, when we enter into leases we record lease liabilities representing the present value of future lease payments over the lease term. Interest expense recorded on lease liabilities for the year ended October 31, 2021 was \$56 million (\$53 million in 2020). Total cash outflow for lease liabilities for the year ended October 31, 2021 was \$383 million (\$384 million in 2020). Variable lease payments (for example maintenance, utilities and property taxes) not included in the measurement of lease liabilities for the year ended October 31, 2021 were \$236 million (\$219 million in 2020).

The maturity profile of our undiscounted lease liabilities is \$344 million for 2022, \$325 million for 2023, \$315 million for 2024, \$287 million for 2025, \$252 million for 2026 and \$1,600 million for 2027 and thereafter.

Note 15: Subordinated Debt

Subordinated debt represents our direct unsecured obligations to our debt holders, in the form of notes and debentures, and forms part of our regulatory capital. Subordinated debt is recorded at amortized cost using the effective interest rate method. Where appropriate, we enter into fair value hedges to hedge the risks caused by changes in interest rates (see Note 8). The rights of the holders of our notes and debentures are subordinate to the claims of depositors and certain other creditors. We require approval from OSFI before we can redeem any part of our subordinated debt.

The face values, terms to maturity and carrying values of our subordinated debt are as follows:

(Canadian \$ in millions, except as noted)	Face value	Maturity date	Interest rate (%)	Redeemable at our option	2021 Total	2020 Total
Debentures Series 20	150	December 2025 to 2040	8.25	Not redeemable	146	146
Series H Medium-Term Notes, Second Tranche (1)	1,000	December 2025	3.34	December 2020 (2)	-	961
Series I Medium-Term Notes, First Tranche (1)	1,250	June 2026	3.32	June 2021 (3)	-	1,242
Series I Medium-Term Notes, Second Tranche (1)	850	June 2027	2.57	June 2022 (4)	843	833
3.803% Subordinated Notes due 2032 (1)	US 1,250	December 2032	3.80	December 2027 (5)	1,567	1,771
4.338% Subordinated Notes due 2028 (1)	US 850	October 2028	4.34	October 2023 (6)	1,096	1,219
Series J Medium-Term Notes, First Tranche (1)	1,000	September 2029	2.88	September 2024 (7)	998	996
Series J Medium-Term Notes, Second Tranche (1)	1,250	June 2030	2.08	June 2025 (8)	1,248	1,248
Series K Medium-Term Notes, First Tranche (1)(9)	1,000	July 2031	1.93	July 2026 (9)	995	-
Total (10)					6,893	8,416

- (1) These notes include a non-viability contingent capital provision, which is necessary for notes issued after a certain date to qualify as regulatory capital under Basel III. As such, they are convertible into a variable number of our common shares if OSFI announces that the bank is, or is about to become, non-viable or if a federal or provincial government in Canada publicly announces that the bank has accepted or agreed to accept a capital injection, or equivalent support, to avoid non-viability. In such an event, each note is convertible into common shares pursuant to an automatic conversion formula with a multiplier and a conversion price based on the greater of: (i) a floor price of \$5.00 and (ii) the current market price of our common shares based on the volume weighted average trading price of our common shares on the TSX. The number of common shares issued is determined by dividing the par value of the note (including accrued and unpaid interest on such note) by the conversion price and then applying the multiplier.
- (2) All \$1,000 million Series H Medium-Term Notes Second Tranche were redeemed on December 8, 2020 for 100% of the principal amount, plus accrued and unpaid interest to, but excluding, the redemption date.
- (3) All \$1,250 million Series I Medium-Term Notes First Tranche were redeemed on June 1, 2021 for 100% of the principal amount, plus accrued and unpaid interest to, but excluding, the redemption date.
- (4) Redeemable at the greater of par and the Canada Yield Price prior to June 1, 2022, and redeemable at par together with accrued and unpaid interest to, but excluding, their redemption date commencing June 1, 2022.
- (5) Redeemable at par on December 15, 2027 together with accrued and unpaid interest to, but excluding, the redemption date.
- (6) Redeemable at par on October 5, 2023 together with accrued and unpaid interest to, but excluding, the redemption date.
- (7) Redeemable at par on September 17, 2024 together with accrued and unpaid interest to, but excluding, the redemption date.
- (8) Redeemable at par on June 17, 2025 together with accrued and unpaid interest to, but excluding, the redemption date.
- (9) On July 22, 2021, we issued \$1,000 million of Series K Medium-Term Notes, First Tranche. These notes are redeemable at par on July 22, 2026 together with accrued and unpaid interest to, but excluding, the redemption date.
- (10) Certain amounts of subordinated debt were issued at a premium or discount and include fair value hedge adjustments, which together increased their carrying value as at October 31, 2021 by \$44 million (increased by \$119 million in 2020); see Note 8 for further details on hedge adjustments. The carrying value is also adjusted for our subordinated debt holdings, held for market-making purposes.

The aggregate remaining maturities of our subordinated debt, based on the maturity dates under the terms of issue, can be found in the blue-tinted font in the Contractual Maturities of Assets and Liabilities and Off-Balance Sheet Commitments section of Management's Discussion and Analysis within this report.

Note 16: Equity

Preferred and Common Shares Outstanding and Other Equity Instruments

(Canadian \$ in millions, except as noted)	2021			2020		
	Number of shares	Amount	Dividends declared per share	Number of shares	Amount	Dividends declared per share
Preferred Shares – Classified as Equity						
Class B – Series 25 (1)	-	-	0.34	9,425,607	236	0.45
Class B – Series 26 (1)	-	-	0.23	2,174,393	54	0.52
Class B – Series 27	20,000,000	500	0.96	20,000,000	500	0.96
Class B – Series 29	16,000,000	400	0.91	16,000,000	400	0.91
Class B – Series 31	12,000,000	300	0.96	12,000,000	300	0.96
Class B – Series 33	8,000,000	200	0.76	8,000,000	200	0.90
Class B – Series 35 (2)	-	-	-	6,000,000	150	1.25
Class B – Series 36 (2)	-	-	-	600,000	600	58.50
Class B – Series 38	24,000,000	600	1.21	24,000,000	600	1.21
Class B – Series 40	20,000,000	500	1.13	20,000,000	500	1.13
Class B – Series 42	16,000,000	400	1.10	16,000,000	400	1.10
Class B – Series 44	16,000,000	400	1.21	16,000,000	400	1.21
Class B – Series 46	14,000,000	350	1.28	14,000,000	350	1.28
Preferred Shares – Classified as Equity		3,650			4,690	
Other Equity Instruments						
4.8% Additional Tier 1 Capital Notes		658			658	
4.3% Limited Recourse Capital Notes, Series 1		1,250			1,250	
Preferred Shares and Other Equity Instruments		5,558			6,598	
Common Shares						
Balance at beginning of year	645,889,396	13,430		639,232,276	12,971	
Issued under the Shareholder Dividend Reinvestment and Share Purchase Plan	-	-		6,746,237	471	
Issued/cancelled under the Stock Option Plan and other stock-based compensation plans (Note 20)	1,630,867	122		563,613	40	
Repurchased for cancellation and/or treasury shares sold/purchased (3)(4)	616,209	47		(652,730)	(52)	
Balance at End of Year	648,136,472	13,599	4.24	645,889,396	13,430	4.24

(1) Series 25 and Series 26 were redeemed and final dividends were paid on August 25, 2021.

(2) Series 35 and Series 36 were redeemed and final dividends were paid on November 25, 2020.

(3) Common shares are net of 36,521 treasury shares as at October 31, 2021 (652,730 treasury shares as at October 31, 2020).

(4) During fiscal 2021 and 2020, we did not purchase any of our common shares under the normal course issuer bid.

Preferred Share Rights and Privileges

(Canadian \$, except as noted)

	Redemption amount	Quarterly non-cumulative dividend (1)	Reset premium	Date redeemable / convertible	Convertible to
Class B – Series 27	25.00	\$ 0.24075 (2)	2.33%	May 25, 2024 (3)(4)	Class B – Series 28 (5)(6)
Class B – Series 29	25.00	\$ 0.2265 (2)	2.24%	August 25, 2024 (3)(4)	Class B – Series 30 (5)(6)
Class B – Series 31	25.00	\$0.240688 (2)	2.22%	November 25, 2024 (3)(4)	Class B – Series 32 (5)(6)
Class B – Series 33	25.00	\$0.190875 (2)	2.71%	August 25, 2025 (3)(4)	Class B – Series 34 (5)(6)
Class B – Series 38	25.00	\$0.303125 (2)	4.06%	February 25, 2022 (3)(4)	Class B – Series 39 (5)(6)
Class B – Series 40	25.00	\$ 0.28125 (2)	3.33%	May 25, 2022 (3)(4)	Class B – Series 41 (5)(6)
Class B – Series 42	25.00	\$ 0.2750 (2)	3.17%	August 25, 2022 (3)(4)	Class B – Series 43 (5)(6)
Class B – Series 44	25.00	\$0.303125 (2)	2.68%	November 25, 2023 (3)(4)	Class B – Series 45 (5)(6)
Class B – Series 46	25.00	\$ 0.31875 (2)	3.51%	May 25, 2024 (3)(4)	Class B – Series 47 (5)(6)

(1) Non-cumulative dividends are payable quarterly as and when declared by the Board of Directors.

(2) The dividend rate will reset on the date redeemable and every five years thereafter at a rate equal to the 5-year Government of Canada bond yield plus the reset premium noted. If converted to a floating rate series, the rate will be set as, and when declared, at the 3-month Government of Canada treasury bill yield plus the reset premium noted.

(3) Redeemable on the date noted and every five years thereafter.

(4) Convertible on the date noted and every five years thereafter if not redeemed. If converted, the shares will become floating rate preferred shares.

(5) If converted, the holders have the option to convert back to the original preferred shares on subsequent redemption dates.

(6) The shares issued include a non-viability contingent capital provision, which is necessary for the shares to qualify as regulatory capital under Basel III. Refer to the Non-Viability Contingent Capital paragraph below for details.

On August 25, 2021, we redeemed all of our 9,425,607 issued and outstanding Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 25 for an aggregate total of approximately \$236 million and all of our 2,174,393 issued and outstanding Non-Cumulative Floating Rate Class B Preferred Shares, Series 26 for an aggregate total of approximately \$54 million.

On November 25, 2020, we redeemed all of our 6 million issued and outstanding Non-Cumulative Perpetual Class B Preferred Shares, Series 35 (Non-Viability Contingent Capital (NVCC)) for an aggregate total of \$156 million and all of our 600,000 issued and outstanding Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 36 (NVCC) for an aggregate total of \$600 million.

Other Equity Instruments

The \$1,250 million 4.3% Limited Recourse Capital Notes Series 1 (LRCN) (NVCC), are classified as equity and form part of our Additional Tier 1 capital. Upon the occurrence of a recourse event, the noteholders will have recourse to assets held in a consolidated trust managed by a third-party trustee. The trust assets are currently comprised of \$1,250 million of BMO issued Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 48 (NVCC) (Preferred Shares Series 48) issued concurrently with the LRCN. As the Preferred Shares Series 48 eliminate on consolidation, they do not currently form part of our Additional Tier 1 capital.

The US\$500 million 4.8% Additional Tier 1 Capital Notes (AT1 Notes) (NVCC), are also classified as equity and form part of our Additional Tier 1 capital.

The LRCN and AT1 Notes are compound financial instruments that have both equity and liability features. On the date of issuance, we assigned an insignificant value to the liability components of both types of instrument and, as a result, the full amount of proceeds have been classified as equity. Semi-annual distributions on the LRCN and AT1 Notes will be recorded when payable. The LRCN and AT1 Notes are subordinate to the claims of the depositors and certain other creditors in right of payment. The following table shows the details of our AT1 Notes and LRCN as at October 31, 2021 and 2020.

(Canadian \$ in millions, except as noted)					2021	2020
	Face value	Interest rate (%)	Redeemable at our option	Convertible to	Total	Total
4.8% Additional Tier 1 Capital Notes	US\$500	4.8 (1)	August 2024 (2)	Variable number of common shares (3)	658	658
4.3% Limited Recourse Capital Notes	\$1,250	4.3 (4)	November 2025 (2)	Variable number of common shares (4)	1,250	1,250
Total					1,908	1,908

(1) Non-cumulative interest is payable semi-annually in arrears, at the bank's discretion.

(2) The notes are redeemable at a redemption price equal to 100% of the principal amount plus any accrued and unpaid interest, in whole or in part, at our option on any interest payment date on or after the first interest reset date or following certain regulatory or tax events. The bank may, at any time, purchase the notes at any price in the open market.

(3) The notes issued include a non-viability contingent capital provision, which is necessary for the notes to qualify as regulatory capital under Basel III. Refer to the Non-Viability Contingent Capital paragraph below for details.

(4) Non-deferrable interest is payable semi-annually on these notes, at the bank's discretion. Non-payment of interest will result in a recourse event, with the noteholders' sole remedy being the holders' proportionate share of trust assets comprised of our NVCC Preferred Shares Series 48. In such an event, the delivery of the trust assets will represent the full and complete extinguishment of our obligations under the LRCN. In circumstances under which non-viability contingent capital, including the Preferred Shares Series 48, would be converted into common shares of the bank (described below), the LRCN would be redeemed, and the noteholders' sole remedy would be their proportionate share of trust assets, then comprised of common shares of the bank received by the trust on conversion of the Preferred Shares Series 48.

Authorized Share Capital

We classify financial instruments that we issue as financial liabilities, equity instruments or compound instruments. Financial instruments that will be settled by a variable number of our common shares upon conversion by the holders are classified as liabilities in our Consolidated Balance Sheet. Dividends and interest payments on financial liabilities are classified as interest expense in our Consolidated Statement of Income. Financial instruments are classified as equity instruments when there is no contractual obligation to transfer cash or other financial assets. Issued instruments that are not mandatorily redeemable, or that are not convertible into a variable number of our common shares at the holder's option, are classified as equity and presented in share capital. Dividend payments on equity instruments are recognized as a reduction in equity.

Common Shares

We are authorized by our shareholders to issue an unlimited number of our common shares, without par value, for unlimited consideration. Our common shares are not redeemable or convertible. Dividends are declared by our Board of Directors at their discretion. Historically, the Board of Directors has declared dividends on a quarterly basis and the amount can vary from quarter to quarter.

Preferred Shares

We are authorized by our shareholders to issue an unlimited number of Class A Preferred Shares and Class B Preferred Shares, without par value, in series, for unlimited consideration. Class B Preferred Shares may be issued in a foreign currency.

Treasury Shares

When we purchase our common shares as part of our trading business, we record the cost of those shares as a reduction in shareholders' equity. If those shares are resold at a price higher than their cost, the premium is recorded as an increase in contributed surplus. If those shares are resold at a price below their cost, the discount is recorded as a reduction first to contributed surplus and then to retained earnings for any amount in excess of the total contributed surplus related to treasury shares.

Non-Viability Contingent Capital

Class B – Series 27, Class B – Series 29, Class B – Series 31, Class B – Series 33, Class B – Series 38, Class B – Series 40, Class B – Series 42, Class B – Series 44 and Class B – Series 46 preferred share issues, the AT1 Notes and, by virtue of the recourse to the Preferred Shares Series 48 the LRCN, include a non-viability contingent capital provision which is necessary for them to qualify as regulatory capital under Basel III. As such, they are convertible into a variable number of our common shares if OSFI announces that the bank is, or is about to become, non-viable or if a federal or provincial government in Canada publicly announces that the bank has accepted, or agreed to accept, a capital injection, or equivalent support, to avoid non-viability. In such an event, each preferred share or other equity instrument is convertible into common shares pursuant to an automatic conversion formula and a conversion price based on the greater of: (i) a floor price of \$5.00 and (ii) the current market price of our common shares based on the volume weighted average trading price of our common shares on the TSX. The number of common shares issued is determined by dividing the value of the preferred share or other equity instrument issuance, including declared and unpaid dividends on such preferred share or other equity instrument issuance, by the conversion price and then applying the multiplier.

Normal Course Issuer Bid

On December 3, 2021, we announced our intention, subject to the approval of OSFI and the Toronto Stock Exchange, to establish a new normal course issuer bid (NCIB) for up to 22.5 million common shares. The NCIB is a regular part of our capital management strategy. Once approvals are obtained, the share repurchase program will permit us to purchase BMO common shares for the purpose of cancellation. The timing and amount of purchases under the NCIB are subject to regulatory approvals and to management discretion, based on factors such as market conditions and capital levels. We will consult with OSFI before making purchases under the NCIB.

We did not renew our NCIB in 2021 as OSFI's restriction on common share purchases, effective since March 13, 2020, remained in place until November 4, 2021. During fiscal 2021, we did not purchase any of our common shares under the prior NCIB.

Share Redemption and Dividend Restrictions

OSFI must approve any plan to redeem any of our preferred share issues or other equity instruments for cash.

We are prohibited from declaring dividends on our preferred or common shares when we would be, as a result of paying such a dividend, in contravention of the capital adequacy, liquidity or any other regulatory directive issued under the *Bank Act (Canada)*. In addition, common share dividends cannot be paid unless all dividends declared and payable on our preferred shares have been paid or sufficient funds have been set aside to do so and, in certain circumstances Class B Preferred Share dividends cannot be paid unless dividends on our Preferred Shares Series 48 have been paid.

In addition, if the bank does not pay the interest in full on the AT1 Notes, the bank will not declare dividends on its common shares or preferred shares or redeem, purchase or otherwise retire such shares until the month commencing after the bank resumes full interest payments on the AT1 Notes.

Currently, these limitations do not restrict the payment of dividends on common or preferred shares.

Shareholder Dividend Reinvestment and Share Purchase Plan

We offer a Dividend Reinvestment and Share Purchase Plan (DRIP) for our shareholders. Participation in the plan is optional. Under the terms of the DRIP, cash dividends on common shares are reinvested to purchase additional common shares. Shareholders also have the opportunity to make optional cash payments to acquire additional common shares.

During fiscal 2021 and the first half of fiscal 2020, common shares to supply the DRIP were purchased on the open market. In the second half of fiscal 2020, common shares to supply the dividend reinvestment feature of the DRIP were issued from treasury at a 2% discount from their then-current market price.

Potential Share Issuances

As at October 31, 2021, we had reserved 33,200,910 common shares (33,200,910 as at October 31, 2020) for potential issuance in respect of the DRIP. We have also reserved 5,682,206 common shares (6,446,110 as at October 31, 2020) for the potential exercise of stock options, as further described in Note 20.

Note 17: Fair Value of Financial Instruments and Trading-Related Revenue

We record trading assets and liabilities, derivatives, certain equity and debt securities and securities sold but not yet purchased at fair value, and other non-trading assets and liabilities at amortized cost less allowances or write-downs for impairment. The fair values presented in this note are based upon the amounts estimated for individual assets and liabilities and do not include an estimate of the fair value of any of the legal entities or underlying operations that comprise our business. For certain portfolios of financial instruments where we manage exposures to similar and offsetting risks, fair value is determined on the basis of our net exposure to that risk.

Fair value represents the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between willing market participants at the measurement date. The fair value amounts disclosed represent point-in-time estimates that may change in subsequent reporting periods due to changes in market conditions or other factors. Some financial instruments are not typically exchangeable or exchanged and therefore it is difficult to determine their fair value. Where there is no quoted market price, we determine fair value using management's best estimates based on a range of valuation techniques and assumptions; since these involve uncertainties, the fair values may not be realized in an actual sale or immediate settlement of the asset or liability.

Governance Over the Determination of Fair Value

Senior executive oversight of our valuation processes is provided through various valuation and risk committees. In order to ensure that all financial instruments carried at fair value are reasonably measured for risk management and financial reporting purposes, we have established governance structures and controls, such as model validation and approval, independent price verification (IPV) and profit or loss attribution analysis (PAA), consistent with industry practice. These controls are applied independently of the relevant operating groups.

We establish valuation methodologies for each financial instrument that is required to be measured at fair value. The application of valuation models for products or portfolios is subject to independent approval to ensure only validated models are used. The impact of known limitations of models and data inputs is also monitored on an ongoing basis. IPV is a process that regularly and independently verifies the accuracy and appropriateness of market prices or model inputs used in the valuation of financial instruments. This process assesses fair values using a variety of different approaches to verify and validate the valuations. PAA is a daily process carried out by management to identify and explain changes in fair value positions across all operating lines of business within BMO Capital Markets. This process works in concert with other processes to ensure that the fair values being reported are reasonable and appropriate.

Securities

For traded securities, quoted market value is considered to be fair value. Quoted market value is based on bid or ask prices, depending on which is the most appropriate to measure fair value. Securities for which no active market exists are valued using all reasonably available market information. Our fair value methodologies are described below.

Government Securities

The fair value of government issued or guaranteed debt securities in active markets is determined by reference to recent transaction prices, broker quotes or third-party vendor prices. The fair value of securities that are not traded in an active market is modelled using implied yields derived from the prices of similar actively traded government securities and observable spreads.

Mortgage-Backed Securities and Collateralized Mortgage Obligations

The fair value of mortgage-backed securities and collateralized mortgage obligations is determined using prices obtained from independent third-party vendors, broker quotes and relevant market indices, as applicable. If such prices are not available, fair value is determined using cash flow models that make maximum use of observable market inputs or benchmark prices for similar instruments. Valuation assumptions for mortgage-backed securities and collateralized mortgage obligations include discount rates, default rates, expected prepayments, credit spreads and recoveries.

Corporate Debt Securities

The fair value of corporate debt securities is determined using prices observed in the most recent transactions. When observable price quotations are not available, fair value is determined based on discounted cash flow models using discounting curves and spreads obtained from independent dealers, brokers and third-party vendors.

Trading Loans

The fair value of trading loans is determined by referring to current market prices for the same or similar instruments.

Corporate Equity Securities

The fair value of corporate equity securities is based on quoted prices in active markets, where available. Where quoted prices in active markets are not readily available, fair value is determined using either quoted market prices for similar securities or using valuation techniques, which include discounted cash flow analysis and earnings multiples.

Privately Issued Securities

Privately issued debt and equity securities are valued using prices observed in recent market transactions, where available. Otherwise, fair value is derived from valuation models using a market or income approach. These models consider various factors, including projected cash flows, earnings, revenue and other third-party evidence, as available. The fair value of our privately issued securities includes net asset values published by third-party fund managers as applicable.

Prices from dealers, brokers and third-party vendors are corroborated as part of our independent review process, which may include using valuation techniques or obtaining consensus or composite prices from other pricing services. We validate the estimates of fair value by independently obtaining multiple quotes for external market prices and input values. We review the approach taken by third-party vendors to ensure that vendors employ a valuation model that maximizes the use of observable inputs such as benchmark yields, bid-ask spreads, underlying collateral, weighted-average terms to maturity and prepayment rate assumptions. Fair value estimates from internal valuation techniques are verified, where possible, by reference to prices obtained from third-party vendors.

Loans

In determining the fair value of our fixed rate performing loans, other than credit card loans, we discount the remaining contractual cash flows, adjusted for estimated prepayment, at market interest rates currently offered for loans with similar terms and credit risks. For credit card performing loans, fair value is considered to be equal to carrying value, due to their short-term nature.

For floating rate performing loans, changes in interest rates have minimal impact on fair value since interest rates are repriced or reset frequently. On that basis, fair value is assumed to be equal to carrying value.

The fair value of loans is not adjusted for the value of any credit protection purchased to mitigate credit risk.

Derivative Instruments

A number of valuation techniques are employed to estimate fair value, including discounted cash flow analysis, the Black-Scholes model, Monte Carlo simulation and other accepted market models. These independently validated models incorporate current market data for interest rates, foreign currency exchange rates, equity and commodity prices and indices, credit spreads, recovery rates, corresponding market volatility levels, spot prices, correlation levels and other market-based pricing factors. Option implied volatilities, an input into many valuation models, are either obtained directly from market sources or calculated from market prices. Multi-contributor pricing sources are used wherever possible.

In determining the fair value of complex and customized derivatives, we consider all reasonably available information, including dealer and broker quotations, multi-contributor pricing sources and any relevant observable market inputs. Our models calculate fair value based on inputs specific to the type of contract, which may include stock prices, correlation for multiple assets, interest rates, foreign currency exchange rates, yield curves and volatilities.

We calculate a credit valuation adjustment (CVA) to recognize the credit risk that the bank's counterparty may not ultimately be able to fulfill its derivative obligations. The CVA is derived from market-observed credit spreads or proxy credit spreads and our assessment of the net counterparty credit risk exposure, taking into account credit mitigants such as collateral, master netting agreements and novation to central counterparties. We also calculate a funding valuation adjustment (FVA) to recognize the implicit funding costs associated with over-the-counter derivative positions. The FVA is determined by reference to our own funding spreads.

Deposits

In determining the fair value of our deposits, we incorporate the following assumptions:

- For fixed rate, fixed maturity deposits, we discount the remaining contractual cash flows related to these deposits, adjusted for expected redemptions, at market interest rates currently offered for deposits with similar terms and risks. The fair value of our senior note liabilities and covered bonds is determined by referring to current market prices for similar instruments or using valuation techniques, such as discounted cash flow models that use market interest rate yield curves and funding spreads.
- For fixed rate deposits with no defined maturities, we consider fair value to equal carrying value, since carrying value is equivalent to the amount payable on the reporting date.
- For floating rate deposits, changes in interest rates have minimal impact on fair value, since deposits reprice to market frequently. On that basis, fair value is considered to equal carrying value.

Certain of our structured note liabilities that have coupons or repayment terms linked to the performance of interest rates, foreign currencies, commodities or equity securities have been designated at fair value through profit or loss. The fair value of these structured notes is estimated using internally validated valuation models and incorporates observable market prices for identical or comparable securities, as well as other inputs, such as interest rate yield curves, option volatilities and foreign exchange rates, where appropriate. Where observable prices or inputs are not available, management judgment is required to determine the fair value by assessing other relevant sources of information, such as historical data and proxy information from similar transactions.

Securities Sold But Not Yet Purchased

The fair value of these obligations is based on the fair value of the underlying securities, which can be equity or debt securities. As these obligations are fully collateralized, the method used to determine fair value would be the same as that used for the relevant underlying equity or debt securities.

Securitization and Structured Entities' Liabilities

The determination of the fair value of our securitization and structured entities' liabilities is based on quoted market prices or quoted market prices for similar financial instruments, where available. Where quoted prices are not available, fair value is determined using valuation techniques, such as discounted cash flow models that maximize the use of observable inputs.

Subordinated Debt

The fair value of our subordinated debt is determined by referring to current market prices for the same or similar instruments.

Financial Instruments with a Carrying Value Approximating Fair Value

Carrying value is considered to be a reasonable estimate of fair value for our cash and cash equivalents.

The carrying value of certain financial assets and liabilities, such as interest bearing deposits with banks, securities borrowed or purchased under resale agreements, customers' liability under acceptances, other assets, acceptances, securities lent or sold under repurchase agreements and other liabilities, is a reasonable estimate of fair value due to their short-term nature or because they are frequently repriced to current market rates. These items are therefore excluded from the below table.

Fair Value Hierarchy

We use a fair value hierarchy to categorize financial instruments according to the inputs we use in valuation techniques to measure fair value.

Fair Value of Financial Instruments Not Carried at Fair Value on the Balance Sheet

Set out in the following tables are the fair values of financial instruments not carried at fair value in our Consolidated Balance Sheet.

(Canadian \$ in millions)	2021		2020	
	Carrying value	Fair value (5)	Carrying value	Fair value (5)
Securities (1)				
Amortized cost	49,970	49,810	48,466	49,009
Loans (1)				
Residential mortgages	135,653	135,461	126,882	128,815
Consumer instalment and other personal	76,627	76,791	69,480	70,192
Credit cards	7,827	7,827	7,556	7,556
Business and government (2)	233,066	233,670	238,239	239,929
	453,173	453,749	442,157	446,492
Deposits (3)	662,827	663,558	640,961	643,156
Securitization and structured entities' liabilities (4)	24,631	24,809	26,889	27,506
Subordinated debt	6,893	7,087	8,416	8,727

(1) Carrying value is net of allowances for credit losses.

(2) Excludes \$5,022 million of loans classified as FVTPL (\$5,306 million as at October 31, 2020) and \$134 million of loans classified as FVOCI (\$51 million as at October 31, 2020).

(3) Excludes \$22,665 million of structured note liabilities (\$18,073 million as at October 31, 2020) and \$139 million of metal deposits (\$nil as at October 31, 2020) designated at FVTPL.

(4) Excludes \$855 million of securitization and structured entities' liabilities classified at FVTPL (\$nil as at October 31, 2020).

(5) If financial instruments not carried at fair value were categorized based on the fair value hierarchy, all of these financial instruments would be categorized as Level 2, except for amortized cost securities, which would have \$14,117 million categorized as Level 1 (\$18,831 million as at October 31, 2020), and \$35,693 million categorized as Level 2 (\$30,178 million as at October 31, 2020).

Certain comparative figures have been reclassified to conform with the current year's presentation.

Valuation Techniques and Significant Inputs

We determine the fair value of publicly traded fixed maturity debt and equity securities using quoted prices in active markets (Level 1) when these are available. When quoted prices in active markets are not available, we determine the fair value of financial instruments using models such as discounted cash flows, with observable market data for inputs, such as yield or broker quotes and other third-party vendor quotes (Level 2). Fair value may also be determined using models where significant market inputs are not observable due to inactive markets or minimal market activity (Level 3). We maximize the use of observable market inputs to the extent possible.

Our Level 2 trading securities are primarily valued using discounted cash flow models with observable spreads or broker quotes. The fair value of Level 2 FVOCI securities is determined using discounted cash flow models with observable spreads or third-party vendor quotes. Level 2 structured note liabilities are valued using models with observable market information. Level 2 derivative assets and liabilities are valued using industry-standard models and observable market information.

The extent of our use of actively quoted market prices (Level 1), internal models using observable market information as inputs (Level 2) and models without observable market information as inputs (Level 3) in the valuation of securities, business and government loans classified as FVTPL, and FVOCI, other assets, fair value liabilities, derivative assets and derivative liabilities is presented in the following table:

				2021		2020		
	Valued using quoted market prices	Valued using models (with observable inputs)	Valued using models (without observable inputs)	Total	Valued using quoted market prices	Valued using models (with observable inputs)	Valued using models (without observable inputs)	Total
Trading Securities								
Issued or guaranteed by:								
Canadian federal government	3,123	4,473	-	7,596	6,529	4,371	-	10,900
Canadian provincial and municipal governments	2,183	3,655	-	5,838	1,868	6,467	-	8,335
U.S. federal government	6,050	3,532	-	9,582	5,702	2,716	-	8,418
U.S. states, municipalities and agencies	-	458	-	458	16	487	-	503
Other governments	1,307	591	-	1,898	1,021	1,495	-	2,516
NHA MBS and U.S. agency MBS and CMO	-	13,379	675	14,054	7	11,487	803	12,297
Corporate debt	2,231	7,656	7	9,894	3,767	7,274	-	11,041
Trading loans	-	160	-	160	-	67	-	67
Corporate equity	54,931	-	-	54,931	43,757	-	-	43,757
	69,825	33,904	682	104,411	62,667	34,364	803	97,834
FVTPL Securities								
Issued or guaranteed by:								
Canadian federal government	704	159	-	863	452	149	-	601
Canadian provincial and municipal governments	137	1,243	-	1,380	180	1,249	-	1,429
U.S. federal government	-	38	-	38	-	44	-	44
Other governments	-	92	-	92	-	94	-	94
NHA MBS and U.S. agency MBS and CMO	-	9	-	9	-	3	-	3
Corporate debt	160	7,544	-	7,704	70	7,827	-	7,897
Corporate equity	1,670	12	2,442	4,124	1,587	10	1,903	3,500
	2,671	9,097	2,442	14,210	2,289	9,376	1,903	13,568
FVOCI Securities								
Issued or guaranteed by:								
Canadian federal government	9,138	3,927	-	13,065	20,765	1,685	-	22,450
Canadian provincial and municipal governments	1,438	1,549	-	2,987	2,604	2,143	-	4,747
U.S. federal government	18,873	2,153	-	21,026	14,852	2,842	-	17,694
U.S. states, municipalities and agencies	-	4,113	1	4,114	8	5,267	1	5,276
Other governments	2,803	3,699	-	6,502	3,643	3,738	-	7,381
NHA MBS and U.S. agency MBS and CMO	-	12,136	-	12,136	-	12,532	-	12,532
Corporate debt	812	2,349	-	3,161	792	2,442	-	3,234
Corporate equity	-	-	132	132	-	-	93	93
	33,064	29,926	133	63,123	42,664	30,649	94	73,407
Business and Government Loans	-	5,150	6	5,156	-	3,412	1,945	5,357
Other Assets (1)	4,392	85	-	4,477	6,117	117	-	6,234
Fair Value Liabilities								
Securities sold but not yet purchased	17,424	14,649	-	32,073	19,740	9,636	-	29,376
Structured note liabilities (2)	-	22,665	-	22,665	-	18,073	-	18,073
Other liabilities (3)	1,106	2,125	-	3,231	789	1,285	-	2,074
	18,530	39,439	-	57,969	20,529	28,994	-	49,523
Derivative Assets								
Interest rate contracts	6	8,066	-	8,072	13	14,916	-	14,929
Foreign exchange contracts	3	14,982	-	14,985	1	10,825	-	10,826
Commodity contracts	642	6,976	-	7,618	123	2,465	-	2,588
Equity contracts	1,381	4,657	-	6,038	750	7,711	-	8,461
Credit default swaps	-	-	-	-	-	11	-	11
	2,032	34,681	-	36,713	887	35,928	-	36,815
Derivative Liabilities								
Interest rate contracts	6	6,773	-	6,779	22	10,871	-	10,893
Foreign exchange contracts	4	12,451	-	12,455	3	10,609	-	10,612
Commodity contracts	746	1,445	-	2,191	350	1,983	-	2,333
Equity contracts	1,581	7,802	-	9,383	456	6,067	-	6,523
Credit default swaps	-	5	2	7	-	10	4	14
	2,337	28,476	2	30,815	831	29,540	4	30,375

(1) Other assets include precious metals, segregated fund assets in our insurance business and certain receivables measured at fair value.

(2) These structured note liabilities included in deposits have been designated at FVTPL.

(3) Other liabilities include investment contract and segregated fund liabilities in our insurance business, certain payables and metals deposits that have been designated at FVTPL as well as certain securitization and structured entities' liabilities measured at FVTPL.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Quantitative Information about Level 3 Fair Value Measurements

The table below presents the fair values of our significant Level 3 financial instruments, the valuation techniques used to determine their fair values and the value ranges of significant unobservable inputs used in the valuations. We have not applied any other reasonably possible alternative assumptions to the significant Level 3 categories of private equity investments, as the net asset values are provided by the investment or fund managers.

(Canadian \$ in millions, except as noted)						2021	
Reporting line in fair value hierarchy table	Fair value of assets	Valuation techniques	Significant unobservable inputs	Range of input values (1)			
				Low	High		
Private equity (2)	Corporate equity	2,442	Net asset value EV/EBITDA	Net asset value Multiple	na 6x	na 19x	
Loans (3)	Business and government loans	6	Discounted cash flows	Discount margin	40bps	40bps	
NHA MBS and U.S. agency MBS and CMO	NHA MBS and U.S. agency MBS and CMO	675	Discounted cash flows Market Comparable	Prepayment rate Comparability Adjustment (4)	4% (5.56)	47% 5.85	
2020							
Private equity (2)	Corporate equity	1,903	Net asset value EV/EBITDA	Net asset value Multiple	na 5x	na 17x	
Loans (3)	Business and government loans	1,945	Discounted cash flows	Discount margin	65bps	141bps	
NHA MBS and U.S. agency MBS and CMO	NHA MBS and U.S. agency MBS and CMO	803	Discounted cash flows Market Comparable	Prepayment rate Comparability Adjustment (4)	6% (4.93)	62% 5.74	

(1) The low and high input values represent the highest and lowest actual level of inputs used to value a group of financial instruments in a particular product category. These input ranges do not reflect the level of input uncertainty but are affected by the specific underlying instruments within each product category. The input ranges will therefore vary from period to period based on the characteristics of the underlying instruments held at each balance sheet date.

(2) Included in private equity is \$453 million of U.S. Federal Reserve Bank and U.S. Federal Home Loan Bank shares that we carry at cost (\$487 million in 2020), which approximates fair value, and are held to meet regulatory requirements.

(3) The impact of assuming a 10 basis point increase or decrease in discount margin for business and government loans is \$nil (\$3 million in 2020).

(4) Range of input values represents price per security adjustment.

na - not applicable

Significant Unobservable Inputs in Level 3 Instrument Valuations

Net Asset Value

Net asset value represents the estimated value of a security based on valuations received from the investment or fund manager. The valuation of certain private equity securities is based on the economic benefit we derive from our investment.

EV/EBITDA Multiple

The fair value of certain private equity and merchant banking investments is derived by calculating an enterprise value (EV) using the EV/EBITDA multiple and then proceeding through a waterfall of the company's capital structure to determine the value of the assets or securities we hold. The EV/EBITDA multiple is determined using judgment in considering factors such as multiples for comparable listed companies, recent transactions and company-specific factors, as well as liquidity discounts that account for the lack of active trading in these assets and securities.

Discount Margin

Loan and corporate debt yield is the interest rate used to discount expected future cash flows in the valuation model. The discount margin is the difference between an instrument's yield and a benchmark instrument's yield. Benchmark instruments, such as government bonds, have high credit quality ratings and similar maturities. The discount margin therefore represents a market return that accounts for uncertainty in future cash flows. Generally, a higher or lower discount margin will result in a lower or higher fair value.

Prepayment Rates

Discounted cash flow models are used to fair value our NHA MBS and U.S. agency MBS and CMOs. The cash flow model includes assumptions related to conditional prepayment rates, constant default rates and percentage loss on default. Prepayment rates impact our estimate of future cash flows. Changes in the prepayment rate tend to be negatively correlated with interest rates. In other words, an increase in the prepayment rate will result in a higher fair value when the asset interest rate is lower than the current reinvestment rate. A decrease in the prepayment rate will result in a lower fair value when the asset interest rate is higher than the current reinvestment rate.

Comparability Adjustment

Market comparable pricing is used to evaluate the fair value of NHA MBS and U.S. agency MBS and CMOs. This technique involves sourcing prices from third parties for similar instruments and applying adjustments to reflect recent transaction prices and instrument specific characteristics.

Significant Transfers

Our policy is to record transfers of assets and liabilities between fair value hierarchy levels at their fair values as at the end of each reporting period, consistent with the date of the determination of fair value. Transfers between the various fair value hierarchy levels reflect changes in the availability of quoted market prices or observable market inputs that result from changes in market conditions. Transfers from Level 1 to Level 2 were due to reduced observability of the inputs used to value the securities. Transfers from Level 2 to Level 1 were due to increased availability of quoted prices in active markets.

The following table presents significant transfers between Level 1 and Level 2 for the years ended October 31, 2021 and October 31, 2020.

(Canadian \$ in millions)	2021		2020	
	Level 1 to Level 2	Level 2 to Level 1	Level 1 to Level 2	Level 2 to Level 1
Trading Securities	7,863	11,421	6,582	5,930
FVTPL Securities	871	902	667	334
FVOCI Securities	11,028	13,542	12,193	13,425
Securities sold but not yet purchased	7,764	5,950	7,781	3,871

Changes in Level 3 Fair Value Measurements

The tables below present a reconciliation of all changes in Level 3 financial instruments for the years ended October 31, 2021 and 2020, including realized and unrealized gains (losses) included in earnings and other comprehensive income as well as transfers into and out of Level 3. Transfers from Level 2 to Level 3 were due to an increase in unobservable market inputs used in pricing the securities. Transfers out of Level 3 to Level 2 were due to an increase in observable market inputs used in pricing the securities.

For the year ended October 31, 2021 (Canadian \$ in millions)	Balance October 31, 2020	Change in fair value		Movements			Transfers		Fair value as at October 31, 2021	Change in unrealized gains (losses) recorded in income for instruments still held (3)
		Included in earnings	Included in other compre- hensive income (1)	Purchases/ Issuances	Sales (2)	Maturities/ Settlement	Transfers into Level 3	Transfers out of Level 3		
Trading Securities										
NHA MBS and U.S. agency MBS and CMO	803	(222)	(56)	1,465	(1,253)	-	169	(231)	675	38
Corporate debt	-	-	-	10	(3)	-	-	-	7	-
Total trading securities	803	(222)	(56)	1,475	(1,256)	-	169	(231)	682	38
FVTPL Securities										
Corporate equity	1,903	315	(92)	628	(276)	(4)	-	(32)	2,442	374
Total FVTPL securities	1,903	315	(92)	628	(276)	(4)	-	(32)	2,442	374
FVOCI Securities										
Issued or guaranteed by:										
U.S. states, municipalities and agencies	1	-	-	-	-	-	-	-	1	na
Corporate equity	93	-	26	13	-	-	-	-	132	na
Total FVOCI securities	94	-	26	13	-	-	-	-	133	na
Business and Government Loans										
	1,945	-	(150)	1,812	-	(1,302)	-	(2,299)	6	-
Other Liabilities										
	-	-	-	-	(13)	-	13	-	-	-
Derivative Liabilities										
Credit default swaps	4	-	-	-	-	-	-	(2)	2	-
Total derivative liabilities	4	-	-	-	-	-	-	(2)	2	-

(1) Foreign exchange translation on trading securities held by foreign subsidiaries is included in other comprehensive income, net foreign operations.

(2) Includes proceeds received on securities sold but not yet purchased.

(3) Changes in unrealized gains (losses) on FVTPL securities still held on October 31, 2021 are included in earnings for the year.

Unrealized gains (losses) recognized on Level 3 financial instruments may be offset by (losses) gains on economic hedge contracts.

na - not applicable

For the year ended October 31, 2020 (Canadian \$ in millions)	Change in fair value				Movements		Transfers		Fair value as at October 31, 2020	Change in unrealized gains (losses) recorded in income for instruments still held (3)
	Balance October 31, 2019	Included in earnings	Included in other comprehensive income (1)	Purchases/ Issuances	Sales (2)	Maturities/ Settlement	Transfers into Level 3	Transfers out of Level 3		
Trading Securities										
NHA MBS and U.S. agency MBS and CMO	538	(351)	9	1,338	(715)	-	225	(241)	803	(232)
Corporate debt	7	10	(2)	50	(68)	-	3	-	-	(1)
Total trading securities	545	(341)	7	1,388	(783)	-	228	(241)	803	(233)
FVTPL Securities										
Corporate equity	1,984	4	17	356	(459)	-	1	-	1,903	35
Total FVTPL securities	1,984	4	17	356	(459)	-	1	-	1,903	35
FVOCI Securities										
Issued or guaranteed by:										
U.S. states, municipalities and agencies	1	-	-	-	-	-	-	-	1	na
Corporate equity	81	-	1	11	-	-	-	-	93	na
Total FVOCI securities	82	-	1	11	-	-	-	-	94	na
Business and Government Loans	1,736	(3)	156	1,803	-	(1,747)	-	-	1,945	-
Other Liabilities	-	-	-	-	-	-	-	-	-	-
Derivative Liabilities										
Credit default swaps	1	-	-	-	-	-	4	(1)	4	-
Total derivative liabilities	1	-	-	-	-	-	4	(1)	4	-

(1) Foreign exchange translation on trading securities held by foreign subsidiaries is included in other comprehensive income, net foreign operations.

(2) Includes proceeds received on securities sold but not yet purchased.

(3) Changes in unrealized gains (losses) on trading securities, derivative assets and derivative liabilities still held on October 31, 2020 are included in earnings for the year.

Unrealized gains (losses) recognized on Level 3 financial instruments may be offset by (losses) gains on economic hedge contracts.

na - not applicable

Trading-Related Revenue

Trading assets and liabilities, including derivatives, securities and financial instruments designated at fair value through profit or loss, are measured at fair value, with gains and losses recognized in trading revenues, non-interest revenue, in our Consolidated Statement of Income. Trading-related revenue includes net interest income and non-interest revenue and excludes underwriting fees and commissions on securities transactions, which are shown separately in our Consolidated Statement of Income. Net interest income arises from interest and dividends related to trading assets and liabilities and is reported net of interest expense associated with funding these assets and liabilities in the following table.

(Canadian \$ in millions)	2021	2020	2019
Interest rates	1,017	1,199	700
Foreign exchange	416	474	401
Equities	567	(32)	269
Commodities	147	271	145
Other	2	34	6
Total trading-related revenue	2,149	1,946	1,521
Reported as:			
Net interest income	1,853	1,931	1,223
Non-interest revenue - trading revenues	296	15	298
Total trading-related revenue	2,149	1,946	1,521

Note 18: Offsetting of Financial Assets and Financial Liabilities

Financial assets and financial liabilities are offset and the net amount is reported in our Consolidated Balance Sheet when there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis or realize the asset and settle the liability simultaneously. The following table presents the amounts that have been offset in our Consolidated Balance Sheet, including securities purchased under resale agreements, securities sold under repurchase agreements and derivative instruments, generally under a market settlement mechanism (e.g. an exchange or clearing house) where simultaneous net settlement can be achieved to eliminate credit and liquidity risk between counterparties. Also presented are amounts not offset in the Consolidated Balance Sheet related to transactions where a master netting agreement or similar arrangement is in place with a right to offset the amounts only in the event of default, insolvency or bankruptcy, or where the offset criteria are otherwise not met.

(Canadian \$ in millions)

2021

	Gross amounts	Amounts offset in the balance sheet	Net amounts presented in the balance sheet	Amounts not offset in the balance sheet			
				Impact of master netting agreements	Securities received/pledged as collateral (1)(2)	Cash collateral	Net amount (3)
Financial Assets							
Securities borrowed or purchased under resale agreements	108,799	1,417	107,382	15,779	90,389	9	1,205
Derivative instruments	37,054	341	36,713	20,952	2,377	4,823	8,561
	145,853	1,758	144,095	36,731	92,766	4,832	9,766
Financial Liabilities							
Derivative instruments	31,156	341	30,815	20,952	1,865	1,906	6,092
Securities lent or sold under repurchase agreements	98,973	1,417	97,556	15,779	81,411	108	258
	130,129	1,758	128,371	36,731	83,276	2,014	6,350

2020

Financial Assets							
Securities borrowed or purchased under resale agreements	115,863	3,985	111,878	17,302	92,889	194	1,493
Derivative instruments	37,164	349	36,815	19,302	2,816	4,148	10,549
	153,027	4,334	148,693	36,604	95,705	4,342	12,042
Financial Liabilities							
Derivative instruments	30,724	349	30,375	19,302	1,889	3,108	6,076
Securities lent or sold under repurchase agreements	92,643	3,985	88,658	17,302	70,693	263	400
	123,367	4,334	119,033	36,604	72,582	3,371	6,476

(1) Financial assets received/pledged as collateral are disclosed at fair value and are limited to the net balance sheet exposure (i.e. any over-collateralization is excluded from the table).

(2) Certain amounts of collateral are restricted from being sold or repledged except in the event of default or the occurrence of other predetermined events.

(3) Not intended to represent our actual exposure to credit risk.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Note 19: Capital Management

Our objective is to maintain a strong capital position in a cost-effective structure that: is appropriate given our target regulatory capital ratios and internal assessment of required economic capital; underpins our operating groups' business strategies; supports depositor, investor and regulator confidence, while building long-term shareholder value; and is consistent with our target credit ratings.

Our approach includes establishing limits, targets and performance measures that are used to manage balance sheet positions, risk levels and capital requirements, as well as issuing and redeeming capital instruments to achieve a cost-effective capital structure.

Regulatory capital requirements for the bank are determined in accordance with guidelines issued by OSFI, which are based on the Basel III framework developed by the Basel Committee on Banking Supervision. To address the market disruption posed by the COVID-19 pandemic, OSFI announced a suite of modifications to capital requirements in fiscal 2020, with those that were temporary in nature being unwound during the course of fiscal 2021, except for the temporary exclusion of certain exposures from the Leverage Ratio exposure measures which expires on December 31, 2021. Refer to the Enterprise-Wide Capital Management section of Management's Discussion and Analysis within this report for more details.

Common Equity Tier 1 (CET1) capital is the most permanent form of capital. It is comprised of common shareholders' equity and may include a portion of expected credit loss provisions, less deductions for goodwill, intangible assets and certain other items. Tier 1 capital is primarily comprised of CET1 capital, preferred shares and other equity instruments, less regulatory deductions.

Tier 2 capital is primarily comprised of subordinated debentures and may include a portion of expected credit loss provisions, less regulatory deductions. Total capital includes Tier 1 and Tier 2 capital. Details of the components of our capital position are presented in Notes 11, 12, 15 and 16.

The primary regulatory capital measures are the CET1 Ratio, Tier 1 Capital Ratio, Total Capital Ratio and Leverage Ratio.

- Regulatory capital ratios are calculated by dividing CET1, Tier 1 and Total capital by their respective risk-weighted assets.
- The Leverage Ratio is defined as Tier 1 capital divided by leverage exposures, which consists of on-balance sheet items and specified off-balance sheet items, net of specified adjustments.

As at October 31, 2021, we met OSFI's required target capital ratios, which include a 2.5% Capital Conservation Buffer, a 1.0% Common Equity Tier 1 Surcharge for domestic systemically important banks, a Countercyclical Buffer and a 2.5% Domestic Stability Buffer.

Regulatory Capital Measures, Risk-Weighted Assets and Leverage Exposures ⁽¹⁾

(Canadian \$ in millions, except as noted)	2021	2020
CET1 Capital	44,491	40,077
Tier 1 Capital	49,966	45,840
Total Capital	57,201	54,661
Risk-Weighted Assets	325,433	336,607
Leverage Exposures	976,690	953,640
CET1 Ratio	13.7%	11.9%
Tier 1 Capital Ratio	15.4%	13.6%
Total Capital Ratio	17.6%	16.2%
Leverage Ratio	5.1%	4.8%

(1) Disclosed in accordance with, as applicable, OSFI's Capital Adequacy Requirements Guideline and Leverage Requirements Guideline. Reflects modifications to capital requirements announced by OSFI in response to the COVID-19 pandemic in fiscal 2020, some of which remain in effect in 2021.

Note 20: Employee Compensation – Share-Based Compensation

Stock Option Plan

We maintain a Stock Option Plan for designated officers and employees. Options are granted at an exercise price equal to the closing price of our common shares on the day before the grant date. Stock options granted vest in equal tranches of 50% on the third and fourth anniversaries of their grant date. Each tranche is treated as a separate award with a different vesting period. In general, options expire 10 years from their grant date.

We determine the fair value of stock options on their grant date and record this amount as compensation expense over the period that the stock options vest, with a corresponding increase to contributed surplus. When these stock options are exercised, we issue shares and record the amount of proceeds, together with the amount recorded in contributed surplus, in share capital. The estimated grant date fair value of stock options granted to employees who are eligible to retire is expensed at the date of grant.

The following table summarizes information about our Stock Option Plan:

(Canadian \$, except as noted)	2021		2020		2019	
	Number of stock options	Weighted-average exercise price (1)	Number of stock options	Weighted-average exercise price (1)	Number of stock options	Weighted-average exercise price (1)
Outstanding at beginning of year	6,446,110	81.50	6,108,307	76.59	6,095,201	72.19
Granted	984,943	97.14	976,087	101.47	931,047	89.90
Exercised	1,630,867	67.88	563,613	61.89	902,651	60.21
Forfeited/cancelled	117,980	97.03	34,052	97.10	4,756	98.96
Expired	–	–	40,619	82.78	10,534	103.79
Outstanding at end of year	5,682,206	87.79	6,446,110	81.50	6,108,307	76.59
Exercisable at end of year	2,616,750	77.34	3,595,744	69.16	3,507,803	64.57
Available for grant	12,708,296		13,575,259		2,487,645	

(1) The weighted-average exercise prices reflect the conversion of foreign currency denominated options at the exchange rate as at October 31, 2021, 2020 and 2019, respectively.

For foreign currency denominated options exercised or expired during the year, the weighted-average exercise prices are translated using the exchange rates as at the settlement date and expiry date, respectively.

Employee compensation expense related to this plan for the years ended October 31, 2021, 2020 and 2019 was \$10 million, \$9 million and \$9 million, respectively.

Options outstanding and exercisable at October 31, 2021 by range of exercise price were as follows:

(Canadian \$, except as noted)	Options outstanding			Options exercisable	
Range of exercise prices	Number of stock options	Weighted-average remaining contractual life (years)	Weighted-average exercise price	Number of stock options	Weighted-average exercise price
\$50.01 to \$60.00	107,888	0.1	56.00	107,888	56.00
\$60.01 to \$70.00	1,065,947	1.6	64.58	1,065,947	64.58
\$70.01 to \$80.00	691,456	3.7	77.57	691,456	77.57
\$80.01 to \$90.00	878,372	7.1	89.90	–	–
\$90.01 and over	2,938,543	7.6	99.16	751,459	98.27

The following table summarizes additional information about our Stock Option Plan:

(Canadian \$ in millions, except as noted)	2021	2020	2019
Unrecognized compensation cost for non-vested stock option awards	7	7	6
Cash proceeds from stock options exercised	111	35	54
Weighted-average share price for stock options exercised (in dollars)	115.42	94.44	99.84

The fair value of options granted was estimated using a binomial option pricing model. The weighted-average fair value of options granted during the years ended October 31, 2021, 2020 and 2019 was \$10.75, \$9.46 and \$10.23, respectively. To determine the fair value of the stock option tranches on the grant date, the following ranges of values were used for each option pricing assumption:

	2021	2020	2019
Expected dividend yield	4.9%	4.3%	5.7%
Expected share price volatility	20.6% – 20.7%	15.4%	20.0% – 20.1%
Risk-free rate of return	1.0%	1.9% – 2.0%	2.5%
Expected period until exercise (in years)	6.5 – 7.0	6.5 – 7.0	6.5 – 7.0

Changes to the input assumptions can result in different fair value estimates.

Expected dividend yield is based on market expectations of future dividends on our common shares. Expected share price volatility is determined based on the market consensus implied volatility for traded options on our common shares. The risk-free rate is based on the yields of a Canadian swap curve with maturities similar to the expected period until exercise of the options. The weighted-average exercise price on the grant date for the years ended October 31, 2021, 2020 and 2019 was \$97.14, \$101.47 and \$89.90, respectively.

Other Share-Based Compensation

Share Purchase Plans

We offer various employee share purchase plans. The largest of these plans provides employees with the option of directing a portion of their gross salary toward the purchase of our common shares. We match 50% of employee contributions up to 6% of their individual gross salary to a maximum of \$75,000 (\$100,000 prior to December 31, 2020). Our contributions during the first two years vest after two years of participation in the plan, with subsequent contributions vesting immediately. The shares held in the employee share purchase plan are purchased on the open market and are considered outstanding for purposes of computing earnings per share. The dividends earned on our common shares held by the plan are used to purchase additional common shares on the open market.

We account for our contributions as employee compensation expense when they are contributed to the plan.

Employee compensation expense related to these plans for the years ended October 31, 2021, 2020 and 2019 was \$46 million, \$58 million and \$54 million, respectively. There were 18.0 million, 19.2 million and 18.0 million common shares held in these plans for the years ended October 31, 2021, 2020 and 2019, respectively.

Compensation Trusts

We sponsor various share ownership arrangements, certain of which are administered through trusts into which our matching contributions are paid. We are not required to consolidate our compensation trusts. The assets held by the trusts are not included in our consolidated financial statements.

Total assets held under our share ownership arrangements amounted to \$2,425 million as at October 31, 2021 (\$1,523 million as at October 31, 2020).

Mid-Term Incentive Plans

We offer mid-term incentive plans for executives and certain senior employees. Payment amounts are adjusted to reflect reinvested dividends and changes in the market value of our common shares. Depending on the plan, the recipient receives either a single cash payment at the end of the three-year period of the plan, or cash payments over the three years of the plan. As the awards are cash-settled, they are recorded as liabilities. Amounts payable under such awards are recorded as compensation expense over the vesting period. Amounts related to units granted to employees who are eligible to retire are expensed at the time of grant. Subsequent changes in the fair value of the liability are recorded in compensation expense in the period in which they arise.

Mid-term incentive plan units granted during the years ended October 31, 2021, 2020 and 2019 totalled 6.4 million, 5.7 million and 6.3 million, respectively.

The weighted-average fair value of these units granted during the years ended October 31, 2021, 2020 and 2019 was \$91.62, \$99.59 and \$98.52, respectively, and we recorded employee compensation expense of \$1,234 million, \$363 million and \$610 million, respectively. We hedge the impact of the change in market value of our common shares by entering into total return swaps. We also enter into foreign currency swaps to manage the foreign exchange translation from our U.S. businesses. Gains (losses) on total return swaps and foreign currency swaps recognized for the years ended October 31, 2021, 2020 and 2019 were \$719 million, \$(175) million and \$20 million, respectively, resulting in net employee compensation expense of \$515 million, \$538 million and \$590 million, respectively.

A total of 17.6 million, 17.0 million and 17.2 million mid-term incentive plan units were outstanding as at October 31, 2021, 2020 and 2019, respectively, and the intrinsic value of those awards which had vested was \$1,679 million, \$1,019 million and \$1,251 million, respectively.

Deferred Incentive Plans

We offer deferred incentive plans for members of our Board of Directors, executives and key employees in BMO Capital Markets and Wealth Management. Under these plans, fees, annual incentive payments and/or commissions can be deferred as share units of our common shares. These share units are either fully vested on the grant date or vest at the end of three years. The value of these share units is adjusted to reflect reinvested dividends and changes in the market value of our common shares.

Deferred incentive plan payments are paid in cash upon the participant's departure from the bank.

Employee compensation expense for these plans is recorded in the year the fees, incentive payments and/or commissions are earned. Changes in the amount of the incentive plan payments as a result of dividends and share price movements are recorded as increases or decreases in employee compensation expense in the period of the change.

Deferred incentive plan units granted during the years ended October 31, 2021, 2020 and 2019 totalled 0.4 million, 0.3 million and 0.3 million, respectively, and the weighted-average fair value of these units granted during the years ended October 31, 2021, 2020 and 2019 was \$113.08, \$85.47 and \$97.27, respectively.

Liabilities related to these plans are recorded in other liabilities in our Consolidated Balance Sheet and totalled \$609 million and \$379 million as at October 31, 2021 and 2020, respectively.

Employee compensation expense related to these plans for the years ended October 31, 2021, 2020 and 2019 was \$279 million, \$(62) million and \$17 million, respectively. We have entered into derivative instruments to hedge our exposure related to these plans. Changes in the fair value of these derivatives are recorded as employee compensation expense in the period in which they arise. Gains (losses) on these derivatives recognized for the years ended October 31, 2021, 2020 and 2019 were \$271 million, \$(67) million and \$4 million, respectively. These gains (losses) resulted in net employee compensation expense for the years ended October 31, 2021, 2020 and 2019 of \$8 million, \$5 million and \$13 million, respectively.

A total of 4.6 million, 4.7 million and 4.8 million deferred incentive plan units were outstanding as at October 31, 2021, 2020 and 2019, respectively.

Note 21: Employee Compensation – Pension and Other Employee Future Benefits

Pension and Other Employee Future Benefit Plans

We sponsor a number of arrangements globally that provide pension and other employee future benefits to our retired and current employees. The largest of these arrangements, by defined benefit obligation, are the primary defined benefit pension plans for employees in Canada and the United States and the primary other employee future benefit plan for employees in Canada.

Pension arrangements include defined benefit pension plans, as well as supplementary arrangements that provide pension benefits in excess of statutory limits. Generally, under these plans we provide retirement benefits based on an employee's years of service and average annual earnings over a period of time prior to retirement. Our pension and other employee future benefit expenses, recorded in employee compensation expense, mainly comprise the current service cost plus or minus the interest on net defined benefit assets or liabilities. In addition, we provide defined contribution pension plans to our employees. The costs of these plans, recorded in employee compensation expense, are equal to our contributions to the plans.

Effective December 31, 2020, the primary defined benefit pension plan for employees in Canada was closed to new employees hired after that date. Employees hired or transferred to BMO Canada on or after January 1, 2021 are eligible to participate in a defined contribution pension plan once they have completed the waiting period of six months of continuous service.

We also provide other employee future benefits, including health and dental care benefits and life insurance, for eligible current and retired employees.

Short-term employee benefits, such as salaries, paid absences, bonuses and other benefits, are accounted for on an accrual basis over the period in which the employees provide the related services.

Investment Policy

The defined benefit pension plans are administered under a defined governance structure, with oversight resting with the Board of Directors.

The plans are managed under a framework that considers both assets and liabilities in the development of an investment policy and in managing risk. Over the past several years, we have implemented a liability-driven investment strategy for the primary Canadian plan to enhance risk-adjusted returns while reducing the plan's surplus volatility. This strategy has reduced the impact of the plan on our regulatory capital.

The plans invest in asset classes that include equities, fixed income and alternative strategies, under established investment guidelines. Plan assets are diversified across asset classes and by geographic exposure. They are managed by asset management firms that are responsible for the selection of investment securities. Derivative instruments are permitted under policy guidelines and are generally used to hedge foreign currency exposures, manage interest rate exposures or replicate the return of an asset.

Asset Allocations

The asset allocation ranges and weighted-average actual asset allocations of our primary pension plans, based on fair market values at October 31, are as follows:

	Pension benefit plans		
	Target range 2021	Actual 2021	Actual 2020
Equities	20% – 40%	30%	30%
Fixed income investments	40% – 55%	47%	47%
Alternative strategies	10% – 35%	23%	23%

Our pension and other employee future benefit plan assets are measured at fair value on a recurring basis.

Risk Management

The defined benefit pension plans are exposed to various risks, including market risk (interest rate, equity and foreign currency risks), credit risk, operational risk, surplus risk and longevity risk. We follow a number of approaches to monitor and actively manage these risks, including:

- monitoring surplus-at-risk, which measures a plan's risk in an asset-liability framework;
- stress testing and scenario analyses to evaluate the volatility of the plans' financial positions and any potential impact on the bank;
- hedging of currency exposures and interest rate risk within policy limits;
- controls related to asset mix allocations, geographic allocations, portfolio duration, credit quality of debt securities, sector guidelines, issuer/counterparty limits and others; and
- ongoing monitoring of exposures, performance and risk levels.

Pension and Other Employee Future Benefit Liabilities

Our actuaries perform valuations of our defined benefit obligations for pension and other employee future benefits as at October 31 of each year using the projected unit credit method based on management's assumptions about discount rates, rates of compensation increase, retirement age, mortality and health care cost trend rates.

The discount rates for the primary Canadian and U.S. pension and other employee future benefit plans were selected based on the yields of high-quality AA rated corporate bonds with terms matching the plans' cash flows.

The fair value of plan assets is deducted from the defined benefit obligation to determine the net defined benefit asset or liability. For defined benefit pension plans that are in a net defined benefit asset position, the recognized asset is limited to the present value of economic benefits available in the form of future refunds from the plan or reductions in future contributions to the plan (the "asset ceiling"). Changes in the asset ceiling are recognized in other comprehensive income. Components of the change in our net defined benefit assets or liabilities and our pension and other employee future benefit expenses are as follows:

Current service cost represents benefits earned in the current year. The cost is determined with reference to the current workforce and the amount of benefits to which employees will be entitled upon retirement, based on the provisions of our benefit plans.

Interest on net defined benefit asset or liability represents the increase in the net defined benefit asset or liability that results from the passage of time and is determined by applying the discount rate to the net defined benefit asset or liability.

Actuarial gains and losses may arise in two ways. First, each year our actuaries recalculate the defined benefit obligations and compare them to those estimated as at the previous year end. Any differences that result from changes in demographic and economic assumptions or from plan member experience being different from management's expectations at the previous year end are considered actuarial gains or losses. Second, actuarial gains and losses arise when there are differences between the discount rate and actual returns on plan assets. Actuarial gains and losses are recognized immediately in other comprehensive income as they occur and are not subsequently reclassified to income in future periods.

Plan amendments are changes in our defined benefit obligations that result from changes to provisions of the plans. The effects of plan amendments are recognized immediately in income when a plan is amended.

Settlements occur when defined benefit obligations for plan participants are settled, usually through lump sum cash payments, and as a result we no longer have any obligation to provide such participants with benefit payments in the future.

Funding of Pension and Other Employee Future Benefit Plans

We fund our defined benefit pension plans in Canada and the United States in accordance with statutory requirements, and the assets in these plans are used to pay benefits to retirees and other employees. Some groups of employees are also eligible to make voluntary contributions in order to receive enhanced benefits. Our supplementary pension plan in Canada is funded, while the supplementary pension plan in the U.S. is unfunded.

Our other employee future benefit plans in Canada and the United States are either funded or unfunded. Benefit payments related to these plans are paid either through the respective plan or directly by us.

We measure the fair value of plan assets for our plans in Canada and the United States as at October 31. In addition to actuarial valuations for accounting purposes, we are required to prepare valuations for determining our minimum funding requirements for our pension arrangements in accordance with the relevant statutory framework (our "funding valuation"). An annual funding valuation is performed for our plans in Canada and the United States. The most recent funding valuation for our primary Canadian pension plan was performed as at October 31, 2021 and the most recent funding valuation for our primary U.S. pension plan was performed as at January 1, 2021.

A summary of plan information for the past three years is as follows:

(Canadian \$ in millions)	Pension benefit plans			Other employee future benefit plans		
	2021	2020	2019	2021	2020	2019
Defined benefit obligation	9,716	10,493	9,866	1,220	1,290	1,254
Fair value of plan assets	10,525	10,064	9,723	166	181	175
Surplus (deficit) and net defined benefit asset (liability)	809	(429)	(143)	(1,054)	(1,109)	(1,079)
Surplus (deficit) is comprised of:						
Funded or partially funded plans	939	(266)	36	40	38	46
Unfunded plans	(130)	(163)	(179)	(1,094)	(1,147)	(1,125)
Surplus (deficit) and net defined benefit asset (liability)	809	(429)	(143)	(1,054)	(1,109)	(1,079)

Pension and Other Employee Future Benefit Expenses

Pension and other employee future benefit expenses are determined as follows:

(Canadian \$ in millions)	Pension benefit plans			Other employee future benefit plans		
	2021	2020	2019	2021	2020	2019
Annual benefits expense						
Current service cost	268	249	193	9	11	9
Net interest (income) expense on net defined benefit (asset) liability	7	1	(20)	30	32	37
Past service cost (income)	-	-	(5)	-	-	-
Administrative expenses	5	5	5	-	-	-
Remeasurement of other long-term benefits	-	-	-	(11)	10	6
Benefits expense	280	255	173	28	53	52
Canada and Quebec pension plan expense	90	87	82	-	-	-
Defined contribution expense	160	169	170	-	-	-
Total annual pension and other employee future benefit expenses recognized in the Consolidated Statement of Income	530	511	425	28	53	52

Weighted-Average Assumptions

	Pension benefit plans			Other employee future benefit plans		
	2021	2020	2019	2021	2020	2019
Defined Benefit Expenses						
Discount rate at beginning of year (3)(4)	2.7%	3.0%	4.0%	2.7%	3.0%	4.1%
Rate of compensation increase	2.1%	2.1%	2.4%	2.0%	2.0%	2.0%
Assumed overall health care cost trend rate	na	na	na	4.8% (2)	4.9% (1)	4.9% (1)
Defined Benefit Obligation						
Discount rate at end of year	3.2%	2.7%	3.0%	3.3%	2.7%	3.0%
Rate of compensation increase	2.2%	2.1%	2.1%	na (5)	2.0%	2.0%
Assumed overall health care cost trend rate	na	na	na	4.8% (2)	4.8% (1)	4.9% (1)

(1) Trending to 4.1% in 2040 and remaining at that level thereafter.

(2) Trending to 4.0% in 2041 and remaining at that level thereafter.

(3) The pension benefit current service cost was calculated using a separate discount rate of 3.00%, 3.10% and 4.10% for 2021, 2020 and 2019, respectively.

(4) The other employee future benefit plans current service cost was calculated using a separate discount rate of 3.00%, 3.20% and 4.20% for 2021, 2020 and 2019, respectively.

(5) Rate of compensation increase is na due to new flat dollar retiree plan benefit no longer being dependent on compensation.

na - not applicable

Assumptions regarding future mortality are based on published statistics and mortality tables calibrated to plan experience, when applicable.

The current life expectancies underlying the amounts of the defined benefit obligations for our primary plans are as follows:

(Years)	Canada		United States	
	2021	2020	2021	2020
Life expectancy for those currently age 65				
Males	23.8	23.8	21.8	21.7
Females	24.2	24.1	23.2	23.1
Life expectancy at age 65 for those currently age 45				
Males	24.8	24.7	23.0	22.9
Females	25.1	25.1	24.4	24.3

Changes in the estimated financial positions of our defined benefit pension plans and other employee future benefit plans are as follows:

(Canadian \$ in millions, except as noted)	Pension benefit plans		Other employee future benefit plans	
	2021	2020	2021	2020
Defined benefit obligation				
Defined benefit obligation at beginning of year	10,493	9,866	1,290	1,254
Current service cost	268	249	9	11
Interest cost	269	286	34	37
Benefits paid	(525)	(516)	(50)	(48)
Employee contributions	17	17	5	5
Actuarial (gains) losses due to:				
Changes in demographic assumptions	11	16	(4)	14
Changes in financial assumptions	(700)	484	(89)	50
Plan member experience	29	59	39	(35)
Foreign exchange and other	(146)	32	(14)	2
Defined benefit obligation at end of year	9,716	10,493	1,220	1,290
Wholly or partially funded defined benefit obligation	9,586	10,330	126	143
Unfunded defined benefit obligation	130	163	1,094	1,147
Total defined benefit obligation	9,716	10,493	1,220	1,290
Fair value of plan assets				
Fair value of plan assets at beginning of year	10,064	9,723	181	175
Interest income	262	285	4	5
Return on plan assets (excluding interest income)	542	235	(1)	6
Employer contributions	298	296	40	36
Employee contributions	17	17	5	5
Benefits paid	(525)	(516)	(50)	(48)
Administrative expenses	(5)	(5)	-	-
Foreign exchange and other	(128)	29	(13)	2
Fair value of plan assets at end of year	10,525	10,064	166	181
Surplus (Deficit) and net defined benefit asset (liability) at end of year	809	(429)	(1,054)	(1,109)
Recorded in:				
Other assets	947	124	40	38
Other liabilities	(138)	(553)	(1,094)	(1,147)
Surplus (Deficit) and net defined benefit asset (liability) at end of year	809	(429)	(1,054)	(1,109)
Actuarial gains (losses) recognized in other comprehensive income				
Net actuarial gains (losses) on plan assets	542	235	(1)	6
Actuarial gains (losses) on defined benefit obligation due to:				
Changes in demographic assumptions	(11)	(16)	4	(12)
Changes in financial assumptions	700	(484)	84	(45)
Plan member experience	(29)	(59)	(45)	38
Foreign exchange and other	20	(6)	-	-
Actuarial gains (losses) recognized in other comprehensive income for the year	1,222	(330)	42	(13)

Our pension and other employee future benefit plan assets are measured at fair value on a recurring basis. The fair values of plan assets held by our primary plans as at October 31, 2021 and 2020 are as follows:

(Canadian \$ in millions)	2021			2020		
	Quoted	Unquoted	Total	Quoted	Unquoted	Total
Cash and money market funds	144	1	145	208	-	208
Securities issued or guaranteed by:						
Canadian federal government	26	41	67	17	54	71
Canadian provincial and municipal governments	191	364	555	308	404	712
U.S. federal government	297	4	301	393	7	400
Pooled funds	1,071	4,014	5,085	1,331	3,442	4,773
Derivative instruments	-	43	43	1	(16)	(15)
Corporate debt	3	1,391	1,394	2	1,363	1,365
Corporate equity	1,655	-	1,655	1,255	-	1,255
	3,387	5,858	9,245	3,515	5,254	8,769

No plan assets are directly invested in the bank's or related parties' securities as at October 31, 2021 and 2020. As at October 31, 2021 our primary Canadian plan indirectly held, through pooled funds, approximately \$11 million (\$9 million as at October 31, 2020) of our common shares and fixed income securities. The plans do not hold any property we occupy or other assets we use.

Sensitivity of Assumptions

Key weighted-average assumptions used in measuring the defined benefit obligations for our primary plans are outlined in the following table. The sensitivity analysis provided in the table should be used with caution, as it is hypothetical and the impact of changes in each key assumption may not be linear. The sensitivities to changes in each key variable have been calculated independently of the impact of changes in other key variables. Actual experience may result in simultaneous changes in a number of key assumptions, which would amplify or reduce certain sensitivities.

(Canadian \$ in millions, except as noted)	Defined benefit obligation	
	Pension benefit plans	Other employee future benefit plans
Discount rate (%)	3.2	3.3
Impact of: 1% increase (\$)	(1,019)	(111)
1% decrease (\$)	1,287	133
Rate of compensation increase (%)	2.2	na
Impact of: 0.25% increase (\$)	47	- (1)
0.25% decrease (\$)	(46)	- (1)
Mortality		
Impact of: 1 year shorter life expectancy (\$)	(179)	(29)
1 year longer life expectancy (\$)	176	29
Assumed overall health care cost trend rate (%)	na	4.8 (2)
Impact of: 1% increase (\$)	na	49
1% decrease (\$)	na	(49)

(1) The change in this assumption is immaterial.

(2) Trending to 4.0% in 2041 and remaining at that level thereafter.

na - not applicable

Maturity Profile

The duration of the defined benefit obligation for our primary plans is as follows:

(Years)	2021	2020
Canadian pension plans	14.5	15.4
U.S. pension plans	9.5	9.9
Canadian other employee future benefit plans	13.7	14.3

Cash Flows

Cash payments we made during the year in connection with our employee future benefit plans are as follows:

(Canadian \$ in millions)	Pension benefit plans			Other employee future benefit plans		
	2021	2020	2019	2021	2020	2019
Contributions to defined benefit plans	254	251	203	-	-	-
Contributions to defined contribution plans	160	169	170	-	-	-
Benefits paid directly to pensioners	44	45	53	40	36	40
	458	465	426	40	36	40

Our best estimate of the contributions and benefits to be paid directly to pensioners for the year ending October 31, 2022 is approximately \$86 million for our defined benefit pension plans and \$48 million for our other employee future benefit plans. Benefit payments for the year ending October 31, 2022 are estimated to be \$542 million.

Note 22: Income Taxes

We report our provision for income taxes in our Consolidated Statement of Income based upon transactions recorded in our consolidated financial statements regardless of when they are recognized for income tax purposes, with the exception of repatriation of retained earnings from our subsidiaries, as noted below.

In addition, we record an income tax expense or benefit in other comprehensive income or directly in equity when the taxes relate to amounts recorded in other comprehensive income or equity. For example, income tax expense (recovery) on hedging gains (losses) related to our net investment in foreign operations is recorded in our Consolidated Statement of Comprehensive Income as part of net gains (losses) on translation of net foreign operations.

Current tax is the amount of income tax recoverable (payable) in respect of the taxable loss (profit) for a period. Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities for accounting and tax purposes. Deferred tax assets and liabilities are measured at the tax rates expected to apply when temporary differences reverse. Changes in deferred tax assets and liabilities related to a change in tax rates are recorded in income in the period the tax rate is substantively enacted, except to the extent that the tax arises from a transaction or event which is recognized either in other comprehensive income or directly in equity. Current and deferred taxes are offset only when they are levied by the same tax authority, on the same entity or group of entities, and when there is a legal right to offset.

Included in deferred tax assets is \$nil million (\$20 million as at October 31, 2020) related to Canadian tax loss carryforwards and \$9 million (\$75 million as at October 31, 2020) related to both U.S. tax loss carryforwards and tax credits that will expire in various amounts in U.S. taxation years from 2021 through 2040. On the evidence available, including management projections of income, we believe that it is probable there will be sufficient taxable income generated by our business operations to support these deferred tax assets. The amount of tax on temporary differences, unused tax losses and unused tax credits for which no deferred tax asset is recognized in our Consolidated Balance Sheet as at October 31, 2021 is \$118 million (\$113 million in 2020), of which \$7 million (\$7 million in 2020) is scheduled to expire within five years. Deferred tax assets have not been recognized in respect of these items because it is not probable that these assets will be realized.

Income that we earn through our foreign subsidiaries is generally taxed in the foreign country in which they operate. Income that we earn through our foreign branches is also generally taxed in the foreign country in which they operate. Canada also taxes the income we earn through foreign branches and a credit is allowed for certain foreign taxes paid on such income. Repatriation of earnings from certain foreign subsidiaries would require us to pay tax on certain of these earnings. As repatriation of such earnings is not planned in the foreseeable future, we have not recorded a related deferred tax liability. The taxable temporary differences associated with the repatriation of earnings from investments in certain subsidiaries, branches, associates and interests in joint ventures for which deferred tax liabilities have not been recognized totalled \$17 billion as at October 31, 2021 (\$16 billion in 2020).

Provision for Income Taxes

(Canadian \$ in millions)	2021	2020	2019
Consolidated Statement of Income			
Current			
Provision for income taxes for the current period	2,334	1,154	1,198
Adjustments for prior periods	(14)	10	(14)
Deferred			
Origination and reversal of temporary differences	173	91	327
Effect of changes in tax rates	11	(4)	3
	2,504	1,251	1,514
Other Comprehensive Income and Equity			
Income tax expense (recovery) related to:			
Unrealized gains (losses) on FVOCI debt securities	(58)	143	140
Reclassification to earnings of (gains) on FVOCI debt securities	(14)	(25)	(26)
Gains (losses) on derivatives designated as cash flow hedges	(504)	541	521
Reclassification to earnings of (gains) losses on derivatives designated as cash flow hedges	(149)	(16)	51
Unrealized gains (losses) on hedges of net foreign operations	180	(35)	(4)
Gains (losses) on remeasurement of pension and other employee future benefit plans	341	(88)	(196)
Gains (losses) on remeasurement of own credit risk on financial liabilities designated at fair value	(70)	(10)	27
Unrealized gains on FVOCI equity securities	6	-	1
Share-based compensation	(10)	3	-
	(278)	513	514
Total provision for income taxes	2,226	1,764	2,028
Components of Total Provision for Income Taxes			
(Canadian \$ in millions)	2021	2020	2019
Canada: Current taxes			
Federal	650	694	791
Provincial	373	402	465
	1,023	1,096	1,256
Canada: Deferred taxes			
Federal	233	(11)	(113)
Provincial	134	(6)	(66)
	367	(17)	(179)
Total Canadian	1,390	1,079	1,077
Foreign: Current taxes	940	450	308
Deferred taxes	(104)	235	643
Total foreign	836	685	951
Total provision for income taxes	2,226	1,764	2,028

Set out below is a reconciliation of our statutory tax rates and income taxes that would be payable at these rates to the effective tax rates and provision for income taxes that we have recorded in our Consolidated Statement of Income:

(Canadian \$ in millions, except as noted)	2021		2020		2019	
Combined Canadian federal and provincial income taxes at the statutory tax rate	2,729	26.6%	1,688	26.6%	1,934	26.6%
Increase (decrease) resulting from:						
Tax-exempt income from securities	(232)	(2.3)	(247)	(3.9)	(220)	(3.0)
Foreign operations subject to different tax rates	(137)	(1.3)	(175)	(2.8)	(158)	(2.2)
Write-down of goodwill	202	2.0	-	-	-	-
Change in tax rate for deferred taxes	11	0.1	(4)	(0.1)	3	-
Income attributable to investments in associates and joint ventures	(56)	(0.6)	(39)	(0.6)	(37)	(0.5)
Other	(13)	(0.1)	28	0.5	(8)	(0.1)
Provision for income taxes in the Consolidated Statement of Income and effective tax rate	2,504	24.4%	1,251	19.7%	1,514	20.8%

Components of Deferred Tax Balances

(Canadian \$ in millions)	Net asset, October 31, 2020	Benefit (expense) to income statement	Benefit (expense) to equity	Translation and other	Net asset, October 31, 2021
Deferred Tax Asset (Liability)					
Allowance for credit losses	849	(194)	-	(4)	651
Employee future benefits	337	2	(9)	-	330
Deferred compensation benefits	416	270	-	(1)	685
Other comprehensive income	(358)	-	250	-	(108)
Tax loss carryforwards	87	(53)	-	-	34
Tax credits	31	(31)	-	-	-
Premises and equipment	(361)	(39)	-	-	(400)
Pension benefits	78	104	(330)	-	(148)
Goodwill and intangible assets	(237)	(6)	-	2	(241)
Securities	11	(62)	-	-	(51)
Other	512	(175)	10	(4)	343
Net deferred tax assets (liabilities)	1,365	(184)	(79)	(7)	1,095
Comprising					
Deferred tax assets	1,473				1,287
Deferred tax liabilities	(108)				(192)
Net deferred tax assets (liabilities)	1,365	-	-	-	1,095

(Canadian \$ in millions)	Net asset, November 1, 2019 (1)	Benefit (expense) to income statement	Benefit (expense) to equity	Translation and other	Net asset, October 31, 2020
Deferred Tax Asset (Liability)					
Allowance for credit losses	511	334	-	4	849
Employee future benefits	325	11	1	-	337
Deferred compensation benefits	483	(69)	-	2	416
Other comprehensive income	(143)	-	(218)	3	(358)
Tax loss carryforwards	145	(59)	-	1	87
Tax credits	189	(189)	-	31	31
Premises and equipment	(282)	(78)	-	(1)	(361)
Pension benefits	27	(35)	86	-	78
Goodwill and intangible assets	(217)	(18)	-	(2)	(237)
Securities	50	(39)	-	-	11
Other	441	55	-	16	512
Net deferred tax assets (liabilities)	1,529	(87)	(131)	54	1,365
Comprising					
Deferred tax assets	1,589				1,473
Deferred tax liabilities	(60)				(108)
Net deferred tax assets (liabilities)	1,529	-	-	-	1,365

(1) Includes IFRS 16 adoption adjustment of \$21 million (refer to Note 1).

Canadian tax authorities have reassessed us for additional income tax and interest in an amount of approximately \$1,210 million, to date, in respect of certain 2011 – 2016 Canadian corporate dividends. Those reassessments denied certain dividend deductions on the basis that the dividends were received as part of a “dividend rental arrangement”. The tax rules raised by the Canadian tax authorities were prospectively addressed in the 2015 and 2018 Canadian federal budgets. In October 2021, we filed Notices of Appeal with the Tax Court of Canada and the matter is now in litigation. In the future, we expect to be reassessed for significant income tax for similar activities. We remain of the view that our tax filing positions were appropriate and intend to challenge all reassessments. However, if such challenges are unsuccessful, the additional expense would negatively impact our net income.

Note 23: Earnings Per Share

Basic earnings per share is calculated by dividing net income, after deducting dividends payable on preferred shares and distributions payable on other equity instruments, by the daily average number of fully paid common shares outstanding throughout the year.

Diluted earnings per share is calculated in the same manner, with further adjustments made to reflect the dilutive impact of instruments convertible into our common shares.

The following table presents our basic and diluted earnings per share:

Basic Earnings Per Common Share (Canadian \$ in millions, except as noted)	2021	2020	2019
Net income	7,754	5,097	5,758
Dividends on preferred shares and distributions on other equity instruments	(244)	(247)	(211)
Net income available to common shareholders	7,510	4,850	5,547
Weighted-average number of common shares outstanding (in thousands)	647,163	641,424	638,881
Basic earnings per common share (Canadian \$)	11.60	7.56	8.68
Diluted Earnings Per Common Share			
Net income available to common shareholders adjusted for impact of dilutive instruments	7,510	4,850	5,547
Weighted-average number of common shares outstanding (in thousands)	647,163	641,424	638,881
Effect of dilutive instruments			
Stock options potentially exercisable (1)	6,403	3,433	5,326
Common shares potentially repurchased	(4,890)	(2,729)	(3,847)
Weighted-average number of diluted common shares outstanding (in thousands)	648,676	642,128	640,360
Diluted earnings per common share (Canadian \$)	11.58	7.55	8.66

(1) In computing diluted earnings per share, we did not exclude any stock options outstanding for the year ended October 31, 2021 as the average share price for the year exceeded the exercise price. For the years ended October 31, 2020 and 2019, we excluded average stock options outstanding 3,146,040 and 1,177,152 with a weighted-average exercise price of \$99.57 and \$101.83, respectively, as the average share price for the year did not exceed the exercise price.

Note 24: Commitments, Guarantees, Pledged Assets, Provisions and Contingent Liabilities

In the normal course of business, we enter into a variety of contracts under which we may be required to make payments to reimburse a counterparty for a loss if a third party does not perform according to the terms of a contract or does not make payments when due under the terms of a debt instrument, and contracts under which we provide indirect guarantees of the indebtedness of another party, all of which are considered guarantees.

Guarantees that qualify as derivatives are accounted for in accordance with the policy for derivative instruments (refer to Note 8). For guarantees that do not qualify as derivatives, the liability is initially recorded at fair value, which is generally the fee received. Subsequently, guarantees are recorded at the higher of the initial fair value, less amortization to recognize any fee income earned over the period, and our best estimate of the amount required to settle the obligation. Any change in the liability is reported in our Consolidated Statement of Income.

We enter into a variety of commitments, including off-balance sheet credit instruments, such as backstop liquidity facilities, securities lending, letters of credit, credit default swaps and commitments to extend credit, as a method of meeting the financial needs of our customers. These commitments include contracts where we may be required to make payments to a counterparty, based on changes in the value of an asset, liability or equity security that the counterparty holds, due to changes in an underlying interest rate, foreign exchange rate or other variable. The contractual amount of our commitments represents our maximum undiscounted potential exposure, before possible recoveries under recourse and collateral provisions. Collateral requirements for these instruments are consistent with our collateral requirements for loans.

A large majority of these commitments expire without being drawn upon. As a result, the total contractual amounts may not be representative of the funding likely to be required for these commitments.

We strive to limit credit risk by dealing only with counterparties that we believe are creditworthy, and we manage our credit risk for these instruments using the same credit risk process that is applied to loans and other credit assets.

The maximum amount payable related to our various commitments is as follows:

(Canadian \$ in millions)	2021	2020
Financial Guarantees		
Standby letters of credit	22,165	23,144
Credit default swaps (1)	5,158	1,795
Other Credit Instruments		
Backstop liquidity facilities (2)	12,895	5,601
Securities lending	3,909	4,349
Documentary and commercial letters of credit	1,481	1,034
Commitments to extend credit (3)	174,327	180,384
Other commitments (4)	8,070	5,302
Total	228,005	221,609

(1) The fair value of the related derivatives included in our Consolidated Balance Sheet was \$(4) million as at October 31, 2021 (\$8) million as at October 31, 2020.

(2) Effective October 31, 2021, we deconsolidated our investment in Fairway Financial Company LLC and the total committed undrawn liquidity facility provided to the vehicle was \$8,095 million as at October 31, 2021.

(3) Commitments to extend credit exclude personal lines of credit and credit cards that are unconditionally cancellable at our discretion.

(4) Other commitments include \$1,649 million as at October 31, 2021 (\$1,763 million as at October 31, 2020) of underwriting commitments that are extended but not yet accepted by the borrower.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Financial Guarantees

Standby letters of credit represent our obligation to make payments to third parties on behalf of customers if they are unable to make the required payments or meet other contractual requirements. The majority have a term of one year or less. Collateral requirements for standby letters of credit and guarantees are consistent with our collateral requirements for loans. Standby letters of credit and guarantees include our guarantee of a subsidiary's debt directly provided to a third party.

Written credit default swaps require us to compensate a counterparty following the occurrence of a credit event in relation to a specified reference obligation, such as a bond or a loan. The terms of these contracts range from less than one year to 10 years. Refer to Note 8 for details.

Other Credit Instruments

Backstop liquidity facilities are provided to ABCP programs administered by us as an alternative source of financing when ABCP markets cannot be accessed. The terms of the backstop liquidity facilities do not require us to advance money to these programs in the event of insolvency of the borrower. The average term of these liquidity facilities is approximately 2 to 5 years.

We lend eligible customers' securities to third-party borrowers who have been evaluated for credit risk using the same credit risk process that is applied to loans and other credit assets. In connection with these activities, we may provide indemnification to clients against losses resulting from the failure of the borrower to return loaned securities when due. All borrowings are fully collateralized with cash or marketable securities.

As securities are loaned, we require borrowers to maintain collateral that is equal to or in excess of 100% of the fair value of the securities borrowed. The collateral is revalued on a daily basis.

Documentary and commercial letters of credit represent our agreement to honour drafts presented by a third party upon completion of specific activities.

Commitments to extend credit represent our commitment to our customers to grant them credit in the form of loans or other financings for specific amounts and maturities, subject to their meeting certain conditions.

Other commitments include commitments to fund external private equity funds and investments in equity and debt securities at market value at the time the commitments are drawn. In addition, we act as underwriter for certain new issuances under which we, alone or together with a syndicate of financial institutions, purchase the new issue for resale to investors.

Indemnification Agreements

In the normal course of operations, we enter into various agreements that provide general indemnifications. These indemnifications typically occur in connection with sales of assets, securities offerings, service contracts, director contracts, membership agreements, clearing arrangements, derivative contracts and leasing transactions. Based on historical experience, we expect the risk of loss to be remote.

Exchange and Clearinghouse Guarantees

We are a member of several securities and futures exchanges and central counterparties. Membership in certain of these organizations may require us to pay a pro rata share of the losses incurred by the organization in the event of default of another member. It is difficult to estimate our maximum exposure under these membership agreements, since this would require an assessment of future claims that may be made against us that have not yet occurred. Based on historical experience, we expect the risk of material loss to be remote.

Pledged Assets and Collateral

In the ordinary course of business, we enter into trading, lending and borrowing activities that require us to pledge assets or provide collateral. Pledging and collateral transactions are typically conducted under terms and conditions that are usual and customary to these activities. If there is no default, the securities or their equivalents must be returned by the pledgee upon satisfaction of the obligation.

The following table summarizes our pledged assets and collateral, and the activities to which they relate:

(Canadian \$ in millions)	2021	2020
Bank Assets		
Cash and due from banks	110	111
Securities (1)	82,975	75,104
Loans	54,656	58,974
Other assets	6,436	6,344
	144,177	140,533
Third-party Assets (2)		
Collateral received and available for sale or re-pledging	180,705	169,197
Less: Collateral not sold or re-pledged	(46,278)	(58,312)
	134,427	110,885
	278,604	251,418
(Canadian \$ in millions)	2021	2020
Uses of pledged assets and collateral		
Clearing systems, payment systems and depositories	9,464	7,550
Foreign governments and central banks	110	111
Obligations related to securities sold short	32,073	29,376
Obligations related to securities sold under repurchase agreements	87,894	80,962
Securities borrowing and lending (3)	77,456	58,791
Derivatives transactions	11,439	9,613
Securitization	26,075	31,417
Covered bonds	26,340	25,948
Other	7,753	7,650
Total pledged assets and collateral	278,604	251,418

(1) Includes NHA mortgage-backed securities of \$4,519 million, which are included in loans in our Consolidated Balance Sheet (\$6,121 million as at October 31, 2020).

(2) Includes on-balance sheet securities borrowed or purchased under resale agreements and off-balance sheet collateral received.

(3) Includes off-balance sheet securities borrowing and lending.

Lease Commitments

We have entered into a number of non-cancellable leases for premises and equipment. Our computer and software leases are typically fixed for one term. Leases that we have signed but have not yet taken possession of, were \$248 million as at October 31, 2021 (\$991 million as at October 31, 2020).

Provisions and Contingent Liabilities

Provisions are recognized when we have a legal or constructive obligation as a result of past events, such as contractual commitments, legal or other obligations for which we can reliably estimate the obligation, and it is probable we will be required to settle the obligation. We recognize as a provision our best estimate of the amount required to settle the obligations as of the balance sheet date, taking into account the risks and uncertainties surrounding the obligations. Provisions are recorded in other liabilities on the Consolidated Balance Sheet. Contingent liabilities are potential obligations arising from past events, the existence of which will only be confirmed by the occurrence or non-occurrence of one or more future events not wholly within our control, and are not included in the table below.

Legal Proceedings

The bank and its subsidiaries are party to legal proceedings, including regulatory investigations, in the ordinary course of business. We review the status of these proceedings regularly and establish provisions when in our judgment it becomes probable that we will incur a loss and the amount can be reliably estimated. The bank's provisions represent our best estimates based upon currently available information for proceedings for which estimates can be made. However, the bank's provisions may differ significantly from actual losses as a result of, for example, the inherent uncertainty of the various potential outcomes of such proceedings; the varying stages of the proceedings; the existence of multiple defendants whose share of liability may not yet be determined; unresolved issues in such proceedings, some of which involve novel legal theories and interpretations; the fact that the underlying matters will change from time to time; and such proceedings may involve very large or indeterminate damages. While it is inherently difficult to predict the ultimate outcome of these proceedings, based on our current knowledge, we do not expect the outcome of any of these proceedings, individually or in the aggregate, to have a material adverse effect on the consolidated financial position or the results of operations of the bank. However, because of the factors listed above, as well as other uncertainties inherent in litigation and regulatory matters, there is a possibility that the ultimate resolution of legal or regulatory investigations may be material to the bank's consolidated financial position or its results of operations for any particular reporting period.

BMO and its subsidiaries are named as defendants or are otherwise involved in a substantial number of legal proceedings. BMO Harris Bank N.A. (BMO Harris), as successor to M&I Marshall and Ilsley Bank (M&I), has been named as the defendant in a lawsuit filed in the U.S. Bankruptcy Court for the District of Minnesota (Bankruptcy Court) in connection with a Ponzi scheme carried out by Thomas J. Petters and certain affiliated individuals and entities (collectively, Petters) between 1994 and 2008. The lawsuit, brought by a Trustee in bankruptcy proceedings for certain Petters entities, alleges that between 1999 and 2008, M&I (and a predecessor bank) facilitated the Ponzi scheme operated by Petters. BMO denies these allegations and continues to defend itself vigorously. The Trustee seeks US\$1.9 billion in compensatory damages, plus prejudgment interest, punitive damages, and attorneys' fees. The Bankruptcy Court: (i) denied BMO Harris's motion for summary judgement; (ii) granted the Trustee's motion for sanctions based on the alleged spoliation of evidence; and (iii) transferred the case to the U.S. District Court for the District of Minnesota (District Court) for trial. BMO Harris filed an objection to the spoliation sanctions, which is still pending before the District Court. BMO Harris anticipates that the trial in this case will take place no earlier than late 2022.

In June 2021, the Ontario Superior Court approved the settlement of \$100 million relating to a class action involving BMO Nesbitt Burns Inc., BMO Investorline Inc. and BMO Trust Company regarding disclosures of foreign exchange conversion spreads when converting foreign exchange in registered accounts prior to a system change in 2011.

Restructuring Charges

Provisions for restructuring charges as at October 31, 2021 are \$136 million (\$336 million as at October 31, 2020), which include severance-related costs to improve efficiency, and accelerate delivery against key bank-wide initiatives focused on digitization, organizational redesign and simplification of the way we do business. This represents our best estimate of the amount that will ultimately be paid out.

Changes in the provision balance during the year were as follows:

(Canadian \$ in millions)	2021	2020
Balance at beginning of year	472	680
Additional provisions/increase in provisions	166	141
Provisions utilized	(340)	(334)
Amounts reversed	(44)	(16)
Foreign exchange and other	(6)	1
Balance at end of year (1)	248	472

(1) Balance includes severance obligations, restructuring charges and legal provisions.

Note 25: Operating and Geographic Segmentation

Operating Groups

We conduct our business through three operating groups, each of which has a distinct mandate. We determine our operating groups based on our management structure and therefore these groups, and the results attributed to them, may not be comparable with those of other financial services companies. We evaluate the performance of our groups using reported and adjusted measures, such as net income, revenue growth, return on equity, and non-interest expense-to-revenue (efficiency) ratio, as well as operating leverage.

Personal and Commercial Banking

Personal and Commercial Banking (P&C) is comprised of two operating segments: Canadian Personal and Commercial Banking and U.S. Personal and Commercial Banking.

Canadian Personal and Commercial Banking

Canadian Personal and Commercial Banking (Canadian P&C) provides a full range of financial products and services to eight million customers. Personal Banking provides financial solutions through a network of almost 900 branches, contact centres, digital banking platforms and over 3,300 automated teller machines. Commercial Banking serves clients across Canada and delivers sector and industry expertise, as well as a local presence.

U.S. Personal and Commercial Banking

U.S. Personal and Commercial Banking (U.S. P&C) offers a broad range of products and services. Our retail and small and mid-sized business banking customers are served through our branches, contact centres, online and mobile banking platforms, and automated banking machines across eight states. Commercial Banking serves clients across the United States and delivers sector and industry expertise and local presence.

BMO Wealth Management

BMO's group of wealth management businesses (BMO WM) serves a full range of client segments, from mainstream to ultra high net worth and institutional, with a broad offering of wealth management products and services, including insurance products.

BMO Capital Markets

BMO Capital Markets (BMO CM) is a North American-based financial services provider offering a complete range of products and services to corporate, institutional and government clients. Through our Investment and Corporate Banking and Global Markets lines of business, we operate in 32 locations around the world, including 18 offices in North America.

Corporate Services

Corporate Services consists of Corporate Units and Technology and Operations (T&O). Corporate Units provide enterprise-wide expertise, governance and support in a variety of areas, including strategic planning, risk management, finance, legal and regulatory compliance, human resources, communications, marketing, real estate and procurement. T&O develops, monitors, manages and maintains governance of information technology including data and analytics, and also provides cyber security and operations services.

The costs of these Corporate Units and T&O services are largely transferred to the three operating groups (P&C, BMO WM and BMO CM), with any remaining amounts retained in Corporate Services results. As such, Corporate Services results largely reflect the impact of residual treasury-related activities, the elimination of taxable equivalent adjustments and residual unallocated expenses.

Basis of Presentation

The results of these operating groups are based on our internal financial reporting systems. The accounting policies used in these segments are generally consistent with those followed in the preparation of our consolidated financial statements, as disclosed in Note 1 and throughout the consolidated financial statements. Income taxes presented below may not be reflective of taxes paid in each jurisdiction in which we operate. Income taxes are generally applied to each segment based on a statutory tax rate and may be adjusted for items and activities specific to each segment. A notable accounting measurement difference is the taxable equivalent basis adjustment, as described below.

Periodically, certain business lines and units within the business lines are transferred between client and corporate support groups to more closely align our organizational structure with our strategic priorities. In addition, revenue and expense allocations are updated to more accurately align with current experience. Results for prior periods are restated to conform with the current year's presentation.

Taxable Equivalent Basis

We analyze revenue on a taxable equivalent basis (teb) at the operating group level. Revenue and the provision for income taxes are increased on tax-exempt securities to an equivalent before-tax basis to facilitate comparisons of income between taxable and tax-exempt sources. The offset to the operating segments' teb adjustments is reflected in Corporate Services revenue and provision for income taxes. The teb adjustment for the year ended October 31, 2021 was \$315 million (\$335 million in 2020 and \$296 million in 2019).

Inter-Group Allocations

Various estimates and allocation methodologies are used in the preparation of the operating groups' financial information. Overhead expenses are allocated to operating groups using allocation formulas applied on a consistent basis. Operating group net interest income reflects internal funding charges and credits on the groups' assets, liabilities and capital at market rates, taking into account relevant terms and currency considerations. The offset of the net impact of these charges and credits is reflected in Corporate Services. These inter-group allocations are also applied to the geographic segmentation.

Our results and average assets, grouped by operating segment, are as follows:

(Canadian \$ in millions)	Canadian P&C	U.S. P&C	BMO WM	BMO CM	Corporate Services (1)	2021 Total
Net interest income (2)	6,561	4,268	982	3,115	(616)	14,310
Non-interest revenue	2,225	1,243	6,071	3,011	326	12,876
Total Revenue	8,786	5,511	7,053	6,126	(290)	27,186
Provision for (recovery of) credit losses on impaired loans	493	22	4	11	(5)	525
Provision for (recovery of) credit losses on performing loans	(116)	(166)	(16)	(205)	(2)	(505)
Total provision for (recovery of) credit losses	377	(144)	(12)	(194)	(7)	20
Insurance claims, commissions and changes in policy benefit liabilities	-	-	1,399	-	-	1,399
Depreciation and amortization	526	487	283	269	-	1,565
Non-interest expense	3,511	2,310	3,433	3,167	1,523	13,944
Income (loss) before taxes	4,372	2,858	1,950	2,884	(1,806)	10,258
Provision for (recovery of) income taxes	1,135	669	476	744	(520)	2,504
Reported net income (loss)	3,237	2,189	1,474	2,140	(1,286)	7,754
Average assets (3)	262,953	129,009	48,232	372,475	168,471	981,140

	Canadian P&C	U.S. P&C	BMO WM	BMO CM	Corporate Services (1)	2020 Total
Net interest income (2)	6,105	4,345	900	3,320	(699)	13,971
Non-interest revenue	1,930	1,186	5,808	2,006	285	11,215
Total Revenue	8,035	5,531	6,708	5,326	(414)	25,186
Provision for credit losses on impaired loans	787	418	4	310	3	1,522
Provision for credit losses on performing loans	623	441	18	349	-	1,431
Total provision for credit losses	1,410	859	22	659	3	2,953
Insurance claims, commissions and changes in policy benefit liabilities	-	-	1,708	-	-	1,708
Depreciation and amortization	517	563	295	243	-	1,618
Non-interest expense	3,375	2,512	3,224	2,993	455	12,559
Income (loss) before taxes	2,733	1,597	1,459	1,431	(872)	6,348
Provision for (recovery of) income taxes	706	320	363	344	(482)	1,251
Reported net income (loss)	2,027	1,277	1,096	1,087	(390)	5,097
Average assets (3)	251,471	137,644	45,573	369,518	138,244	942,450

	Canadian P&C	U.S. P&C	BMO WM	BMO CM	Corporate Services (1)	2019 Total
Net interest income (2)	5,885	4,216	935	2,390	(538)	12,888
Non-interest revenue	2,099	1,162	6,727	2,369	238	12,595
Total Revenue	7,984	5,378	7,662	4,759	(300)	25,483
Provision for (recovery of) credit losses on impaired loans	544	160	2	52	(7)	751
Provision for (recovery of) credit losses on performing loans	63	37	(2)	28	(5)	121
Total provision for (recovery of) credit losses	607	197	-	80	(12)	872
Insurance claims, commissions and changes in policy benefit liabilities	-	-	2,709	-	-	2,709
Depreciation and amortization	355	459	230	161	-	1,205
Non-interest expense	3,481	2,677	3,293	3,118	856	13,425
Income (loss) before taxes	3,541	2,045	1,430	1,400	(1,144)	7,272
Provision for (recovery of) income taxes	917	434	371	309	(517)	1,514
Reported net income (loss)	2,624	1,611	1,059	1,091	(627)	5,758
Average assets (3)	237,742	126,539	40,951	342,626	85,394	833,252

(1) Corporate Services includes Technology and Operations.

(2) Operating groups report on a taxable equivalent basis - see Basis of Presentation section.

(3) Included within average assets are average earning assets, which are comprised of deposits with other banks, deposits at central banks, reverse repos, loans and securities. Total average earning assets for 2021 are \$897,302, including \$248,215 for Canadian P&C, \$122,166 for U.S. P&C, and \$526,921 for all other operating segments including Corporate (2020 - Total: \$853,336, Canadian P&C: \$234,953, U.S. P&C: \$130,190 and all other operating segments: \$488,193; 2019 - Total: \$759,395, Canadian P&C: \$222,260, U.S. P&C: \$119,640 and all other operating segments: \$417,495).

Certain comparative figures have been reclassified to conform with the current year's presentation.

Geographic Information

We operate primarily in Canada and the United States, but we also have operations in the United Kingdom, Europe, the Caribbean and Asia, which are grouped in other countries in the table below. We allocate our results by geographic region based on the location of the unit responsible for managing the related assets, liabilities, revenues and expenses.

Our results and average assets, grouped by geographic region, are as follows:

(Canadian \$ in millions)	2021			
	Canada	United States	Other countries	Total
Total Revenue	15,983	9,242	1,961	27,186
Income (loss) before taxes	6,242	4,224	(208)	10,258
Reported net income (loss)	4,809	3,254	(309)	7,754
Average Assets	544,652	376,102	60,386	981,140
				2020
Total Revenue	14,515	8,659	2,012	25,186
Income before taxes	3,815	1,891	642	6,348
Reported net income	3,021	1,554	522	5,097
Average Assets	522,155	361,651	58,644	942,450
				2019
Total Revenue	14,998	8,282	2,203	25,483
Income before taxes	4,218	2,367	687	7,272
Reported net income	3,313	1,903	542	5,758
Average Assets	462,427	316,983	53,842	833,252

Note 26: Significant Subsidiaries

As at October 31, 2021, the bank, either directly or indirectly through its subsidiaries, controls the following significant operating subsidiaries.

Significant subsidiaries (1)(2)	Head or principal office	Book value of shares owned by the bank (Canadian \$ in millions)
Bank of Montreal (China) Co. Ltd.	Beijing, China	411
Bank of Montreal Europe plc	Dublin, Ireland	1,001
Bank of Montreal Holding Inc. and subsidiaries, including:	Toronto, Canada	35,384
Bank of Montreal Mortgage Corporation	Calgary, Canada	
BMO Mortgage Corp.	Vancouver, Canada	
BMO Investments Limited	Hamilton, Bermuda	
BMO Reinsurance Limited	St. Michael, Barbados	
BMO Nesbitt Burns Holdings Corporation	Toronto, Canada	
BMO Nesbitt Burns Inc.	Toronto, Canada	
BMO Investments Inc.	Toronto, Canada	
BMO InvestorLine Inc.	Toronto, Canada	
BMO Capital Markets Limited	London, England	310
BMO Financial Corp. and subsidiaries, including:	Chicago, United States	26,775
BMO Asset Management Corp. and subsidiaries	Chicago, United States	
BMO Capital Markets Corp.	New York, United States	
BMO Family Office, LLC	Palo Alto, United States	
BMO Harris Bank National Association and subsidiaries, including:	Chicago, United States	
BMO Harris Investment Company LLC	Chicago, United States	
BMO Harris Financing, Inc. and subsidiaries	Chicago, United States	
BMO Global Asset Management (Asia) Limited (3)	Hong Kong, China	
BMO Global Asset Management (Europe) Limited and subsidiaries (3), including:	London, England	395
BMO Asset Management (Holdings) plc and subsidiaries (3)	London, England	
BMO Life Insurance Company and subsidiaries, including:	Toronto, Canada	1,369
BMO Life Holdings (Canada), ULC	Halifax, Canada	
BMO Life Assurance Company	Toronto, Canada	
BMO Trust Company	Toronto, Canada	589
LGM Investments Limited (3)	London, England	39
Pyrford International Limited (3)	London, England	73

(1) Each subsidiary is incorporated or organized under the laws of the state or country in which the principal office is situated, except for BMO Financial Corp., BMO Asset Management Corp., BMO Capital Markets Corp., BMO Harris Financing, Inc., and BMO Family Office, LLC, which are incorporated under the laws of the state of Delaware, United States. BMO Asset Management (Holdings) plc is incorporated under the laws of Scotland. BMO Harris Investment Company LLC is organized under the laws of the state of Nevada, United States.

(2) Unless otherwise noted, the bank, either directly or indirectly through its subsidiaries, owns 100% of the outstanding voting shares of each subsidiary.

(3) These subsidiaries are part of the sale of our EMEA asset management business which was completed on November 8, 2021. Refer to Note 10 for further information.

Significant Restrictions

Our ability to transfer funds between our subsidiaries may be restricted by statutory, contractual, capital and regulatory requirements.

Restrictions include:

- Assets pledged as security for various liabilities we incur. Refer to Note 24 for details.
- Assets of our consolidated structured entities that are held for the benefit of the note holders. Refer to Note 7 for details.
- Assets held by our insurance subsidiaries. Refer to Note 12 for details.
- Regulatory and statutory requirements that reflect capital and liquidity requirements.
- Funds required to be held with central banks. Refer to Note 2 for details.

Note 27: Related Party Transactions

Related parties include subsidiaries, joint ventures, associates, employee future benefit plans and key management personnel and their close family members. Close family members include spouses, common-law partners and dependent minors. Transactions with our subsidiaries are eliminated on consolidation, and are not disclosed as related party transactions.

Key Management Personnel Compensation

Key management personnel is defined as those persons having authority and responsibility for planning, directing and/or controlling the activities of an entity, being the members of our Board of Directors (directors) and certain senior executives.

The following table presents the compensation of our key management personnel:

(Canadian \$ in millions)	2021	2020	2019
Base salary and incentives	22	20	22
Post-employment benefits	3	3	2
Share-based payments (1)	32	32	43
Total key management personnel compensation	57	55	67

(1) Amounts included in share-based payments are the fair values of awards granted in the year.

We offer senior executives market interest rates on credit card balances, a fee-based subsidy on annual credit card fees, and a select suite of customer loan and mortgage products at rates normally accorded to preferred customers. At October 31, 2021, loans to key management personnel totalled \$22 million (\$19 million in 2020). We have no provision for credit losses related to these amounts as at October 31, 2021 and 2020.

Directors receive a specified amount of their annual retainer in deferred stock units. Until a director's shareholdings (including deferred stock units) are eight times greater than their annual retainer, they are required to take 100% of their annual retainer and other fees in the form of either our common shares or deferred stock units. Once the shareholding requirements have been met, directors may elect to receive the remainder of such retainer fees and other remuneration in cash, common shares or deferred stock units.

Directors of our wholly owned subsidiary, BMO Financial Corp., are required to take a specified minimum amount of their annual retainer and other fees in the form of deferred stock units.

Joint Ventures and Associates

We provide banking services to our joint ventures and associates on the same terms offered to our customers for these services.

The following table presents the carrying amount of our interests in joint ventures and associates accounted for under the equity method as well as our share of the income of those entities:

(Canadian \$ in millions)	Joint ventures		Associates	
	2021	2020	2021	2020
Carrying amount	474	412	661	573
Share of net income	107	99	141	62

We do not have any joint ventures or associates that are individually material to our consolidated financial statements.

The following table presents transactions with our joint ventures and associates:

(Canadian \$ in millions)	2021	2020
Loans	791	560
Deposits	117	124
Fees paid for services received	59	63
Guarantees and commitments	73	57

Certain comparative figures have been reclassified to conform with the current year's presentation.

Where to Find More Information

Corporate Governance

Our website provides information on our corporate governance practices, including our code of conduct, our director independence standards and our board mandate and committee charters.

www.bmo.com/corporategovernance

Management Proxy Circular

Our management proxy circular contains information on our directors, board committee reports and a detailed discussion of our corporate governance practices. It will be published in March 2022 and will be available on our website.

www.bmo.com/corporategovernance

Stock Exchange Governance Requirements

A summary of the significant ways in which our corporate governance practices differ from the corporate governance practices required for U.S. domestic companies under New York Stock Exchange Listing Standards and NASDAQ Stock Market Rules is posted on our website.

www.bmo.com/corporategovernance

Sustainability Performance

BMO's *Sustainability Report and Public Accountability Statement (PAS)* outlines the way we govern, manage, measure and disclose the environmental and social risks and opportunities related to our business, while creating value for our many stakeholders. We use the Global Reporting Initiative (GRI) Standards as a framework for reporting on our sustainability performance, along with other internationally recognized standards, including those issued by the Sustainability Accounting Standards Board (SASB). The *2021 Sustainability Report/PAS* will be available on our website in March 2022.

www.bmo.com/corporateresponsibility

Have Your Say

If you have a question you would like to ask at our annual meeting of shareholders, you can submit your question during the webcast. You can also submit a question to the board by writing to the Corporate Secretary at Corporate Secretary's Office, 21st Floor, 1 First Canadian Place, Toronto, ON M5X 1A1, or by emailing corp.secretary@bmo.com.

Shareholders

Contact our Transfer Agent and Registrar for dividend information

- Change in share registration or address
- Lost certificates
- Estate transfers
- Duplicate mailings
- Direct registration

Computershare Trust Company of Canada

100 University Avenue, 8th Floor, Toronto, ON M5J 2Y1
Email: service@computershare.com
www.computershare.com/ca/en

Canada and the United States
Call: **1-800-340-5021** Fax: **1-888-453-0330**

International
Call: **514-982-7800** Fax: **416-263-9394**

Computershare Trust Company, N.A.
Co-Transfer Agent (U.S.)

Computershare Investor Services PLC is the Transfer Agent and Registrar for common shares in Bristol, United Kingdom

Online filing information:

BMO filings in Canada
Canadian Securities Administrators
www.sedar.com

BMO filings in the United States
Securities and Exchange Commission
www.sec.gov/edgar.shtml

For all other shareholder inquiries:

Shareholder Services
BMO Financial Group
Corporate Secretary's Office
21st Floor, 1 First Canadian Place
Toronto, ON M5X 1A1
Email: corp.secretary@bmo.com
Call: **416-867-6785** Fax: **416-867-6793**

Institutional Investors and Research Analysts

To obtain additional financial information:

Investor Relations Department
BMO Financial Group
10th Floor, 1 First Canadian Place
Toronto, ON M5X 1A1
Email: investor.relations@bmo.com

Employees

For information on BMO's Employee Share Ownership Plan:

Call: **1-877-266-6789**

General

To obtain printed copies of the annual report or make inquiries about company news and initiatives:

Corporate Communications Department
BMO Financial Group
100 King Street West, 28th floor
Toronto, ON M5X 1A1

On peut obtenir sur demande un exemplaire en français.

www.bmo.com

Customers

For assistance with your investment portfolio or other financial needs:

BMO Bank of Montreal
English and French: **1-877-225-5266**
Cantonese and Mandarin: **1-800-665-8800**
Outside Canada and the continental United States: **514-881-3845**
TTY service for hearing impaired customers: **1-866-889-0889**
www.bmo.com

BMO InvestorLine: 1-888-776-6886
www.bmoinvestorline.com

BMO Harris Bank
United States: **1-888-340-2265**
Outside the United States: **1-847-238-2265**
www.bmoharris.com

BMO Nesbitt Burns: 416-359-4000
www.bmonesbitburns.com

The following are trademarks of Bank of Montreal or its subsidiaries:

BMO and the M-bar roundel symbol; BMO Capital Markets; BMO Financial Group; BMO Global Asset Management; BMO Harris Bank; Harris Bank; BMO Wealth Management; Boldly Grow the Good; BMO CashTrack; BMO Institute for Learning; BMO Payment Hub; BMO Insights; Online Banking for Business; BMO Climate Institute; BMO Business Xpress; adviceDirect; BMO Empower; and InvestorLine.

The following are trademarks owned by other parties:

Bloomberg is a trademark of Bloomberg Finance L.P.; *The Wall Street Journal* is a trademark of Dow Jones & Company, Inc.; World's Most Ethical Companies is a trademark of Ethisphere, LLC; Corporate Knights is a trademark of Corporate Knights Inc.; Dow Jones Sustainability is a trademark of S&P Dow Jones Indices LLC; Forbes is a trademark of Forbes LLC; Blend is a trademark of Blend Labs, Inc.; FedNow is a service mark of the Federal Reserve Banks; The American Business Awards is a trademark of Stevie Awards, Inc.; International Business Awards is a trademark of Stevie Awards, Inc.; Sandstorm Gold Royalties is a trademark of Sandstorm Gold Ltd.

Shareholder Information

Market for Shares of Bank of Montreal

The common shares of Bank of Montreal are listed on the Toronto Stock Exchange (TSX) and New York Stock Exchange (NYSE). The preferred shares of Bank of Montreal are listed on the TSX.

Common Share Trading in Fiscal 2021

Primary stock exchanges	Ticker	Closing price October 31, 2021	High	Low	Total volume of shares traded
TSX	BMO	\$134.37	\$137.98	\$76.03	615.6 million
NYSE	BMO	US\$108.51	US\$111.48	US\$57.25	50.8 million

Common Share History

Date	Action	Common share effect
March 14, 2001	100% stock dividend	Equivalent to a 2-for-1 stock split
March 20, 1993	100% stock dividend	Equivalent to a 2-for-1 stock split
June 23, 1967	Stock split	5-for-1 stock split

Important Dates

Fiscal Year End **October 31**
Annual Meeting **April 13, 2022 | 9:30 a.m. ET**

Further details will be made available on our website:

www.bmo.com/investorrelations

2022 Dividend Payment Dates*

Common and preferred shares record dates	Common shares payment dates	Preferred shares payment dates
February 1	February 28	February 25
May 2	May 26	May 25
August 2	August 26	August 25
November 1	November 28	November 25

*Subject to approval by the Board of Directors.

The *Bank Act* prohibits a bank from declaring or paying a dividend if it is or would thereby be in contravention of regulations or an order from the Office of the Superintendent of Financial Institutions dealing with adequacy of capital or liquidity. Currently, this limitation does not restrict the payment of dividends on Bank of Montreal's common or preferred shares.

Managing Your Shares

Our Transfer Agent and Registrar

Computershare Trust Company of Canada serves as Transfer Agent and Registrar for common and preferred shares, with transfer facilities in Montreal, Toronto, Calgary and Vancouver. Computershare Investor Services PLC and Computershare Trust Company, N.A. serve as Transfer Agents and Registrars for common shares in Bristol, United Kingdom and Canton, Massachusetts, respectively. See previous page for contact information.

Reinvesting Your Dividends and Purchasing Additional Common Shares

Through the Shareholder Dividend Reinvestment and Share Purchase Plan, you can reinvest cash dividends from your BMO common shares to purchase additional BMO common shares without paying a commission or service charge. You can also purchase additional common shares in amounts up to \$40,000 per fiscal year. Contact Computershare Trust Company of Canada or Shareholder Services for details.



Your vote matters.

Watch for your proxy circular in March and remember to vote.

Employee Ownership*

84.7% of our Canadian employees participate in the BMO Employee Share Ownership Plan – a clear indication of their commitment to BMO.

*As at October 31, 2021.

Credit Ratings

Credit rating information appears on page 101 of this annual report and on our website.

www.bmo.com/creditratings

Direct Deposit

You can choose to have your dividends deposited directly to an account in any financial institution in Canada or the United States that provides electronic funds transfer services.

Personal Information Security

We advise our shareholders to be diligent in protecting their personal information. Details are available on our website.

www.bmo.com/security

Auditors KPMG LLP

Recognition means we're on the right path

To find out more
about who we are,
what we do, and
what matters to us,
visit us at:

bmo.com/about
[@BMO](#)
[@lifeatBMO](#)

Forbes Magazine: The World's Best Banks

2021 | 2020

Recognized by customers
as one of the best banks
in North America.

Dow Jones Sustainability Index

2006 to 2021

Included for 16 years,
in 2021 we were one of
only five companies in
Canada to appear in the
DJSI World Index.

Ethisphere®: World's Most Ethical Companies®

2021 | 2020 | 2019 | 2018

Included for four years in
a row, and one of just five
banks worldwide on the
2021 list.

Insider Intelligence: 2021 Canada Mobile Banking Benchmark

2021

Ranked #1 for digital
money management,
security and card controls,
mobile banking alerts.

Bloomberg Gender-Equality Index

2021 | 2020 | 2019 | 2018 |
2017 | 2016

Six consecutive years
on this prestigious list
in recognition of our
commitment to gender
equality.

Corporate Knights: Global 100 Most Sustainable Corporations in the World

2021 | 2020

Recognized as the most
sustainable bank in North
America two years in a row.