

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 each of these business activities. A disciplined and integrated approach to managing risk is fundamental to the success of our 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 are inherent in these business activities, as discussed in the following sections:

78	Risks That May Affect Future Results	109	Operational Non-Financial Risk
82	Enterprise-Wide Risk Management Framework	113	Legal and Regulatory Risk
87	Credit and Counterparty Risk	115	Strategic Risk
95	Market Risk	116	Environmental and Social Risk
100	Insurance Risk	118	Reputation Risk
100	Liquidity and Funding 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 2023 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 Notes 1 and 5 of the audited annual consolidated financial statements.

Risks That May Affect Future Results

Top and Emerging Risks That May Affect Future Results

Evolving internal and external events may have an impact on BMO's overall risk profile. These events have the potential to affect our business, the results of our operations and our financial condition. Our risk management process involves proactively identifying, assessing, managing, monitoring and reporting on risks arising from these events. Risks that are identified are brought forth to several forums for discussion with the Board of Directors, senior management and business leaders, incorporating both bottom-up and top-down approaches. Risks are examined and assessed by scenario analysis. Action plans that address our exposure to certain events are developed based on these risk assessments.

The following risks are considered to have the potential to materially impact BMO's financial results, operational efficiency, strategic direction or reputation.

General Economic Conditions

The general economic conditions prevailing in Canada, the United States and other jurisdictions in which we conduct business affect our earnings. The Canadian and U.S. economies slowed in the past year in response to higher interest rates, but have shown some resilience as a result of high levels of household savings, pent-up demand, expansionary fiscal policies and, in Canada, robust population growth. The labour market remains healthy, with some recent signs of softening. Inflation has moderated, although underlying price pressures persist. The economy faces headwinds from high interest rates and high levels of household indebtedness in Canada, as well as the conflicts in Ukraine and the Middle East, trade disputes with China, diplomatic tensions between Canada and India, and other global geopolitical risks. The possibility that policy rates could rise further and remain high for an extended period has driven longer-term borrowing costs to multi-decade highs, which could lead to higher loan provisions, lower levels of loan demand and stronger deposit pricing competition, with potential impacts on net interest income. These factors represent potential risks for market stability and economic growth. Refer to the Geopolitical Risk and Escalating Trade Disputes section and the Inflation section for further discussion of these risks.

Management regularly monitors the economic environment in which we operate, in order to identify significant changes in key economic indicators, so that we can assess BMO's portfolio and business strategies, and develop contingency plans to address any adverse developments.

Cyber and Cloud Security Risk

Our exposure to cyber security risk arises from the ever-increasing reliance of our business operations on internet and cloud technologies, coupled with a hybrid work environment and extensive dependence on advanced digital technologies to process data. Heightened geopolitical tensions are also contributing to increasing global exposures to cyber security risks. These risks include the threat of data loss, which could lead to exposure of customer or employee information, as well as identity theft and fraud. Ransomware or denial of service attacks could result in system failure and disruption of services. Threat campaigns are becoming better organized and more sophisticated, including an increase in reported data breaches, often occurring through third-party suppliers, that can negatively impact a company's brand and reputation, as well as customer retention and acquisition. At BMO, our response includes investing in our Financial Crimes Unit and technological infrastructure, equipping our team to detect and address cyber security threats across North America, Europe and Asia in order to help keep our customers' and employees' data secure.

Technology Resiliency Risk

Heightened exposure to technology resiliency risk is leading to new and more expansive regulatory requirements related to operational resilience, challenging banks to extend their programs beyond disaster recovery and business continuity activities. New regulatory expectations include the need to be predictive and respond proactively to internal and external threats of disruption.

Technology resiliency is critical to providing our customers with a smooth online experience across our digital channels. Given the extent to which our customers, employees and suppliers are increasingly reliant on technology platforms and the Internet of Things to manage and support their personal, business and investment banking activities, it is important that we maintain platforms that can function at high levels of operational reliability and resilience, particularly with respect to business-critical systems.

Third-Party Risk

Our use of third-party arrangements continues to expand, helping us to deliver innovative solutions across the bank and for our clients. Failure to effectively manage these third-party arrangements exposes BMO to the risk that data may be compromised or the delivery of critical products and services may be disrupted. In addition, third-party service providers may use sub-contractors, introducing an additional layer of complexity for oversight. Any concentration of third parties will also heighten exposures to existing risks of disruption arising from other events, such as natural disasters or geopolitical events.

Effective risk management and oversight are important for third-party arrangements. This includes determining the inherent risk and criticality of third-party arrangements, conducting appropriate due diligence, as well as ongoing monitoring and oversight of the third-party service provider. At BMO, we continue to enhance our third-party risk management practices, aligning them with regulatory expectations and strengthening operational resilience across the supply chain.

Geopolitical Risk and Escalating Trade Disputes

The Russia-Ukraine conflict has had a significant global impact, including high energy prices and the erosion of business confidence. The financial, energy and technology sanctions imposed on Russia by Ukraine's allies have also aggravated shortages, particularly the supply of energy, across the global economy. This could result in a long-term political, economic and military standoff between Western countries and Russia.

Canadian and U.S. relations with China remain fragile. Taiwan continues to be a volatile issue between the United States and China, as China is committed to unification. A U.S. commitment to expanding trade ties with Taiwan may further increase the tension. In addition, the strategic competition between the two countries is driving greater global fragmentation, as both seek to reinforce their autonomy, limit any vulnerabilities and insulate their technology sectors. This could adversely affect business investment, and could prove especially problematic for commodity-producing countries such as Canada that rely on a large export market. Recent Canada-China disputes over political interference are further evidence of this antagonism. More recently, diplomatic relations between Canada and India have frayed, threatening to disrupt trade flows and tourism between the two countries and limit the number of international students applying to study in Canada. The Middle East crisis has raised tensions significantly in the region, and the risk of potential for escalation could drive up energy prices, unsettle financial markets and slow global growth even further, which would have a direct impact on our customers.

We actively monitor global and North American trends and continually assess our businesses in the context of these trends. Our lending portfolio has limited direct exposure outside North America; however, our customers rely on global trade and sustained economic growth. To mitigate exposure to geopolitical risk, we maintain a diversified portfolio that we monitor continually, in addition to contingency plans that are intended to prepare BMO for any possible adverse developments. Our portfolios, business plans and capital adequacy are stress tested against severely adverse scenarios arising from trade-related shocks, and we build 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 4, 5 and 8 to 10 in the Supplemental Information and in Note 4 of the audited annual consolidated financial statements.

Climate Change

BMO is exposed to risks related to environmental conditions and extreme weather events that could potentially disrupt our operations, impact our 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 roadmap and tools that support the restoration, maintenance and management of critical operations and processes in the event of a business disruption.

BMO is also exposed to risks related to borrowers that may experience financial losses or rising operating costs as a result of climate-related litigation or policies, such as carbon emissions pricing, or that may experience a decline in revenue as new and emerging technologies disrupt or displace demand for certain commodities, products and services. As a global bank, our strategic priority is to be our clients' lead partner in the transition to a net zero world, delivering on our commitments to sustainable financing and responsible investing, supported by the BMO Climate Institute and our dedicated Energy Transition Group.

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 give rise to new business or reputation risks. Globally, climate-related litigation or enforcement measures could arise from new and more stringent 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

The level of household debt in Canada is high, making the economy vulnerable to economic shocks. The housing market rebounded after the Bank of Canada paused interest rate hikes in early 2023, which together with elevated inflation and a pickup in economic activity, prompted the Canadian central bank to raise rates twice over the summer. While the Bank of Canada may refrain from raising rates further, the housing market recovery will likely be held back by the persistent lack of affordability, notably in Ontario and British Columbia. However, high rates of immigration should provide underlying support to housing market activity and prices.

Housing affordability remains challenging, especially in the Greater Toronto Area (GTA) and Greater Vancouver Area (GVA) and their surrounding regions, and represents an ongoing barrier to entry for potential first-time homebuyers. Inflation and higher interest rates are putting a strain on household budgets despite historically low unemployment rates, which is reducing overall household purchasing power. Further increases in interest rates could add more stress to the financial situation of some households as their fixed payment variable-rate mortgage or fixed-rate mortgage is renewed. To address this risk, BMO has proactively reached out to customers, directly and through our website, to inform them of the potential impact of higher interest rates and provide options for increasing their scheduled payments before renewal.

A decline in home sales activity, particularly in the GTA and GVA, would impact mortgage origination volumes, while lower property values could result in higher provisions for credit losses. BMO's prudent lending practices, which include the application of additional underwriting scrutiny and regulatory stress testing at origination 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 BMO'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, primarily due to insurance coverage and the significant level of equity held by owners with seasoned loans. Credit losses may be mitigated by relatively low unemployment and rising wages, which are expected to support consumer spending capacity in the face of high inflation.

Inflation

The inflation rate has begun to moderate after reaching four-decade highs in 2022, amid lower commodity prices and improved global supply chains. However, it is not expected to return to the 2% target of central banks until 2025. Elevated inflation is having an impact on the operations of our clients, and could have a negative effect on our earnings through higher provisions for credit losses and higher operating costs. We monitor inflationary pressures in North America closely and assess potential effects on our portfolios, interest margins and operating costs. Refer to the Canadian Housing Market and Consumer Leverage section and the General Economic Conditions section for further discussion of these risks.

Technological Innovation and Competition

Emerging technologies continue to evolve rapidly, creating opportunities to drive revenue growth and operating efficiencies in the financial sector. We are committed to the prudent and responsible adoption of emerging new technologies in order to have a competitive advantage and meet our customers' expectations, as we deliver personalized on-demand banking and new digital products and services. In alignment with BMO's Digital First strategy, we are continuing to invest in risk management technology that can also enhance the customer experience, streamline processes and reduce complexity. We continue to monitor the evolving external environment to identify emerging technologies, practices and regulations in the financial services industry. Our emerging technologies risk management framework is now a component of Technology Risk Management, supporting prudent and responsible innovation and adoption. We are also developing and deploying new talent strategies to attract and retain employees with the skills essential to maintaining BMO's global competitive position.

Other Factors That May Affect Future Results

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

Fiscal and monetary policies and other economic conditions prevailing in Canada, the United States and other jurisdictions in which we do business may impact profitability and heighten economic uncertainty in specific businesses and markets, which may in turn affect our customers and counterparties, reduce profitability and contribute to a greater risk of default. Higher levels of business debt following the pandemic may give rise to future vulnerabilities that could impact our markets and our operating results. Interest rate fluctuations could have an impact on our earnings, the value of our investments, the credit quality of our loans to customers and counterparty exposure, as well as the capital markets that we access.

Fluctuations in the value of the Canadian dollar relative to other currencies have affected, and could continue to affect, the business operations and results of clients with significant earnings or input costs denominated in foreign currencies. Our investments in operations outside of Canada are primarily denominated in U.S. dollars, and the foreign exchange impact on our 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 for further discussion of these risks. 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 foreign exchange impacts, and to 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 our exposure to foreign exchange and interest rate risk.

Regulatory Requirements

The financial services industry is highly regulated, and BMO has experienced increasing complexity in regulatory requirements and expectations, 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. These may lead to further increases in regulatory capital or liquidity requirements and additional compliance costs, which could lower returns and affect growth. These reforms could also affect the cost and availability of funding and the level of the bank's market-making activities. Regulatory reforms may also impact fees and other revenues for certain operating groups. In addition, differences in the laws and regulations enacted by a range of national regulatory authorities may offer advantages to our international competitors, which could affect our ability to compete. We monitor such developments, and other potential changes, so that we are well-positioned to respond and implement any necessary changes.

Following our acquisition of Bank of the West, our subsidiary, BMO Financial Corp. (BFC), as a U.S. bank intermediate holding company, has transitioned from a Category IV to a Category III institution under the Enhanced Prudential Standards issued by the Federal Reserve Board. This change will require BFC to meet certain heightened regulatory standards. Additional information regarding regulatory requirements that now apply to BFC is set out in the Enterprise-Wide Capital Management section.

Failure to comply with applicable legal and regulatory requirements and expectations could result in legal proceedings, financial losses, regulatory sanctions and fines, enforcement actions, criminal convictions and penalties, restrictions on or an inability to execute certain 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 and U.S. federal governments, other G20 governments and the Organisation for Economic Co-operation and Development (OECD) to increase taxes, broaden the tax base globally and improve tax-related reporting. For example, the Canadian government has released proposed legislation to adopt the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting two-pillar plan (Pillar 2) for international tax reform, which will levy a 15% minimum tax on operations globally. For further discussion, refer to the Regulatory Developments – New Canadian Tax Measures section.

Changes to Business Portfolio

On occasion, BMO may acquire companies, businesses and assets as part of its overall business strategy. We conduct thorough due diligence before completing these acquisitions. However, some acquisitions, including Bank of the West, may not perform in accordance with our financial or strategic objectives or expectations. We may be subject to regulatory and shareholder approvals to successfully complete an acquisition, and it may not be possible to establish 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 anticipated cost savings after an acquisition could also adversely affect earnings. Integration costs may increase because of regulatory costs related to an acquisition, operational loss events, other unanticipated expenses 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 may in turn lead to delays in attaining 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.

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 experience difficulty in finding buyers or devising 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 favourable than anticipated or lead to adverse operational or financial impacts, or greater disruption than expected, and the impact of the divestiture on revenue growth may be greater than projected. Dispositions may be subject to the satisfaction of conditions and the granting of governmental or regulatory approvals on acceptable terms that, if not satisfied or obtained, may prevent the completion of a disposition as intended, or at all.

Critical Accounting Estimates, Judgments and Accounting Standards

BMO prepares its consolidated financial statements in accordance with International Financial Reporting Standards (IFRS). Changes that the International Accounting Standards Board makes from time to time may materially affect the way we record and report financial results. Future changes in accounting policies are discussed in the Future Changes in Accounting Policies section, as well as in Note 1 of the audited annual 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 and Judgments section.

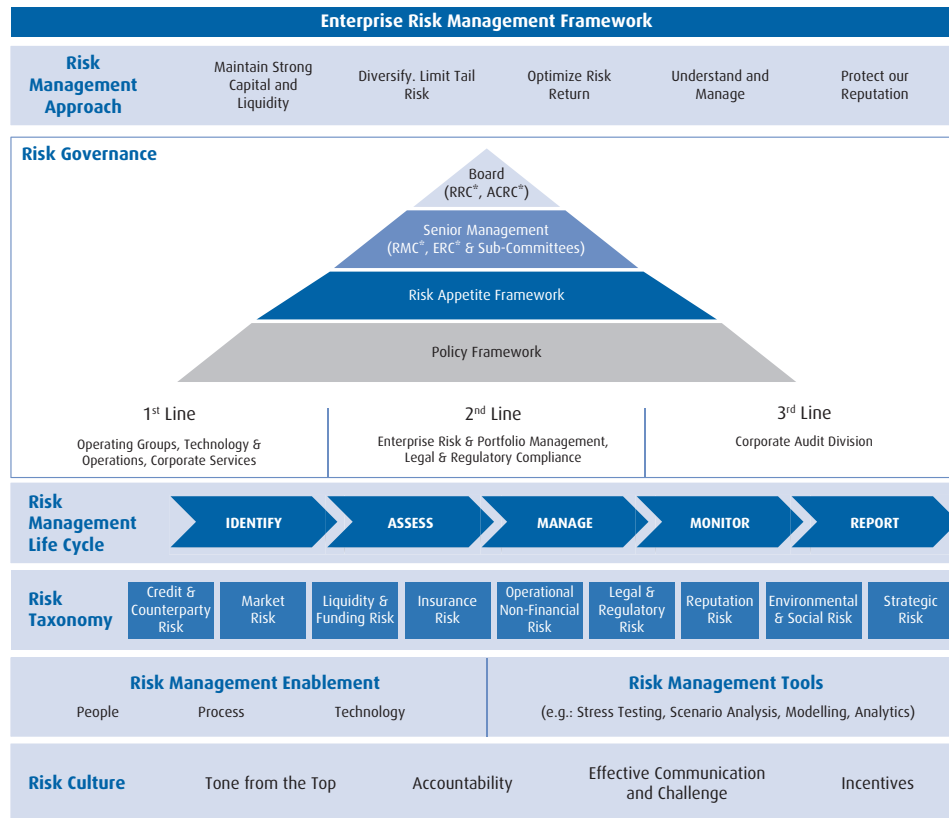
Caution

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.

Enterprise-Wide Risk Management Framework

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 enable 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.

The ERMF guides our 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 positions, 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, and informs our efforts to identify, assess, manage (which includes mitigation), monitor and report on our exposure to material risks. The ERMF is driven by our people, processes and technology, along with a range of risk management 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 and provide 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

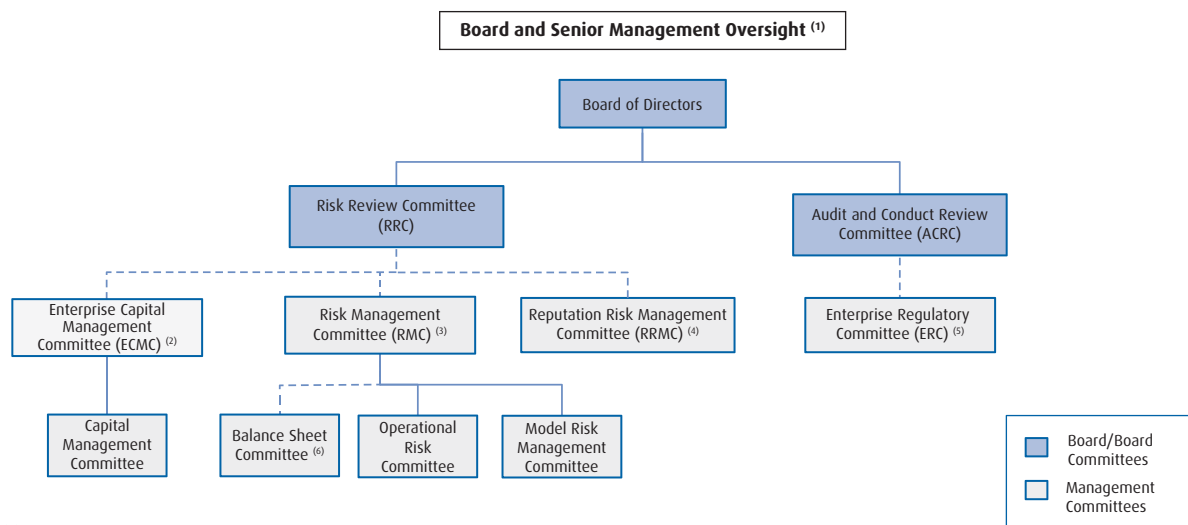
Risk Governance

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 policies approved by our Board of Directors govern our approach to the management of material risks, and oversight is exercised at every level of the enterprise through a hierarchy of committees and individual responsibilities, as outlined in the following diagram. The Board of Directors 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 lines of business and other operations. The Board also has overall responsibility for oversight of 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, exercising oversight and governance of the risks taken across the enterprise and the processes through which exposures to such risks are identified, assessed, managed, monitored and reported on, in accordance with policies, and held within approved limits and risk tolerances.

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



(1) Reporting relationships shown in dotted lines, sub-committees shown as solid lines.

(2) Co-chaired by the Chief Financial Officer and Chief Risk Officer.

(3) Chaired by the Chief Risk Officer.

(4) Chaired by the General Counsel.

(5) Co-chaired by the General Counsel and Chief Risk Officer.

(6) The Balance Sheet Committee (BSC) is a sub-committee of the Asset and Liability Management Committee (ALCO) and reports to RMC on matters related to Structural Market Risk and Liquidity and Funding Risk.

In addition to the oversight exercised by the Board of Directors and senior management, effective governance of the bank's risks is overseen by management committees and supported by the three-lines-of-defence operating model, which addresses risks across the operating groups and Corporate Services.

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 of 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 (RRC) of the Board of Directors assists the Board in fulfilling its risk management oversight responsibilities. This includes overseeing a strong risk culture; overseeing the identification and management of BMO's risks; monitoring adherence to risk management corporate policies and compliance with risk-related regulatory requirements; and evaluating the effectiveness of the Chief Risk Officer (CRO), in conjunction with the Human Resources Committee, including input into succession planning for the CRO. The ERMF is reviewed on a regular basis by the RRC and guides risk-taking activities and sets out the bank's approach to risk management.

Audit and Conduct Review Committee (ACRC) of the Board of Directors assists the Board in fulfilling its oversight responsibilities for the integrity of BMO's financial reporting and sustainability reporting on environmental, social and governance (ESG) matters; the effectiveness of BMO's internal controls; the internal audit function; 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; standards of business conduct and ethics; cyber security; and consumer protection measures and complaints.

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 ERMF and fostering a strong risk culture across the enterprise.

Risk Management Committee (RMC) brings together senior executive members of BMO management to oversee risk management across the enterprise. RMC reviews and discusses significant risk issues and action plans as they arise in the implementation of the enterprise-wide strategy. RMC exercises 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 exposures and balance sheet impacts that may arise from management strategies, governance practices, risk measurement, model risk management and contingency planning. RMC and its sub-committees exercise oversight of the risks taken across the enterprise and the processes through which such risks are identified, assessed, managed, monitored and reported on, in accordance with policies, and held within limits and risk tolerances.

Enterprise Risk and Portfolio Management (ERPM), as the 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 exercising its responsibility 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 risks accepted 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 exposures to 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 a Risk Appetite Statement and the responsibilities of senior management and the Board of Directors, and is supported by corporate policies, standards and guidelines, including the related risk limits, concentration levels and controls defined therein. Risk appetite defines the level and type 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 the assumption of material risks. Key risk metrics are outlined for material risks, with specific thresholds that allow senior management and the Board of Directors to monitor actual performance 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, Corporate Services, 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 define 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** positions 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, balancing 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 exposure to credit and liquidity facilities.
- **Operational Non-Financial Risk** – key metrics for measuring operational and other non-financial risks that may have financial consequences.

The Board of Directors, after considering recommendations from the RRC and 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 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 risk-related 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 exposures to key risks are identified, assessed, managed, 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 frameworks 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, serve as 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 (which includes mitigation), monitor and report on all risks in, or arising from, their businesses, operations and exposures. The first line fulfils its responsibilities by applying risk management and reporting methodologies, by establishing appropriate internal controls in accordance with the ERMF, and by monitoring the effectiveness of such controls. These processes and controls serve as the framework for our lines of business to act within their delegated risk-taking authority and risk limits, as set out in corporate policies and the Risk Appetite Framework. Corporate Services, while part of our first line of defence, may also serve 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 exercises independent oversight, performs effective challenge and provides independent assessment of risks and risk management practices, including transaction, product and portfolio risk

management decisions, processes and controls applied 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 (which includes mitigation), monitor and report on 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

Our Risk Taxonomy categorizes the key risks to which BMO is exposed and provides an analytical framework for the risk management life cycle in relation to each of the 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 Non-Financial 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 to support effective risk management practices as part of the overall ERMF. Failure in managing these risks, or in controlling our exposures to them, could have material financial consequences for BMO.

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 documents the 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 assessed under 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 significant or heightened reputation risk are reviewed by the Reputation Risk Management Committee.
- **Investment initiatives** – documentation of risk assessments is formalized through the investment assessment and approval process, and is reviewed and approved by Corporate Services based on the size of an initiative's investment spending and its inherent risk.
- **New products and services** – policies and 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 management 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 regulatory capital. Both are aggregate measures of the risk that the bank assumes in pursuit of its financial objectives, and 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 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 current transaction or portfolio reflect current and future 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 our risk management 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. Oversight and governance of the stress testing associated with the Horizontal Capital Review (HCR), which is a U.S. regulatory requirement for BMO Financial Corp. (BFC), are exercised at the BFC level by its Board of Directors.

Quantitative models and tools, along with qualitative evaluations, 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 position 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.

BMO's stress testing framework integrates stress testing at the line of business, portfolio, industry, geographic and product level, and embeds the test results 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.

Refer to the Environmental and Social Risk section for a discussion of our climate scenario analysis program.

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 our earnings, our balance sheet, and our 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 distills 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 BMO could experience as a result of a specific stress, as well as the ordinary course of business and extraordinary actions anticipated in response to that stress.

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

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 managing 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 at BMO is the set of shared norms, attitudes and behaviours related to risk awareness, risk-taking and risk management. Sound risk culture consistently supports appropriate behaviours and judgments about risk-taking, and promotes effective risk management and the alignment of risk-taking activities with BMO's Risk Appetite. Our risk culture informs and supports our overall organizational culture. We are committed to high ethical standards, grounded in our values of integrity, empathy, diversity and responsibility. Our Purpose – to Boldly Grow the Good *in business and life* – defines BMO as an organization and is the foundation of 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 actions. The Board of Directors oversees BMO's corporate objectives, and affirms that 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 those concerns can be appropriately evaluated and 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, which brings 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 and effective 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 to discourage 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 management 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 financial 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 represent the most significant measurable risks we face. Effective management of credit and counterparty risk is integral to our success, since failure to do so could have an immediate and significant impact on our earnings, financial condition and reputation.

Credit and Counterparty Risk Governance

The Credit Risk Management Framework seeks to ensure that all material credit risks to which the enterprise is exposed are identified, assessed, managed, monitored and reported on regularly. The Risk Review Committee (RRC) has oversight of the management of all material risks that BMO faces, including the Credit Risk Management Framework. The framework incorporates governing principles that are defined in a series of corporate policies and standards and are given effect through specific operating procedures. These policies and standards are reviewed on a regular basis and modified as necessary, so that they are current and consistent with our risk appetite. The structure, limits (both notional and capital-based), collateral requirements, monitoring, reporting and ongoing management of credit and counterparty 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 an automated decision-making process, or they may be approved by first-line underwriters with appropriate training, independence and oversight. Credit officers in Enterprise Risk and Portfolio Management (ERPM) approve larger transactions or transactions involving greater risk and are accountable for providing an objective independent assessment of the relevant 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 a 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 corporate policies, standards and procedures.

For corporate and commercial borrowers presenting a higher than normal risk of default, we have formal policies in place that outline the framework for managing such accounts, as well as specialized groups that manage them. We strive to identify borrowers facing financial difficulty early, and every effort is made to return such accounts to an acceptable level of risk through the application of good business judgment and the implementation of sound and constructive workout solutions.

All credit risk exposures are subject to regular monitoring. Performing corporate and commercial accounts are reviewed on a regular basis, generally no less frequently than annually, with most subject to internal monitoring of triggers that, if breached, result in an interim review. The frequency of review rises 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 conducted, including stress testing and scenario analysis based on current, emerging or prospective risks. Reporting is provided at least quarterly, and more frequently where appropriate, to the Board of Directors and senior management committees in order to keep them informed of credit risk developments in our 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 the 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, limits, risk management framework and approval process outlined above. However, given the nature of the risk, CCR exposures are also monitored under the market risk framework. In order to reduce our exposure to CCR, transactions 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 the risk of default by any member through 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 in order 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 business (including repurchase agreements and securities lending), we obtain 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 Master Agreement provided by International Swaps and Derivatives Association Inc., 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.

A Credit Support Annex entitles a party to demand a transfer of collateral (or other credit support) when its exposure to OTC derivatives of 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, certain thresholds and provisions setting out acceptable types of collateral, a method for their valuation (discounts are often applied to market values), the availability of the collateral for re-pledging by the recipient and the manner in which interest is to be calculated.

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, valuation or restricted use appraisal is obtained and updated every 12 months, as long as the loan remains classified as impaired. In Canada, for residential real estate that has an original loan-to-value (LTV) ratio of less than 80%, an independent property valuation is routinely obtained at the time of loan origination. For U.S. residential loans secured by real estate, an independent property valuation is obtained for all loans that will be retained in BMO's loan portfolio. For certain real estate loans originated for sale to government-sponsored agencies, the requirement may be waived based on an existing valuation already on file with that agency.

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 in determining either the current value of a property or the need for a full property appraisal.

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

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 when a relatively large 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 segments, country, product and single-name concentrations. We use a range of tools to reduce the credit risk exposures in our loan portfolio. These include asset sales, traditional securitizations, or the purchase of credit protection in the form of credit default swaps or credit insurance and risk transfer transactions. Credit risk is mitigated by obtaining protection from better-rated counterparties or high-quality collateral. Credit risk mitigation activities support our management of capital, and individual and portfolio credit concentration.

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. On a drawn loans and commitments basis, our most significant credit exposure at default as at October 31, 2023 was to individual consumers, comprising \$344,912 million (\$290,896 million as at October 31, 2022).

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 of the loss that BMO is expected to incur 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 (FIRB) and Advanced Internal Ratings Based (AIRB). BMO primarily uses the Internal Ratings Based (IRB) Approach, which includes both AIRB and FIRB, to determine credit risk-weighted assets (RWA) in its portfolios, including portfolios of the bank's subsidiary BMO Financial Corp. Under the Basel III Reform requirement, it is mandatory to apply FIRB to a subset of IRB exposures where LGD and EAD are based on regulatory prescribed values. Refer to the Supplementary Regulatory Capital Information disclosure for details regarding the total exposure (measured as EAD) of Retail and Wholesale portfolios under the IRB Approach to determining regulatory capital. The remaining exposures reflect waivers and exemptions to the IRB 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. 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 type and industry sector, as at October 31, 2023 and 2022, based on the Basel III classifications, are as follows:

(Canadian \$ in millions)	Drawn (3) (7)		Commitments (undrawn) (3) (8)		Other off-balance sheet items (3) (9)		OTC derivatives (4) (10)		Repo-style transactions (4) (5) (11)		Total (1)	
	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022
Individual Financial	281,087	233,450	63,812	57,446	13	-	-	-	-	-	344,912	290,896
institutions	95,433	112,185	18,690	34,216	7,201	8,036	19,307	16,467	16,177	18,197	156,808	189,101
Governments	219,809	186,542	2,551	1,869	1,575	434	8,193	8,063	5,870	9,287	237,998	206,195
Manufacturing	33,141	32,515	16,059	17,522	1,915	2,050	807	1,643	-	-	51,922	53,730
Real estate	61,766	49,639	11,843	12,911	971	1,238	224	459	-	-	74,804	64,247
Retail trade	27,858	23,890	4,621	4,890	441	549	129	248	-	-	33,049	29,577
Service industries	56,649	52,437	13,552	17,113	3,172	3,169	696	695	-	-	74,069	73,414
Wholesale trade	20,117	18,037	7,618	7,206	611	775	167	336	-	-	28,513	26,354
Oil and gas	3,364	3,823	2,889	4,440	788	1,341	1,444	6,066	-	-	8,485	15,670
Utilities	11,224	8,781	8,767	12,885	4,547	4,323	1,850	2,087	-	-	26,388	28,076
Others (2)	62,636	50,936	18,132	18,111	4,009	5,287	1,634	1,649	-	-	86,411	75,983
Total exposure at default (6)	873,084	772,235	168,534	188,609	25,243	27,202	34,451	37,713	22,047	27,484	1,123,359	1,053,243

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

(2) Includes remaining industries that individually comprise less than 2% of total exposures.

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

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

(5) Repo-style transactions include repos, reverse repos and securities lending transactions, which represent both asset and liability exposures. The impact of collateral on the credit exposure for repo-style transactions is \$228,691 million (\$215,806 million in 2022).

(6) Excludes exposures arising from derivative and repo-style transactions that are cleared through a clearing house or a central counterparty totalling \$9,025 million (\$13,698 million in 2022).

(7) Drawn exposures include loans, acceptances, deposits with regulated financial institutions and certain securities.

(8) Undrawn commitments cover all unutilized authorizations associated with the drawn exposures noted above, including any authorizations that are unconditionally cancellable. EAD for undrawn commitments is model-generated, based on internal empirical data.

(9) Other off-balance sheet exposures include items such as guarantees, standby letters of credit and documentary credits.

(10) Over-the-counter (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.

(11) EAD for repo-style transactions is the calculated exposure, net of collateral.

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

Risk Rating Systems

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

Credit risk-based parameters are monitored, reviewed and validated regularly. 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.

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 processes 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 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. Risk drivers used in the retail credit models may include customer attributes such as delinquency status and credit scores, and account attributes such as loan amounts 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 downturn conditions. The PD, LGD and EAD estimates are updated annually and recalibrated as required by comparing the estimates to observed historical experience.

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 (Sovereign, Bank, Corporate and Commercial)

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 developed general and sector-specific BRR models, as well as portfolio-level LGD and EAD models for each of the sovereign, bank, corporate and commercial portfolios.

The BRR models capture the key financial and non-financial characteristics of the borrowers and generate a borrower-level rating that reflects the relative rank order of the default risk. The models are primarily based on internal data, supplemented by 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 when events trigger a review, such as an external rating change or a 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 also 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 an 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. An 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 amount drawn, 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

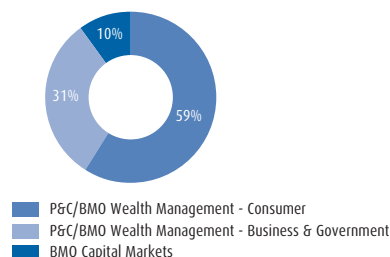
Credit Quality Information

Portfolio Review

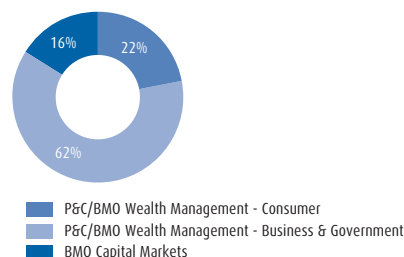
Total enterprise-wide outstanding credit risk exposures were \$1,123.4 billion as at October 31, 2023, with \$537.4 billion recorded in Canada, \$539.2 billion in the United States and \$46.8 billion in other jurisdictions. This represented an increase of \$70.2 billion or 7% from the prior year.

BMO's loan book continues to be well-diversified by industry and geographic region. Gross loans and acceptances increased \$101.2 billion or 18% from the prior year to \$668.4 billion as at October 31, 2023. The geographic mix of BMO's Canadian and U.S. portfolios represented 55.9% and 42.4% of total loans, respectively, compared with 62.6% and 35.4% in the prior year. The loan portfolio is well-diversified, with the consumer loan portfolio representing 43.9% of the total portfolio, a slight increase from 43.1% in the prior year, and business and government loans representing 56.1% of the total portfolio, a slight decrease from 56.9% in the prior year.

Canada and Other Countries



U.S.



Commercial Real Estate Lending

Commercial real estate (CRE) lending refers to loans made for the purpose of financing buildings or land intended to generate a profit, derived either from the sale of property or from rental income. CRE primarily refers to two distinct types of real estate businesses: income-producing real estate (office, industrial and retail space, and multi-family residential buildings with more than four dwelling units), including the construction of these assets; and development of land and construction of properties for sale (subdivisions, condominiums and other types of property). Our primary focus is on owners of income-producing commercial real estate portfolios with stable operating performance, diversified portfolios, modest leverage and continued access to capital, including those legally structured as real estate investment trusts (REITs), real estate investment funds and real estate operating companies (REOCs), as well as pension funds and other established owners of income-producing commercial real estate.

Our CRE portfolio was \$69.8 billion as at October 31, 2023 (\$54.5 billion as at October 31, 2022) and accounted for 10% of total gross loans and acceptances (10% as at October 31, 2022). The portfolio is well-managed, with consistent and conservative underwriting standards, strict lending criteria and structural resilience, resulting in strong credit quality. As at October 31, 2023, 57% of CRE loans are investment grade (69% as at October 31, 2022) and 41% are sub-investment grade (30% as at October 31, 2022), with impaired loans representing 1% of the portfolio (0% as at October 31, 2022).

Our CRE portfolio is well-diversified across businesses, property types and geographic regions. Given the post-pandemic prevalence of remote and hybrid work arrangements, office space is one of the higher-risk portfolio segments within commercial real estate and represents 1% of our total gross loans and acceptances. In addition to monitoring the limits we set for the CRE portfolio, we apply lower limits on each segment, including office space, which helps us mitigate any exposure to related risks.

Real Estate Secured Lending

Real estate secured lending comprises residential mortgages and home equity lines of credit (HELOC) we extend to individuals, secured by residential real estate, which is defined as residential structures with one to four dwelling units. The increases in prime interest rates during fiscal 2022 and 2023 impacted variable-rate mortgages, resulting in extended and negative amortization. These prime rate increases had no immediate impact on fixed-rate mortgages, which are fixed at one rate until renewal.

We regularly perform stress testing on our residential mortgage and HELOC portfolios to assess 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.

The following tables provide a breakdown of residential mortgages and HELOCs by geographic region, as well as insured and uninsured balances. Residential mortgages and HELOCs are secured by residential properties.

Canadian Real Estate Secured Lending

(Canadian \$ in millions)	Residential mortgages	Amortizing home equity lines of credit	Total amortizing real estate secured lending	Non-amortizing real estate secured lending	Total Canadian real estate secured lending
As at October 31, 2023	150,575	35,741	186,316	12,982	199,298
As at October 31, 2022	139,394	34,083	173,477	13,219	186,696

Residential Mortgages ⁽¹⁾

(Canadian \$ in millions, except as noted)	As at October 31, 2023					As at October 31, 2022				
	Outstanding balances				For the 12 months ended	Outstanding balances				For the 12 months ended
	Insured (3)	Uninsured	Total	% of total	Average LTV uninsured (4)	Insured (3)	Uninsured	Total	% of total	Average LTV uninsured (4)
Region (2)										
Atlantic	3,347	3,452	6,799	3.8%	71%	3,197	3,255	6,452	4.3%	72%
Quebec	9,242	12,903	22,145	12.5%	71%	8,892	12,156	21,048	14.2%	72%
Ontario	14,643	56,798	71,441	40.3%	70%	14,411	49,664	64,075	43%	70%
Alberta	9,885	7,302	17,187	9.7%	73%	9,552	6,854	16,406	11%	74%
British Columbia	4,746	24,391	29,137	16.5%	67%	4,680	22,919	27,599	18.5%	68%
All other Canada	2,264	1,602	3,866	2.2%	73%	2,179	1,635	3,814	2.6%	73%
Total Canada	44,127	106,448	150,575	85.0%	70%	42,911	96,483	139,394	93.6%	70%
United States	68	26,607	26,675	15.0%	77%	16	9,470	9,486	6.4%	72%
Total	44,195	133,055	177,250	100%	71%	42,927	105,953	148,880	100%	71%

Home Equity Lines of Credit ⁽¹⁾

(Canadian \$ in millions, except as noted)	As at October 31, 2023					As at October 31, 2022				
	Portfolio				For the 12 months ended	Portfolio				For the 12 months ended
	Outstanding balances	%	Authorizations	%	Average LTV (4)	Outstanding balances	%	Authorizations	%	Average LTV (4)
Region (2)										
Atlantic	996	1.8%	1,922	1.7%	60%	967	1.9%	1,835	1.9%	64%
Quebec	9,149	16.6%	18,071	15.9%	67%	8,897	17.6%	17,085	17.4%	71%
Ontario	24,601	44.6%	45,351	40.0%	59%	23,647	46.8%	43,063	43.9%	63%
Alberta	3,203	5.8%	6,970	6.2%	62%	3,232	6.4%	6,835	6.9%	66%
British Columbia	10,029	18.2%	18,899	16.7%	59%	9,826	19.5%	17,953	18.3%	61%
All other Canada	745	1.3%	1,474	1.3%	66%	733	1.5%	1,443	1.5%	67%
Total Canada	48,723	88.3%	92,687	81.8%	61%	47,302	93.7%	88,214	89.9%	64%
United States	6,471	11.7%	20,615	18.2%	60%	3,196	6.3%	9,902	10.1%	64%
Total	55,194	100%	113,302	100%	61%	50,498	100%	98,116	100%	64%

(1) Reporting methodologies are in accordance with OSFI's Residential Mortgage Underwriting Practices and Procedures (B-20) Guideline.

(2) Region is based upon address of the property mortgaged.

(3) Portfolio insured mortgages are defined as mortgages that are insured individually or in bulk through an eligible insurer (i.e., CMHC, Sagen MI Canada™).

(4) Loan-to-value (LTV) is based on the value of the property at mortgage origination, as well as outstanding balances for mortgages and authorized amounts for HELOCs.

Residential Mortgages by Remaining Term of Amortization ^{(1) (2)}

As at October 31, 2023	Amortization period							
	< 5 years	6-10 years	11-15 years	16-20 years	21-25 years	26-30 years	31-35 years	> 35 years
Canada (3)	0.7%	2.5%	6.1%	13.6%	32.1%	18.0%	2.1%	24.9%
United States (4)	0.5%	2.2%	5.3%	2.8%	10.4%	78.6%	0.1%	0.1%
Total	0.7%	2.5%	5.9%	12.0%	28.8%	27.1%	1.8%	21.2%

As at October 31, 2022	Amortization period							
	< 5 years	6-10 years	11-15 years	16-20 years	21-25 years	26-30 years	31-35 years	> 35 years
Canada (3)	0.8%	2.6%	5.7%	13.5%	32.3%	13.8%	3.4%	27.9%
United States (4)	0.7%	4.9%	9.9%	4.9%	14.3%	65.0%	0.1%	0.2%
Total	0.8%	2.7%	6.0%	13.0%	31.1%	17.1%	3.2%	26.1%

(1) In Canada, the remaining amortization is based on the current balance, interest rate, customer payment amount and payment frequency. Contractual payment schedule is used in the United States.

(2) Reporting methodologies are in accordance with OSFI's B-20 guideline.

(3) As a result of increases in interest rates, the portfolio included \$29.9 billion (\$22.3 billion as at October 31, 2022) of variable-rate mortgages in negative amortization, with all of the contractual payments currently being applied to interest, and the portion of interest due that is not met by each payment is added to the principal.

(4) A large proportion of U.S.-based mortgages in the longer-amortization band are primarily associated with modification programs for troubled borrowers and regulator-initiated mortgage refinancing programs.

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 2% of total assets, with \$26.7 billion outstanding as at October 31, 2023 (2% and \$25.1 billion, respectively, in 2022). Of this amount, 25% of leveraged finance loans, with \$6.8 billion outstanding as at October 31, 2023 (25% and \$6.3 billion, respectively, in 2022), were well-secured by high-quality assets. The remainder of the portfolio is well-diversified across sectors and includes loans to borrowers where we have relatively small hold sizes. This portfolio is closely managed, and in some cases has risk mitigation and structural elements that lower the level of credit risk. As at October 31, 2023, \$497 million or 2% of all leveraged finance loans were classified as impaired (\$348 million or 1% in 2022). In addition to this leveraged finance lending business, we also enter into underwriting activities involving leveraged borrowers, which are managed through the market risk framework.

Provision for Credit Losses

Total provision for credit losses was \$2,178 million on a reported basis and \$1,473 million on an adjusted basis, compared with \$313 million on both a reported and adjusted basis in the prior year, due to downward credit migration despite an improvement in the macroeconomic outlook, as well as higher losses on impaired loans. Detailed discussions of PCL, including historical PCL trends, are provided in Table 12 in the Supplemental Information and in Note 4 of the audited annual consolidated financial statements.

Gross Impaired Loans

Total gross impaired loans and acceptances (GIL) were \$3,960 million, an increase from \$1,991 million in the prior year. The increase in impaired loans was predominantly in business and government lending, with the largest increases in the service, commercial real estate and retail trade industries. GIL as a percentage of gross loans and acceptances was 0.59% in 2023, which increased from an historically low level of 0.35% in the prior year.

Factors contributing to the change in GIL are outlined in the table below. Loans classified as impaired during the year increased to \$4,047 million from \$1,635 million in 2022, reflecting higher impaired loan formations in both the wholesale and the consumer portfolios, including the purchased credit impaired loans related to the acquisition of Bank of the West. On a geographic basis, Canada accounted for 42% of total formations in 2023, compared with 71% in 2022.

Detailed breakdowns of impaired loans by geographic region and industry can be found in Table 8 in the Supplemental Information and in Note 4 of the audited annual consolidated financial statements.

Changes in Gross Impaired Loans and Acceptances

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

	2023	2022
GIL, beginning of year	1,991	2,169
Classified as impaired during the year	4,047	1,635
Purchased credit impaired during the year	415	-
Transferred to not impaired during the year	(545)	(659)
Net repayments	(1,214)	(819)
Amounts written off	(753)	(363)
Recoveries of loans and advances previously written off	-	-
Disposals of loans	(24)	(54)
Foreign exchange and other movements	43	82
GIL, end of year	3,960	1,991
GIL as a % of gross loans and acceptances	0.59	0.35

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 for credit losses on impaired loans and an allowance for credit losses on performing loans, in accordance with International Financial Reporting Standards (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 an allowance for loss 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 that involves 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 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. Allowances in the second quarter of 2023 included an initial provision of \$705 million on the purchased Bank of the West performing loan portfolio.

We maintain an allowance for credit losses (ACL) at a level that we consider appropriate to absorb credit-related losses. As at October 31, 2023, the total ACL was \$4,267 million, an increase of \$1,269 million from the prior year, reflecting the initial provision of \$705 million on the Bank of the West performing loans and higher allowances on both performing and impaired loans. The allowance on impaired loans was \$695 million as at October 31, 2023, and the allowance on performing loans was \$3,572 million. These amounts included an allowance on impaired loans of \$11 million and an allowance on performing loans of \$449 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 increased \$138 million from \$557 million in the prior year. The allowance on performing loans increased \$1,131 million to \$3,572 million from \$2,441 million in the prior year, primarily driven by the initial provision on the Bank of the West performing loans, portfolio credit migration, uncertainty in credit conditions, growth in certain portfolios and movements in foreign exchange rates, partially offset by an improvement in the macroeconomic outlook.

Further details on the continuity in ACL by each product type can be found in Tables 9 and 10 in the Supplemental Information, and in Note 4 of the audited annual consolidated financial statements.

International Exposures

BMO's geographic exposures to regions outside of Canada and the United States are subject to a risk management framework that incorporates assessments of economic and political risks in each region or country. These exposures are also managed within limits based on product, entity and country of ultimate risk. Our total net exposure to these regions is set out in the table below.

The table outlines total net exposure for funded lending and undrawn commitments, securities (including cash products, traded credit and credit default swap activity), repo-style transactions and derivatives. Repo-style transactions and derivatives exposures are reported at mark-to-market value. Derivatives exposures incorporate 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.

Exposure by Region

(Canadian \$ in millions)	As at October 31, 2023												As at October 31, 2022
	Funded lending and commitments				Securities				Repo-style transactions and derivatives				Total net exposure
Region	Bank	Corporate	Sovereign	Total	Bank	Corporate	Sovereign	Total	Bank	Corporate	Sovereign	Total	Total net exposure
Europe (excluding United Kingdom)	641	2,978	-	3,619	495	214	6,423	7,132	377	124	29	530	11,281
United Kingdom	21	4,204	370	4,595	102	100	770	972	105	457	6	568	6,135
Latin America	2,978	6,922	-	9,900	1	118	-	119	13	238	-	251	10,270
Asia-Pacific	3,874	3,173	148	7,195	782	107	3,641	4,530	229	270	65	564	12,289
Middle East and Africa	782	437	105	1,324	-	4	28	32	12	28	1,075	1,115	2,471
Other (1)	-	5	51	56	6	-	3,681	3,687	-	-	1,832	1,832	5,575
Total	8,296	17,719	674	26,689	1,386	543	14,543	16,472	736	1,117	3,007	4,860	48,021

(1) Primarily exposure to supranational entities.

Derivative Transactions

The following table presents the notional amounts of BMO's over-the-counter (OTC) derivative contracts, comprising contracts that are centrally cleared and settled through a designated clearing house or central counterparty (CCP) and contracts that are not 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, in order to centrally clear OTC derivative contracts, we acquire a membership in the CCP and, in addition to providing collateral to protect the CCP against risk of loss 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 of default by another member.

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	
As at October 31	2023	2022	2023	2022	2023	2022
Interest Rate Contracts						
Swaps	413,856	420,700	9,197,174	5,534,061	9,611,030	5,954,761
Forward rate agreements	5,439	3,929	127,214	18,468	132,653	22,397
Purchased options	130,000	98,113	-	-	130,000	98,113
Written options	118,524	87,941	-	-	118,524	87,941
Total interest rate contracts	667,819	610,683	9,324,388	5,552,529	9,992,207	6,163,212
Foreign Exchange Contracts						
Cross-currency swaps	95,932	119,976	-	-	95,932	119,976
Cross-currency interest rate swaps	685,022	582,092	-	-	685,022	582,092
Forward foreign exchange contracts	555,031	469,503	9,335	12,270	564,366	481,773
Purchased options	51,143	72,733	-	-	51,143	72,733
Written options	55,370	74,041	-	-	55,370	74,041
Total foreign exchange contracts	1,442,498	1,318,345	9,335	12,270	1,451,833	1,330,615
Commodity Contracts						
Swaps	18,573	24,487	1	38	18,574	24,525
Purchased options	5,319	5,686	-	-	5,319	5,686
Written options	4,218	5,011	-	-	4,218	5,011
Total commodity contracts	28,110	35,184	1	38	28,111	35,222
Equity Contracts	116,011	105,280	129	-	116,140	105,280
Credit Default Swaps						
Purchased	1,705	1,496	15,222	15,275	16,927	16,771
Written	1,080	962	8,930	10,137	10,010	11,099
Total credit default swaps	2,785	2,458	24,152	25,412	26,937	27,870
Total	2,257,223	2,071,950	9,358,005	5,590,249	11,615,228	7,662,199

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 can 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) oversees 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 assesses significant market risk exposures and positions, and exercises ongoing senior management oversight of our risk-taking activities. Both of these committees are kept apprised of specific market risk exposures and any developments that could expose BMO to unusual, unexpected or unquantified risks associated with those market risk 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 our customers' 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, rigorous 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, leveraged loan, bond and equity underwriting, and market risk exposures arising from the domestic and foreign operations of our operating groups.

Various metrics and techniques are then employed to measure identified market risk exposures. These include Value-at-Risk and stress tests, as well as sensitivity to market risk factors, position concentrations and trading revenues. Results are reported to the appropriate line of business, the RMC and RRC on a regular basis.

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.

Stress Tests are used to determine the potential impact of low-frequency, high-severity events on the trading and underwriting portfolios. The portfolios are measured daily against a variety of hypothetical and historical event scenarios. Scenarios are continuously refined to reflect the latest market conditions and portfolio risk exposures.

Risk models support the measurement of our exposure to the risk of adverse outcomes for income, retained earnings and capital. 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. The data and correlations that underpin our models are updated frequently, so that risk metrics reflect current conditions.

Stress tests capture a wide range of hypothetical and historical events, including the 2008 global financial crisis and the COVID-19 pandemic, along with portfolio-specific impacts and asset class scenarios. In addition, a range of assumptions, including the duration of the scenario and management actions, are incorporated in the stress tests to better reflect the anticipated impact on the trading and underwriting business.

Our VaR model is back-tested daily, assuming there are no changes to the previous day's closing position and isolating the effects of each day's price movements against those closing positions. 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.

Although it is a useful indicator of risk, VaR has limitations, as with any model-driven metric. These include the assumption that all portfolio positions can be liquidated within the assumed one-day holding period, which may not be the case under illiquid market conditions. Market liquidity horizons are reviewed for suitability and updated where appropriate for relevant risk metrics, such as stress testing. Further limitations of the VaR metric include the assumption that historical data can be used as a proxy to forecast future market events. In addition, VaR calculations are based on portfolio positions at the close of business and do not reflect the impact of intra-day trading activity.

VaR and stress testing continue to have a significant role in managing portfolio risks, although the determination of trading market risk regulatory capital will reflect Basel III Reforms starting in 2024. However, these metrics should not be viewed as definitive predictors of the maximum amount of losses that could be experienced in the trading and underwriting portfolios 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.

Monitoring and Control of Trading and Underwriting Market Risk

Limits are applied to VaR, stress testing and other risk metrics, and these limits are subject to regular monitoring and reporting, with breaches escalated to the appropriate level of management for review. 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 committees of our Board of Directors. 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

Average Total Trading VaR increased year-over-year due to portfolio changes and higher market volatility, primarily in our fixed income portfolio. Average diversification levels increased and provided a significant offset to the rise in average interest rate VaR and debt-specific risk VaR.

Total Trading Value at Risk (VaR) Summary⁽¹⁾

As at or for the year ended October 31 (Pre-tax Canadian \$ equivalent in millions)	2023				2022			
	Year-end	Average	High	Low	Year-end	Average	High	Low
Commodity VaR	4.0	2.4	6.1	1.2	1.6	3.1	5.5	1.0
Equity VaR	13.6	14.0	24.5	8.5	14.1	13.1	18.4	8.5
Foreign exchange VaR	1.7	2.9	5.6	1.3	2.3	1.8	5.2	0.5
Interest rate VaR (2)	27.3	27.4	41.5	16.0	22.1	18.0	26.5	12.4
Debt-specific risk	11.0	10.9	15.9	7.5	10.2	5.7	10.5	1.8
Diversification	(25.0)	(25.5)	nm	nm	(15.0)	(15.1)	nm	nm
Total Trading VaR	32.6	32.1	47.9	21.2	35.3	26.6	38.2	18.1

(1) One-day measure using a 99% confidence interval. Gains are presented in brackets and losses are presented as positive numbers.

(2) Interest rate VaR includes general credit spread risk.

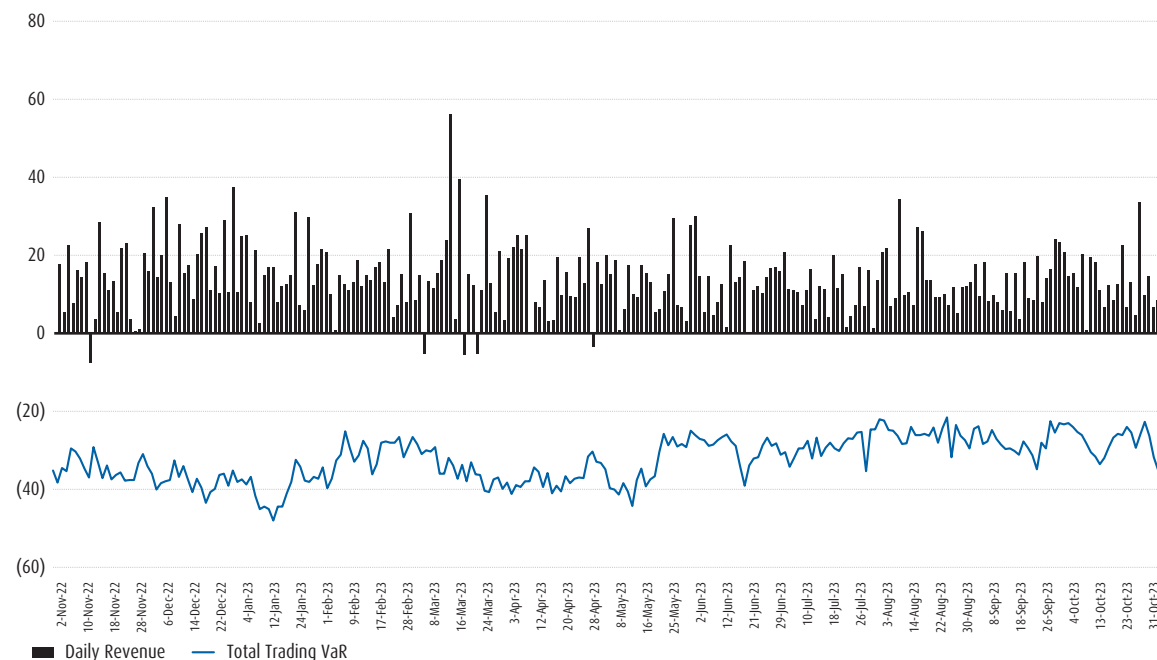
nm – not meaningful

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 2023, net trading losses occurred on five days, with none of these losses exceeding Total Trading VaR. The losses on these days were attributable to lower than usual client activity, combined with market volatility, which had a negative impact on some of our positions.

Trading Net Revenues versus Value at Risk

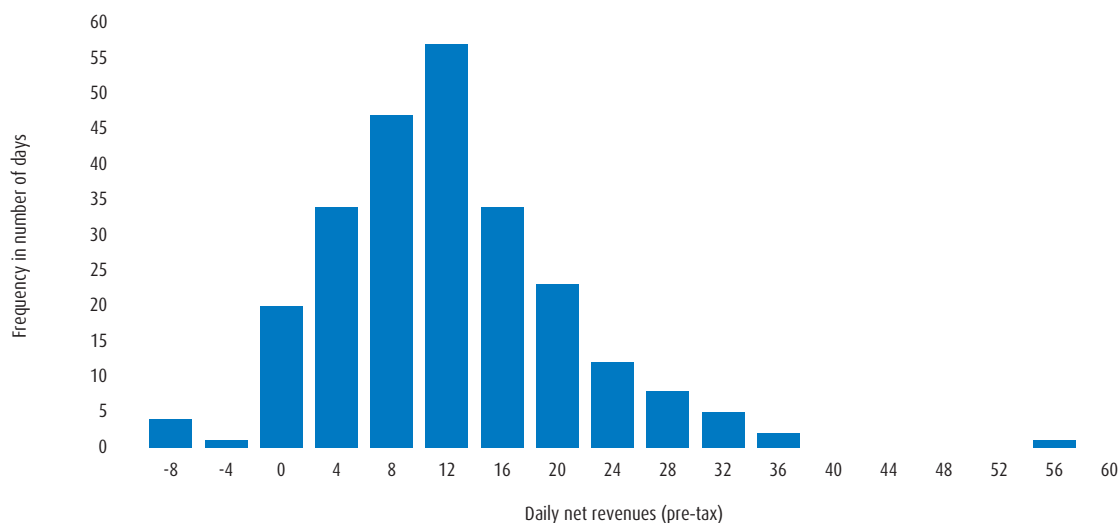
November 2, 2022 to October 31, 2023 (pre-tax basis, Canadian \$ in millions)



Material presented in a blue-tinted font above is an integral part of Note 5 of the 2023 audited annual consolidated financial statements.

Frequency Distribution of Daily Net Revenues

Nov 1, 2022 to Oct 31, 2023 (Canadian \$ in millions)



Structural (Non-Trading) Market Risk

Structural market risk comprises interest rate risk arising from our banking activities (such as those involving 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 the limits approved by our Board of Directors on earnings at risk and the sensitivity of economic value 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 ongoing senior management oversight of risk positions and related activities.

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 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 align with a target profile through interest rate swaps and securities.

Product-embedded option risk arises when product features allow customers to alter the timing of 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 limit the level of exposure to this risk.

Structural interest rate risk is measured using simulations, analyses of the sensitivity of earnings and economic value, stress testing and gap analysis, in addition to other 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 from 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 dates and timing. 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 generated by these structural market risk models are inherently uncertain, as they reflect potential future 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.

The sensitivity of structural interest rate earnings and economic value to an immediate parallel increase or decrease of 100 basis points in the yield curve is disclosed in the table below.

On February 1, 2023, we closed the acquisition of Bank of the West. Prior to closing, we entered into interest rate swaps to manage the exposure of our regulatory capital to the risk of changes in the fair value of the assets and liabilities of Bank of the West due to changes in interest rates between the announcement and closing of the acquisition. These swaps resulted in a cumulative mark-to-market gain of \$5.7 billion at closing. Any exposure to interest rate risk in relation to these interest rate swaps was largely offset by our purchase of a portfolio of matched-duration U.S. treasuries and other balance sheet instruments. On closing, the mark-to-market swaps were unwound and replaced with fair value accounting hedges, which in effect crystallized an unrealized loss on the U.S. treasuries and other balance sheet instruments that will be recognized as a reduction in interest income over their remaining life. Refer to the Enterprise-Wide Capital Management section and the Recent Acquisitions section for further discussion.

The sensitivity of structural economic value to rising interest rates primarily reflects a lower market value for fixed-rate loans. The sensitivity of structural economic value to falling interest rates primarily reflects the impact of a higher market value for fixed-rate loans and minimum modelled client deposit rates. The exposure of structural economic value to rising interest rates and the benefits of falling interest rates increased relative to October 31, 2022, primarily due to a modestly shorter net duration of BMO's position in the prior year, in advance of our acquisition of Bank of the West. Structural earnings sensitivity quantifies the potential impact of interest rate changes on structural balance sheet pre-tax net income over the next 12 months. The sensitivity of structural earnings to falling interest rates primarily reflects the risk of fixed-rate and floating-rate loans repricing at lower rates and the more limited ability to reduce deposit pricing as rates fall. The benefits of rising interest rates to structural earnings primarily reflect the positive impact of reinvesting our net equity and non-rate sensitive deposits into assets with higher-term rates. The benefits of rising interest rates to structural earnings and exposures to falling interest rates decreased in 2023 relative to 2022, largely due to a modestly shorter net duration of BMO's position in the prior year, in advance of our acquisition of Bank of the West.

During 2023, both economic value sensitivity and earnings sensitivity remained within the limits established by the Board of Directors.

Structural Interest Rate Sensitivity ⁽¹⁾

(Pre-tax Canadian \$ equivalent in millions)	Economic value sensitivity				Earnings sensitivity			
	October 31, 2023			October 31, 2022	October 31, 2023			October 31, 2022
	Canada (2)	United States	Total	Total	Canada (2)	United States	Total	Total
100 basis point increase	(872.6)	(976.0)	(1,848.6)	(990.2)	31.0	273.4	304.5	498.9
100 basis point decrease	750.4	741.1	1,491.6	647.9	(36.2)	(289.2)	(325.4)	(595.2)

(1) Losses are presented in brackets and gains are presented as positive numbers.

(2) Includes Canadian dollar and other currencies.

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

(Canadian \$ in millions)	2023	2022
Fixed rate (1)		
Contractual amounts that will reprice/repay within 3 months	213,667	147,232
Contractual amounts that will reprice/repay after 3 months	248,688	181,694
Floating rate (2)	186,327	215,625
Non-rate sensitive (3)	15,907	20,023
Total	664,589	564,574

(1) Includes index-based loans.

(2) Floating rate only includes loans that reprice immediately upon a change in interest rates.

(3) Includes credit card balances that are paid when due, customers' liability under acceptances, impaired loans and allowance for credit losses.

Certain comparative figures have been reclassified 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. We may enter into hedging arrangements to offset the impact of changes in interest rates and equity market values on our earnings, and we did so during the 2023 fiscal year. The sensitivity reflects the impact of these hedging relationships. An increase of 100 basis points in interest rates would result in a decrease in earnings before tax of \$13 million as at October 31, 2023 (increase of \$12 million as at July 31, 2023 and \$35 million as at October 31, 2022). A decrease of 100 basis points in interest rates would result in an increase in earnings before tax of \$15 million as at October 31, 2023 (decrease of \$8 million as at July 31, 2023 and \$34 million as at October 31, 2022). An increase of 10% in equity market values would result in an increase in earnings before tax of \$14 million as at October 31, 2023 (\$15 million as at July 31, 2023 and \$13 million as at October 31, 2022). A decrease of 10% in equity market values would result in a decrease in earnings before tax of \$11 million as at October 31, 2023 (\$12 million as at July 31, 2023 and \$13 million as at October 31, 2022). 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.

BMO Insurance will adopt International Financial Reporting Standard 17, *Insurance Contracts* (IFRS 17) effective November 1, 2023. IFRS 17 will change the fundamental principles used to recognize and measure insurance contracts, including life insurance contracts, reinsurance contracts held and investment contracts with discretionary participation features. This change will impact the timing of when investment-related income emerges and the associated market risk sensitivities, as the discount rates used in calculating the present value of insurance liabilities will no longer be based on the assets supporting those liabilities, but rather on the features of the insurance contracts themselves. On transition, we will apply the full retrospective approach to our creditor business and the fair value approach to all other products written prior to November 1, 2022. For further information, refer to the Critical Accounting Estimates and Judgments – Future Changes in Accounting Policies section.

Material presented in a blue-tinted font above is an integral part of Note 5 of the 2023 audited annual consolidated financial statements.

Non-Trading 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 arises from the potential 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 changes in foreign exchange rates on our capital ratios, and we did so during the 2023 fiscal year. In addition, BMO entered into forward contracts during 2022 to mitigate the impact of changes in the Canadian dollar equivalent of the Bank of the West purchase price between the announcement and the closing of the acquisition, which qualified for hedge accounting. Changes in the fair value of these forward contracts of \$374 million (\$269 million after-tax) were accounted for as a reduction of the Canadian dollar equivalent of the purchase price. Refer to the Enterprise-Wide Capital Management section and the Recent Acquisitions section for further discussion.

Transaction risk arises from the potential 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 we did not enter into any hedging arrangements in the current or prior year. If future results are consistent with results in 2023, 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 \$38 million, in the absence of hedging arrangements. 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, 2023				As at October 31, 2022				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	77,934	–	77,934	–	87,466	–	87,466	–	Interest rate
Interest bearing deposits with banks	4,125	237	3,888	–	5,734	142	5,592	–	Interest rate
Securities	322,379	124,620	197,759	–	273,262	108,303	164,959	–	Interest rate, credit spread, equity
Securities borrowed or purchased under resale agreements	115,662	–	115,662	–	113,194	–	113,194	–	Interest rate
Loans and acceptances (net of allowance for credit losses)	656,478	4,412	652,066	–	551,339	3,501	547,838	–	Interest rate, foreign exchange
Derivative instruments	39,976	34,004	5,972	–	48,160	45,537	2,623	–	Interest rate, foreign exchange
Customers' liabilities under acceptances	8,111	–	8,111	–	13,235	–	13,235	–	Interest rate
Other assets	68,611	4,734	27,385	36,492	46,809	3,030	26,561	17,218	Interest rate
Total Assets	1,293,276	168,007	1,088,777	36,492	1,139,199	160,513	961,468	17,218	
Liabilities Subject to Market Risk									
Deposits	909,676	35,300	874,376	–	769,478	26,305	743,173	–	Interest rate, foreign exchange
Derivative instruments	50,193	43,166	7,027	–	59,956	46,803	13,153	–	Interest rate, foreign exchange
Acceptances	8,111	–	8,111	–	13,235	–	13,235	–	Interest rate
Securities sold but not yet purchased	43,781	43,781	–	–	40,979	40,979	–	–	Interest rate
Securities lent or sold under repurchase agreements	106,108	–	106,108	–	103,963	–	103,963	–	Interest rate
Other liabilities	90,142	33	90,049	60	72,400	60	71,815	525	Interest rate
Subordinated debt	8,228	–	8,228	–	8,150	–	8,150	–	Interest rate
Total Liabilities	1,216,239	122,280	1,093,899	60	1,068,161	114,147	953,489	525	

(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.

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 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 catastrophic risk;
- Policyholder behaviour risk – the risk that the behaviour of policyholders in regard to premium payments, withdrawals or loans, as well as 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, monitoring 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, serving as the first line of defence and assuming the primary responsibility for managing insurance risk. Second-line-of-defence oversight is provided by the CRO, BMO Insurance, who reports to the CRO, BMO Wealth Management. 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 to the insurance companies' boards of directors on a quarterly basis. In addition, the Audit and Conduct Review Committee of the Board of Directors 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 manages 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 or cede insurance risk from BMO Insurance to independent reinsurance companies also mitigate our exposure to insurance risk by diversifying risk and limiting claims. BMO Insurance has exited the Property and Casualty Reinsurance market, with the last remaining treaty terminated in January 2021, significantly reducing our exposure to catastrophic claims and in turn, the risks arising from climate change. However, a certain portion of our exposure to 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.

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, as well as 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 a level of liquid assets and funding capacity sufficient 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 on exposures to liquidity and funding risk across the enterprise; develops and recommends for approval the Liquidity and Funding Risk Management Framework and the related risk appetite statement 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, exercises 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 Asset Liability Committee (ALCO) provide senior management oversight, and 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 in alignment with corporate policies approved by our Board of Directors and standards approved by management. These policies and standards set out key management principles, liquidity and funding metrics and related limits, as well as roles and responsibilities in 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. These limits define BMO's 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), as well as 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 intended to facilitate effective risk 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 any exposure to 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, 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.

BMO continued to maintain a strong liquidity position during 2023. Customer loans and deposits continued to grow, while wholesale funding increased, reflecting net issuances. Our liquidity metrics, including the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR), exceeded internal and regulatory requirements throughout 2023.

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 severe systemic and enterprise-specific stress scenarios, and a combination thereof. 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 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). Stress scenarios also consider 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 potential 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 appetite and are considered in management's 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 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 values recognized for different asset classes under BMO's risk management framework reflect management's assessment of the liquidity values 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 for 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 60% of the supplemental liquidity pool is held at the parent bank level in assets denominated in Canadian or U.S. dollars, and most of the remaining supplemental liquidity pool is held at our U.S. bank entity, BMO Bank N.A., in U.S.-dollar-denominated assets. The size of the supplemental liquidity pool is integrated with our assessment of liquidity risk. In order to comply with 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 normal 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 assets encumbered as collateral, totalled \$360.2 billion as at October 31, 2023, compared with \$335.3 billion as at October 31, 2022.

The increase in unencumbered liquid assets was primarily due to higher securities balances, partially offset by lower cash balances. Net unencumbered liquid assets are primarily held at the parent bank level, at BMO Bank N.A., 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, the Bank of England's Sterling Monetary Framework, and European Central Bank standby liquidity facilities. We do not consider central bank facilities as a source of available liquidity when assessing the soundness of our liquidity position.

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 limits for pledging 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 audited annual consolidated financial statements for further information on pledged assets.

Liquid Assets

(Canadian \$ in millions)	As at October 31, 2023					As at October 31, 2022
	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	77,934	–	77,934	125	77,809	87,379
Deposits with other banks	4,125	–	4,125	–	4,125	5,734
Securities and securities borrowed or purchased under resale agreements						
Sovereigns / Central banks / Multilateral development banks	155,249	107,854	263,103	141,176	121,927	111,940
NHA mortgage-backed securities and U.S. agency mortgage-backed securities and collateralized mortgage obligations	87,244	8,875	96,119	39,390	56,729	39,978
Corporate and other debt	24,783	20,368	45,151	8,683	36,468	33,698
Corporate equity	55,103	54,051	109,154	65,501	43,653	39,966
Total securities and securities borrowed or purchased under resale agreements	322,379	191,148	513,527	254,750	258,777	225,582
NHA mortgage-backed securities (reported as loans at amortized cost) (3)	23,983	–	23,983	4,481	19,502	16,604
Total liquid assets	428,421	191,148	619,569	259,356	360,213	335,299

(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 Risk Management Framework. This amount is shown as a separate line item, NHA mortgage-backed securities.

Asset Encumbrance

(Canadian \$ in millions)	Total gross assets (1)	Encumbered (2)		Net unencumbered	
		Pledged as collateral	Other encumbered	Other unencumbered (3)	Available as collateral (4)
As at October 31, 2023					
Cash and deposits with other banks	82,059	–	125	–	81,934
Securities (5)	537,510	209,091	50,140	16,061	262,218
Loans	632,495	93,931	511	342,211	195,842
Other assets					
Derivative instruments	39,976	–	–	39,976	–
Customers' liability under acceptances	8,111	–	–	8,111	–
Premises and equipment	6,241	–	–	6,241	–
Goodwill	16,728	–	–	16,728	–
Intangible assets	5,216	–	–	5,216	–
Current tax assets	2,052	–	–	2,052	–
Deferred tax assets	3,081	–	–	3,081	–
Other	35,293	10,596	–	24,697	–
Total other assets	116,698	10,596	–	106,102	–
Total assets	1,368,762	313,618	50,776	464,374	539,994

(Canadian \$ in millions)	Total gross assets (1)	Encumbered (2)		Net unencumbered	
		Pledged as collateral	Other encumbered	Other unencumbered (3)	Available as collateral (4)
As at October 31, 2022					
Cash and deposits with other banks	93,200	–	87	–	93,113
Securities (5)	472,443	183,275	46,982	12,620	229,566
Loans	529,458	71,139	656	299,358	158,305
Other assets					
Derivative instruments	48,160	–	–	48,160	–
Customers' liability under acceptances	13,235	–	–	13,235	–
Premises and equipment	4,841	–	–	4,841	–
Goodwill	5,285	–	–	5,285	–
Intangible assets	2,193	–	–	2,193	–
Current tax assets	1,421	–	–	1,421	–
Deferred tax assets	1,175	–	–	1,175	–
Other	31,894	13,991	–	17,903	–
Total other assets	108,204	13,991	–	94,213	–
Total assets	1,203,305	268,405	47,725	406,191	480,984

(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 \$16.1 billion as at October 31, 2023, 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 may 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 U.S. Federal Home Loan Bank (FHLB) advances.

(5) Includes securities, securities borrowed or purchased under resale agreements and NHA mortgage-backed securities (reported as loans at amortized cost).

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 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 position, is a source of strength. This supports the maintenance of a sound liquidity position and reduces our reliance on wholesale funding. Customer deposits totalled \$654.4 billion as at October 31, 2023, increasing from \$544.4 billion in 2022, primarily due to the closing of the Bank of the West acquisition in February 2023, and underlying growth in both retail and commercial deposits.

Total secured and unsecured wholesale funding outstanding, which largely consists of negotiable marketable securities, was \$269.6 billion as at October 31, 2023, with \$78.2 billion sourced as secured funding and \$191.4 billion sourced as unsecured funding. Total wholesale funding outstanding increased from \$236.8 billion as at October 31, 2022, primarily due to the net issuance of wholesale funding during the year. The mix and maturities of BMO's wholesale term funding are outlined later in this section. Additional information on deposit maturities can also be found in the Contractual Maturities of Assets and Liabilities and Off-Balance Sheet Commitments section. We maintain a sizeable portfolio of unencumbered liquid assets, totalling \$360.2 billion as at October 31, 2023 and \$335.3 billion as at October 31, 2022, that can be monetized to meet potential funding requirements, as described in the Unencumbered Liquid Assets section above.

Wholesale Funding Maturities ⁽¹⁾

(Canadian \$ in millions)	As at October 31, 2023						As at October 31, 2022		
	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	4,374	1,660	753	927	7,714	-	-	7,714	9,550
Certificates of deposit and commercial paper	12,932	27,334	26,232	27,805	94,303	69	-	94,372	80,696
Bearer deposit notes	426	167	276	85	954	-	-	954	1,661
Asset-backed commercial paper (ABCP)	1,562	1,931	2,072	440	6,005	-	-	6,005	-
Senior unsecured medium-term notes	960	2,156	8,096	13,449	24,661	16,131	29,957	70,749	65,234
Senior unsecured structured notes (2)	135	215	-	31	381	156	8,878	9,415	7,950
Secured funding									
Mortgage and HELOC securitizations	-	585	1,165	1,717	3,467	3,405	11,044	17,916	20,385
Covered bonds	-	2,330	-	-	2,330	3,467	22,615	28,412	29,047
Other asset-backed securitizations (3)	-	-	-	148	148	176	7,337	7,661	6,631
Federal Home Loan Bank advances	693	-	-	-	693	13,265	4,190	18,148	7,494
Subordinated debt	-	-	-	-	-	-	8,227	8,227	8,150
Total	21,082	36,378	38,594	44,602	140,656	36,669	92,248	269,573	236,798
Of which:									
Secured	2,255	4,846	3,237	2,305	12,643	20,313	45,186	78,142	63,557
Unsecured	18,827	31,532	35,357	42,297	128,013	16,356	47,062	191,431	173,241
Total (4)	21,082	36,378	38,594	44,602	140,656	36,669	92,248	269,573	236,798

(1) Wholesale unsecured funding primarily includes funding raised through the issuance of negotiable marketable securities. Wholesale funding excludes 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.

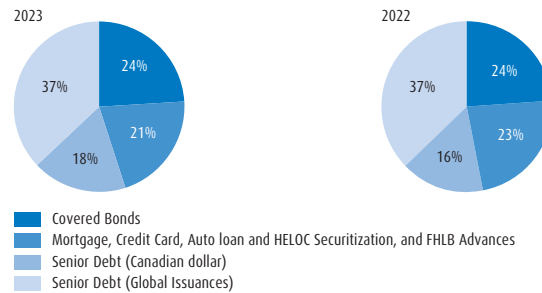
(2) Primarily issued to institutional investors.

(3) Includes credit card, auto and transportation finance loan securitizations.

(4) Total wholesale funding comprised Canadian-dollar-denominated funding of \$49.1 billion and U.S.-dollar-denominated and other foreign-currency-denominated funding of \$220.5 billion as at October 31, 2023.

Diversification of our wholesale term funding sources is an important part of our overall liquidity management strategy. Our wholesale term funding is 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 plan is reviewed annually by the senior management committees with specific related responsibilities and approved by the RRC, and is regularly updated to reflect actual results and incorporate updated forecast information.

Regulatory Developments

The Office of the Superintendent of Financial Institutions (OSFI) announced changes to its Liquidity Adequacy Requirements (LAR) Guideline that became effective April 1, 2023. The changes primarily relate to the calculation of the Net Cumulative Cash Flow regulatory metric. There was no material impact on our liquidity and funding practices or requirements as a result of these changes.

Credit Ratings

The credit ratings assigned to BMO's short-term and senior long-term debt securities by external rating agencies are important in raising both capital and funding to support the bank's 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 may increase and our access to funding and capital through the wholesale markets could be constrained. A material downgrade of BMO's ratings could also have other consequences, including those set out in Note 8 of the audited annual consolidated financial statements.

The credit ratings assigned to BMO's senior debt by rating agencies are indicative of high-grade, high-quality issues. On June 20, 2023, Fitch affirmed its ratings for BMO and revised its outlook to stable from negative, reflecting solid and above-target capital adequacy levels after the successful closing of our acquisition of Bank of the West. During the third quarter of fiscal 2023, Moody's, Standard & Poor's (S&P) and DBRS also affirmed their ratings, while maintaining their stable outlook on BMO.

As at October 31, 2023

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	Stable
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, 2023, we would be required to provide additional collateral to counterparties totalling \$128 million, \$368 million and \$844 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 the OSFI LAR Guideline and is summarized in the following table. The LCR is calculated on a daily basis as the ratio of high-quality liquid assets (HQLA) held to total net stressed cash outflows over the next 30 calendar days. 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 OSFI are applied to cash flows and HQLA to arrive at the weighted values and the LCR. The LCR does not reflect liquidity in BMO Financial Corp. (BFC) in excess of 100%, because of limitations on the transfer of liquidity between BFC and the parent bank. Canadian domestic systemically important banks, including BMO, are required to maintain a minimum LCR of 100%. The average daily LCR for the quarter ended October 31, 2023 was 128%, equivalent to a surplus of \$49.9 billion above the regulatory minimum. The LCR decreased 7% from 135% in 2022, primarily as a result of the incorporation of Bank of the West business activities into the measure. The closing of the Bank of the West acquisition increased both HQLA and net cash outflows, but excess liquidity at BFC was capped at 100% in the LCR measure. In the prior year, HQLA were temporarily elevated, in anticipation of the closing of the acquisition. While banks are required to maintain an LCR of 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. 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 below.

	As at October 31, 2023	
	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)	*	228.4
Cash Outflows		
Retail deposits and deposits from small business customers, of which:	290.4	21.4
Stable deposits	135.0	4.1
Less stable deposits	155.4	17.3
Unsecured wholesale funding, of which:	295.0	131.7
Operational deposits (all counterparties) and deposits in networks of cooperative banks	143.6	35.5
Non-operational deposits (all counterparties)	128.5	73.3
Unsecured debt	22.9	22.9
Secured wholesale funding		20.9
Additional requirements, of which:	239.4	47.1
Outflows related to derivatives exposures and other collateral requirements	26.3	7.5
Outflows related to loss of funding on debt products	4.0	4.0
Credit and liquidity facilities	209.1	35.6
Other contractual funding obligations	1.1	–
Other contingent funding obligations	517.4	9.8
Total cash outflows	*	230.9
Cash Inflows		
Secured lending (e.g., reverse repos)	152.8	31.6
Inflows from fully performing exposures	17.7	9.6
Other cash inflows	11.2	11.2
Total cash inflows	181.7	52.4
		Total adjusted value (4)
Total HQLA		228.4
Total net cash outflows		178.5
Liquidity Coverage Ratio (%)		128
For the quarter ended October 31, 2022		
		Total adjusted value (4)
Total HQLA		204.3
Total net cash outflows		151.2
Liquidity Coverage Ratio (%)		135

* 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 62 business days in the fourth quarter of 2023.

(3) Weighted values are calculated after the application of the weightings prescribed under the OSFI 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 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 the OSFI LAR Guideline. Unlike the LCR, which is a short-term metric, the NSFR assesses a bank's medium-term and long-term resilience. The NSFR is defined as the ratio of the amount of available stable funding (ASF) to the amount of required stable funding (RSF). ASF represents the proportion of own and third-party resources that are expected to be reliably available to a bank over a one-year time horizon (including customer deposits, long-term wholesale funding and capital). 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, RSF and the NSFR. Canadian domestic systemically important banks, including BMO, are required to maintain a minimum NSFR of 100%. Both ASF and RSF increased in 2023, primarily due to the impact of the Bank of the West acquisition. BMO's NSFR was 115% as at October 31, 2023, equivalent to a surplus of \$96.3 billion above the regulatory minimum. The NSFR increased from 114% as at October 31, 2022, as higher required stable funding was more than offset by higher available stable funding.

	For the quarter ended October 31, 2023				
	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:	–	–	–	90.7	90.7
Regulatory capital	–	–	–	90.7	90.7
Other capital instruments	–	–	–	–	–
Retail deposits and deposits from small business customers:	228.4	54.6	36.2	61.5	348.2
Stable deposits	116.7	20.3	15.2	13.8	158.4
Less stable deposits	111.7	34.3	21.0	47.7	189.8
Wholesale funding:	276.1	262.9	61.7	115.2	280.4
Operational deposits	129.6	–	–	–	64.8
Other wholesale funding	146.5	262.9	61.7	115.2	215.6
Liabilities with matching interdependent assets	–	0.9	1.5	12.2	–
Other liabilities:	4.0	*	*	33.2	4.8
NSFR derivative liabilities	*	*	*	11.1	*
All other liabilities and equity not included in the above categories	4.0	17.2	0.1	4.8	4.8
Total ASF	*	*	*	*	724.1
Required Stable Funding (RSF) Item					
Total NSFR high-quality liquid assets (HQLA)	*	*	*	*	11.8
Deposits held at other financial institutions for operational purposes	–	0.3	–	–	0.1
Performing loans and securities:	185.2	179.1	61.1	370.7	525.7
Performing loans to financial institutions secured by Level 1 HQLA	–	72.6	2.5	0.3	3.3
Performing loans to financial institutions secured by non-Level 1 HQLA and unsecured performing loans to financial institutions	33.4	55.4	6.7	16.9	59.9
Performing loans to non-financial corporate clients, loans to retail and small business customers, and loans to sovereigns, central banks and public sector entities, of which:	109.6	40.4	42.1	193.2	300.8
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:	13.0	8.5	9.4	144.9	122.5
With a risk weight of less than or equal to 35% under the Basel II standardized approach for credit risk	13.0	8.5	9.4	144.9	122.5
Securities that are not in default and do not qualify as HQLA, including exchange-traded equities	29.2	2.2	0.4	15.4	39.2
Assets with matching interdependent liabilities	–	0.9	1.5	12.2	–
Other assets:	42.8	*	*	55.1	69.4
Physical traded commodities, including gold	4.9	*	*	*	4.1
Assets posted as initial margin for derivative contracts and contributions to default funds of CCPs	*	*	*	12.7	10.8
NSFR derivative assets	*	*	*	6.1	–
NSFR derivative liabilities before deduction of variation margin posted	*	*	*	20.7	1.0
All other assets not included in the above categories	37.9	7.2	0.2	8.2	53.5
Off-balance sheet items	–	–	–	589.6	20.8
Total RSF	*	*	*	*	627.8
Net Stable Funding Ratio (%)	*	*	*	*	115

For the quarter ended October 31, 2022

	Weighted value (2)
Total ASF	610.2
Total RSF	534.1
Net Stable Funding Ratio (%)	114

* Disclosure is not required under the NSFR disclosure standard.

(1) Items 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 incorporate 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.

	2023									
(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	75,473	-	-	-	-	-	-	-	2,461	77,934
Interest bearing deposits with banks	2,791	680	383	153	118	-	-	-	-	4,125
Securities	4,037	8,408	7,472	5,614	6,816	29,374	63,601	141,953	55,104	322,379
Securities borrowed or purchased under resale agreements	93,707	12,311	6,903	2,491	-	250	-	-	-	115,662
Loans (1)										
Residential mortgages	1,121	2,188	3,403	4,246	4,761	27,229	107,347	26,689	266	177,250
Consumer instalment and other personal	283	621	1,028	1,343	1,542	8,094	35,467	29,992	25,670	104,040
Credit cards	-	-	-	-	-	-	-	-	12,294	12,294
Business and government	19,671	10,920	12,550	16,370	16,953	49,366	114,289	27,880	98,702	366,701
Allowance for credit losses	-	-	-	-	-	-	-	-	(3,807)	(3,807)
Total loans, net of allowance	21,075	13,729	16,981	21,959	23,256	84,689	257,103	84,561	133,125	656,478
Other Assets										
Derivative instruments	2,797	4,539	2,670	2,827	1,555	7,804	9,325	8,459	-	39,976
Customers' liabilities under acceptances	4,682	3,423	6	-	-	-	-	-	-	8,111
Other	4,023	814	336	42	4	10	19	7,629	55,734	68,611
Total other assets	11,502	8,776	3,012	2,869	1,559	7,814	9,344	16,088	55,734	116,698
Total Assets	208,585	43,904	34,751	33,086	31,749	122,127	330,048	242,602	246,424	1,293,276

	2023									
(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)	48,986	63,728	64,939	60,911	52,040	47,624	80,829	18,624	471,995	909,676
Other liabilities										
Derivative instruments	3,103	8,450	3,033	2,278	2,014	7,694	11,748	11,873	-	50,193
Acceptances	4,682	3,423	6	-	-	-	-	-	-	8,111
Securities sold but not yet purchased (4)	43,781	-	-	-	-	-	-	-	-	43,781
Securities lent or sold under repurchase agreements (4)	99,006	4,751	476	539	-	1,336	-	-	-	106,108
Securitization and liabilities related to structured entities	97	717	1,199	2,195	592	4,896	9,870	7,528	-	27,094
Other	15,672	2,269	116	110	107	14,109	2,763	6,160	21,742	63,048
Total other liabilities	166,341	19,610	4,830	5,122	2,713	28,035	24,381	25,561	21,742	298,335
Subordinated debt	-	-	-	-	-	-	25	8,203	-	8,228
Total Equity	-	-	-	-	-	-	-	-	77,037	77,037
Total Liabilities and Equity	215,327	83,338	69,769	66,033	54,753	75,659	105,235	52,388	570,774	1,293,276

(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 \$30,852 million as at October 31, 2023 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.

(4) Presented based on their earliest maturity date.

	2023									
(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)	2,216	4,874	9,377	14,499	14,190	41,713	129,634	5,927	-	222,430
Letters of credit (2)	1,641	5,088	5,739	5,397	6,065	3,663	3,778	48	-	31,419
Backstop liquidity facilities	212	241	666	2,207	2,039	3,951	8,643	846	-	18,805
Other commitments (3)	46	91	106	101	155	354	626	141	-	1,620

(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.

(3) Other commitments comprise purchase obligations and lease commitments for leases signed but not yet commenced.

Material presented in a blue-tinted font above is an integral part of Note 5 of the 2023 audited annual consolidated financial statements.

2022

(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	86,003	-	-	-	-	-	-	-	1,463	87,466
Interest bearing deposits with banks	3,844	1,662	86	44	98	-	-	-	-	5,734
Securities	4,189	4,284	5,480	5,375	6,060	18,272	68,521	108,072	53,009	273,262
Securities borrowed or purchased under resale agreements	83,861	21,736	5,101	2,448	48	-	-	-	-	113,194
Loans (1)										
Residential mortgages	526	1,519	3,708	5,778	6,501	14,665	105,285	10,810	88	148,880
Consumer instalment and other personal	211	553	940	1,693	1,537	4,844	37,742	14,084	24,499	86,103
Credit cards	-	-	-	-	-	-	-	-	9,663	9,663
Business and government	13,003	9,595	11,724	9,300	11,394	37,250	105,009	17,776	94,259	309,310
Allowance for credit losses	-	-	-	-	-	-	-	-	(2,617)	(2,617)
Total loans, net of allowance	13,740	11,667	16,372	16,771	19,432	56,759	248,036	42,670	125,892	551,339
Other Assets										
Derivative instruments	5,362	7,147	3,359	2,552	2,225	7,787	11,636	8,092	-	48,160
Customers' liabilities under acceptances	9,752	3,461	19	3	-	-	-	-	-	13,235
Other	2,735	625	225	21	2	10	19	5,817	37,355	46,809
Total other assets	17,849	11,233	3,603	2,576	2,227	7,797	11,655	13,909	37,355	108,204
Total Assets	209,486	50,582	30,642	27,214	27,865	82,828	328,212	164,651	217,719	1,139,199

2022

(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)	38,064	44,637	49,626	47,908	48,444	39,992	62,978	16,265	421,564	769,478
Other liabilities										
Derivative instruments	3,370	11,764	4,399	3,814	2,895	7,619	14,092	12,003	-	59,956
Acceptances	9,752	3,461	19	3	-	-	-	-	-	13,235
Securities sold but not yet purchased (4)	40,979	-	-	-	-	-	-	-	-	40,979
Securities lent or sold under repurchase agreements (4)	94,215	6,476	1,046	2,226	-	-	-	-	-	103,963
Securitization and liabilities related to structured entities	14	2,803	1,300	794	1,673	5,136	9,342	6,006	-	27,068
Other	12,143	4,980	101	97	146	872	2,558	5,722	18,713	45,332
Total other liabilities	160,473	29,484	6,865	6,934	4,714	13,627	25,992	23,731	18,713	290,533
Subordinated debt	-	-	-	-	-	-	25	8,125	-	8,150
Total Equity	-	-	-	-	-	-	-	-	71,038	71,038
Total Liabilities and Equity	198,537	74,121	56,491	54,842	53,158	53,619	88,995	48,121	511,315	1,139,199

(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 \$29,966 million as at October 31, 2022 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.

(4) Presented based on their earliest maturity date.

2022

(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)	1,932	3,610	10,461	13,373	14,753	38,057	119,430	5,490	-	207,106
Letters of credit (2)	1,680	4,601	4,936	4,662	4,922	2,832	3,680	57	-	27,370
Backstop liquidity facilities	-	585	393	1,438	1,275	3,465	9,189	985	-	17,330
Other commitments (3)	27	98	55	55	58	220	353	278	-	1,144

(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.

(3) Other commitments comprise purchase obligations and lease commitments for leases signed but not yet commenced.

Caution

This Liquidity and Funding Risk section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Operational Non-Financial Risk

Operational Non-Financial Risk encompasses a wide range of non-financial risks, including those related to business change, customer trust, reputation and data, all of which 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 the fair value of assets we hold in our credit or investment portfolios. Examples of these risks include cyber and cloud security risk, technology risk, fraud risk and business continuity risk, but exclude legal and regulatory risk, credit risk, market risk, liquidity risk and other types of financial risk.

Operational non-financial risk (ONFR) 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 of financial results and damage to BMO's reputation. Like other financial service organizations, 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 be the result of process and control failures, unauthorized transactions by employees, business disruption, information security breaches, theft or fraud and cyber security threats, exposure to risks related to third-party relationships and damage to physical assets. For example, 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 we use to manage risks. There is the possibility that errors could occur, as well as the possibility that a failure in our internal processes or systems could lead to a failure to manage or mitigate risk, 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, restatements of financial results and damage to BMO's reputation.

The nature of our business activities also exposes us to the risk of theft and fraud when we enter into transactions with customers or counterparties. BMO relies on the accuracy and completeness of any information provided by, and any other representations made by, customers and counterparties. While we conduct due diligence in relation to 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 our ability to serve our clients and minimize disruptions and adverse impacts and the contingency plans of our third-party service providers, our ability to conduct business may be adversely affected by a disruption to the infrastructure that supports 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 top and emerging risk exposures that could impact BMO's business and operations, and we 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 exposures to non-financial risk.

Refer to the Risks That May Affect Future Results – Top and Emerging Risks That May Affect Future Results section for further discussion of these risks.

Operational Non-Financial Risk Governance

The Enterprise Operational Risk Committee (EORC), a sub-committee of the Risk Management Committee (RMC), is the primary governance committee exercising oversight of all operational non-financial risk management matters, including: providing direction on, and monitoring against, strategic objectives and deliverables; improving operational resilience; and helping ensure that BMO maintains its reputation for preventing avoidable operating failures and mistakes. As part of its governance responsibilities, the EORC reviews and recommends corporate policies and standards to the Board of Directors and senior executives for review and approval as required, as well as the methodologies and tools that comprise the governing principles of the Operational Non-Financial Risk Management Framework (ONFRMF). 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 (EORC, 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, supporting 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 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, along with Corporate Services, which provides additional governance and oversight in certain targeted areas. Operational Risk Officers independently assess the operational risk profiles of our operating groups, identify material exposures and potential weaknesses in our product, service and process-based risk and control environment, and recommend appropriate mitigation strategies and actions.

Independent risk management oversight is provided by ONFR, which is responsible for developing and implementing effective risk-related strategies, tools and policies, and for exercising second-line oversight, effective challenge and governance. ONFR establishes and maintains the ONFRMF, 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 ONFRMF sets out the processes by which ONFR, as the second line of defence, guides, supports, monitors, assesses and communicates with the first line in its management of operational non-financial risks.

Implementing the governing principles of the ONFRMF 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 ONFRMF. We also continue to strengthen our second-line-of-defence support and oversight capabilities with an enhanced Operational 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 ONFRMF, we seek to maintain an operational risk profile that is not only consistent with our risk appetite and supported by adequate capital, but is also reinforced by enhanced operational resilience. Operational resilience is an organization's ability to protect and sustain core business services that are essential for its clients, both during the normal course of business and when experiencing operational stress or disruption. It involves our ability to deal with unpredictable events and adapt to changes and external circumstances. Operational resilience is a positive, forward-looking strategic posture that allows us to take measured risks with confidence and prepare BMO 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 ONFRMF that assist us in the ongoing review of our operational risk profile:

- **Risk and Control Self-Assessment** is an established process that is evolving into the Product/Service and Process Risk Assessment program in 2023-2024. This new program will be used by our operating groups and Corporate Services areas to assess the controls and residual exposures to risk in their business operations by focusing on the key controls they have in place to address specific material risks associated with their products, services, internal activities and processes. It provides a current and forward-looking view of the impact of both our internal controls and the external business environment on the risk profiles of our operating groups and Corporate Services areas, supporting the proactive prevention, mitigation and management of risk.
- BMO's **Initiative Assessment and Approval Process** 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. This process supports continuous oversight of change in risk exposure by setting out specific requirements for due diligence, approval, monitoring and reporting that apply 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 an operational risk profile and are utilized to assess specific risk exposures in relation to BMO's overall risk appetite.
- **Historical Internal Loss Data Events** are key data elements utilized in the Standardized Approach for the calculation of operational risk regulatory capital. BMO adopted the new Basel III Standardized Approach for regulatory capital reporting as of February 1, 2023, as set out in the Capital Adequacy Requirements (CAR) Guideline published by OSFI.
- **Stress Testing** assesses the potential impact of severe negative events on key risk exposures and critical business processes in order to inform risk management. Stress testing helps 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 aim to help manage tail risk.
- BMO's **Corporate Risk & Insurance (CR&I)** group provides a second layer of mitigation for certain operational risk exposures. CR&I is also accountable for establishing and maintaining the enterprise-wide insurance program. 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 policy structures and coverage provisions of our insurance positions are assessed annually to confirm alignment with BMO's overall risk tolerance.

The following are some of the operational non-financial risks that may adversely affect BMO's business and financial results.

Anti-Money Laundering

Money laundering, terrorist financing and sanctions risks are associated with laundering the proceeds of crime, financing terrorist activity, or violating economic sanctions by making use of our products or services. Compliance with all anti-money laundering, anti-terrorist financing (AML/ATF) and sanctions measures is critical to safeguarding BMO, our customers and the communities in which we operate. We are committed to managing AML/ATF and sanctions risks effectively, and to complying with all relevant laws and regulations. The consequences of non-compliance with these requirements can include enforcement action, criminal prosecution, 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 sets out policies, risk assessments, due diligence processes and controls, and training, including mandatory annual training for all employees. BMO's compliance program applies analytics, technology and professional expertise in order to deter, detect and report suspicious activity. The CAMLO reports regularly to the Audit and Conduct Review Committee (ACRC) of the Board of Directors and to senior management on the effectiveness of the compliance program. The effectiveness of our AML/ATF and sanctions compliance program is subject to regular review and independent assessment by the Corporate Audit Division. We remain committed to effective compliance and the ongoing effort to protect the financial system and the communities in which we operate.

Artificial Intelligence Risk

Artificial intelligence (AI) risk is the potential for loss or harm arising from incorrect use or misuse of AI systems, which can include one or many AI techniques, such as machine learning (ML) or generative AI.

These outcomes can include financial loss, poor customer experiences and damage to our reputation. AI continues to present new opportunities for innovative products and services, including system automation and revenue-generating capabilities, and is expected to become a key enabler of future operating efficiencies, but only if we safely and responsibly adopt and integrate new AI technologies. The application of AI in our business operations is governed and managed by our existing risk management policies. Significant initiatives are reviewed by a cross-enterprise group before implementation with the aim to ensure that ethical, privacy and fair and responsible banking requirements are met.

Our management and oversight of AI risk is focused on advancing our commitment to serving our customers in a way that fosters confidence and trust in our secure, ethical and responsible use of these technologies, utilizing our robust risk management practices and internal safeguards in a manner aligned with, and in compliance with, regulatory expectations.

Business Continuity Risk

Business continuity risk is related to the possibility that we may be unable to maintain, continue or restore essential business operations during and/or after an event that prevents BMO from conducting business in the normal course.

Business continuity management should enable BMO to recover, maintain and manage critical processes, as well as safeguard the interests and well-being of our customers, shareholders and employees. In the event of an operational disruption, effective business continuity plans minimize adverse impacts on our customers, employees and other stakeholders. These operational disruptions could result from severe weather, technology failures, cyber attacks or any other event that can lead to process failure. We have a framework in place that facilitates the rapid recovery and timely resumption of critical operations, including availability of our people, processes, facilities and technology, and maintenance of our third-party arrangements. Our comprehensive business continuity management strategy involves developing, testing and maintaining recovery strategies and plans, and is intended to ensure that critical processes and third-party arrangements remain viable.

Cyber and Cloud Security Risk

Cyber and cloud security risk arises from the possibility that BMO could experience security incidents, including the loss, theft or misuse of information, including all types of data (e.g., client data, employee data and the organization's proprietary data), as well as any potential failure to comply with rules concerning information or cyber security.

Cyber and cloud security is integral to BMO's business operations, brand and reputation. As technology evolves rapidly and the connective capabilities of digital devices continue to grow, cyber threats and risks also evolve. These threats include: breaches of, or disruptions to, our systems or operations, as well as unauthorized access to, or use or dissemination of, information pertaining to BMO, our customers or employees. At BMO, our response includes investing in our Financial Crimes Unit and technological infrastructure, equipping our team to detect and address cyber security threats across North America, Europe and Asia in order to help us keep our customers' and employees' data secure.

Data Risk

Data risk is the risk of loss resulting from inadequate or failed internal processes and systems, or from external events impacting data. Data quality, governance and architecture impact our understanding and management of BMO's data assets.

We continue to invest in new capabilities in support of BMO's digital transformation. Our ability to effectively manage and safeguard critical data has a direct impact on our successful deployment of digital processes and our ability to develop and introduce innovative new capabilities with tools and systems driven by AI. Our management of data risk is focused on the quality, resilience, retention and governance of BMO's data assets, which are foundational to our business operations, strategy and future growth, including BMO's Digital First strategy.

Fraud and Physical Security Risk

Fraud risk is related to the possibility that an intentional act, misstatement or omission designed to deceive others may result in the intended target experiencing a loss or the perpetrator achieving a gain. Fraud may be perpetrated by our employees, suppliers or other external parties, including BMO customers. Fraudsters are getting more sophisticated and may open accounts with financial institutions, including BMO, and then use those accounts to commit fraud. BMO maintains a Fraud Risk Management program intended to proactively manage fraud risks across the bank.

A recessionary or tightening interest rate environment may lead to an increase in fraud attacks against BMO and our customers.

The management of physical security risk seeks to ensure that the bank, its customers, employees and third parties are protected against the risk of loss, interference, unauthorized physical access, damage or injury to which they may be exposed as a result of the bank's operations. Physical security risks may emerge through various threat vectors, including criminal activities, terrorist attacks, sociopolitical unrest, human error, natural events and/or geopolitical threats. Physical security measures may also support the management of a number of other risks, including risks related to information security, privacy and fraud.

Project and Change Management Risk

Project and change management risk is related to the possibility that BMO could experience a loss due to substandard delivery of an initiative that may lead to the business not achieving its intended outcome, as well as attracting additional regulatory scrutiny.

The bank has established a Project and Change Management Risk Framework to drive consistency in the delivery of an initiative within a prescribed control environment. This framework outlines the principles and processes for providing governance, monitoring and reporting, as well as the roles and responsibilities necessary to address project and change management risk across the enterprise and meet or exceed stakeholder expectations.

Technology Risk

Technology risk, including risks related to emerging technology and digital platforms, arises from the possibility that the inadequacy, misuse, disruption or failure of information technology systems, infrastructure or data could result in an inability to meet business needs. Failure to maintain and invest in technology can lead to operational disruption and impede the achievement of strategic organizational goals, at significant financial cost. Technology risk management measures are intended to protect BMO's systems, data and assets, and help ensure their confidentiality, integrity and availability. As the adoption of digital banking channels continues to grow, we continue to invest in new and innovative technological capabilities in order to meet our customers' expectations and keep their data secure. In alignment with our operational risk management framework, we follow a program that addresses exposures to technology risk, supported by a team of technology risk management experts.

Third-Party Risk

Third-party risk is the risk associated with the acquisition of goods, services and arrangements that permit BMO's products, processes and/or systems to be managed or supplied by external service providers, which could result in a negative impact on our business operations, regulatory compliance or reputation. Failure to effectively manage these third-party arrangements exposes BMO to the risk that data may be compromised, or the delivery of critical products and services may be disrupted. In addition, third-party service providers may use sub-contractors, introducing an additional layer of

complexity for oversight. Any concentration of third parties will also heighten exposures to existing risks of disruption arising from other events, such as natural disasters or geopolitical events. BMO's third-party risk management (TPRM) framework defines the identification, governance, measurement, mitigation, monitoring and reporting of third-party risk across the third-party life cycle. This framework is supported by enterprise-wide TPRM policies that are intended to ensure compliance with the framework.

We continue to enhance our capabilities in order to maintain robust risk management practices, support operational resilience objectives and comply with relevant regulatory requirements.

Model Risk

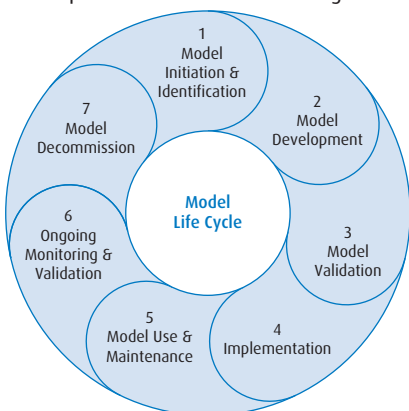
Model Risk is the potential for adverse outcomes resulting from decisions that are based on incorrect or misused model results. These adverse outcomes can include financial loss, poor business decision-making and damage to reputation.

Model risk arises from the use of quantitative analytical tools that apply statistical, mathematical, economic, algorithmic or other advanced techniques, such as AI and ML, to process input data and generate quantitative output or estimates. These analytical tools range from very simple quantitative methods that produce straightforward estimates to highly sophisticated models that can be used to value complex transactions or provide a broad range of forward-looking estimates. These analytical tools generate results that can inform business, risk and capital management decision-making, and 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 models across the enterprise. We also seek to ensure that any additional overlays and approaches to estimation in 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 that rely on statistical, mathematical or other quantitative techniques to approximate reality and 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 a risk-based 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 for the management of 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 the governing principles for managing model risk, describe model risk management processes in detail 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 our Model Risk Management Framework in alignment with regulatory expectations, as well as exercising oversight of the effectiveness of model processes, model inventory and the overall aggregation, assessment and reporting of model risk. This framework incorporates guidance on the management of risks, the safe and responsible adoption of advances in automation used for decision-making, such as large language models and algorithmic trading, as well as other AI and ML applications. Our enterprise Model Risk Management Committee (MRMC), a sub-committee of the RMC, is a cross-functional group representing key stakeholders across the enterprise. The MRMC meets regularly to help direct BMO's use of models, oversee the development, implementation and maintenance of the Model Risk Management Framework, provide effective challenge and 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 further steps being taken, 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, including models that incorporate AI and ML techniques, are subject to validation and ongoing monitoring to confirm that they are being used in alignment with our framework and in compliance with regulatory expectations, such as those related to ethics, privacy, fairness and explainability. 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.

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 failure to comply with laws or satisfy contractual obligations or regulatory requirements. This includes the risk arising from any 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 operations 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 other 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 well as criminal prosecutions. As rulemaking and supervisory expectations continue to evolve, we monitor developments to enable BMO to respond by implementing changes as required.

Under the direction of BMO's General Counsel, our Legal & Regulatory Compliance group maintains enterprise-wide frameworks that set out the steps to be taken to identify, assess, manage, monitor and report on exposure to legal and regulatory risk. We identify applicable laws and regulations and potential risks, recommend mitigation measures and strategies, conduct internal investigations, and oversee legal proceedings and enforcement actions, including civil claims and litigation, criminal charges, and regulatory examinations and audits.

Heightened regulatory and supervisory scrutiny has a significant impact on the way we conduct business. Working with the operating groups and Corporate Services, Legal & Regulatory Compliance assesses and analyzes the implications of changes in regulatory and supervisory expectations. We devote substantial resources to the implementation of systems and processes required to comply with new regulations. Failure to comply with applicable legal and regulatory requirements may lead to legal proceedings, financial losses, regulatory sanctions or fines, enforcement actions, criminal convictions and penalties, restrictions on or an inability to execute certain business strategies, a decline in investor and customer confidence, and damage to our reputation. 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.

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 grow in the future. Information regarding material legal proceedings to which we are a party is included in the Legal Proceedings section in Note 24 of the audited annual consolidated financial statements. Our disclosure controls and procedures are intended 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 may 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.

BMO's Anti-Corruption Office, through its global program, has articulated key principles and procedures that support the effective oversight of compliance with anti-corruption legislation in the jurisdictions in which we operate. These include guidance on both identifying, avoiding and reporting on 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 for 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 assessment, governance and oversight of the principles and procedures we have in place 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, refer to the Operational Non-Financial Risk Management – Anti-Money Laundering section.

The success of our business operations has been built on BMO's reputation for good conduct. In recognition of this, we have adopted a wide range of practices, in addition to 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 the risk of 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.

All of these frameworks reflect the three-lines-of-defence operating model described previously. The operating groups and Corporate Services manage day-to-day risks by implementing and observing corporate policies and standards, while Legal & Regulatory Compliance units specifically assigned to each of the operating groups provide advice and independent legal and regulatory risk management oversight.

We continue to respond to other global regulatory developments, including the impact of changes in capital and liquidity requirements. These developments include consumer protection measures and specific financial reforms, including proposals in respect of the assessment, management and disclosure of climate-related financial risk, which are discussed further below. For additional discussion of regulatory developments related 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 and Judgments – Income Taxes and Deferred Tax Assets; Fiscal and Monetary Policies and Other Economic Conditions in the Countries in which BMO Conducts Business; Tax Legislation and Interpretations; and Other Regulatory Developments.

Climate Change and Environmental, Social and Governance Matters

We continue to monitor the rulemaking activities of regulatory authorities, and we are participating in programs and consultations that focus on risk management and disclosures related to environmental, social and governance (ESG) matters, as well as trends in climate-related litigation. Globally, we are also tracking the emergence and finalization of formal supervisory regulatory frameworks governing the analysis and reporting of risks related to sustainability and climate change, including frameworks in Canada, the United States, the United Kingdom and the European Union. In addition, current and emerging regulatory requirements in certain U.S. states may apply restrictions or sanctions on financial institutions that impose any environmental standards that exceed the legal or regulatory requirements in the states in which they operate. Trends in litigation and regulatory investigation involving disclosure practices or financing activities related to climate or ESG matters, as well as allegations of “greenwashing”, also continue to evolve. We are monitoring these trends and assessing their potential impact in the context of BMO’s climate-related sustainable finance and responsible investment activities, environmental and social risk management, and disclosure practices related to climate or ESG matters. For further discussion, refer to the Environmental and Social Risk section.

Consumer and Investor Protection

Regulators around the world continue to focus on consumer protection measures, including those related to seniors and other vulnerable customers, interactions with consumers, and standards of conduct for individuals in the financial services industry. In Canada, the Financial Consumer Agency of Canada (FCAC) issued a Guideline on Existing Consumer Mortgage Loans in Exceptional Circumstances. The guideline requires banks to establish policies and procedures that can provide tailored support to consumers who are experiencing severe financial stress as a result of exceptional circumstances, including rising interest rates, and who are at risk of mortgage default. Recently enacted provincial legislation specifies various language requirements, including with respect to consumer contracts and the manner in which we conduct business. In addition, reforms to the Canadian securities regulatory regime related to the protection of investors are also proceeding. Canadian securities regulatory reforms included the consolidation of the Mutual Fund Dealers Association of Canada (MFDA) and the Investment Industry Regulatory Organization of Canada (IIROC) into a single self-regulatory organization known as the Canadian Investment Regulatory Organization (CIRO), as well as the merger of two investor protection funds under the continuing name of the Canadian Investor Protection Fund (CIPF). Further, the Canadian Securities Administrators (CSA) and the Canadian Council of Insurance Regulators adopted changes to harmonize and enhance reporting of the ongoing costs, including embedded fees, of owning investment funds and segregated funds. In addition, the Canadian government announced that it will implement new measures to reduce fees for non-sufficient funds and certain other fees charged by financial institutions. If these proposed measures are enacted, the expected impact would be a reduction in BMO fee revenue. In the United States, banking regulators have a heightened focus, with respect to all consumer products, on matters pertaining to racial equity, financial inclusion and consumer protection. Key consumer concerns, including fair lending and unfair, deceptive or abusive acts or practices, are now the subject of heightened regulatory scrutiny in bank examination programs.

Privacy

There is a growing focus on regulation related to privacy and the use and safeguarding of personal information, and we continue to advance our privacy program so that we are able to comply with evolving regulatory requirements. In Canada, significant reform to federal privacy laws is expected under Bill C-27, including new regulatory powers and penalties and additional legislation to address artificial intelligence. In Quebec, Law 25 (previously Bill 64) is coming into effect in phases, which began in 2021 and will end in 2024. Law 25 modernizes the province’s private-sector privacy regime, introduces new regulations related to biometrics and automated decisions, and gives new powers to regulators to impose monetary administrative penalties. Outside of Canada, large fines and settlements have been imposed for breaches of privacy rights and failure to comply with regulatory privacy requirements – evidence of heightened regulatory vigilance and enforcement. The *California Consumer Privacy Act*, which is currently the most comprehensive privacy law at the state level in the United States, was enhanced and amended in 2023 by the *California Privacy Rights Act*, which includes new and expanded privacy rights for California residents. Other states have introduced privacy legislation, which is leading to a growing patchwork of privacy laws in the United States. In the European Union and the United Kingdom, there are continuing concerns regarding the transfer of personal data to countries lacking adequate privacy protection. For further discussion, refer to the Top and Emerging Risks That May Affect Future Results – Cyber and Cloud Security Risk section and the Operational Non-Financial Risk – Cyber and Cloud Security Risk 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 any risks related to compliance with applicable laws and regulations, and 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 directives. This is carried out in conjunction with our Code of Conduct training, which tests employees’ knowledge and understanding of the behaviour required of employees of BMO.

Securities Transaction Settlement Cycle

The U.S. Securities and Exchange Commission published final rules, effective in May 2024, shortening the settlement cycle for most securities transactions to T+1. Canadian securities regulators have also proposed rule amendments to support the adoption of a T+1 settlement cycle, and this is expected to occur in 2024, in step with the U.S. rules. Planning for implementation at BMO is underway.

Third-Party Risk Management

On April 24, 2023, OSFI released its final Guideline B-10 – *Third-Party Risk Management*, which sets out expectations for federally regulated financial institutions, including BMO, in managing risks involving third-party arrangements. Federally regulated financial institutions retain accountability for business activities and services outsourced to a third party. We continue to prepare for compliance with this guideline, which comes into effect on May 1, 2024. Refer to the Operational Non-Financial Risk – Third-Party Risk section for further discussion.

U.S. Regulatory Developments

On October 25, 2023, the U.S. Federal Reserve announced proposed revisions to the debit card interchange fee cap under Regulation II of the *Dodd-Frank Act*, which would: (i) reduce the base component of the interchange fee cap and the transaction value; and (ii) increase the fraud-prevention adjustment. If these revisions are enacted as proposed, the expected impact would be a reduction in BMO's U.S. interchange revenue.

U.S. Regulatory Reform

Following the closing of our acquisition of Bank of the West and with the increasing size and scope of our U.S. operations, BMO Financial Corp. (BFC), BMO's U.S. holding company, has met the threshold for designation as a Category III firm under the Enhanced Prudential Standards issued by the Federal Reserve Board. This change requires BFC to meet certain increased regulatory requirements related to capital, liquidity and risk management, including complying with single counterparty credit limits. Additional information regarding regulatory requirements that now apply to BFC is set out in the Enterprise-Wide Capital Management section.

On August 29, 2023, the U.S. banking agencies issued a new rule proposal that would require large banks with total assets of \$100 billion or more to maintain a layer of long-term debt, which would improve financial stability by increasing the resolvability and resiliency of such institutions. The impact of these proposed rules on our results will depend on the final rules issued by the U.S. banking agencies, but we do not currently expect a material change to our enterprise-level funding activities.

On July 27, 2023, the U.S. banking agencies issued new rule proposals that would revise the regulatory capital framework for large bank holding companies and their depository institutions, including BFC and BMO Bank N.A. These proposals would implement the risk-based capital standards contained in the Basel III Reforms (referred to as Basel III Endgame) published by the Basel Committee on Banking Supervision. The impact of these proposed rules on our results will depend on the final rules issued by the U.S. banking agencies.

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 due to fluctuations in the external business environment and/or failure to properly respond to these fluctuations due to inaction, ineffective strategies or poor implementation of strategies.

Strategic risk arises from exposure to the external risks inherent in the business environment within which BMO operates, as well as from the potential financial loss or other negative impact that BMO could experience as a result of failing to address those external risks effectively. While external strategic risks – including possible changes in the macroeconomic, geopolitical or regulatory environment, and changes in legal, innovation, competitive, environmental and social factors – cannot be controlled, the likelihood and magnitude of their impact can be limited through an effective strategic risk management framework, and the potential impact of certain of these risks can be assessed through stress testing.

BMO's Corporate Strategy group oversees the strategic planning process and works with the lines of business and Corporate Services to identify, monitor and mitigate strategic risk across the enterprise. Our rigorous strategic risk management framework encourages a consistent approach in the development of strategic plans, carried out through an integrated, multi-year strategic and financial planning process that directs funding to support specific strategic choices across each line of business, in alignment with our enterprise risk appetite.

The framework promotes 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, the actions of existing and new competitors and regulatory developments, are considered in this process and inform strategic decision-making within each line of business. Oversight of strategic risk is the responsibility of the Executive Committee and the Board of Directors. This is carried out through an annual review of enterprise and group strategies, which involves interactive sessions that challenge assumptions and strategies in the context of both the current and potential future business environment. Where required, these strategies are revised to address new or unexpected developments.

Strategic risk also includes business risk arising from specific enterprise activities and the effects these could have on earnings. Within BMO, each operating group is responsible for controlling its respective business risk by assessing, managing and mitigating risks. To manage exposure to transverse business risks (i.e., those spanning multiple lines of business, such as climate change), the Corporate Strategy group works in tandem with the relevant business stakeholders to shape effective mitigation approaches.

Our ability to implement the strategic plans developed by management influences our financial performance. Performance objectives are established through the strategic planning process and our progress toward those objectives is monitored regularly and reported on quarterly, using both leading and lagging indicators of absolute and relative 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 is the potential for loss or harm directly or indirectly resulting from environmental and social factors that impact BMO or its customers, and BMO's impact on the environment and society.

In recognition of its unique characteristics, environmental and social (E&S) risk is classified in BMO's Risk Taxonomy as a transverse risk that may manifest itself through other risk types, namely: credit and counterparty risk, market risk, insurance risk, liquidity and funding risk, operational non-financial risk, legal and regulatory risk, strategic risk and reputation risk. E&S risk may arise over a range of time frames, from short-term to long-term. Factors that may give rise to E&S risk include, but are not limited to: climate change; pollution and waste; the use of energy, water and other resources; 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 cultural heritage. We are advancing our risk identification efforts by defining these factors and identifying any risk exposures that may be affected by the transverse impact of these factors.

We may have direct exposure to E&S risk associated with the ownership and operation of BMO's businesses. We may be indirectly exposed to the risk of financial loss or reputational harm if our customers or suppliers are affected by E&S factors or are associated with adverse environmental or social impacts to such an extent that they are unable to meet their financial or other obligations to us, or that they cause reputational risks for BMO. E&S factors may also give rise to the risk of reputational harm, if we are perceived to not respond effectively to those factors, or to cause, contribute or be linked to adverse impacts on the environment or society, as discussed in the Reputation Risk section.

Governance

The Board of Directors, through the Risk Review Committee (RRC), approves the E&S Risk Appetite Statement and the E&S Risk Corporate Policy, as discussed below. The RRC assists the Board of Directors in meeting its oversight responsibilities for the identification, assessment and management of our exposure to E&S risk, including risks arising from climate change, for the overall adherence to risk management corporate policies, and for complying with risk-related regulatory requirements. The Audit and Conduct Review Committee (ACRC) assesses the effectiveness of BMO's governance of sustainability matters and approves BMO's sustainability reporting and disclosures, including our Sustainability Report and Public Accountability Statement, and our Climate Report. The Human Resources Committee has responsibility for the alignment of executive compensation with performance, including performance in relation to BMO's environmental and social objectives. The Governance and Nominating Committee regularly reviews the charters of our Board of Directors and its committees to assess the coverage and alignment of their responsibilities for overseeing environmental, social and governance (ESG) issues with their respective mandates.

BMO's General Counsel is the bank's Executive Committee Sponsor for Sustainability and Climate and has accountability for legal and regulatory risk, reputation risk, business conduct and ethics, and sustainability, including climate change. Our ESG Executive Committee comprises senior leaders from the lines of business and Corporate Services across the enterprise, and provides oversight and leadership for our sustainability strategy, including our Climate Ambition. In addition to the ESG Executive Committee, BMO has a Sustainability Council, which is a leadership forum for advancing sustainability initiatives. Senior management oversees E&S risk through management committees and forums that provide oversight and receive updates on sustainability matters and E&S risk. These include, but are not limited to: Disclosure Committee, Risk Management Committee (RMC), Reputation Risk Management Committee (RRMC), Enterprise Regulatory Committee, Climate Commercialization Working Group and Impact Investment Fund Committee, as well as the Investment Committee of BMO Global Asset Management. Additional committees, forums and working groups may be established as needed. In addition, the Board of Directors and any management committees active in other jurisdictions receive updates and oversee E&S risk for the relevant jurisdiction. They also receive updates on sustainability matters and E&S risk across the enterprise.

The Chief Risk Officer (CRO), as Head of Enterprise Risk and Portfolio Management (ERPM) and supported by the Risk Executive Committee, acts as the second line of defence on the transverse impacts of E&S risk on credit and counterparty risk, market risk, liquidity and funding risk, insurance risk and operational non-financial risk; oversees risk appetite for E&S risk in the context of these risks; and reports to the Board of Directors, its RRC and the RMC on E&S risk.

Strategy

As a global bank, we are partnering with our clients to accelerate their transition to a low-carbon operating environment, identifying and advancing solutions that meet net zero emissions and climate objectives and support positive social change. This ambition is explicitly linked to our enterprise commercial strategy and we are working to realize this ambition through a four-pillar climate strategy: Commitment; Capabilities; Client partnership and commercialization; and Convening for climate action. Our strategy seeks to capture commercialization opportunities by working with our clients on their decarbonization journeys. The strategy is being implemented by our operating groups, overseen by the ESG Executive Committee and supported by the BMO Climate Institute, which serves as an enterprise resource that is accelerating BMO's climate-related transition efforts and as an internal and external convener on climate action.

In order to remain informed about emerging E&S risks, we participate in global forums with other financial institutions and maintain an open dialogue with our external stakeholders.

E&S Risk Management

A successful future for BMO and our customers depends on the sustainability of the environment, communities and economies in which we operate. We seek to understand the impact that E&S risk factors could have on our business environment, as well as our clients, portfolios and operations. With this understanding, we are better positioned to make informed strategic decisions.

Our E&S Risk Corporate Policy, applicable to all BMO employees, sets out our approach to integrating E&S risk into the ERMF. The policy affirms the expectation of our Board of Directors that BMO will integrate considerations of E&S risk across the ERMF. It is supported by BMO's three-lines-of-defence operating model, and is underpinned by our risk culture. Its implementation involves building new capabilities, while also leveraging

our existing risk governance provisions and resources, to identify, assess, manage, monitor and report on potential impacts on our clients, portfolios and operations. On March 7, 2023, the Office of the Superintendent of Financial Institutions (OSFI) published its final version of Guideline B-15 – *Climate Risk Management* (Guideline B-15), setting out its expectations for the sound management of climate-related risks for Canadian financial institutions. The guideline is effective October 2024, and the E&S risk group is considering updates to the E&S Risk Corporate Policy and related documentation for alignment across the enterprise.

We have developed a qualitative Risk Appetite Statement that includes E&S risks, including risks related to climate change. In addition, we have developed a key metric with risk tolerance thresholds, which measures our lending in support of carbon-related assets as a percentage of our total net loans and acceptances, net of the allowance for credit losses on impaired loans.

E&S risk is also addressed in our Credit Risk Management Framework, including provisions for governance and accountabilities, enhanced due diligence and thresholds for escalations or exceptions. Sector-specific financing guidelines help us identify and manage exposure to E&S risk in higher-risk sectors and to integrate a consideration of these risks into our decision-making, which also considers factors such as climate change and Indigenous consultation. The Environmental and Social Risk General Financing Guideline is an enterprise-level second-line directive that applies to wholesale lending transactions; articulates our lending risk appetite for E&S risk; outlines the enhanced due diligence process, supported by E&S Risk Rating (ESRR) assessment tools developed to address sectors with heightened risk; and outlines lending prohibitions, escalations and elevations. Social and environmental requirements in financing arrangements and transactions are monitored by the lines of business as part of our overall monitoring process.

We recognize that climate change involves exposure to physical risks and transition risks. Physical risks are risks associated with a changing climate, which can have 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 appears to be accelerating. Transition risks are 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 these changes, some of which may unfold more rapidly than others as consumers, clients, investors, governments and communities act to enhance their resilience to climate-related risks. We consider the physical and transition risks arising from climate change to be transverse risks. Our Environmental and Social Risk General Financing Guideline includes direction on developing an understanding of the specific impacts of climate change on borrowers and their operations, including regulatory and/or legislative changes. To limit our involvement in 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. Transactions involving significant environmental or social concerns may be escalated to the RRMC for consideration.

We are developing a climate scenario analysis program to explore climate-specific vulnerabilities in order to enhance our resilience to climate-related risks, in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). The climate scenario analysis program leverages existing risk capabilities in combination with climate-specific expertise. This program includes the evaluation of transition risks and/or physical risks, where relevant and potentially significant, across a selection of climate-sensitive portfolios, and we will continue expanding the scope of these analyses across sectors and risk types in line with internal policies and any applicable regulatory requirements. Utilizing scenario analysis to gain a deeper understanding of climate-related risks is a relatively new approach that is evolving rapidly. As we enhance our knowledge of climate-related impacts and consider comprehensive climate-based scenarios, and as data modelling techniques and data availability improve, we expect our approach to analyzing these scenarios will evolve. These analyses will help identify potential exposures to material financial risks and may inform our business strategy in relation to climate change going forward.

We continue to assess the credibility, reliability, comparability and decision-making usefulness of various measurement, assessment and reporting approaches, as well as the ways in which we could incorporate them into our climate risk management program and associated disclosures.

Managing E&S Risk in the Supply Chain

Our Sustainability group 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.

BMO's Code of Conduct has been approved by our Board of Directors, and reflects our commitment to manage our business responsibly. We report publicly under the United Kingdom *Modern Slavery Act 2015* and the Australian *Modern Slavery Act 2018*, and we have in place a Supplier Code of Conduct, which outlines our standards for integrity, fair dealing and sustainability. We require our suppliers to be aware of, understand and comply with the principles of our Supplier Code of Conduct.

In Canada, Bill S-211, *An Act to enact the Fighting Against Forced Labour and Child Labour in Supply Chains Act and to amend the Customs Tariff* (Bill S-211) received royal assent on May 11, 2023, and comes into effect January 1, 2024. Under the provisions of Bill S-211, corporate entities that meet certain criteria will be required to file public reports on measures they have taken to identify, address and prevent the use of forced labour, prison labour and child labour in their supply chains. BMO is developing a plan for compliance with this new legislation.

Climate-Related Financial Disclosures

BMO provides voluntary annual disclosures by way of the BMO Climate Report and BMO Sustainability Report. We are implementing plans to adapt and extend our sustainability and climate disclosure to align with requirements set forth by regulators and standard setters.

We have adopted the TCFD framework to guide climate-related financial disclosures, as set out in our Climate Report. The Canadian Securities Administrators (CSA) has proposed National Instrument 51-107, *Disclosure of Climate-Related Matters* (NI 51-107), but related policies have yet to be finalized and would require certain additional disclosures. On June 26, 2023, the International Sustainability Standards Board (ISSB) issued its inaugural standards: IFRS S1, *General Requirements for Disclosure of Sustainability-Related Financial Information*, and IFRS S2, *Climate-Related Disclosures* (the ISSB Standards), which are intended to provide a global baseline for disclosures related to sustainability and climate-related risks and opportunities. The ISSB Standards are effective for our fiscal year beginning November 1, 2024, on a voluntary basis, and any mandatory application will be determined by the rules and requirements issued by regulators in the jurisdictions in which we operate.

We are implementing plans to prepare BMO to meet the expectations of OSFI regarding the first set of climate-related financial disclosures it has mandated, which are effective for our fiscal year ending October 31, 2024. Other disclosures mandated by OSFI will be effective for the 2025 fiscal year.

Metrics and Targets

Our reporting of climate-related metrics and targets includes a discussion of BMO's Scope 1 and 2 greenhouse gas (GHG) emissions, calculated using the GHG Protocol, and a discussion of our Scope 3 emissions, calculated using the Partnership for Carbon Accounting Financials (PCAF). More detailed discussion, as well as a discussion of financed emissions targets for certain sectors, can be found in the Climate Report. Metrics related to sustainability are discussed in the Sustainability Report. Our sustainability reporting suite is prepared in accordance with the Global Reporting Initiative (GRI) Standards and the GRI Financial Services Sector Disclosure, and integrates the disclosure frameworks of the TCFD and the Sustainability Accounting Standards Board. These include 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 BMO'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. The shareholders' auditors provide a limited assurance report on selected environmental and social indicators in the Sustainability Report and the Climate Report. We are currently assessing the impact of our adoption of the ISSB Standards and monitoring domestic implementation processes in the United States and Canada.

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, data and technology use (including artificial intelligence), 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. Ongoing reinforcement of the principles set out in the Code of Conduct minimizes risks to our reputation that may result from inappropriate behaviour or poor decision-making. Recognizing that non-financial risks can have a negative impact as significant as the effect of financial risks, we actively promote a culture in which employees are encouraged to raise concerns and are supported in doing so, with zero tolerance for retaliation.

In our corporate governance practices and Enterprise-Wide Risk Management Framework, we have 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 (RRMC) for review. As misconduct can impact our reputation, the Chief Ethics Officer, who is responsible for enterprise-wide reporting on employee conduct, may escalate instances of misconduct involving significant reputation risk to BMO's RRMC for review, as appropriate.