# 2018 Annual Report

THE FUTURE
IS YOURS TO SEE.

# The future is yours to see.

# Letter from the chair

## As Chair of TMX Group, I am pleased to report to you on our progress in 2018.

During the past year, your Board and senior management focused on our growth strategy, which is to deliver value to an increasing number of global clients with an expanded range of solutions. This included establishing a new Client First Vision, which our CEO, Lou Eccleston, discusses in his letter that follows. We also refined the description of your company to more accurately reflect this vision:

> **TMX Group operates global markets, and builds digital communities and analytic solutions that facilitate the funding, growth and success of businesses, traders and investors.**

We believe that TMX Group has the talent, financial wherewithal and discipline to execute on our cohesive enterprise-wide strategy and achieve sustainable, long-term growth into the future. I would like to thank all of our clients for their ongoing input and support, as your company continues to grow.

I also want to recognize two directors, Lise Lachapelle and Michael Wissell, who will retire at our annual shareholder meeting this year. I enjoyed working with both of them and thank them for their sound advice over the years. I also want to welcome Nicolas Darveau-Garneau to our Board.

On behalf of our Board, I wish to express my appreciation to our employees for making 2018 such a successful year. Finally, I want to thank our shareholders for their ongoing support as TMX continues to evolve.

**Charles Winograd**

Chair, Board of Directors
TMX Group Limited
March 26, 2019

# Letter from the CEO

## 2018 featured strong performances within each of TMX's operating segments, including both our transaction and recurring revenue-based businesses.

We reported solid year-over-year growth in revenue, earnings per share from continuing operations and cash flows from operating activities. Overall, our revenue was up 22%, with an 8% increase in organic revenue, when compared to 2017. We also delivered solid revenue and earnings growth from continuing operations in each quarter of the year, when compared to each of the quarters of 2017. This was a particularly impressive accomplishment given the market conditions we faced around the world. At times, high volatility in 2018 posed considerable challenges for a significant portion of our client base and our business, with a particularly severe downswing in valuations during the last few weeks of the year.

Along with the negative pressures, we saw some positive effects from high volatility on our results, both in our transaction-based businesses, and in other parts of our increasingly diversified business. Our overall successes in 2018 demonstrates the importance of the initiatives taken to strengthen and diversify our portfolio of client-focused solutions.

## Driving revenue growth

### Capital Formation

Our growing strength in the innovation sector is a strong indication that we are effecting change in how the world perceives TMX. Canada is becoming a global hub for innovation companies to list. In fact, 2018 was a record year for the Innovation sector on Toronto Stock Exchange and TSX Venture Exchange with 59 new companies listed, surpassing the previous record of 41 in 2016.

This is more than a single niche segment of the market. Innovation listings cover a diverse set of companies from multiple industries, including fintech, biotech, blockchain, cleantech, IT consulting, eSports and cannabis. These companies span a wide range of regions around the world, including the United States, Portugal, Israel and Singapore. We continue to focus our business development and sales efforts on attracting international listings across all sectors and activating new pools of capital in new geographies.

In 2018, revenue from TSX Trust and other issuer services grew 28% over last year. TSX Trust was our fastest growing business in 2018, and it continued to thrive with higher revenue from transfer agent services and margin income.

### Global Trading

Higher volatility led to gains in our global trading businesses. Derivatives revenue was up 13% in 2018 versus 2017, driven by higher volumes, including record-setting activity in a number of Montreal Exchange's key products. 2018 was also a landmark year for Montreal Exchange in advancing our global growth strategy. In October, we launched extended trading hours on our interest rate product suite to enable clients to manage their exposure to Canadian markets during non-regular Canadian business hours. We are seeing significant activity and global participation during the early hours. Based on the success of phase one and increased client demand, we have now expanded extended trading hours to include index futures like the SXF, Canada's equity index benchmark product.

### Global Solutions, Insights and Analytics - Trayport

Trayport, the primary connectivity network and data and analytics platform for the European wholesale energy markets, acquired at the end of 2017, experienced strong revenue growth in the core subscriber business in 2018, up 10% over 2017. This was driven by a 3% increase in the number of total subscribers, including a 9% increase in trader subscribers, and an increase of 6% in the average revenue per user over 2017. Trayport is focused on growth opportunities in new markets around the world and in expanding the portfolio of new products and services.

## Moving forward with our Client First Vision

We set out four years ago on a journey to transform TMX from a regional infrastructure company into a global provider of intellectual property-based solutions, able to develop and deliver client solutions to market quickly and cost effectively. We defined our vision then: to be a technology driven solutions provider that puts clients first.

Over the last four years, we have fulfilled that aspiration. We have achieved our vision and we are a technology driven solutions provider today. "Client first" is the lens through which we see the world. It is intrinsic to the new TMX.

In December 2018, our Board of Directors approved a change to refine our vision statement to move to a new aspirational statement - one to strive for going forward. The new TMX vision is:

> **To be an indispensable solution for companies around the world to raise capital and the preferred destination for traders and investors to prosper.**

We are excited about the future and to live up to our new vision in the eyes of our clients every day.

I look forward to updating you after we report our first quarter 2019 results in May.

**Louis V. Eccleston**

Chief Executive Officer
TMX Group
March 26, 2019

# MD& A

Management's Discussion and Analysis

# TMX Group Limited

## MANAGEMENT'S DISCUSSION AND ANALYSIS

February 13, 2019

This Management's Discussion and Analysis (MD&A) of TMX Group Limited's (TMX Group) financial condition and financial performance is provided to enable a reader to assess our financial condition, material changes in our financial condition and our financial performance, including our liquidity and capital resources, for the year ended December 31, 2018, compared with the year ended December 31, 2017. This MD&A should be read together with our audited annual consolidated financial statements for the year ended December 31, 2018 (financial statements).

Our financial statements and this MD&A for the year ended December 31, 2018 are filed with Canadian securities regulators and can be accessed at www.tmx.com and www.sedar.com. The financial measures included in this MD&A are based on financial statements prepared in accordance with International Financial Reporting Standards (IFRS), as issued by the International Accounting Standards Board (IASB), unless otherwise specified. All amounts are in Canadian dollars unless otherwise indicated.

Certain comparative figures have been reclassified in order to conform with the financial presentation adopted in the current or prior year.

Additional information about TMX Group, including the Annual Information Form, is available at www.tmx.com and www.sedar.com. We are not incorporating information contained on our website in this MD&A.

### MD&A Structure

Our MD&A is organized into the following key sections:

- Mission, Client First Vision and Corporate Strategy;
- Initiatives and Accomplishments - 2018 initiatives and accomplishments;
- Regulatory Changes - an update on the regulatory environment;
- Market Conditions - a discussion of our current business environment;
- Our Business - a detailed description of our operations and our products and services;
- Results of Operations - a year-over-year comparison of results;
- Liquidity and Capital Resources - a discussion of changes in our cash flow, our outstanding debt and the resources available to finance existing and future commitments;
- Managing Capital - an outline of objectives for managing our cash and cash equivalents, marketable securities, share capital, Commercial Paper, Debentures, and credit and liquidity facilities;
- Financial Instruments;
- Critical Accounting Estimates - a review of our goodwill and intangible assets - valuation and impairment;
- Select Annual and Quarterly Financial Information - a discussion of select annual information from 2016-2018, the fourth quarter of 2018 compared with the corresponding period in 2017 and the results over the previous eight quarters;
- Enterprise Risk Management - a discussion of the risks to our business as identified through our risk management process as well as Financial Risk Management;

- Accounting and Control Matters - a discussion of changes in accounting policies adopted in 2018 and future changes in accounting policies, an evaluation of our disclosure controls and procedures and internal control over financial reporting and changes to internal control over financial reporting; and
- Caution Regarding Forward-Looking Information.

## MISSION, CLIENT FIRST VISION AND CORPORATE STRATEGY

### Mission

Powering capital and commodity markets, investment, and economic growth for clients in Canada, across North America, and around the world.

### Client First Vision

We have evolved over the last few years and have achieved the previous vision of being "a technology driven solutions provider that puts clients first". In December 2018, our Board of Directors approved a change to refine our vision statement:

"To be an indispensable solution for companies around the world to raise capital and the preferred destination for traders and investors to prosper."

### Corporate Strategy[1]

In 2015, we engaged in a comprehensive review of our portfolio of assets and an in-depth strategic review of the organization to establish our strategy going forward. We developed a strategic direction and execution plans to transform the organization from a regional infrastructure provider to a global technology solutions provider.

In 2016, we created leverage in our organizational structure by advancing beyond a group of companies to an integrated organization. We identified businesses that were core to our strategy, and sold certain non-core businesses in 2016 and 2017. We also announced a realignment of the organization that helped us achieve operational and cost efficiencies.

In 2017, we completed the acquisition of Trayport Holdings Limited and its subsidiaries, and its U.S.-based affiliate, Trayport Inc. (collectively, Trayport) which transformed our revenue mix, and accelerated our global growth. With Trayport, our recurring revenues increased from approximately 40% in 2016 to approximately 50%[2] in 2018; while our revenue from outside of Canada grew from less than 30% in 2016 to approximately 33% in 2018[3].

In 2018 and looking forward, we are well positioned for long term growth with our transformation into a technology enabled, diversified, global business.

We have the following long term financial objectives that are based on certain assumptions and expected performance over time. While we believe these aspirational goals are reasonable, we may not be able to achieve these financial objectives as our assumptions may prove to be inaccurate and therefore our actual results could differ materially from our long term objectives. Our long term objectives do not constitute guidance. Our current profitability and our ability to attain these goals in a given period must be weighed against our need to invest in our business in order to execute on our strategy. Some examples of these assumptions include successful execution of our strategic growth initiatives and

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[1] The "*Corporate Strategy*" section contains certain forward-looking statements. Please refer to "*Caution Regarding Forward-Looking Information*" for a discussion of risks and uncertainties related to such statements.

[2] Recurring revenue streams include substantially all of Global Solutions, Insights & Analytics, as well as sustaining listing fees, custody fees, transfer agency fees, and other access/subscription based revenues.

[3] Compared with < 30% revenue outside of Canada in 2016. Based on full year 2018 revenue from customers with an address outside of Canada.

business objectives; continued investment in growth businesses; and continued re-prioritization of investment towards enterprise solutions.


*Organic cumulative average annual growth rate (CAGR). See discussion under the heading *Caution Regarding Forward Looking Information*.
**Adjusted EPS is a Non-IFRS measure. See discussion under the headings *Caution Regarding Forward Looking Information and Non-IFRS Financial measures*.

Our business is now organized into the following areas:

**Capital formation:** Energize and expand the capital markets community to better facilitate capital raising for issuers of all types at all stages of their development, and provide access to alternative sources of capital.

*Lines of business include Toronto Stock Exchange (TSX) and TSX Venture Exchange (TSXV) listing and issuer services, and TSX Trust (TMX Group's transfer agency and corporate trust services business).*

**Equities and fixed income trading and clearing**: Operate innovative, efficient, reliable, fast, easy to use platforms for equities and fixed income trading and clearing.

*Lines of business include TSX, TSXV and TSX Alpha Exchange (Alpha) equities trading, Shorcan Brokers Limited (Shorcan) fixed income trading and Canadian Depository for Securities Limited (CDS).*

**Derivatives trading and clearing**: Intensify new product creation and leverage our unique market position to benefit from increasing demand for derivatives products both in Canada and globally.

*Lines of business include Montréal Exchange (MX) and Canadian Derivatives Clearing Corporation (CDCC).*

**Global Solutions, Insights and Analytics**

Deliver integrated data sets to fuel high-value proprietary and third party analytics to help clients make better trading and investment decisions. Provide solutions to European wholesale energy markets for price discovery, trade execution, post-trade transparency and straight through processing.

*Lines of business include TMX Datalinx (information services), TMX Insights (analytics), Co-location,* as well as London-based *Trayport* (acquired on December 14, 2017).

## INITIATIVES AND ACCOMPLISHMENTS[4]

### Capital Formation

In May 2018, we announced that the exchange traded funds (ETFs) sector on TSX had reached a record high. Total AUM[5] of ETFs listed on TSX has doubled in the past five years, and was approximately $153 billion as of December 31, 2018. In the year ended December 31, 2018, TSX listed 98 new ETFs and welcomed six new institutions to its group of ETF providers.

In 2018, we had a record 59 new listings in the innovation sector (including those in the technology, clean technology, renewable energy and life science sectors) with total equity capital raised of $14.7 billion. The previous record was 41 new innovation listings in 2016, and $11.3 billion raised in 2015.

In November 2018, we launched TMX Matrix, a dynamic, community-based platform designed to bridge growth capital with TSXV listed growth companies. TMX Matrix offers growth companies a valuable tool to incorporate into their investor relations strategy and amplify their story by uploading videos, presentations, alternative data and other materials to their own customizable page. Growth investors are empowered to discover, research, and track unique growth companies with insights which are difficult to find on financial websites and information portals.

### Equities and Fixed Income Trading and Clearing

In May 2018, Payments Canada, the Bank of Canada, TMX Group and Accenture demonstrated that the instantaneous clearing and settlement of securities on-ledger is feasible, showing for the first time that both central bank cash and assets can be tokenized to complete an instant, end-to-end equity settlement on distributed ledger technology (DLT). Payments Canada, the Bank of Canada, TMX Group and Accenture presented initial findings from the research at the Payments Canada Summit in May 2018. The following is a summary of the report's key findings:

- A distributed ledger technology platform can be used for a payment and securities settlement system. The proof-of-concept platform constructed was able to process pledge, transaction and redeem functions in a manner designed to address the privacy and scalability requirements of the Canadian system. The platform was also capable of handling the different participant sets so that each participant was only capable of performing those functions for which they were authorized.

- The loose integration framework of the project left the two authorities involved — the Bank of Canada for cash and Canadian Depository for Securities for equities — in full control of their respective instruments or tokens.

- Jasper Phase III was a focused proof of concept, and expansion to multiple parties and asset classes, will require further study to determine the impact of DLT with respect to cost savings or efficiency gains. An expansion of scope could span a number of possible dimensions — e.g., multiple assets, more of the trade and post-trade settlement lifecycle, and additional types of trades.

In October 2018, we signed a Memorandum of Understanding (MoU) with Shanghai Clearing House (SHCH) which builds on almost two years of close collaboration between us and SHCH. Our relationship with SHCH supports foreign institutional investor access to Chinese bond markets, provides for the parties' mutual support towards obtaining regulatory and government approvals, and affirms TMX Group's and SHCH's desire to create an efficient linkage between North American and Chinese bond markets. We also entered into an MoU with China Central Depository & Clearing Corporation, Limited (CCDC) pursuant to which we intend to initiate a feasibility study of mutual access models, work together to increase understanding of the respective businesses, and evaluate future trade opportunities.

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[4] The "*Initiatives and Accomplishments*" section above contains certain forward-looking statements. Please refer to "*Caution Regarding Forward-Looking Information*" for a discussion of risks and uncertainties related to such statements.

[5] Quoted market value is used as a proxy for AUM

## Global Solutions, Insights and Analytics

On April 12, 2018, we completed the sale of our entire 24.2% interest in FTSE TMX Global Debt Capital Markets Limited ("TMX FTSE") to FTSE International Limited, a wholly owned subsidiary of London Stock Exchange Group. The proceeds of $70.4 million resulted in a gain on sale of approximately $26.8 million before and after income tax ($24.1 million gain on sale and $2.7 million realized gain on foreign currency translation), which was reflected in our net income for Q2/18.

### *Trayport*

On November 30, 2018, we completed the sale of Contigo Software (Contigo), the ancillary non-subscriber based risk application business of Trayport, to Energy One, a supplier of software products and services which resulted in a gain on sale of approximately $2.3 million before and after income tax.

In Q2/18 we revised our estimate of transaction costs for the Trayport acquisition to a range of $0.3 million to $0.7 million from the previous range estimate of $1.4 million to $4.4 million. In the year ended December 31, 2018, we incurred $0.3 million of transaction costs related to Trayport.

## Derivatives Markets

### *Derivatives Trading and Clearing*

In 2016, we launched single stock futures (SSFs) on about 20 symbols. The balance of the S&P/TSX 60[6] symbols were added throughout Q1/17, and in June 2018 we launched SSFs on 12 ETFs. In December 2018, MX achieved a new monthly volume SSF record with 207,459 contracts, breaking the record of 184,850 contracts from November 2017.

In April 2018, CDCC, Canada's national central clearing counterparty (CCP) for exchange-traded derivative products, certain over-the-counter (OTC) products and repurchase agreements (repos), announced the launch of its new direct-clearing model for Canadian buy-side firms.

In October 2018, MX launched extended trading hours from the previously 6:00 a.m. ET open to a 2:00 a.m. ET open. This initiative is in line with MX's mission to be a client focused and globally recognized leading derivatives exchange, as it allows domestic and international clients to manage their exposure to Canadian markets during non-regular Canadian business hours.

Several of MX's key products set yearly volume records of contracts traded, including:

- Ten-Year Government of Canada Bond Futures (CGB) reached 28,769,478 contracts, breaking the record of 23,946,703 contracts set in 2017 by 20%;
- Five-Year Government of Canada Bond Futures (CGF) reached 406,782 contracts, breaking the record of 358,078 contracts set in 2017 by 14%;

[6] The "S&P/TSX 60" is a product of S&P Dow Jones Indices LLC ("SPDJI") and TSX Inc. ("TSX"). Standard & Poor's® and S&P® are registered trademarks of Standard & Poor's Financial Services. LLC ("S&P"); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"); and TSX® is a registered trademark of TSX. SPDJI, Dow Jones, S&P and TSX do not sponsor, endorse, sell or promote any products based on the S&P/TSX 60 and none of such parties make any representation regarding the advisability of investing in such product(s) nor do they have any liability for any errors, omissions or interruptions of the S&P/TSX 60 or any data related thereto.

- S&P/TSX 60[7] Index Standard Futures (SXF) reached 7,623,603 contracts, breaking the record of 6,144,651 contracts set in 2017 by 24%;
- Options on Three-Month Canadian Bankers' Acceptance Futures (OBX) reached 1,095,579 contracts, breaking the record of 801,051 contracts set in 2017 by 37%;
- 29,405,993 contracts traded in Equity Options, breaking the record of 25,302,965 contracts set in 2016 by 16%;
- 14,482,523 contracts traded in options on ETFs, breaking the record of 11,724,768 contracts set in 2016 by 24%.

## Update on Modernization of Clearing Platforms[8]

Tata Consultancy Services (TCS), a leading IT services, consulting and business solutions organization, is implementing a single, modernized technology platform for our clearing and settlement businesses. The innovative platform, called TCS BaNCS for Market Infrastructure, will replace the legacy systems deployed by CDS and CDCC, subject to regulatory approval where required. Our original estimates of the expected cash outlays was approximately $55.0 - $60.0 million from 2017 to 2019, and the annual savings in operating expenses on a run rate basis, compared with cost structure at September 30, 2017 was expected to be approximately $6.0 to $8.0 million, starting in 2020. Substantially all of the costs were expected to be related to capital expenditures. We spent approximately $9.0 million on capital expenditures in 2017. In 2018, we spent approximately $22.4 million, including approximately $16.6 million on capital expenditures. As we transition, we anticipate that operating expenses will continue to increase over the short-term before we realize savings. Given the complex nature of this project, we expect that the original estimates provided above will change. We will update these estimates on spending, savings, and timing throughout 2019.

## Corporate

On October 26, 2018, we reduced our existing shareholding in CanDeal.ca Inc. (CanDeal), a provider of electronic markets for Canadian fixed income and interest rate swaps, from 47.1% to 14.3%. As a result of this transaction, we received proceeds of $12.8 million which includes cash consideration of $7.8 million and an unsecured promissory note of $5.0 million. In Q4/18, we reported a gain of $1.1 million before income tax and $0.9 million after income tax.

In May 2018, we implemented organizational and executive changes, including new strategic and expanded responsibilities for members of our leadership team:

- Jean Desgagné, President and CEO, TMX Global Solutions, Insights and Analytics left the company to pursue new career opportunities.
- Jay Rajarathinam, Chief Technology and Operations Officer expanded his mandate to take on the Product Development and Commercial Planning for Advanced Analytics, as well as TMX Innovation initiatives.
- Shaun McIver, Chief Client Officer, in addition to overseeing Marketing and Branding, took on the additional responsibility for Advanced Analytics sales, and assumed responsibility for the TMX Datalinx business.

In September 2018, we announced leadership changes at Trayport and Shorcan and appointed new business leaders:

- Kevin Heffron, President of Trayport left Trayport to pursue other opportunities.

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[7] The “S&P/TSX 60” is a product of S&P Dow Jones Indices LLC (“SPDJI”) and TSX Inc. (“TSX”). Standard & Poor’s® and S&P® are registered trademarks of Standard & Poor’s Financial Services. LLC (“S&P”); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC (“Dow Jones”); and TSX® is a registered trademark of TSX. SPDJI, Dow Jones, S&P and TSX do not sponsor, endorse, sell or promote any products based on the S&P/TSX 60 and none of such parties make any representation regarding the advisability of investing in such product(s) nor do they have any liability for any errors, omissions or interruptions of the S&P/TSX 60 or any data related thereto.

[8] The "*Update on Modernization of Clearing Platforms*" section contains certain forward-looking statements. Please refer to "*Caution Regarding Forward-Looking Information*" for a discussion of risks and uncertainties related to such statements.

- Peter Conroy, formerly President, Shorcan Brokers took on the leadership of the Trayport business, and has been named President, Trayport.  Michael Gibbens was appointed President of Shorcan.

- Sarah Ryerson was appointed President of TMX Datalinx.  Key areas of focus include developing new products, implementing enhanced commercial models and expanding the business into new markets.

- Claire Johnson was appointed President, TSX Trust, responsible for the vision and leadership of TSX Trust while executing on a strategy designed to accelerate the company's growth.

In November 2018:

- Sanjay Kulkarni was appointed Chief Marketing Officer and Head of Digital Solutions, responsible for leading the vision, strategy and execution of TMX Group's integrated marketing initiatives across digital platforms.

In February 2019, we announced changes related to our post-trade business:

- Jay Rajarathinam's has also taken on the leadership of our post-trade business as President, CDCC & CDS with the retirement of Glenn Goucher, Chief Clearing Officer, President CDCC & CDS at the end of February.

- Wayne Ralph was appointed Chief Operating Officer, CDS, reporting to Jay Rajarathinam.  Wayne served on the CDS Board from September 2006 to May 2017.

## REGULATORY CHANGES[9]

### Equity Trading

On December 18, 2018, the Canadian Securities Administrator (CSA) published for comment (until March 1, 2019) a notice outlining a proposed Trading Fee Rebate Pilot Study to examine the effects of a prohibition of rebate payments by Canadian Marketplaces (Proposed Pilot). The Proposed Pilot is intended to run concurrently with the United States Securities and Exchange Commission's (SEC) Proposed Transaction Fee Pilot.  While TMX Group is supportive of the reduction of maker-taker fees in Canada, we must ensure the reduction in rates will not negatively impact liquidity in our markets, execution quality, and Canada's competitiveness for global capital.

## MARKET CONDITIONS AND OUTLOOK[10]

Overall, Canadian equities trading volumes were up 16% in the year ended December 31, 2018 compared with the prior year[11].  The average CBOE Volatility Index (VIX) was 16.6 in the year ended December 31, 2018 up significantly from 11.1 in the prior year.  Trading on TSX increased with an 8% increase in volumes traded in the year ended December 31, 2018 compared with the prior year; however, volumes traded on TSXV (including NEX) was down 1% over the same period. Derivative trading in Canada was positively impacted by speculation around an increase in interest rates as reflected in a

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[9] The "Regulatory Changes" section above contains certain forward-looking statements.  Please refer to "Caution Regarding Forward-Looking Information" for a discussion of risks and uncertainty related to such statements.

[10] The "Market Conditions and Outlook" section contains certain forward-looking statements.  Please refer to "Caution Regarding Forward-Looking Information" for a discussion of risks and uncertainty related to such statements.

[11] Source: Investment Industry Regulatory Organization of Canada (IIROC) (excluding intentional crosses).

17% increase in the volume of contracts traded on MX in the year ended December 31, 2018 compared with the prior year.

The more volatile market environment contributed to less favourable conditions for capital raising in the year ended December 31, 2018. On TSX, the total amount of financing dollars raised declined by 30% and the total number of financings decreased by 20% in the year ended December 31, 2018 compared with the same period last year. Looking specifically at IPOs on TSX, there was an 11% decrease in the number of IPOs and a 55% decrease in IPO financing dollars raised in the year ended December 31, 2018 compared with last year. The more volatile environment had less of an impact on TSXV (including NEX) where there was a 10% increase in the total amount of financing dollars raised despite a 7% decrease in the total number of financings in the year ended December 31, 2018 over the same period last year.

On January 9, 2019, the Bank of Canada maintained its target for the overnight rate at 1.75%.[12] The Bank said the global economic expansion continues to moderate, with growth forecast to slow to 3.4 per cent in 2019 from 3.7 per cent in 2018. There are increasing signs that the US-China trade conflict is weighing on global demand and commodity prices. The Bank also said CPI inflation is projected to edge further down and be below 2 per cent through much of 2019, owing mainly to lower gasoline prices. On the other hand, the lower level of the Canadian dollar will exert some upward pressure on inflation. As the Bank said, as these transitory effects unwind and excess capacity is absorbed, inflation will return to around the 2 per cent target by late 2019.

From a global perspective, we see a number of macroeconomic factors moderating activity and heightening risks, which may impact our business. Such factors include the U.S.-China trade conflict, softened international trade and investment, uncertainty around Brexit and financial market pressures. All of these factors could contribute to a more volatile economic environment in 2019. This volatility is more likely to have an adverse impact on our Capital Formation business, including on annual sustaining fees, which will likely decline in 2019 compared with 2018 (see **CAPITAL FORMATION - *Revenue Description*** - *Sustaining Listing*). The level of initial public offering activity and secondary market activity may also be impacted if volatility remains high. The higher volatility could have the opposite impact on our equity and derivatives trading and clearing businesses, where higher volatility, and uncertainty regarding interest rates, could contribute to increased trading and clearing activity. Our Global Solutions Insights and Analytics business is less likely to be impacted by adverse economic conditions since it is largely subscription based. However, a significant decline in employment levels in the financial services sector could also have an adverse impact on products such as those for real-time market data.

## OUR BUSINESS

On the following pages, we provide an overview and description of products and services, strategy and revenue description for each of our segments as outlined below:

1. Capital Formation
2. Equities and Fixed Income Trading and Clearing
3. Derivatives Trading and Clearing
3. Global Solutions, Insights and Analytics

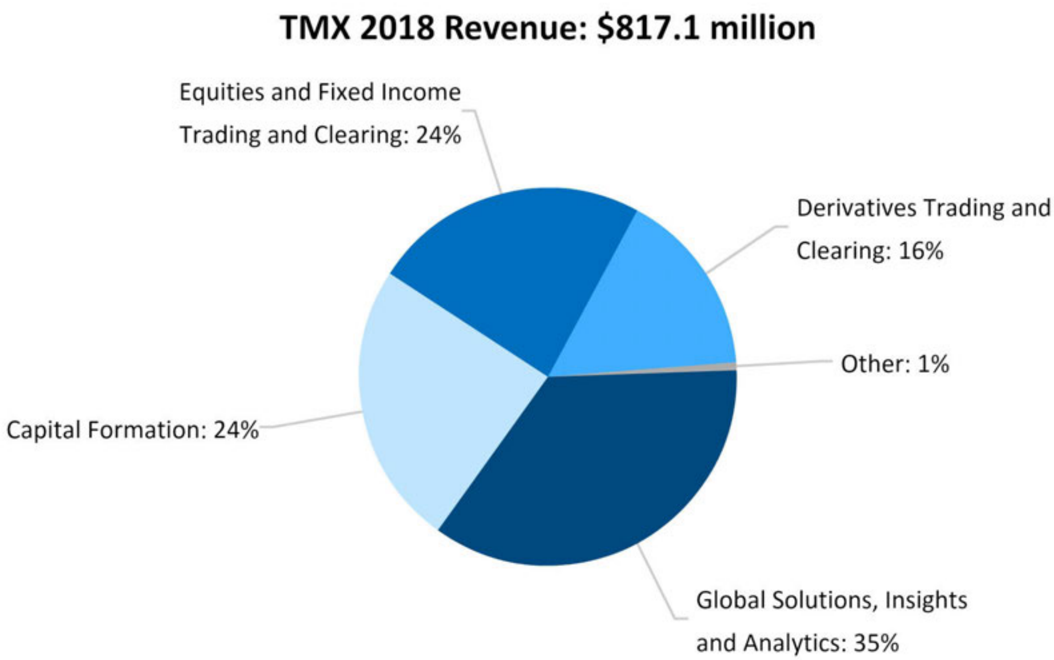
    i TMX Datalinx

    ii. Co-location Services

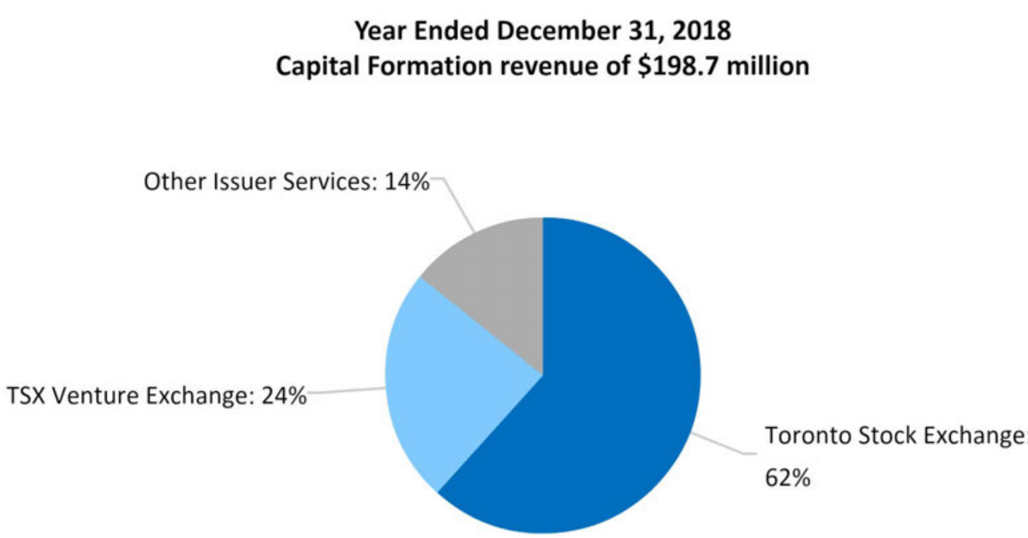
    iii. Trayport

[12] Source: Bank of Canada press release, January 9, 2019.

For key statistics related to each business above, please see **Results of Operations**.




## Capital Formation



### *Overview and Description of Products and Services*

*Our goal is to provide solutions for corporate clients in need of growth capital and liquidity, and provide investors with a broad range of investment opportunities.*

TMX operates a unique two-tiered ecosystem, comprising of TSX and TSXV, to help companies access the public markets, raise capital and provide liquidity to shareholders. TSX is a leading listings venue for established domestic and international issuers. TSXV is the pre-eminent global platform for facilitating venture stage capital formation.

In general, issuers initially list on TSX through an Initial Public Offering (IPO), by graduating from TSXV, or by seeking a secondary listing in addition to its current listing venue. Venture stage companies generally list on TSXV either in connection with an IPO, or through alternative methods such as TSXV's Capital Pool Company program or a reverse takeover. We also operate NEX, a market for issuers that have fallen below the listing standards of TSXV.

Issuers list a number of different types of securities including conventional securities such as common shares, preferred shares, rights and warrants; and a variety of alternative types of structures such as exchangeable shares, convertible debt instruments, limited partnership units, ETFs, and structured products such as investment funds.

We are a global leader in listing global growth capital marketplaces[13] with concentration in resource sector listings and a growing number of innovation companies (including those in the technology, clean technology, renewable energy and life science sectors). As of December 31, 2018, we have 225 international (non-Canadian) listings, of which 63 are innovation companies. Issuers listed on TSX and TSXV raised a combined $41.0 billion in 2018 ($34.0 billion on TSX and $7.0 billion on TSXV).

In addition to our listing facilities, we offer other services to our listed issuers. TSX Company Services is focused on enhancing and expanding our service offering to support the funding, growth, and success of our listed companies. Together with industry leading service providers, we offer solutions designed to help our clients reach their corporate objectives. For example, we have an agreement with Ipreo Holdings LLC to offer TSX and TSXV issuers in-depth analysis and dynamic functionality to assist them to build and execute their IR strategies.

Within Capital Formation is TSX Trust, second in the market when measured by clients on the TSX and TSXV. The business supports over 1,000 equity and debt issuers and private companies with corporate trust, transfer agent, registrar, and employee plan administration service.

### *Strategy*

- Our business development and sales efforts focus on:
    - Expanding our geographic focus to attract international listings across all sectors
    - Growing the innovation sector while maintaining our resource sector franchise
    - Activating new pools of capital in new geographies and by engaging pools of capital not currently active on our markets
- Streamlining and digitizing issuer on-boarding processes to improve issuer engagement, lower costs for issuers, and accelerate revenue capture
- Driving policy innovation and updating our pricing strategy
- Developing TMX Matrix, a dynamic, community platform designed to bridge growth capital with TSXV listed growth companies

[13] Global growth capital marketplace is defined as small and medium-sized enterprises

- For TSX Trust, the strategy focuses on two main pillars of growth:
    - Organic growth - increasing the win rate and selling more products to existing clients
    - Leveraging the trust license to expand into adjacent markets with recurring revenue and cash balances

***Revenue Description***

We generate Capital Formation revenue from several services, including:

*Initial Listing*

TSX and TSXV issuers pay initial listing fees based on the value of the securities to be listed or reserved, subject to minimum and maximum fees. Initial listing fees fluctuate with the value of securities being listed or reserved at the time of listing. Initial listing fees are deferred over a 12-month period from the date of listing.

*Additional Listing*

Issuers already listed on one of our equity exchanges pay fees in connection with subsequent capital market transactions, such as the raising of new capital through the sale of additional securities and reserving additional shares to be issued under stock option plans. Additional listing fees are based on the value of the securities to be listed or reserved, subject to minimum and maximum fees and are recognized in the period the transaction occurred.

*Sustaining Listing*[14]

Issuers listed on one of our equity exchanges pay annual fees to maintain their listing, based on their market capitalization at the end of the prior calendar year, subject to minimum and maximum fees. Sustaining listing fees for existing issuers are billed during the first quarter of the year, recorded as deferred revenue and amortized over the year on a straight-line basis. Sustaining listing fees for new issuers are billed in the quarter that the new listing takes place and are amortized over the remainder of the year on a straight-line basis.

TSX amended its Listing Fee Schedule (“Fee Schedule”), effective January 1, 2019. The amendments to the Fee Schedule include:

- An increase to the maximum annual sustaining fee for corporate issuers from $110,000 to $125,000
- Certain changes to the fee schedule for closed-end funds. Housekeeping amendments to clarify the recovery of expenses incurred by TSX

Fees charged to issuers vary based on the type of issuer (corporate, structured product or ETF) and for TSXV issuers, there are other transactional fees we charge for Stock Options Plans and Change of Business, among others.

The aggregate market capitalization of issuers listed on TSX decreased from $2.97 trillion to $2.65 trillion at the end of 2017 to the end of 2018. The market capitalization of issuers listed on TSXV decreased from $54.5 billion to $45.4 billion over the same period. We estimate that the decreases in market capitalization on TSX and TSXV, net of the impact of the changes in fees described above, could result in a decrease in sustaining fee revenue of approximately $1.0 million to $3.0 million in 2019.

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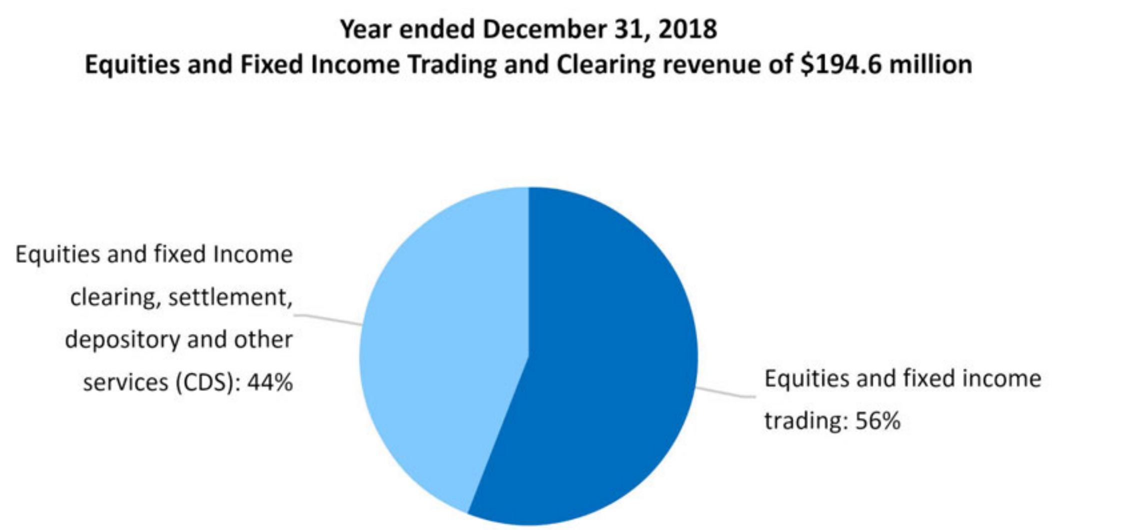
[14] The "*Sustaining Listing*" section above contains certain forward-looking statements. Please refer to "Caution Regarding Forward-Looking Information" for a discussion of risks and uncertainties related to such statements.

_Other Services_

TSX Trust has approximately 1,050 unique clients, and revenue is primarily derived from recurring monthly fees and net interest income on cash balances. In 2018, TSX Trust experienced approximately 18% growth in mandates for its transfer agent business. Corporate trust fees relate to services that include acting as trustee for debt instruments, depository for takeover bid offers, warrant agent, subscription receipt agent, and agent for voluntary escrow arrangements. TSX Trust also benefits from periodic and large cash balances that are held in its trust account, which results in net interest income.

## Equities and Fixed Income Trading & Clearing




## Equities and Fixed Income Trading – TSX, TSXV, Alpha and Shorcan

### *Overview and Description of Products and Services*

*We operate innovative, efficient, reliable, high performance platforms for trading and clearing.*

_Equities Trading_

TSX, TSXV and Alpha operate fully electronic exchanges that facilitate secondary trading in TSX and TSXV-listed securities on a continuous auction basis throughout the trading day.

Retail, institutional and other proprietary investors and traders place orders to buy or sell securities through Participating Organizations (POs)/Members of the exchanges. In addition to continuous trading throughout the day, TSX and TSXV also operate opening and closing auctions, which are central sources of liquidity for trading in Canada during those times. The closing auctions also establish the industry benchmark closing price for our listed securities. A post-closing trading session on TSX and TSXV allows for further opportunity to trade at the closing price. Additional trading features and functionalities are offered to accommodate a range of trading strategies and provide flexibility and optionality to clients. Each of TSX, TSXV and Alpha also allow POs to report their internally matched orders, by printing these as crosses on the exchanges at no cost.

*Fixed Income Trading*

Shorcan acts as an inter-dealer bond broker (IDB) that specializes in the Canadian fixed income marketplace, brokering products that include provincial, corporate, strip, and mortgage bonds; repurchase agreements (repos) and swaps. Shorcan serves financial institutions that are broker-dealer registered with IIROC and that are CDCC members; the buy-side does not participate. Interdealer brokers can be accessed via broker screens that can run on a desktop computer at a trader's desk.

***Strategy***

- Continue to deploy innovative trading features and functionalities aimed at enhancing market efficiency and trading liquidity
- Increase global awareness and offerings (e.g., increased sales presence and focus outside of North America)
- Expand offerings into new asset classes and customer groups

***Revenue Description***

*Equities Trading*

Most of the fees on TSX, TSXV and Alpha are volume-based. These fees are applied to traded shares, and in most cases, involve one side of the trade being charged a per share fee and the other side being provided with a per share rebate. The excess of the fee over the rebate represents the exchanges' net fee per share traded. These types of models are intended to incent different types of customers and behaviors. The primary fee structure on TSX and TSXV is a maker-taker model that pays a rebate to the liquidity providing side of the trade so that market participants have an incentive to enter passive orders into the central limit order book, while the liquidity taking side of the trade pays a fee. Alpha supports an inverted pricing model which is intended to provide incentives to take liquidity by providing a rebate, with the liquidity providing side of the trade paying the fee. Regardless of the fee structure applied, trading revenue is recognized in the month in which the trade is executed. **(also see REGULATORY CHANGES - Equity Trading** for details regarding a proposed Trading Fee Rebate Pilot Study to examine the effects of a prohibition of rebate payments).

*Fixed Income Trading*

Shorcan charges broker commissions on both sides of the trade upon execution. Commission of the brokered transaction is embedded in the price of the trade through clearing and settlement processes. Trading revenue is recognized when the trade is settled. Shorcan broker commission varies by different types of fixed income instrument and differs between orders that are matched electronically vs. voice-brokered.

## Equities and Fixed Income Clearing, Settlement, Depository and Other Services - CDS

***Overview and Description of Products and Services***

The Canadian Depository for Securities Limited (CDS) is Canada's national securities depository, clearing and settlement hub for domestic and cross-border depository-eligible securities. CDS supports Canada's equities, fixed income and money markets and is accountable for the safe custody and movement of securities, the processing of post-trade transactions, and the collection and distribution of entitlements relating to securities deposited by participants.

CDS' domestic clearing and settlement services enable participants to report, confirm or match, reconcile, net and settle exchange and OTC traded equity, debt and money market transactions, as well as derivative transactions in depository-eligible securities (e.g., the processing of rights and warrants and the settlement of exercised options). CDS also offers related services such as buy-ins, risk controls and reporting, and facilitates trading in CDSX (CDS's multilateral clearing and settlement system) eligible securities before they are publicly distributed (trades in these securities settle after public distribution). CDSX is designated by the Bank of Canada as being systemically important, under the Payment Clearing and Settlement Act (Canada).

CDS Depository is accountable for the safe custody and movement of depository-eligible domestic and international securities, accurate record-keeping, processing post-trade transactions, and collecting and distributing entitlements arising from securities deposited by participants.

Other CDS services include, the issuance of International Security Identification Numbers (ISINs), depository eligibility, securities registration as well as entitlement and corporate action (E&CA) event management.

### *Strategy*

TMX Group is implementing a cross-asset post-trade services strategy that covers CDS and CDCC. Under this strategy, TMX Group will invest in modernizing core technology and developing growth opportunities for the two businesses under these main focuses:

- Clearing and Depository: Develop and migrate to an advanced clearing, settlement, and risk management solution, to deliver enhanced client experiences at higher efficiency (see **INITIATIVES AND ACCOMPLISHMENTS - Update on Modernization of Clearing Platforms**)
- Global Liquidity Solutions: Provide streamlined access to funding and margining, and continue growth in Repo central-counterparties offering
- Global Connectivity Solutions: Create access gateways that connect global clients within an increasingly global marketplace such as CDS-DTCC (The Depository Trust & Clearing Corporation) link and CDS-Shanghai Clearing initiatives

### *Revenue Description*

For reported trades, both exchange traded and OTC trades, CDS charges clearing fees to participants on a per trade basis. Clearing fees are recognized as follows:

- Reporting fees are recognized when the trades are delivered to CDS.
- Netting/novation fees are recognized when the trades are netted and novated.

Other clearing related fees are recognized when services are performed.

For those trades that are netted in Continuous Net Settlement (CNS), settlement fees are charged on the basis of the number of netted trades settled. Settlement fees for those trades that are not netted (i.e., trades that are settled individually on a trade-for-trade (TFT) basis) are charged on a per transaction basis. Settlement related fees are recognized when the trades are settled.

Depository fees are charged per transaction and custody fees are charged based on a daily average of volume (i.e., number of shares held for equity securities and nominal value held for fixed income securities) and positions held. Depository fees are charged for custody of securities, depository related activities, and processing of entitlement and corporate actions, and are recognized when the services are performed.

International revenue consists of revenue generated through offering links as channels to participants to affect cross-border transactions and custodial relationships with other international organizations. The related fees are recognized as follows:

- Fees are charged to participants based on participant usage of National Securities Clearing Corporation (NSCC) and Depository Trust Company (DTC) services. Participants are sponsored into NSCC and DTC services via the New York Link service and the DTC Direct Link service respectively.
- Custodial fees and other international services related revenues are recognized when the services are performed.

Issuer services fees are fees levied to issuers and/or their agents for ISIN, and entitlements and corporate actions management services for which they benefit. The transition period for the discount on entitlement and corporate action event management fees ended on December 31, 2018. Full fees are applicable effective January 1, 2019.

<u>50:50 Rebates on Core CDS Services</u>

For the period starting November 1, 2012 and subsequent fiscal years starting on January 1, 2013, CDS shares with participants, on a 50:50 basis, any annual increases in revenue on clearing and other core CDS Clearing services, as compared with revenues in fiscal year 2012 (the 12-month period ending October 31, 2012). Beginning January 1, 2015 and subsequent years, CDS also shares with Participants, on a 50:50 basis, any annual increases in revenue applicable to the New York Link/Depository Trust Company Direct Link Liquidity Premium. Rebates are paid on a pro rata basis to participants in accordance with the fees paid by such participants for these services.

<u>Additional Rebates</u>

In addition, CDS must rebate an additional $4.0 million annually to participants in respect of exchange clearing services for trades conducted on an exchange or alternative trading systems (ATS).

## Derivatives Trading and Clearing

## Derivatives Trading & Clearing – MX, CDCC and BOX

### *Overview and Description of Products and Services*

Our domestic financial derivatives trading is conducted through MX, Canada's standardized financial derivatives exchange. Headquartered in Montréal, MX offers trading in interest rate, index and equity derivatives. BOX is an equity options market located in the U.S. for which MX is the technical operator and technology developer. As at December 31, 2018, MX held approximately 41% ownership interest in BOX. Our derivatives markets derive revenue from MX's trading and clearing.

*<u>Derivatives - Trading</u>*

### *MX*

MX offers interest rate, index, equity and exchange-rate derivatives to Canadian and international market participants. MX connects participants to its derivatives markets, builds business relationships with them and works with them to ensure that the derivatives offerings meet investor needs. More than half of MX's volume in 2018 was represented by three futures contracts – the Three-Month Canadian Bankers' Acceptance Futures contract (BAX), the 10-Year Government of Canada Bond Futures contract (CGB) and the S&P/TSX 60 Standard Futures contract (SXF) – with the balance largely represented by our equity and ETF options market.

### *BOX*

BOX (BOX Options Market LLC and BOX Exchange LLC) is an all-electronic equity derivatives market and is one of a number of equity options markets in the U.S. All BOX trade volume is cleared through the Options Clearing Corporation. BOX runs on our SOLA technology. In 2018, Derivatives trading and clearing revenue included approximately $8.6 million of revenue from SOLA technology services provided to BOX. Effective December 31, 2018, the term of such service offerings ended, and we are currently providing transitional services to BOX as it becomes more self sufficient in managing its technology needs.

*Derivatives – Clearing*

CDCC acts as the central clearing counterparty for exchange-traded derivative products in Canada and for a growing range of customized financial instruments. CDCC's role is to ensure the integrity and stability of the markets that it supports. CDCC provides CCP clearing and settlement services for all MX transactions and certain over-the-counter (OTC) derivatives, including fixed income repurchase and reverse repurchase agreement (REPO) transactions. In addition, CDCC is the issuer of options traded on MX markets.

CDCC is the only integrated central clearing counterparty in North America that clears and settles futures, options and options on futures. The Canadian Derivatives Clearing Service (CDCS) operated by CDCC has been designated by the Bank of Canada as being a systemically important financial market infrastructure under the Payment Clearing and Settlement Act (Canada).

CDCC generates revenue from clearing and settlement, as well as from options and futures exercise activities (see **Revenue Description** section below).

*Derivatives – Regulatory Division*

MX is recognized by the Autorité des marchés financiers (AMF) as a Self-Regulatory Organization (SRO) that has responsibility for maintaining the transparency, credibility and integrity of the exchange-traded derivatives market in Canada. MX's Regulatory Division oversees the regulatory functions. It is responsible for the regulation of its markets and its trading participants.

The Regulatory Division operates as a separate and independent unit of MX. It is subject to the oversight of MX's Special Committee – Regulatory Division. The Special Committee – Regulatory Division, which is appointed by the Board of Directors of MX, is composed of a majority of independent members, none of whom is a member of the Board of Directors of MX or CDCC. The Regulatory Division operations are self-funded and are carried out on a not-for-profit basis.

The Regulatory Division generates revenues from regulatory fees principally comprised of market surveillance fees collected by MX on behalf of its Regulatory Division. Market regulation fees are recognized in the month in which the services are provided.

Any surplus in the Regulatory Division must be, subject to the approval of the Special Committee – Regulatory Division, redistributed to MX's approved participants and any shortfall must be made up by a special assessment by MX's participants or by MX upon recommendation of the Special Committee – Regulatory Division. Regulatory fines are accounted for separately from regulatory fees revenues. The regulatory fines can be used only for specifically approved purposes, such as educational initiatives.

### *Strategy*

For MX, our sales efforts will continue to focus on:

- Global expansion through extended trading hours
- Client focused products and services with new offerings to unlock the yield curve and further build out the equities derivatives complex

For CDCC, we have started to align CDS and CDCC under a modernized post-trade services strategy (see **INITIATIVES AND ACCOMPLISHMENTS - Update on Modernization of Clearing Platforms**). Under this strategy, the two businesses will:

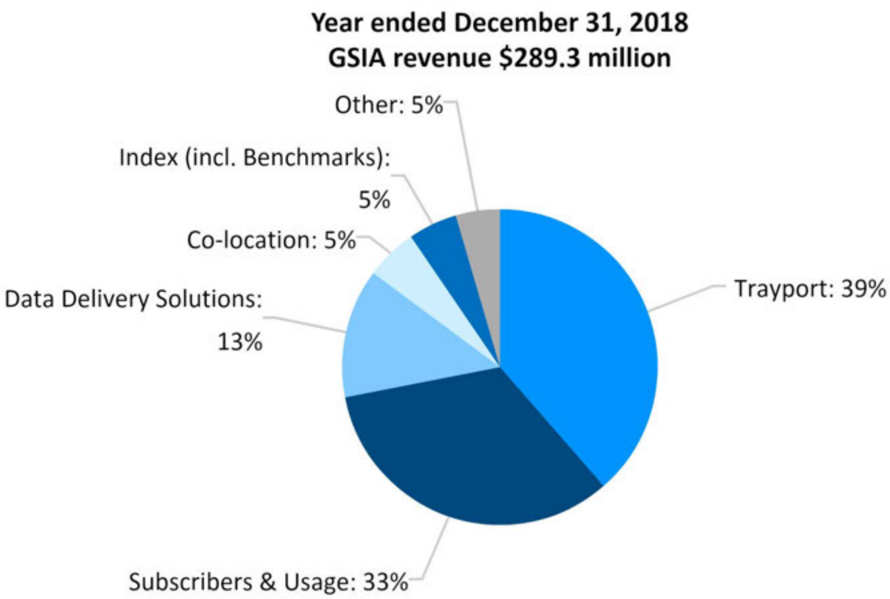
- Develop and migrate to an efficient, cross-asset next-generation clearing solution
- Explore opportunities related to fintech
- Enhance and develop solutions related to liquidity, capital efficiency, and global infrastructures

### *Revenue Description*

Those who trade on MX are charged fees for buying and selling derivatives products on a per transaction basis, determined by factors that include contract type and volume of contracts traded. Since MX trading fee rates are charged on each transaction based on the number of contracts included in each transaction, MX trading revenue is correlated to the volume of contracts traded on the derivatives market. Derivatives trading revenue is recognized in the month in which the trade is executed.

CDCC clearing members (Clearing Members) pay fees for clearing and settlement, including OTC fixed income and REPO transactions, on a per transaction basis. Fees for fixed income transactions are based on the size and term of the original agreement. Clearing Members are also eligible for a revenue sharing arrangement based on annual cleared volumes of REPO transactions. Clearing and settlement revenues other than for REPO transactions are correlated to the trading volume of such products and therefore fluctuate based on the same factors that affect our derivatives trading volume. Derivatives clearing revenue is recognized on the settlement date of the related transaction. Clearing revenue for fixed income REPO agreements is recognized on the novation date of the related transaction.

## Global Solutions, Insights, and Analytics (GSIA)




### *Overview and Description of Products and Services*

*We deliver data to fuel high-value proprietary and third party analytics to help clients make better trading and investment decisions, and provide solutions to European wholesale energy markets for price discovery, trade execution, post-trade transparency, and post-trade straight through processing.*

### *TMX Datalinx*

*Real-Time Equity Market Data Products – TSX and TSXV Level 1 and Level 2 and Alpha Feeds*

Trading activity on TSX, TSXV and Alpha produces a stream of real-time data reflecting orders and executed transactions. This stream of data is supplemented with value-added content (e.g. dividends, earnings) and packaged by TMX Datalinx, our information services division, into real-time market data products and delivered to end users directly or via Canadian and global redistributors that sell data as feeds and for desktop product use. Our market data is available globally through a large number of network carriers and extranets.

We offer our subscribers Last Sale, Level 1, and Level 2 real-time services for TSX, TSXV (including NEX, a market for issuers that have fallen below the listing standards of TSXV) and Alpha. Level 1 provides trades, quotes, corporate actions and index level information. Level 2 provides a more in-depth look at the order book and allows distributors to obtain Market Book for TSX, TSXV and Alpha. Market Book is an end-user display service that includes Market-by-Price, Market-by-Order and Market Depth by Broker for all committed orders and trades.

We also provide market participants with low-latency access to real-time Level 1 and Level 2 market data consolidated to include all domestic equities marketplaces, by way of our TMX Information Processor Consolidated Data Feed (CDF), Canadian Best Bid and Offer (CBBO), Consolidated Last Sale (CLS), and Consolidated Depth of Book (CDB) services. Our Information Processor mandate from securities regulators was approved in June 2018 for an additional four year period.

*Real-Time Derivative Market Data Products*

We also derive data revenue from MX. Similarly to equities markets, we distribute MX real-time Level 1, and Level 2 trading data to market participants on a global basis directly and through data distributors.

*Historical, Online, and Other Market Data Products*

Historical market data products include market information such as historical tick data, official market statistics and close prices and corporate information such as dividends and corporate actions used in research, analysis and trade clearing, including via TMX Analytics product suites to enable increased usability for clients.

*Equities and Derivatives - Index Products*

We have an arrangement with S&P Dow Jones Indices (S&P DJI) under which we share license fees received from organizations that create products, such as mutual funds and ETFs, based on the S&P/TSX indices. In general, these license fees are based on a percentage of funds under management in respect of these proprietary products. In January 2016 we announced the renewal of the multi-year Index Operation and License Agreement between TSX Inc. and S&P DJI which further extended our long-standing partnership. The agreement between S&P DJI and TSX covers the creation and publication of all S&P/TSX indices, while also providing MX with the rights to list futures and options on the S&P/TSX indices[15].

### Co-location Services

We provide co-location services to a broad range of domestic and international market participants. Our co-location services clients, benefit from stable, low-latency access to TSX, TSXV, Alpha, and MX trading engines and market data feeds, as well as access to other capital market clients, financial content providers, and technology providers.

### Strategy

- Go to market with new innovation in product pricing and packaging
- Provide a digital platform for TMX Group proprietary content and complete product gaps for all core TMX Group content
- Expand our suite of multi-asset class, real time and historical analytics using proprietary and third party data
- Capture the global addressable market for TMX Group content
- Shift to a more client centric model for managing data entitlements and administration

### Trayport

Trayport is the primary connectivity network and data and analytics platform for the European wholesale energy markets. Trayport's solutions provide price discovery, trade execution, post-trade transparency, and post-trade straight through processing.

[15] The S&P/TSX indices are a product of S&P Dow Jones Indices LLC ("SPDJI") and TSX Inc. ("TSX"). Standard & Poor's® and S&P® are registered trademarks of Standard & Poor's Financial Services LLC ("S&P"); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC and TSX® is a registered trademark of TSX.

### *Strategy*

We intend to focus on capitalizing on four macro themes in the global energy markets that present growth opportunities in both new markets and in new services to existing clients:

- Leverage increasing demand for data and analytics, and provide a new analytic interface and new applications giving clients the ability to mine critical data sets
- Provide enhanced execution, data and analytics to both new and existing clients globally who need to access developing gas markets. Trayport clients will have one of the most complete views and trading access to the rapidly growing global gas market
- Leverage new technologies to drive automation and efficiency as business processes become digitized. This will enable Trayport to deliver increased value along the full trade lifecycle by increasing data and analytics tools available for OTC markets and facilitating broker expansion into new asset classes and geographies
- The rise of renewable energy sources is having an increasing impact on energy generation and trading. Trayport will help clients meet the increasing demand in spot power and gas markets with new trading tools

### *Revenue Description*

### *TMX Datalinx*

Subscribers generally pay fixed monthly rates for access to real-time streaming data, which differ depending on the depth of information accessed. In addition to streaming data, many individual investors consume real-time quote data, for which we charge on a per quote basis. We charge market data vendors and direct feed clients a fixed monthly fee for access to data feeds.

Real-time market data revenue is recognized based on usage as reported by customers and vendors, less a provision for sales allowances from the same customers. Other Global Solutions, Insights and Analytics revenue is recognized when the services are provided.

Generally, we sell historical data products for a fixed amount per product accessed. Fees vary depending on the type of end use.

### *Co-location Services*

Subscribers to TMX Group's co-location services, pay a fixed monthly fee depending on the number of cabinets and other related services they receive. Co-location services are normally contracted for a period of one to five years.

### *Trayport*

Trayport subscribers pay a monthly rate for access to the platform. While some customers are on multi-year contracts, the average term is about one year.

In 2018, approximately 49% of our GSIA (excluding Trayport) revenue was billed in U.S. dollars, and approximately 94% of our Trayport revenue was billed in British Sterling. We do not currently hedge this revenue and therefore it is subject to foreign exchange fluctuations. (For details, see **Financial Risk Management - Market Risk - *Foreign Currency Risk*.**)

## RESULTS OF OPERATIONS

### Non-IFRS Financial Measures

Adjusted earnings per share, adjusted diluted earnings per share, adjusted earnings per share from continuing operations, and adjusted diluted earnings per share from continuing operations are non-IFRS measures and do not have standardized meanings prescribed by IFRS and are, therefore, unlikely to be comparable to similar measures presented by other companies. We present adjusted earnings per share, adjusted diluted earnings per share, adjusted earnings per share from continuing operations, and adjusted diluted earnings per share from continuing operations to indicate ongoing financial performance from period to period, exclusive of a number of adjustments. These adjustments include amortization of intangibles related to acquisitions, non-cash impairment charges (including product write-off in 2017), increase in deferred income tax assets resulting from capital loss carryback, write-off of deferred income tax assets, transaction related costs (including acquisition and finance costs), net income tax recovery on gain on sale of Natural Gas Exchange Inc. (NGX), gain on sale of Contigo, gain on sale of interest in TMX FTSE, gain on reduction in our shareholding in CanDeal, commodity tax provision, gain on FX forward, gain on sale of NGX and Shorcan Energy Brokers Inc. (Shorcan Energy), and change in net deferred income tax assets/liabilities resulting from change to B.C. and U.S. corporate income tax rates Management uses these measures, and excludes certain items, because it believes doing so results in a more effective analysis of underlying operating and financial performance, including, in some cases, our ability to generate cash. Excluding these items also enables comparability across periods. The exclusion of certain items does not imply that they are non-recurring or not useful to investors.

### Sale of NGX and Shorcan Energy - discontinued operations

On December 14, 2017, we completed the sale of NGX and Shorcan Energy. TMX Group has classified the sale of NGX and Shorcan Energy as discontinued operations. Prior to the sale, the operations of NGX and Shorcan Energy entirely comprised of the Energy Trading and Clearing operating segment and a small portion of the Global Solutions, Insights and Analytics operating segment.

The classification of discontinued operations occurred at December 14, 2017 which is the date of disposal of the operations. Accordingly, TMX Group has presented the comparative consolidated income statements to show the discontinued operations, including the gain on disposition, separately from continuing operations.

## Year ended December 31, 2018 Compared with Year ended December 31, 2017

The information below reflects the financial statements of TMX Group for the year ended December 31, 2018 compared with the year ended December 31, 2017. Certain comparative information has been reclassified in order to conform with the financial presentation adopted in the current year.

| (in millions of dollars, except per share amounts) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ increase/ (decrease)** | **% increase/ (decrease)** |
|---|---|---|---|---|
| Revenue | **$817.1** | $668.9 | $148.2 | 22% |
| Operating expenses | **448.1** | 356.3 | 91.8 | 26% |
| Income from operations before acquisition costs | **369.0** | 312.6 | 56.4 | 18% |
| Acquisition costs | **—** | 13.8 | (13.8) | (100)% |
| Income from operations | **369.0** | 298.8 | 70.2 | 23% |
| Income from discontinued operations, net of tax | **0.0** | 176.8 | (176.8) | (100%) |
| Net income | **286.0** | 368.0 | (82.0) | (22%) |
| Earnings per share - from continuing operations[16] | | | | |
| Basic | **5.14** | 3.46 | 1.68 | 49% |
| Diluted | **5.10** | 3.43 | 1.67 | 49% |
| Earnings per share[17] | | | | |
| Basic | **5.14** | 6.66 | (1.52) | (23%) |
| Diluted | **5.10** | 6.60 | (1.50) | (23%) |
| Adjusted Earnings per share from continuing operations | | | | |
| Basic | **5.20** | 4.30 | 0.90 | 21% |
| Diluted | **5.16** | 4.26 | 0.90 | 21% |
| Adjusted Earnings per share[18] | | | | |
| Basic | **5.20** | 4.69 | 0.51 | 11% |
| Diluted | **5.16** | 4.65 | 0.51 | 11% |
| Cash flows from operating activities | **347.1** | 276.6 | 70.5 | 25% |

## Net income

Net income in the year ended December 31, 2018 was $286.0 million, or $5.14 per common share on a basic basis and $5.10 per common share on a diluted basis, compared with a net income of $368.0 million, or $6.66 per common share on a basic and $6.60 on a diluted basis, for the year ended December 31, 2017. Net income for 2017 included a gain of $157.8 million from the sale of NGX and Shorcan Energy as well as a gain on FX forwards relating to the Trayport acquisition. In addition, net income for 2017 included income of $19.1 million, net of tax, from January 1, 2017 to December 14, 2017

[16] Earnings per share from continuing operations is based on income from continuing operations, net of tax.

[17] Earnings per share information is based on net income.

[18] See discussion under the heading *Non-IFRS Financial Measures*.

for NGX and Shorcan Energy. However, net income for 2017 was reduced by acquisition costs on the purchase of Trayport and non-cash income tax adjustments relating to a change in the B.C. and U.S. corporate income tax rates. Net income for 2018 included a before and after tax gain on the sale of TMX FTSE of $26.8 million, an after tax gain of $0.9 million on the reduction in our shareholding in CanDeal, and an after tax gain of $2.3 million on the sale of Contigo. In 2018, there was also a net income tax recovery on the gain on sale of NGX, which increased net income.

From an operational perspective, the net decrease in net income described above was partially offset by the impact from higher revenues across each operating segment of our business, which included $111.7 million related to Trayport (acquired December 14, 2017). The increase was partially offset by higher operating expenses, including $70.5 million related to Trayport. The overall decrease in basic and diluted earnings per share was also due to an increase in the number of weighted-average common shares outstanding in 2018 compared with 2017 and higher net finance costs.

## Adjusted Earnings per Share[19] and Adjusted Earnings per Share from continuing operations[20] Reconciliation for Year ended December 31, 2018 and Year ended December 31, 2017

| | **Year ended December 31, 2018** | | Year ended December 31, 2017 | |
|---|---|---|---|---|
| (unaudited) | **Basic** | **Diluted** | Basic | Diluted |
| Earnings per share from continuing operations[21] | **$5.14** | **$5.10** | $3.46 | $3.43 |
| Adjustments related to: | | | | |
| Amortization of intangibles related to acquisitions | **0.68** | **0.68** | 0.45 | 0.44 |
| Non-cash impairment charges (including product write-off in 2017)[22] | **—** | **—** | 0.14 | 0.14 |
| Increase in deferred income tax assets resulting from capital loss carryback[23] | **—** | **—** | (0.04) | (0.04) |
| Write-off of deferred income tax assets[24] | **—** | **—** | 0.05 | 0.05 |
| Transaction related costs (including acquisition and finance costs)[25] | **—** | **—** | 0.25 | 0.25 |
| Net income tax recovery on gain on sale of NGX | **(0.18)** | **(0.18)** | — | — |
| Gain on sale of Contigo | **(0.04)** | **(0.04)** | — | — |
| Gain on sale of interest in TMX FTSE | **(0.48)** | **(0.48)** | — | — |
| Gain on reduction in our shareholding in CanDeal | **(0.02)** | **(0.02)** | — | — |
| Commodity tax provision | **0.10** | **0.10** | — | — |
| Gain on FX Forward[26] | **—** | **—** | (0.16) | (0.16) |
| Change in net deferred income tax assets/liabilities resulting from change to B.C. and U.S. corporate income tax rates | **—** | **—** | 0.15 | 0.15 |
| Total adjustments from continuing operations | **$0.06** | **$0.06** | $0.84 | $0.83 |
| Adjusted earnings per share from continuing operations[27] | **$5.20** | **$5.16** | $4.30 | $4.26 |
| Earnings per share | **$5.14** | **$5.10** | $6.66 | $6.60 |
| Total adjustments from continuing operations | **0.06** | **0.06** | 0.84 | 0.83 |
| Amortization of intangibles related to acquisitions (discontinued operations) | **—** | **—** | 0.04 | 0.04 |
| Gain on sale of NGX and Shorcan Energy (discontinued operations) | **—** | **—** | (2.85) | (2.82) |
| Adjusted earnings per share[28] | **$5.20** | **$5.16** | $4.69 | $4.65 |
| Weighted average number of common shares outstanding | **55,635,123** | **56,093,543** | 55,285,668 | 55,730,437 |

[19] See discussion under the heading Non-IFRS Financial Measures.

[20] See discussion under the heading Non-IFRS Financial Measures.

[21] Earnings per share from continuing operations is based on income from continuing operations, net of tax.

[22] Related to TMX Atrium impairment (9 cents), Agriclear impairment (3 cents), and product write-off (2 cents) in 2017.

[23] Related to sale of Razor Risk.

[24] Related to TMX Atrium Wireless.

[25] Includes costs related to the acquisition of Trayport in 2017 (24 cents), including finance costs (1 cent).

[26] Related to the acquisition of Trayport in 2017.

[27] See discussion under the heading Non-IFRS Financial Measures.

[28] See discussion under the heading Non-IFRS Financial Measures.

Adjusted diluted earnings per share from continuing operations increased by 21% from $4.26 in the year ended December 31, 2017 to $5.16 in the year ended December 31, 2018. The increase in adjusted diluted earnings per share from continuing operations reflected higher revenue which included $111.7 million related to Trayport (acquired December 14, 2017). The increase in revenue was partially offset by higher operating expenses which included $70.5 million related to Trayport. The increase in adjusted diluted earnings per share from continuing operations was partially offset by the impact from an increase in the number of weighted-average common shares outstanding in the year ended December 31, 2018 compared with the year ended December 31, 2017, and higher net finance costs.

## Revenue

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ increase** | **% increase** |
|---|---|---|---|---|
| Capital Formation | $198.7 | $188.7 | $10.0 | 5% |
| Equities and Fixed Income Trading and Clearing | 194.6 | 182.1 | 12.5 | 7% |
| Derivatives Trading and Clearing | 129.9 | 114.8 | 15.1 | 13% |
| Global Solutions, Insights and Analytics | 289.3 | 186.5 | 102.8 | 55% |
| Other | 4.6 | (3.2) | 7.8 | 244% |
| | **$817.1** | $668.9 | $148.2 | 22% |

Revenue was $817.1 million in the year ended December 31, 2018, up $148.2 million or 22% compared with $668.9 million in the year ended December 31, 2017. There was an increase in *Global Solutions, Insights and Analytics* revenue reflecting approximately $111.7 million in revenue from Trayport in 2018 compared with approximately $4.5 million in 2017 (acquired on December 14, 2017), partially offset by $8.6 million decrease in revenue from TMX Atrium (sold on April 30, 2017). With increased revenue in all operating segments, our organic revenue growth in 2018 was 8% (based on revenue of $817.1 million less Trayport revenue of $111.7 million and TMX FTSE revenue of $1.0 million for 2018, and revenue of $668.9 million for 2017 less Trayport revenue of approximately $4.5 million for Q4/17, TMX Atrium revenue of $8.6 million to April 30, 2017 and TMX FTSE revenue of $2.3 million).

## Capital Formation

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ increase** | **% increase** |
|---|---|---|---|---|
| Initial listing fees | **$13.4** | $12.5 | $0.9 | 7% |
| Additional listing fees | **84.6** | 82.7 | 1.9 | 2% |
| Sustaining listing fees | **71.0** | 70.3 | 0.7 | 1% |
| Other issuer services | **29.7** | 23.2 | 6.5 | 28% |
| | **$198.7** | $188.7 | $10.0 | 5% |

- The increase in *initial listing fees* revenue was attributable to an increase in *initial listing fees* on TSX and TSXV related to recognizing revenue received in prior periods. Effective January 1, 2018, we changed our method for recognizing *initial listing fee* revenue in accordance with IFRS 15, *Revenue from Contracts with Customers* (see **Changes in accounting policies**). In the year ended December 31, 2018, we recognized $6.9 million of total *initial listing fees* received of $12.0 million with the balance of $5.1 million to be recognized over the remaining 12-month deferral period. Since the cumulative impact of this change was recorded effective January 1, 2018, we also recognized *initial listing fees* received in 2017 of $6.5 million during the year ended December 31, 2018. Under IFRS 15, total *initial listing fees* of $13.4 million was approximately $1.4 million higher than would have been the case if *initial listing fees* were recognized when the listing occurred.

- The increase in *initial listing fee* revenue was also due to an increase in *initial listing fees* on TSXV in 2018 reflecting an increase in new issuers listed. These increases in *initial listing fee* revenue were partially offset by the impact from a decrease in *initial listing fees* on TSX in 2018 reflecting a decline in both the number of initial public offerings (IPOs) and in initial public offering financing dollars raised.

- Based on *initial listing fees* billed in 2018, the following amounts have been deferred to be recognized in Q1/19, Q2/19, Q3/19 and Q4/19: $2.3 million, $1.7 million, $0.9 million, and $0.2 million respectively. Total *initial listing fees* revenue for future quarters will also depend on listing activity in those quarters.

- *Additional listing fees* in the year ended December 31, 2018 increased from the year ended December 31, 2017 reflecting the impact of a higher maximum additional listing fee on TSX somewhat offset by the impact of a 10% decrease in the number of transactions billed on TSX. There was also a decrease in *additional listing fees* on TSXV where there was a decrease in the number of financings in the year ended December 31, 2018 compared with the year ended December 31, 2017.

- Issuers listed on TSX and TSXV pay annual sustaining listing fees primarily based on their market capitalization at the end of the prior calendar year, subject to minimum and maximum fees. There was an increase in *sustaining listing fees* on both TSX and TSXV due to the increase in the market capitalization of issuers at December 31, 2017 compared with December 31, 2016; however, the increase was largely offset by the impact from certain price reductions for issuers listed on TSX.

- *Other issuer services* revenue in the year ended December 31, 2018 was higher compared to the year ended December 31, 2017 reflecting higher revenue from TSX Trust for transfer agent services and margin income.

## Equities and Fixed Income Trading and Clearing

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ increase** | **% increase** |
|---|---|---|---|---|
| Equities and fixed income trading | **$108.8** | $104.0 | $4.8 | 5% |
| Equities and fixed Income clearing, settlement, depository and other services (CDS) | **85.8** | 78.1 | 7.7 | 10% |
| | **$194.6** | $182.1 | $12.5 | 7% |

- There was a 5% increase in *Equities and fixed income trading* revenue in the year ended December 31, 2018 compared with the year ended December 31, 2017 driven by higher volumes on TSX and Alpha which were somewhat offset by lower volumes on TSXV. There was also higher *fixed income trading* revenue due to increased activity in Government of Canada Bonds and swaps.

- The overall volume of securities traded on our equities marketplaces increased by 6% (150.0 billion securities in the year ended December 31, 2018 versus 142.0 billion securities in the year ended December 31, 2017). Volumes on TSX increased by 8% and volumes on Alpha increased by 20% while volumes on TSXV decreased by 1% from the year ended December 31, 2017 to the year ended December 31, 2018. The increase related to overall higher volumes was somewhat offset by the impact from lower pricing on TSX market on close auction.

- Excluding intentional crosses, in all listed issues in Canada, our combined domestic equities trading market share was 58% in the year ended December 31, 2018, down from 63% in the year ended December 31, 2017[29]. The decline in market share reflects an increase in trading volume on other markets of issues not listed or traded on TSX or TSXV. We only trade securities that are listed on TSX or TSXV.

- Excluding intentional crosses, for TSX and TSXV listed issues, our combined domestic equities trading market share was approximately 67% in the year ended December 31, 2018, down 2% from approximately 69% in the same period last year.

- CDS revenue increased by 10% from the year ended December 31, 2017 to the year ended December 31, 2018 reflecting organic growth in custody revenues, market volatility resulting in higher clearing and settlement fee revenue, revisions to the fee schedule for issuer services implemented on March 1, 2017, increased account transfer online notification revenue and higher interest on clearing funds.

### Derivatives Trading and Clearing

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ increase** | **% increase** |
|---|---|---|---|---|
| | **$129.9** | $114.8 | $15.1 | 13% |

- The increase in *Derivatives Trading and Clearing* revenue reflected higher volumes from MX and CDCC. The revenue increase in MX and CDCC were in-line with volumes which increased by 17% on MX (112.2 million contracts traded in the year ended December 31, 2018 versus 96.3 million contracts traded in the year ended December 31, 2017). This increase was partially offset by lower revenue from BOX.

### Global Solutions, Insights and Analytics

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ increase/ (decrease)** | **% increase/ (decrease)** |
|---|---|---|---|---|
| GSIA (excluding Trayport) | **$177.6** | $182.0 | ($4.4) | (2)% |
| Trayport | **$111.7** | $4.5 | $107.2 | n/a |
| | **$289.3** | $186.5 | $102.8 | 55% |

- The increase in *GSIA* revenue in the year ended December 31, 2018 compared with the same period last year reflected the inclusion of revenue from Trayport (acquired December 14, 2017) of $111.7 million, an increase in subscription and enterprise agreement revenue, higher revenue from usage based quotes and feeds as well as increased co-location revenue.

[29] Source: IIROC.

- These increases were partially offset by a decline of $8.6 million in revenue from TMX Atrium (sold on April 30, 2017) and lower revenue recoveries related to under-reported usage of real-time quotes in prior periods. In addition, there was lower benchmarks and indices revenue driven by the sale of our interest in TMX FTSE in Q2/18.

*GSIA (excluding Trayport)*

- Revenue from TMX Datalinx and Co-location Services, excluding TMX FTSE and TMX Atrium, increased by 3% in the year ended December 31, 2018 compared with the year ended December 31, 2017.
- The average number of professional market data subscriptions for TSX and TSXV products decreased slightly from the year ended December 31, 2017 to the year ended December 31, 2018 (101,668 professional market data subscriptions in the year ended December 31, 2018 compared with 102,018 in the year ended December 31, 2017.)
- The average number of MX professional market data subscriptions increased by 4% from the year ended December 31, 2017 to the year ended December 31, 2018 (18,779 MX professional market data subscriptions in the year ended December 31, 2018 compared with 18,003 in the year ended December 31, 2017).

*Trayport (acquired December 14, 2017)*

The following table summarizes the average number of Trayport subscribers over the last eight quarters:

| | Q4/18 | Q3/18 | Q2/18 | Q1/18 | Q4/17 | Q3/17 | Q2/17 | Q1/17 |
|---|---|---|---|---|---|---|---|---|
| Trader Subscribers | 4,684 | 4,370 | 4,353 | 4,230 | 4,079 | 4,037 | 4,030 | 4,002 |
| Total Subscribers | 21,485 | 20,623 | 20,312 | 20,213 | 20,000 | 19,927 | 20,108 | 19,890 |
| Revenue (in millions of GBP) | £16.8 | £16.5 | £16.0 | £15.4 | £14.9 | £15.2 | £15.1 | £14.7 |

Total Subscribers refers to all chargeable licenses of core Trayport products in core customer segments including traders, brokers and exchanges. Trader Subscribers are a subset of Total Subscribers. Trader Subscribers revenue represents over 50% of total Trayport revenue.

- Revenue from Trayport's core subscriber business was £61.6 million in the year ended December 31, 2018, up 10% over the same period last year. Revenue from Contigo (sold on November 30, 2018); the ancillary non-subscriber based risk application business of Trayport; was £3.1 million in the year ended December 31, 2018.

## Other

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ increase** | **% increase** |
|---|---|---|---|---|
| | $4.6 | $(3.2) | $7.8 | 244% |

- The increase in *Other* revenue was primarily due to recognizing net foreign exchange gains on net monetary assets in the year ended December 31, 2018 compared with net foreign exchange losses in the year ended December 31, 2017.

## Operating expenses

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ increase** | **% increase** |
|---|---|---|---|---|
| Compensation and benefits | **$220.1** | $171.4 | $48.7 | 28% |
| Information and trading systems | **52.4** | 51.2 | 1.2 | 2% |
| Selling, general and administration | **105.3** | 82.1 | 23.2 | 28% |
| Depreciation and amortization | **70.3** | 51.6 | 18.7 | 36% |
| | **$448.1** | $356.3 | $91.8 | 26% |

Operating expenses in the year ended December 31, 2018 were $448.1 million, up $91.8 million or 26%, from $356.3 million in the year ended December 31, 2017. There were increased costs related to Trayport (acquired December 14, 2017) of $70.5 million, a commodity tax provision of $7.6 million (10 cents per basic and diluted share), an increase in severance costs of approximately $7.0 million related to organizational changes, higher employee performance incentive plan costs of $8.5 million, a lease termination payment of $4.5 million (6 cents per basic and diluted share) and an increase in project costs, including costs related to the modernization of our clearing houses, CDS and CDCC. The increases were offset partially by reduced costs related to TMX Atrium (sold on April 30, 2017) of approximately $9.4 million.

### Compensation and benefits

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ increase** | **% increase** |
|---|---|---|---|---|
| | **$220.1** | $171.4 | $48.7 | 28% |

- *Compensation and benefits* costs increased in the year ended December 31, 2018 compared with the year ended December 31, 2017 reflecting higher costs related to inclusion of Trayport (acquired December 14, 2017) of approximately $35.9 million, an increase of approximately $7.0 million in severance costs related to organizational changes, and higher employee performance incentive plan costs of $8.5 million. These increases were partially offset by reduced costs of $1.7 million related to TMX Atrium (sold April 30, 2017).
- There were 1,208 TMX Group employees at December 31, 2018 versus 1,238 employees at December 31, 2017 reflecting a decrease from the sale of Contigo (sold November 30, 2018) which employed approximately 40 people. The decrease was partially offset by an increase in headcount attributable to investing in the various growth areas of our business.

### Information and trading systems

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ increase** | **% increase** |
|---|---|---|---|---|
| | **$52.4** | $51.2 | $1.2 | 2% |

- *Information and trading systems* expenses increased by $1.2 million in the year ended December 31, 2018 compared with the year ended December 31, 2017 reflecting increased costs related to Trayport of $4.8 million and an increase in project costs, including costs related to the modernization of our clearing houses, CDS and CDCC. The increase was somewhat offset by costs in 2017 related to TMX Atrium of $5.8 million (sold on April 30, 2017) and a write-off of costs related to discontinued products.

### Selling, general and administration

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ increase** | **% increase** |
|---|---|---|---|---|
| | **$105.3** | $82.1 | $23.2 | 28% |

- *Selling, general and administration* expenses increased by $23.2 million in the year ended December 31, 2018 compared with the year ended December 31, 2017 partially due to recording a commodity tax provision of $7.6 million (10 cents per basic and diluted share) and a lease termination payment of $4.5 million (6 cents per basic and diluted share). In addition, s*elling, general and administration* expenses increased due to the inclusion of Trayport costs of $8.1 million, increased project costs (including those related to our initiative to modernize clearing platforms), and higher fees related to liquidity facilities.
- The increases in s*elling, general and administration* expenses were partially offset by reduced costs related to TMX Atrium of $0.8 million as well as lower marketing costs and occupancy costs related to our office consolidation initiative.

### Depreciation and amortization

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ increase** | **% increase** |
|---|---|---|---|---|
| | **$70.3** | $51.6 | $18.7 | 36% |

- Higher *Depreciation and amortization* costs reflected increased amortization related to Trayport of $21.7 million, partially offset by reductions in amortization related to Quantum XA of $3.4 million and TMX Atrium of $1.1 million.
- The *Depreciation and amortization* costs in the year ended December 31, 2018 of $70.3 million included $47.5 million related to amortization of intangibles assets related to acquisitions (68 cents per basic and 68 cents per diluted share).
- The *Depreciation and amortization* costs in the year ended December 31, 2017 of $51.6 million included $31.3 million related to amortization of intangibles related to acquisitions (45 cents per basic and 44 cents per diluted share).

### Acquisition costs

| | **Year Ended December 31, 2018** | | Year Ended December 31, 2017 | |
|---|---|---|---|---|
| (in millions of dollars) | **Pre-tax Amount** | **Basic and Diluted Earnings per Share Impact** | Pre-tax Amount | Basic and Diluted Earnings per Share Impact |
| | **$—** | **$—** | $13.8 | $0.25 |

- The decrease in acquisition costs relate to the acquisition of Trayport that closed on December 14, 2017 (See **INITIATIVES AND ACCOMPLISHMENTS -Trayport**).

## Additional Information

### Income from discontinued operations

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ (decrease)** | **% (decrease)** |
|---|---|---|---|---|
| | **$—** | $176.8 | $(176.8) | (100)% |

- In 2017, we completed the sale of NGX and Shorcan Energy at a combined amount of $379.2 million as partial consideration for the related acquisition of Trayport. We disposed net assets of $174.0 million. There was an income tax expense of $45.4 million resulting in an after-tax gain of approximately $157.8 million.
- Income from NGX and Shorcan Energy (both sold on December 14, 2017) was approximately $19.1 million net of tax from January 1, 2017 to December 14, 2017.

### Share of income from equity accounted investees

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ increase** | **% increase** |
|---|---|---|---|---|
| | **$3.0** | $2.9 | $0.1 | 3% |

- In the year ended December 31, 2018 our share of income from equity accounted investees increased by $0.1 million which is primarily attributable to increases in our share of income from BOX, largely offset by decreases in our share of income from TMX FTSE (sold on April 12, 2018).

### Impairment charges

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ (decrease)** | **% (decrease)** |
|---|---|---|---|---|
| | **$—** | $6.5 | $(6.5) | (100)% |

- In Q1/17 we determined that the fair value of TMX Atrium was below its carrying value, resulting in impairment charges relating to the write-down of goodwill of $4.8 million.
- In Q4/17 we determined that the fair value of Agriclear was below its carrying value, resulting in impairment charges of $1.7 million.

### Other income

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ increase** | **% increase** |
|---|---|---|---|---|
| | **$30.7** | $— | $30.7 | n/a |

- In Q2/18, we completed the sale of our entire 24.2% interest in TMX FTSE. The proceeds of $70.4 million resulted in a gain on sale of approximately $26.8 million before income tax (48 cents per basic and diluted share).
- In Q4/18, we completed the sale of Contigo which resulted in a gain on sale of approximately $2.3 million before income tax (4 cents per basic and diluted share).

- In Q4/18, we reduced our shareholding in CanDeal from 47.1% to 14.3%. As a result of this transaction, we received proceeds of $12.8 million which includes cash consideration of $7.8 million and an unsecured promissory note of $5.0 million and recognized a gain of $1.1 million before income tax (2 cents per basic and diluted share).

## Net finance costs

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ increase** | **% increase** |
|---|---|---|---|---|
| | **$40.4** | $15.0 | $25.4 | 169% |

- The increase in net finance costs from the year ended December 31, 2017 to the year ended December 31, 2018 reflected higher interest expense due to increased debt levels following the Trayport acquisition. In the year ended December 31, 2018, we also had a higher average interest rate on our debt driven by the interest rates on our long term Series D Debentures and Series E Debentures compared with that on Commercial Paper.

## Income tax expense and effective tax rate

| **Income Tax Expense** (in millions of dollars) | | **Effective Tax Rate** (%) | |
|---|---|---|---|
| **Year ended December 31, 2018** | Year ended December 31, 2017 | **Year ended December 31, 2018** | Year ended December 31, 2017 |
| **$76.3** | $89.0 | **21%** | 32% |

- Excluding adjustments, primarily related to the items noted below, the effective tax rate would have been approximately 26% for the year ended December 31, 2018, and 27% for the year ended December 31, 2017.

**2018**

- In Q4/18, we realized a capital loss on the liquidation of a foreign wholly-owned subsidiary. The capital loss was carried back to reduce the income tax on the sale of NGX in 2017, resulting in a tax benefit of approximately $2.0 million.
- In Q2/18, we realized a capital loss on the wind up of a limited partnership, resulting in a tax benefit of approximately $11.8 million. A portion of this capital loss was utilized to eliminate the income tax otherwise payable in the amount of $3.8 million on the sale of our interest in TMX FTSE. In addition, we carried back the balance of this net capital loss to reduce income tax of $8.0 million on the sale of NGX in 2017. Additionally, the non-taxable portion of the capital gain on the sale of our interest in TMX FTSE resulted in a tax benefit of approximately $3.3 million.
- As a result, there was a decrease in income tax expense, which reduced our effective tax rate for the year ended December 31, 2018.

**2017**

- In Q4/17, there were non-cash income tax adjustments related to changes in B.C. and U.S. corporate income tax rates. These changes increased net deferred income tax liabilities and reduced net deferred income tax assets, respectively, resulting in a corresponding non-cash net increase in deferred income tax expense of approximately $8.3 million.
- In Q4/17, we incurred acquisition costs related to Trayport, and non-cash impairment charges related to Agriclear that are non-deductible for tax purposes, which increased our effective tax rate in Q4/17. The impact was somewhat offset by the gain on FX forwards being taxed at 50% of our statutory rate.
- In Q1/17, we incurred non-cash impairment charges of $4.8 million related to TMX Atrium. We also wrote-down $2.9 million of deferred tax assets relating to TMX Atrium Wireless. These items increased our effective tax rate and income tax expense in Q1/17.

## Total equity

| (in millions of dollars) | **As at December 31, 2018** | As at December 31, 2017 | **$ increase** |
|---|---|---|---|
| Total equity | **$3,381.8** | $3,182.8 | $199.0 |

- At December 31, 2018, there were 55,790,548 common shares issued and outstanding and 1,743,134 options outstanding under the share option plan.
- At February 8, 2019, there were 55,790,548 common shares issued and outstanding and 1,739,392 options outstanding under the share option plan.
- The increase in *Total equity* is primarily attributable to the inclusion of net income of $286.0 million, and proceeds from exercised share options of $20.1 million, less dividend payments to shareholders of TMX Group of $124.7 million and foreign currency translation differences of $21.3 million.

## Segments

The following information reflects TMX Group's segment results for the year ended December 31, 2018 compared with the year ended December 31, 2017.

***Year ended December 31, 2018***

| (in millions of dollars) | Capital Formation | Equities and Fixed Income Trading & Clearing | Derivatives Trading & Clearing | Global Solutions, Insights & Analytics | Other | Total |
|---|---|---|---|---|---|---|
| Revenue from external customers | $ 198.7 | $ 194.6 | $ 129.9 | $ 289.3 | $ 4.6 | $ 817.1 |
| Inter-segment revenue | — | 1.6 | — | 0.5 | (2.1) | — |
| Total revenue | 198.7 | 196.2 | 129.9 | 289.8 | 2.5 | 817.1 |
| Income (loss) from operations | 111.3 | 83.5 | 57.3 | 173.4 | (56.5) | 369.0 |

***Year ended December 31, 2017***

| (in millions of dollars) | Capital Formation | Equities and Fixed Income Trading & Clearing | Derivatives Trading & Clearing | Global Solutions, Insights & Analytics | Other | Total |
|---|---|---|---|---|---|---|
| Revenue from external customers | $ 188.7 | $ 182.1 | $ 114.8 | $ 186.5 | $ (3.2) | $ 668.9 |
| Inter-segment revenue | — | 1.5 | — | 0.6 | (2.1) | — |
| Total revenue | 188.7 | 183.6 | 114.8 | 187.1 | (5.3) | 668.9 |
| Income (loss) from operations before acquisition costs | 107.0 | 84.0 | 55.0 | 117.7 | (51.1) | 312.6 |

***Income (loss) from operations before acquisition costs***

The increase in *Income from operations* from *Capital Formation* reflected higher revenue from all fee types as well as higher revenue from TSX Trust in the year ended December 31, 2018 compared with the same period last year. This was partially offset by higher operating expenses in the year ended December 31, 2018 compared with the same period last year.

The decrease in *income from operations* from *Equities and Fixed Income Trading and Clearing* reflected higher operating expenses in the year ended December 31, 2018 compared with the same period last year. There was higher severance costs related to organizational changes and increased project spend related to the modernization of our clearing platforms. This increase was partially offset by higher revenue primarily from *CDS*.

*Income from operations* from *Derivatives Trading and Clearing* increased reflecting higher revenue from MX and CDCC The revenue increase in MX and CDCC were in-line with volumes which increased by 17% on MX. This increase was partially offset by lower revenue from sales to BOX. This increase was partially offset by higher operating expenses in the year ended December 31, 2018 compared with the same period last year mainly related to a lease termination payment.

The increase in *Income from operations* from *Global Solutions, Insights and Analytics* largely reflects the positive impacts from the inclusion of Trayport and the sale of TMX Atrium. In the same period last year, TMX Atrium earned approximately $8.6 million of revenue, and incurred approximately $9.5 million in operating expenses.

*Other* includes certain revenue as well as corporate and other costs, not allocated to the operating segments. Revenue related to foreign exchange gains and losses and other services are presented in the *Other* segment. Costs and expenses related to the amortization of purchased intangibles, along with certain consolidation and elimination adjustments, are also presented in *Other*. The higher *loss from operations* for the *Other* segment reflected an increase in corporate costs largely related to the amortization of Trayport intangibles. This increase was partially offset by higher *Other* revenue primarily due to recognizing net foreign exchange gains on net monetary assets in the year ended December 31, 2018 compared with foreign exchanges losses in the same period last year.

## Geographical Information

The following information provides revenue by geography for the years ended December 31, 2018 and December 31, 2017.

***2018***

| (in millions of dollars) | **Canada** | **U.S.** | **U.K.** | **Other** | **TMX Group** |
|---|---|---|---|---|---|
| Revenue | $550.2 | $115.8 | $85.0 | $66.1 | $817.1 |

***2017***

| (in millions of dollars) | **Canada** | **U.S.** | **U.K.** | **Other** | **TMX Group** |
|---|---|---|---|---|---|
| Revenue | $511.0 | $118.2 | $16.7 | $23.0 | $668.9 |

Revenue is allocated based on the country to which customer invoices are addressed.

In 2018, revenue originating from outside of Canada increased by $109.0 million with revenue originating from the U.S. decreasing by $2.4 million, revenue originating from the U.K. increasing by $68.3 million and revenue from Other regions increasing by $43.1 million. The increases originating from the U.K. and Other regions were driven by the acquisition of Trayport (acquired December 14, 2017) where the majority of revenue originates from the U.K and other countries outside of Canada. This increase was partially offset by the sale of TMX Atrium (sold April 30, 2017) where revenue was predominantly outside of Canada.

## LIQUIDITY AND CAPITAL RESOURCES

### Summary of Cash Flows

***Year ended December 31, 2018 compared with Year ended December 31, 2017***

| (in millions of dollars) | **Year ended December 31, 2018** | Year ended December 31, 2017 | **$ increase / (decrease) in cash** |
|---|---|---|---|
| Cash flows from operating activities | **$347.1** | $276.6 | $70.5 |
| Cash flows from/(used in) financing activities | **(425.1)** | 270.4 | (695.5) |
| Cash flows from/(used in) investing activities | **37.4** | (612.0) | 649.4 |

- In the year ended December 31, 2018, *Cash flows from operating activities* increased reflecting higher income from operations (excluding depreciation and amortization) compared with the year ended December 31, 2017 as well as an increase in cash related to trade and other payables. The increases in cash were partially offset by a decrease in cash related to other assets and liabilities as well as an increase in income taxes paid.
- In the year ended December 31, 2018, *Cash flows used in financing activities* were higher than in the year ended December 31, 2017 when we generated cash from financing activities. In 2018, we used $400.0 million to repay our Series A Debentures which was partially offset by receiving $200.0 million in cash from the issuance of our Series E Debentures. In 2017, we received $300.0 million in cash following the issuance of our Series D Debentures. In addition to this net decrease in cash of $500.0 million, there was also a net decrease in cash related to the redemption of Commercial Paper of over $160.0 million. There were also decreases in cash due to an increase in interest paid as well as an increase in dividends paid to equity holders.
- In the year ended December 31, 2018, *Cash flows from investing activities* were higher than in the year ended December 31, 2017 when we used cash in investing activities. During 2017, there was a cash outflow of $613.5 million related to the acquisition of Trayport. In 2018, the proceeds that we received from the sale of investments and businesses (TMX FTSE, CanDeal and Contigo) were almost $60.0 million higher than the proceeds we received in 2017 from the sale of TMX Atrium. The increase in cash was somewhat offset by an increase in additions to premises and equipment and intangible assets in 2018 compared with 2017.

### Summary of Cash Position and Other Matters[30]

### Cash, Cash Equivalents and Marketable Securities

| (in millions of dollars) | **As at December 31, 2018** | As at December 31, 2017 | **$ increase** |
|---|---|---|---|
| | **$230.7** | $225.1 | $5.6 |

We had $230.7 million of cash, cash equivalents and marketable securities at December 31, 2018. There was an increase in cash, cash equivalents and marketable securities primarily reflecting cash flows from operating activities of $347.1 million, proceeds from the sale of investments and businesses of $83.9 million, proceeds from exercised options of $20.1 million and proceeds from the issuance of our Series E Debentures of $200.0 million. Offsetting these increases in cash and cash equivalents was a $400.0 million repayment of our Series A Debentures. There was also a net decrease in

[30] The "*Summary of Cash Position and Other Matters*" section above contains certain forward-looking statements. Please refer to *"Caution Regarding Forward-Looking Information"* for a discussion of risks and uncertainties related to such statements.

Commercial Paper of approximately $76.6 million, cash outflows for dividends to TMX Group shareholders of $124.7 million and additions to premises and equipment and intangible assets of $58.8 million. Based on our current business operations and model, we believe that we have sufficient cash resources and access to financing to operate our business, make interest payments, as well as meet our covenants under the trust indentures governing our Debentures and the terms of the Credit Agreement (as defined below) and commercial paper program (Commercial Paper Program) (see **LIQUIDITY AND CAPITAL RESOURCES - Commercial Paper, Debentures, Credit and Liquidity Facilities**), and satisfy the capital maintenance requirements imposed by regulators.

In 2017, we announced the consolidation of our facilities in both Toronto and Montreal. Our office build initiative was substantially complete at the end of Q2/18. Approximately $17.0 million of capital expenditure was spent in 2017, and a further $12.2 million of capital expenditure was spent in the year ended December 31, 2018. The initiative resulted in reductions in operating expenses of approximately $2.5 million on a run rate basis starting in Q3/18. During Q2/18, we recorded charges of $4.5 million related to lease terminations.

We will also have cash outlays related to the modernization our clearing platforms (see - **INITIATIVES AND ACCOMPLISHMENTS - Update on Modernization of Clearing Platforms**)

Debt financing of future investment opportunities could be limited by current and future economic conditions, the covenants in the Credit Agreement and the Debentures, and by capital maintenance requirements imposed by regulators. At December 31, 2018, there was $319.5 million of Commercial Paper outstanding, and the authorized limit under the program was $500.0 million. Our Series A Debentures of $400.0 million came due on October 3, 2018. In June 2018, we pre-funded $200.0 million through our Series E Debentures issuance which was used to reduce our Commercial Paper outstanding in June, 2018. On October 3, 2018, we repaid the Series A Debentures with proceeds from the issuance of Commercial Paper.

## Total Assets

| (in millions of dollars) | **As at December 31, 2018** | As at December 31, 2017 | **$ increase** |
|---|---|---|---|
| | **$31,657.9** | $25,624.8 | $6,033.1 |

- Our consolidated balance sheet as at December 31, 2018 includes outstanding balances on open REPO agreements within *Balances with Participants and Clearing Members*. These balances have equal amounts included within *Total Liabilities*. The increase in *Total Assets* of $6,033.1 million from December 31, 2017 reflected higher balances in CDCC at December 31, 2018 partially offset by lower investments in equity accounted investees (sale of our interest in TMX FTSE on April 12, 2018 and reduction in our shareholding in CanDeal on October 26, 2018).

## Defined Benefits Pension Plan

Based on the most recent actuarial valuations, we estimate a net deficit of approximately $6.6 million of which $1.6 million was funded in 2018. The next required tri-annual valuation for the TMX registered pension plan (RPP) will be as at December 31, 2020.

## Commercial Paper, Debentures, Credit and Liquidity Facilities

### Commercial Paper

| (in millions of dollars) | **As at December 31, 2018** | As at December 31, 2017 | **$ (decrease)** |
|---|---|---|---|
| | **$319.5** | $395.3 | $(75.8) |

TMX Group maintains a Commercial Paper Program to offer potential investors up to $500.0 million (or the equivalent U.S. dollars) of Commercial Paper to be issued in various maturities of no more than one year from the date of issue. The Commercial Paper bears interest rates based on the prevailing market conditions at the time of issuance. The Commercial Paper Program is fully backstopped by the Credit Agreement (as defined below).

The Commercial Paper issued represents an unsecured obligation and ranks equally with all other senior unsecured obligations of TMX Group. The Commercial Paper has been assigned a rating of "R-1 (low)" with a Stable trend by DBRS Limited (DBRS).

There was $319.5 million of Commercial Paper outstanding under the program at December 31, 2018 reflecting a net reduction of approximately $75.8 million from December 31, 2017. Commercial paper is short term in nature, and the average term to maturity from the date of issue was 56.6 days in the year ended December 31, 2018.

### Debentures

As of December 31, 2018, TMX Group has the following Debentures outstanding:

| **Debenture** | **Principal Amount ($ millions)** | **Coupon** | **Maturity Date** | **DBRS Credit Rating** |
|---|---|---|---|---|
| Series B | **250.0** | 4.461% per annum, payable in arrears in equal semi-annual installments (long first coupon) | October 3, 2023 | A (high) |
| Series D | **300.0** | 2.997% per annum, payable in arrears in equal semi-annual installments | December 11, 2024 | A (high) |
| Series E | **200.0** | 3.779% per annum, payable in arrears in equal semi-annual installments | June 5, 2028 | A (high) |

- On June 5, 2018, TMX Group completed a Canadian private placement offering of $200.0 million aggregate principal amount of 3.779% senior unsecured debentures due June 5, 2028 ("Series E Debentures") to accredited investors in Canada. The Series E Debentures received a credit rating of A (high) with a Stable trend from DBRS Limited. TMX Group incurred financing costs of $1.1 million for the initial issuance of the Series E Debentures, and these costs are offset against the initial carrying value of the Series E Debentures.

- The Series B and Series E Debentures may be redeemed, at the option of TMX Group, in whole or in part at the redemption price together with accrued and unpaid interest to the date fixed for redemption. The redemption price is equal to the greater of the applicable Canada Yield Price (as defined in the relevant Trust Indenture (as defined below)) and 100% of the principal amount of the Series B and Series E Debentures being redeemed to the date fixed for redemption. If the Series B and Series E Debentures are redeemed anytime on or after three months prior to the maturity date of the series, the redemption price is equal to 100% of the aggregate principal amount outstanding on the Series B and Series E Debentures together with accrued and unpaid interest to the date of the redemption.

- The Series D Debentures may be redeemed, in whole or in part, at the option of TMX Group, at the redemption price together with accrued and unpaid interest to the date fixed for redemption. The redemption price is equal to the greater of the Canada Yield Price (as defined in the relevant Trust Indenture) and 100% of the principal amount of the Series D Debentures being redeemed. If the Series D Debentures are redeemed anytime on or after two months prior to the maturity date of the series, the redemption price will be equal to 100% of the aggregate principal amount outstanding on the Series D Debentures together with accrued and unpaid interest to the date of the redemption.

- The trust indenture and the supplements thereto which govern the Debentures (collectively, the Trust Indentures and each a Trust Indenture) include the following covenants:

    - A negative pledge which restricts the ability of TMX Group and each of its material subsidiaries (as defined in the Trust Indentures) to create a lien on these entities' assets unless the Debentures are similarly secured on an equal and rateable basis.

    - A limitation on the ability of material subsidiaries of TMX Group to enter into certain types of indebtedness.

    - In the event of a change of control (as such term is defined in the Trust Indentures) of either TSX Inc. or MX, if the rating of the Debentures is lowered to below investment grade (as defined in the Trust Indentures), TMX Group will be required, at the option of the Debenture holder to repurchase, in whole or in part, the holder's Debentures at a cash price of 101% of the outstanding principal amount of the Debentures plus all accrued and unpaid interest up to the date of repurchase.

    - A requirement for TMX Group to maintain at least one credit rating from a Specified Credit Rating Agency (as defined in the Trust Indentures).

| (in millions of dollars) | **As at December 31, 2018** | As at December 31, 2017 | **$ increase/ (decrease)** |
|---|---|---|---|
| Series A - Current Debentures | **$0.0** | $399.8 | $(399.8) |
| Series B - Non-Current Debentures | **$249.5** | $249.2 | $0.3 |
| Series D - Non-Current Debentures | **$298.4** | $298.3 | $0.1 |
| Series E - Non-Current Debentures | **$198.9** | $0.0 | $198.9 |
| | **$746.8** | $947.3 | $(200.5) |

On October 1, 2018, TMX Group issued Commercial Paper which was used to repay Series A Debentures on October 3, 2018.

## Credit Facility

In 2016, TMX Group entered into an amended and restated credit agreement (as amended on each of December 14, 2017 and September 12, 2018, the Credit Agreement) which replaced our existing 2014 credit agreement. The Credit Agreement provides 100% backstop to the Commercial Paper Program and is also available for general corporate purposes. $500 million (or the USD equivalent) is available under the Credit Agreement which amount is reduced by the outstanding amount of Commercial Paper and any outstanding inter-company notes payable to CDS and CDCC. The maturity date of the Credit Agreement is May 2, 2021.

On December 14, 2017, in connection with the acquisition of Trayport and sale of NGX and Shorcan Energy, certain terms of the Credit Agreement were amended, including the implementation of a less restrictive total leverage ratio as described below:

- an Interest Coverage Ratio of more than 4.0:1, where Interest Coverage Ratio:
  - means the ratio of adjusted EBITDA for the period comprised of the four most recently completed financial quarters to an annualized consolidated interest expense for the first three financial quarters following December 14, 2017;
  - and thereafter means the ratio of adjusted EBITDA for the period comprised of the four most recently completed financial quarters to the consolidated interest expense for such four financial quarters;
- a Total Leverage Ratio of not more than:
  - 3.75:1 on and after January 1, 2017 until December 31, 2018; and
  - 3.5:1 on January 1, 2019 and thereafter

Total Leverage Ratio at any time is the ratio of consolidated debt as at such time to adjusted EBITDA for the period comprised of the four most recently completed financial quarters. Adjusted EBITDA means earnings on a consolidated basis before interest, taxes, extraordinary, unusual or non-recurring items, depreciation and amortization, as well as non-cash items.

As at December 31, 2018, all covenants were met under the Credit Agreement.

The following table summarizes the Applicable Rates and Fee Rates and corresponding Total Leverage Ratios under the Credit Agreement. The Standby Fee is charged on the unutilized portion of the revolving facility. The Applicable Rate represents the corporate spread that is included in the interest rate that is applied to the drawn portion of the facility.

| Applicable Margin Pricing Matrix | | | |
|---|---|---|---|
| **Total Leverage Ratio (x)** | **Standby Fee for undrawn portion of Revolving Facility** | **Prime Rate Loans and US Base Rate Loans** | **BA Instruments/ LIBOR Loans / Letters of Credit** |
| ≤ 2.0 | 21.5 bps | 7.5 bps | 107.5 bps |
| > 2.0 and ≤ 2.5 | 24.5 bps | 22.5 bps | 122.5 bps |
| > 2.5 and ≤ 3.0 | 27.5 bps | 37.5 bps | 137.5 bps |
| > 3.0 and ≤ 3.5 | 32.5 bps | 62.5 bps | 162.5 bps |
| > 3.5 and ≤ 3.75 | 37.5 bps | 87.5 bps | 187.5 bps |
| > 3.75 | 40.0 bps | 100.0 bps | 200.0 bps |

## Interest Rate Swaps (IRS)

As at December 31, 2018 we have the following IRS in place:

| **Interest Rate** | **Maturity Date** | **Principal** (in millions) |
|---|---|---|
| 1.08% | May 2, 2019 | $100.0 |

This swap was put in place to economically hedge the issuance of Commercial Paper starting on October 3, 2016 (see **MANAGING CAPITAL**). As this IRS was not designated as a hedge for accounting purposes, it is possible that there will be fluctuations in net income as we mark to market the fair value of this IRS each quarter until maturity.

## Effective Interest Rates

The effective interest rates as at December 31, 2018 for the Debentures and Commercial Paper are shown below:

| Debentures and Commercial Paper | Principal ($CAD millions) | Maturity | All-in Rate |
|---|---|---|---|
| Series B Debentures | 250.0 | Oct. 3, 2023 | 4.461% |
| Series D Debentures | 300.0 | Dec. 11, 2024 | 2.997% |
| Series E Debentures | 200.0 | June 5, 2028 | 3.779% |
| Commercial Paper | 319.5 | Jan. 4, 2019 to Feb. 15, 2019 | 2.153% |

## Other Credit and Liquidity Facilities

CDCC maintains daylight liquidity facilities for a total of $600.0 million to provide liquidity on the basis of collateral in the form of securities that have been received by CDCC. The daylight liquidity facilities must be cleared to zero at the end of each day.

CDCC also maintains a $13,788.0 million repurchase facility with a syndicate of six Canadian major chartered banks. This facility is in place to provide end-of-day liquidity in the event that CDCC is unable to clear the daylight liquidity facilities to zero or if emergency liquidity is required in the event of a Clearing member default. It will provide liquidity in exchange for securities that have been pledged to or received by CDCC. CDCC has the option to re-size this facility on a quarterly basis in order to stay consistent with its liquidity risk policy.

CDCC maintains a syndicated revolving standby liquidity facility to provide end-of-day liquidity in the event that CDCC is unable to clear the daylight liquidity facilities to zero or if emergency liquidity is required in the event of a Clearing member default. On March 2, 2018, TMX Group extended the facility from March 3, 2018 to March 1, 2019 and increased the size of the facility from $300.0 million to $400.0 million. Advances under the facility are secured by collateral in the form of securities that have been pledged to or received by CDCC. As at December 31, 2018, CDCC did not have any failed REPO settlement and as such did not require a draw. In addition, CDCC has an agreement that would allow the Bank of Canada to provide emergency liquidity to CDCC at the discretion of the Bank of Canada. This facility is intended to provide end-of-day liquidity in the event that CDCC is unable to access liquidity from the revolving standby liquidity facility and the syndicated REPO facility or in the event that the liquidity under such facilities is insufficient. Use of this facility would be on a fully collateralized basis.

CDS maintains unsecured operating demand loans totaling $6.0 million to support short-term operating requirements. To support processing and settlement activities of Participants, an unsecured overdraft facility and demand loan of $15.0 million and an overnight facility of US$5.5 million are available. The borrowing rates for these facilities are the Canadian prime rate or the U.S. base rate, depending on the currency drawn.

CDS also has a secured standby liquidity facility with a syndicate of banks to support processing and settlement activities in the event of a Participant default. On March 27, 2018, CDS amended the agreement to increase the arrangement from US$400.0 million, or Canadian dollar equivalent, to US$720.0 million, or Canadian equivalent. This agreement was also amended so the facility is available to support processing and settlement activities in the event of a Participant default in the New York Link Service and The Depository Trust Company Direct Link Service. The terms of the facility permits CDS to increase the amount available by an additional US$600.0 million or Canadian equivalent, with approval of the lenders. Borrowings under the secured facility are obtained by pledging or providing collateral pledged by Participants primarily in the form of debt instruments issued or guaranteed by federal, provincial and/or municipal governments in Canada or U.S.

treasury instruments and equity instruments. The facility can be drawn in either U.S. or Canadian currencies and depending upon the currency drawn, the borrowing rate for the secured standby liquidity facility is the U.S. base rate plus 150 bps or the Canadian prime rate plus 150 bps.

On March 27, 2018, CDS also entered into a secured standby liquidity facility of $2.0 billion or US equivalent that can be drawn in either Canadian or US currency. This arrangement is available to support settlement activities in the event of a Participant default with CDS's Continuous Net Settlement service. The terms of the facility permits CDS to increase the amount available by an additional $500.0 million or US equivalent, with approval of the lenders. Borrowings under this secured facility are obtained by pledging or providing collateral pledged by Participants primarily in the form of debt and equity instruments. Depending on the currency drawn, the borrowing rate for the secured standby liquidity facility is the US base rate plus 150 bps or the Canadian prime rate plus 150 bps.

In addition, CDS has an agreement that would allow the Bank of Canada to provide emergency last-resort liquidity to CDS at the discretion of the Bank of Canada. This liquidity facility is intended to provide end-of-day liquidity for payment obligations arising from CDSX, and only in the event that CDS is unable to access liquidity from its standby liquidity facility or in the event that the liquidity under such facilities is insufficient. Use of this facility would be on a fully collateralized basis.

As at December 31, 2018, CDS had $39.8 million in bank overdraft, which is recorded in "Other current liabilities", and which was subsequently cleared on January 2, 2019.

In compliance with PFMIs and additional Canadian regulatory and oversight guidance, CDS Clearing and CDCC each maintain a recovery plan, to be applied in the event that the entity is unable to provide defined critical operations and services as a going concern. These recovery plans are filed with their respective Canadian regulators. In connection with the recovery plans, and if certain funding conditions are met, TMX Group agreed to provide certain limited financial support to CDS Clearing and CDCC, if necessary, in the context of a recovery.

AgriClear maintains a US$0.2 million uncommitted letter of credit facility with a major Canadian chartered bank. The facility is being used to issue letters of credit to support the operations of the AgriClear business. As at December 31, 2018, US $0.2 million of letters of credit were outstanding to which TMX Group has issued a guarantee. In Q2/18, AgriClear cancelled uncommitted credit agreements for $3.0 million and US$3.0 million.

Shorcan maintains a facility with a major chartered bank to provide end of day liquidity to cover any shortfalls due to timing of payments and receipts. Utilization of this facility is secured by collateral in the form of securities.

## Contractual Obligations

| (in millions of dollars) | Total | Less than 1 year | 1 - 3 years | 3 - 5 years | 5+ years |
|---|---|---|---|---|---|
| Commercial Paper | 319.5 | 319.5 | — | — | — |
| Debentures | 746.8 | — | — | 249.5 | 497.3 |
| Financial Lease Obligations | 0.1 | 0.1 | — | — | — |
| Operating Leases | 145.4 | 17.2 | 25.9 | 20.8 | 81.5 |
| Clearing and Other Obligations | 26,142.8 | 26,126.8 | 8.0 | 8.0 | — |

## MANAGING CAPITAL

Our primary objectives in managing capital, which we define to include our cash and cash equivalents, marketable securities, share capital, Commercial Paper, Debentures, and various credit facilities, include:

- Maintaining sufficient capital for operations to ensure market confidence and to meet regulatory requirements and credit facility requirements (see **Commercial Paper, Debentures, Credit and Liquidity Facilities** for a description of certain financial covenants under the Credit Agreement). Currently, we target to retain a minimum of $170.0 million in cash, cash equivalents and marketable securities. This amount is subject to change;

- Maintaining our credit ratings in a range consistent with our current A (high) and R1 (low) credit ratings from DBRS regarding our Debentures and Commercial Paper, respectively;

- Using excess cash to invest in and continue to grow the business;

- Returning capital to shareholders through methods such as dividends paid to shareholders and purchasing shares for cancellation; and

- Reducing the debt levels to be below the Total Leverage Ratios under the Credit Agreement, which decrease over time.

We achieve the above objectives while managing our capital subject to capital maintenance requirements imposed on us and our subsidiaries by regulators. Certain of the requirements described below may impose restrictions on the amount of upstream dividends or other amounts that a subsidiary may distribute to its shareholders:

- In respect of TSX, as required by the OSC to maintain certain financial ratios on both a consolidated and non-consolidated basis, as defined in the OSC recognition order, as follows:

    - a current ratio of greater than or equal to 1.1:1;

    - a debt to cash flow ratio of less than or equal to 4:1; and

    - a financial leverage ratio of less than or equal to 4:1.

- In respect of TSXV, as required by various provincial securities commissions to maintain sufficient financial resources.

- In respect of MX, as required by the AMF to maintain certain regulatory ratios as defined in the AMF recognition order, as follows:

    - a working capital ratio of more than 1.5:1;

    - a cash flow to total debt outstanding ratio of more than 20%; and

    - a financial leverage ratio of less than 4.0.

- In respect of CDCC, to maintain certain amounts, as follows:

    - maintain sufficient financial resources as required by the OSC and AMF;

    - $5.0 million cash and cash equivalents or marketable securities as part of the Clearing Member default recovery process plus an additional $5.0 million in the event that the initial $5.0 million is fully utilized during a default;
    - sufficient cash, cash equivalents and marketable securities to cover 12 months of operating expenses, excluding amortization and depreciation; and
    - $30.0 million total shareholders' equity.
- In respect of Shorcan:
    - by IIROC which requires Shorcan to maintain a minimum level of shareholder's equity of $0.5 million;
    - by the National Futures Association which requires Shorcan to maintain a minimum level of net capital; and
    - by the OSC which requires Shorcan to maintain a minimum level of excess working capital.
- In respect of CDS and CDS Clearing, as required by the OSC and the AMF, to maintain certain financial ratios as defined in the OSC recognition order, as follows:
    - a debt to cash flow ratio of less than or equal to 4.0; and
    - a financial leverage ratio of less than or equal to 4.0.
    - In addition, the OSC requires CDS and CDS Clearing to maintain working capital to cover 6 months of operating expenses (excluding, in the case of CDS, the amount of shared services fees charged to CDS Clearing). CDS Clearing introduced dedicated own resources in the Continuous Net Settlement (CNS) default waterfall for the CNS function; beginning January 1, 2016, funded with $1.0 million in cash and cash equivalents or marketable securities to cover the potential loss incurred due to Participant's default.
- In respect of Alpha, as required by the OSC, to maintain certain financial ratios as defined in the OSC recognition order, as follows:
    - a current ratio of greater than or equal to 1.1:1;
    - a debt to cash flow ratio of less than or equal to 4.0:1; and
    - a financial leverage ratio of less than or equal to 4.0:1.
- In respect of TSX Trust, as required by the Office of the Superintendent of Financial Institutions, to maintain a certain minimum capital amount and ratio and a financial leverage ratio of less than or equal to 8%.

As at December 31, 2018, we were in compliance with each of these externally imposed capital requirements. For the year ended December 31, 2019, TSX has received an exemption with regards to its financial leverage ratio, as a result of adopting IFRS 16, *Leases*.

## FINANCIAL INSTRUMENTS

### Cash, Cash Equivalents and Marketable Securities

Our financial instruments include cash, cash equivalents and investments in marketable securities which are held to earn investment income. Marketable securities consist of Federal and Provincial treasury bills.

We have designated our marketable securities as fair value through profit and loss. Fair values have been determined by reference to quoted market prices.

The primary risks related to cash, cash equivalents and marketable securities are credit risk, market risk and liquidity risk. For a description of these risks, please refer to **Credit Risk - *Cash and cash equivalents*, Credit Risk – *Marketable Securities*, Market Risk - *Interest Rate Risk – Marketable Securities*, Liquidity Risk - *Cash and cash equivalents* and Liquidity Risk - Marketable securities**.

### Restricted Cash and Cash Equivalents

Restricted cash and cash equivalents contains tax withheld by CDS on entitlement payments made by CDS on behalf of CDS participants. The restricted cash and cash equivalents related to this withheld tax is ultimately under the control of CDS; however, the amount is payable to various taxation authorities within a relatively short period of time and so is restricted from use in normal operations. An equivalent and offsetting amount is included in the consolidated balance sheet under the caption Participants' tax withholdings. At December 31, 2018, we had restricted cash and cash equivalents of $131.4 million.

The primary risks related to restricted cash and cash equivalents are credit risk and liquidity risk. For a description of these risks, please refer to **Credit Risk - Restricted Cash and cash equivalents and Liquidity Risk - Restricted Cash and cash equivalents**.

### Trade Receivables

Our financial instruments include accounts receivable, which represents amounts that our customers owe us. The carrying value is based on the actual amounts owed by the customers, net of loss allowances for trade receivables measured at an amount equal to lifetime expected credit losses, calculated using historical credit loss experience taking into account current observable data at the reporting date to reflect the effects of any relevant current market conditions and forecasts of future economic conditions.

The primary risks related to trade receivables are credit risk and market risk. For a description of these risks, please refer to **Credit Risk – Trade Receivables and Market risk - Foreign Currency Risk**.

### CDS – Participant cash collateral and entitlements and other funds

As part of CDS's clearing operations, CDS Participant Rules require participants to pledge collateral to CDS in the form of cash or securities in amounts calculated in relation to their activities. Cash pledged and deposited with CDS is recognized as an asset and an equivalent and offsetting liability is recognized as these amounts are ultimately owed to the participants. There is no impact on the consolidated income statement. Securities pledged do not result in an economic inflow to CDS, and therefore, are not recognized.

The primary risks associated with these financial instruments are credit risk, market risk and liquidity risk. For a description of these risks, please refer to **Credit Risk – CDS, Other Market Price Risk – CDS, Market Risk - Foreign Currency Risk, Liquidity Risk - Balances with Clearing members and participants, Liquidity Risk - New York Link service - CDS and Liquidity Risk - Credit and liquidity facilities - Clearing operations.**

## CDCC – Daily Settlements due to and due from Clearing Members

As part of CDCC's clearing operations, amounts due from and to Clearing Members as a result of marking to market open futures positions and settling options transactions each day are required to be collected from or paid to Clearing Members prior to the commencement of trading the next day. The amounts due from and due to Clearing Members are recognized in the consolidated assets and liabilities as Balances with Participants and Clearing Members. There is no impact on the consolidated statements of income.

## CDCC – Clearing Members' cash margin deposits and clearing fund cash deposits

These balances represent the cash deposits of Clearing Members held in the name of CDCC as margins against open positions and as part of the clearing fund. The cash held is recognized as an asset and an equivalent and offsetting liability is recognized as these amounts are ultimately owed to the Clearing Members. There is no impact on the consolidated income statement.

## CDCC – Net amounts receivable/payable on open REPO agreements

CDCC clears fixed income REPO agreements. OTC REPO agreements between buying and selling Clearing Members are novated to CDCC whereby the rights and obligations of the Clearing Members under the REPO agreements are cancelled and replaced by new agreements with CDCC. Once novation occurs, CDCC becomes the counterparty to both the buying and selling Clearing Member. As a result, the contractual right to receive and return the principal amount of the REPO as well as the contractual right to receive and pay interest on the REPO is thus transferred to CDCC. These balances represent outstanding balances on open REPO agreements. Receivable and payable balances outstanding with the same Clearing Member are offset when they are in the same currency and are to be settled on the same day, as CDCC has a legally enforceable right to offset and the intention to net settle. The balances include both the original principal amount of the REPO and the accrued interest, both of which are carried at amortized cost. As CDCC is the central counterparty, an equivalent amount is recognized in both TMX Group's' assets and liabilities.

The primary risks associated with these financial instruments are credit risk, market risk and liquidity risk. For a description of these risks, please refer to **Credit Risk - CDCC, Other Market Price Risk - CDCC, Liquidity Risk - Balances with Clearing members and participants and Liquidity Risk - Credit and liquidity facilities - Clearing operations.**

## Commercial Paper

TMX Group maintains a Commercial Paper Program to offer potential investors up to $500.0 million (or the equivalent U.S. dollars) of Commercial Paper to be issued in various maturities of up to one year from the date of issue. The Commercial Paper bears interest rates based on the prevailing market conditions at the time of issuance. The Commercial Paper Program is supported by the Credit Agreement. The Commercial Paper issued represents an unsecured obligation and ranks equally with all other senior unsecured obligations of TMX Group. The Commercial Paper has been assigned a rating of "R-1 (low)" with a Stable trend by DBRS.

The Commercial Paper is subject to market risk and liquidity risk. For a description of these risks, please refer to **Market Risk – Interest Rate Risk - Commercial Paper and Debentures, Market Risk - Foreign Currency Risk and Liquidity Risk - Commercial Paper, Debentures and Credit Facility.**

## Debentures

TMX Group has the following Debentures outstanding: a $250-million Series B Debentures with a 4.461% coupon and a 10-year term, a $300.0-million principal amount Series D Debentures with a 2.997% coupon and a 7-year term, and a $200.0-million Series E Debentures with a 3.779% coupon and a 10-year term. The Debentures received and maintain a credit rating of A (high) with a Stable trend from DBRS. The fair value of the Debentures was obtained using market prices as inputs.

The Debentures are subject to market risk and liquidity risk. For a description of these risks, please refer to **Market Risk – Interest Rate Risk - Commercial Paper and Debentures and Liquidity Risk - Commercial Paper, Debentures and Credit Facility.**

### Interest Rate Swaps (IRS)

We have an IRS in place to economically hedge the issuance of commercial paper starting on October 3, 2016 (see **Commercial Paper, Debentures, Credit and Liquidity Facilities – Interest Rate Swaps)**. We mark to market the fair value of the IRS, which is determined by using observable market information. At December 31, 2018, the fair value of the IRS was an asset of $0.5 million. In the year ended December 31, 2018, we recognized $0.6 million of realized gains within net finance costs representing the net amount received on the IRS. The counterparty on this IRS is a major Canadian chartered bank. As this IRS was not designated as a hedge for accounting purposes, it is possible that there will be fluctuations in net income as we mark to market the fair value of this IRS each quarter until maturity.

IRSs are subject to credit risk. For a description of this risk, please refer to **Credit Risk – Interest Rate Swaps (IRS).**

### Total Return Swaps (TRS)

We have entered into a series of TRSs, which synthetically replicate the economics of purchasing our shares as a partial economic hedge to the share appreciation rights of the non-performance element of RSUs and DSUs. We have also entered into a series of TRSs as an economic hedge against the share price appreciation associated with the DSUs.

We have classified our series of TRSs as fair value through profit and loss and mark to market the fair value of the TRSs as an adjustment to income. We also simultaneously mark to market the liability to holders of the units as an adjustment to income. Fair value is based on the share price of our common shares at the end of the reporting period. The fair value of the TRSs and the obligation to unit holders are reflected on the consolidated balance sheet. The contracts are settled in cash upon maturity.

For the year ended December 31, 2018, unrealized losses and realized gains on the TRSs of $3.7 million and $6.0 million, respectively have been reflected in the consolidated income statement (2017 – unrealized losses and realized gains of $2.1 million and $2.5 million, respectively).

TRSs are subject to credit risk and market risk. For a description of this risk, please refer to **Credit Risk – TRS and Market Risk - Equity Price Risk - TRS**

## CRITICAL ACCOUNTING ESTIMATES

### *Goodwill and Intangible Assets – Valuation and Impairment Testing*

We recorded goodwill and intangible assets valued at $5,054.9 million as at December 31, 2018, down by $12.7 million from $5,067.6 million at December 31, 2017. Management has determined that the testing for impairment of goodwill and intangible assets involves making critical accounting estimates.

Goodwill is recognized at cost on acquisition less any subsequent impairment in value. We measure goodwill arising on a business combination as the fair value of the consideration transferred less the fair value of the identifiable assets acquired and liabilities assumed, all measured as of the acquisition date.

Intangible assets are recognized at cost less accumulated amortization, where applicable, and any impairment in value. Cost includes any expenditure that is directly attributable to the acquisition of the asset. The cost of internally developed assets includes the cost of materials and direct labour, and any other costs directly attributable to bringing the assets to a working condition for their intended use.

Assets are considered to have indefinite lives where management believes that there is no foreseeable limit to the period over which the assets are expected to generate net cash flows.

We test for impairment as follows:

The carrying amounts of our goodwill and intangible assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. Goodwill and intangible assets that have indefinite useful lives or that are not yet available for use, are tested for impairment at least annually even if there is no indication of impairment, and the recoverable amount is estimated each year at the same time.

For the purpose of impairment testing, assets that cannot be tested individually are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other assets or groups of assets (the cash-generating unit, or CGU). For the purposes of goodwill impairment testing, goodwill acquired in a business combination is allocated to the CGU, or the group of CGUs, that is expected to benefit from the synergies of the combination and reflects the lowest level at which that goodwill is monitored for internal reporting purposes.

The recoverable amount of an asset or CGU is based on the higher of the value in use or fair value. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset.

An impairment loss is recognized if the carrying amount of an asset, or its CGU, exceeds its estimated recoverable amount. Impairment losses recognized in respect of CGUs are allocated first to reduce the carrying amount of any goodwill allocated to the units, and then to reduce the carrying amounts of the other assets in the unit on a pro rata basis. Impairment losses along with any related deferred income tax effects are recognized in the consolidated income statement.

There were no impairment losses related to goodwill and intangible assets for the .year ended December 31, 2018 (see **Results of Operations - Impairment Charges**).

Considerable judgement is required to predict future operating performance and to estimate cash flows. Economic weakness due to macroeconomic factors moderating activity and heightening risks may impact our business. Such factors include the U.S.-China trade conflict, softened international trade and investment, uncertainty around Brexit and financial market pressures. These factors could result in future impairment charges related to goodwill and intangible assets. A significant impairment charge in the future could have a significant impact on our reported net income.

### *Capital Formation – Listings*

In 2018, management updated its growth projections. Based on current assumptions, the recoverable amount for the Listings CGU remains above carrying value, and as such no impairment has been identified. Management has identified three key assumptions, the pre-tax discount rate, the terminal growth rate, and the cash flow projections, that have a significant impact on the estimate of the recoverable amount. Changes in these assumptions that would cause the carrying value to equal the recoverable amount are a 2.8% increase in the pre-tax discount rate, a 4.6% reduction in the terminal growth rate, or a 18.6% decrease in cash flow.

### *Equities Trading*

In 2018, management updated its growth projections. Based on current assumptions, the recoverable amount for Equities Trading remains above carrying value, and as such no impairment has been identified. Management has identified three key assumptions, the pre-tax discount rate, the terminal growth rate, and the cash flow projections, that have a significant impact on the estimate of the recoverable amount. Changes in these assumptions that would cause the carrying value to equal the recoverable amount are a 6.6% increase in the pre-tax discount rate, a 13.4% reduction in the terminal growth rate, or a 33.3% decrease in cash flow.

### *CDS*

In 2018, management updated its growth projections. Based on current assumptions, the recoverable amount for the CDS CGU remains above carrying value, and as such no impairment has been identified. Management has identified three key assumptions, the pre-tax discount rate, the terminal growth rate, and the cash flow projections, that have a significant impact on the estimate of the recoverable amount. Changes in these assumptions that would cause the carrying value to equal the recoverable amount are a 17.4% increase in the pre-tax discount rate, a 69.0% reduction in the terminal growth rate, or a 63.9% decrease in cash flow.

### *Derivatives Trading and Clearing - MX/CDCC*

In 2018, management updated its growth projections. Based on current assumptions, the recoverable amount for Derivatives Trading and Clearing remains above carrying value, and as such no impairment has been identified. Management has identified three key assumptions, the pre-tax discount rate, the terminal growth rate, and the cash flow projections, that have a significant impact on the estimate of the recoverable amount. Changes in these assumptions that would cause the carrying value to equal the recoverable amount are a 4.0% increase in the pre-tax discount rate, a 3.2% reduction in the terminal growth rate, or a 35.7% decrease in cash flow.

### *Global Solutions, Insights & Analytics - TMX Datalinx*

In 2018, management updated its growth projections. Management has determined that the TMX Datalinx CGU may be subject to a reasonably possible change to one or more of the key assumptions used to determine the recoverable amount, which could cause this CGU to become impaired. Management has identified three key assumptions, the pre-tax discount rate, the terminal growth rate, and the cash flow projections, that have a significant impact on the estimate of the recoverable amount. Changes in these assumptions that would cause the carrying value to equal the recoverable amount are a 1.5% increase in the pre-tax discount rate, a 2.3% reduction in the terminal growth rate, or a 10.5% decrease in cash flow.

### *Global Solutions, Insights & Analytics - Trayport*

In 2018, management updated its growth projections. Based on current assumptions, the recoverable amount for Trayport remains above carrying value, and as such no impairment has been identified. Management has identified three key assumptions, the pre-tax discount rate, the terminal growth rate, and the cash flow projections, that have a significant impact on the estimate of the recoverable amount. Changes in these assumptions that would cause the carrying value to equal the recoverable amount are a 0.9% increase in the pre-tax discount rate, a 1.6% reduction in the terminal growth rate, or a 10.8% decrease in cash flow.

## Select Annual Information

| (in millions of dollars except per share amounts) | 2018 | 2017 | 2016 |
|---|---|---|---|
| Revenue | $ 817.1 | $ 668.9 | $ 683.7 |
| Net income from continuing operations | 286.0 | 191.2 | 180.0 |
| Net income | 286.0 | 368.0 | 196.4 |
| | | | |
| Total assets (as at December 31) | 31,657.9 | 25,624.8 | 22,204.1 |
| Non-current liabilities (as at December 31) | 1,615.7 | 1,433.3 | 1,547.1 |
| | | | |
| Earnings per share - from continuing operations | | | |
| Basic | 5.14 | 3.46 | 3.31 |
| Diluted | 5.10 | 3.43 | 3.30 |
| Earnings per share: | | | |
| Basic | 5.14 | 6.66 | 3.60 |
| Diluted | 5.10 | 6.60 | 3.58 |
| Adjusted earnings per share: | | | |
| Basic | 5.20 | 4.69 | 4.49 |
| Diluted | 5.16 | 4.65 | 4.47 |
| | | | |
| Cash dividends declared per common share | 2.24 | 1.95 | 1.65 |

## 2018 compared with 2017

(See **RESULTS OF OPERATIONS and LIQUIDITY AND CAPITAL RESOURCES - Year ended December 31, 2018 compared with Year ended December 31, 2017**)

## 2017 compared with 2016

### *Revenue*

Revenue was down $14.8 million compared with the year ended December 31, 2016. There were decreases in *Global Solutions, Insights and Analytics* revenue reflecting both a $5.9 million decrease in revenue from Razor Risk (sold on December 31, 2016) and a $17.7 million decrease in revenue from TMX Atrium (sold on April 30, 2017), partially offset by $4.5 million revenue from Trayport (acquired on December 14, 2017). The decrease in *Other* revenue was primarily due to recognizing higher net foreign exchange losses on U.S. dollar and other non-Canadian denominated net monetary assets in the year ended December 31, 2017 compared with the year ended December 31, 2016 and reclassifying revenue from BOX's regulatory entity from *Other* revenue to *Derivatives Trading and Clearing* revenue effective July 1, 2016. These decreases were partially offset by increases in *Equities and Fixed Income Trading and Clearing,* and *Capital Formation* revenue. Revenue for the year ended December 31, 2017 increased by 2% over the year ended December 31, 2016, excluding the Razor Risk and TMX Atrium businesses and the $6.5 million net impact from de-consolidating BOX (effective July 1, 2016).

### *Net income, Earnings per share and Adjusted earnings per share*

Net income in the year ended December 31, 2017 was $368.0 million, or $6.66 per common share on a basic basis and $6.60 per common share on a diluted basis, compared with a net income of $196.4 million, or $3.60 per common share on a basic and $3.58 on a diluted basis, for the year ended December 31, 2016. The increase in net income in the year ended December 31, 2017 included an after tax gain on the sale of NGX and Shorcan Energy, of $157.3 million as well as a gain on FX forwards relating to the Trayport acquisition. There were lower operating expenses before acquisition costs and strategic re-alignment and no strategic re-alignment expenses in 2017 compared with 2016. There was also a decrease in income tax expense of approximately $2.4 million related to a capital loss carryback, which increased net income in

2017. In addition, we incurred lower finance costs in the year ended December 31, 2017 compared with the year ended December 31, 2016. During 2016, we recorded non-cash impairment charges of $8.9 million relating to AgriClear and TMX Atrium whereas in 2017 we recorded non-cash impairment charges and wrote off product costs totaling $7.7 million (after tax) relating to AgriClear and TMX Atrium.

These increases in net income were partially offset by lower revenue, acquisition costs on purchase of Trayport and a non-cash income tax adjustment of $2.9 million relating to the write off of deferred income tax assets relating to TMX Atrium. In 2017, we recorded non-cash income tax adjustments relating to a change in the B.C. and U.S. corporate income tax rate of approximately $8.3 million, which increased income tax expense, whereas in 2016 we recorded a non-cash income tax adjustment relating to a change in the Quebec corporate income tax rate of approximately $3.2 million which reduced income tax expense. There was also an unfavorable impact on basic and diluted earnings per share from an increase in the number of weighted-average common shares outstanding in the year ended December 31, 2017 compared with the year ended December 31, 2016.

Adjusted diluted earnings per share increased by 4% from $4.47 in the year ended December 31, 2016 to $4.65 in the year ended December 31, 2017. The increase in adjusted diluted earnings per share reflected significantly lower operating expenses before acquisition costs and strategic re-alignment expenses, excluding amortization of intangibles related to acquisitions, partially offset by lower revenue. In addition, we incurred lower finance costs in the year ended December 31, 2017 compared with the year ended December 31, 2016. The increase in basic and diluted earnings per share were partially offset by the impact from an increase in the number of weighted-average common shares outstanding in the year ended December 31, 2017 compared with the year ended December 31, 2016.

## Total assets

Our consolidated balance sheet as at December 31, 2017 includes outstanding balances on open REPO agreements within *Balances with Clearing Members and Participants*. These balances have equal amounts included within *Total Liabilities*. The increase in *Total Assets* of $3,423.4 million from December 31, 2016 reflected higher balances in CDCC related to REPO agreements at December 31, 2017.

## Non-current liabilities

Non-current liabilities as at December 31, 2017 was $113.8 million lower than as at December 31, 2016. The decrease was driven by the reclassification of the $400.0 million Series A Debentures from non-current to current, partially offset by an increase from the $300.0 million issuance for Series D Debentures related to the acquisition of Trayport.

## QUARTERLY FINANCIAL INFORMATION

| (in millions of dollars except per share amounts - unaudited) | Dec 31 2018 | Sep 30 2018 | Jun 30 2018 | Mar 31 2018 | Dec 31 2017 | Sep 30 2017 | Jun 30 2017 | Mar 31 2017 |
|---|---|---|---|---|---|---|---|---|
| Capital Formation | $45.4 | $45.1 | $57.8 | $50.4 | $49.3 | $43.0 | $51.6 | $44.8 |
| Equities and Fixed Income Trading | 28.6 | 25.1 | 25.8 | 29.3 | 25.2 | 22.9 | 26.8 | 29.2 |
| Equities and fixed Income - clearing, settlement, depository and other services (CDS) | 22.7 | 20.3 | 21.0 | 21.8 | 20.4 | 18.7 | 19.9 | 19.0 |
| Derivatives Trading & Clearing | 35.1 | 30.2 | 33.3 | 31.3 | 27.6 | 27.7 | 31.4 | 28.1 |
| Global Solutions, Insights and Analytics | 73.8 | 72.1 | 70.7 | 72.7 | 48.3 | 41.6 | 46.3 | 50.3 |
| Other | 2.0 | — | 0.9 | 1.7 | — | (1.9) | (1.1) | (0.2) |
| Revenue | 207.6 | 192.8 | 209.5 | 207.2 | 170.8 | 152.0 | 174.9 | 171.2 |
| Operating expenses before acquisition costs | 110.6 | 106.3 | 119.7 | 111.5 | 87.0 | 84.0 | 89.5 | 95.8 |
| Income from operations before acquisition costs | 97.0 | 86.5 | 89.8 | 95.7 | 83.8 | 68.0 | 85.4 | 75.4 |
| Acquisition costs | — | — | — | — | 13.4 | 0.4 | — | — |
| Income from operations | 97.0 | 86.5 | 89.8 | 95.7 | 70.4 | 67.6 | 85.4 | 75.4 |
| Income from continuing operations, net of tax | 69.8 | 57.5 | 95.6 | 63.1 | 39.9 | 47.2 | 61.5 | 42.6 |
| Income from discontinued operations, net of tax | — | — | — | — | 162.4 | 4.7 | 5.0 | 4.7 |
| Net income | 69.8 | 57.5 | 95.6 | 63.1 | 202.3 | 51.9 | 66.5 | 47.3 |
| Earnings per share from continuing operations[31] | | | | | | | | |
| Basic | 1.25 | 1.03 | 1.72 | 1.14 | 0.72 | 0.85 | 1.11 | 0.77 |
| Diluted | 1.24 | 1.02 | 1.71 | 1.13 | 0.72 | 0.85 | 1.10 | 0.77 |
| Earnings per share:[32] | | | | | | | | |
| Basic | 1.25 | 1.03 | 1.72 | 1.14 | 3.65 | 0.94 | 1.20 | 0.86 |
| Diluted | 1.24 | 1.02 | 1.71 | 1.13 | 3.63 | 0.93 | 1.19 | 0.85 |

[31] Earnings per share from continuing operations is based on income from continuing operations, net of tax.

[32] Earnings per share information is based on Net income.

### *Q4/18 compared with Q4/17*

- *Revenue* was $207.6 million in Q4/18, up $36.8 million or 22% compared with $170.8 million in Q4/17 largely attributable to an increase in *Global Solutions, Insights and Analytics* revenue reflecting the inclusion of revenue from Trayport (acquired December 14, 2017) of approximately $28.6 million. There were also increases in *Equity and fixed income trading and clearing* as well as *Derivatives trading and clearing* revenue and *Other* revenue. These increases in revenue were partially offset by a decrease in *Capital Formation revenue*. Our organic revenue growth in Q4/18 was 8% (based on revenue of $207.6 million less Trayport revenue of approximately $28.6 million for Q4/18, and revenue of $170.8 million for Q4/17 less Trayport revenue of approximately $4.5 million for Q4/17).

- *Operating expenses before acquisition costs* in Q4/18 were $110.6 million, up $23.6 million or 27%, from $87.0 million in Q4/17. This reflected increased costs related to Trayport (acquired December 14, 2017) of $14.6 million compared to Q4/17. There was also an increase of approximately $2.6 million in severance costs related to organizational changes, higher employee performance incentive plan costs of approximately $3.1 million, and higher project and infrastructure spending.

- *Net income* in Q4/18 was $69.8 million, or $1.25 per common share on a basic and $1.24 on a diluted basis, compared with net income of $202.3 million, or $3.65 per common share on a basic and $3.63 on a diluted basis, for Q4/17. Net income for Q4/17 included a gain of $157.8 million from the sale of NGX and Shorcan Energy as well as a gain on FX forwards relating to the Trayport acquisition. However, net income for Q4/17 was reduced by acquisition costs on the purchase of Trayport and non-cash income tax adjustments relating to a change in the B.C. and U.S. corporate income tax rates.

  From an operational perspective, the net decrease in net income described above was partially offset by the impact of higher revenue from *Global Solutions, Insights and Analytics (GSIA)* in Q4/18, which included $28.6 million related to Trayport (acquired December 14, 2017) compared with $4.5 million in Q4/17. There was also higher revenue from *Equities and Fixed Income Trading and Clearing,* and *Derivatives Trading and Clearing* driven by higher trading volumes in TSX, Alpha and MX. The increases in revenue were partially offset by higher operating expenses, which included $14.6 million related to Trayport. The overall decrease in diluted earnings per share was also due to an increase in the number of weighted-average common shares outstanding in Q4/18 compared with Q4/17 and higher net finance costs.

- In Q4/18, *Cash flows from operating activities* increased reflecting higher income from operations (excluding depreciation and amortization) compared with Q4/17. This increase in cash was somewhat off by a decrease in cash related to trade and other payables, trade and other receivables, other assets and liabilities as well as an increase in income taxes paid.

- In Q4/18, *Cash flows used in financing activities* were higher than in Q4/17 when we generated cash from financing activities. During Q4/18 we used $400.0 million in cash when we repaid our Series A Debentures whereas in Q4/17 we received $300.0 million in cash following the issuance of our Series D Debentures. The impact of this $700.0 million decrease in cash was somewhat offset by a net increase in the issuance of Commercial Paper of almost $200.0 million.

- In Q4/18, *Cash flows from investing activities* were higher than in Q4/17 when we used cash in investing activities. During Q4/17, there was a cash outflow of $613.5 million related to the purchase of Trayport. The increase in cash was somewhat offset by an increase in additions to premises and equipment and intangible assets and lower proceeds on the sale of investments and businesses in Q4/18 compared with Q4/17.

### *Q4/18 compared with Q3/18*

- *Revenue* was $207.6 million in Q4/18, up $14.8 million from Q3/18 reflecting increases in all operating segments.

- *Operating expenses before acquisition costs* were up $4.3 million in Q4/18 compared with Q3/18. There were higher Information and trading systems expenses, as well as higher recoverable expenses related to increased revenues in Q4/18 compared with Q3/18.

- *Income from operations before acquisition costs* and *income from operations* increased in Q4/18 from Q3/18 reflecting higher revenue partially offset by higher operating expenses.

- *Net income* in Q4/18 was $69.8 million, or $1.25 per common share on a basic and $1.24 on a diluted basis compared with *net income* of $57.5 million, or $1.03 per common share on basic and $1.02 on a diluted basis in Q3/18. There was a gain on the sale of Contigo of approximately $2.3 million after tax (4 cents per basic and diluted share), and a gain on reduction in our shareholding in CanDeal of $0.9 million after tax (2 cents per basic and diluted share) in Q4/18. In addition, there was a net income tax recovery on gain on sale of NGX resulting in a tax benefit of approximately $2.0 million (4 cents per basic and diluted share) in Q4/18.

### *Q3/18 compared with Q2/18*

- *Revenue* was $192.8 million in Q3/18, down $16.7 million from Q2/18 reflecting decreases in *Capital Formation* and *Derivatives Trading and Clearing* revenue as well as declines in *Equities and Fixed Income Trading* and *CDS* revenue. The decreases were partially offset by an increase in *Global Solutions Insights and Analytics* revenue. Trayport's revenue was essentially unchanged from Q2/18 to Q3/18.

- *Operating expenses before acquisition costs* were down $13.4 million in Q3/18 compared with Q2/18. In Q2/18 we recorded a commodity tax provision of $7.6 million and a lease termination payment of $4.5 million.

- *Income from operations before acquisition costs* and *Income from operations* decreased from Q2/18 to Q3/18 due to the lower revenue partially offset by the lower operating expenses.

- *Net income* in Q3/18 was $57.5 million, or $1.03 per common share on a basic and $1.02 on a diluted basis compared with net income of $95.6 million, or $1.72 per common share on a basic and $1.71 per share on a diluted basis in Q2/18. In Q2/18, there was a gain on the sale of our interest in TMX FTSE of $26.8 million before and after income tax (48 cents per basic and diluted share). In addition, during Q2/18, there was a decrease in income tax expense, which reduced our effective tax rate for Q2/18, relating to realizing and utilizing a capital loss. We realized a capital loss on the wind up of a limited partnership, resulting in a tax benefit of approximately $11.8 million. This capital loss was applied to eliminate income tax otherwise payable of $3.8 million on the sale of our interest in TMX FTSE in Q2/18 and reduce the income tax of $8.0 million on our sale of NGX in 2017. Also, the non-taxable portion of the capital gain on the sale of our interest in TMX FTSE resulted in a tax benefit of approximately $3.3 million. Net income also declined due to the decrease in *income from operations* from Q2/18 to Q3/18.

### *Q2/18 compared with Q1/18*

- *Revenue* was $209.5 million in Q2/18, up $2.3 million from Q1/18 reflecting increases in *Capital Formation* and *Derivatives Trading and Clearing* revenue largely offset by declines in *Equities and Fixed Income Trading, CDS* and *Global Solutions Insights and Analytics* revenue.

- *Operating expenses before acquisition costs* were up $8.2 million in Q2/18 compared with Q1/18 reflecting a commodity tax provision of $7.6 million (10 cents per basic and diluted share), a lease termination payment of $4.5 million (6 cents per basic and diluted share) and higher fees related to liquidity facilities. The increases were partially offset by a decrease in severance costs of approximately $2.0 million and a decrease in payroll taxes of approximately $2.1 million.

- *Income from operations before acquisition costs* and *Income from operations* decreased from Q1/18 to Q2/18 due to higher operating expenses partially offset by higher revenue.

- *Net income* in Q2/18 was $95.6 million, or $1.72 per common share on a basic and $1.71 on a diluted basis compared with net income of $63.1 million, or $1.14 per common share on a basic and $1.13 on a diluted basis in Q1/18. There was a gain on the sale of our interest in TMX FTSE of $26.8 million before and after income tax (48 cents per basic and diluted share). In addition, during Q2/18, there was a decrease in income tax expense, which reduced our effective tax rate for Q2/18, relating to realizing and utilizing a capital loss. We realized a capital loss on the wind up of a limited partnership, resulting in a tax benefit of approximately $11.8 million. This capital loss was applied to eliminate income tax otherwise payable of $3.8 million on the sale of our interest in TMX FTSE in Q2/18 and reduce the income tax of $8.0 million on our sale of NGX in 2017. Also, the non-taxable portion of the capital gain on the sale of our interest in TMX FTSE resulted in a tax benefit of approximately $3.3 million. These increases in net income were somewhat offset by the decrease in *income from operations* from Q1/18 to Q2/18.

### *Q1/18 compared with Q4/17*

- *Revenue* was $207.2 million in Q1/18, up $36.4 million from Q4/17 reflecting increases in all segments including an increase in Trayport revenue of $22.8 million (acquired December 14, 2017).

- *Operating expenses before acquisition costs* were up in Q1/18 compared with Q4/17 reflecting an increase of $14.6 million in Trayport expenses, higher severance costs of $4.9 million, increased payroll taxes of $3.1 million as well as higher employee performance incentive plan costs of $1.8 million.

- *Income from operations before acquisition costs* and *Income from operations* increased from Q4/17 to Q1/18 due to higher revenue partially offset by higher operating expenses.

- *Net income* in Q1/18 was $63.1 million, or $1.14 per common share on a basic and $1.13 on a diluted basis, compared with net income of $202.3 million, or $3.65 per common share on a basic and $3.63 on a diluted basis in Q4/17. There was a gain on the sale of NGX and Shorcan Energy in Q4/17. Excluding this gain, there was an increase in net income from Q4/17 to Q1/18 due to the higher revenue partially offset by higher operating expenses.

### *Q4/17 compared with Q3/17*

- *Revenue* was $170.8 million in Q4/17, up $18.8 million from Q3/17 reflecting increases in almost all segments including Trayport revenue of $4.5 million in the *Global Solutions, Insights and Analytics* segment.

- *Operating expenses before acquisition costs* were up in Q4/17 compared with Q3/17 reflecting operating costs from Trayport, a write down of assets, higher external fees as well as increased marketing and occupancy costs. The increases were partially offset by lower severance costs and reduced depreciation and amortization.

- *Income from operations before acquisition costs* and *Income from operations* increased from Q3/17 to Q4/17 due to higher revenue partially offset by higher operating expenses.

- *Net income* in Q4/17 was $202.3 million or $3.65 per common share on a basic and $3.63 on a diluted basis, compared with net income of $51.9 million, or $0.94 per common share on a basic and $0.93 on a diluted basis in Q3/17. There was a gain on the sale of NGX and Shorcan Energy of approximately $157.8 million and a gain on the FX forward in Q4/17.

### *Q3/17 compared with Q2/17*

- *Revenue* in Q3/17 decreased over Q2/17 reflecting decreases in *Capital Formation, CDS, Derivatives Trading and Clearing, Equities and Fixed Income Trading* as well as *Global Solutions, Insights and Analytics* revenue, including approximately $2.3 million related to TMX Atrium (sold April 30, 2017).

- *Operating expenses before acquisition costs* for Q3/17 decreased by $5.5 million from Q2/17 largely reflecting lower overall *Compensation and benefits* costs, reduced infrastructure spending, lower *Depreciation and amortization* costs and reduced expenses of approximately $2.0 million from TMX Atrium (sold April 30, 2017).

- *Income from operations before acquisition costs* and *Income from operations* decreased from Q2/17 to Q3/17 due to the lower revenue partially offset by lower operating expenses.

- *Net income* for Q3/17 was $51.9 million, or $0.94 per common share on a basic basis and $0.93 on a diluted basis, compared with net income of $66.5 million, or $1.20 per common share on a basic basis and $1.19 on a diluted basis, for Q2/17 reflecting significantly lower revenue partially offset by lower operating expenses and lower net finance costs. In addition, for Q2/17, there was a $2.4 million increase in deferred income tax assets from a capital loss carryback, which reduced income tax expense and net income.

***Q2/17 compared with Q1/17***

- *Revenue* in Q2/17 increased over Q1/17 reflecting increases in *Capital Formation, CDS,* and *Derivatives Trading and Clearing* revenue. This was somewhat offset by decreases in *Equities and Fixed Income Trading* as well as *Global Solutions, Insights and Analytics* revenue, including approximately $4.5 million related to TMX Atrium (sold April 30, 2017).

- *Operating expenses before acquisition costs* for Q2/17 decreased by $6.3 million from Q1/17 largely reflecting lower expenses of approximately $5.5 million from TMX Atrium (sold April 30, 2017).

- *Income from operations before acquisition costs* and *Income from operations* increased from Q1/17 to Q2/17 reflecting both higher revenue and lower operating expenses.

- *Net income* for Q2/17 was $66.5 million, or $1.20 per common share on a basic or $1.19 on a diluted basis, compared with net income of $47.3 million, or $0.86 per common share on a basic and $0.85 on a diluted basis, for Q1/17 reflecting higher revenue, lower operating expenses, lower net finance costs and a $2.4 million increase in deferred income tax assets from a capital loss carryback. In addition, during Q1/17, net income was reduced by a non-cash income tax adjustment of $2.9 million relating to the write off of deferred income tax assets and a non-cash impairment charge of $4.8 million, both amounts related to TMX Atrium.

## ENTERPRISE RISK MANAGEMENT

TMX Group's operating subsidiaries provide essential services to the Canadian capital and global commodity markets and effectively managing risk is fundamental to our ability to execute on our enterprise and business strategies. Inherent in the execution of our strategies, we undertake activities that expose us to various risks. The objective of enterprise risk management (ERM) is to ensure that the outcomes of these risk-taking activities across the enterprise are transparent and understood, consistent with our objectives and risk appetite, appropriately balance risk and reward, and serve as inputs into the enterprise strategy formulation process.

We have identified a number of principles which guide our management of risks. These include the following:

- We promote and maintain an enterprise-wide ethical culture that values the importance of effective risk management in day-to-day business activities and decision making, and encourages frank and open communication.

- Our business units and corporate functions (*first line of defence*) own all risks assumed in their activities and are accountable for the effective management of those risks, supported by the risk management (*second line of defence*) and internal audit (*third line of defence*) functions. We adequately define these roles and responsibilities and associated levels of authority for risk-taking across the enterprise.

- We employ effective and consistent risk management processes across the enterprise to ensure risks are transparent and remain within an accepted and approved risk appetite.

- We employ sufficient resources and effective tools, methods, models and technology to support risk management processes.

- Our ERM framework reflects industry standards, legal and regulatory requirements and is regularly reassessed.

### Risks and Uncertainties

The Risk Management Committee (RMC), a management committee of TMX Group, has established a list of Key Enterprise Risks (KERs) that it believes are the most significant risks that TMX Group is exposed to. The RMC regularly undertakes a formal review of these KERs by evaluating the impact and likelihood of each risk after taking into account the enterprise's key objectives, known mitigations and established internal controls. These KERs are evaluated against TMX Group's risk appetite. In addition, the KERs are evaluated as part of the enterprise's strategic planning process and updated accordingly as necessary. The RMC also discusses any new or emerging risks that should be considered. These KERs are grouped under one of the risk categories of strategic, financial, operational as well as legal and regulatory.

The risks and uncertainties described below are not the only ones facing TMX Group. Additional risks and uncertainties not presently known to us or that we currently believe are immaterial may also adversely affect our business. If any of the following risks actually occur, our reputation, business, financial condition, or operating results could be materially adversely affected.

## Strategic Risks

### *Competition Risk*

We are exposed to the risk that established and new competitors, including disruptive technology providers, will challenge our business model and objectives.

### *Our Capital Formation business competes with other exchanges and other financing platforms*

We compete for listings with North American exchanges in a broad range of sectors and also internationally, particularly for resource companies and SMEs. We also face competition from North American and international exchanges for Canadian listings. Domestically, we currently compete for listings with three other exchanges.

While some Canadian issuers seek a listing on another major North American or international exchange, historically, the vast majority of these issuers also list on TSX or TSXV and do not bypass our markets. We also compete with institutions and various market participants that offer alternative forms of financing including private equity, venture capital and various forms of debt financing.

In addition, crowdfunding, a way for start-ups and SMEs to raise capital through small amounts of money raised from a large number of investors over the internet via an internet portal intermediary, is emerging. Similarly, Initial Coin Offerings (ICOs) are emerging as an alternative way to raise capital via a tokenized form of asset or currency.

### *TSX, TSXV and TSX Alpha Exchange face competition from other exchanges, other marketplaces and trading mechanisms*

We face competition for business from other exchanges, especially those in the U.S. as they continue to consolidate and investing becomes more global. In particular, these competitors could look to attract Canadian issuers that are listed on one of our exchanges. For example, one of our U.S.-based competitors has acquired a Canadian ATS on February 1, 2016 that has the second largest market share in Canadian equities trading and has since obtained exchange status to enable it to compete for listings in Canada. It is possible that this competitor could, in addition to competing for listing and trading of Canadian issuers, enter into other business areas in which we currently operate including the trading of other asset classes or areas under our Capital Formation, Derivatives or Global Solutions, Insights and Analytics segments.

In addition, the variety of other marketplaces and trading venues in the U.S. that trade Canadian securities, including dark markets and internalization facilities, places increasing competitive pressure on our business. For example, some market participants in the U.S., known as wholesalers, are currently able to pay our customers for order flow under U.S. securities laws and regulations. This practice is not permitted in Canada, and therefore puts us at a competitive disadvantage. IIROC published guidance and a technical notice to clarify the requirements for investment dealers when orders in Canadian-listed securities are executed away from Canadian markets, an important step in IIROC’s approach to addressing concerns about the routing of orders to the U.S. If we are unable to continue to provide competitive trade execution, the volume traded in all interlisted issuers on our equity exchanges could decrease in the future and adversely affect our operating results. Our combined market share (including TSX, TSXV, and Alpha) of the total volume traded in Canadian based interlisted issues was approximately 30% in 2018, essentially unchanged from 2017. Our cash equities sales team is focused on attracting more foreign participants and order flow by raising the level of awareness of the benefits of trading on TSX, TSXV and Alpha.

Domestic competition in our cash equities trading business has intensified with the establishment of ATSs in Canada. Technological advances have lowered barriers to entry and have created a multiple marketplace environment for trading TSX and TSXV listed securities. There are currently 14 Canadian equity marketplaces which trade TSX and/or TSXV listed securities, including dark and visible trading venues. There are also sophisticated mechanisms to internalize order flow, liquidity aggregators and smart order routers that facilitate trading on other venues. New market entrants have fragmented domestic equities market share and we continue to face significant competitive pressure from existing venues, and potential new entrants. Excluding intentional crosses, in the issues we trade, our combined domestic equities trading market share was 67%[33] in 2018, down from 69% in 2017. We only trade securities that are listed on TSX or TSXV. Excluding intentional crosses, in all listed issues in Canada, our combined domestic equities trading market share was 58% in the year ended December 31, 2018, down from 63% in the year ended December 31, 2017.

These trading venues may, among other things, respond more quickly to competitive pressures, develop similar or alternative products and services to those that TSX, TSXV and Alpha offer that are preferred by customers, develop and expand their network infrastructures and offerings more efficiently, adapt more swiftly to new or emerging technologies and changes in customer requirements, and adopt better, more user friendly and reliable technology. If these trading venues attract significant order flow, or other market structure changes occur in the marketplace which negatively impacts our ability to effectively compete, our listing, trading and data and analytics revenue could be materially adversely affected.

There is also intense price competition in the cash equities markets where competitors may price their trading and data products more attractively. While we have developed a pricing mix to attract greater liquidity to our markets, the competitive environment in which we operate places significant pricing pressures on our trading and market data offerings. Some competitors may seek to increase their share of trading by reducing their transaction fees, by offering larger liquidity payments, by offering inverted pricing and/or by offering other forms of financial or other incentives. We have in the past lowered our equity trading fees and we may, in the future, be required to adjust our pricing to respond to competitive pricing pressure. If we are unable to compete successfully with respect to the pricing of our offerings, our business, financial condition and results of operations could be materially adversely affected.

### *MX and CDCC face competition from other venues*

While MX is the only Canadian financial derivatives exchange offering standardized products and CDCC the only clearing house headquartered in Canada clearing such products, their various component activities are exposed. MX already competes with, among others, options and other derivatives exchanges as well as the OTC market. This competition exists particularly in the US, but also in Europe and Asia. For example, in the U.S., MX competes for market share of trading single stock options and share futures on Canadian-based inter-listings, or dual listings. However, options and share futures traded in the U.S. are not fungible with those traded in Canada. In addition, OTC regulatory reform that is underway in Canada could encourage the entry of new competition within the Canadian clearing space. OTC inter-dealer and dealer-to-client trading platforms represent increased competitive risk to MX with their lookalike and substitute products. We may, in the future, also face competition from other Canadian marketplaces. These competitors may, among other things, respond more quickly to competitive pressures, develop similar products to those MX offers that are preferred by customers or they may develop alternative competitive products. Furthermore, they may price their products more competitively, develop and expand their network infrastructures and offerings more efficiently, adapt more swiftly to new or emerging technologies and changes in customer requirements and use better, more user friendly and reliable technology. Increased competition could lead to reduced interest in MX's products which could materially adversely affect our business and operating results.

The Canadian clearing services market may become more competitive as some competitors receive recognition or exemption orders from regulators to operate as clearing agencies. For example, in 2013, Canada's central bank

[33] Source: IIROC

designated SwapClear, a global system for clearing over-the-counter interest rate swaps, as subject to its regulatory oversight, citing the potential to pose systemic risk to the Canadian financial system. SwapClear is operated by LCH, a U.K.-based company that operates several central counterparty services. Provincial regulators have also exempted from recognition in their respective province a number of foreign clearing agencies, allowing those exempted clearing agencies to provide clearing services to participants in the province under the terms of the applicable exemption orders, including Eurex Clearing AG and Chicago Mercantile Exchange Inc.

Increasing regulatory requirements imposed upon banks through higher capital requirements imposed under the Basel regulatory framework, which increase the costs of acting as a futures clearing agent on behalf of end customers may make clearing services more challenging for end customers to obtain, which could limit growth in the futures clearing business. Other major competitors may gain some of this business as they have started to offer clearing services directly to end customers, eliminating challenges end customers may face in obtaining clearing agent services from banks.

The derivatives trading industry is characterized by intense price competition. While our derivatives markets have developed a pricing mix to attract greater liquidity to these markets while maintaining our average price per contract, market conditions may result in increased competition which, in turn, may place significant pricing pressures in the future. Some competitors may seek to increase their share of trading by reducing their transaction fees, by offering larger liquidity payments or by offering other forms of financial or other incentives. Our business, financial condition and results of operations could be materially adversely affected as a result of these developments.

### *Shorcan faces competition from OTC markets and other sources*

Shorcan has several competitors in the fixed income IDB market. If Shorcan fails to attract institutional dealer order flow from this market, it would adversely affect its business and operating results.

### *Global Solutions, Insights and Analytics*

With the advent of a multi-marketplace environment in Canada, we face competition in market data and analytics, from other trading venues and vendors. Market data is generated from trading activity and the success of certain data products is linked to maintaining order flow.

### *Economic Risk*

We are exposed to the risk that the macroeconomic and industry conditions (among others, the commodity cycle and economic growth) will challenge our business model and objectives.

### *We depend on the economy of Canada*

Our financial results are, and continue to be affected by the Canadian economy, including by commodity prices in the resource sector, especially fluctuations in the price for crude oil. Any prolonged economic downturn could have a significant negative impact on our business. If the profit growth of Canadian-based companies is generally lower than the profit growth of companies based in other countries, the markets on which those other issuers are listed may be more attractive to investors than our equity exchanges. A prolonged economic downturn may have a negative impact on investment performance, which could materially adversely affect the number of issuers and new listed issuers, the market capitalization of our listed issuers, additional securities being listed or reserved, trading volumes across our markets, the number of transactions related to our equity and fixed income clearing and settlement, depository, custodial and entitlement services and market data sales.

### *Our operating results may be adversely impacted by global economic conditions*

The economic and market conditions in Canada, the United States, Europe, China and the rest of the world impact the different aspects of our business and our revenue drivers. In particular, lower commodity prices, including fluctuations in the price for crude oil, can, and has, negatively impacted our business. Changes in the economic and political climate in the United States, including changes relating to trade agreements, could impact our business. In addition, increased uncertainty in Europe, including the impact of Brexit and the possibility of sovereign defaults on debt, may also impact our business, including Trayport. Because listing, financing, trading and clearing activities are significantly affected by economic, political and market conditions and the overall level of investor confidence, they impact the level of listing activity (including IPOs), the market capitalization of our issuers, trading volumes and sales of data across our markets. In addition, our clearing customers face higher credit costs associated with complying with margining regimes which could result in lower volumes.

Global market and economic conditions have fluctuated in recent years and we have witnessed both high and low levels of volatility. While higher volatility in markets can generate increased transaction volume, when coupled with prolonged negative economic conditions higher volatility can adversely affect trading volumes and the demand for market data and can lead to slower collections of accounts receivable as well as increased counterparty risk which, in turn, could adversely affect our business, financial condition, and operating results. A low-volatility environment can result in lower levels of trading, particularly for derivative products, placing downward pressure on operating results.

### *We depend on market activity that is outside of our control*

Our revenue is highly dependent upon the level of activity on our exchanges and clearing houses, including: the volume of securities traded on our cash markets; the number of transactions, volume of contracts or products traded and cleared on our derivatives markets; the number and market capitalization of listed issuers; the number of new listings; the number of active traders and brokerage firms; the number of transactions related to our equity and fixed income clearing and settlement, depository services; and the number of subscribers to market data and Trayport services.

We do not have direct control over these variables. Among other things, these variables depend upon the relative attractiveness of securities listed and traded on our exchanges and the relative attractiveness of our exchanges as a place to list and trade those securities as compared to other exchanges and other trading mechanisms. Those variables are in turn influenced by:

- the overall economic conditions and monetary policies in Canada, the United States, Europe, China, and in the world in general (especially growth levels, political stability and debt crisis);
- broad trends in business and corporate finance, including trends in the exchange industry, capital market trends and the mergers and acquisitions environment;
- the economic health of the resource sector;
- the level and volatility of interest rates and resulting attractiveness of alternative asset classes;
- the regulatory environment for investment in securities, including the regulation of marketplaces and other market participants, both in Canada and other jurisdictions;
- the relative activity and performance of global capital markets;
- investor confidence in the prospects and integrity of our listed issuers, and the prospects of Canadian-based listed issuers in general;
- pricing volatility of global commodities and energy markets; and

- changes in tax legislation that would impact the relative attractiveness of certain types of securities, or listing in certain countries.

We may be able to indirectly influence the volume of trading by providing efficient, reliable and low-cost trading; maximizing the availability of timely, reliable information upon which research, advice and investment decisions can be based; and maximizing the ease of access to listings and trading facilities. However, those activities may not have a positive effect on or effectively counteract the factors that are outside of our control.

### *Strategic Planning Risk*

We are exposed to the risk that poorly planned strategy and change initiatives reduce the probability of successful organizational transformation.

### *Our strategic planning processes may not enable us to identify and properly respond to opportunities or threats resulting in our inability to develop new products and services that meet clients' evolving needs*

Our strategic planning process includes a thorough analysis of the business context in which we operate as well as significant peer and competitive analysis. While we regularly test the key assumptions underlying our strategic plan, it is possible that we may not identify or respond to opportunities or threats in our industry despite the investment of time and resources in this process.

### *Execution Risk*

We are exposed to the risk that we lack capabilities or fail to prioritize initiatives to deliver against our strategy and objectives in an efficient and effective manner.

### *We may not be successful in executing our strategy*

We invest significant resources in the development and execution of our corporate strategy to grow profitability and maximize shareholder value. We may not succeed in executing our strategies effectively because of, among other things, increased global competition, inability to mobilize or co-ordinate internal resources on a timely basis, difficulty developing and introducing products or regulatory restrictions. In addition, we may have difficulty obtaining financing for new business opportunities, due to financial restrictions that currently or may in the future be placed on TMX Group under our Commercial Paper Program, Debentures, Credit Facility, Recognition Orders and under our regulatory oversight agreements. While we have established process and tools for effective and rigourous oversight of our key initiatives, any of these factors could materially adversely affect the successful execution of our strategies.

### *New business activities may adversely affect income*

We may enter new business activities which, while they could provide opportunities for us, may also impose restrictions on us and/or have an adverse effect on our existing profitability. While we would expect to realize new revenue from these new activities, there is a risk that this new revenue would not be greater than the associated costs or any related decline in existing revenue sources.

### *Expansion of our operations internationally involves unique challenges that we may not be able to meet*

We continue to expand our operations internationally, including making acquisitions, opening offices and acquiring distribution, technology and other systems in foreign jurisdictions, and obtaining regulatory authorizations or exemptions to allow remote access to our markets by approved participants outside Canada. We expect that the expansion of access to our electronic markets will continue to increase the portion of our business that is generated from outside Canada. We face certain risks inherent in doing business in international markets, particularly in the regulated exchange and clearing businesses. These risks include, but are not limited to:

- restrictions on the use of trading terminals or the contracts that may be traded;
- reduced protection for intellectual property rights;
- difficulties in staffing and managing foreign operations;
- potentially adverse tax consequences;
- enforcing agreements and collecting receivables through certain foreign legal systems; and
- foreign currency fluctuations for international business.

We would be required to comply with the laws and regulations of foreign governmental and regulatory authorities of each country in which we obtain authorizations or exemptions for remote access to our markets. These may include laws, rules and regulations relating to any aspect of the business. In many cases, the additional costs related to compliance can be substantial, and could outweigh the potential benefits. International expansion may expose TMX Group to geographic regions that may be subject to greater political, economic and social uncertainties than countries with developed economies.

Any of these factors could have a material adverse effect on the success of our plans to grow our international presence and market products and services and consequently on our business, financial condition and results of operations.

### *Commercial Risk*

We are exposed to the risk that we fail to promote and sell our products and services effectively resulting in loss of revenue.

### *Our exchanges depend on the development, marketing and acceptance of new products and services*

We are dependent to a great extent on developing and introducing new investment, trading and clearing products and services and their acceptance by the investment community. While we continue to review and develop new products and services that respond to the needs of the marketplace, we may fail to continue to develop successful new products and services or fail to effectively promote and sell our products and services. Our current offerings may become outdated or lose market favour before we can develop adequate enhancements or replacements. Other exchanges, ATSs or ECNs may introduce new products or services or enhancements that make our offerings less attractive. Even if we develop an attractive new product, we could lose trading activity to another marketplace that introduces a similar or identical offering which offers greater liquidity or lower cost. We also may not receive regulatory approval (in a timely manner or at all) for our new offerings. Any of these events could materially adversely affect our business, financial condition and operating results.

### *Integration/Divestitures Risk*

We are exposed to the risk that we fail to integrate acquisitions to achieve the planned economics or divest under-performing businesses effectively.

### *We face risks associated with integrating the operations, systems, and personnel of acquisitions*

As part of our strategy to sustain growth, we have and expect to continue to pursue appropriate acquisitions of other companies and technologies. An acquisition will only be successful if we can integrate the acquired businesses' operations, products and personnel; retain key personnel; and expand our financial and management controls and our reporting systems and procedures to accommodate the acquired businesses. It is possible that integrating an acquisition could result in less management time being devoted to other parts of our core business. In addition, pursuant to the Final Recognition

Orders[34], prior regulatory approval is required before TMX Group can implement significant integration, combination or reorganization of businesses, operations or corporate functions among TMX Group entities. The requirement to obtain these approvals may restrict or delay TMX Group's ability to make planned changes to these aspects of its operations in the future which could have a material adverse effect on TMX Group's business, financial condition and results of operations. If an investment, acquisition or other transaction does not fulfill expectations, we may have to write down its value in the future and/or sell at a loss.

### *We face risks associated with not being able to divest under-performing businesses*

As part of our normal course of operations and strategic review processes, we may from time to time identify under performing assets or businesses that we chose to divest.

Similar to integration risks, we also face the risks of not divesting under-performing businesses in a timely and effective manner to enable better utilization of our capital and other resources.

## Operational Risks

### *Technology Risk*

We are exposed to the risk that our technology and underlying IT processes do not enable us to develop and/or deliver our products and services effectively.

### *We depend heavily on information technology, which could fail or be subject to disruptions*

We are extremely dependent on our information technology systems. Trading and data on our cash equities and energy markets, trading and clearing on our derivatives markets and clearing, settlement and depository activity for equities and fixed income securities are conducted exclusively on an electronic basis. SOLA, the MX proprietary trading system, is currently in use at BOX and other venues. In addition, we provide the technical operations services related to BOX's trading and surveillance platforms.

We have incident and disaster recovery and contingency plans as well as back-up procedures to mitigate the risk of an interruption, failure or disruption, including those due to  cyber attacks on our critical information technology including that of TSX, TSXV, Alpha, MX, Trayport, CDCC and CDS. We also test and exercise our disaster recovery plans.  However, depending on an actual failure or disruption, those plans may not be adequate as it is difficult to foresee every possible scenario and therefore we cannot entirely eliminate the risk of a system failure or interruption. We have experienced occasional information technology failures and delays in the past, and we could experience future information technology failures, delays or other interruptions.

The current technological architecture for our cash equities, derivatives trading and clearing, and market data information technology systems may not effectively or efficiently support our changing business requirements.

We are continually improving our information technology systems so that we can handle increases and changes in our trading, clearing, settlement and depository activities and market data volumes to respond to customer demand for improved performance. This requires ongoing expenditures which may require us to expend significant amounts of resources in the future. System changes may introduce risk; while we have and follow, standard deployment processes for managing and testing these changes, we cannot entirely eliminate the risk of a system failure or interruption.

[34] Recognition orders issued by the securities regulators with respect to the Maple Transaction.

If the TMX Quantum XA trading enterprise, the SOLA derivatives trading enterprise, the SOLA Clearing platform, or CDS's CDSX system fail to perform in accordance with expectations, our business, financial condition and operating results may be materially adversely affected.

### *Information Security and Privacy Risk*

We are exposed to the risk that information security breaches will adversely affect the operations, intellectual property and reputation of TMX Group.

### *Our processes and networks and those of our third-party service providers may be vulnerable to data security risks, including cyber attack*

Our processes and networks and those of our third-party service providers, our POs and approved participants and our customers may be vulnerable to information risks, including unauthorized access, computer viruses, denial of service attacks, and other security issues. Persons who circumvent security measures could wrongfully use our information or cause interruptions or malfunctions in our operations which could damage the integrity of our markets and data provision, any of which could have a material adverse effect on our business, financial condition and results of operations. We may be required to expend significant resources to protect against the threat of security breaches or to alleviate problems, including reputational harm and litigation, caused by any breaches. Although we intend to continue to implement industry-standard security measures, these measures may prove to be inadequate and result in system failures and delays that could lower trading volume and have a material adverse effect on our business, financial condition and results of operations.

### *Geopolitical & External Disruption Risks*

We are exposed to the risks that geopolitical upheavals (e.g. a terrorist attack) or non-political external events (e.g. extreme weather) will affect the provision of our critical services.

### *Geopolitical, climate change and other factors could interrupt our critical business functions*

The continuity of our critical business functions could be interrupted by geopolitical upheaval, including terrorist, criminal and political, or other types of external disruptions, including human error, climate change, natural disasters, extreme weather, power loss, telecommunication failures, theft, sabotage and vandalism. Given our position in the Canadian capital markets, we may be more likely than other companies to be a target of such activities.

We have a series of integrated disaster recovery and business continuity plans for critical business functions to mitigate the risk of an interruption. We currently maintain duplicate facilities to provide redundancy and back-up to reduce the risk and recovery time of system disruptions for key systems. However, not all systems are duplicated, and any major disruption may affect our existing and back-up facilities. Any interruption in our key services could impair our reputation, damage our brand name, and negatively impact our financial condition and operating results.

### *Talent Management Risk*

We are exposed to the risk that we are unable to attract and/or retain talented employees, which adversely affects the achievement of our objectives.

### *We need to retain and attract qualified personnel*

Our success depends to a significant extent upon the continued employment and performance of a number of key management personnel whose compensation is partially tied to vested share options and long-term incentive plans that mature over time. The value of this compensation is dependent upon total shareholder return performance factors, which includes appreciation in our share price. The loss of the services of key personnel could materially adversely affect our business and operating results. We also believe that our future success will depend in large part on our ability to attract and retain highly skilled technical, managerial and marketing personnel. There can be no assurance that we will be successful in retaining and attracting the personnel we require which could negatively affect our business and results of operations.

### *Critical Infrastructure Risk*

We are exposed to the risk that we fail to manage our trading, clearing and settlement infrastructure effectively, thereby exposing ourselves to systemic failure.

### *Our trading, clearing and depository businesses could be exposed to loss due to operational failures*

If our systems are significantly compromised or disrupted or if we suffer repeated failures, this could interrupt our cash equities trading services, MX's trading and CDCC's clearing services, CDS' clearing, settlement and depository services, as well as the services we provide to BOX; cause delays in settlement; cause us to lose data; corrupt our trading and clearing operations, data and records; or disrupt our business operations, including BOX's operations. This could undermine confidence in our exchanges and clearinghouses, materially adversely affect our reputation or operating results, and may lead to customer claims, litigation and regulatory sanctions. Failure of CDS' systems could also affect other systemically important financial infrastructures such as the Large Value Transfer System operated by Payments Canada.

CDS holds securities on behalf of its participants in safe keeping. A small portion of this securities inventory is held in physical form. This risk is mitigated through layers of physical security arrangements as well as insurance coverage. However, CDS may be exposed to the risk of the loss or theft of these securities.

The operational processes at CDS and CDCC which provide clearing and central-counterparty services, are subject to the risk of failure for which they may be held liable. These process failures may result in material financial losses. To mitigate this risk, CDS and CDCC have instituted a comprehensive set of internal controls, which are audited by an external party on at least an annual basis.  CDS and CDCC are the sole clearers for the transactions they process.

### *Operations Risk relating to Transfer Agent and Corporate Trust Services Business*

### *Our transfer agent and corporate trust services business could be exposed to losses due to operational risks*

The principal risks associated with the services and products offered by TSX Trust are operational in nature as TSX Trust does not lend money or trade in marketable securities. The most significant operational risks include securities issuance and transfers, corporate actions processing, disbursements, escrows, corporate trust and segregated accounts reconciliation activities. To mitigate these risks, the management has instituted a comprehensive set of internal controls, which are audited by an external party on at least an annual basis.

### *Model Risk*

We are exposed to the risk that our clearing and settlement risk models used within our clearing houses are not designed or operating effectively, thereby exposing us to systemic failure.

### *We are dependent on the accuracy and effective implementation of risk models*

CDS and CDCC use financial models to estimate risk exposures and the value of margin and collateral to mitigate those exposures. These models are subject to risks including the incorrect use of variables input into the models, the misspecification of the model or errors in the implementation and/or use of models and their results which could result in the risks resulting from a clearing member failure being inadequately collateralized. The model risks are mitigated through model testing prior to implementation and the existence of a  risk management framework with necessary governance to regularly assess the adequacy of the models. In addition, our clearinghouse risk models are subject to independent vetting and validation thereby ensuring that those models continue to perform as they were originally designed to do. Failure of the models may result in under or over estimation of financial risk exposures and may create systemic risks.

***Third Party Risk***

We are exposed to the risk that the use of third party vendors or outsourcing service providers for technology and/or business processes will result in loss of critical business data and/or compromise controls.

***We depend on third-party suppliers and service providers***

We depend on a number of third parties, such as IIROC, data processors, software and hardware suppliers, communication and network suppliers, suppliers of electricity, and many other vendors, for elements of our businesses including trading, clearing, routing, providing market data and other products and services. These third parties may not be able to provide their services without interruption, or in an efficient, cost-effective manner. In addition, we may not be able to renew our agreements with these third parties on favourable terms or at all. These third parties also may not be able to adequately expand their services to meet our needs. We have established a central procurement function focused on vendor selection and management. However, if a third party suffers an interruption in or stops providing services and we cannot make suitable alternative arrangements, or if we fail to renew certain of our agreements on favourable terms or at all, our business, financial condition or operating results could be materially adversely affected.

***Client Concentration Risk***

***We depend on an adequate number of clients***

If we determine that there is not a fair market, the markets will be shut down. There will not be a fair market if too few POs, or approved participants are able to access our cash equity or derivatives exchanges, including market data information generated from these exchanges. If trading on our exchanges is interrupted or ceases, it could materially adversely affect our equity, derivatives or energy operations, our financial condition and our operating results.

***Our trading and clearing operations depend primarily on a small number of clients***

During 2018, approximately 76% of our trading and related revenue, net of rebates, on TSX and approximately 70% of our trading and related revenue on TSXV were accounted for by the top ten POs on each exchange based on volumes traded.

Approximately 58% of CDS's revenue, net of rebates, in 2018 was accounted for by the top ten customers (excluding securities regulators).

Approximately 63% of MX and CDCC's trading and clearing revenue, net of rebates, in 2018 was accounted for by the top ten participants based on volume of contracts traded.

If there was a significant decrease in revenue from several of these customers, there would be a negative impact on our business.

***Legal & Regulatory Risk***

***Regulatory Climate & Compliance***

We are exposed to the risks that are associated with the complexity and unpredictability of our legal and regulatory environment, including legislation and regulations that impact our listed issuers. Our response to regulatory requirements could result in higher operating costs. Moreover, we are also exposed to the risk that we fail to comply with laws and regulations, resulting in financial and reputational loss.

### *Cost of Regulation*

We incur costs to comply with the regulatory requirements that are imposed pursuant to the Recognition Orders.

For more information on the regulatory impact on our business, please see the TMX Group Annual Information Form, dated March 29, 2018.

### *We operate in a highly regulated industry and are subject to extensive regulation and could be subject to increased regulatory scrutiny in the future*

We are subject to significant regulatory constraints. We operate in a highly regulated industry and are subject to extensive government regulation and we could be subject to increased regulatory scrutiny in the future. Regulators in Canada, as well as regulators in other jurisdictions where we do business, such as the U.S., regulate us, our exchanges, our clearing houses and certain of our other businesses. Regulators in other jurisdictions may regulate our future operations. Canadian regulators propose changes, including amendments to National Instruments, on an ongoing basis.

In Canada, our exchanges are regulated by certain provincial securities regulators. In addition, MX is recognized as an SRO in Québec. Shorcan is a registrant under the “exempt market dealer” category and has been approved by IIROC to act as an inter-dealer broker. TSX Trust has been granted the requisite trust licenses by the Office of the Superintendent of Financial Institutions (OSFI) and the provinces. Our clearing agencies are regulated by certain provincial securities regulators and CDS and CDCC are also subject to regulation and oversight by the Bank of Canada (BOC).

In the U.S., MX carries on certain activities as a Foreign Board of Trade (FBOT) in compliance with an Order of Registration issued by the Commodity Futures Trading Commission (CFTC). CDCC is subject to regulatory requirements of the SEC and various U.S. state securities regulators. Shorcan is registered as an introducing broker with the National Futures Association, which enforces CFTC reporting requirements for its members under the U.S. Commodity Exchange Act.

Outside the U.S. and Canada, MX is recognized as a foreign market in France and can undertake certain activities in Israel subject to the conditions listed in a no-action letter issued by the Israel Securities Authority. TSX Inc. has a representative office in China for TSX and TSXV, which is subject to regulation by the China Securities Regulatory Commission. CDCC has been recognized by the European Securities and Markets Authority as a foreign clearing house under European Market Infrastructure Regulation.

Our regulators have broad powers over the entities they regulate to audit, investigate and enforce compliance with applicable regulations and impose sanctions for non-compliance. The Canadian Derivatives Clearing Service (CDCS), operated by CDCC, and CDSX, operated by CDS Clearing, have each been designated by the BOC as being of systemic importance under the Payment Clearing and Settlement Act (Canada). Under such designation, the BOC has broad powers relating to the regulation and oversight of CDS Clearing and CDCC.

Our regulators are vested with broad powers to prohibit us from engaging in certain business activities and to suspend or revoke existing approval to engage in certain business activities, including exchange, clearing agency and SRO related activities. In the case of actual or alleged non-compliance with legal or regulatory requirements, our regulated entities could be subject to investigations and administrative or judicial proceedings that may result in substantial penalties, including the suspension or revocation of approval to act as an exchange, clearing agency or SRO, as applicable. Any such investigation or proceeding, whether successful or not, would result in substantial costs and diversions of resources and might also harm our reputation, any of which may have a material adverse effect on our business, financial condition and results of operations.

The regulation of our businesses may impose barriers or constraints which limit our ability to build an efficient, competitive organization and may also limit our ability to expand global operations. Securities and other regulators also impose financial and corporate governance restrictions on us and our equity and derivatives exchanges and clearing agencies and operations. Some of our regulators must approve or review our regulated entities' listing rules, trading rules, clearing, settlement and depository rules, fee structures and features and operations of, or changes to, our systems. These approvals or reviews may increase our costs and delay our plans for implementation. There could also be regulatory changes that impact our customers and that could materially adversely affect our business and results of operations.

We could be subject to increased regulatory scrutiny in the future. The multi-market environment in Canada and the impact of global economic conditions continue to lead to more aggressive regulation of our businesses by securities and other regulatory agencies in Canada, the U.S. and abroad and could extend to areas of our businesses that to date have not been regulated.

There may be a conflict of interest, real or perceived, between our regulatory responsibilities and our own business activities. While we have implemented stringent governance measures and have and will continue to put into place policies and procedures to manage such conflicts, any failure to diligently and fairly manage such conflicts may significantly harm our reputation, prompt regulatory action and could materially adversely affect our business, financial condition and results of operations.

### *New regulatory requirements may make it more costly to comply with relevant regulation, to operate our existing businesses or to enter into new business areas*

A number of regulatory initiatives and changes have been identified or proposed or are being implemented by regulators, including in Canada, the U.S. and Europe. We cannot be certain whether, or in what form, regulatory changes will take place, and cannot predict with certainty the impact of such changes on our businesses and operations. Changes in, and additions to, the rules affecting our exchanges and clearing houses could require us to change the manner in which we and our customers conduct business or govern ourselves. For example, impacts of Brexit on our exchanges, clearing houses and Trayport, as well as our clients, remain uncertain. Failure to make the required changes and comply on a timely basis could result in material reductions to activity or revenue, sanctions and/or restrictions by the applicable regulatory authorities.

Unexpected and new regulatory requirements could make it more costly to comply with relevant regulations and for affected entities to operate their existing businesses or to enter into new business areas. In addition, high levels of regulation may stifle growth and innovation in capital markets generally and may adversely affect our business, financial condition and results of operations.

CDS Clearing and CDCC operate financial market infrastructures, including central counterparties for cash and derivative markets, commodity markets, securities settlement systems and central securities depositories that are subject to the CPMI-IOSCO Principles for Financial Market Infrastructure (PFMIs) for these types of services, which are reflected in the requirements of such entities' regulators and applicable securities law including National Instrument 24-102 Clearing Agency Requirements. The ongoing implementation of PFMIs by regulators on these businesses will continue to impact the cost of regulatory compliance. In 2018, in compliance with the PFMIs additional guidance issued in 2017 and additional Canadian regulatory and oversight guidance, CDS Clearing implemented change to its liquidity facilities and CDCC adopted new recovery tools.

European energy market regulatory changes could potentially affect the structure of these markets and hence the number of trading venues supported by Trayport.

### *Our Recognition Orders impose significant regulatory constraints*

Under the Recognition Orders, we are subject to extensive regulation and regulatory oversight with respect to, among other things, fees, fee models, discounts and incentives. The Recognition Orders also impose significant regulatory constraints on our ongoing business. The additional regulatory and oversight provisions provided for in the Recognition Orders provide the applicable regulators with broad powers that could, depending on how such powers are exercised in the future, impose barriers or constraints that limit our ability to build an efficient, competitive organization, which could have a material adverse effect on our business, financial condition and results of operations.

With respect to the fees charged by all of our equity exchanges (TSX, Alpha, and TSXV), the Recognition Orders impose restrictions or prohibitions on certain types of fee discounts or incentives that such exchanges may provide, including discounts or incentives that are accessible only to a particular marketplace participant or class of marketplace participants. Such prohibitions and restrictions may limit the ability of our equity exchanges to introduce new products in the future or to introduce them on a timely basis, which could materially adversely affect the success of our future strategies, financial condition and results of operations. In addition, under the Recognition Orders the OSC has the right to require TSX and Alpha to submit a fee, fee model or incentive that has previously been approved by the OSC for re-approval. In such circumstances, if the OSC decides not to re-approve the fee, fee model or incentive, it must be revoked.

Changes to TSX and Alpha fees are filed for approval with the OSC at least seven business days before becoming effective. Fee changes for TSXV are filed for approval with the Alberta Securities Commission (ASC) and British Columbia Securities Commission (BCSC) at least seven business days in advance. Prior to becoming effective, changes to MX trading fees are filed with the AMF and the OSC at least seven business days in advance. It is possible that the AMF, OSC, BCSC or the ASC may require more time to review the fee filing, object, or require revisions to, the proposed fee changes.

In addition, changes to TMX Datalinx fees related to TSX, TSXV, Alpha and MX market data and co-location are filed with the OSC, BCSC, ASC and the AMF, as applicable, for approval, seven business days before becoming effective. It is possible that the regulators may require more time to review the fee filing, object, or require revisions to the proposed fee changes.

Similarly, changes to CDCC fees are filed with the AMF upon approval by CDCC and with the OSC ten business days before becoming effective. It is possible that the regulators may require more time to review the fee filing, object, or require revisions to the proposed fee changes.

With respect to CDS, under the applicable Recognition Orders certain fees charged by it and its subsidiaries are subject to prior approval of the applicable regulators. Under the CDS Recognition Orders granted by the OSC, AMF and BCSC, fees for services and products offered by certain CDS subsidiaries will be those fees in effect on November 1, 2011 (the 2012 base fees). We cannot adjust such fees without the approval of the OSC, AMF and BCSC. In addition, we may only seek approval for fee increases on clearing and other core CDS Clearing services (which services are outlined in the OSC and AMF Recognition Orders) where there has been a significant change from circumstances as at August 1, 2012, the effective date of the Recognition Orders, and approval may or may not be granted. Accordingly, even where costs may be rising in the future (including as a result of trading volumes falling), we would only be permitted to seek a fee increase on such services if we could establish to the applicable regulators that there has been a significant change. Under the CDS Recognition Orders the OSC and the AMF each have the right to require the applicable CDS entity to submit a fee, fee model or incentive that has been previously approved by the OSC and/or the AMF for re-approval. In such circumstances, if the OSC and/or AMF, as applicable, decide not to re-approve the fee, fee model or incentive, it must be revoked. Such constraints on the ability to amend CDS fees could have a material adverse impact on our business, financial condition and results of operations in the future. **(see OUR BUSINESS - CAPITAL MARKETS - Equities and Fixed Income Clearing, Settlement, Depository and Other Services - CDS.)**

We have incurred increased costs to comply with the additional regulatory requirements that are imposed pursuant to the Recognition Orders. In addition, we and certain of our businesses are subject to participation and activity fees imposed by provincial securities regulators. The overall scope of the additional regulatory costs may have a material adverse effect on our business, financial condition, and results of operations.

Pursuant to the Recognition Orders, prior regulatory approval is also required before we can implement changes to a number of aspects of our operations. This includes prior regulatory approval of (a) changes to internal cost allocation models and any transfer pricing between affiliated entities, (b) significant integration, combination or reorganization of businesses, operations or corporate functions between TMX Group entities, (c) non-ordinary course changes to TSXV's operations, and (d) any outsourcing of key services or systems by a marketplace. The requirement to obtain approvals may restrict or delay our ability to make planned changes to these aspects of our operations in the future which could have a material adverse effect on our business, financial condition and results of operations.

### *Our Recognition Orders impose ownership restrictions on our voting shares*

Under the OSC and AMF Recognition Orders, no person or combination of persons, acting jointly or in concert, is permitted to beneficially own or exercise control or direction over more than 10% of any class or series of voting shares of TMX Group without prior approval of the OSC and the AMF. Should a person or combination of persons, acting jointly or in concert, beneficially own or exercise control or direction over more than 10% of any class or series of voting shares of TMX Group without prior approval of the OSC and the AMF, their respective voting rights will be limited to no more than 10% until such time as approval has been granted by the OSC and the AMF.

### *Litigation/Legal Proceedings Risk*

We are exposed to the risk that litigation or other legal proceedings are launched against us.

#### *We are subject to risks of litigation and other legal proceedings*

Some aspects of our business involve risks of litigation. Dissatisfied customers, among others, may make claims with respect to, among other things, the manner in which we operate or they may challenge our regulatory actions, decisions or jurisdiction. Although we may benefit from certain contractual indemnities and limitations on liabilities, these rights may not be sufficient. In addition, with civil liability for misrepresentations in our continuous disclosure documents and statements and for the failure to make timely disclosures of material changes in Ontario and certain other jurisdictions, dissatisfied shareholders have a statutory right to make claims against us. We could incur significant legal expenses defending claims, even those without merit. If a lawsuit or claim is resolved against us, it could materially adversely affect our reputation, business, financial condition and operating results.

## Intellectual Property Risk

We are exposed to the risk that we fail to protect our intellectual property resulting in material financial loss to us. We are exposed to the risk that an infringement claim may be asserted against us.

#### *We may be unable to protect our intellectual property*

To protect our intellectual property rights, we rely on a combination of trademark laws, copyright laws, patent laws, trade secret protection, confidentiality agreements, and other contractual arrangements with our affiliates, customers, strategic partners, and others. This protection may not be adequate to deter others from misappropriating our proprietary information. We may not be able to detect the unauthorized use of, or take adequate steps to enforce, our intellectual property rights. We have registered, or applied to register, our trademarks in Canada and in some other jurisdictions. If we are unable to protect our intellectual property adequately, it could harm our brand, affect our ability to compete effectively and may limit our ability to maintain or increase revenue. It could also take significant time and money to defend our intellectual property rights, which could adversely affect our business, financial condition, and operating results.

#### *We are subject to risks of intellectual property claims*

We license a variety of intellectual property from third parties. Others may bring infringement claims against us or our customers in the future because of an alleged breach of such a license. We may also be subject to claim alleging that we are infringing on a third party's intellectual property rights without a license. If someone successfully asserts an infringement claim, we may be required to spend significant time and money to develop or license intellectual property that does not infringe upon the rights of that other person or to obtain a license for the intellectual property from the owner. We may not succeed in developing or obtaining a license on commercially acceptable terms, if at all. In addition, any litigation could be lengthy and costly and could adversely affect us even if we are successful.

## Financial Risks

### *Foreign Exchange*

We are exposed to the risk that future movements in exchange rates will adversely affect the valuation of our revenues, expenses, assets or liabilities (For details, see **Foreign Currency Risk under Market Risk section - Financial Risk Management**).

### *Cost Structure Risk*

### *Our cost structure is largely fixed*

Most of our expenses are fixed and cannot be easily lowered in the short-term if our revenue decreases, which could have an adverse effect on our operating results and financial condition.

### *Market Event Risk*

### *Our derivatives and cash markets clearing businesses may be harmed by a systemic market event*

In the case of sudden, large price movements, certain market participants may not be able to meet their obligations to brokers who, in turn, may not be able to meet their obligations to their counterparties. The impact of such an event could have a material adverse effect on CDCC and CDS' businesses. In such cases, it could be possible that Clearing Members and/or participants default with CDCC and/or CDS. As referred to in the ***Financial Risk Management – Credit Risk – CDS*** **and *Credit Risk – CDCC* sections**, CDCC and/or CDS would use its risk management mechanisms to manage such a default. In extreme situations such as large-scale market price moves or multiple defaults occurring at the same time, all these mechanisms may prove insufficient and could result in significant losses.

### *Capital Structure Risk*

We are exposed to the risk that we fail to develop, implement and maintain the appropriate corporate finance model and capital structure.

We have approximately $1,066.3 million of indebtedness and are subject to ongoing covenants under the Trust Indentures governing the Debentures and the terms of our Credit Facility and Commercial Paper Program.

The Trust Indentures governing the Debentures impose various restrictions on TMX Group and its subsidiaries, including restrictions on the ability of TMX Group and each of its material subsidiaries (as defined in the Trust Indentures) to create a lien on these entities' assets, limitations on the ability of material subsidiaries of TMX Group to enter into certain types of indebtedness, and requirements to repurchase outstanding Debentures on change of control of TSX Inc. or MX coupled with a triggering event (i.e., rating of the Debentures is lowered to below investment grade). Notwithstanding our treasury and capital allocation programs which include leverage ratio and dividend payout ratio analysis, some, or all, of these restrictions could limit our flexibility to change our capital structure.

### *The terms of our Credit Facility and Commercial Paper Program*

Our Credit Agreement requires us to satisfy and maintain an interest coverage ratio and a leverage ratio, among other covenants, including the timely payment of principal and interest when due. It is important that we meet all of the terms under our Credit Facility since it provides a 100% backstop to our Commercial Paper Program (see **Liquidity and Capital Resources - Commercial Paper, Debentures, Credit and Liquidity Facilities - Credit Facility**). Our ability to meet the financial ratios under the Credit Facility and other covenants, including the timely payment of principal and interest when due, under the Credit Agreement and Trust Indentures are dependent on our cash flows and earnings, level of indebtedness and other financial performance measures, which are affected by prevailing interest rates and general economic, market, financial, competitive, regulatory and other factors, such as the volume of securities traded on our equity markets, the number of transactions cleared and settled in our cash market clearing, settlement and depository services, the number of transactions, volume of contracts or products traded and cleared on our cash and derivatives markets, the number of new and additional listings on our equity markets, the number and market capitalization of listed issuers, the number of subscribers to market data, fee regulation by securities regulatory authorities, and increased competition from other exchanges and marketplaces, all of which are beyond our control, as well as on our ability to control our expenses.

Based on the current level of operations and anticipated growth, we believe that our cash flows from operations and our available cash are adequate to meet our current liquidity needs. However, we cannot guarantee that our businesses will generate sufficient earnings or cash flows from operations or that anticipated growth will be realized or that we will be able to control our expenses in an amount sufficient to enable us to satisfy the financial ratios and other covenants, or pay our indebtedness or fund our other liquidity needs. If we do not have sufficient funds, we may be required to renegotiate the terms of, restructure, or refinance all or a portion of our indebtedness on or before our stated maturity, reduce or delay capital investments and acquisitions, reduce or eliminate our dividends, or sell assets. Our ability to renegotiate, restructure, or refinance our indebtedness would depend on the condition of the financial markets and our financial condition at that time. Failure to comply with the financial ratios as well as covenants of the Credit Agreement could result in a default under the Trust Indentures, which, if not cured or waived, could result in TMX Group being required to repay outstanding borrowings under both the Credit Agreement and the Debentures before their due dates. In addition, an event of default under the Trust Indentures governing the Debentures that would result in an acceleration of maturity of the applicable series of Debentures could lead to an acceleration of the maturity of the Credit Agreement.

In addition, if we fail to comply or are reasonably likely to fail to comply with any financial covenant or ratio contained in any Final Recognition Order, such failure could result in a default under the Credit Agreement as well, if a governmental authority issues a decision or orders restrictions on us or any of our subsidiaries as a result of the non-compliance where a requisite majority of the lenders determine that the restrictions have or will have a material adverse effect as defined in the Credit Agreement. It will also be a default under the Credit Agreement if a governmental authority issues a decision or orders restrictions on our or any of our subsidiaries' ability to move cash or cash equivalents among TMX Group and our subsidiaries, where a requisite majority of the lenders determine that the restrictions have or will have a material adverse effect. If these events of default under the Credit Agreement were to result in an acceleration of maturity under the Credit Agreement, the event(s) could constitute an event of default under the Trust Indentures, which in turn would result in the acceleration of maturity of the outstanding Debentures. If we are forced to refinance these borrowings on less favourable terms or cannot refinance these borrowings, our business, results of operations, and financial condition would be adversely affected.

### *Our variable rate indebtedness subjects us to interest rate risk, which could cause our indebtedness service obligations to increase significantly / Our hedging arrangements could also increase indebtedness*

Borrowings under the Commercial Paper Program and Credit Agreement incur interest at variable rates and expose us to interest rate risk. If interest rates increase, our debt service obligations on our variable rate indebtedness would increase even though the amount borrowed remained the same, and our net income and cash flows, including cash available for servicing the indebtedness, would correspondingly decrease. Although we have entered into an interest rate hedging arrangement to partially mitigate this risk, there is no assurance that this hedging arrangement will be effective. In addition, if interest rates decrease, we would accrue indebtedness in connection with this hedging arrangement, which may impact our ability to meet our financial ratios under the Credit Agreement. Our exposure to increases in variable interest rates on indebtedness is also somewhat mitigated by the fact that we hold cash and marketable securities at variable interest rates.

### *Our ability to incur additional indebtedness could be impacted by adverse changes to our credit rating*

TMX Group has an issuer rating of A (high) from DBRS with a Stable trend. Our Debentures, have the same credit rating from DBRS with a Stable trend. The Commercial Paper has been assigned a rating of "R-1 (low)" with a Stable trend by DBRS.

DBRS regularly evaluates and monitors the rating of our Commercial Paper and the rating of our Debentures outstanding. A downgrade from our existing rating could adversely affect our cost of borrowing and/or our ability to access sources of liquidity and capital and reduce financing options available to us.

## Financial Risk Management

## Credit Risk

Credit risk is the risk of loss due to the failure of a borrower, counterparty, clearing member or participant to honour their financial obligations. It arises principally from the clearing operations of CDS Clearing and CDCC, the operations of TSX Trust, the brokerage operations of Shorcan, cash and cash equivalents, restricted cash and cash equivalents, marketable securities, trade receivables, interest rate swaps and total return swaps.

In 2016, in compliance with the PFMIs and additional Canadian regulatory and oversight guidance, CDS Clearing and CDCC each adopted a recovery plan, to be applied in the event that the entity is unable to provide defined critical operations and services as a going concern. (see ***Legal & Regulatory Risk - New regulatory requirements may make it more costly to comply with relevant regulation, to operate our existing businesses or to enter into new business areas***)

### *Credit Risk – CDS*

CDS Clearing is exposed to the risk of loss due to the failure of a Participant in CDS Clearing's clearing and settlement services to honour its financial obligations. To a lesser extent, CDS is exposed to credit risk through the performance of services in advance of payment.

Through the clearing and settlement services operated by CDS Clearing, credit risk exposures are created. During the course of each business day, transaction settlements can result in a net payment obligation of a Participant to CDS Clearing or the obligation of CDS Clearing to pay a Participant. The potential failure of the Participant to meet its payment obligation to CDS Clearing results in payment risk, a specific form of credit risk. Payment risk is a form of credit risk in securities settlement whereby a seller will deliver securities and not receive payment, or that a buyer will make payment and not receive the purchased securities. Payment risk is mitigated by delivery payment finality in CDSX, CDS' multilateral clearing and settlement system, as set out in the CDS Participant Rules.

In the settlement services offered by CDS Clearing, payment risk is transferred entirely from CDS Clearing to Participants who accept this risk pursuant to the contractual rules for the settlement services. This transfer of payment risk occurs primarily by means of Participants acting as extenders of credit to other Participants through lines of credit managed within the settlement system or, alternatively, by means of risk-sharing arrangements whereby groups of Participants cross-guarantee the payment obligations of other members of the group. Should a Participant be unable to meet its payment obligations to CDS Clearing, these surviving Participants are required to make the payment. Payment risk is mitigated on behalf of Participants through the enforcement of limits on the magnitude of payment obligations of each Participant and the requirement of each Participant to collateralize its payment obligation. Both of these mitigants are enforced in real time in the settlement system.

Through New York Link (NYL) and DTC Direct Link (DDL), credit risk exposures are created. During the course of each business day, settlement transactions by NSCC/DTC can result in a net payment obligation from NSCC/DTC to CDS Clearing or the obligation of CDS Clearing to make a payment to NSCC/DTC. As a corollary result, CDS has a legal right to receive the funds from sponsored participants in a debit position or has an obligation to pay the funds to sponsored participants in a credit position.

The potential failure of a Participant to meet its payment obligation to CDS Clearing in CDS Clearing's NYL or DDL services results in a payment risk. To mitigate the risk of default, CDS Clearing has in place default risk mitigation mechanisms to minimize losses to the surviving participants as set out in the CDS Participant Rules. The process includes participants posting collateral with CDS Clearing and NSCC/DTC.

The risk exposure of CDS Clearing in its central counterparty services is mitigated through a daily mark-to-market of each Participant's obligations as well as risk-based collateral requirements calculated daily. These mitigants are intended to cover the vast majority of market changes and are tested against actual price changes on a regular basis. This testing is supplemented with analysis of the effects of extreme market conditions on a collateral valuation and market risk measurements which are used to determine additional collateral requirements of Participants to a default fund established in 2015. Should the collateral of a defaulter in a central counterparty service be insufficient, either because the value of the collateral has declined or the loss to be covered by the collateral exceeded the collateral requirement, the surviving participants in the service are required to cover any residual losses. Cash collateral is held by CDS Clearing at the Bank of Canada and NSCC/DTC and non-cash collateral pledged by Participants under Participant Rules is held by CDS Clearing.

CDS Clearing also holds $1.0 million of its cash and cash equivalents and marketable securities to contribute pre-funded resources to its CNS default waterfall. This default fund of $1.0 million would be accessed following the exhaustion of a suspended Participant's CNS Participant Fund and Default Fund contribution.

As a result of calculations of participants' exposure at December 31, 2018, the total amount of collateral required by CDS Clearing was $6,081.1 million (2017 – 5,888.3 million). The actual collateral pledged to CDS Clearing at December 31, 2018 was $7,291.7 million (2017 - $6,789.4 million). The collateral pledged at December 31, 2018 was comprised of Cash (included within Balances with participants on the consolidated balance sheet) of $681.9 million (2017 - $505.7 million) and Treasury bills and Fixed Income Securities of $6,609.8 million (2017 - $6,283.7 million). Non-cash collateral is not included on our consolidated balance sheet.

CDS may receive payment from securities issuers for entitlements, for example, maturity or interest payments, prior to the date of payment to the participants holding those securities. In rare circumstances, due to the timing of receipt of these payments or due to market conditions, these funds may be held with a major Canadian chartered bank. As a result, CDS could be exposed to the credit risk associated with the potential failure of the bank.

See **Other Credit and Liquidity Facilities** for a description of CDS' credit and liquidity facilities.

### *Credit Risk – CDCC*

CDCC is exposed to loss in the event that Clearing Members fail to satisfy any of the contractual obligations as stipulated within CDCC's rules.

CDCC is exposed to the credit risk of its Clearing Members since it acts as the central counterparty for all transactions carried out on MX's markets and on certain OTC markets which are serviced by CDCC. As such, in the event of a Clearing Member default, the obligations of those defaulting counterparties would become the responsibility of CDCC.

The first line of defense in CDCC's credit risk management process is the adoption of strict membership criteria which include both financial and regulatory requirements. In addition, CDCC performs on-going monitoring of the financial viability of its Clearing Members against the relevant criteria as a means of ensuring the on-going compliance of its Clearing Members. In the event that a Clearing Member fails to continue to satisfy any of its membership criteria, CDCC has the right through its rules, to impose various sanctions on such Clearing Members.

One of CDCC's principal risk management practices with regards to counterparty credit risk is the collection of risk-based margin deposits in the form of cash, equities and liquid government securities. Should a Clearing Member fail to meet settlements and/or daily margin calls or otherwise not honour its obligations under open futures, options contracts and REPO agreements, margin deposits would be seized and would then be available to apply against the potential losses incurred through the liquidation of the Clearing Member's positions.

CDCC's margining system is complemented by a Daily Capital Margin Monitoring (DCMM) process that evaluates the financial strength of a Clearing Member against its margin requirements. CDCC monitors the margin requirement of a Clearing Member as a percentage of its capital (net allowable assets). CDCC will make additional margin calls when the ratio of margin requirement/net allowable assets exceeds 100%. The additional margin is equal to the excess of the ratio over 100% and is meant to ensure that Clearing Member leverage in the clearing activities does not exceed the value of the firm. CDCC also has additional margin surcharges to manage the risk exposures associated with certain idiosyncratic risks. These include: concentration charges for Clearing Members that are overly concentrated in certain positions, wrong-way risk charges for those Clearing Members holding positions which are highly correlated with their own credit risk profile, mismatched settlement surcharges which are meant to mitigate the risk of cherry-picking by a potential defaulter in the settlement process.

Global regulatory requirements for central-counterparties (CCP) like CDCC have highlighted the need for CCPs to have a component of their capital at risk in the default management process. CDCC holds $10.0 million of its cash and cash equivalents and marketable securities to cover the potential loss incurred due to Clearing Member defaults. This $10.0 million would be accessed in the event that a defaulting Clearing Members' margin and clearing fund deposits are insufficient to cover the loss incurred by CDCC. The $10.0 million is allocated into two separate tranches. The first tranche of $5.0 million is intended to cover the loss resulting from the first defaulting Clearing Member. If the loss incurred is greater than $5.0 million, and as such the first tranche is fully depleted, CDCC will fully replenish the first tranche using the second tranche of $5.0 million. This second tranche is in place to ensure there is $5.0 million available in the event of an additional Clearing Member default.

CDCC's cash margin deposits and cash clearing fund deposits are held at the Bank of Canada thereby alleviating the credit risk CDCC were to face with deposits held at commercial banks. The actual cash collateral pledged to CDCC at December 31, 2018 was $1,179.0 million (2017 - $877.3 million). CDCC's non-cash margin deposits and non-cash clearing fund deposits are pledged to CDCC under irrevocable agreements and are held by approved depositories. This collateral may be seized by CDCC in the event of default by a Clearing Member. At December 31, 2018, non-cash margin deposits of $8,183.0 million(2017 - $8,413.5 million) and non-cash clearing fund deposits of $1,257.5 million (2017 - $956.1 million) had been pledged to CDCC. Non cash collateral is held in government securities, put letters of guarantee, and equity securities and is not included in our consolidated balance sheet.

See **Other Credit and Liquidity Facilities** for a description of CDCC's credit facilities.

### *Credit Risk – Cash and cash equivalents and Restricted cash and cash equivalents*

We manage our exposure to credit risk on our cash and cash equivalents and restricted cash and cash equivalents by holding the majority of our cash and cash equivalents with major Canadian chartered banks or in Federal and Provincial treasury bills.

### *Credit Risk – Marketable Securities*

We manage exposure to credit risk arising from investments in marketable securities by holding investment funds that actively manage credit risk or by holding high-grade individual fixed income securities with credit ratings of A/R1-low or better. In addition, when holding individual fixed income securities, we will limit our exposure to any non-government security. Our investment policy will only allow excess cash to be invested within money market securities or fixed income securities.

The majority of the portfolio is held within bank deposits, notes and Treasury Bills.

### *Credit Risk – Trade Receivables*

Our exposure to credit risk resulting from uncollectable accounts is influenced by the individual characteristics of our customers, many of whom are banks and financial institutions. We invoice our customers on a regular basis and maintain a collections team to monitor customer accounts and minimize the amount of overdue receivables. There is no concentration of credit risk arising from accounts receivable from a single customer. In addition, customers that fail to maintain their account in good standing risk loss of listing, trading, clearing, data and system access privileges and other services.

#### *Credit Risk – Total Return Swaps (TRS)*

Due to the bilateral nature of the TRSs, we are exposed to the counterparty credit risk. To manage this credit risk, we only enter into the TRSs with major Canadian chartered banks.

#### *Credit Risk – Interest Rate Swaps (IRS)*

Due to the bilateral nature of the IRSs, we are exposed to the counterparty credit risk. To manage this credit risk, we only enter into the IRSs with major Canadian chartered banks.

#### *Credit Risk - Shorcan*

Shorcan is exposed to credit risk in the event that customers fail to settle on the contracted settlement date. This risk is limited by their status as agents, in that they do not purchase or sell securities for their own account. As agents, in the event of a failed trade, Shorcan has the right to withdraw its normal policy of anonymity and advise the two counterparties to settle directly.

#### *Credit Risk – TSX Trust*

TSX Trust is exposed to credit risk on foreign exchange transactions processed for clients in the event that either the client or the financial counterparty fails to settle contracts for which foreign exchange rates have moved unfavourably. The risk of a financial counterparty failing to settle a transaction is considered remote as TSX Trust deals only with reputable financial institutions comprised of major Canadian chartered banks.

### Market Risk

Market risk is the risk of loss due to changes in market prices and rates such as equity prices, interest rates and foreign exchange rates.

#### *Equity Price Risk – RSUs, DSUs, TRS*

We are exposed to market risk relating to equity prices when we grant DSUs and RSUs to our directors and employees, respectively, as our obligation under these arrangements are partly based on our share price. We have entered into TRSs as a partial fair value hedge to the share appreciation rights of these RSUs and DSUs.

#### *Interest Rate Risk – Cash, cash equivalents, and marketable securities*

We are exposed to market risk on interest earned on our cash, cash equivalents and marketable securities. This risk is partially mitigated by having variable interest rates on our short-term debt (Commercial Paper). At December 31, 2018, TMX Group held $55.6 million ($50.1 million at December 31, 2017) in marketable securities of which, 100.0% were held in Federal and Provincial treasury bills.

#### *Interest Rate Risk – Commercial Paper*

We are exposed to market risk relating to interest paid on our **Commercial Paper.** Assuming Commercial Paper outstanding of approximately $319.5 million (balance at December 31, 2018), the approximate annual impact on income before income taxes of a +1.0% rise and a -1.0% fall in interest rates with respect to Commercial Paper is a decrease of $0.5 million and an increase of $0.5 million, respectively. We partially manage the market risk relating to interest paid on our Commercial Paper through an interest rate swap with a notional value of $100.0 million. It expires on May 2, 2019. **(See Commercial Paper, Debentures, Credit and Liquidity Facilities – Interest Rate Swaps)**.

### *Other Market Price Risk – CDS, CDCC, and Shorcan*

We are exposed to market risk factors from the activities of CDS Clearing, CDCC, and Shorcan if a customer, contracting party or clearing member, as the case may be, fails to take or deliver either securities or derivatives products on the contracted settlement or delivery date where the contracted price is less favourable than the current market price.

CDS is exposed to market risk through its CCP function in the event a Participant defaults as it becomes the legal counterparty to all of the defaulters' novated transactions and must honor the financial obligations that arise from those novated transactions. Adverse changes to market prices and rates would expose CDS to credit risk losses.

The principal mitigation of this credit risk exposure post default is the default management process. CDS has developed default management processes that would enable it to neutralize the market exposures via open market operations within prescribed time periods. Any losses from such operations would be set-off against the collateral contributions of the defaulting participant to the Participant Fund and Default Fund for the CCP service, thereby minimizing credit losses.

Replacement cost risk exposure of CDS in these central counterparty services is mitigated through a daily mark-to-market of each Participant's obligations as well as risk-based collateral requirements calculated daily. These mitigants are intended to cover the vast majority of market changes and are tested against actual price changes on a regular basis. This testing is supplemented with analysis of the effects of extreme market conditions on collateral valuation and market risk measurements which are used to determine additional collateral requirements of participants to a default fund established in 2015. Should the collateral of a defaulter in a central counterparty service be insufficient, either because the value of the collateral has declined or the loss to be covered by the collateral exceeded the collateral requirement, the surviving Participants in the service are required to cover any residual losses.

Settlements in the clearing and settlement services occur in both Canadian and U.S. dollars. Foreign exchange risk is created when the currency of the payment obligation is different from the valuation currency of the collateral supporting that payment obligation. This risk is mitigated by discounting the collateral value of securities where these mismatches occur.

CDCC is exposed to market risk through its CCP functions in the event of a Clearing Member default as it becomes the legal counterparty to all of the defaulter's novated transactions and must honor the financial obligations that arise from those novated transactions. Adverse changes to market prices and rates would expose CDCC to credit risk losses.

The principal mitigation of this credit risk exposure post default is the default management process. CDCC has developed detailed default management processes that would enable it to neutralize the market exposures through either its auction process or via open market operations within prescribed time periods. Any losses from such operations would be set-off against the margin and clearing fund (if necessary) collateral that are pre-funded by all Clearing Members for these purposes, thereby minimizing the credit losses.

Shorcan's risk is limited by its status as an agent, in that it does not purchase or sell securities or commodities for its own account, the short period of time between trade date and settlement date, and the defaulting customer's liability for any difference between the amounts received upon sale of, and the amount paid to acquire, the securities or commodities.

We are also exposed to other market price risk on a portion of our sustaining listing fee revenue, which is based on the quoted market values of listed issuers on TSX and TSXV as at December 31 of the previous year.

### *Foreign Currency Risk*

We are exposed to market risk on revenue and expenses where we invoice or procure in a foreign currency, principally in U.S. dollars. Based on 2018 revenue and operating expenses, the approximate impact of a 10% rise or a 10% decline in the Canadian dollar compared with the U.S. dollar on revenue, net of operating expenses, is approximately $6.7 million. Based on Trayport's 2018 revenue and operating expenses, the approximate impact of a 10% rise or a 10% decline in the Canadian dollar compared with Great British Pounds (GBP) on revenue, net of operating expenses, is approximately $3.3 million.

We are also exposed to market risk relating to foreign currency rates applicable to our cash and cash equivalents, trade receivables and trade payables, principally denominated in U.S. dollars. At December 31, 2018, cash and cash equivalents and trade receivables, net of current liabilities, include US$14.2 million, which are exposed to changes in the US-Canadian dollar exchange rate (2017 – US$14.1 million), £0.7 million which are exposed to changes in the GBP-Canadian dollar exchange rate (2017 - £1.5 million), and €0.1 million which are exposed to changes in the Euro-Canadian dollar exchange rate (2017 - €0.7 million). The approximate impact of a 10% rise or a 10% decline in the Canadian dollar compared with the U.S. dollar, GBP and Euro on these balances as at December 31, 2018 is a $1.9 million decrease or increase in income before income taxes, respectively.

In addition, net assets related to Trayport and other foreign operations are denominated in US dollars, Euros and GBP, and the effect of foreign exchange rate movements on our share of these net assets is included in accumulated other comprehensive income in the consolidated balance sheet. The approximate impact of a 10% rise or a 10% decline in the Canadian dollar compared with the U.S. dollar, GBP and Euro on these balances as at December 31, 2018 is a $91.8 million decrease or increase in equity attributable to equity holders, respectively.

Settlements in the clearing and settlement services offered by CDS occur in both Canadian and U.S. dollars. Market risk relating to foreign exchange rates could be created if there is a default and the currency of the payment obligation is different from the currency of the collateral supporting that payment obligation. This risk is mitigated by discounting the collateral value of securities where these mismatches occur.

We do not currently employ currency hedging strategies with respect to our operating activities, and therefore significant moves in exchange rates, specifically a strengthening of the Canadian dollar against the U.S. dollar and GBP can have an adverse effect on the value of our revenue or assets in Canadian dollars.

## Liquidity Risk

Liquidity risk is the risk of loss due to the inability of TMX Group or its participants/customers to meet their financial obligations in a timely manner or at reasonable prices. We manage liquidity risk through the management of our cash and cash equivalents and marketable securities, all of which are held in short term instruments, and our Debentures, Commercial Paper as well as credit and liquidity facilities. In the clearing and depository services, liquidity risk results from the requirement to convert collateral to cash in the event of the default of a participant.

### *Cash and cash equivalents and Restricted cash and cash equivalents*

Cash and cash equivalents and restricted cash and cash equivalents consist of cash and highly liquid investments.

### *Marketable securities*

Our investment policy will only allow excess cash to be invested within money market securities or fixed income securities. Individual fixed income securities held have credit ratings of A/R1-low or better and are highly liquid.

As at December 31, 2018 marketable securities were comprised of Federal and Provincial treasury bills.

### *Balances with Clearing Members and participants*

The margin deposits of CDCC and CDS and clearing fund margins of CDCC are held in liquid instruments. Cash margin deposits and cash clearing fund deposits from Clearing Members, which are recognized on the consolidated balance sheet, are held by CDCC with the Bank of Canada. Non-cash margin deposits and non-cash clearing fund deposits pledged to

CDCC under irrevocable agreements are in government securities and other securities and are held with approved depositories. Cash collateral from CDS' participants, which is recognized on the consolidated balance sheet, is held by CDS at the Bank of Canada and NSCC/DTC. Non-cash collateral, which is not recognized on the consolidated balance sheet, pledged by participants under Participant Rules is held by CDS in liquid government and fixed income securities.

### *New York Link service – CDS*

The design of CDS' New York Link service does not apply strict limits to a Participant's end-of-day payment obligation, creating the potential for unlimited liquidity risk exposure if a user of the service were to default on its obligation. CDS manages this risk through active monitoring of payment obligations and a committed liquidity facility which covers the vast majority of potential Participant default scenarios. Residual liquidity risk in excess of CDS' liquidity facility is transferred to surviving participant users of the New York Link service and as a result CDS' liquidity risk exposure is limited to a maximum of its available liquidity facility.

### *Credit and liquidity facilities – Clearing operations*

In response to the liquidity risk that CDS and CDCC are exposed to through their clearing operations, they have arranged various facilities (see ***Other Credit and Liquidity Facilities***).

CDS maintains unsecured operating demand loans totaling $6.0 million to support short-term operating requirements. To support processing and settlement activities of participants, an unsecured overdraft facility and demand loan of $15.0 million and an overnight facility of US$5.5 million are available.

CDS maintains two secured standby liquidity facilities of $2.0 billion and US$720.0 million, both facilities can be drawn in either U.S. or Canadian currency. These arrangements are available to support processing and settlement activities in the event of a participant default in either the CNS or NYL service lines. Borrowings under the secured facilities are obtained by pledging securities that are settled through CNS or NYL services or providing collateral pledged by participants primarily in the form of debt instruments issued or guaranteed by federal, provincial and/or municipal governments in Canada or U.S. treasury instruments.

CDCC maintains daylight liquidity facilities for a total of $600.0 million to provide liquidity on the basis of collateral in the form of securities that have been received by, or pledged to, CDCC. The daylight liquidity facilities must be cleared to zero at the end of each day.

The syndicated revolving standby liquidity facility for a total of $400.0 million is also in place to provide end of day liquidity in the event that CDCC is unable to clear the daylight liquidity facilities to zero as well as to provide a source of overnight funding for securities that are not eligible to be pledged at the Bank of Canada or for emergency liquidity needs in the event of a Clearing Member default. Advances under the facility will be secured by collateral in the form of securities that have been received by CDCC. The syndicated REPO facility is also in place to provide end of day liquidity in the event that CDCC is unable to clear the daylight liquidity facilities to zero or for emergency liquidity needs in the event of a Clearing Member default. It will provide liquidity in exchange for securities that have been pledged to or received by CDCC. The overall size of this facility did not change in 2018 and as of December 31, 2018, the size of the repurchase facility stood at approximately $13,800.0 million as a result of Clearing Members' activities. CDCC has the option to re-size this facility on a quarterly basis in order to stay consistent with its liquidity risk policy.

Finally, CDCC's Bank of Canada liquidity facility is intended to provide end of day liquidity only in the event that CDCC is unable to access liquidity from the revolving standby liquidity facility and the syndicated REPO facility or in the event that the liquidity under such facilities is insufficient. Use of this facility would be on a fully collateralized basis.

### *Commercial Paper, Debentures and Credit Facility*

Our capital structure includes approximately $1066.3 million of indebtedness. As highlighted in the **Capital Structure Risk**, we rely on our Commercial Paper Program, Debentures and Credit Facility as a source of financing. If our indebtedness under the terms of our Commercial Paper Program, Debentures or Credit Facility (if drawn) was to become due prior to the maturity dates as a result of not meeting covenants under the Trust Indentures, the terms of the Commercial Paper Program or the Credit Facility, we could be required to seek more costly sources of financing, or potentially would not be able to obtain an alternative form of financing. The specific liquidity risk related to Commercial Paper is that we are unable to borrow under a new Commercial Paper issuance in order to pay for Commercial Paper that is coming due because of a lack of liquidity or demand for our Commercial Paper in the market. To mitigate this risk, we maintain a Credit Agreement that provides 100% coverage or backstop to the Commercial Paper Program (see **Liquidity and Capital Resources - Commercial Paper, Debentures, Credit and Liquidity Facilities - Credit Facility**).

## Accounting and Control Matters

**Changes in accounting policies**

The following new IFRS standards and amendments were effective for TMX Group from January 1, 2018:

- IFRS 15, *Revenue from Contracts with Customers*;
- IFRS 9, *Financial Instruments*;
- Annual improvements 2014-2016 cycle (Amendments to IFRS 1, *First-time Adoption of International Financial Reporting Standards* and IAS 28, *Investments in Associates and Joint Ventures*);
- Classification and measurement of share-based payment transactions (Amendments to IFRS 2, *Share-based Payments*); and
- IFRIC 22, *Foreign currency transactions and advance consideration* (Interpretation of IAS 21, *The Effects of Changes in Foreign Exchange Rates*)

There was no significant impact on the consolidated financial statements as a result of their adoption, except for IFRS 15**.** IFRS 15 establishes a single comprehensive framework in determining the timing and amount of revenue to be recognized, and requires enhanced disclosures, including revenue recognition policies to identify performance obligations to customers and judgment used in the measurement and recognition of revenue.

TMX Group adopted IFRS 15, using the cumulative effect method, by recognizing the cumulative effect of initially applying IFRS 15 as an adjustment to the opening balance of equity at January 1, 2018. Therefore, the comparative information has not been restated and continues to be reported under IAS 18, *Revenue.*

The impact of applying IFRS 15 has resulted in a change to the timing of recognition of initial listing fees. Under IFRS 15, revenue is recognized when performance obligations have been satisfied. The identification of performance obligations and determining the timing of when performance obligations are satisfied, either at a point in time or over time, requires judgement. Under IAS 18, initial listing fees were recognized when the listing had occurred. Under IFRS 15, TMX Group determined that the initial listing service and the initial year sustaining service contain one single performance obligation, and therefore concluded that the initial listing fee should be deferred over a 12-month period from the date of listing, which is the period over which the customer has a material right to the services rendered. There were no other changes to the recognition of revenue as a result of applying IFRS 15.

In the year ended December 31, 2018, we recognized $6.9 million of total *initial listing fees* received of $12.0 million with the balance of $5.1 million to be recognized over the remaining 12 month deferral period. Since the cumulative impact of this change was recorded effective January 1, 2018, we also recognized *initial listing fees* received in 2017 of $6.5 million during the year ended December 31, 2018. Under IFRS 15, total *initial listing fees* of $13.4 million was approximately $1.4 million higher than would have been the case if *initial listing fees* were recognized when the listing occurred.

Based on initial listing fees billed in 2018, the following amounts have been deferred to be recognized in Q1/19, Q2/19, Q3/19, and Q4/19: $2.3 million, $1.7 million, $0.9 million, and $0.2 million respectively. Total *initial listing fee* revenue for future quarters will also depend on listing activity in those quarters. There were no other changes to the recognition of revenue as a result of applying IFRS 15.

**Future changes in accounting policies**

The following standards are not yet effective for the year ending December 31, 2018, and have not been applied in the preparation of the financial statements. These new and amended standards and interpretations are required to be implemented for financial years beginning on or after January 1, 2019, unless otherwise noted:

- IFRS 16, *Leases* - The IASB issued a new standard on leases which provides a comprehensive model for the identification of lease arrangements and their treatment in the financial statements. IFRS 16 supersedes IAS 17, *Leases* and its associated interpretative guidance. IFRS 16 applies a control model to the identification of leases, differentiating between leases and service contracts on the basis of whether there is an identified asset controlled by the customer. Among other significant changes, the distinction between operating and finance leases is removed and assets and liabilities are recognized in respect of all leases. The mandatory effective date for IFRS 16 is for annual periods beginning on or after January 1, 2019.

  TMX Group intends to adopt IFRS 16 in its consolidated financial statements for the annual period beginning on January 1, 2019. TMX Group will elect the modified retrospective approach, and will not restate prior periods. TMX Group will implement new accounting policies as well as elect certain practical expedients available under IFRS 16, including those related to leases of low value assets and short term leases. Based on December 31, 2018 data and current implementation status, we estimate the adoption of IFRS 16 will result in an increase in right-of-use assets and corresponding lease liabilities of approximately $100.0 million, primarily related to leased office spaces.

- IFRIC 23, *Uncertainty over Income Tax Treatments* - On June 7, 2017, the IASB issued IFRIC Interpretation 23 *Uncertainty over Income Tax Treatments*. The interpretation provides guidance on the accounting for current and deferred tax liabilities and assets in circumstances in which there is uncertainty over income tax treatments. TMX Group intends to adopt the interpretation in its financial statements for the annual period beginning on January 1, 2019. TMX Group does not expect the interpretation to have a material impact on the financial statements.

- Annual improvements 2015-2017 cycle - Amendments were made to IFRS 3, *Business Combinations* and IFRS 11, *Joint Arrangements* to clarify the accounting for increased interests in joint operations. IAS 12, *Income Taxes*, was also amended to clarify that all income tax consequences of dividends are recognized consistently with the transactions that generated the distributable profits. As well, amendments were made to IAS 23, *Borrowing Costs* to clarify that entities include funds borrowed specifically to obtain an asset other than a qualifying asset as part of general borrowings. TMX Group intends to adopt these amendments in its financial statements for the annual period beginning on January 1, 2019. The amendments are not expected to have a material impact on the financial statements.

- Amendments to conceptual framework - On March 29, 2018 the IASB issued a revised version of its *Conceptual Framework for Financial Reporting* that underpins IFRS Standards. The IASB also issued *Amendments to References to the Conceptual Framework* in IFRS Standards to update references in IFRS Standards to previous versions of the Conceptual Framework. TMX Group intends to adopt the amendments for the annual period beginning on January 1, 2020. TMX Group does not expect the amendments to have a material impact on its financial statements.

## Disclosure Controls and Procedures and Internal Control over Financial Reporting

### *Disclosure Controls and Procedures*

TMX Group's disclosure controls and procedures (DCP), as defined in National Instrument 52-109 – Certification of Disclosure in Issuers' Annual and Interim Filings (NI 52-109) are designed to provide reasonable assurance that information required to be disclosed in our filings under securities legislation is recorded, processed, summarized and reported within the time periods specified in securities legislation. They are also designed to provide reasonable assurance that all information required to be disclosed in these filings is accumulated and communicated to management, including the Chief Executive Officer (CEO) and Chief Financial Officer (CFO) as appropriate, to allow timely decisions regarding public disclosure. We regularly review our disclosure controls and procedures; however, they cannot provide an absolute level of assurance because of the inherent limitations in control systems to prevent or detect all misstatements due to error or fraud.

Our management, including the CEO and CFO, conducted an evaluation of the effectiveness of our DCP as of December 31, 2018. Based on this evaluation, the CEO and CFO have concluded that our DCP were effective as of December 31, 2018.

### *Internal Control over Financial Reporting*

Management is responsible for establishing and maintaining adequate internal control over financial reporting (ICFR), as defined in NI 52-109. ICFR means a process designed by or under the supervision of the CEO and CFO, and effected by our board of directors, management and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS, and includes those policies and procedures that: (1) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of TMX Group; (2) are designed to provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with IFRS, and that receipts and expenditures of TMX Group are being made only in accordance with authorizations of management and directors of TMX Group; and (3) are designed to provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of TMX Group's assets that could have a material effect on the financial statements.

All internal control systems have inherent limitations and therefore our ICFR can only provide reasonable assurance and may not prevent or detect misstatements due to error or fraud.

Our management, including the CEO and CFO, conducted an evaluation of the effectiveness of our ICFR as of December 31, 2018 using the Committee of Sponsoring Organizations of the Treadway Commission (COSO) framework (2013). Based on this evaluation, the CEO and CFO have concluded that our ICFR were effective as of December 31, 2018.

### *Changes in Internal Control over Financial Reporting*

There were no changes to ICFR during the quarter and year ended December 31, 2018 that materially affected, or are reasonably likely to materially affect, our ICFR.

## Related Party Relationships and Transactions

### *Parent*

The shares of TMX Group are widely held and, as such, there is no ultimate controlling party of TMX Group. Under the OSC and AMF Recognition Orders, no person or combination of persons, acting jointly or in concert, is permitted to beneficially own or exercise control or direction over more than 10% of any class or series of voting shares of TMX Group without prior approval of the OSC and the AMF.

### *Key management personnel compensation*

Compensation for key management personnel, including TMX Group's Board of Directors, was as follows for the year:

| (in millions of dollars) | **2018** | 2017 |
|---|---|---|
| Salaries and other short-term employee benefits, and termination benefits | **$13.1** | $8.2 |
| Post-employment benefits | **0.6** | 0.7 |
| Share-based payments | **9.4** | 6.0 |
| | **23.1** | 14.9 |

## CAUTION REGARDING FORWARD-LOOKING INFORMATION

This MD&A of TMX Group contains “forward-looking information” (as defined in applicable Canadian securities legislation) that is based on expectations, assumptions, estimates, projections and other factors that management believes to be relevant as of the date of this MD&A. Often, but not always, such forward-looking information can be identified by the use of forward-looking words such as “plans,” “expects,” “is expected,” “budget,” “scheduled,” “targeted,” “estimates,” “forecasts,” “intends,” “anticipates,” “believes,” or variations or the negatives of such words and phrases or statements that certain actions, events or results “may,” “could,” “would,” “might,” or “will” be taken, occur or be achieved or not be taken, occur or be achieved. Forward-looking information, by its nature, requires us to make assumptions and is subject to significant risks and uncertainties which may give rise to the possibility that our expectations or conclusions will not prove to be accurate and that our assumptions may not be correct.

Examples of forward-looking information in this MD&A include, but are not limited to, growth objectives; our target dividend payout ratio; the ability of TMX Group to de-leverage and the timing thereof; TMX Group's business integration initiative including the modernization of clearing platforms, including the expected cash expenditures related to the modernization of our clearing platforms and the anticipated cost savings resulting from this initiative and the timing of the modernization and the anticipated savings; other statements related to cost reductions; the impact of the decrease of market capitalization of TSX and TSXV issuers overall (from 2017 to 2018) net of changes to sustaining fees on TMX Group's revenue; TMX Group's anticipated statutory income tax rate for 2019; factors relating to stock, and derivatives exchanges and clearing houses and the business, strategic goals and priorities, market conditions, pricing, proposed technology and other initiatives, financial results or financial condition, operations and prospects of TMX Group which are subject to significant risks and uncertainties.

These risks include: competition from other exchanges or marketplaces, including alternative trading systems and new technologies, on a national and international basis; dependence on the economy of Canada; adverse effects on our results caused by global economic conditions or uncertainties including changes in business cycles that impact our sector; failure to retain and attract qualified personnel; geopolitical and other factors which could cause business interruption; dependence on information technology; vulnerability of our networks and third party service providers to security risks, including cyber-attacks; failure to properly identify or implement our strategies; regulatory constraints; constraints imposed by our level of indebtedness, risks of litigation or other proceedings; dependence on adequate numbers of customers; failure to develop, market or gain acceptance of new products; failure to effectively integrate acquisitions to achieve planned economics, or divest under performing businesses; currency risk; adverse effect of new business activities; adverse effects from business divestitures; not being able to meet cash requirements because of our holding company structure and restrictions on paying dividends; dependence on third-party suppliers and service providers; dependence of trading operations on a small number of clients; risks associated with our clearing operations; challenges related to international expansion; restrictions on ownership of TMX Group common shares; inability to protect our intellectual property; adverse effect of a systemic market event on certain of our businesses; risks associated with the credit of customers; cost structures being largely fixed; the failure to realize cost reductions in the amount or the time frame anticipated; dependence on market activity that cannot be controlled; the regulatory constraints that apply to the business of TMX Group and its regulated subsidiaries, costs of on exchange clearing and depository services, trading volumes (which could be higher or lower than estimated) and revenues; future levels of revenues being lower than expected or costs being higher than expected.

Forward-looking information is based on a number of assumptions which may prove to be incorrect, including, but not limited to, assumptions in connection with the ability of TMX Group to successfully compete against global and regional marketplaces; business and economic conditions generally; exchange rates (including estimates of exchange rates from Canadian dollars to the U.S. dollar or British pound sterling), commodities prices, the level of trading and activity on markets, and particularly the level of trading in TMX Group’s key products; business development and marketing and sales activity; the continued availability of financing on appropriate terms for future projects; productivity at TMX Group, as well as that of TMX Group’s competitors; market competition; research and development activities; the successful introduction and client acceptance of new products; successful introduction of various technology assets and capabilities; the impact on TMX Group and its customers of various regulations; TMX Group’s ongoing relations with its employees; and the extent of any labour, equipment or other disruptions at any of its operations of any significance other than any planned maintenance or similar shutdowns.

In addition to the assumptions outlined above, forward looking information related to long term revenue CAGR objectives, and long term adjusted earnings per share CAGR objectives are based on assumptions that include, but not limited to:

- TMX Group's success in achieving growth initiatives and business objectives;
- continued investment in growth businesses and in transformation initiatives including next generation post-trade systems;
- no significant changes to our effective tax rate, recurring revenue, and number of shares outstanding;
- moderate levels of market volatility;
- level of listings, trading, and clearing consistent with historical activity;
- economic growth consistent with historical activity;
- no significant changes in regulations;
- continued disciplined expense management across our business;
- continued re-prioritization of investment towards enterprise solutions and new capabilities; and
- free cash flow generation consistent with historical run rate.

While we anticipate that subsequent events and developments may cause our views to change, we have no intention to update this forward-looking information, except as required by applicable securities law. This forward-looking information should not be relied upon as representing our views as of any date subsequent to the date of this MD&A. We have attempted to identify important factors that could cause actual actions, events or results to differ materially from those current expectations described in forward-looking information. However, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended and that could cause actual actions, events or results to differ materially from current expectations. There can be no assurance that forward-looking information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward-looking information. These factors are not intended to represent a complete list of the factors that could affect us. A description of the above-mentioned items is contained under the heading **RISKS AND UNCERTAINTIES** in this MD&A.

# Financial Statements

# Management Statement

Management is responsible for the preparation, integrity and fair presentation of the consolidated financial statements (the financial statements), management's discussion and analysis, and other information in this annual report. The financial statements were prepared in accordance with International Financial Reporting Standards and, in the opinion of management, fairly reflect the financial position, financial performance and changes in the financial position of TMX Group Limited. Financial information contained throughout this annual report is consistent with the financial statements, unless otherwise specified.

Acting through the Finance and Audit Committee, comprised of non-management directors, all of whom are independent directors within the meaning of Multilateral Instrument 52-110-Audit Committees, the Board of Directors oversees management's responsibility for financial reporting and internal control systems. The Finance and Audit Committee is responsible for reviewing the financial statements and management's discussion and analysis and recommending them to the Board of Directors for approval. To discharge its duties the Committee meets with management and external auditors to discuss audit plans, internal controls over accounting and financial reporting processes, auditing matters and financial reporting issues.

TMX Group's external auditors appointed by the shareholders, KPMG LLP, are responsible for auditing the financial statements and expressing an opinion thereon. The external auditors have full and free access to, and meet periodically with, management and the Finance and Audit Committee to discuss the audit.

**Louis V. Eccleston**
Chief Executive Officer
TMX Group Limited

**John McKenzie**
Chief Financial Officer
TMX Group Limited

February 13, 2019

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# INDEPENDENT AUDITORS' REPORT

To the Shareholders of TMX Group Limited

***Opinion***

We have audited the consolidated financial statements of TMX Group Limited (the "Company"), which comprise:

- the consolidated balance sheets as at end of December 31, 2018 and 2017
- the consolidated income statements for the years then ended
- the consolidated statements of comprehensive income for the years then ended
- the consolidated statements of changes in equity for the years then ended
- the consolidated statements of cash flows for the years then ended
- and notes to the consolidated financial statements, including a summary of significant accounting policies

(Hereinafter referred to as the "financial statements").

In our opinion, the accompanying financial statements present fairly, in all material respects, the consolidated financial position of the Company as at December 31, 2018 and 2017, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with International Financial Reporting Standards (IFRS).

***Basis for Opinion***

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the "***Auditors' Responsibilities for the Audit of the Financial Statements***" section of our auditors' report.

We are independent of the Company in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

*Other Information*

Management is responsible for the other information. Other information comprises:

- the information included in Management's Discussion and Analysis filed with the relevant Canadian Securities Commissions.
- Information, other than the financial statements and the auditors' report thereon, included in a document likely to be entitled "Annual Report".

Our opinion on the financial statements does not cover the other information and we do not and will not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit and remain alert for indications that the other information appears to be materially misstated.

We obtained the information included in Management's Discussion and Analysis filed with the relevant Canadian Securities Commissions as at the date of this auditors' report. If, based on the work we have performed on this other information, we conclude that there is a material misstatement of this other information, we are required to report that fact in the auditors' report. We have nothing to report in this regard.

Information, other than the financial statements and the auditors' report thereon, included in a document likely to be entitled "Annual Report" is expected to be made available to us after the date of this auditors' report. If, based on the work we will perform on this other information, we conclude that there is a material misstatement of this other information, we are required to report that fact to those charged with governance.

***Responsibilities of Management and Those Charged with Governance for the Financial Statements***

Management is responsible for the preparation and fair presentation of the financial statements in accordance with IFRS, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Company's financial reporting process.

***Auditors' Responsibilities for the Audit of the Financial Statements***

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit.

We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

KPMG

- Communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.
- Provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Company to express an opinion on the financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

KPMG LLP

Chartered Professional Accountants, Licensed Public Accountants

The engagement partner on the audit resulting in this auditors' report is James Newton.

Toronto, Canada
February 13, 2019

# TMX GROUP LIMITED
## Consolidated Balance Sheets

| *(In millions of Canadian dollars)* | *Note* | | **December 31, 2018** | | December 31, 2017 |
|---|---|---|---|---|---|
| **Assets** | | | | | |
| **Current assets:** | | | | | |
| Cash and cash equivalents | *15* | **$** | **175.1** | $ | 175.0 |
| Restricted cash and cash equivalents | *15* | | **131.4** | | 116.3 |
| Marketable securities | *15* | | **55.6** | | 50.1 |
| Trade and other receivables | *16* | | **105.9** | | 102.3 |
| Balances with Participants and Clearing Members | *10* | | **25,991.4** | | 19,946.0 |
| Other current assets | *23* | | **25.9** | | 18.1 |
| | | | **26,485.3** | | 20,407.8 |
| **Non-current assets:** | | | | | |
| Goodwill and intangible assets | *17* | | **5,054.9** | | 5,067.6 |
| Other non-current assets | *23* | | **92.6** | | 134.4 |
| Deferred income tax assets | *9* | | **25.1** | | 15.0 |
| **Total Assets** | | **$** | **31,657.9** | $ | 25,624.8 |
| | | | | | |
| **Liabilities and Equity** | | | | | |
| **Current liabilities:** | | | | | |
| Trade and other payables | *19* | **$** | **110.2** | $ | 90.3 |
| Participants' tax withholdings | *15* | | **131.4** | | 116.3 |
| Balances with Participants and Clearing Members | *10* | | **25,991.4** | | 19,946.0 |
| Debt | *12* | | **319.5** | | 795.0 |
| Other current liabilities | *23* | | **107.9** | | 61.1 |
| | | | **26,660.4** | | 21,008.7 |
| **Non-current liabilities:** | | | | | |
| Debt | *12* | | **746.8** | | 547.6 |
| Other non-current liabilities | *23* | | **54.0** | | 61.3 |
| Deferred income tax liabilities | *9* | | **814.9** | | 824.4 |
| **Total Liabilities** | | | **28,276.1** | | 22,442.0 |
| | | | | | |
| **Equity:** | | | | | |
| Share capital | *26* | | **2,938.0** | | 2,915.5 |
| Contributed surplus | *24* | | **12.3** | | 11.8 |
| Retained earnings | | | **410.0** | | 252.6 |
| Accumulated other comprehensive income | | | **21.5** | | 2.9 |
| **Total Equity** | | | **3,381.8** | | 3,182.8 |
| Commitments and contingent liabilities | *21 & 22* | | | | |
| **Total Liabilities and Equity** | | **$** | **31,657.9** | $ | 25,624.8 |

See accompanying notes which form an integral part of these consolidated financial statements.

Approved on behalf of the Board of Directors on February 13, 2019:

/s/ Charles Winograd Chair

/s/ William Linton Director

# TMX GROUP LIMITED
## Consolidated Income Statements

*(In millions of Canadian dollars, except per share amounts)*

| | *Note* | For the year ended December 31, 2018 | 2017 |
|---|---|---|---|
| Revenue | *5* | **$ 817.1** | $ 668.9 |
| REPO interest: | | | |
| Interest income | | **197.7** | 78.4 |
| Interest expense | | **(197.7)** | (78.4) |
| Net REPO interest | | **—** | — |
| **Total revenue** | | **817.1** | 668.9 |
| Compensation and benefits | | **220.1** | 171.4 |
| Information and trading systems | | **52.4** | 51.2 |
| Selling, general and administration | | **105.3** | 82.1 |
| Depreciation and amortization | | **70.3** | 51.6 |
| **Total operating expenses before acquisition costs** | | **448.1** | 356.3 |
| **Income from operations before acquisition costs** | | **369.0** | 312.6 |
| Acquisition costs | *3* | **—** | 13.8 |
| **Income from operations** | | **369.0** | 298.8 |
| Share of income from equity accounted investees | *18* | **3.0** | 2.9 |
| Impairment charges | *17* | **—** | (6.5) |
| Other income | *18* | **30.7** | — |
| Finance income (costs): | | | |
| Finance income | *7* | **3.8** | 13.1 |
| Finance costs | *7* | **(44.2)** | (28.1) |
| Net finance costs | | **(40.4)** | (15.0) |
| **Income before income tax expense and income from discontinued operations** | | **362.3** | 280.2 |
| Income tax expense | *9* | **76.3** | 89.0 |
| **Income from continuing operations, net of tax** | | **286.0** | 191.2 |
| Income from discontinued operations, net of tax | *4* | **—** | 176.8 |
| **Net income** | | **$ 286.0** | $ 368.0 |
| **Earnings per share:** | | | |
| Income from continuing operations, net of tax - basic | *8* | **$ 5.14** | $ 3.46 |
| Income from continuing operations, net of tax - diluted | *8* | **$ 5.10** | $ 3.43 |
| Net income - basic | *8* | **$ 5.14** | $ 6.66 |
| Net income - diluted | *8* | **$ 5.10** | $ 6.60 |

See accompanying notes which form an integral part of these consolidated financial statements.

# TMX GROUP LIMITED
## Consolidated Statements of Comprehensive Income

*(In millions of Canadian dollars)*

| | Note | For the year ended December 31, 2018 | 2017 |
|---|---|---|---|
| **Net income** | | **$ 286.0** | $ 368.0 |
| **Other comprehensive income (loss):** | | | |
| Items that will not be reclassified to the consolidated income statements: | | | |
| Actuarial gain (loss) on defined benefit pension and other post-retirement benefit plans (net of tax cost of $(0.3), 2017 – tax benefit of $0.9) | *25* | **0.9** | (2.3) |
| **Total items that will not be reclassified to the consolidated income statements** | | **0.9** | (2.3) |
| Items that may be reclassified subsequently to the consolidated income statements: | | | |
| Unrealized gain (loss) on translating financial statements of foreign operations | | **21.3** | (16.4) |
| Reclassification to net income of foreign currency translation differences | *18* | **(2.7)** | — |
| **Total items that may be reclassified subsequently to the consolidated income statements** | | **18.6** | (16.4) |
| **Total comprehensive income** | | **$ 305.5** | $ 349.3 |

See accompanying notes which form an integral part of these consolidated financial statements.

# TMX GROUP LIMITED
## Consolidated Statements of Changes in Equity

*(In millions of Canadian dollars)* **For the year ended December 31, 2018**

| | Note | Share capital | Contributed surplus | Accumulated other comprehensive income | Retained earnings | Total equity |
|---|---|---|---|---|---|---|
| **Balance at January 1, 2018** | | $ 2,915.5 | $ 11.8 | $ 2.9 | $ 252.6 | $ 3,182.8 |
| Adjustment on initial application of IFRS 15 | *5* | — | — | — | (4.8) | (4.8) |
| **Adjusted balance at January 1, 2018** | | 2,915.5 | 11.8 | 2.9 | 247.8 | 3,178.0 |
| **Net income** | | — | — | — | 286.0 | 286.0 |
| **Other comprehensive income (loss):** | | | | | | |
| Foreign currency translation differences | | — | — | 21.3 | — | 21.3 |
| Reclassification to net income of foreign currency translation differences | | — | — | (2.7) | — | (2.7) |
| Actuarial gains on defined benefit pension and other post-retirement benefit plans, net of taxes | *25* | — | — | — | 0.9 | 0.9 |
| **Total comprehensive income** | | — | — | 18.6 | 286.9 | 305.5 |
| **Dividends to equity holders** | *28* | — | — | — | (124.7) | (124.7) |
| **Proceeds from exercised share options** | | 20.1 | — | — | — | 20.1 |
| **Cost of exercised share options** | | 2.4 | (2.4) | — | — | — |
| **Cost of share option plan** | *24* | — | 2.9 | — | — | 2.9 |
| **Balance at December 31, 2018** | | $ 2,938.0 | $ 12.3 | $ 21.5 | $ 410.0 | $ 3,381.8 |

See accompanying notes which form an integral part of these consolidated financial statements.

# TMX GROUP LIMITED
## Consolidated Statements of Changes in Equity

*(In millions of Canadian dollars)* For the year ended December 31, 2017

| | Note | Share capital | Contributed surplus | Accumulated other comprehensive income | Retained earnings (deficit) | Total equity |
|---|---|---|---|---|---|---|
| Balance at January 1, 2017 | | $ 2,896.4 | $ 10.3 | $ 19.3 | $ (5.3) | $ 2,920.7 |
| Net income | | — | — | — | 368.0 | 368.0 |
| Other comprehensive loss: | | | | | | |
| Foreign currency translation differences | | — | — | (16.4) | — | (16.4) |
| Actuarial losses on defined benefit pension and other post-retirement benefit plans, net of taxes | *25* | — | — | — | (2.3) | (2.3) |
| Total comprehensive (loss) income | | — | — | (16.4) | 365.7 | 349.3 |
| Dividends to equity holders | *28* | — | — | — | (107.8) | (107.8) |
| Proceeds from exercised share options | | 17.3 | — | — | — | 17.3 |
| Cost of exercised share options | | 1.8 | (1.8) | — | — | — |
| Cost of share option plan | *24* | — | 3.3 | — | — | 3.3 |
| Balance at December 31, 2017 | | $ 2,915.5 | $ 11.8 | $ 2.9 | $ 252.6 | $ 3,182.8 |

See accompanying notes which form an integral part of these consolidated financial statements.

# TMX GROUP LIMITED
## Consolidated Statements of Cash Flows

*(In millions of Canadian dollars)*

| | Note | For the year ended December 31, 2018 | 2017 |
|---|---|---|---|
| **Cash flows from (used in) operating activities:** | | | |
| Income (including discontinued operations) before income taxes | | **$ 362.3** | $ 507.5 |
| Adjustments to determine net cash flows: | | | |
| Depreciation and amortization | | **70.3** | 56.1 |
| Impairment charges and write-offs | | **—** | 8.3 |
| Gain on sale of NGX and Shorcan Energy before income taxes | *4* | **—** | (203.2) |
| Other income | | **(30.7)** | — |
| Net finance costs | | **40.4** | 14.4 |
| Share of income from equity accounted investees | *18* | **(3.0)** | (2.9) |
| Cost of share option plan | *24* | **2.9** | 3.3 |
| Employee defined benefits expense | *25* | **3.3** | 3.8 |
| Unrealized foreign exchange gains (losses) | | **1.4** | (2.5) |
| Trade and other receivables, and prepaid expenses | | **(11.2)** | (11.8) |
| Trade and other payables | | **23.4** | 0.8 |
| Provisions | | **6.1** | (7.9) |
| Deferred revenue | | **(0.2)** | (2.8) |
| Other assets and liabilities | | **(2.5)** | 11.0 |
| Cash paid for employee defined benefits | *25* | **(2.3)** | (2.2) |
| Income taxes paid | | **(113.1)** | (95.3) |
| | | **347.1** | 276.6 |
| **Cash flows (used in) from financing activities:** | | | |
| Interest paid | *7* | **(43.4)** | (29.0) |
| Net settlement on derivative instruments | *12* | **0.6** | 10.2 |
| Reduction in obligations under finance leases | | **—** | (0.1) |
| Proceeds from exercised options | | **20.1** | 17.3 |
| Dividends paid to equity holders | *28* | **(124.7)** | (107.8) |
| Credit facility and debt financing fees | *12* | **(1.1)** | (2.0) |
| Repayment of debenture | *12* | **(400.0)** | — |
| Proceeds from issuance of debenture | *12* | **200.0** | 300.0 |
| Net movement of Commercial Paper | *12* | **(76.6)** | 86.4 |
| Credit and liquidity facilities drawn, net | *12* | **—** | (4.6) |
| | | **(425.1)** | 270.4 |
| **Cash flows (used in) from investing activities:** | | | |
| Interest received | | **3.8** | 3.6 |
| Dividends received | | **8.2** | 0.5 |
| Additions to premises and equipment and intangible assets | | **(58.8)** | (39.6) |
| Acquisition of Trayport and sale of NGX and Shorcan Energy, net of cash | *3 & 4* | **5.8** | (613.5) |
| Proceeds from sale of subsidiary | *3* | **5.7** | 25.3 |
| Proceeds from reduction/sale of equity accounted investees | 18 | **78.2** | — |
| Marketable securities, net | | **(5.5)** | 11.7 |
| | | **37.4** | (612.0) |
| **Decrease in cash and cash equivalents** | | **(40.6)** | (65.0) |
| Cash and cash equivalents, beginning of the period | | **175.0** | 240.6 |
| Unrealized foreign exchange gains (losses) on cash and cash equivalents held in foreign currencies | | **0.9** | (0.6) |
| **Cash and cash equivalents, net, end of the period** | *15* | **$ 135.3** | $ 175.0 |

See accompanying notes which form an integral part of these consolidated financial statements.

## NOTE 1 – GENERAL INFORMATION

TMX Group Limited is a company domiciled in Canada and incorporated under the Business Corporations Act (Ontario). The registered office is located at 100 Adelaide Street West, Toronto, Ontario, Canada.

The audited annual consolidated financial statements as at and for the year ended December 31, 2018 and 2017 (the "financial statements"), comprise the accounts of TMX Group Limited and its subsidiaries (collectively referred to as the "Company"), and the Company's interests in equity accounted investees.

TMX Group Limited controls, directly or indirectly, a number of entities which operate exchanges, markets, and clearinghouses primarily for capital markets in Canada and provides select services globally, including:

- TSX Inc. ("TSX"), which operates Toronto Stock Exchange, a national stock exchange serving the senior equities market; TSX Venture Exchange Inc. ("TSX Venture Exchange"), which operates TSX Venture Exchange, a national stock exchange serving the public venture equity market; and Alpha Exchange Inc. ("Alpha"), which also operates an exchange for the trading of securities;
- Montréal Exchange Inc. ("MX"), Canada's national derivatives exchange, and its subsidiaries, including Canadian Derivatives Clearing Corporation ("CDCC"), the clearing house for options and futures contracts traded at MX and certain over-the-counter ("OTC") products and fixed income repurchase ("REPO") agreements. MX also holds an investment in BOX Holdings Group LLC ("BOX Holdings"), which wholly-owns BOX Options Market LLC ("BOX"). BOX provides a market for the trading of United States ("US") equity options. The Company accounts for its investment in BOX Holdings using the equity method (note 18);
- The Canadian Depository for Securities Limited and its subsidiaries ("CDS"), including CDS Clearing and Depository Services Inc. ("CDS Clearing"), which operates the automated facilities for the clearing and settlement of equities and fixed income transactions and custody of securities in Canada;
- Trayport Holdings Limited and Trayport Inc. (collectively "Trayport"), a world-leading provider of technology solutions for energy traders, brokers and exchanges based in London, UK. The Company acquired Trayport on December 14, 2017 from Intercontinental Exchange Inc. ("ICE")(note 3);
- Shorcan Brokers Limited ("Shorcan"), a fixed income inter-dealer broker and registered exempt market dealer; and
- TSX Trust Company ("TSX Trust"), a provider of corporate trust, registrar, transfer agency and foreign exchange services.

On December 14, 2017, the Company sold Natural Gas Exchange Inc. ("NGX") and its subsidiaries, which operates an exchange for the trading and clearing of natural gas, electricity, and crude oil contracts in North America and Shorcan Energy Brokers Inc. ("Shorcan Energy"), a broker of crude oil contracts to ICE (note 4). NGX and Shorcan Energy have been reported as discontinued operations in the comparative periods.

## NOTE 2 – BASIS OF PREPARATION

### (A) BASIS OF ACCOUNTING

The financial statements have been prepared by management in accordance with International Financial Reporting Standards ("IFRS") and IFRS Interpretations Committee ("IFRIC") interpretations, as issued by the International Accounting Standards Board ("IASB"). The financial statements were approved by the Company's Board of Directors on February 13, 2019.

The Company's significant accounting policies have been applied consistently to all periods presented in the financial statements, unless otherwise indicated. Similarly, the accounting policies have been applied consistently by all the Company's entities. The Company has applied its judgement in presenting its significant accounting policies together with related information in the notes to the consolidated financial statements. The Company has also ordered its notes to the consolidated financial statements to emphasize the areas that are most relevant to the Company's financial performance and financial position, as viewed by management.

**(B) BASIS OF MEASUREMENT**

The financial statements have been prepared on the historical cost basis except for the following items which are measured at fair value:

- Certain financial instruments (note 14);
- Investment in privately-owned company (note 23);
- Liabilities arising from share-based payment plans (note 24); and
- Legal obligations associated with the restoration costs on the retirement of premises and equipment (note 21).

The Company uses a fair value hierarchy to categorize the inputs used in its valuation of assets and liabilities carried at fair value. Fair values are categorized into: Level 1 – to the extent of the Company's use of unadjusted quoted market prices; Level 2 – valuation using observable market information as inputs; and Level 3 – valuation using unobservable market information.

**(C) JUDGEMENTS AND ESTIMATES**

The preparation of the financial statements in conformity with IFRS requires management to make judgements, estimates and assumptions that affect the reported amounts of assets, liabilities and contingent liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. The estimates and associated assumptions are based on historical experience and other factors that management considers to be relevant. Actual results could differ from these estimates and assumptions.

Judgements, estimates and underlying assumptions are reviewed on an ongoing basis, and revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

Judgements made in applying accounting policies that have the most significant effects on the amounts recognized in these financial statements are included in the following notes:

- Revenue recognition - Identification of performance obligations and determination of the timing of when performance obligations are satisfied, either at a point in time or over time, requires judgement (note 5).
- Valuation of goodwill and indefinite life intangible assets - Purchased intangibles are valued as at the acquisition date using established methodologies and amortized over their estimated useful economic lives, except in those cases where intangibles are determined to have indefinite lives, where there is no foreseeable limit over which these intangibles would generate net cash flows. These valuations and lives are based on management's best estimates of future performance and periods over which value from the intangible assets will be derived (note 17).

Information about assumptions and estimate uncertainties that have a significant risk of resulting in a material adjustment in these financial statements is included in the following notes:

- Fair values of assets acquired and liabilities assumed – for the acquisition of Trayport and the sale of NGX and Shorcan Energy, the fair values under the acquisition method are based on management's best estimates using established methodologies of the fair value of the assets and liabilities acquired and disposed (note 3 and 4);
- Impairment of goodwill and indefinite life intangible assets – impairment tests are completed using the higher of fair value less costs of disposal, where available, and value-in-use calculations, determined using management's best estimates of future cash flows, long-term growth rates and appropriate discount rates (note 17);
- Measurement of defined benefit obligations for pensions, other post-retirement and post-employment benefits – the valuations of the defined benefit assets and liabilities are based on actuarial assumptions made by management with advice from the Company's external actuary (note 25);
- Provisions and contingencies – management judgement is required to assess whether provisions and/or contingencies should be recognized or disclosed, and at what amount. Management bases its decisions on past experience and other factors it considers to be relevant on a case by case basis (note 21);
- Share-based payments – the liabilities associated with the Company's share-based payment plans are measured at fair value using a recognized option pricing model based on management's assumptions. Management's assumptions are based on historical share price movements, dividend policy and past experience for the Company (note 24);
- Income taxes – the accounting for income taxes requires estimates to be made, such as the recoverability of deferred tax assets and tax uncertainties. Where differences arise between estimated income tax provisions and final income tax liabilities, an adjustment is made when the difference is identified (note 9); and

- Classification of financial assets - the Company has exercised judgment in the assessment of the business model within which the assets are held and in the assessment of whether the contractual terms of the financial asset are solely payments of principal and interest on the principal amounts outstanding to determine the classification of financial assets.

**(D) BASIS OF CONSOLIDATION**

Subsidiaries are entities controlled by the Company, and they are consolidated from the date on which control is transferred to the Company until the date that control ceases. Balances and transactions between the Company's subsidiaries have been eliminated on consolidation. On loss of control of a subsidiary, the Company derecognizes the assets and liabilities of the entity, and any related non-controlling interests and equity. Any gain or loss is recognized in the consolidated income statement and any retained interests measured at fair value at the date of loss of control. Changes in the Company's interest that do not result in a loss of control are accounted for as equity transactions.

Equity accounted investees are entities in which the Company has determined it has significant influence, but not control, over the financial and operating policies. Investments in these entities are recognized initially at cost and subsequently accounted for using the equity method of accounting.

**(E) FUNCTIONAL AND PRESENTATION CURRENCY**

Items included in the financial statements of each of the Company's entities are measured using the currency of the primary economic environment in which the entity operates (the "functional currency"). The financial statements are presented in Canadian dollars, which is the Company's functional and presentation currency.

The assets and liabilities of the Company's foreign operations for which the Canadian dollar is not the functional currency are translated at the rate of exchange in effect at the balance sheet date. Revenue and expenses are translated at the relevant daily exchange rates. The resulting unrealized exchange gain or loss is included in accumulated other comprehensive income within equity.

Revenues earned, expenses incurred and assets purchased in foreign currencies are translated into the functional currency at the prevailing exchange rate on the transaction date. Monetary assets and liabilities denominated in foreign currencies are translated at the period end rate or at the transaction rate when settled. Resulting unrealized and realized foreign exchange gains and losses are recognized within other revenue in the consolidated income statement for the period.

**(F) REVENUE RECOGNITION**

The Company has applied IFRS 15, *Revenue from Contracts with Customers* from January 1, 2018 using the modified retrospective approach. As such, comparative information has not been restated and continues to be reported under IAS 18, *Revenue*. Under IAS 18, revenue was measured at the fair value of the consideration received or receivable. Revenue was recognized when the service or supply was provided, when it was probable that the economic benefits would flow to the Company, and when the revenue and the costs incurred in respect of the transaction could be reliably measured. Revenue recognition under IFRS 15 is discussed in note 5.

**(G) COMPARATIVE FIGURES**

Certain comparative figures in these financial statements have been reclassified to reflect financial presentation adopted in the current year.

## NOTE 3 – ACQUISITION OF TRAYPORT

On December 14, 2017, the Company completed the acquisition of Trayport from ICE for £549.3 ($944.4). In conjunction with the Trayport acquisition, the Company completed the sale of NGX and Shorcan Energy to ICE, at a combined value of £220.5 ($379.2) (note 4). The sale of NGX and Shorcan Energy was used as partial consideration by the Company for the Trayport acquisition.

The acquisition has been accounted for as a business combination with the Company consolidating 100% of the results of operations of Trayport from the date of the acquisition. The assets and liabilities of Trayport are included in the consolidated financial statements. Trayport is included in the Global Solutions, Insights & Analytics ("GSIA") operating segment (note 6).

The final purchase price allocation is as follows:

| | | |
|---|---|---|
| Goodwill | $ | **603.7** |
| Intangible assets | | **398.0** |
| Other assets and liabilities, net | | **10.4** |
| Deferred tax liabilities on identifiable intangible assets | | **(67.7)** |
| **Fair value of net assets acquired** | **$** | **944.4** |

The total purchase price was allocated to Trayport's tangible and identifiable intangible assets and liabilities based on their estimated fair values as of December 14, 2017. In determining the purchase price allocation, the Company considered, among other factors, the intended future use of acquired assets, analysis of historical financial performance and estimates of future performance of Trayport's business. The excess of the purchase price over the net tangible and identifiable intangible assets was recorded as goodwill and assigned to the GSIA reportable segment.

The following table sets forth the components of the identifiable intangible assets associated with the acquisition as at December 31, 2018:

| **Intangible assets** | | **Acquisition date fair value** | | **Foreign exchange** | | **Accumulated amortization** | | **Net book value** | **Useful life (Years)** |
|---|---|---|---|---|---|---|---|---|---|
| Customer relationships | $ | 327.0 | $ | 4.0 | $ | (13.8) | **$** | **317.2** | **25** |
| Trade name | | 39.2 | | 0.5 | | — | | **39.7** | **Indefinite** |
| Developed technology | | 31.8 | | 0.4 | | (4.1) | | **28.1** | **2 to 10** |
| **Total** | **$** | **398.0** | **$** | **4.9** | **$** | **(17.9)** | **$** | **385.0** | |

Approximately $13.8 of acquisition related costs have been recognized as an expense in the comparative period.

Had the acquisition of Trayport occurred as of January 1, 2017, the Company's consolidated income statement for the year ended December 31, 2017 would have included revenue of $100.3, income from operations of $34.1, inclusive of pre-acquisition revenue of $95.9 and income from operations of $31.6, respectively. In determining these amounts, management has assumed that the fair value adjustments that arose on the acquisition date, would have been the same if the acquisition had occurred on January 1, 2017.

On November 30, 2018, the Company completed the sale of Trayport Contigo Limited ("Contigo"), a subsidiary of Trayport Limtied, to Energy One. As as a result of the sale, the Company disposed of $2.2 of goodwill related to the Contigo business.

## NOTE 4 – SALE OF NGX AND SHORCAN ENERGY

In conjunction with the acquisition of Trayport (note 3), the Company completed the sale of NGX and Shorcan Energy to ICE on December 14, 2017, at a combined value of £220.5 ($379.2). The sale of NGX and Shorcan Energy was used as partial consideration for the acquisition of Trayport.

The financial information relating to the gain on sale of NGX and Shorcan Energy is as follows:

| | | December 31, 2017 |
|---|---|---|
| Gross proceeds from sale of NGX and Shorcan Energy | $ | 379.2 |
| Net assets disposed | | (174.0) |
| Transaction costs | | (2.0) |
| Gain on sale of NGX and Shorcan Energy before income taxes | | 203.2 |
| Income tax expense | | (45.4) |
| Gain on sale of NGX and Shorcan Energy, net of tax | $ | 157.8 |

| | | December 31, 2017 |
|---|---|---|
| Goodwill | $ | 10.4 |
| Intangible assets | | 188.0 |
| Other assets and liabilities, net | | (24.4) |
| Total assets disposed | $ | 174.0 |

The Company classified the sale of NGX and Shorcan Energy as a discontinued operation for the year ended December 31, 2017. Prior to the sale, the operations of NGX and Shorcan Energy entirely comprised of the Energy Trading & Clearing operating segment and a small portion of the Global Solutions, Insights & Analytics operating segment. A discontinued operation is a component of the Company's business, the operations and cash flows of which can be clearly distinguished from the rest of the Company and which: (i) represents a separate major line of business or geographic area of operations; (ii) is part of a single co-ordinated plan to dispose of a separate major line of business or geographic area of operations; or (iii) is a subsidiary acquired exclusively with a view to re-sale.

The following tables illustrate the comparative financial performance that has been reclassified to discontinued operations and the related cash flow information for the year ended December 31, 2017:

| | | December 31, 2017 |
|---|---|---|
| Revenue | $ | 58.3 |
| Operating expenses | | 34.9 |
| Income from operations | | 23.4 |
| Finance income | | 0.7 |
| Income before income taxes and gain on sale | | 24.1 |
| Income tax expense | | 4.9 |
| Gain on sale of NGX and Shorcan Energy, net of tax | | 157.8 |
| Income from discontinued operations, net of tax | $ | 176.8 |

| | | December 31, 2017 |
|---|---|---|
| Net cash provided by operating activities | $ | 19.1 |
| Net cash provided by financing activities | | 0.1 |
| Net cash generated by (used in) investing activities | | (3.1) |
| Net cash flow from discontinued operations | $ | 16.1 |

## NOTE 5 – REVENUE

### (A) IFRS 15, REVENUE FROM CONTRACTS WITH CUSTOMERS

IFRS 15 establishes a single comprehensive framework in determining the timing and amount of revenue to be recognized, and requires enhanced disclosures, including revenue recognition policies to identify performance obligations to customers and judgement used in the measurement and recognition of revenue.

The Company has adopted IFRS 15 using the cumulative effect method, by recognizing the cumulative effect of initially applying IFRS 15 as an adjustment to the opening balance of retained earnings at January 1, 2018. Therefore, the comparative information has not been restated and continues to be reported under IAS 18, *Revenue*.

The impact of applying IFRS 15 has resulted in a change to the timing of recognition of initial listing fees. Under IFRS 15, revenue is recognized when performance obligations have been satisfied. The identification of performance obligations and determining the timing of when performance obligations are satisfied, either at a point in time or over time, requires judgement. Under IAS 18, initial listing fees were recognized when the listing had occurred. Under IFRS 15, the Company determined that the initial listing service and the initial year sustaining service represent one single performance obligation, and therefore concluded that the initial listing fee should be deferred over a 12-month period from the date of listing which is the period over which the customer has a material right to the services rendered. There were no other changes to the recognition of revenue as a result of applying IFRS 15.

The quantitative impact on the balance sheet, at January 1, 2018, is set out below.

| | Balance at December 31, 2017 | Initial listing fees | Tax on initial listing fees | **Balance at January 1, 2018** |
|---|---|---|---|---|
| Deferred revenue (current) | $ 8.7 | $ 6.5 | $ — | **$ 15.2** |
| Deferred income tax assets | 15.0 | — | 1.7 | **16.7** |
| Retained earnings | 252.6 | (6.5) | 1.7 | **247.8** |

For the year ended December 31, 2018, as a result of adopting IFRS 15, revenue increased by $1.4, and retained earnings increased by $1.0. In addition, as at December 31, 2018, deferred revenue increased by $5.1.

### (B) REVENUE FROM CONTRACTS WITH CUSTOMERS BY MAJOR PRODUCTS AND SERVICES LINES

Substantially all of the Company's revenues are considered to be revenues from contracts with customers. The related accounts receivable balances are recorded in the balance sheets as trade receivables and generally have terms of 30 days. The majority of deferred revenue represents contract liabilities related to initial listing fees and sustaining fees.

The majority of the Company's contracts are short–term in nature and therefore the Company has elected to apply the practical expedient to not disclose the remaining performance obligations in contracts with an expected duration of 12 months or less. Contracts that have an expected duration of 12 months or longer are recognized on an 'as–invoiced' basis and the Company has chosen to apply the practical expedient to not disclose revenue related to the remaining performance obligations in these contracts. These contracts also include variable consideration related to usage that are constrained and not included in the transaction price and thus not included in the remaining performance obligation disclosure.

The Company's primary contracts from customers are described and are disaggregated by major products and service lines below, and categorized by operating segments as identified and disclosed in note 6.

*GLOBAL SOLUTIONS, INSIGHTS AND ANALYTICS*

| | For the year ended December 31, | |
|---|---|---|
| | **2018** | 2017 |
| Trayport | **$ 111.7** | $ 4.5 |
| Subscribers and usage | **96.6** | 91.9 |
| Other | **81.0** | 90.1 |
| | **$ 289.3** | $ 186.5 |

Global solutions, insights and analytics revenue includes real time data, other market data products, data delivery solutions and technology solutions.

Real time market data revenue is recognized at the point in time the performance obligation is satisfied, based on estimated usage as reported by customers and vendors. The Company conducts periodic audits of the information provided to determine any adjustments to estimated revenue. However, the amounts owing from the audits cannot be estimated as they are dependent on factors outside of the Company's control, and the results of each audit has limited predictive value for future audits.

Trayport revenue includes subscriber fees, which are paid on a monthly basis for access to the platform. Subscriber revenue is recognized over time as the performance obligation is satisfied.

Performance obligations for other global solutions, insights and analytics contracts are satisfied, and revenue is recognized, when the services are provided.

*CAPITAL FORMATION*

| | For the year ended December 31, | |
|---|---|---|
| | **2018** | 2017 |
| Initial listing fees | **$ 13.4** | $ 12.5 |
| Additional listing fees | **84.6** | 82.7 |
| Sustaining fees | **71.0** | 70.3 |
| Other issuer services | **29.7** | 23.2 |
| | **$ 198.7** | $ 188.7 |

Capital formation revenue includes revenue from listings services and other issuer services. Listings services revenue includes revenue generated from initial listings, additional listings and sustaining services.

Revenue from new issuers include the initial listing fee and the first-year sustaining fee. These fees, either billed upfront or when the listing occurs, contain a single performance obligation. When the initial fee creates a material right, it is deferred and recognized over 12 months. Sustaining services for new issuers are recognized on a straight-line basis over the remainder of the year as those services are provided. Performance obligations for additional listings are satisfied at a point in time, and revenue is recognized when the additional listing occurs, which is also when the fee is billed. Sustaining services for existing issuers are billed during the first quarter of the year and the related performance obligation is satisfied on a straight-line basis over the year.

Other issuer services include revenue from registrar and transfer agency services and corporate trust services which is recognized as the services are provided. Margin income from funds held and administered on behalf of clients is also included in other issuer services revenue. Other issuer services have separate performance obligations, that are satisfied at a point in time, which is when the services are provided to the customer.

*EQUITIES AND FIXED INCOME TRADING AND CLEARING*

| | For the year ended December 31, | |
|---|---|---|
| | **2018** | 2017 |
| Equities and fixed income trading | **$ 108.8** | $ 104.0 |
| Equities and fixed income clearing, settlement, depository and other services (CDS) | **85.8** | 78.1 |
| | **$ 194.6** | $ 182.1 |

Equities and fixed income trading and clearing revenue includes revenue from equities and fixed income trading, clearing, settlement, and depository services.

Trading and related revenues for equities and fixed income contain one performance obligation related to trade execution, which occurs instantaneously. Revenue is recognized in the month in which the trades are executed or when the related services are provided.

Revenues related to equities and fixed income clearing, settlement and depository services are recognized as follows:

- Clearing services include the reporting and confirmation of all trade types within the multilateral clearing and settlement system referred to as CDSX. Clearing services also include the netting and novation of exchange trades through CDS's Continuous Net Settlement ("CNS") service prior to settlement. The Company has identified two performance obligations related to the clearing and settlement and allocates the transaction price on the basis of relative stand–alone selling prices. These are generally satisfied at a point in time and recognized in the month in which the services are provided. Clearing services and the related settlement occur within a short period of time. Other clearing related fees are recognized when services are performed.
- Depository fees are charged for custody of securities, depository related activities and processing of entitlement and corporate actions and are recognized when the services are performed.
- Under the CDS recognition orders granted by the Ontario Securities Commission ("OSC") and the Autorité des marchés financiers ("AMF"), CDS is required to share any annual revenue increases on clearing and other core CDS Clearing services, as compared to revenues for the twelve-month period ended October 31, 2012, on a 50:50 basis with Participants. Beginning January 1, 2015 and subsequent years, CDS also shares with Participants, on a 50:50 basis, any annual increases in revenue applicable to the New York Link/Depository Trust Company Direct Link Liquidity Premium. These amounts are calculated and recorded on a monthly basis as a reduction of revenue, which results in the recognition of revenue at the amount to which the Company is entitled.
- Rebates are allocated and recorded as a reduction in revenue in the consolidated income statement in the period to which they relate.

DERIVATIVES TRADING AND CLEARING

| | For the year ended December 31, | |
|---|---|---|
| | **2018** | 2017 |
| Derivatives trading and clearing | **$ 129.9** | $ 114.8 |

Derivatives trading and clearing revenue includes revenue from trading and clearing activities.

Trading and related revenues for derivatives markets contain one performance obligation related to trade execution, which occurs instantaneously. Revenue is recognized in the month in which the trades are executed or when the related services are provided. Clearing revenues are recognized on the novation date of the related transaction. Trade execution and novation are instantaneous and any performance obligations are satisfied within a short period of time.

Rebates are allocated and recorded as a reduction in revenue in the consolidated income statement in the period to which they relate.

As part of its REPO clearing service, CDCC earns interest income and incurs interest expense on all REPO transactions that clear through CDCC. The interest income and interest expense are equal; however as CDCC does not have a legal right to offset these amounts, they are recognized separately on the consolidated income statement. The interest income is earned, and the interest expense incurred, over the term of the REPO agreements.

## NOTE 6 – SEGMENT INFORMATION

The Company has four operating segments. An operating segment is a component of the Company that engages in business activities from which it may earn revenues and incur expenses, including revenues and expenses that relate to transactions with any of the Company’s other components and for which discrete financial information is available. Operating segments are reported in a manner consistent with the internal reporting provided to the Chief Operating Decision Maker (“CODM”). The CODM, who is responsible for allocating resources and assessing performance of the operating segments, has been identified as the Chief Executive Officer.

### (A) INFORMATION ABOUT REPORTABLE SEGMENTS

Prior to the sale of NGX and Shorcan Energy (note 4), the Company had five reportable segments which included the Energy Trading & Clearing segment. The Energy Trading & Clearing segment fully comprised of NGX and Shorcan Energy. As a result of the sale, the Company's four reportable segments are now as follows:

- **Global Solutions, Insights & Analytics**: to deliver integrated data sets to fuel high-value proprietary and third party analytics to help clients make better trading and investment decisions. The Company's operations included in the Global Solutions, Insights & Analytics segment are TMX Datalinx, TMX Insights and as of December 14, 2017, Trayport (note 3).
- **Capital Formation:** to energize and expand the "capital market community" to better facilitate capital raising for issuers of all types at all stages of their development and to provide access to alternative sources of capital. The Company's operations included in the Capital Formation segment are: Toronto Stock Exchange ("TSX"), a national stock exchange serving the senior equities market; TSX Venture Exchange, a national stock exchange serving the public venture equity market, and TSX Trust, a provider of corporate trust, registrar, transfer agency and foreign exchange services.
- **Derivatives Trading & Clearing:** to intensify new product creation and leverage our unique market position to benefit from increasing demand for derivatives products both in Canada and globally. The Company's operations included in the Derivatives Trading and Clearing segment are Montréal Exchange, a national derivatives exchange; and Canadian Derivatives Clearing Corporation ("CDCC"), a clearinghouse for options and futures contracts and certain over-the-counter products and fixed income repurchase agreements.
- **Equities and Fixed Income Trading & Clearing:** to operate innovative, efficient, reliable, fast, easy to use platforms for equities trading and clearing. The Company's operations included in the Equities and Fixed Income Trading and Clearing segment are the trading operations of Toronto Stock Exchange, TSX Venture Exchange, and TSX Alpha Exchange; CDS Clearing and Depository Services Inc. ("CDS Clearing"), an automated facility for the clearing and settlement of equities and fixed income transactions and custody of securities in Canada and Shorcan Brokers Limited, a fixed income inter-dealer broker.

The Company has certain revenue and corporate costs not allocated to the operating segments. Revenue related to foreign exchange gains and losses and other services are presented in the Other segment. Costs and expenses related to the amortization of purchased intangibles, along with certain consolidation and elimination adjustments, are also presented in the Other segment.

Information related to each reportable segment is as follows:

| **For the year ended** | | | | | | **December 31, 2018** |
|---|---|---|---|---|---|---|
| | **Global Solutions Insights & Analytics** | **Capital Formation** | **Derivatives Trading & Clearing** | **Equities and Fixed Income Trading & Clearing** | **Other** | **Total** |
| **Revenue (external)** | **$ 289.3** | **$ 198.7** | **$ 129.9** | **$ 194.6** | **$ 4.6** | **$ 817.1** |
| **Inter-segment revenue** | **0.5** | **—** | **—** | **1.6** | **(2.1)** | **—** |
| **Total revenue** | **$ 289.8** | **$ 198.7** | **$ 129.9** | **$ 196.2** | **$ 2.5** | **$ 817.1** |
| **Income from operations** | **$ 173.4** | **$ 111.3** | **$ 57.3** | **$ 83.5** | **$ (56.5)** | **$ 369.0** |
| **Selected items:** | | | | | | |
| **Depreciation and amortization** | **$ 6.2** | **$ —** | **$ 0.3** | **$ 0.5** | **$ 63.3** | **$ 70.3** |

| For the year ended | | | | | | December 31, 2017 |
|---|---|---|---|---|---|---|
| | Global Solutions Insights & Analytics | Capital Formation | Derivatives Trading & Clearing | Equities and Fixed Income Trading & Clearing | Other | Total |
| Revenue (external) | $ 186.5 | $ 188.7 | $ 114.8 | $ 182.1 | $ (3.2) | $ 668.9 |
| Inter-segment revenue | 0.6 | — | — | 1.5 | (2.1) | — |
| Total revenue | $ 187.1 | $ 188.7 | $ 114.8 | $ 183.6 | $ (5.3) | $ 668.9 |
| Income from operations before acquisition costs | $ 117.7 | $ 107.0 | $ 55.0 | $ 84.0 | $ (51.1) | $ 312.6 |
| Selected items: | | | | | | |
| Depreciation and amortization | $ 1.9 | $ 0.1 | $ 0.2 | $ 0.5 | $ 48.9 | $ 51.6 |
| Impairment charges | $ — | $ — | $ — | $ — | $ 6.5 | $ 6.5 |

The CODM assesses the performance of the operating segments based on income from operations before acquisition costs, which is not a term defined within IFRS. This measure of profit excludes share of income from equity accounted investees, impairment charges, acquisition costs and other costs and expenses that relate to individual events of an infrequent nature.

Income from operations before acquisition costs and income from operations are important indicators of the Company's ability to generate liquidity through operating cash flow to fund future working capital needs, service outstanding debts, and fund future capital expenditures. Impairment charges includes impairment of goodwill and intangibles originating from acquisitions and is not considered an operating item. The intent of these performance measures is to provide additional useful information to investors and analysts; however, should not be considered in isolation.

### (B) INFORMATION ABOUT GEOGRAPHICAL AREAS

The Company’s revenue by geography is as follows:

| **For the year ended** | **December 31, 2018** | December 31, 2017 |
|---|---|---|
| Canada | **$ 550.2** | $ 511.0 |
| US | **115.8** | 118.2 |
| UK | **85.0** | 16.7 |
| Other | **66.1** | 23.0 |
| | **$ 817.1** | $ 668.9 |

Revenue is allocated based on the country to which customer invoices are addressed.

No single customer generates revenues greater than ten percent of the Company's total revenues.

The Company's non-current assets by geography is as follows:

| **As at** | **December 31, 2018** | December 31, 2017 |
|---|---|---|
| Canada | **$ 4,118.4** | $ 4,157.7 |
| UK | **999.1** | 1,013.3 |
| US | **24.3** | 21.3 |
| Other | **—** | 0.8 |
| | **$ 5,141.8** | $ 5,193.1 |

Non-current assets above are primarily comprised of goodwill and intangible assets, investments in equity accounted investees, and other assets and excludes both accrued employee benefit assets and deferred income tax assets.

## NOTE 7 – FINANCE INCOME AND FINANCE COSTS

Finance income comprises interest income on funds invested, realized gains on foreign currency forward contracts, and changes in the fair value of marketable securities. Finance costs comprise interest expense on borrowings. Any realized gains or losses on interest rate swaps are also included within net finance costs in the consolidated income statement.

Net finance costs for the period is as follows:

| **For the year ended** | *Note* | **December 31, 2018** | December 31, 2017 |
|---|---|---|---|
| **Finance income** | | | |
| Interest income on funds invested | | **$ 3.8** | $ 2.9 |
| Net settlement on derivative instruments | | **—** | 10.2 |
| | | **3.8** | 13.1 |
| **Finance costs** | | | |
| Interest expense on borrowings, including foreign exchange and amortization of financing fees | *12* | **(44.1)** | (29.0) |
| Net settlement on interest rate swaps | | **—** | 1.0 |
| Unwinding of the discount on provisions | | **(0.1)** | (0.1) |
| | | **(44.2)** | (28.1) |
| **Net finance costs** | | **$ (40.4)** | $ (15.0) |

## NOTE 8 – EARNINGS PER SHARE

Basic earnings per share is determined by dividing net income by the weighted average number of common shares outstanding during the reporting period. Diluted earnings per share is determined by dividing the net income by the weighted average number of common shares outstanding during the reporting period, adjusted for the effects of all potential dilutive common shares arising from share options granted to employees.

Basic and diluted earnings per share both before and including discontinued operations (note 4) for the period are as follows:

| **For the year ended** | | | **December 31, 2018** | | | December 31, 2017 |
|---|---|---|---|---|---|---|
| | **Before discontinued operations** | **Discontinued operations** | **Total** | Before discontinued operations | Discontinued operations | Total |
| **Net income** | **$ 286.0** | **$ —** | **$ 286.0** | $ 191.2 | $ 176.8 | $ 368.0 |
| Weighted average number of common shares outstanding – basic | **55,635,123** | **—** | **55,635,123** | 55,285,668 | 55,285,668 | 55,285,668 |
| Effect of dilutive share options | **458,420** | **—** | **458,420** | 444,769 | 444,769 | 444,769 |
| Weighted average number of common shares outstanding – diluted | **56,093,543** | **—** | **56,093,543** | 55,730,437 | 55,730,437 | 55,730,437 |
| **Basic earnings per share** | **$ 5.14** | **$ —** | **$ 5.14** | $ 3.46 | $ 3.20 | $ 6.66 |
| **Diluted earnings per share** | **$ 5.10** | **$ —** | **$ 5.10** | $ 3.43 | $ 3.17 | $ 6.60 |

## NOTE 9 – INCOME TAXES

### (A) INCOME TAX EXPENSE RECOGNIZED IN THE CONSOLIDATED INCOME STATEMENT

Income tax expense comprises current and deferred income tax. Income tax expense is recognized in the consolidated income statement except to the extent that it relates to items recognized directly in equity or in other comprehensive income.

Income tax expense recognized in the consolidated income statement for the period is as follows:

| **For the year ended** | **December 31, 2018** | December 31, 2017 |
|---|---|---|
| **Current income tax expense:** | | |
| Income tax for the current period | **$ 98.2** | $ 83.3 |
| Adjustments in respect of prior years | **(0.2)** | 0.1 |
| **Deferred income tax expense:** | | |
| Origination and reversal of temporary differences | **$ (21.9)** | $ (3.3) |
| Adjustments in respect of prior years | **—** | (2.3) |
| Changes in substantively enacted income tax rates | **—** | 8.3 |
| Write-down of deferred income tax assets | **0.2** | 2.9 |
| **Income tax expense before discontinued operations** | **76.3** | 89.0 |
| Income tax expense on discontinued operations before gain on sale (note 4) | **—** | 4.9 |
| Income tax expense on sale of NGX and Shorcan Energy (note 4) | **—** | 45.4 |
| **Total income tax expense** | **$ 76.3** | $ 139.3 |

Current income tax is the expected income tax payable or receivable on the taxable income or loss for the period using income tax rates enacted or substantively enacted at the reporting date in the countries where the Company operates and any adjustments to income tax payable in respect of previous years.

Uncertain income tax positions are recognized in the financial statements using management's best estimate of the amount expected to be paid.

Deferred income tax is recognized in respect of certain temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred income tax is measured at the income tax rates that are expected to be applied to temporary differences when they reverse, based on the laws that have been enacted or substantively enacted at the reporting date.

Income tax expense attributable to income differs from the amounts computed by applying the combined federal and provincial income tax rate of 26.5% (2017 – 26.5%) to income before discontinued operations and income taxes as a result of the following:

| For the year ended | | December 31, 2018 | | December 31, 2017 |
|---|---|---|---|---|
| **Income before income tax expense and income from discontinued operations** | **$** | **362.3** | $ | 280.2 |
| | | | | |
| Computed expected income tax expense | **$** | **96.0** | $ | 74.3 |
| Non-deductible expenses | | **1.5** | | 0.9 |
| Write-down of deferred income tax assets | | **0.2** | | 2.9 |
| Capital loss recognized on internal reoganizations | | **(13.9)** | | — |
| Rate differential due to various jurisdictions | | **(4.1)** | | (1.5) |
| Sale of TMX FTSE (note 18) | | **(3.3)** | | — |
| Adjustments in respect of prior years | | **(0.2)** | | (2.2) |
| Changes in substantively enacted income tax rates | | **—** | | 8.3 |
| Acquisition costs, net of realized foreign exchange gains (note 3) | | **—** | | 2.3 |
| Impairment charges (note 17) | | **—** | | 1.7 |
| Sale of TMX Atrium | | **—** | | 1.4 |
| Other | | **0.1** | | 0.9 |
| **Income tax expense before discontinued operations** | **$** | **76.3** | $ | 89.0 |

During the year ended December 31, 2017, the British Columbia general corporate income tax rate was increased to 12% from 11%, effective January 1, 2018. The Company recognized $2.5 in deferred income tax expense as a result of the rate change, which became substantively enacted on October 26, 2017.

As part of the US tax reform that was enacted on December 22, 2017, the US federal corporate tax rate was reduced from 35% to 21%, effective January 1, 2018. As a result of this rate change the Company recognized $5.8 in deferred income tax expense for the year ended December 31, 2017.

### (B) DEFERRED INCOME TAX ASSETS AND LIABILITIES

The Company recognizes a deferred income tax asset only to the extent that it is probable that future taxable income will be available against which it can be utilized. Deferred income tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the related tax benefit will be realized.

Deferred income tax assets (liabilities) as of December 31 are attributable to the following:

| | Assets | | Liabilities | | Net | |
|---|---|---|---|---|---|---|
| | **2018** | 2017 | **2018** | 2017 | **2018** | 2017 |
| Premises and equipment | **$ 5.7** | $ 6.0 | **$ (0.7)** | $ (0.7) | **$ 5.0** | $ 5.3 |
| Cumulative eligible capital / intangible assets | **20.0** | 22.8 | **(853.7)** | (860.6) | **(833.7)** | (837.8) |
| Tax loss carry-forwards | **16.9** | 6.1 | **—** | — | **16.9** | 6.1 |
| Employee future benefits | **4.3** | 4.9 | **(1.5)** | (2.0) | **2.8** | 2.9 |
| Share-based payments | **11.2** | 10.6 | **—** | — | **11.2** | 10.6 |
| Other | **8.2** | 3.9 | **(0.2)** | (0.4) | **8.0** | 3.5 |
| **Deferred income tax assets (liabilities)** | **$ 66.3** | $ 54.3 | **$ (856.1)** | $ (863.7) | **$ (789.8)** | $ (809.4) |
| Set off of tax | **(41.2)** | (39.3) | **41.2** | 39.3 | **—** | — |
| **Net deferred income tax assets (liabilities)** | **$ 25.1** | $ 15.0 | **$ (814.9)** | $ (824.4) | **$ (789.8)** | $ (809.4) |

Income tax assets and liabilities are offset in the financial statements if there is a legally enforceable right to offset them and they relate to income taxes levied by the same taxation authority on the same taxable entity, or on different taxable entities but the Company intends to settle them on a net basis or where the income tax assets and liabilities will be realized simultaneously.

Movements in the deferred income tax balances in the year are as follows:

| | Premises and equipment | Cumulative eligible capital/ intangible assets | Tax loss carry-forwards | Employee future benefits | Share-based payments | Other | Total |
|---|---|---|---|---|---|---|---|
| Balance at January 1, 2017 | $ 2.8 | $ (823.0) | $ 27.4 | $ 2.2 | $ 9.0 | $ 5.4 | $ (776.2) |
| Recognized in net income | 2.0 | 1.7 | (9.7) | 0.4 | 1.6 | (1.6) | (5.6) |
| Recognized in discontinued operations | (0.1) | 49.4 | (11.3) | (0.6) | — | (0.3) | 37.1 |
| Recognized through acquisition of Trayport | 0.5 | (65.0) | — | — | — | 0.1 | (64.4) |
| Recognized in other comprehensive loss | — | — | — | 0.9 | — | — | 0.9 |
| Effect of movements in exchange rates | 0.1 | (0.9) | (0.3) | — | — | (0.1) | (1.2) |
| Balance at December 31, 2017 | 5.3 | (837.8) | 6.1 | 2.9 | 10.6 | 3.5 | (809.4) |
| **Recognized in net income** | **(0.4)** | **8.9** | **9.4** | **0.2** | **0.6** | **3.0** | **21.7** |
| **Recognized through acquisition of Trayport** | **—** | **(3.3)** | **—** | **—** | **—** | **—** | **(3.3)** |
| **Recognized in other comprehensive income** | **—** | **(0.6)** | **—** | **(0.3)** | **—** | **—** | **(0.9)** |
| **Recognized in equity (note 5)** | **—** | **—** | **—** | **—** | **—** | **1.7** | **1.7** |
| **Effect of movements in exchange rates** | **0.1** | **(0.9)** | **1.4** | **—** | **—** | **(0.2)** | **0.4** |
| **Balance at December 31, 2018** | **$ 5.0** | **$ (833.7)** | **$ 16.9** | **$ 2.8** | **$ 11.2** | **$ 8.0** | **$ (789.8)** |

As at December 31, 2018, $9.7 and $7.2 of the above deferred income tax assets related to tax losses incurred in Canada and the US, respectively (2017 – nil and $6.1, respectively). Recoverability of these assets is dependent upon the availability of future taxable profits within these legal entities. The Company believes that these losses will be recoverable.

No deferred income tax assets have been recognized in respect of the following temporary differences:

| As at | December 31, 2018 | December 31, 2017 |
|---|---|---|
| Tax losses | **$ 25.4** | $ 46.5 |
| Other deductible temporary differences | **156.9** | 203.6 |
| | **$ 182.3** | $ 250.1 |

At December 31, 2018, the above income tax losses will expire by 2038 (2017 – $35.1 will expire by 2038 with the remainder of the losses not subject to expiry under currently applicable income tax legislation). Deferred income tax assets have not been recognized in respect of these items because it is not probable that future taxable profit will be available against which the Company can utilize the tax losses. However, the Company will continue to pursue tax planning strategies to utilize the tax losses where possible.

At December 31, 2018, deferred income tax liabilities for temporary differences of $0.4 relating to investments in certain foreign subsidiaries were not recognized as the Company is able to control the timing of the reversal of the temporary differences and it is probable that the temporary differences will not reverse in the foreseeable future (2017 – $1.1). Temporary differences relating to the remaining domestic subsidiaries have not been recognized as the temporary difference can be settled without tax consequences.

## NOTE 10 – BALANCES WITH PARTICIPANTS AND CLEARING MEMBERS

Balances with Participants and Clearing Members on the consolidated balance sheets are comprised of:

| As at | December 31, 2018 | December 31, 2017 |
|---|---|---|
| Balances with Participants | **$ 702.0** | $ 691.7 |
| Balances with Clearing Members | **24,110.4** | 18,377.0 |
| Clearing Members cash collateral | **1,179.0** | 877.3 |
| **Balances with Participants and Clearing Members** | **$ 25,991.4** | $ 19,946.0 |

There is no net impact on the consolidated balance sheets as an equivalent amount is recognized in both assets and liabilities.

### (A) CDS CLEARING, SETTLEMENT AND PARTICIPANT BALANCES

Balances with Participants includes the cash collateral pledged and deposited with CDS Clearing and cash dividends, interest and other cash distributions awaiting distribution ("entitlements and other funds") on securities held under custody in the depository. Cash collateral is held by CDS Clearing at the Bank of Canada and National Securities Clearing Corporation ("NSCC")/Depository

Trust Company ("DTC") and is recognized as an asset and an equivalent and offsetting liability is recognized as these amounts are ultimately owed to the Participants.

| | | **December 31, 2018** | | December 31, 2017 |
|---|---|---|---|---|
| Entitlements and other funds | **$** | **20.1** | $ | 186.0 |
| Participants cash collateral | | **681.9** | | 505.7 |
| **Balances with Participants** | **$** | **702.0** | $ | 691.7 |

The margin deposits of CDS Clearing are held in liquid instruments. CDS Clearing's New York Link ("NYL") service does not apply strict limits to a Participant's end-of-day payment obligation, creating the potential for unlimited liquidity risk exposure if a user of the service were to default on its obligation. CDS Clearing manages this risk through active monitoring of payment obligations and a committed liquidity facility which covers the vast majority of potential Participant default scenarios. Residual liquidity risk in excess of CDS Clearing's liquidity facility is transferred to surviving Participant users of the NYL service and as a result CDS Clearing's liquidity risk exposure is limited to a maximum of its available liquidity facility.

At December 31, 2018, as a result of calculations of Participants' exposure, the total amount of collateral required by CDS Clearing was $6,081.1 (2017 – $5,888.3). The actual collateral pledged to CDS Clearing at December 31 is summarized below:

| | | **December 31, 2018** | | December 31, 2017 |
|---|---|---|---|---|
| Cash (included within Balances with Participants on the consolidated balance sheet) | **$** | **681.9** | $ | 505.7 |
| Treasury bills and fixed income securities | | **6,609.8** | | 6,283.7 |
| **Total collateral pledged** | **$** | **7,291.7** | $ | 6,789.4 |

Non-cash collateral is not included in the Company's consolidated balance sheets.

### (B) CDCC CLEARING, SETTLEMENT AND CLEARING MEMBER BALANCES

Balances with Clearing Members includes balances with clearing members of CDCC ("Clearing Members") as follows:

- Daily settlements due from, and to, Clearing Members – These balances result from marking open futures positions to market and settling option transactions each day. These amounts are required to be collected from and paid to Clearing Members prior to the commencement of trading the next day. There is no impact on the consolidated balance sheet as an equivalent amount is recognized in both assets and liabilities.

  At December 31, 2018, the gross amount of daily settlements due from, and to, Clearing Members was $147.8 and $147.8, respectively (2017 – $25.2 and $25.2). These balances are then netted by Clearing Member at the balance sheet date, for cash to be paid or received on mark-to-market on futures, options premium and cash margin shortage or excess.

- Net amounts receivable/payable on open REPO agreements – OTC REPO agreements between buying and selling Clearing Members are novated to CDCC whereby the rights and obligations of the Clearing Members under the REPO agreements are cancelled and replaced by new agreements with CDCC. Once novation occurs, CDCC becomes the counterparty to both the buying and selling Clearing Member. As a result, the contractual right to receive and return the principal amount of the REPO as well as the contractual right to receive and pay interest on the REPO is thus transferred to CDCC.

  These balances represent outstanding balances on open REPO agreements. At December 31, 2018, the gross amount of open REPO contracts receivable and payable was $44,086 and $44,086 (2017 – 30,585.7 and $30,585.7). These contracts when broken down by Clearing Member give rise to gross receivable and gross payable positions. As allowed under CDCC rules, receivable and payable balances outstanding with the same Clearing Member are offset when they are in the same currency and are to be settled on the same day, as CDCC has a legally enforceable right to offset and the intention to net settle. The balances include both the original principal amount of the REPO and the accrued interest, both of which are carried at amortized cost. As CDCC is the central counterparty, an equivalent amount is recognized in both the Company's assets and liabilities.

The following table sets out the carrying amounts of Balances with Clearing Members that are subject to offsetting, enforceable master netting arrangements and similar arrangements:

| **As at** | | | **December 31, 2018** |
|---|---|---|---|
| Asset/(Liability) | **Gross asset or (liability) for counterparties in a net asset / (net liability) position** | **Liabilities / (assets) offset against net assets/ (net liabilities) by counterparties** | **Net amounts presented in the consolidated balance sheet** |
| **Financial assets** | | | |
| Daily settlements due from Clearing Members | **$ 146.0** | **$ —** | **$ 146.0** |
| Net amounts receivable on open REPO agreements | **30,977.1** | **(7,012.7)** | **23,964.4** |
| | **31,123.1** | **(7,012.7)** | **24,110.4** |
| **Financial liabilities** | | | |
| Daily settlements due to Clearing Members | **(147.7)** | **1.7** | **(146.0)** |
| Net amounts payable on open REPO agreements | **(37,073.0)** | **13,108.6** | **(23,964.4)** |
| | **(37,220.7)** | **13,110.3** | **(24,110.4)** |
| **Net amount** | **$ (6,097.6)** | **$ 6,097.6** | **$ —** |

| As at | | | December 31, 2017 |
|---|---|---|---|
| Asset/(Liability) | **Gross asset or (liability) for counterparties in a net asset / (net liability) position** | **Liabilities / (assets) offset against net assets/ (net liabilities) by counterparties** | Net amounts presented in the consolidated balance sheet |
| Financial assets | | | |
| Daily settlements due from Clearing Members | $ 22.7 | $ (0.5) | $ 22.2 |
| Net amounts receivable on open REPO agreements | 23,072.9 | (4,718.1) | 18,354.8 |
| | 23,095.6 | (4,718.6) | 18,377.0 |
| Financial liabilities | | | |
| Daily settlements due to Clearing Members | (24.6) | 2.4 | (22.2) |
| Net amounts payable on open REPO agreements | (25,867.6) | 7,512.8 | (18,354.8) |
| | (25,892.2) | 7,515.2 | (18,377.0) |
| Net amount | $ (2,796.6) | $ 2,796.6 | $ — |

For the year ended December 31, 2018, the largest daily settlement amount due from a Clearing Member was $287.5 (2017 – $173.0), and the largest daily settlement amount due to a Clearing Member was $222.7 (2017 – $149.9). These settlement amounts do not reflect net amounts from open REPO agreements, which are also due from Clearing Members.

Clearing Members' cash collateral are comprised of cash margin deposits and cash clearing fund deposits from Clearing Members which are held by CDCC with the Bank of Canada. Cash collateral, either as margin against open positions or as part of the clearing fund, are held by CDCC and are recognized as an asset and an equivalent and offsetting liability is recognized as these amounts are ultimately owed to the Clearing Members. There is no impact on the consolidated balance sheet as an equivalent amount is recognized in both assets and liabilities.

The actual collateral pledged to CDCC at December 31 is summarized below:

| | **December 31, 2018** | December 31, 2017 |
|---|---|---|
| **Cash collateral held:** | | |
| Clearing Members' cash margin deposits | **$ 939.5** | $ 727.9 |
| Clearing fund cash deposits | **239.5** | 149.4 |
| | **$ 1,179.0** | $ 877.3 |

Non-cash margin deposit and non-cash clearing fund deposit collateral pledged to CDCC under irrevocable agreements is held in government securities, put letters of guarantee and equity securities with approved depositories. Clearing Members may also pledge escrow receipts directly with CDCC. The non-cash collateral pledged to CDCC at December 31 is summarized below:

| | December 31, 2018 | December 31, 2017 |
|---|---|---|
| **Non-cash collateral pledged:** | | |
| Non-cash margin deposits | **$ 8,183.0** | $ 8,413.5 |
| Non-cash clearing fund deposits | **1,257.5** | 956.1 |
| | **$ 9,440.5** | $ 9,369.6 |

Non-cash collateral is not included in the Company's consolidated balance sheets.

### (C) TSX TRUST ASSETS UNDER ADMINISTRATION

TSX Trust administers various segregated funds, representing amounts held on behalf of clients in connection with corporate trust and similar services. The actual assets under administration by TSX Trust at December 31 are summarized below:

| | December 31, 2018 | December 31, 2017 |
|---|---|---|
| Cash | $ 199.5 | $ 221.1 |
| Treasury bills and fixed income securities | 565.6 | 406.0 |
| **Total assets under administration** | **$ 765.1** | **$ 627.1** |

Since these amounts are not controlled by TSX Trust or by the Company, assets under administration are not included in the consolidated balance sheet.

## NOTE 11 – FINANCIAL RISK MANAGEMENT

The Company is exposed to a number of financial risks as a result of its operations, which are discussed below. It seeks to monitor and minimize adverse effects from these risks through its risk management policies and processes.

### (A) CREDIT RISK

Credit risk is the risk of loss due to the failure of a borrower, counterparty, Clearing Member, or Participant to honour their financial obligations. It arises principally from the Company's clearing operations of CDS Clearing and CDCC, the operations of TSX Trust, the brokerage operations of Shorcan, cash and cash equivalents, restricted cash and cash equivalents, marketable securities, trade receivables, interest rate swaps and total return swaps.

**(i) Clearing and/or brokerage operations**

The Company is exposed to credit risk in the event that Participants, in the case of CDS Clearing; Clearing Members, in the case of CDCC; and clients, in the case of TSX Trust and Shorcan, fail to fulfill their financial obligations.

**CDS Clearing**

CDS Clearing is exposed to the risk of loss due to the failure of a Participant in CDS Clearing's clearing and settlement services to honour its financial obligations. To a lesser extent, CDS Clearing is exposed to credit risk through the performance of services in advance of payment.

Through the clearing and settlement services operated by CDS Clearing, credit risk exposures are created. During the course of each business day, transaction settlements can result in a net payment obligation of a Participant to CDS Clearing or the obligation of CDS Clearing to pay a Participant. The potential failure of the Participant to meet its payment obligation to CDS Clearing results in payment risk, a specific form of credit risk. Payment risk is a form of credit risk in securities settlement whereby a seller will deliver securities and not receive payment, or that a buyer will make payment and not receive the purchased securities. Payment risk is mitigated by delivery payment finality in CDSX, CDS Clearing's multilateral clearing and settlement system, as set out in the CDS Clearing Participant Rules.

In the settlement services offered by CDS Clearing, payment risk is transferred entirely from CDS Clearing to Participants who accept this risk pursuant to the contractual rules for the settlement services. This transfer of payment risk occurs primarily by means of Participants acting as extenders of credit to other Participants through lines of credit managed within the settlement system or, alternatively, by means of risk-sharing arrangements whereby groups of Participants cross-guarantee the payment obligations of other members of the group. Should a Participant be unable to meet its payment obligations to CDS Clearing, these surviving Participants are required to make the payment. Payment risk is mitigated on behalf of

Participants through the enforcement of limits on the magnitude of payment obligations of each Participant and the requirement of each Participant to collateralize their payment obligation. Both of these mitigants are enforced in real time in the settlement system.

Through NYL and DTC Direct Link ("DDL"), credit risk exposures at CDS Clearing are created. During the course of each business day, settlement transactions by the NSCC/DTC can result in a net payment obligation from NSCC/DTC to CDS Clearing or the obligation of CDS Clearing to make a payment to NSCC/DTC. As a corollary result, CDS Clearing has a legal right to receive the funds from sponsored Participants in a debit position or has an obligation to pay the funds to sponsored Participants in a credit position.

The potential failure of a Participant to meet its payment obligation to CDS Clearing in the NYL or DDL services results in a payment risk. To mitigate the risk of default, CDS Clearing has in place default risk mitigation mechanisms to minimize losses to the surviving Participants as set out in the CDS Clearing Participant Rules. The process includes Participants posting collateral with CDS Clearing and NSCC/DTC (note 10).

The risk exposure of CDS Clearing in these central counterparty services is mitigated through a daily mark-to-market of each Participant's obligations as well as risk-based collateral requirements calculated daily. These mitigants are intended to cover the vast majority of market changes and are tested against actual price changes on a regular basis. This testing is supplemented with analysis of the effects of extreme market conditions on a collateral valuation and market risk measurements which are used to determine additional collateral requirements of Participants to a Default Fund established in 2015. Should the collateral of a defaulter in a central counterparty service be insufficient, either because the value of the collateral has declined or the loss to be covered by the collateral exceeded the collateral requirement, the surviving Participants in the service are required to cover any residual losses. Cash collateral is held by CDS Clearing at the Bank of Canada and NSCC/DTC and non-cash collateral pledged by Participants under Participant Rules is held by CDS Clearing (note 10).

CDS Clearing also holds $1.0 of its cash and cash equivalents and marketable securities to contribute pre-funded resources to its CNS default waterfall. This Default Fund of $1.0 would be accessed following the exhaustion of a suspended Participant's CNS Participant Fund and Default Fund contribution.

CDS Clearing may receive payment from securities issuers for entitlements, for example, maturity or interest payments, prior to the date of payment to the Participants holding those securities. In rare circumstances, due to the timing of receipt of these payments or due to market conditions, these funds may be held with a major Canadian chartered bank. As a result, CDS Clearing could be exposed to the credit risk associated with the potential failure of the bank.

**CDCC**

CDCC is exposed to risk of loss in the event that Clearing Members fail to satisfy any of the contractual obligations as stipulated within CDCC's rules.

CDCC is exposed to the credit risk of its Clearing Members since it acts as the central counterparty for all transactions carried out on MX's markets and on certain OTC markets which are serviced by CDCC. As such, in the event of a Clearing Member default, the obligations of those defaulting counterparties would become the responsibility of CDCC.

The first line of defence in CDCC's credit risk management process is the adoption of strict membership criteria which include both financial and regulatory requirements. In addition, CDCC performs on-going monitoring of the financial viability of its Clearing Members against the relevant criteria as a means of ensuring the on-going compliance of its Clearing Members. In the event that a Clearing Member fails to continue to satisfy any of its membership criteria, CDCC has the right through its rules, to impose various sanctions on such Clearing Members.

One of CDCC's principal risk management practices with regard to counterparty credit risk is the collection of risk-based margin deposits in the form of cash, equities, liquid government securities and escrow receipts. Should a Clearing Member fail to meet settlements and/or daily margin calls or otherwise not honour its obligations under open future, option contracts and REPO agreements, margin deposits would be seized and would then be available to apply against the potential losses incurred through the liquidation of the Clearing Member's positions.

CDCC's margining system is complemented by a Daily Capital Margin Monitoring (DCMM) process that evaluates the financial strength of a Clearing Member against its margin requirements. CDCC monitors the margin requirement of a Clearing Member as a percentage of its capital (net allowable assets). CDCC will make additional margin calls when the ratio of margin requirement/net allowable assets exceeds 100%. The additional margin is equal to the excess of the ratio over 100% and is meant to ensure that Clearing Member leverage in the clearing activities does not exceed the value of the firm. CDCC also has additional margin surcharges to manage the risk exposures associated with specific business related risks. These include: concentration charges for Clearing Members that are overly concentrated in certain positions, wrong-way risk charges for those Clearing Members holding positions which are highly correlated with their own credit risk profile, mismatched settlement surcharges which are meant to mitigate the risk of cherry-picking by a potential defaulter in the settlement process.

Global regulatory requirements for central-counterparties (CCPs), like CDCC, have highlighted the need for CCPs to have a component of their capital at risk in the default management process. CDCC holds $10.0 of its cash and cash equivalents and marketable securities to cover the potential loss incurred due to Clearing Member defaults. This $10.0 would be accessed in the event that a defaulting Clearing Members' margin and clearing fund deposits are insufficient to cover the loss incurred by CDCC. The $10.0 is allocated into two separate tranches. The first tranche of $5.0 is intended to cover the loss resulting from the first defaulting Clearing Member. If the loss incurred is greater than $5.0, and as such the first tranche is fully depleted, CDCC will fully replenish the first tranche using the second tranche of $5.0. This second tranche is in place to ensure there is $5.0 available in the event of an additional Clearing Member default.

CDCC's cash margin deposits and cash clearing fund deposits are held at the Bank of Canada thereby alleviating the credit risk CDCC would face with deposits held at commercial banks. CDCC's non-cash margin deposits and non-cash clearing fund deposits are pledged to CDCC under irrevocable agreements and are held by approved depositories (note 10). This collateral may be seized by CDCC in the event of default by a Clearing Member.

**TSX Trust**

TSX Trust is exposed to credit risk on foreign exchange transactions processed for clients in the event that either the client or the financial counterparty fails to settle contracts for which foreign exchange rates have moved unfavourably. The risk of a financial counterparty failing to settle a transaction is considered remote as TSX Trust deals only with reputable financial institutions comprised of Canadian major chartered banks.

**Shorcan**

Shorcan is exposed to credit risk in the event that customers fail to settle on the contracted settlement date. This risk is limited by their status as agents, in that they do not purchase or sell securities for their own account. As agents, in the event of a failed trade, Shorcan has the right to withdraw its normal policy of anonymity and advise the two counterparties to settle directly.

**(ii) Cash and cash equivalents and restricted cash and cash equivalents**

The Company manages its exposure to credit risk on its cash and cash equivalents and restricted cash and cash equivalents by holding the majority of its cash and cash equivalents with major Canadian chartered banks or in Government of Canada and provincial treasury bills and US treasury bills.

**(iii) Marketable securities**

The Company manages its exposure to credit risk arising from investments in marketable securities by holding investment funds that actively manage credit risk or by holding high-grade individual fixed income securities or term deposits with credit ratings of A/R1-low or better. In addition, when holding individual fixed income securities, the Company will limit its exposure to any non-government security. The investment policy of the Company will only allow excess cash to be invested in money market securities or fixed income securities; however the majority of the portfolio is held within bank deposits, notes, Government of Canada and provincial treasury bills, and US treasury bills.

**(iv) Trade receivables**

The Company's exposure to credit risk resulting from uncollectable accounts is influenced by the individual characteristics of its customers, many of whom are banks and financial institutions. The Company invoices its customers on a regular basis and maintains a collections team to monitor customer accounts and minimize the amount of overdue receivables. There is no concentration of credit risk arising from trade receivables from a single customer. In addition, customers that fail to maintain their account in good standing risk loss of listing, trading, clearing, or data access privileges and other services.

**(v) Interest rate swaps and total return swaps**

The Company limits its exposure to counterparty credit risk on its interest rate swaps and its total return swaps by contracting with major Canadian chartered banks.

**(B) MARKET RISK**

Market risk is the risk of loss due to changes in market prices and rates, such as foreign exchange rates, interest rates, commodity prices and equity prices.

### (i) Foreign currency risk

The Company is exposed to foreign currency risk on revenue and expenses where it invoices or procures in a foreign currency. It is also exposed to foreign currency risk on cash and cash equivalents, trade receivables and trade payables denominated in foreign currencies, principally in US dollars. As at December 31, 2018, cash and cash equivalents and trade receivables, net of current liabilities, include US$14.2, which are exposed to changes in the US-Canadian dollar exchange rate, £0.7, which are exposed to changes in the British Pound Sterling-Canadian dollar exchange rate, €0.1, which are exposed to changes in the Euro-Canadian dollar exchange rate (2017 – US$14.1, £1.5 and €0.7). In addition, net assets related to Trayport and other foreign operations are denominated in US dollars, Euros (“EUR”) and British Pound Sterling ("GBP"), and the effect of foreign exchange rate movements on the Company’s share of these net assets is included in accumulated other comprehensive income in the consolidated balance sheet.

The Company is also exposed to foreign currency risk on its US dollar advances on Commercial Paper. At December 31, 2018, the Company did not have any Commercial Paper which is exposed to changes in the US-Canadian dollar exchange rate (2017 – US$15.0).

The Company does not currently employ currency hedging strategies with respect to its operating activities, and therefore significant moves in exchange rates, specifically a strengthening of the Canadian dollar against the US dollar could have an adverse effect on the value of the Company's net income or net assets in Canadian dollars.

Settlements in the clearing and settlement services offered by CDS Clearing occur in both Canadian and US dollars. Foreign exchange risk could be created if there is a default and the currency of the payment obligation is different from the currency of the collateral supporting that payment obligation. This risk is mitigated by discounting the collateral value of securities where these mismatches occur.

### (ii) Interest rate risk

The Company is exposed to interest rate risk on its marketable securities, credit and liquidity facilities, debentures and Commercial Paper.

At December 31, 2018, the Company held $55.6 in marketable securities, all of which were held in treasury bills (2017 – $50.1, all of which were held in treasury bills).

The Company also has $319.5 of Commercial Paper (note 12) outstanding at December 31, 2018. The Company has entered into an interest rate swap agreement to partially manage its exposure to interest rate fluctuations on its Commercial Paper.

### (iii) Equity price risk

The Company is exposed to equity price risk arising from its share-based payments, as the Company’s obligation under these arrangements are partly based on the price of the Company’s shares. The Company has entered into TRSs as a partial economic hedge to the share appreciation rights of these share-based payments.

### (iv) Other market price risk

The Company is exposed to market risk factors from the activities of CDCC, CDS Clearing and Shorcan, if a Clearing Member, Participant or client, as the case may be, fails to take or deliver either derivative products or securities on the contracted settlement date where the contracted price is less favourable than the current market price.

### CDCC

CDCC is exposed to market risk through its CCP function in the event of a Clearing Member default as it becomes the legal counterparty to all of the defaulters’ novated transactions and must honor the financial obligations that arise from those novated transactions.

The principal mitigation of the market risk exposure post default is the default management process. CDCC has developed detailed default management processes that would enable it to neutralize the market exposures through either its auction process or via open markets operations within prescribed time periods. Any losses from such operations would be set-off against the margin and clearing fund (if necessary) collateral that are pre-funded by all Clearing Members for these purposes.

### CDS Clearing

CDS Clearing is exposed to market risk through its CCP function in the event of a Participant default as it becomes the legal counterparty to all of the defaulters’ novated transactions and must honor the financial obligations that arise from those novated transactions.

The principal mitigation of the market risk exposure post default is the default management process. CDS Clearing has developed detailed default management processes that would enable it to neutralize the market exposures via open market operations within prescribed time periods. Any losses from such operations would be set-off against the collateral contributions of the defaulting participant to the Participant Fund and Default Fund for the CCP service.

Replacement cost risk exposure of CDS Clearing in these central counterparty services is mitigated through a daily mark-to-market of each participant's obligations as well as risk-based collateral requirements calculated daily. These mitigants are intended to cover the vast majority of market changes and are tested against actual price changes on a regular basis. This testing is supplemented with analysis of the effects of extreme market conditions on collateral valuation and market risk measurements which are used to determine additional collateral requirements of Participants to a Default Fund established in 2015. Should the collateral of a defaulter in a central counterparty service be insufficient, either because the value of the collateral has declined or the loss to be covered by the collateral exceeded the collateral requirement, the surviving participants in the service are required to cover any residual losses.

Settlements in the clearing and settlement services occur in both Canadian and US dollars. Foreign exchange risk is created when the currency of the payment obligation is different from the valuation currency of the collateral supporting that payment obligation. This risk is mitigated by discounting the collateral value of securities where these mismatches occur.

**TSX and TSX Venture Exchange**

The Company is exposed to market price risk on a portion of its sustaining services revenue, which is based on quoted market values of listed issuers as at December 31 of the previous year.

**Shorcan**

Shorcan's risk is limited by their status as an agent, in that they do not purchase or sell securities for their own account, the short period of time between trade date and settlement date, and the defaulting customer's liability for any difference between the amounts received upon sale of, and the amount paid to acquire, the securities.

**(v) Market risk sensitivity summary**

| | Change in underlying factor | Impact on income before income taxes | Impact on equity attributable to equity holders of the Company |
|---|---|---|---|
| **Foreign currency** | | | |
| USD, EUR and GBP currency | +10.0% | $ 1.9 | $ 91.8 |
| USD, EUR and GBP currency | -10.0% | (1.9) | (91.8) |
| USD advances on Commercial Paper | +10.0% | n/a | n/a |
| USD advances on Commercial Paper | -10.0% | n/a | n/a |
| **Interest rates** | | | |
| Marketable securities | +1.0% | $ (0.1) | n/a |
| Marketable securities | -1.0% | 0.1 | n/a |
| Interest rate swaps | +1.0% | 0.4 | n/a |
| Interest rate swaps | -1.0% | (0.4) | n/a |
| Commercial Paper | +1.0% | (0.5) | n/a |
| Commercial Paper | -1.0% | 0.5 | n/a |
| Debentures | +1.0% | n/a | n/a |
| Debentures | -1.0% | n/a | n/a |
| **Equity price** | | | |
| RSUs and DSUs | +25.0% | $ (12.2) | n/a |
| RSUs and DSUs | -25.0% | 13.4 | n/a |
| TRS | +25.0% | 8.1 | n/a |
| TRS | -25.0% | (8.1) | n/a |

### (C) LIQUIDITY RISK

Liquidity risk is the risk of loss due to the inability of the Company to meet its, or of the Company's borrowers, counterparties, Clearing Members, or Participants to meet their obligations in a timely manner or at reasonable prices. The Company manages liquidity risk through the management of its cash and cash equivalents and marketable securities, all of which are held in short-term instruments, and its debentures, credit and liquidity facilities and Commercial Paper (note 12) and capital (note 13).

The contractual maturities of the Company's financial liabilities are as follows:

| **As at** | | | **December 31, 2018** |
|---|---|---|---|
| | **Less than 1 year** | **Between 1 and 5 years** | **Greater than 5 years** |
| Participants' tax withholdings* | $ **131.4** | $ — | $ — |
| Accrued interest payable | **3.9** | — | — |
| Other trade and other payables | **57.1** | — | — |
| Provisions | **11.7** | **7.3** | — |
| Obligation under finance leases | **0.1** | — | — |
| Balances with Participants and Clearing Members* | **25,991.4** | — | — |
| Total return swaps | **3.9** | — | — |
| Bank overdraft | **39.8** | — | — |
| Commercial Paper | **319.5** | — | — |
| Debentures | — | **249.5** | **497.3** |

**The above financial liabilities are covered by assets that are restricted from use in the ordinary course of business.*

## NOTE 12 – DEBT, CREDIT AND LIQUIDITY FACILITIES

The Company is exposed to liquidity risk through its clearing operations and capital structure (note 11). To manage this risk, the Company has arranged various liquidity and credit facilities, Commercial Paper and debentures as a source of financing. If the Company is unable to meet its covenants under the trust indentures, the terms of the Commercial Paper program or the credit facilities, the Company may be required to seek potentially less favourable sources of financing.

### (A) DEBT

The Company has the following debt outstanding at December 31:

| | | | | **2018** | 2017 |
|---|---|---|---|---|---|
| | **Interest rate** | **Maturity date(s)** | **Principal/ Authorized** | **Carrying amount** | Carrying amount |
| Series A Debentures | 3.253% | Oct 3, 2018 | $ 400.0 | $ — | $ 399.8 |
| Series B Debentures | 4.461% | Oct 3, 2023 | 250.0 | **249.5** | 249.2 |
| Series D Debentures | 2.997% | Dec 11, 2024 | 300.0 | **298.4** | 298.3 |
| Series E Debentures | 3.779% | June 5, 2028 | 200.0 | **198.9** | — |
| **Debentures** | | | | **746.8** | 947.3 |
| Commercial Paper | 2.10% - 2.20% | Jan 4 - Feb 15, 2019 | 500.0 | **319.5** | 395.3 |
| **Commercial Paper** | | | | **319.5** | 395.3 |
| TMX Group Limited credit facility | 1 month B.A./LIBOR + 122.5 bps | May 2, 2021 | 500.0 | — | — |
| **Credit facility** | | | | — | — |
| **Total debt** | | | | **1,066.3** | 1,342.6 |
| Less: current portion of debt | | | | **(319.5)** | (795.0) |
| **Non-current debt** | | | | $ **746.8** | $ 547.6 |

#### (i) Debentures

The Company maintains debentures, which are direct, senior, unsecured and unsubordinated obligations of the Company and rank equally with all other senior unsecured and unsubordinated indebtedness. The debentures have received a rating of A (high) with Stable trend from DBRS Limited ("DBRS"). On June 5, 2018, the Company completed a Canadian private placement offering of $200.0 aggregate principal amount of senior unsecured debentures ("Series E Debentures") to accredited investors in Canada. The debentures have received a rating of A (high) with Stable trend from DBRS Limited. The Series E Debentures are direct senior unsecured and unsubordinated obligations of the Company and rank pari passu with all other senior unsecured and unsubordinated indebtedness of the Company. The Company incurred financing costs of $1.1 on the issuance of the Series E Debentures, and these costs are initially recognized in the carrying value of the Debentures in the Debt caption of the consolidated balance sheet under non-current liabilities and amortized over the term of the debt.

The Company has the right, at its option, to redeem, in whole or in part, each of the Series B , Series D and Series E Debentures at any time prior to their respective maturities. The redemption price is equal to the greater of the applicable Canada Yield Price (as defined in the relevant Indenture) and 100% of the principal amount of the debentures being redeemed, together with accrued and unpaid interest to the date fixed for redemption. If redeemed on or after the date that is three months prior to the maturity date for the Series B and Series E, or two months prior to the maturity date for the Series D Debentures, the redemption price is equal to 100% of the aggregate principal amount outstanding on the series being redeemed, together with accrued and unpaid interest to the date fixed for redemption.

The debentures are carried at amortized cost and are measured using the effective interest rate method.

For the year ended December 31, 2018, the Company recognized interest expense on its Series A, Series B, Series D and Series E debentures of $10.1, $11.3, $9.1 and $4.4, respectively (2017 – $13.3, $11.3, $0.5 and nil, respectively). On October 3, 2018, the Company repaid its Series A debentures.

**(ii) Commercial paper**

The Company has a commercial paper program to offer potential investors up to $500 (or the equivalent US$) of Commercial Paper to be issued in various maturities of no more than one year. The Commercial Paper bears interest rates based on the prevailing market conditions at the time of issuance.

The Commercial Paper issued are unsecured obligations of TMX Group Limited and rank equally with all other senior unsecured obligations of the Company. The Commercial Paper has been assigned a rating of R-1 (low) with Stable trend by DBRS.

The Commercial Paper is carried at amortized cost and measured using the effective interest rate method.

During the year ended December 31, 2018, the Company issued and repaid Commercial Paper with a cumulative amount of $1,973.4 and $2,050.0, respectively (2017 – $2,681.3 and $2,594.8, respectively).

As at December 31, 2018, the carrying amount of Commercial Paper issued that remains outstanding is $319.5 (2017 – $395.3, of which $18.8 represents the Canadian dollar equivalent amount of US dollar Commercial Paper).

**(iii) TMX Group Limited credit facility**

The Company has entered into a credit agreement (the "TMX Group Limited credit facility") with a syndicate of lenders to provide 100% backstop to the commercial paper program as well as for general corporate purposes. The credit agreement is to mitigate the Company's exposure to specific liquidity risk should it be unable to borrow under a new Commercial Paper issuance in order to pay for Commercial Paper that is coming due because of a lack of liquidity or demand for the Company's Commercial Paper in the market.

On September 12, 2018, the maturity date of the TMX Group Limited credit facility was extended from May 2, 2020 to May 2, 2021.

The amount available to be drawn under the TMX Group Limited credit facility is limited to $500 less the aggregate amount of: (i) Commercial Paper outstanding; and (ii) inter-company notes payable to CDS Clearing and CDCC outstanding, at any point in time (December 31, 2018 – $319.5 and $36.5, respectively).

MX has an outstanding letter of guarantee for $0.5 issued against the TMX Group Limited credit facility. This letter of guarantee has been issued as a guarantee to the trustee under the MX supplementary pension plan in respect of accrued future employee benefits (note 25).

**(iv) Interest rate swaps**

The interest rate swaps in place as of December 31 are as follows:

| Swap | Maturity date | Interest rate the Company will receive | Interest rate the Company will pay | Notional value | | Fair value asset (liability) | |
|---|---|---|---|---|---|---|---|
| | | | | **2018** | 2017 | **2018** | 2017 |
| Series 5 | May 2, 2019 | 1 month B.A. | 1.083% | **$ 100.0** | $ 100.0 | **$ 0.5** | $ 1.1 |

During the year ended December 31, 2018, the Company recognized $0.6 of realized gains within net finance costs in the consolidated income statement, representing the net amount received on the interest rate swaps (2017 – paid $0.1).

The Company's objective is to eliminate the variability of cash flows from interest rate payments payable by the Company on its Commercial Paper through the use of interest rate swaps over the term of the debt. Fair value is obtained from a pricing service based on a discounted cash flow model, which includes a credit spread.

**(B) OTHER CREDIT AND LIQUIDITY FACILITIES**

The Company has the following other credit and liquidity facilities drawn and outstanding at December 31:

| | Interest rate† | Maturity date(s) | Authorized | **2018** Carrying amount | 2017 Carrying amount |
|---|---|---|---|---|---|
| AgriClear letter of credit | – | n/a | US$0.2 | — | — |
| CDS Limited operating demand loan | – | n/a | 6.0 | — | — |
| CDS Clearing unsecured overdraft | — | n/a | 5.0 | — | — |
| CDS Clearing operating demand loan | – | n/a | 10.0 | — | — |
| CDS Clearing secured standby liquidity facility | – | Mar 26, 2019 | 2,000.0 | — | — |
| CDS Clearing overnight loan facility | – | n/a | US$5.5 | — | — |
| CDS Clearing secured standby liquidity facility | – | March 26, 2019 | US$720.0 | — | — |
| CDCC syndicated revolving standby liquidity facility | | March 1, 2019 | 400.0 | — | — |
| CDCC daylight liquidity facilities | – | n/a | 600.0 | — | — |
| CDCC syndicated REPO facility | – | March 1, 2019 | 13,788.0 | — | — |
| Shorcan overdraft facility | – | n/a | 50.0 | — | — |
| **Total credit and liquidity facilities** | | | | **$ —** | $ — |

*†The interest rate charged on borrowings under the credit and liquidity facilities vary as the actual rate will be based on the prevailing market rates at the time of draw.*

**(i) AgriClear facilities**

AgriClear maintains a letter of credit demand facility of US$0.2 with a major Canadian chartered bank. TMX Group Limited has guaranteed the obligations under the letter of credit demand facility. As at December 31, 2018, letters of credit issued and outstanding under this facility were US$0.2.

**(ii) CDS facilities**

CDS maintains unsecured operating demand loans totaling $6.0 to support short-term operating requirements. To support processing and settlement activities of Participants, an unsecured overdraft facility and demand loan of $15.0 and an overnight facility of US$5.5 are available. The borrowing rates for these facilities, if drawn, are the Canadian prime or the US base rate, depending on the currency drawn.

CDS Clearing maintained a secured standby liquidity facility of US$400, or Canadian dollar equivalent, that can be drawn in either United States ("US") or Canadian currency. This arrangement is available to support processing and settlement activities in the event of a Participant default. Borrowings under the secured facility are obtained by pledging or providing collateral pledged by Participants primarily in the form of debt instruments issued or guaranteed by federal, provincial and/or municipal governments in Canada, or US treasury instruments. Depending upon the currency drawn, the borrowing rate for the secured standby liquidity facility is the US base rate or the Canadian prime rate.

On March 27, 2018, CDS Clearing amended the secured standby liquidity facility to increase the arrangement from US$400, or Canadian equivalent, to US$720.0, or Canadian equivalent. Also, this agreement was amended so the facility is available to support processing and settlement activities in the event of a Participant default with the New York Link Service and The Depository Trust Company Direct Link Service. The facility will allow the Company to increase the amount available by an additional US$600, or Canadian equivalent, with approval of the lenders.

Borrowings under the secured facility are obtained by pledging or providing collateral pledged by Participants primarily in the form of debt instruments issued or guaranteed by federal, provincial and/or municipal governments in Canada, or US treasury instruments and equity instruments. Depending upon the currency drawn, the borrowing rate for the secured standby liquidity facility is the US base rate plus 150 bps or the Canadian prime rate plus 150 bps.

On the same date, CDS Clearing also entered into a secured standby liquidity facility of $2,000, or US equivalent, that can be drawn in either Canadian or US currency. This arrangement is available to support settlement activities in the event of a Participant default with CDS Clearing's Continuous Net Settlement service. The facility will allow the Company to increase the amount available by an additional $500, or US equivalent, with approval of the lenders.

Borrowings under the secured facility are obtained by pledging or providing collateral pledged by Participants primarily in the form of debt and equity instruments. Depending upon the currency drawn, the borrowing rate for the secured standby liquidity facility is the Canadian prime rate plus 150 bps or the US base rate plus 150 bps.

Borrowing costs of $0.4 associated with these facilities were recorded within the other assets caption of the consolidated balance sheet at December 31, 2018 and will be expensed to general and administration expense until the maturity date of March 26, 2019.

In addition, CDS has signed agreements that would allow the Bank of Canada to provide emergency last-resort liquidity to CDS at the discretion of the Bank of Canada. This liquidity facility is intended to provide end of day liquidity for payment obligations arising from CDSX, and only in the event that CDS Clearing is unable to access liquidity from its standby liquidity facility or in the event that the liquidity under such facilities is insufficient. Use of this facility would be on a fully collateralized basis.

As at December 31, 2018, CDS Clearing had $39.8 in bank overdraft, which is recorded in "Other current liabilities", and which was subsequently cleared on January 2, 2019.

**(iii) CDCC facilities**

CDCC maintains daylight liquidity facilities for a total of $600.0 to provide liquidity on the basis of collateral in the form of securities that have been received by, or pledged to, CDCC. The daylight liquidity facilities must be cleared to zero at the end of each day.

CDCC maintains a $13,788.0 REPO uncommitted facility that is in place to provide end of day liquidity in the event that CDCC is unable to clear the daylight liquidity facilities to zero. The facility would provide liquidity in exchange for securities that have been received by, or pledged to, CDCC.

CDCC also maintains a $300.0 syndicated revolving standby liquidity facility to provide end of day liquidity in the event that CDCC is unable to clear the daylight liquidity facilities to zero. On March 2, 2018, CDCC increased the syndicated revolving standby liquidity facility from $300.0 to $400.0. Advances under the facility are secured by collateral in the form of securities that have been received by, or pledged to, CDCC. As at December 31, 2018, CDCC did not have any failed REPO settlements (2017 – $nil).

On March 2, 2018, the Company also extended these facilities from March 3, 2018 to March 1, 2019.

In addition, CDCC has signed an agreement that would allow the Bank of Canada to provide emergency last-resort liquidity to CDCC at the discretion of the Bank of Canada. This liquidity facility is intended to provide end of day liquidity only in the event that CDCC is unable to access liquidity from the revolving standby liquidity facility and the syndicated REPO facility or in the event that the liquidity under such facilities is insufficient. Use of this facility would be on a fully collateralized basis.

**(v) Shorcan facility**

Shorcan maintains an overdraft facility with a major chartered bank to provide end of day liquidity to cover any shortfalls due to timing of payments and receipts associated with the brokerage of trades. Use of this facility is secured by collateral in the form of securities.

**(vi) TMX Group Limited Support Agreement**

In 2016, in compliance with the Principles for Financial Market Infrastructures and additional Canadian regulatory and oversight guidance, CDS Clearing and CDCC each adopted a recovery plan, to be applied in the event that the entity is unable to provide defined critical operations and services as a going concern. These recovery plans were filed with their respective

Canadian regulators. On January 1, 2017, in connection with the recovery plans, and if certain funding conditions are met, TMX Group Limited agreed to provide certain limited financial support to CDS Clearing and CDCC, if necessary, in the context of a recovery.

**(C) RECONCILIATION OF LIABILITIES ARISING FROM FINANCING ACTIVITIES**

The table below details changes in the Company's liabilities arising from financing activities, including both cash and non-cash changes. Liabilities arising from financing activities are those for which cash flows were, or future cash flows will be, classified in the Company's consolidated statement of cash flows from financing activities.

| | Balance at January 1, 2018 | Financing cash flows | Other (non-cash) | **Balance at December 31, 2018** |
|---|---|---|---|---|
| Debentures | $ 947.3 | $ (201.1) | $ 0.6 | **$ 746.8** |
| Commercial Paper | 395.3 | (76.6) | 0.8 | **319.5** |
| Finance lease liabilities | 0.1 | — | — | **0.1** |
| **Total** | 1,342.7 | (277.7) | 1.4 | **$ 1,066.4** |

| | Balance at January 1, 2017 | Financing cash flows | Foreign Exchange (non-cash) | Balance at December 31, 2017 |
|---|---|---|---|---|
| Debentures | $ 648.7 | $ 298.6 | $ — | $ 947.3 |
| Commercial Paper | 309.9 | 86.4 | (1.0) | 395.3 |
| CDS Clearing operating demand loan | 2.1 | (2.1) | — | — |
| CDCC syndicated revolving standby liquid facility | 2.5 | (2.5) | — | — |
| Interest rate swap (note 23) | (0.1) | 1.2 | — | 1.1 |
| Finance lease liabilities | 0.4 | (0.3) | — | 0.1 |
| **Total** | 963.5 | 381.3 | (1.0) | 1,343.8 |

## NOTE 13 – CAPITAL MAINTENANCE

The Company’s primary objectives in managing capital, which it defines as including its cash and cash equivalents, marketable securities, share capital, debentures, Commercial Paper, and various credit facilities, include:

- Maintaining sufficient capital for operations to ensure market confidence and to meet regulatory requirements and various facility requirements. Currently, the Company targets to retain a minimum of $170 in cash, cash equivalents and marketable securities. This amount is subject to change;
- Maintaining a credit rating in a range consistent with the Company’s current A (high) and R1-low credit ratings from DBRS;
- Using excess cash to invest in and continue to grow the business;
- Returning capital to shareholders through methods such as dividends paid to shareholders and purchasing shares for cancellation pursuant to normal course issuer bids; and
- Reducing the debt levels to be below the total leverage ratios as discussed in (a) below, which decrease over time.

The Company aims to achieve the above objectives while managing its capital subject to capital maintenance requirements imposed on the Company and its subsidiaries as follows:

a. In respect of the TMX Group Limited credit facility (note 12) that require the Company to maintain:
    i. an interest coverage ratio of more than 4.0:1;
    ii. a total leverage ratio of not more than:
        - 3.75:1 until December 31, 2018; and
        - 3.50:1 on January 1, 2019 and thereafter.

b. In respect of TSX, as required by the OSC to maintain certain financial ratios on both a consolidated and non-consolidated basis, as defined in the OSC recognition order, as follows:
    i. a current ratio of greater than or equal to 1.1:1;
    ii. a debt to cash flow ratio of less than or equal to 4:1; and
    iii. a financial leverage ratio of less than or equal to 4:1.

c. In respect of Alpha Exchange Inc., as required by the OSC to maintain certain financial ratios as defined in the OSC recognition order, as follows:
    i. a current ratio of greater than or equal to 1.1:1;
    ii. a debt to cash flow ratio of less than or equal to 4.0:1; and
    iii. a financial leverage ratio of less than or equal to 4.0:1.

d. In respect of TSX Venture Exchange, as required by various provincial securities commissions, to maintain sufficient financial resources.

e. In respect of MX, as required by the AMF, to maintain certain financial ratios as defined in the AMF recognition order, as follows:
    i. a working capital ratio of more than 1.5:1;
    ii. a cash flow to total debt outstanding ratio of more than 20%; and
    iii. a financial leverage ratio of less than 4.0.

f. In respect of CDCC, to maintain certain amounts, as follows:
    i. maintain sufficient financial resources as required by the OSC and AMF;
    ii. $5.0 cash and cash equivalents or marketable securities as part of the Clearing Member default recovery process plus an additional $5.0 in the event that the initial $5.0 is fully utilized during a default;
    iii. sufficient cash, cash equivalents and marketable securities to cover 12 months of operating expenses, excluding amortization and depreciation; and
    iv. $30.0 total shareholder's equity.

g. In respect of CDS and CDS Clearing, as required by the OSC and the AMF to maintain certain financial ratios as defined in the OSC recognition order, as follows:
    i. a debt to cash flow ratio of less than or equal to 4:1; and
    ii. a financial leverage ratio of less than or equal to 4:1.

    In addition, the OSC requires CDS and CDS Clearing to maintain working capital to cover 6 months of operating expenses (excluding, in the case of CDS, the amount of shared services fees charged to CDS Clearing).

    CDS is required to dedicate a portion of its own resources in the CNS default waterfall for the CNS function. The Company maintains $1.0 in cash and cash equivalents or marketable securities to cover potential losses incurred as a result of a Participant default.

h. In respect of Shorcan:
    i. by IIROC which requires Shorcan to maintain a minimum level of shareholders' equity of $0.5;
    ii. by the National Futures Association ("NFA") which requires Shorcan to maintain a minimum level of net capital; and
    iii. by the OSC which requires Shorcan to maintain a minimum level of excess working capital.

i. In respect of TSX Trust, as required by the Office of the Superintendent of Financial Institutions, to maintain a certain minimum capital amount and ratio and a financial leverage ratio of less than or equal to 8%.

As at December 31, 2018, the Company complied with each of these externally imposed capital requirements. For the year ended December 31, 2019, TSX has received an exemption with regards to its financial leverage ratio, as a result of adopting IFRS 16, *Leases* (note 29).

## NOTE 14 – FINANCIAL INSTRUMENTS

Financial assets are recognized on the trade date at which the Company becomes a party to the contractual provisions of the instrument. Financial assets are generally derecognized when the contractual rights to the cash flows from the assets expire, or when the Company transfers the rights to receive the contractual cash flows on the financial assets to another party without retaining substantially all the risks and rewards of ownership of the financial assets.

Financial liabilities are initially recognized on the trade date at which the Company becomes a party to the contractual provisions of the instrument. The Company derecognizes a financial liability when its contractual obligations are discharged, cancelled or expired. Financial liabilities are recognized initially at fair value plus any directly attributable transaction costs. Subsequent to initial recognition these financial liabilities are measured at amortized cost using the effective interest method. Financial assets and liabilities are offset and the net amount presented in the consolidated balance sheet only when the Company has a current legal right to offset the amounts and intends either to settle on a net basis or to realize the asset and settle the liability simultaneously.

Derivatives are recognized initially at fair value. Subsequent to initial recognition, derivatives are measured at fair value, and changes therein are accounted for as described below.

- Hedge accounting – Where hedge accounting can be applied, a hedge relationship is designated and documented at its inception detailing the relationship between the hedging instrument(s) and hedged item(s), including the risk management objectives and strategy in undertaking the hedge transaction, together with the methods that will be used to assess the effectiveness of the hedging relationship. The Company makes an assessment, both at the inception of the hedge relationship as well as on an ongoing basis, whether the hedging instruments are expected to be "highly effective" in offsetting changes in the fair value or cash flows of the hedged items over the life of the hedge. Hedge accounting is discontinued prospectively when the hedging instrument is no longer effective as a hedge, the hedging instrument is terminated or sold, or upon the sale or early termination of the hedged item. The cumulative gain or loss previously recognized in other comprehensive income is transferred to the consolidated income statement in the same period as the hedged item affects net income.
- Cash flow hedges – For cash flow hedges, the effective portion of the changes in the fair value of the hedging derivative, net of taxes, is recognized in other comprehensive income while any ineffective portion is recognized immediately in the consolidated income statement within net finance costs. Interest arising on the derivative is transferred from accumulated other comprehensive income within equity to net settlement on interest rate swaps within finance costs in the consolidated income statement as it is incurred.
- Other derivatives – The Company holds total return swaps which, while providing a partial economic hedge against its share price exposure on its cash-settled share-based compensation plans (note 24), are not designated as hedges for accounting purposes. As such, these derivatives are recognized at fair value both initially and subsequently, with changes in the fair value recognized in the consolidated income statement.

**(A) IFRS 9, FINANCIAL INSTRUMENTS**

IFRS 9 supersedes IAS 39, *Financial Instruments: Recognition and Measurement*. The Company adopted IFRS 9 on January 1, 2018 and has elected not to restate comparative figures. The Company did not identify any adjustments to the carrying amounts of financial instruments at the date of transition. The adoption of IFRS 9 did result in changes to the Company's accounting policy for the classification of financial instruments. Under IFRS 9, financial assets and liabilities are classified as fair value through profit and loss ("FVTPL"), amortized cost, or fair value through other comprehensive income ("FVTOCI"). The Company has exercised judgement in its assessment of the business model within which the assets are held and in its assessment of whether the contractual terms of the financial assets are solely payments of principal and interest on the principal amounts outstanding to determine the classification of financial assets.

The table below illustrates the changes to the classification of the Company's financial assets under IFRS 9 and IAS 39 at the date of initial application of IFRS 9:

| | IAS 39 | IFRS 9 |
|---|---|---|
| Total return swaps | FVTPL (Held for trading) | **FVTPL** |
| Interest rate swaps | FVTPL (Held for trading) | **FVTPL** |
| Marketable securities | FVTPL (Designated) | **FVTPL** |
| Cash and cash equivalents | Amortized cost (Loans and receivables) | **Amortized cost** |
| Restricted cash and cash equivalents | Amortized cost (Loans and receivables) | **Amortized cost** |
| Trade and other receivables | Amortized cost (Loans and receivables) | **Amortized cost** |
| Clearing Members cash collateral | Amortized cost (Loans and receivables) | **Amortized cost** |
| Balances with Clearing Members | Amortized cost (Loans and receivables) | **Amortized cost** |
| Balances with Participants | Amortized cost (Loans and receivables) | **Amortized cost** |
| Investment in privately-owned company | FVTOCI (Available for sale) | **FVTOCI** |

There were no changes to the recognition or measurement, including impairment, of financial assets, or to the recognition, classification or measurement of financial liabilities.

**(B) FINANCIAL INSTRUMENTS – CARRYING AMOUNTS AND FAIR VALUES**

The Company classifies its non-derivative financial assets in the following categories, depending on the purpose for which they were acquired:

- Financial assets as FVTPL are measured at fair value at the end of each reporting period, with any fair value gains or losses recognized in profit or loss. The net gain or loss recognized in profit or loss includes any dividend or interest earned on the financial asset and is presented as finance income or cost in the consolidated income statement.
- Financial assets carried at amortized cost is the amount at which the financial asset is measured at initial recognition minus the principal repayments, plus the cumulative amortization using the effective interest method of any difference between that initial amount and the maturity amount, adjusted for any loss allowance. On the other hand, the gross carrying amount of a financial asset is the amortized cost of a financial asset before adjusting for any loss allowance.
- Financial assets as FVTOCI are measured at fair value, both initially and subsequently, with changes in fair value, except for impairment losses and certain foreign exchange gains and losses, recognized in other comprehensive income until the asset is sold. Impairment losses are recognized in the consolidated income statement based on expected credit losses, as are foreign exchange gains and losses arising on monetary items. Foreign exchange gains and losses arising on non-monetary items, such as an investment in an equity instrument, are recognized in other comprehensive income.

The classification of the Company's financial instruments, along with their carrying amounts and fair values are as follows:

| | **December 31, 2018** | | December 31, 2017 | |
|---|---|---|---|---|
| | **Carrying amount** | **Fair value** | Carrying amount | Fair value |
| **Assets at fair value through profit or loss** | | | | |
| Marketable securities | **$ 55.6** | **$ 55.6** | $ 50.1 | $ 50.1 |
| Interest rate swaps | **0.5** | **0.5** | 1.1 | 1.1 |
| | **56.1** | **56.1** | 51.2 | 51.2 |
| **Fair value through other comprehensive income** | | | | |
| Investment in privately-owned company | **0.8** | **0.8** | 0.8 | 0.8 |
| | **0.8** | **0.8** | 0.8 | 0.8 |
| **Amortized cost** | | | | |
| Cash and cash equivalents | **175.1** | **175.1** | 175.0 | 175.0 |
| Restricted cash and cash equivalents | **131.4** | **131.4** | 116.3 | 116.3 |
| Trade and other receivables | **105.9** | **105.9** | 102.3 | 102.3 |
| Promissory note (note 18) | **5.0** | **5.0** | — | — |
| Clearing Members cash collateral | **1,179.0** | **1,179.0** | 877.3 | 877.3 |
| Balances with Clearing Members | **24,110.4** | **24,110.4** | 18,377.0 | 18,377.0 |
| Balances with Participants | **702.0** | **702.0** | 691.7 | 691.7 |
| | **26,408.8** | **26,408.8** | 20,339.6 | 20,339.6 |
| **Liabilities at fair value through profit or loss** | | | | |
| Total return swaps | **(3.9)** | **(3.9)** | (0.1) | (0.1) |
| | **(3.9)** | **(3.9)** | (0.1) | (0.1) |
| **Amortized cost** | | | | |
| Other trade and other payables | **(57.1)** | **(57.1)** | (57.4) | (57.4) |
| Bank overdraft (note 12) | **(39.8)** | **(39.8)** | — | — |
| Accrued interest payable | **(3.9)** | **(3.9)** | (6.5) | (6.5) |
| Participants' tax withholdings | **(131.4)** | **(131.4)** | (116.3) | (116.3) |
| Clearing Members cash collateral | **(1,179.0)** | **(1,179.0)** | (877.3) | (877.3) |
| Balances with Clearing Members | **(24,110.4)** | **(24,110.4)** | (18,377.0) | (18,377.0) |
| Balances with Participants | **(702.0)** | **(702.0)** | (691.7) | (691.7) |
| Obligations under finance leases | **(0.1)** | **(0.1)** | (0.1) | (0.1) |
| Commercial Paper | **(319.5)** | **(319.5)** | (395.3) | (395.3) |
| Debentures | **(746.8)** | **(761.7)** | (947.3) | (972.1) |
| | **$ (27,290.0)** | **$ (27,304.9)** | $ (21,468.9) | $ (21,493.7) |

The carrying amount of the Company's financial instruments approximate their fair values at each reporting date, with the exception of the debentures. The fair values of the debentures were obtained using Level 2 observable market prices as inputs.

### (C) FAIR VALUE MEASUREMENT

The categories within the fair value hierarchy of the Company's financial instruments carried at fair value are as follows:

| As at | | Fair value measurements using: | | December 31, 2018 |
|---|---|---|---|---|
| **Asset/(Liability)** | **Level 1** | **Level 2** | **Level 3** | |
| **Marketable securities** | **$ 55.6** | **$ —** | **$ —** | **$ 55.6** |
| **Total return swaps** | **—** | **(3.9)** | **—** | **(3.9)** |
| **Interest rate swaps** | **—** | **0.5** | **—** | **0.5** |
| **Investment in privately-owned company** | **—** | **—** | **0.8** | **0.8** |

| As at | | Fair value measurements using: | | December 31, 2017 |
|---|---|---|---|---|
| Asset/(Liability) | Level 1 | Level 2 | Level 3 | |
| Marketable securities | $ 50.1 | $ — | $ — | $ 50.1 |
| Total return swaps | — | (0.1) | — | (0.1) |
| Interest rate swaps | — | 1.1 | — | 1.1 |
| Investment in privately-owned company | — | — | 0.8 | 0.8 |

There were no transfers during the periods between any of the levels.

## NOTE 15 – CASH AND CASH EQUIVALENTS, RESTRICTED CASH AND CASH AND CASH EQUIVALENTS AND MARKETABLE SECURITIES

### (A) CASH AND CASH EQUIVALENTS AND RESTRICTED CASH AND CASH AND CASH EQUIVALENTS

Cash and cash equivalents, and restricted cash and cash equivalents are comprised of:

| As at | December 31, 2018 | December 31, 2017 |
|---|---|---|
| Cash | **$ 69.6** | $ 68.7 |
| Term and other deposits | **51.2** | 47.6 |
| Treasury bills | **45.0** | 52.9 |
| Overnight money market | **5.0** | 1.8 |
| Regulatory surplus | **$ 4.3** | 4.0 |
| **Cash and cash equivalents** | **$ 175.1** | $ 175.0 |
| Bank overdraft (note 12) | **$ (39.8)** | — |
| **Cash and cash equivalents, net** | **$ 135.3** | **175.0** |
| Restricted cash and cash equivalents – CDS Clearing | **$ 131.4** | $ 116.3 |
| **Restricted cash and cash equivalents** | **$ 131.4** | $ 116.3 |

Cash and cash equivalents consist of cash and highly liquid investments having an original maturity of three months or less and also include restricted cash. MX operates a separate regulatory division, responsible for the approval of participants and market regulation, which operates on a cost recovery basis. The surplus of this regulatory division has an equivalent and off-setting amount included in trade and other payables.

Restricted cash and cash equivalents contains tax withheld by CDS Clearing on entitlement payments made by CDS Clearing on behalf of CDS Clearing Participants. The restricted cash and cash equivalents related to this withheld tax is ultimately under the control of CDS Clearing; however, the amount is payable to various taxation authorities within a relatively short period of time and so is restricted from use in normal operations. An equivalent and off-setting amount is included in the consolidated balance sheet as a current liability under the caption Participants' tax withholdings.

### (B) MARKETABLE SECURITIES

Marketable securities are comprised of:

| As at | | December 31, 2018 | | December 31, 2017 |
|---|---|---|---|---|
| Treasury bills | $ | 55.6 | $ | 50.1 |
| **Marketable securities** | $ | 55.6 | $ | 50.1 |

The Company has designated its marketable securities as fair value through profit and loss, with changes in fair value being recorded within finance income in the consolidated income statement in the period in which they occur. Fair values have been determined based on quoted market prices or are based on observable market information.

## NOTE 16 – TRADE AND OTHER RECEIVABLES

Trade and other receivables are comprised of:

| As at | | December 31, 2018 | | December 31, 2017 |
|---|---|---|---|---|
| Trade receivables, gross | $ | 99.2 | $ | 89.7 |
| Less: Allowance for doubtful accounts | | (2.8) | | (2.7) |
| Trade receivables, net | | 96.4 | | 87.0 |
| Other receivables | | 9.5 | | 15.3 |
| **Trade and other receivables** | $ | 105.9 | $ | 102.3 |

Loss allowances for trade and other receivables are measured at an amount equal to lifetime expected credit losses. The expected credit losses on trade and other receivables are calculated using historical credit loss experience taking into account current observable data at the reporting date to reflect the effects of any relevant current and forecasts of future conditions.

Trade receivables generally have terms of 30 days. Trade receivables that are more than three months past due are considered to be impaired, and an allowance for doubtful accounts, which varies depending on the age of the receivable, is recorded within selling, general and administration costs in the consolidated income statement. Other specific trade receivables are also provided against as considered necessary.

The aging of the trade receivables was as follows:

| As at | | December 31, 2018 | | | | December 31, 2017 | | |
|---|---|---|---|---|---|---|---|---|
| | | Gross | | Allowance | | Gross | | Allowance |
| Not past due | $ | 60.6 | $ | — | $ | 62.0 | $ | — |
| Past due 1-90 days | | 33.3 | | 0.1 | | 22.1 | | — |
| More than 90 days past due | | 5.3 | | 2.7 | | 5.6 | | 2.7 |
| **Trade receivables** | $ | 99.2 | $ | 2.8 | $ | 89.7 | $ | 2.7 |

The movement in the Company's allowance for doubtful accounts is as follows:

| | | December 31, 2018 | | December 31, 2017 |
|---|---|---|---|---|
| Balance at January 1 | $ | 2.7 | $ | 2.8 |
| Allowance recognized in the year, net of allowance released | | 1.4 | | 1.5 |
| Receivables written off as uncollectible | | (1.3) | | (1.6) |
| **Balance at December 31** | $ | 2.8 | $ | 2.7 |

No allowance for impairment is considered necessary for other receivables.

## NOTE 17 – GOODWILL AND INTANGIBLE ASSETS

### (A) GOODWILL AND INDEFINITE LIFE INTANGIBLE ASSETS

Goodwill is recognized at cost on acquisition less any subsequent impairment in value. Intangible assets such as trade names, derivative products, regulatory designations and structured products are considered to have indefinite lives as management believes that there is no foreseeable limit to the period over which these assets are expected to generate net cash flows.

A summary of the Company's goodwill and indefinite life intangible assets is as follows:

| | Goodwill | Trade names | Derivative products | Regulatory designations | Structured products | Total |
|---|---|---|---|---|---|---|
| Balance at January 1, 2017 | $ 1,074.5 | $ 250.6 | $ 632.0 | $ 1,408.3 | $ 107.0 | $ 3,472.4 |
| Acquisition of Trayport (note 3) | 621.7 | 39.2 | — | — | — | 660.9 |
| Sale of NGX and Shorcan Energy (note 4) | (10.4) | (4.9) | — | (1.0) | (107.0) | (123.3) |
| Sale of TMX Atrium | (18.6) | (1.6) | — | — | — | (20.2) |
| Impairment | (6.5) | — | — | — | — | (6.5) |
| Effect of movements in exchange rates | 0.9 | — | — | — | — | 0.9 |
| Balance at December 31, 2017 | 1,661.6 | 283.3 | 632.0 | 1,407.3 | — | 3,984.2 |
| **Acquisition of Trayport (note 3)** | **(18.0)** | **—** | **—** | **—** | **—** | **(18.0)** |
| **Sale of Contigo (note 3)** | **(2.2)** | **—** | **—** | **—** | **—** | **(2.2)** |
| **Effect of movements in exchange rates** | **7.2** | **0.5** | **—** | **—** | **—** | **7.7** |
| **Balance at December 31, 2018** | **$ 1,648.6** | **$ 283.8** | **$ 632.0** | **$ 1,407.3** | **$ —** | **$ 3,971.7** |

The Company measures goodwill arising on a business combination as the fair value of the consideration transferred less the fair value of the identifiable assets acquired and liabilities assumed, all measured as of the acquisition date. The Company elects on a transaction by transaction basis whether to measure non-controlling interests at fair value or at their proportionate share of the recognized amount of the identifiable net assets acquired, at the acquisition date. Transaction costs, other than those associated with the issue of debt or equity securities as consideration, that the Company incurs in connection with a business combination are expensed as incurred.

### (B) DEFINITE LIFE INTANGIBLE ASSETS

Definite life intangible assets are recognized at cost less accumulated amortization, where applicable, and any impairment in value. Cost includes any expenditure that is directly attributable to the acquisition of the asset. The cost of internally developed assets includes the cost of materials and direct labour, and any other costs directly attributable to bringing the assets to a working condition for their intended use.

Costs incurred in research activities, undertaken with the prospect of gaining new technical knowledge, are recognized in the consolidated income statement as incurred. Costs incurred in development activities are capitalized when all of the following criteria are met:

- It is technically feasible to complete the work such that the asset will be available for use or sale,
- The Company intends to complete the asset for use or sale,
- The Company will be able to use the asset once completed,
- The asset will be useful and is expected to generate future economic benefits for the Company,
- The Company has adequate resources available to complete the development of and to use the asset, and
- The Company is able to reliably measure the costs attributable to the asset during development.

Definite life intangible assets are amortized from the date of acquisition or, for internally developed intangible assets, from the time the asset is available for use. Amortization is recognized in the consolidated income statement on a straight-line basis over the estimated useful life of the asset. Residual values and the useful lives of the assets are reviewed at each year end, and revised as necessary.

Amortization is provided over the following useful lives of definite life intangible assets:

| Asset | Basis | Rate |
|---|---|---|
| Customer relationships | Straight-line | 17 – 34 years |
| Technology | Straight-line | 1 – 10 years |

A summary of the Company's definite life intangible assets is as follows:

| | Technology | Customer relationships | Open interest | Total |
|---|---|---|---|---|
| **Cost:** | | | | |
| Balance at January 1, 2017 | $ 95.9 | $ 967.4 | $ 2.0 | $ 1,065.3 |
| Additions through general operations | 17.4 | — | — | 17.4 |
| Acquisition of Trayport (note 3) | 36.6 | 307.6 | — | 344.2 |
| Sale of NGX and Shorcan Energy (note 4) | (14.5) | (83.5) | — | (98.0) |
| Adjustments | (1.1) | — | — | (1.1) |
| Impairment/write-offs | (3.2) | — | — | (3.2) |
| Effect of movements in exchange rates | (0.1) | — | — | (0.1) |
| Balance at December 31, 2017 | 131.0 | 1,191.5 | 2.0 | 1,324.5 |
| **Additions through general operations** | **35.3** | **—** | **—** | **35.3** |
| **Acquisition of Trayport (note 3)** | **—** | **19.4** | | **19.4** |
| **Adjustments** | **(16.8)** | **(6.7)** | **—** | **(23.5)** |
| **Effect of movements in exchange rates** | **0.8** | **4.0** | **—** | **4.8** |
| **Balance at December 31, 2018** | **$ 150.3** | **$ 1,208.2** | **$ 2.0** | **$ 1,360.5** |
| **Accumulated amortization:** | | | | |
| Balance at January 1, 2017 | $ 61.0 | $ 154.9 | $ 2.0 | $ 217.9 |
| Charge for the year | 12.7 | 34.5 | — | 47.2 |
| Acquisition of Trayport (note 3) | 0.2 | 0.5 | — | 0.7 |
| Sale of NGX and Shorcan Energy (note 4) | (7.4) | (15.5) | — | (22.9) |
| Impairment/write-offs | (1.4) | — | — | (1.4) |
| Effect of movements in exchange rates | (0.4) | — | — | (0.4) |
| Balance at December 31, 2017 | 64.7 | 174.4 | 2.0 | 241.1 |
| **Charge for the year** | **15.6** | **44.0** | **—** | **59.6** |
| **Adjustments** | **(17.2)** | **(6.7)** | **—** | **(23.9)** |
| **Effect of movements in exchange rates** | **0.4** | **0.1** | **—** | **0.5** |
| **Balance at December 31, 2018** | **$ 63.5** | **$ 211.8** | **$ 2.0** | **$ 277.3** |
| **Net book values:** | | | | |
| At December 31, 2017 | $ 66.3 | $ 1,017.1 | $ — | $ 1,083.4 |
| **At December 31, 2018** | **$ 86.8** | **$ 996.4** | **$ —** | **$ 1,083.2** |

### (C) IMPAIRMENT OF ASSETS

The carrying amounts of the Company's non-financial assets, other than deferred income tax assets and employee future benefit assets, are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. Goodwill and intangible assets that have indefinite useful lives, or that are not yet available for use, are tested for impairment at least annually even if there is no indication of impairment, and the recoverable amount is estimated each year at the same time.

The recoverable amount of an asset is the greater of its value-in-use and its fair value less costs of disposal. In assessing value-in-use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For the purpose of impairment testing, assets that cannot be tested individually are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other assets or groups of assets (the "cash-generating unit", or "CGU"). For the purposes of goodwill impairment testing, goodwill acquired in a business combination is allocated to the CGU, or the group of CGUs, that is expected to benefit from the synergies of the combination and reflects the lowest level at which that goodwill is monitored for internal reporting purposes.

An impairment loss is recognized if the carrying amount of an asset, or its CGU, exceeds its estimated recoverable amount, which is the higher of the asset's fair value less costs of disposal and its value-in-use. Impairment losses recognized in respect of CGUs are allocated first to reduce the carrying amount of any goodwill allocated to the CGUs, and then to reduce the carrying amounts of the other assets in the CGU on a pro rata basis. Impairment losses are recognized in the consolidated income statement.

An impairment loss in respect of goodwill cannot be reversed. In respect of other non-financial assets, impairment losses recognized in prior periods are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized.

For the year ended December 31, 2017, the Company determined that certain CGUs had recoverable amounts that were lower than their respective carrying amounts. As a result, for the year ended December 31, 2017, the Company recognized an impairment charge of $6.5 related to goodwill in the consolidated income statement.

At December 31, the carrying values of goodwill and indefinite life intangible assets allocated to each CGU, after the impairment charges described above, are as follows:

| **As at** | | **December 31, 2018** | | December 31, 2017 |
|---|---|---|---|---|
| | **Goodwill** | **Indefinite life intangibles** | Goodwill | Indefinite life intangibles |
| Listings | **$ 13.3** | **$ 1,305.7** | $ 13.3 | $ 1,290.1 |
| TMX Datalinx | **707.7** | **79.2** | 707.7 | 74.3 |
| Trayport | **608.9** | **39.7** | 622.4 | 39.2 |
| Equities Trading | **5.1** | **209.2** | 5.1 | 229.6 |
| MX/CDCC | **159.4** | **663.8** | 159.4 | 663.9 |
| CDS | **89.5** | **22.0** | 89.5 | 22.0 |
| Other | **64.7** | **3.5** | 64.2 | 3.5 |
| | **$ 1,648.6** | **$ 2,323.1** | $ 1,661.6 | $ 2,322.6 |

The recoverable amounts of the above CGUs were determined based on value-in-use calculations, using management's discounted cash flow projections over periods of 5 to 8 years, depending on the CGU, along with a terminal value. Specifically for Trayport, a cash flow projection period of 8 years was used, which is consistent with the original acquisition economics and reflects the long-term growth potential remaining beyond a 5-year forecast. The terminal value is the value attributed to the CGUs' operations beyond the projected time period. The terminal value for the CGUs is determined using an estimated long-term growth rate of 2.0% for all significant CGUs, except for MX/CDCC which is 4.5%, which is based on the Company's estimates of expected future operating results, future business plans, economic conditions and a general outlook for the industry in which the CGU operates. In calculating the recoverable amount of these CGUs, a pre-tax discount rate is used. The pre-tax discount rate applied was 9.8% to 14.1%, which was set considering the weighted average cost of capital of the Company and certain risk premiums, based on management's past experience.

These assumptions are subjective judgements based on the Company's experience, knowledge of operations and knowledge of the economic environment in which it operates. If future cash flow projections, long-term growth rates or pre-tax discount rates are different to those used, it is possible that the outcome of future impairment tests could result in a different outcome with a CGU's goodwill and/or intangible assets being impaired.

At December 31, 2018, the Company has determined that the TMX Datalinx CGU may be subject to a reasonably possible change to one or more of the key assumptions used to determine the recoverable amount, which could cause this CGU to become impaired. An increase of 1.5% in the discount rate, a 2.3% decrease in the terminal growth rate, or a 10.5% decrease in annual cash flows could cause the recoverable amount to equal the carrying value.

## NOTE 18 – INVESTMENTS IN EQUITY ACCOUNTED INVESTEES

Investments in equity accounted investees are comprised of:

| As at | | December 31, 2018 | | December 31, 2017 |
|---|---|---|---|---|
| Investment in FTSE TMX Global Debt Capital Markets Limited | $ | — | $ | 50.2 |
| Investment in BOX Holdings | | 22.5 | | 19.8 |
| Other | | 5.2 | | 16.3 |
| **Investments in equity accounted investees** | $ | 27.7 | $ | 86.3 |

For the year ended December 31, 2018, the Company recognized $3.0 from its share of income from equity accounted investees (2017 – $2.9). Also for the year ended December 31, 2018, the Company earned $9.6 from services rendered to equity accounted investees (2017 – $13.4).

### (A) SALE OF TMX FTSE

On April 12, 2018, the Company completed the sale of its entire 24.2% interest in FTSE TMX Global Debt Capital Markets Limited ("TMX FTSE") to FTSE International Limited, a wholly owned subsidiary of London Stock Exchange Group. TMX FTSE was accounted for as an equity investment. The Company received $70.4 in proceeds. The carrying value of the investment before the sale was $46.3. The Company recorded a gain of $26.8 in "Other income", which is comprised of pre-tax $24.1 gain on sale and $2.7 realized gain on foreign currency translation.

For the year ended December 31, 2018, the Company recognized $0.5 from its share of income in the consolidated income statements and a loss of $0.1 from translation of the foreign operation in the consolidated statements of comprehensive income (2017 – $2.7 and $0.7, respectively).

### (B) BOX HOLDINGS GROUP LLC

The Company holds an interest of 41.33% in BOX Holdings. The investment in BOX Holdings is accounted for in its functional currency of USD. It was recognized at fair value in 2016 and is accounted for using the equity method.

Summary financial information for BOX Holdings in USD is as follows:

| As at | | December 31, 2018 | | December 31, 2017 |
|---|---|---|---|---|
| Current assets | US$ | 23.3 | US$ | 19.3 |
| Non-current assets | | 5.3 | | 5.6 |
| Current liabilities | | (3.1) | | (1.8) |
| Non-current liabilities | | (0.1) | | (0.2) |
| **Net assets (100%)** | US$ | 25.4 | US$ | 22.9 |

| | | For the year ended December 31, 2018 | | For the year ended December 31, 2017 |
|---|---|---|---|---|
| Revenue | US$ | 19.2 | US$ | 15.5 |
| Net income and comprehensive income (100%) | | 2.5 | | 0.5 |
| **Share of income and comprehensive income (41.33%)** | US$ | 1.0 | US$ | 0.2 |

For the year ended December 31, 2018, the Company recognized $1.4 from its share of income in the consolidated income statements and a gain of $1.7 from translation of the foreign operation in the consolidated statements of comprehensive income (for the year ended December 31, 2017 – income of $0.3 and loss of $1.4, respectively).

### (C) SALE OF CANDEAL SHARES

On October 26, 2018, the Company reduced its shareholding in CanDeal.ca Inc. from 47.1% to 14.3%. As a result of this transaction, the Company received proceeds of $12.8, which includes cash consideration of $7.8 and an unsecured promissory note of $5.0, recognizing a pre-tax gain of $1.1. CanDeal.ca is accounted for using the equity method.

## NOTE 19 – TRADE AND OTHER PAYABLES

Trade and other payables are comprised of:

| As at | December 31, 2018 | December 31, 2017 |
|---|---|---|
| Trade payables and accrued expenses | $ 39.2 | $ 30.2 |
| Sales taxes payable | 4.8 | 8.7 |
| Employee and director costs payable | 57.4 | 40.2 |
| Accrued interest payable | 3.9 | 6.5 |
| Regulatory surplus | 4.3 | 4.0 |
| Other | 0.6 | 0.7 |
| **Trade and other payables** | $ 110.2 | $ 90.3 |

The fair value of trade and other payables is approximately equal to their carrying amount given their short term until settlement.

Short-term payables with no stated interest rate are measured at the original transaction amounts where the effect of discounting is immaterial. Short-term employee benefit obligations, such as wages, salaries and annual vacation entitlements, are measured on an undiscounted basis and are expensed as the related service is provided. A liability is recognized for the Company's annual short-term incentive plan if a present legal or constructive obligation to pay an amount exists as a result of past service provided by the employee, and the obligation can be estimated reliably.

## NOTE 20 – DEFERRED REVENUE

Deferred revenue is comprised of:

| As at | December 31, 2018 | December 31, 2017 |
|---|---|---|
| Listings | $ 9.4 | $ 3.6 |
| Technology solutions | 4.2 | 4.0 |
| Other | 0.7 | 1.1 |
| **Current deferred revenue** | $ 14.3 | $ 8.7 |
| | | |
| Other | 0.6 | 0.2 |
| **Non-current deferred revenue** | $ 0.6 | $ 0.2 |

Listings deferred revenue is mainly comprised of initial and additional listings fees for TSX Venture Exchange, which are paid in advance for the services being provided, and initial listings fees for TSX. Initial listings are deferred over a 12-month period from the date of listing, while additional listings are recognized when the additional listing occurs.

Technology solutions deferred revenue includes annual information services subscription sales from Trayport and CDS and fees for network and infrastructure solutions and risk management software.

## NOTE 21 – PROVISIONS AND CONTINGENCIES

### (A) PROVISIONS

A provision has been recognized if, as a result of a past event, the Company has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. If the effect is material, provisions are determined by discounting the expected future cash flows at a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the liability. The unwinding of the discount is recognized as a finance cost.

A summary of the Company's provisions is as follows:

| | Decommissioning liabilities | Commodity tax | Other | Total |
|---|---|---|---|---|
| Balance at January 1, 2017 | $ 7.5 | $ 3.2 | $ 14.1 | $ 24.8 |
| Provisions recognized during the period | 0.4 | 0.3 | 0.6 | 1.3 |
| Provisions used or reversed during the period | (1.1) | (2.5) | (9.9) | (13.5) |
| Balance at December 31, 2017 | $ 6.8 | $ 1.0 | $ 4.8 | $ 12.6 |
| Current | $ 0.1 | $ 1.0 | $ 4.5 | $ 5.6 |
| Non-current | 6.7 | — | 0.3 | 7.0 |
| Balance at December 31, 2017 | $ 6.8 | $ 1.0 | $ 4.8 | $ 12.6 |
| **Provisions recognized during the period** | **0.5** | **9.3** | **1.1** | **10.9** |
| **Provisions used or reversed during the period** | **(0.1)** | **(0.3)** | **(4.1)** | **(4.5)** |
| **Balance at December 31, 2018** | **$ 7.2** | **$ 10.0** | **$ 1.8** | **$ 19.0** |
| **Current** | **$ —** | **$ 10.0** | **$ 1.7** | **$ 11.7** |
| **Non-current** | **7.2** | **—** | **0.1** | **7.3** |
| **Balance at December 31, 2018** | **$ 7.2** | **$ 10.0** | **$ 1.8** | **$ 19.0** |

### (B) CONTINGENT LIABILITIES

From time to time in connection with its operations, the Company or its subsidiaries are named as a defendant in actions, including those for damages and costs sustained by plaintiffs, or as a respondent in proceedings challenging the Company's or its subsidiaries' regulatory or other actions, decisions or jurisdiction. The outcomes of such matters are subject to future resolution that includes uncertainties of litigation or other proceedings. Based on information currently known to the Company, management believes that any significant payment or other obligation in respect of any such action or proceeding is unlikely.

## NOTE 22 – COMMITMENTS AND LEASE OBLIGATIONS

The Company is committed under long-term leases and licenses as follows:

- The rental of office space, under various long-term operating leases with remaining terms of up to 16 years, including certain asset retirement obligations with regard to these leases;
- The rental of computer hardware and software for remaining terms of one to four years under operating leases; and
- The rental of computer hardware and software for remaining terms of one to three years under finance leases.

### (A) OPERATING LEASES

The Company classifies leases in which a significant portion of the risks and rewards of ownership are retained by the lessor as operating leases. Payments made under operating leases and any lease incentives received are recognized in the consolidated income statement on a straight-line basis over the term of the lease.

Non-cancellable operating lease rentals are payable as follows:

| | December 31, 2018 | December 31, 2017 |
|---|---|---|
| Less than one year | $ 17.2 | $ 22.8 |
| Between one and five years | 46.7 | 48.8 |
| More than five years | 81.5 | 90.4 |
| | $ 145.4 | $ 162.0 |

The Company is responsible for additional taxes, maintenance and other direct charges with respect to its leases. The additional amount will be approximately $11.8 for 2019 (2018 – $11.8).

The figures above do not include the Company's obligations to restore certain leased premises to their original condition (note 21).

The company has other commitments in the form of long term contracts related to technology in the amount of $32.1 of which $18.8 is payable in one year.

The Company has entered into sub-lease agreements with third parties for the rental of office space, and rentals receivable from these sub-leases are as follows:

| | December 31, 2018 | December 31, 2017 |
|---|---|---|
| Less than one year | $ 0.6 | $ 1.5 |
| Between one and five years | 0.8 | 3.6 |
| | $ 1.4 | $ 5.1 |

For the year ended December 31, 2018, payments of $26.9 were charged to the consolidated income statement in relation to operating leases, net of sub-lease income (2017 – $33.9).

**(B) CDS FEE COMMITMENTS AND REBATES**

Under the CDS recognition orders granted by the OSC and the AMF, fees for services and products offered by CDS Clearing will be those fees in effect on November 1, 2011 ("2012 base fees"). CDS Clearing cannot adjust fees without the approval of the OSC, AMF and the British Columbia Securities Commission ("BCSC"). In addition, CDS Clearing may only seek approval for fee increases on clearing and other core CDS Clearing services (which services are outlined in the OSC and AMF recognition orders) where there has been a significant change from circumstances existing as at August 1, 2012, the effective date of the recognition orders.

Under the CDS recognition orders granted by the OSC and AMF, for the two month period starting November 1, 2012 and subsequent fiscal years starting January 1, 2013, CDS will share any annual revenue increases on clearing and other core CDS Clearing services on a 50:50 basis with Participants. Beginning January 1, 2015 and subsequent years, CDS also shares with Participants, on a 50:50 basis, any annual increases in revenue applicable to the NYL/DDL Liquidity Premium compared to the revenues for this service earned in the twelve-month period ended December 31, 2015.

For the year ended December 31, 2018, the rebate payable amounted to $6.3 (2017 – $3.9).

In addition, the Company is mandated to rebate an additional amount to Participants in respect of exchange clearing services for trades conducted on an exchange or Alternative Trading System ("ATS"). This rebate gradually increased over the years to reach its maximum of $4.0 annually in October 2016.

These rebates are accrued and recorded as a reduction against revenue in the year to which they relate.

## NOTE 23 – OTHER ASSETS AND OTHER LIABILITIES

### (A) OTHER ASSETS

Other current and non-current assets are comprised of:

| As at | | December 31, 2018 | | December 31, 2017 |
|---|---|---|---|---|
| Prepaid expenses | $ | 19.4 | $ | 13.6 |
| Current income tax assets | | 6.5 | | 4.5 |
| **Other current assets** | $ | 25.9 | $ | 18.1 |
| | | | | |
| Investment in equity accounted investees (note 18) | $ | 27.7 | $ | 86.3 |
| Accrued employee benefit assets (note 25) | | 5.7 | | 7.6 |
| Premises and equipment | | 51.7 | | 38.0 |
| Investment in privately-owned company | | 0.8 | | 0.8 |
| Fair value of interest rate swaps (note 12) | | 0.5 | | 1.1 |
| Promissory note (note 18) | | 5.0 | | — |
| Other | | 1.2 | | 0.6 |
| **Other non-current assets** | $ | 92.6 | $ | 134.4 |

The Company holds an investment in a privately-owned company, whose shares are not traded on an active market. The fair value of this investment was recorded at cost at acquisition. Management considers cost of the investment to approximate its fair value.

### (B) OTHER LIABILITIES

Other current and non-current liabilities are comprised of:

| As at | | December 31, 2018 | | December 31, 2017 |
|---|---|---|---|---|
| Deferred revenue (note 20) | $ | 14.3 | $ | 8.7 |
| Provisions (note 21) | | 11.7 | | 5.6 |
| Obligations under finance leases | | 0.1 | | 0.1 |
| Total return swaps (note 24) | | 3.9 | | 0.1 |
| Bank overdraft (note 12) | | 39.8 | | — |
| Current income tax liabilities | | 38.0 | | 46.6 |
| **Other current liabilities** | $ | 107.9 | $ | 61.1 |
| | | | | |
| Deferred revenue (note 20) | $ | 0.6 | $ | 0.2 |
| Provisions (note 21) | | 7.3 | | 7.0 |
| Long-term incentive plan and director compensation obligations (note 24) | | 25.1 | | 30.0 |
| Accrued employee benefits payable (note 25) | | 16.3 | | 18.7 |
| Other | | 4.7 | | 5.4 |
| **Other non-current liabilities** | $ | 54.0 | $ | 61.3 |

## NOTE 24 – SHARE–BASED PAYMENTS

Under the long-term incentive plan ("LTIP"), certain employees and officers of the Company will receive a mix of LTIP awards consisting of share options, time-based restricted share units ("RSUs"), and performance-based restricted share units (referred to as "PSUs"). For the year ended December 31, 2018, the Company recognized compensation and benefits expense under the following share-based payment arrangements:

- Share option plan;
- Restricted share unit, performance-based restricted share unit and deferred share unit plans; and
- Employee share purchase plan.

**(A) SHARE OPTION PLAN**

The share option plan has options that vest in quarters over 4 years and have a maximum term of 10 years. Under the share option plan, the fair value of share options granted was estimated on the date of grant using the Black-Scholes option pricing model with the following assumptions: a share price of $76.31 dollars (2017 – $72.21 dollars) and dividend yield of 2.62% (2017 – depending on the tranche, between 2.5% and 2.8%); expected life of between 2 and 5 years (2017 – 2 and 5 years); an expected volatility of between 16.8% and 17.5% (2017 – 16.0% and 18.5%); risk-free interest rate of between 2.2% and 2.5% (2017 – 1.1% and 1.4%); and expected forfeiture rates of between 9.4% and 22.1% (2017 – 9.4% and 22.1%). The assumptions are based on the Company's historical share price movements and historical dividend policy and the expected life is based on the Company's past experience. The resulting weighted average fair value calculated for share options granted in 2018 was $8.45 dollars (2017 – $7.68 dollars).

Options outstanding at December 31, 2018 will expire in 2019, 2020, 2021, 2025, 2026, 2027 and 2028.

Movements in the number of share options outstanding are as follows:

| **For the year ended** | | **December 31, 2018** | | December 31, 2017 |
|---|---|---|---|---|
| | **Number of share options** | **Weighted average exercise price (in dollars)** | Number of share options | Weighted average exercise price (in dollars) |
| Outstanding, beginning of the period | **1,878,926** | **$ 54.41** | 1,734,569 | $ 46.82 |
| Granted | **395,254** | **76.31** | 590,578 | 72.21 |
| Expired | **—** | **—** | (586) | 28.67 |
| Forfeited | **(124,234)** | **62.83** | (83,468) | 50.76 |
| Exercised | **(406,812)** | **49.29** | (362,167) | 47.90 |
| **Outstanding as at December 31** | **1,743,134** | **$ 59.97** | 1,878,926 | $ 54.41 |
| **Vested and exercisable as at December 31** | **633,557** | **$ 51.88** | 657,399 | $ 49.76 |

The range of exercise prices and weighted average remaining contractual life of options outstanding are as follows:

| **As at** | | **December 31, 2018** | | December 31, 2017 |
|---|---|---|---|---|
| **Exercise price range (in dollars)** | **Number of share options** | **Weighted average remaining contractual life** | Number of share options | Weighted average remaining contractual life |
| $40.00 - $49.99 | **610,378** | **6.7** | 883,672 | 7.4 |
| $50.00 - $59.99 | **264,622** | **4.0** | 418,745 | 4.0 |
| $60.00 - $60.73 | **3,806** | **7.6** | 3,806 | 8.6 |
| $70.00 - $72.23 | **864,328** | **8.6** | 572,703 | 9.1 |
| | **1,743,134** | **7.2** | 1,878,926 | 7.2 |

The Company accounts for its share option plan to eligible employees which calls for settlement by the issuance of equity instruments using the fair value based method. Under the fair value based method, compensation cost attributable to options to employees is measured at fair value at the grant date, using a recognized option pricing model, and amortized over the vesting period. The amount recognized as an expense is adjusted to reflect the actual number of options expected to vest. For the year ended December 31, 2018, the Company recognized compensation and benefits expense of $2.9 in relation to its share option plan (2017 – $3.3).

According to the terms of the Company's plan, under no circumstances may any one person's share options and all other share compensation arrangements exceed 5% of the outstanding common shares issued of the Company. At December 31, 2018, 2,710,933 common shares of the Company remain reserved for issuance upon exercise of share options granted under the plan, representing approximately 5% of the outstanding common shares of the Company.

**(B) RESTRICTED SHARE UNIT ("RSU"), PERFORMANCE-BASED RESTRICTED SHARE UNIT ("PSU") AND DEFERRED SHARE UNIT ("DSU") PLANS**

RSUs and PSUs vest over a maximum of 35 months and are payable provided the employee is still employed by the Company at the end of the second calendar year following the calendar year in which the RSUs and PSUs were granted. In the case of the PSUs, the amount of the award payable at the end of this vesting period will be determined by a factor of total shareholder return versus the total gross return of the S&P/TSX Composite Index over the period. Total shareholder return represents the appreciation in share price of the Company plus dividends paid on a common share of the Company, measured at the time the PSUs vest.

The Company has a plan that, among other things, gives officers who have not met their equity ownership requirements the opportunity to convert all or part of their short-term incentive award into deferred share units ("DSU"s). In addition, members of the Board of Directors who do not waive their compensation or direct that it be paid to their employer are granted DSUs annually and are also given the opportunity to convert some of their annual remuneration into DSUs. These DSUs vest immediately. The amount of the award payable is based on the number of units outstanding multiplied by the 30-day volume weighted average price of the Company's common shares at the date of the payout. The DSUs will only be paid out when the DSU holder retires or otherwise ceases to hold any position with the Company or such of its subsidiaries as are designated from time to time.

The Company records its obligation for the RSUs and PSUs, if any, over the service period in which the award is earned. The liability is measured at fair value on the date of grant and at each subsequent reporting date. As at December 31, 2018, the total accrual for the Company's RSUs, PSUs and DSUs was $42.2, which includes $17.1 in trade and other payables and $25.1 in other non-current liabilities (2017 – RSUs and DSUs of $40.0, $10.0 and $30.0, respectively).

The maximum amount to be paid is not known until the awards become payable and will be based on total shareholder return from the date of grant to the time of payout. The accrual is based on the 30-day volume weighted average price of the Company's common shares at the end of the reporting period.

Compensation cost attributable to these employee awards which call for settlement in cash is measured at fair value at each reporting date. Changes in fair value between the grant date and the measurement date are recognized in the consolidated income statement over the vesting period, with a corresponding change in either current or non-current liabilities, depending on the period in which the award is expected to be paid. For the year ended December 31, 2018, the Company recognized compensation and benefits expense and selling, general and administration expense of $13.1 and $2.9, respectively, in relation to its RSUs, PSUs and DSUs (2017 – $11.2 and $2.7, respectively).

The Company has entered into a series of total return swaps ("TRSs") which synthetically replicate the economics of the Company purchasing its shares as a partial economic hedge to the share appreciation rights of the non-performance element of RSUs and DSUs. The Company has also entered into a series of TRSs as an economic hedge against the share price appreciation associated with the DSUs.

The Company has classified its series of TRSs as fair value through profit and loss and marks to market the fair value of the TRSs as an adjustment to income. The Company also simultaneously marks to market the liability to holders of the units as an adjustment to income. Fair value is based on the share price of the Company's common shares at the end of the reporting period. The fair value of the TRSs and the obligation to unit holders are reflected on the consolidated balance sheet. The contracts are settled in cash upon maturity.

For the year ended December 31, 2018, unrealized losses and realized gains of $3.7 and $6.0, respectively have been reflected in the consolidated income statement (2017 – unrealized losses and realized gains of $2.1 and $2.5, respectively).

**(C) EMPLOYEE SHARE PURCHASE PLAN**

The Company has an employee share purchase plan for eligible employees of the Company. Under the employee share purchase plan, contributions by the Company and by eligible employees will be used by the plan administrator, to make purchases of common shares of the Company on the open market. Each eligible employee may contribute up to 10% of the employee's salary to the employee share purchase plan. The Company will contribute to the plan administrator the funds required to purchase one common share of the Company for each two common shares purchased on behalf of the eligible employee, up to a maximum annual contribution of $2,500 dollars per year.

The Company accounts for its contributions as compensation and benefits expense when the amounts are contributed to the plan. For the year ended December 31, 2018, compensation and benefits expense related to this plan was $1.9 (2017 – $1.9).

## NOTE 25 – EMPLOYEE FUTURE BENEFITS

The Company has registered pension plans with both a defined contribution tier and a defined benefit tier covering substantially all employees, as well as supplementary income plans ("SIP") for senior management. The costs of these programs are being funded currently, except for the MX SIP, where a portion is guaranteed by a letter of guarantee. The Company also provides other post-retirement and post-employment benefits, such as supplementary medical and dental coverage, which are funded on a cash basis by the Company, and contributions from plan members in some circumstances.

### (A) DEFINED CONTRIBUTION PLANS

For defined contribution plans, the expense is charged to compensation and benefits expense in the consolidated income statement as it is incurred. The total expense recognized in respect of the Company's defined contribution plans for the year ended December 31, 2018, was $7.3, which represents the employer contributions for the period (2017 – $7.5).

### (B) DEFINED BENEFIT PLANS

The Company measures the present value of its defined benefit obligations and the fair value of plan assets for accounting purposes as at the balance sheet date of each fiscal year. The most recent actuarial valuation of the registered pension plan for funding purposes was as at December 31, 2017, and the next required valuation is as at December 31, 2020. For the TSX SIP plans, the most recent actuarial valuations for funding purposes were as at December 31, 2017, and the next required valuations are as at December 31, 2018. For the CDS SIP plan, the funding valuation is performed annually with the most recent actuarial funding valuation completed as of January 1, 2018 and the next required valuation is at January 1, 2019. Lastly, for the non-pension post-retirement plan, the valuation date was May 1, 2018 and the next required valuation is at May 1, 2021.

The accrued benefit assets and accrued benefit obligations related to the Company's defined benefit pension and non-pension post-retirement plans are included in the Company's consolidated balance sheet at December 31 as follows:

| | **Pension and SIP plans** | | **Other post-retirement benefit plans** | |
|---|---|---|---|---|
| | **2018** | 2017 | **2018** | 2017 |
| Accrued employee benefit assets | **$ 5.7** | $ 7.6 | **$ —** | $ — |
| Accrued employee benefits payable | **(0.4)** | (0.5) | **(14.4)** | (16.9) |
| | **$ 5.3** | $ 7.1 | **$ (14.4)** | $ (16.9) |

Accrued employee benefits payable on the consolidated balance sheet also includes the obligation under the post-employment benefit plan of $1.5 (2017 – $1.3).

The Company's net obligation in respect of pension and SIP plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods, and that benefit is discounted to determine its present value and the fair value of any plan assets are deducted. The benefits are based upon earnings and years of service. The Company's net obligation in respect of the post-retirement and post-employment benefit plans is the amount of future benefit that employees have earned in return for their service in the current and prior periods, discounted to determine its present value. Under all these plans, the discount rates used are based on Canadian AA-rated corporate bond yields.

The calculation is performed annually by an actuary based on management's best estimates using the projected benefit method pro-rated on service. If the calculation results in a surplus, accounting standards require that a limit is placed on the amount of this surplus that can be recognized as an asset. The total amount of defined benefit asset that can be recognized by the Company is limited to the present value of economic benefits available by way of future refunds of plan surplus and/or reductions in future contributions to the plan. In the determination of the economic benefit, minimum funding requirements resulting from the most recent actuarial funding valuations are also taken into consideration. An economic benefit is considered available to the Company if it is realizable during the life of the plan or on settlement of the plan obligations.

The accrued benefit assets and accrued benefit liabilities are comprised of:

| | Pension and SIP plans | | Other post-retirement benefit plans | |
|---|---|---|---|---|
| | **2018** | 2017 | **2018** | 2017 |
| **Accrued benefit obligation:** | | | | |
| Balance, beginning of the year | **$ 111.7** | $ 114.3 | **$ 16.9** | $ 14.4 |
| Current service cost | **1.2** | 1.9 | **0.9** | 0.9 |
| Interest cost | **3.9** | 4.3 | **0.6** | 0.6 |
| Benefits paid | **(5.0)** | (12.2) | **(0.6)** | (0.5) |
| Employee contributions | **0.1** | 0.1 | **—** | — |
| Actuarial losses (gains) | **(4.3)** | 5.3 | **(3.4)** | 1.7 |
| Sale of NGX and Shorcan Energy (note 4) | **—** | (2.0) | **—** | (0.2) |
| **Balance at December 31** | **$ 107.6** | $ 111.7 | **$ 14.4** | $ 16.9 |
| **Plan assets:** | | | | |
| Fair value, beginning of the year | **$ 118.8** | $ 121.4 | **$ —** | $ — |
| Interest income | **4.1** | 4.6 | **—** | — |
| Employer contributions | **1.7** | 1.5 | **0.6** | 0.5 |
| Employee contributions | **0.1** | 0.1 | **—** | — |
| Benefits paid | **(4.9)** | (12.2) | **(0.6)** | (0.5) |
| Plan administration cost | **(0.4)** | (0.4) | **—** | — |
| Actuarial gains (losses) | **(6.5)** | 3.8 | **—** | — |
| **Fair value at December 31** | **$ 112.9** | $ 118.8 | **$ —** | $ — |
| **Accrued benefit asset (liability) at December 31** | **$ 5.3** | $ 7.1 | **$ (14.4)** | $ (16.9) |

Plan assets consist of:

| | Percentage of plan assets | |
|---|---|---|
| **Asset category** | **December 31, 2018** | December 31, 2017 |
| Equity securities | **46.9%** | 47.1% |
| Debt securities | **37.9%** | 36.7% |
| Other | **15.2%** | 16.2% |
| | **100.0%** | 100.0% |

MX has provided a letter of guarantee in the amount of $0.5 to the benefit of the trustee of the MX SIP (2017 – $0.6), using a part of the TMX Group Limited credit facility (note 12).

The service cost, which represents the benefits accruing to the employees, along with the interest cost and the expected return on plan assets, is recognized in the compensation and benefits expense in the consolidated income statement.

The elements of the Company's defined benefit plan costs recognized in the year ended December 31 are as follows:

| | Pension and SIP plans | | Other post-retirement benefit plans | |
|---|---|---|---|---|
| | **2018** | 2017 | **2018** | 2017 |
| Current service cost | **$ 1.2** | $ 1.9 | **$ 0.9** | $ 0.9 |
| Net interest (income) cost | **(0.2)** | (0.4) | **0.6** | 0.6 |
| Plan administration cost | **0.4** | 0.4 | **—** | — |
| **Net benefit plan expense recognized in the consolidated income statement** | **$ 1.4** | $ 1.9 | **$ 1.5** | $ 1.5 |

The Company recognizes all actuarial gains and losses arising from defined benefit plans and post-retirement plans immediately in other comprehensive income. For the post-employment plans, actuarial gains and losses are recognized within compensation and benefits expense in the consolidated income statement. When the benefits of a plan are amended, the portion of the change in benefit relating to past service by employees is recognized immediately in the compensation and benefits expense in the consolidated income statement.

The aggregate actuarial gains and losses and effects of asset limits recognized in other comprehensive income for the year ended December 31, are as follows:

| | Pension and SIP plans | | Other post-retirement benefit plans | |
|---|---|---|---|---|
| | **2018** | 2017 | **2018** | 2017 |
| Effect due to demographics | **$ —** | $ 2.3 | **$ (0.4)** | $ 1.0 |
| Effect due to financial assumptions | **(5.1)** | 4.0 | **(0.4)** | 0.7 |
| Effect due to experience adjustments | **0.8** | (1.0) | **(2.6)** | — |
| Return on plan assets (excluding interest income) | **6.5** | (3.8) | **—** | — |
| **Actuarial losses (gains) recognized in other comprehensive income** | **$ 2.2** | $ 1.5 | **$ (3.4)** | $ 1.7 |

The significant actuarial assumptions adopted in measuring the obligation as at December 31 are as follows:

| | Pension and SIP plans | | Other post-retirement benefit plans | |
|---|---|---|---|---|
| | **2018** | 2017 | **2018** | 2017 |
| Discount rate (weighted average) | **3.80%** | 3.50% | **3.80%** | 3.50% |
| Inflation rate (consumer price index) | **1.50%** | 1.75% | **n/a** | n/a |
| Commuted value | **3.30%** | 3.00% | **n/a** | n/a |
| Rate of compensation increase | **3.00%** | 3.25% | **n/a** | n/a |

Assumptions regarding mortality rates are based on published statistics and mortality tables. The mortality tables used in 2017 and 2018 for the pension, SIP and other post-retirement plans was the Canadian Pensioner Mortality (CPM) RPP2014 private sector table with projection scale CPM-B and CPM RPP2014 table with projection scale CPM-B for lump sum payments. The assumed health care cost trend rate at December 31, 2018 was 5.80% decreasing to 4.00% over 22 years (2017 – 6.15% decreasing to 4.50% over 12 years).

Reasonably possible changes to one of the relevant actuarial assumptions, holding other assumptions constant, would impact the accrued benefit obligations as follows:

| | Pension and SIP plans | | Other post-retirement benefit plans | |
|---|---|---|---|---|
| **(Increase)/Decrease** | **2018** | 2017 | **2018** | 2017 |
| 50 bps decrease in the discount rate | **$ (6.6)** | $ (7.3) | **$ (1.0)** | $ (1.2) |
| 50 bps increase in the discount rate | **5.8** | 6.4 | **0.9** | 1.1 |
| 1 year increase in mortality rates | **1.9** | (2.0) | **(0.5)** | (0.7) |
| 100 bps decrease in initial and ultimate trend rates | **n/a** | n/a | **0.5** | 0.8 |
| 100 bps increase in initial and ultimate trend rates | **n/a** | n/a | **(0.6)** | (0.9) |

In 2019, the Company expects to contribute approximately $1.5 to its pension and other post-retirement benefit plans. Additional amounts to be contributed to the Company's SIP plans will be determined by management once the valuations have been prepared.

## NOTE 26 – SHARE CAPITAL

The authorized capital of the Company consists of an unlimited number of common shares and an unlimited number of preference shares, issuable in series. No preference shares have been issued.

Each common share of the Company entitles its holder to one vote at all meetings of shareholders subject to certain restrictions with respect to the voting rights and the transferability of the shares. No person or combination of persons acting jointly or in concert is permitted to beneficially own or exercise control or direction over more than 10% of any class or series of voting shares of the Company without the prior approval of the OSC and the AMF.

Each common share of the Company is also entitled to receive dividends if, as and when declared by the Board of Directors of the Company. All dividends that the Board of Directors of the Company may declare and pay will be declared and paid in equal amounts per share on all common shares, subject to the rights of holders of the preference shares. Holders of common shares will participate in any distribution of the net assets of the Company upon liquidation, dissolution or winding–up on an equal basis per share, but subject to the rights of the holders of the preference shares.

There are no preemptive, redemption, purchase or conversion rights attaching to the common shares, except for the compulsory sale of shares or redemption provision described in connection with enforcing the restriction on ownership of voting shares of the Company.

In 2012, the Company entered into nomination agreements with each of Alberta Investment Management Corporation, Caisse de dépôt et placement du Québec, Canada Pension Plan Investment Board, CIBC World Markets Inc., National Bank Group Inc., Ontario Teachers' Pension Plan Board, Scotia Capital Inc. and TD Securities Inc., either directly or through an affiliate, (the "Nominating Investors") under which each Nominating Investor is granted the right to nominate one director for election to the Company's board of directors until the earlier of (a) September 14, 2018 and (b) such time as the Nominating Investor ceases to own, directly, or indirectly, 5.0% of the Company's total issued and outstanding shares as at September 14, 2012. As of December 31, 2017, the nomination agreements of each of Alberta Investment Management Corporation,CIBC World Markets Inc., and Scotia Capital Inc. terminated. During the six years following September 14, 2012, should a Nominating Investor (including a Nominating Investor whose nomination agreement has terminated) wish to sell 0.75% or more of the outstanding common shares of the Company, it must be done in accordance with prescribed procedures as agreed to by the Nominating Investors. For the investors who had the right to nominate one director for election, this right expired on September 14, 2018. In addition, the Nominating Investors' obligation to follow prescribed procedures should they wish to sell 0.75% also expired on September 14, 2018.

The following transactions occurred with respect to the Company's common shares during the period:

| | **Number of common shares issued and fully paid** | | | **Share capital** |
|---|---|---|---|---|
| | **2018** | 2017 | **2018** | 2017 |
| Balance, beginning of the period | **55,383,736** | 55,021,569 | **$ 2,915.5** | $ 2,896.4 |
| Options exercised | **406,812** | 362,167 | **22.5** | 19.1 |
| **Balance as at December 31** | **55,790,548** | 55,383,736 | **$ 2,938.0** | $ 2,915.5 |

The Company's shares trade on Toronto Stock Exchange under the symbol "X".

## NOTE 27 – RELATED PARTY RELATIONSHIPS AND TRANSACTIONS

### (A) PARENT

The shares of the Company are widely held and as such there is no ultimate controlling party of the Company. Under the OSC and AMF recognition orders, no person or combination of persons acting jointly or in concert is permitted to beneficially own or exercise control of direction over more than 10% of any class or series of voting shares of the Company without prior approval of the OSC and the AMF.

### (B) KEY MANAGEMENT PERSONNEL COMPENSATION

Compensation for key management personnel, including the Company's Board of Directors, was as follows:

| **For the year ended** | **December 31, 2018** | December 31, 2017 |
|---|---|---|
| Salaries and other short-term employee benefits, and termination benefits | **$ 13.1** | $ 8.2 |
| Post-employment benefits | **0.6** | 0.7 |
| Share-based payments | **9.4** | 6.0 |
| | **$ 23.1** | $ 14.9 |

## NOTE 28 – DIVIDENDS

Dividends recognized and paid in the period are as follows:

| For the year ended | | December 31, 2018 | | | | December 31, 2017 | | |
|---|---|---|---|---|---|---|---|---|
| | | Dividend per share | | Total paid | | Dividend per share | | Total paid |
| Dividend paid in March | $ | 0.50 | $ | 27.7 | $ | 0.45 | $ | 24.8 |
| Dividend paid in June | | 0.58 | | 32.3 | | 0.50 | | 27.6 |
| Dividend paid in September | | 0.58 | | 32.3 | | 0.50 | | 27.7 |
| Dividend paid in December | | 0.58 | | 32.4 | | 0.50 | | 27.7 |
| **Total dividends paid** | | | $ | 124.7 | | | $ | 107.8 |

On February 13, 2019, the Company's Board of Directors declared a dividend of 62 cents per share. This dividend will be paid on March 15, 2019 to shareholders of record on March 1, 2019 and is estimated to amount to $34.6.

## NOTE 29 – FUTURE CHANGES IN ACCOUNTING POLICIES

The following new standards and amendments to standards and interpretations are not yet effective for the year ending December 31, 2018, and have not been applied in the preparation of the financial statements. These new and amended standards and interpretations are required to be implemented for financial years beginning on or after January 1, 2019, unless otherwise noted:

- IFRS 16, *Leases* - The IASB issued a new standard on leases which provides a comprehensive model for the identification of lease arrangements and their treatment in the financial statements. IFRS 16 supersedes IAS 17, *Leases* and its associated interpretative guidance. IFRS 16 applies a control model to the identification of leases, differentiating between leases and service contracts on the basis of whether there is an identified asset controlled by the customer. Among other significant changes, the distinction between operating and finance leases is removed and assets and liabilities are recognized in respect of all leases. The mandatory effective date for IFRS 16 is for annual periods beginning on or after January 1, 2019.

  The Company intends to adopt the standard in its consolidated financial statements for the annual period beginning on January 1, 2019. The Company will elect the modified retrospective approach, and will not restate prior periods. The Company will implement new accounting policies as well as elect certain practical expedients available under IFRS 16, including those related to leases of low value assets and short term leases. Based on December 31, 2018 data and current implementation status, the Company estimates the adoption of IFRS 16 will result in an increase in right-of-use assets and corresponding lease liabilities of approximately $100.0, primarily related to leased office spaces.

- IFRIC 23, *Uncertainty over Income Tax Treatments* - On June 7, 2017, the IASB issued IFRIC Interpretation 23 Uncertainty over Income Tax Treatments. The interpretation provides guidance on the accounting for current and deferred tax liabilities and assets in circumstances in which there is uncertainty over income tax treatments. The Company intends to adopt the interpretation in its financial statements for the annual period beginning on January 1, 2019. The Company does not expect the interpretation to have a material impact on the financial statements.

- Annual improvements 2015-2017 cycle - Amendments were made to IFRS 3, *Business Combinations* and IFRS 11, *Joint Arrangements* to clarify the accounting for increased interests in joint operations. IAS 12, *Income Taxes*, was also amended to clarify that all income tax consequences of dividends are recognized consistently with the transactions that generated the distributable profits. As well, amendments were made to IAS 23, *Borrowing Costs* to clarify that entities include funds borrowed specifically to obtain an asset other than a qualifying asset as part of general borrowings. The Company intends to adopt these amendments in its financial statements for the annual period beginning on January 1, 2019. The amendments are not expected to have a material impact on the financial statements.

- Amendments to conceptual framework - On March 29, 2018 the IASB issued a revised version of its *Conceptual Framework for Financial Reporting* that underpins IFRS Standards. The IASB also issued *Amendments to References to the Conceptual Framework in IFRS Standards* to update references in IFRS Standards to previous versions of the Conceptual Framework. The Company intends to adopt the amendments for the annual period beginning on January 1, 2020. The Company does not expect the amendments to have a material impact on its financial statements.

# Board of Directors

AS OF MARCH 29, 2019

### Charles Winograd (Chair)

Senior Managing Partner
Elm Park Capital Management
Committees: Finance and Audit, Governance, Human Resources
Director since: 2012

### Luc Bertrand

Vice Chair
National Bank Financial Group
Committees: Derivatives (Chair), Public Venture Market
Director since: 2011

### Louis Eccleston

Chief Executive Officer
TMX Group Limited
Director since: 2014

### Christian Exshaw

Managing Director and Head Global Markets
CIBC World Markets Inc.
Committees: Derivatives
Director since: 2015

### Marie Giguère

Corporate Director
Committees: Governance (Chair), Human Resources, Regulatory Oversight
Director since: 2011

### Nicolas Darveau-Garneau

Chief Strategist, Google Search
Director since: 2018

### Martine Irman

Senior Vice President, TD Bank Group and Vice Chair, Head of Global Enterprise Banking, TD Securities
Committees: Derivatives, Public Venture Market
Director since: 2014

### Harry Jaako

Executive Officer, Director and a Principal
Discovery Capital Management Corp.
Committees: Finance and Audit, Public Venture Market (Chair)
Director since: 2012

### Lise Lachapelle

Strategic and Economic Consultant and Corporate Director
Committees: Finance and Audit, Regulatory Oversight
Director since: 2014

### William Linton

Corporate Director
Committees: Finance and Audit (Chair), Governance
Director since: 2012

## Gerri Sinclair

Managing Partner, Kensington Capital Partners
Digital Technologies Consultant and
Corporate Director
Committees:  Governance Committee, Human Resources, Public Venture Market
Director since: 2012

## Kevin Sullivan

Deputy Chairman
GMP Capital Inc.
Committees: Derivatives,
Public Venture Market
Director since: 2012

## Michael Wissell

Senior Vice-President, Portfolio Construction and Risk
Healthcare of Ontario Pension Plan
Committees:  Derivatives, Human Resources
Director since: 2014

## Jean Martel

Executive Chairman, Martelligence Inc.
and Corporate Director
Committees: Regulatory Oversight  (Chair)
Director since: 2012

## Eric Wetlaufer

Corporate Director
Committees: Finance and Audit,
Human Resources (Chair)
Director since: 2012

# TMX Group Executive Committee

AS OF MARCH 29, 2019

**Louis Eccleston**

Chief Executive Officer
TMX Group

**Mary Lou Hukezalie**

Senior Vice President,
Group Head of
Human Resources
TMX Group

**Luc Fortin**

President and Chief
Executive Officer,
Montréal Exchange and
Global Head of Trading
TMX Group

**John McKenzie**

Chief Financial Officer
TMX Group

**Cheryl Graden**

Senior Vice President,
Group Head of Legal
and Business Affairs,
Enterprise Risk
Management and
Government Relations
and Corporate Secretary
TMX Group

**Jay Rajarathinam**

Head of Post-Trade and
Chief Technology and
Operations Officer, TMX
Group and President, CDCC
and CDS

# Shareholder Information

## Stock Listing

Toronto Stock Exchange
Share Symbol "X"

## Auditor

KPMG LLP
Toronto, ON

## Share Transfer Agent

Requests for information regarding share transfers should be directed to the Transfer Agent:

TSX Trust Company
100 Adelaide St. West
Suite 301
Toronto, ON
M5H 4H1

**T** +1 416 361-0930 ext 205
+1 866 393-4891 (Toll Free)
**F** +1 416 361-0470

tmxeinvestorservices@tmx.com

## Investor Contact Information

Investor Relations may be contacted at:

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+1 888 873-8392 (North America)
**F** +1 416 947-4444

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## Forward-Looking Information

This report contains forward-looking statements, which are not historical facts but are based on certain assumptions and reflect TMX Group's current expectations. These forward-looking statements are subject to a number of risks and uncertainties that could cause actual results or events to differ materially from current expectations. We have no intention to update this forward-looking information, except as required by applicable securities law.

This forward-looking information should not be relied upon as representing our views as of any date subsequent to the date of this report. Please see "Caution regarding Forward-Looking Information" in the 2018 Management's Discussion and Analysis for some of the risk factors that could cause actual events or results to differ materially from current expectations.

# For more information

Please contact TMX Group if you have any additional questions or require further clarification.


## General Enquiries

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info@tmx.com


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**tmx.com**