TMX Group Limited

MANAGEMENT’S DISCUSSION AND ANALYSIS

February 13, 2017

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, 2016 and as at December 31, 2016, compared with the year ended December 31, 2015 and as at December 31, 2015. This MD&A should be read together with our 2016 audited annual consolidated financial statements as at and for the year ended December 31, 2016 (financial statements).

Our financial statements and this MD&A for the year ended December 31, 2016 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 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, Vision and Corporate Strategy – our mission, vision and strategic initiatives for future growth;
- Initiatives and Accomplishments - 2016 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 various credit 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 2014-2016, the fourth quarter of 2016 compared with the corresponding period in 2015 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 2016 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 related party relationships and transactions; and

• Caution Regarding Forward-Looking Information.

MISSION, 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.

Vision

To be a technology driven solutions provider that puts clients first.

Corporate Strategy

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. This included a full scale analysis of our markets and our organization to understand how best to advance beyond a group of companies to be a more fully-integrated organization. From that, we built out our investment strategy. We focused on the greatest areas of need for our clients and the markets in which they operate. Putting clients first and working to create increasing value in the services we provide are our priorities. We identified businesses that are core to our strategy going forward, and we will deemphasize certain non-core businesses by divesting or entering into partnership, joint venture or outsourcing arrangements. We also announced a realignment of the organization in order to achieve our new vision of being a technology driven solutions provider that puts clients first. The strategic review process guided us to make some important choices that will enhance our ability to grow revenues, obtain significant operational and cost efficiencies, ignite innovation across all aspects of the business and compete more effectively in Canada, across North America and around the world. Our business is now organized into the following areas:

Capital Markets

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, TSX Trust, and TSX Private Markets.

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 and Energy Markets

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).

Energy trading and clearing: Operate innovative, efficient, reliable, fast, easy to use platforms for energy trading and clearing.

Lines of business include Natural Gas Exchange Inc. (NGX), and Shorcan Energy Brokers Inc. (Shorcan Energy Brokers).

Market Insights

Deliver integrated data sets to fuel high-value proprietary and third party analytics to help clients make better trading and investment decisions.

Lines of business include TMX Datalinx (information services) and TMX Insights (analytics) and TMX Atrium (low-latency infrastructure provider).

Market Solutions

Leverage core TMX Group capabilities and available technologies to introduce new operating models into new sectors and asset classes.

Lines of business include AgriClear and operations that will leverage TMX Group’s capabilities to introduce new operating models into sectors and asset classes not currently served by TMX Group.

INITIATIVES AND ACCOMPLISHMENTS¹

Capital Markets

Capital Formation

In early 2016, the TSXV leadership team embarked on a cross-Canada series of town hall meetings to discuss the actions to help support, revitalize and grow Canada’s public venture marketplace. Over 1,000 clients and key stakeholders took part in the meetings. In March 2016, we provided a progress report on our detailed plans to enhance Canada’s public venture market, which were published in a white paper in December 2015. TSXV is making progress in executing against these plans and remains committed to making a positive, tangible impact in three important areas:

- Reduce our clients’ administrative and compliance costs, in a meaningful way, without compromising investor confidence;
- Expand the base of investors financing companies and generally enhance liquidity; and
- Diversify and grow the stock list to increase the attractiveness of the marketplace.

In October 2016, we announced the members of the Advancing Innovation Roundtable, which include prominent senior executives from the investment and capital formation communities in Canada. Originally announced in August 2016, the Roundtable’s mission is to deliver actionable recommendations on how to increase access to scale up capital for Canadian innovation economy companies as they grow beyond the seed and start-up stages.

In October 2016, we announced an agreement with Ipreo, a leading global provider of financial services technology, data and analytics. We teamed up with Ipreo to offer TSX and TSXV issuers the in-depth analysis and dynamic functionality they need to build and execute their Investor Relations (IR) strategies, including Ipreo’s global investor identification and targeting, IR work flow tools and buy-side perception studies.

¹ 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.
In November 2016, we also announced a strategic alliance with Solium Capital Inc. (Solium), a leading provider of cloud-enabled services for global equity administration, financial reporting and compliance. The agreement leverages the depth of capabilities across our organizations to offer enhanced services to both public and private companies.

**Equities and Fixed Income Trading and Clearing**

In June 2016, TSX launched its new centralized mutual fund solution, TSX NAVex. It enables existing TSX participants to purchase and redeem eligible mutual funds directly from fund manufacturers in the same manner they access TSX-listed equities and Exchange Traded Funds (ETFs).

In July 2016, CDS withdrew the Issuer Services Program fees which were proposed to our regulators in November, 2014, and submitted two new, distinct, proposals to amend CDS’s Fee Schedule. The first proposal addresses Issuance Services and the second addresses Entitlement & Corporate Action Event Management Services. This re-submission followed extensive consultation with clients and stakeholders across the Canadian capital markets.

The two new proposals included several adjustments to the original proposal, including the grandfathering of sovereign debt securities already eligible and deposited at CDS, the waiver of certain agency fees on serial debentures, a pre-payment option with a discount, and an implementation period consisting of a notice period coupled with an implementation period during which discounts on the fees would apply.

With the following further adjustments to the fees and to the implementation schedule, and subject to certain conditions required by CDS’s principal provincial regulators, the Issuer Services Program was approved in December 2016, and CDS expects to make the fees effective on March 1, 2017.

- All entitlement and Corporate Action Event Management Fees will be implemented over a two year period. Fees will be discounted by 50% for the 2017 calendar year, and by 25% in the 2018 calendar year.
- Events related to corporate debt securities deposited prior to implementation will not attract fees (up to, and including, their maturities).
- Events related to government debt securities deposited prior to implementation will not attract fees (up to, and including, their maturities).
- A pre-payment option with a 20% discount (in addition to the applicable discounts, above) will be available for instruments with predictable payment streams.
- Interest Payment and Maturity Event Fees for serial debentures have been adjusted from $100/event to $25/event (in addition to the applicable discounts, above).
- CDS has set up, at no cost, existing Systematic Withdrawals (SWPs) and SWITCH programs (allowing ETF issuer to offer its ETF holder the opportunity to switch one class of ETF security into another in that switch program using a conversion event) as corporate action events for 2017. Transactions will attract Corporate Actions fees if Exchange Traded Funds issuers choose to continue to use CDS to process these events; these fees, however, (SWPs and SWITCHs, as well as Dividend Re-Investment Plans or DRIPs) will be discounted as described above.

**Derivatives and Energy Markets**

**Derivatives Trading and Clearing**

MX set a new total volume record in 2016 with 91.9 million contracts traded, exceeding the previous record of 76.7 million contracts established in 2015.

A number of new MX volume records were established in 2016, including:
• 26,316,537 contracts traded in Three-Month Canadian Bankers' Acceptance Futures (BAX), breaking the record of 24,640,229 set in 2014, by 7%;

• 20,968,281 contracts traded in the Ten-Year Government of Canada Bond Futures (CGB), breaking the record of 17,913,516 set in 2015, by 17%;

• 6,090,257 contracts traded in the S&P/TSX 60 Index Standard Futures (SXF), breaking the record of 5,474,698 set in 2015, by 11%;

• 25,302,965 contracts traded in Equity Options, breaking the record of 24,151,035 set in 2012, by 5%;

• 11,724,768 contracts traded in options on ETFs, breaking the record of 8,719,474 set in 2015, by 34%;

• and 671,462 contracts traded in the S&P/TSX 60 Index Options (S XO), breaking the record of 541,759 set in 2015, by 24%.

In December 2016, we launched single stock futures (SSFs) on about 20 symbols. By the end of January 2017, open interest had reached close to 100,000 contracts. Our plan is to add the balance of the S&P/TSX 60 symbols by the end of Q1/17.

**Energy Trading and Clearing**

NGX set a new daily overall energy record with the equivalent of 226,278 terajoules traded on November 29, 2016.

**Market Insights**

In February 2016, we introduced TMX Insights, an integrated set of capabilities that provide financial content, tools and applications, as well as capital markets analytics. A number of existing capabilities have been grouped together under TMX Insights, including the suite of S&P/TSX indices. TMX Insights also features a new product offering, TMX Global Analytics, a cloud-based application that offers extensive real-time and historical information and insight into the Canadian, U.S. and European Capital Markets. We have launched a number of products so far including a secure transaction cost analysis (TCA) offering as well as an online tool to analyze the Financial Industry Regulatory Authority (FINRA) tick pilot.

In December 2016, we announced a strategic alliance with Velocity Trade, a global provider of Equity and Foreign Exchange (FX) trading services. Velocity Trade will provide TMX Insights with FX data, and TMX Insights will deliver TMX Analytics tools that provide in-depth market FX and Equity data analytics to Velocity Trade's international customer base.

On December 31, 2016, we sold TMX Australia Pty Ltd., which owned our risk management business, Razor Risk (referred to as the sale of Razor Risk in this MD&A). The decision to enter into this transaction was made within the scope of TMX Group's strategy to focus on the growth of its core offerings, both domestically and internationally over the long-term and to evolve into a more nimble, responsive solutions provider. In 2016, Razor Risk earned approximately $5.9 million of revenue and incurred approximately $11.9 million in operating expenses before strategic real-alignment expenses. The loss on sale of Razor Risk of $0.8 million has been included in Other Income in our Consolidated Income (Loss) Statements.

Our TMX Webstore is currently live and we are in the process of transitioning our market data clients to the new platform. The TMX Webstore is an e-commerce platform for the sale of TMX Group proprietary and third party content (www.tmxwebstore.com). In addition, the launch of new applications is underway, including a mobile app that provides users the ability to track dividend payments from companies listed on the TSX and correlate this data with their portfolio data on TMX Money (www.tmxmoney.com/dividends).
Organizational Transformation including Business Integration Initiative

In August 2016, we announced a business integration initiative designed to advance our evolution as a client-driven solutions provider to the Canadian and global capital markets. The objective of the initiative is to align, simplify and integrate relevant systems and operations to both lower the cost base and make us more nimble and adaptive. The initial area of focus is on the integration of the operations and management of our cash and derivatives clearing businesses, CDS and CDCC. Glenn Goucher, President and Chief Clearing Officer, CDCC, was named President of CDS. Bringing together CDS and CDCC under one leader will harmonize integration efforts across operations, systems and business development. This significant integration initiative is subject to regulatory approval. As we move forward, we expect to realize incremental cost savings, and will update the market as future plans become formalized.

In September 2016, we also provided a detailed update on the progress made in streamlining our organization, and said that we were targeting further cost reductions before strategic re-alignment expenses related largely to compensation and benefits of $8.0 to $10.0 million per year on a run rate basis to be realized by the end of 2016 and $3.0 to $5.0 million per year in additional savings on a run rate basis to be realized by the end of 2017, net of the costs associated with new employees that may be hired as we invest in our strategic priorities. We indicated that the majority of the headcount reductions would be completed by the end of Q1/17. Approximately 95 full-time positions and about 20 consultants and contractors were expected to be impacted.

By the end of 2016, we had realized approximately $12.6 million in savings on a run rate basis, net of the costs associated with new employees. We exceeded our target of $8.0 to $10.0 million in net savings per year on a run rate basis, as we exited 2016, largely by accelerating the process of streamlining the organization. The majority of the headcount reductions were completed by the end of Q4/16. While there will be some additional savings in 2017, we expect most of these savings will be offset by the costs associated with new employees that continue to be hired as we invest in our strategy. For the full program, we still expect to achieve the overall target of $11.0 to $15.0 million in net cost savings per year on a run rate basis as we exit 2017.

In 2016, operating expenses before strategic re-alignment expenses declined by approximately $27.0 million compared with 2015. In the second half of 2016 we recorded $16.5 million of severance and related strategic re-alignment costs related to this initiative, which was consistent with our estimate in September 2016 for these costs of $15.0 to $17.0 million.

Corporate

John McKenzie was appointed Chief Financial Officer (CFO) effective July 11, 2016. Mr. McKenzie has been with the company for 17 years; prior to assuming the role of CFO he served as President of CDS. After joining TMX Group in 2000, Mr. McKenzie held increasingly senior executive positions in Corporate Strategy and Development and Finance. In these roles, he led TMX financial and strategic planning and managed various acquisitions, including the Maple transaction\(^2\), MX and Shorcan, as well as the resulting integration initiatives.

\(^2\) The "Organizational Transformation including Business Integration Initiative" 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.

\(^3\) TMX Group Limited (formerly Maple Group Acquisition Corporation or Maple) completed the acquisition of TMX Group Inc. on September 14, 2012 and the acquisitions of CDS and Alpha Trading Systems Inc. and Alpha Trading Systems Limited Partnership (collectively, Alpha) on August 1, 2012 (collectively, the Maple Transaction).
REGULATORY CHANGES

Equity Trading and Market Insights

In April 2016, the Canadian Securities Administrators (CSA) published final amendments to National Instrument 23-101 Trading Rules and its Companion Policy. The amendments adjust the order protection rule (OPR) framework to address perceived inefficiencies and respond to market developments. The amendments include:

- a market share threshold set at 2.5 per cent market share of the adjusted volume and value traded, below which a marketplace’s orders will not be protected;
- clarification related to marketplaces that impose intentional order processing delays (or speed bumps), confirming that orders on these marketplaces will not be protected;
- a transparent methodology to be used by the CSA when reviewing professional market data fees charged by a marketplace; and
- the introduction of a cap on active trading fees charged by marketplaces, with a proposal to further reduce the cap for non-interlisted securities.

The amendments came into force on July 6, 2016, except for the market share threshold which came into force on October 1, 2016.

The amendments introduce an environment where dealers will no longer have a best price obligation to access those marketplaces that fall under the threshold or have introduced intentional speed bumps. As TSX Alpha Exchange (Alpha) is already an unprotected marketplace by nature of its speed bump and TSX and TSXV exceed the threshold, the trading related amendments do not impact the status of any TMX marketplace. In addition, exchanges such as TSX and TSXV that operate as listing venues are considered to be protected in respect of those securities they list, regardless of their market share. In the short term, we do not anticipate smaller marketplaces to be materially impacted given investments already made by the community in connecting to them. However, we do believe the amendments set necessary thresholds for new entrants and over time will ensure only those marketplaces with a valued offering will be subject to the OPR.

On January 25, 2017, the CSA also announced approval of further reductions to the cap on active trading fees applicable to ETFs and non-interlisted equities securities executed at $1.00 or greater - these will be reduced from $0.0030 to $0.0017 per share/unit traded. This reduction will be effective no later than May 15, 2017. As active trading fees for ETFs and non-interlisted equities on TSX and TSXV are currently above the cap, fee changes will be necessary. A review of fees is in progress to determine the appropriate level (at or below the cap) for competitive purposes. No change is necessary to the fees for Alpha as it employs an inverted maker-taker model, which results in an active rebate rather than a fee. The reduced fee cap for non-interlisted securities is directionally aligned with what TMX Group had initiated through its maker-taker reduction program that commenced in June 2015.

The CSA’s data fees methodology estimates a fee range for top-of-book (Level 1) and depth-of-book (Level 2) market data based on a marketplace’s contribution to price discovery and trading activity. Beginning in Q1/17, the CSA will apply the methodology at least annually to determine whether a marketplace’s data fees are higher than the range identified using the methodology. While this methodology does recognize the value of TMX Group’s exchanges’ offerings and market share relative to our domestic competitors, it introduces a stricter regulatory regime for market data fees. Without further details, it is not possible to quantify any financial impact.

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4 The “Regulatory Changes” 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.
MARKET CONDITIONS

Overall, Canadian equities trading volumes were up 25% in 2016 compared with 2015\(^5\) driven, in part, by market volatility. The average CBOE Volatility Index (VIX) was 15.8 during 2016, down slightly from 16.7 in 2015. TSX set a new record with 230.1 million transactions in 2016. Derivative trading in Canada was positively impacted by volatility and MX set a new total volume record in 2016 with 91.9 million contracts traded.

Canadian equities indices and the market capitalization of listed issuers increased substantially during 2016. In addition, there was a 9% increase in the number of additional listing fee transactions billed on TSX in 2016 over 2015. On TSXV (including NEX), there was a 25% increase in the total number of financings and an 36% increase in the total amount of financing dollars raised in 2016 compared with 2015. According to the World Federation of Exchanges, for 2016, we were tied for number one globally based on the number of new international listings and number two in the world based on the number of new listings. In terms of initial public offerings (IPOs), market conditions globally, and within North America, were generally not favourable during 2016. According to the World Federation of Exchanges there was a 21% decrease in IPOs in 2016 compared with 2015. In Canada, we performed better than the global average with an 7% decline in IPOs on TSX and TSXV combined.

On January 18, 2017, the Bank of Canada announced that it is maintaining its target for the overnight rate at 0.5\(^6\), although the possibility of a future rate cut remained on the table. The Bank said that uncertainty about the global outlook is undiminished, particularly with respect to policies in the United States, and that it has made initial assumptions about prospective tax policies only, resulting in a modest upward revision to its U.S. growth outlook. It added that, in contrast to the U.S., Canada’s economy continues to operate with material excess capacity, and that while employment growth has remained firm, indicators still point to significant slack in the labour market. The Bank said that the resource sector’s adjustment to past commodity price declines appears to be largely complete, but negative wealth and income effects will persist.

Total energy volumes at NGX in 2016 were 12% higher than in 2015 as supply and demand fundamentals and increased price volatility drove market participants’ behavior towards longer-term contracts, which offset the impacts of a warmer than normal winter. Power volumes in 2016 increased substantially over 2015 as a result of the impact of a marketing program implemented in U.S. markets and greater term activity due to market conditions.

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 Markets
   i. Capital Formation
   ii. Equities and Fixed Income Trading and Clearing

2. Derivatives and Energy Markets
   i. Derivatives Trading and Clearing
   ii. Energy Trading and Clearing

3. Market Insights
   i. TMX Datalinx

\(^5\) Source: IIROC (excluding intentional crosses)
\(^6\) Source: Bank of Canada press release, January 18, 2017
ii. TMX Insights

iii. TMX Atrium

4. Market Solutions

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

**TMX 2016 Revenue: $742.0 million**

- Equities and Fixed Income Trading and Clearing: 23%
- Derivatives Trading and Clearing: 16%
- Energy Trading and Clearing: 8%
- Market Insights: 28%
- Capital Formation: 25%
CAPITAL MARKETS

Capital Formation

Year Ended December 31, 2016
Capital Formation revenue of $182.9 million

Other Issuer Services: 10%
TSX Venture Exchange: 22%
Toronto Stock Exchange: 68%

Overview and Description of Products and Services

Our goal is to energize and expand our capital markets 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.

We carry out our core listings operations through TSX, our senior market, and TSXV, our junior market. TSX is Canada’s senior equities market, providing issuers with a venue for raising capital and providing domestic and international investors with the opportunity to invest in and trade those issuers’ securities. TSXV is Canada’s premier junior listings market, providing companies at the early stages of growth with the opportunity to raise capital and providing investors with the opportunity to invest in and trade those issuers’ securities. TSXV also provides a market called NEX for issuers that have fallen below TSXV’s ongoing listing standards.

In general, issuers initially list on TSX in connection with their Initial Public Offerings (IPOs), by graduating from TSXV or by seeking a secondary listing in addition to a current listing venue. Junior companies generally list on TSXV either in connection with their IPOs or through alternative methods such as TSXV’s Capital Pool Company (CPC) program or Reverse Takeovers (RTOs).

The CPC program provides an alternative, two-phased process to listing on TSXV. Through the program, CPC founders with financial markets experience raise a pool of capital that is listed on TSXV as a CPC. The CPC founders then seek out growth and development-stage companies to invest in and when an appropriate fit is identified, they complete a business combination known as a Qualifying Transaction (QT).

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 as well as exchange traded funds (ETFs) and structured products such as investment funds.
Being listed on TSX or TSXV provides many benefits, including opportunities to efficiently access public capital, providing liquidity for existing investors via secondary trading on TMX platforms, worldwide distribution of prices and volume, numerous products, such as TSX InfoSuite, and the prestige and market exposure associated with being listed on one of Canada’s premier national stock exchanges. While we list issuers from a wide range of industries, we are a global leader in listing issuers in the resource sectors, including mining and oil and gas companies. In addition, we are a global leader in listing small and medium-sized enterprises (SMEs). We are also listing a growing number of technology and innovation companies (including those in the technology, clean technology, renewable energy and life science sectors). Since the beginning of 2015 we have listed 70 new technology and innovation companies, of which 22 are international listings. In addition, 8 technology and innovation companies graduated from TSXV to TSX since the start of 2015.

Together, TSX and TSXV were tied for second in the world among global exchanges with 221 new listings in 2016. The ranking was part of a report from the World Federation of Exchanges (WFE) as of December 31, 2016. TMX Group was tied for first in the world for new international listings in 2016, with 22.

Issuers listed on TSX and TSXV raised a combined $62.2 billion in 2016 ($57.8 billion on TSX and $4.4 billion on TSXV).

In 2014, we launched TSX Private Markets, to facilitate capital raising and the trading of securities in the exempt market, thereby serving Canadian private companies throughout their evolution from start-up to private issuer to public issuer. TSX Private Markets provides a voice-brokered business for both private and public companies in the exempt market, which is intended to benefit customers, including registered dealers, accredited investors, and other exempt investors. TSX Private Markets is operated by our wholly-owned subsidiary, Shorcan, a registered Exempt Market Dealer.

In addition to listings, we offer other services to our listed issuers. TSX Trust is a provider of corporate trust, securities transfer and registrar, and employee plan administration services for issuers. We obtained a trust license from the Office of the Superintendent of Financial Institutions (OSFI) in 2016.

**Strategy**

- Diversify exchange brand beyond resource sector.
- Capture a diverse set of listed issuers and look to attract a broader investor base.
- Streamline processes and make it less costly for issuers to list.
- Launch direct sales team to attract next wave of North American private and public SMEs.
- Build out TSX Private Markets and TSX Trust.

**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 in a given period.

**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.
**Sustaining Listing**

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.

Fees charged to issuers vary based on the type of issuer (corporate, structured product or ETF).

**TSX Private Markets**

TSX Private Markets revenue is earned from capital formation and secondary trading activities related to private placements by both public and private companies. There is a standard application and posting fee for all postings that go through our due diligence process. Commission fees for capital formation and secondary trading are negotiated on a per deal and/or per transaction basis.

**Other Services**

Transfer agent revenue is primarily derived from a contractual monthly charge that clients pay for a full range of transfer agent services. 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. This revenue is normally transactional. Net margin income is the interest earned on balances held on behalf of clients less interest paid to clients. Foreign exchange revenue is earned on the difference between negotiated and actual rates on foreign exchange transactions executed on behalf of clients.

**Equities and Fixed Income Trading & Clearing**

![Pie chart showing revenue distribution]

*Year ended December 31, 2016*

**Equities and Fixed Income Trading and Clearing revenue of $173.5 million**

- Equities and fixed income clearing, settlement, depository and other services (CDS): 41%
- Equities and fixed income trading: 59%
Equities and Fixed Income trading – TSX, TSXV, Alpha and Shorcan

Overview and Description of Products and Services

We will operate innovative, efficient, reliable, fast, easy to use platforms for trading and clearing.

Equities Trading

Trading on TSX, TSXV and Alpha occurs on a continuous basis throughout the day on our fully electronic trading systems. Retail, institutional and other proprietary investors place orders to buy or sell securities through Participating Organizations (POs) who act as principals or agents. TSX, TSXV and Alpha sessions begin with the market open in an auction format. TSX and TSXV continuous sessions end with a closing auction which establishes the benchmark closing price for our listed issues. Extended trading sessions after the close on TSX, TSXV and Alpha allow trades to occur at the closing price. Non-displayed trading offering price improvement during continuous trading hours also occurs through TSX, TSXV and Alpha using non-displayed order, or dark order, types. Trading also occurs through crosses in which POs internally match orders and report them through the exchanges at no cost.

Fixed Income Trading

Shorcan was Canada’s first inter-dealer broker (IDB), providing facilities for matching orders for Canadian federal, provincial, corporate and mortgage bonds and treasury bills and derivatives for anonymous or name-give-up buyers and sellers in the secondary market.

Strategy

• Focus on strengthening the core business through client centered initiatives.
• Continue to deploy innovative trading models aimed at reducing dealer’s costs and operational risks.
• Leverage existing capabilities to create new solutions for serving existing and new clients.
• Expand sales and marketing activities into international markets.

Revenue Description

Equities Trading

We have volume-based fee structures for issues traded on TSX, TSXV and Alpha. There are differences in our fee structures which provide our customers with multiple execution options. TSX and TSXV are structured so that market participants have an incentive to enter passive orders into the central limit order book. Executed passive orders receive a credit on a per security basis, and when liquidity is removed from the central limit order book, each executed active order is charged on a per security basis. All trading revenue is recognized in the month in which the trade is executed. Alpha supports an inverted pricing model. Under this fee structure, executed passive orders are charged on a per security basis while executed active orders receive a credit on a per security basis. (also see REGULATORY CHANGES - Equity Trading)

Fixed Income Trading

Shorcan charges a commission on orders that are matched against existing communicated orders.
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 equity, 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 systematically 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. Currently, CDS only charges for ISIN issuance, depository eligibility, and registration-related services, and does not charge issuers for E&CA event management.

In November 2014, CDS submitted to its regulators a notice of publication in respect of amendments to the CDS issuer services program fee schedule. The fees were approved in December 2016, subject to a number of adjustments and conditions (see INITIATIVES AND ACCOMPLISHMENTS - Capital Markets - Equities and Fixed Income Trading and Clearing).

Strategy

- Enhance CDS value to both existing and new clients by creating solutions that leverage our capabilities in new and innovative ways.
- Develop and migrate to an efficient, cross-asset next-generation clearing solution and explore growth opportunities.

Revenue Description

For reported trades, both exchange trades 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, depositary 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 effect 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.

50:50 Rebates on Core CDS Services

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 compared to the revenues for this service earned in the twelve-month period ended December 31, 2015. Rebates are paid on a pro rata basis to participants in accordance with the fees paid by such participants for these services.

Additional Rebates

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) as follows:

• $2.8 in the 12 month period ending October 31, 2013
• $3.3 in the 12 month period ending October 31, 2014
• $3.8 in the 12 month period ending October 31, 2015
• $4.0 in the 12 month period ending October 31, 2016
• $4.0 annually thereafter.

DERIVATIVES AND ENERGY MARKETS

Derivatives Trading & Clearing – MX, CDCC and BOX

We are focused on intensifying new product creation and leveraging our unique market position to benefit from increasing demand for derivatives products both in Canada and globally.

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, 2016, MX held a 40.1% ownership interest in BOX. Our derivatives markets derive revenue from MX’s trading and clearing.
**Derivatives Trading**

**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 2016 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 a growing ETF options market.

**BOX**

BOX 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, a leading-edge technology for equity options.

In January 2015, BOX launched a program to incent subscribers to provide liquidity. In exchange for providing this liquidity and a nominal cash payment, subscribers received volume performance rights (VPRs), which are comprised of Class C units of BOX and an order flow commitment. The VPRs vest over 20 quarters of the 5-year order flow commitment period if minimum volume targets are achieved. If a subscriber fails to meet its minimum volume targets, its VPRs are available for reallocation to those subscribers that exceed their minimum volume targets, if any. Those VPRs may vest earlier. In September 2015, the VPR program was granted regulatory approval by the Securities Exchange Commission (SEC). Pursuant to the terms of the VPR program, subscribers became entitled to immediate economic participation in BOX for VPRs held.

As of July 1, 2016, we determined that we did not hold majority voting power on the board of directors as Class C units in certain vested VPRs became entitled to vote at board meetings. As of this date, we no longer consolidated BOX as we ceased to hold the majority of voting power on the board of directors and exercise control. As a result our financial results from July 1, 2016 forward do not include the results of BOX other than our share of BOX's net income (loss), which is reflected in Share of net income (loss) from equity accounted investees. For periods prior to July 1, 2016 our financial results include the results from BOX on a consolidated basis.

Effective July 1, 2016, Derivatives revenue also includes revenue from licensing SOLA technology and providing other services to BOX. This revenue was previously eliminated when BOX's operating results were consolidated in our financial statements.

**Derivatives – Clearing**

Through CDCC, MX's wholly-owned subsidiary, we offer 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. CDCC generates revenue from clearing and settlement, as well as from options and futures exercise activities. CDCC offers central counterparty and clearing and settlement services for all transactions carried out on MX's markets and on some OTC products. In addition, CDCC is the issuer of options traded on MX markets and the clearing house for options and futures contracts traded on MX markets and for some products on the OTC market.

**Derivatives – Regulatory Division**

MX is 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, which is operated independently of its other operations, is responsible for the regulation of its markets and its trading participants. The Regulatory Division is subject to the sole internal 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 operates on a non-profit/cost-recovery basis.
The Regulatory Division generates revenues from regulatory fees (principally comprised of market surveillance fees collected by MX on behalf of its Regulatory Division) and regulatory fine revenues (generated from fines levied by the 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 (excluding regulatory fine revenues, which cannot be redistributed) 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 fine revenues are accounted for separately from regulatory fees revenues and can be used only for specifically approved purposes, such as charitable donations or educational initiatives.

**Strategy**

- Focus on geographic expansion of client base.
- Reduce barriers for new clients.
- Create new products and services for clients.
- Extend and develop existing product line.
- Look to international partnerships to accelerate plans.

**Revenue Description**

MX participants are charged fees for buying and selling derivatives products on a per transaction basis, determined principally by contract type and participant status. Since MX trading fee rates are charged on each transaction based on the number of contracts included in each transaction, MX trading revenue is directly 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, and Clearing Members pay a minimum monthly fee. 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.

**Energy trading and clearing – NGX and Shorcan Energy Brokers**

**Overview and Description of Products and Services**

NGX is a Canadian-based exchange with an electronic platform through which customers can trade, clear and settle natural gas, crude oil and electricity contracts across North America. We have a technology and clearing alliance for North American natural gas and Canadian power with Intercontinental Exchange, Inc. (ICE). Under the arrangement, North American physical natural gas and Canadian electricity products are offered through ICE’s leading electronic commodities trading platform. NGX serves as the clearinghouse for these products. Currently, NGX offers products and clearing services at over 90 natural gas, crude oil, and power locations in North America, including over 65 in the U.S.

In 2013 NGX entered into an agreement with NASDAQ OMX Commodities Clearing Company (NOCC) for the transfer of NOCC’s physical energy products and customers to NGX, and subsequently launched its U.S. physical power clearing services in the Electric Reliability Council of Texas (ERCOT) market. NGX owns The Alberta Watt Exchange (Watt-Ex), a provider of ancillary services to the Alberta Electric System Operator which uses Watt-Ex to procure its operating reserve electricity for the Alberta grid.
Shorcan Energy Brokers is an inter-participant brokerage facility for matching buyers and sellers of crude oil products.

**Strategy**

- Focus on geographic expansion of client base.
- Advance new technological improvements.
- Extend and develop existing product line

**Revenue Description**

NGX generates trading and clearing revenue by applying fees to all transactions based on the contract volume traded or centrally cleared through the exchange, and charges a monthly fixed subscription fee to each customer which maintains a clearing account with NGX. Energy trading and clearing revenue is recognized over the period the relevant services are provided.

In 2016, approximately 53% of NGX revenue was billed in U.S. dollars. We do not currently hedge this revenue and, therefore, it is subject to foreign exchange fluctuations. (See Financial Risk Management - Market Risk - Foreign Currency Risk for more information.)

Shorcan Energy charges a commission on orders that are matched against existing communicated orders.

**Market Insights**

![Market Insights Chart]

**Overview and Description of Products and Services**

We aim to deliver integrated data sets to fuel high-value proprietary and third party analytics to help clients make better trading and investment decisions.
**TMX Datalinx**

**Real-Time Equity Market Data Products – Toronto Stock Exchange and TSX Venture Exchange 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 feeds and desktop market data. Our market data is available globally through TMX Atrium, a provider of low-latency network and infrastructure solutions for the global investment community, and through a variety of network carriers and extranets.

We offer our subscribers 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 MarketDepth 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 renewed for a four year period commencing on July 1, 2014.

**Real-Time Derivative Market Data Products**

We also derive Market Insights revenue from MX. We distribute MX real-time trading and historical 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 pricing, index constituents, and weightings) and corporate information (such as dividends and corporate actions) used in research, analysis and trade clearing.

**TMX Insights**

**TMX Global Analytics**

TMX Global Analytics provides information and market insights by leveraging multi-asset class content across TMX Group business lines and other sources. TMX Global Analytics delivers insight into market liquidity and price discovery, provides analysis of routing decisions in a multiple market environment, measures the expected impact of pre-trade models based on market dynamics, and enables post-trade analysis of trading strategies, as well as order flow and transaction cost analysis.
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 further extending 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.7

Fixed Income – Index and Analytics Products

We have a 24.3% ownership interest in FTSE TMX Global Debt Capital Markets Limited, an international fixed income index business. Income from our 24.3% interest is recorded under Net income of equity accounted investees and Market Insights revenue (as a royalty).

Razor Risk

Razor Risk, provides risk management technology solutions to clearing houses, stock exchanges, financial institutions and brokerages. On December 31, 2016 TMX sold Razor Risk to UK-based Parabellum Limited. (See INITIATIVES AND ACCOMPLISHMENTS for additional detail.)

TMX Atrium

Extranet and wireless network solutions

TMX Atrium is a provider of low latency terrestrial and wireless network solutions to global capital markets. TMX Atrium has a presence in over a dozen countries across North America, Europe and Asia, providing connectivity to 35 Points of Presence.

Co-location and Managed 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. At December 31, 2016, over 80% of capacity was contracted or sold.

Strategy

- Provide unified platforms for TMX Group proprietary content and complete product gaps for all core TMX Group content.
- Expand TMX Global Analytics, a suite of multi-asset class, real time and historical analytics using proprietary and third party data.
- Expand benchmark and index business by assessing market opportunities (including energy and commodities).
- Leverage user experience technology to make it easier for clients to access data.

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7 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.
Revenue Description

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 Market Insights 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.

Subscribers to TMX Group’s managed services, which includes co-location services, pay a fixed monthly fee depending on the number of cabinets and other related services they receive. Subscribers to TMX Atrium’s service also pay a fixed monthly fee depending on the number of connections, distance, and bandwidth. Managed services and TMX Atrium services are normally contracted for a period of one to five years.

In 2016, approximately 40% of our Market Insights revenue was billed in U.S. dollars. 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.)

Market Solutions

Overview and Description of Products and Services

We will leverage TMX capabilities and available technologies to introduce new operating models into new sectors and asset classes.

In 2015, we launched the first of our Market Solutions offerings, AgriClear, an online platform designed to provide U.S. and Canadian cattle buyers and sellers with an efficient, cost-effective transactions platform and payment service. With this initiative, we are looking to reduce opaque prices, uncertainty regarding payment and lower transactions costs.

Currently, we are including revenue from Market Solutions in Other revenue.

Strategy

- Improve the customer experience, reorient sales and marketing tactics to improve listings and transaction volumes for other asset classes.
- Extend the breadth of products and services provided as liquidity increases.
- Deploy the AgriClear platform to other markets, with similar market characteristics.
- Deploy a payment assurance component to other exchanges, auctions and markets that require payment surety.
RESULTS OF OPERATIONS

Year Ended December 31, 2016 Compared with Year Ended December 31, 2015

Non-IFRS Financial Measures

Adjusted earnings per share and adjusted diluted earnings per share provided for the year ended December 31, 2016 and December 31, 2015 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 and adjusted diluted earnings per share 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, increase/decrease in net deferred income tax liabilities resulting from changes in Alberta and Quebec corporate income tax rates and strategic re-alignment expenses. 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.

Additional IFRS Measures

Income from operations before strategic re-alignment expenses and income from operations are important indicators of TMX Group’s ability to generate liquidity through operating cash flow to fund future working capital needs, service outstanding debts and fund future capital expenditures. The intent of these performance measures is to provide additional useful information to investors and analysts; however, these measure should not be considered in isolation.

BOX (BOX Holdings)

In January 2015, BOX launched a program to incent subscribers to provide liquidity. In exchange for providing this liquidity and a nominal cash payment, subscribers received volume performance rights (VPRs), which are comprised of Class C units of BOX and an order flow commitment. The VPRs vest over 20 quarters of the 5-year order flow commitment period if minimum volume targets are achieved. If a subscriber fails to meet its minimum volume targets, its VPRs are available for reallocation to those subscribers that exceed their minimum volume targets, if any. Those VPRs may vest earlier. In September 2015, the VPR program was granted regulatory approval by the Securities Exchange Commission (SEC). Pursuant to the terms of the VPR program, subscribers became entitled to immediate economic participation in BOX for VPRs held.

As of July 1, 2016, we determined that we did not hold majority voting power on the board of directors as Class C units in certain vested VPRs became entitled to vote at board meetings. As of this date, we no longer consolidated BOX as we ceased to hold the majority of voting power on the board of directors and exercise control. As a result our financial results from July 1, 2016 forward do not include the results of BOX other than our share of BOX’s net income (loss), which is reflected in Share of net income (loss) from equity accounted investees. For periods prior to July 1, 2016 our financial results include the results from BOX on a consolidated basis.

Effective July 1, 2016, Derivatives revenue also includes revenue from licensing SOLA technology and providing other services to BOX. This revenue was previously eliminated when BOX’s operating results were consolidated in our financial statements.
The information below reflects the financial statements of TMX Group for the year ended December 31, 2016 compared with the year ended December 31, 2015.

<table>
<thead>
<tr>
<th>(in millions of dollars, except per share amounts)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ increase/(decrease)</th>
<th>% increase/(decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>742.0</td>
<td>717.0</td>
<td>25.0</td>
<td>3%</td>
</tr>
<tr>
<td>Operating expenses before strategic re-alignment expenses</td>
<td>422.7</td>
<td>449.6</td>
<td>(26.9)</td>
<td>(6)%</td>
</tr>
<tr>
<td>Income from operations before strategic re-alignment expenses(^8)</td>
<td>319.3</td>
<td>267.4</td>
<td>51.9</td>
<td>19%</td>
</tr>
<tr>
<td>Strategic re-alignment expenses</td>
<td>21.0</td>
<td>22.7</td>
<td>(1.7)</td>
<td>(7)%</td>
</tr>
<tr>
<td>Income from operations(^9)</td>
<td>298.3</td>
<td>244.7</td>
<td>53.6</td>
<td>22%</td>
</tr>
<tr>
<td>Net income/(loss) attributable to TMX Group shareholders</td>
<td>196.4</td>
<td>(52.3)</td>
<td>248.7</td>
<td>n/a</td>
</tr>
<tr>
<td>Earnings/(loss) per share(^10)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic</td>
<td>3.60</td>
<td>(0.96)</td>
<td>4.56</td>
<td>n/a</td>
</tr>
<tr>
<td>Diluted</td>
<td>3.58</td>
<td>(0.96)</td>
<td>4.54</td>
<td>n/a</td>
</tr>
<tr>
<td>Adjusted Earnings per share(^11)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic</td>
<td>4.49</td>
<td>3.64</td>
<td>0.85</td>
<td>23%</td>
</tr>
<tr>
<td>Diluted</td>
<td>4.47</td>
<td>3.64</td>
<td>0.83</td>
<td>23%</td>
</tr>
<tr>
<td>Cash flows from operating activities</td>
<td>314.4</td>
<td>250.3</td>
<td>64.1</td>
<td>26%</td>
</tr>
</tbody>
</table>

**Net income attributable to TMX Group shareholders**

Net income attributable to TMX Group shareholders in 2016 was $196.4 million, or $3.60 per common share on a basic basis and $3.58 per common share on a diluted basis, compared with a net loss of $52.3 million, or $0.96 per common share on a basic and diluted basis, for 2015. In 2015, there was a net loss attributable to TMX Group shareholders driven by non-cash impairment charges related to Capital Formation (Listings), Equity Trading and Derivatives (BOX) and other assets of $221.7 million ($200.0 million after tax, net of NCI). In 2016, we recorded impairment charges of $8.9 million ($8.9 million after tax) relating to TMX Atrium and AgrisClear. The increase in net income in 2016 over 2015 also reflected higher revenue, lower operating expenses before strategic re-alignment expenses and slightly lower strategic re-alignment expenses. During 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 whereas in 2015 we recorded a similar non-cash income tax adjustment of approximately $7.1 million relating to a change in the Alberta corporate income tax rate, which increased income tax expense. In addition, we incurred lower net finance costs in 2016 compared with 2015.

\(^8\) See discussion under the heading "Additional IFRS Financial Measures".

\(^9\) See discussion under the heading "Additional IFRS Financial Measures".

\(^10\) Earnings per share information is based on net income attributable to TMX Group shareholders.

\(^11\) See discussion under the heading "Non-IFRS Financial Measures".
Adjusted Earnings per Share Reconciliation for the Year ended December 31, 2016 and Year ended December 31, 2015  

The following is a reconciliation of earnings per share to adjusted earnings per share:

<table>
<thead>
<tr>
<th>(unaudited)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Basic</td>
<td>Diluted</td>
</tr>
<tr>
<td>Earnings/(loss) per share</td>
<td>$3.60</td>
<td>$3.58</td>
</tr>
<tr>
<td>Adjustments related to:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amortization of intangibles related to acquisitions</td>
<td>0.51</td>
<td>0.51</td>
</tr>
<tr>
<td>Strategic re-alignment expenses</td>
<td>0.28</td>
<td>0.28</td>
</tr>
<tr>
<td>Non-cash impairment charges</td>
<td>0.16</td>
<td>0.16</td>
</tr>
<tr>
<td>(Decrease) increase in net deferred income tax liabilities resulting from changes to Quebec and Alberta corporate income tax rates</td>
<td>(0.06)</td>
<td>(0.06)</td>
</tr>
<tr>
<td>Adjusted earnings per share</td>
<td>$4.49</td>
<td>$4.47</td>
</tr>
<tr>
<td>Weighted average number of common shares outstanding</td>
<td>54,616,160</td>
<td>54,810,538</td>
</tr>
</tbody>
</table>

Adjusted diluted earnings per share increased by 23% from $3.64 in 2015 to $4.47 in 2016. The increase in adjusted diluted earnings per share reflected higher revenue and lower operating expenses, before strategic re-alignment expenses, excluding amortization of intangibles related to acquisitions. In addition, we incurred lower net finance costs in 2016 compared with 2015.

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12 Adjusted earnings per shares is a non-IFRS measure. See discussion under the heading "Non-IFRS Financial Measures". Earnings per share information is based on net income attributable to TMX Group shareholders.
Revenue

In 2015, we undertook a strategic realignment of our operations and revised our reporting segments information for the year ended December 31, 2015. In Q4/16 we further revised operations and our reporting for our Efficient Markets operating segment. This segment has been separated into Equities and Fixed Income Trading and Clearing and Energy Trading and Clearing. Effective Q4 2016, we now report revenue in the following categories:

- Capital formation
- Equity and Fixed Income Trading and Clearing
- Derivatives Trading and Clearing
- Energy Trading and Clearing
- Market insights
- Other (includes Market Solutions, which was previously reported with Efficient Markets)

Results for the year ended December 31, 2015 have been restated to conform to this new structure.

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ increase/ (decrease)</th>
<th>% increase/ (decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Formation</td>
<td>182.9</td>
<td>179.8</td>
<td>3.1</td>
<td>2%</td>
</tr>
<tr>
<td>Equities and Fixed Income Trading and Clearing</td>
<td>173.5</td>
<td>156.7</td>
<td>16.8</td>
<td>11%</td>
</tr>
<tr>
<td>Derivatives Trading and Clearing</td>
<td>117.5</td>
<td>104.5</td>
<td>13.0</td>
<td>12%</td>
</tr>
<tr>
<td>Energy Trading and Clearing</td>
<td>55.7</td>
<td>52.3</td>
<td>3.4</td>
<td>7%</td>
</tr>
<tr>
<td>Market Insights</td>
<td>$211.0</td>
<td>212.8</td>
<td>(1.8)</td>
<td>(1)%</td>
</tr>
<tr>
<td>Other</td>
<td>$1.4</td>
<td>10.9</td>
<td>(9.5)</td>
<td>(87)%</td>
</tr>
<tr>
<td></td>
<td>$742.0</td>
<td>$717.0</td>
<td>$25.0</td>
<td>3%</td>
</tr>
</tbody>
</table>

Revenue was $742.0 million in 2016, up $25.0 million or 3% compared with $717.0 millions in 2015. There were increases in all revenue categories with the exception of Market Insights and Other revenue. Market Insights revenue was reduced by a $12.2 million decline in revenue from Razor Risk. The decrease in Other revenue was primarily due to recognizing net foreign exchange losses on U.S. dollar and other non-Canadian denominated net monetary assets in 2016 compared with net foreign exchange gains in 2015. The net unfavourable impact from 2015 to 2016 was approximately $9 million. Partially offsetting this, there was a favourable impact of approximately $5 million from a weaker Canadian dollar relative to other currencies, including the U.S. dollar, in 2016 versus 2015. The net unfavourable impact of these two foreign exchange items was approximately $4 million.
Capital Formation

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ increase/ (decrease)</th>
<th>% increase/ (decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial listing fees</td>
<td>$8.7</td>
<td>$9.2</td>
<td>$(0.5)</td>
<td>(5)%</td>
</tr>
<tr>
<td>Additional listing fees</td>
<td>90.1</td>
<td>77.2</td>
<td>12.9</td>
<td>17%</td>
</tr>
<tr>
<td>Sustaining listing fees</td>
<td>65.6</td>
<td>70.0</td>
<td>(4.4)</td>
<td>(6)%</td>
</tr>
<tr>
<td>Other issuer services</td>
<td>18.5</td>
<td>23.4</td>
<td>(4.9)</td>
<td>(21)%</td>
</tr>
<tr>
<td></td>
<td>$182.9</td>
<td>$179.8</td>
<td>$3.1</td>
<td>2%</td>
</tr>
</tbody>
</table>

- **Initial listing fees** on TSX and TSXV for 2016 were lower than in 2015 reflecting a decrease in amount of IPO financing dollars raised.

- **Additional listing fees** in 2016 increased from 2015 reflecting a 9% increase in the number of transactions billed on TSX. In addition, there was an increase in additional listing fees on TSXV reflecting a significant increase in the total number of financings and the total amount of financing dollars raised in 2016 compared with 2015. The increase in additional listing fee revenue was also attributable to the favourable impact from an increase in the maximum additional listing fee on TSX effective February 1, 2016.

- 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 a decrease in sustaining listing fees on both TSX and TSXV due to a decrease in the number and market capitalization of issuers at December 31, 2015 compared with December 31, 2014.

- **Other issuer services** revenue in 2016 was lower compared to 2015 reflecting the loss of revenue from Equicom, which was sold in July 2015.

Equities and Fixed Income Trading and Clearing

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ increase</th>
<th>% increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equities and fixed income trading</td>
<td>$102.3</td>
<td>$86.5</td>
<td>$15.8</td>
<td>18%</td>
</tr>
<tr>
<td>Equities and fixed income clearing, settlement, depository and other services (CDS)</td>
<td>71.2</td>
<td>70.2</td>
<td>1.0</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>$173.5</td>
<td>$156.7</td>
<td>$16.8</td>
<td>11%</td>
</tr>
</tbody>
</table>

- There was an increase in both equities and fixed income trading revenue in 2016 compared with 2015. The overall volume of securities traded on our equities marketplaces increased by 14% (149.7 billion securities in 2016 versus 131.0 billion securities in 2015). Volumes on TSX increased by 17% in 2016 compared with 2015 and volumes on TSXV increased by 33% over the same period. The shutdown of TMX Select and loss of revenue partially offset the positive impact from higher volumes on TSX and TSXV. The increase in equity trading revenue on Alpha was driven by price changes effective Q4/15, partially offset by the impact from a decline in volume of 19% on Alpha from 2015 to 2016. The increase in revenue was also attributable to the impact of a higher average fee on TSX and TSXV. The higher fixed income trading revenue reflected increased activity in provincial and Government of Canada Bonds and swaps.
• Excluding intentional crosses, our combined domestic equities trading market share was 69% in 2016, down from 74% in 2015. The decline in market share is attributable to the shutdown of TMX Select and the re-launch of Alpha as an unprotected marketplace in Q3/15 as well as an increase in trading volume of issues not listed on TSX or TSXV.

• CDS revenue increased by 1% from 2015 to 2016 reflecting an increase in clearing, settlement and international revenue, somewhat offset by the impact from higher rebates and lower depository revenue.

### Derivatives Trading and Clearing

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ increase</th>
<th>% increase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$117.5</td>
<td>$104.5</td>
<td>$13.0</td>
<td>12%</td>
</tr>
</tbody>
</table>

• The increase in Derivatives revenue primarily reflects higher revenue from MX where the impact of increased volumes was somewhat offset by the impact of a lower average fee. Volumes increased by 20% on MX (91.9 million contracts traded in 2016 versus 76.7 million contracts traded in 2015).

• The increase in revenue was partially offset by the impact from excluding revenue from BOX effective July 1, 2016 when we ceased to consolidate BOX’s results from operations. Partially offsetting this decrease, also effective July 1, 2016, Derivatives revenue includes revenue from licensing SOLA technology and providing other services to BOX. This revenue was previously eliminated when BOX’s operating results were consolidated in our financial statements. The net reduction in Derivatives revenue related to BOX from the second half of 2015 to the second half of 2016 was $5.8 million.

### Energy Trading and Clearing

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ increase</th>
<th>% increase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$55.7</td>
<td>$52.3</td>
<td>$3.4</td>
<td>7%</td>
</tr>
</tbody>
</table>

• The increase in energy trading and clearing revenue reflected higher revenue from NGX attributable to higher volumes somewhat offset by slightly lower revenue from Shorcan Energy Brokers. Total energy volumes were 12% higher compared with 2015 at NGX (13.85 million terajoules in the 2016 compared with 12.42 million terajoules in 2015). Natural gas volumes increased as market participants took advantage of volatile prices and moved to term activity. Power volumes increased as a result of the impact of a marketing program implemented in U.S. markets and greater activity in term contracts due to market conditions. Partially offsetting the positive impact from increased total energy volumes for NGX, there was a significant increase in deferred revenue from 2015 to 2016 reflecting market conditions that drove participants’ behavior towards longer-term contracts. Overall, there was a positive impact from a weaker Canadian dollar relative to the U.S. dollar in 2016 compared with 2015 on the revenues of NGX and Shorcan Energy Brokers.

---

13 Source: IIROC
### Market Insights

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ (decrease)</th>
<th>% (decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td>211.0</td>
<td>212.8</td>
<td>(1.8)</td>
<td>(1)%</td>
<td></td>
</tr>
</tbody>
</table>

- The decrease in *Market Insights* revenue reflected a decline of $12.2 million in revenue from Razor Risk. Partially offsetting this decrease, there was an increase in revenue from TMX Atrium Wireless as well as higher revenue recoveries of approximately $4.4 million related to under-reported usage of real-time quotes in prior periods and increased revenue from indices. There was also a positive impact on *Market Insights* revenue from a weaker Canadian dollar relative to the U.S. dollar in 2016 compared with 2015.

- The average number of professional market data subscriptions for TSX and TSXV products decreased by 6% from 2015 to 2016 (105,629 professional market data subscriptions in 2016 compared with 112,180 in 2015).

- The average number of MX professional market data subscriptions decreased by 2% from 2015 to 2016 (18,681 MX professional market data subscriptions in 2016 compared with 19,127 in 2015).

### Other

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ (decrease)</th>
<th>% (decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.4</td>
<td>10.9</td>
<td>(9.5)</td>
<td>(87)%</td>
<td></td>
</tr>
</tbody>
</table>

- The decrease in *Other* revenue was primarily due to recognizing net foreign exchange losses on U.S. dollar and other non-Canadian denominated net monetary assets in 2016 compared with net foreign exchange gains in 2015. The net unfavourable impact from 2015 to 2016 was approximately $9 million.
Operating expenses before strategic re-alignment expenses

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ (decrease)</th>
<th>% (decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation and benefits</td>
<td>$204.4</td>
<td>$219.2</td>
<td>$(14.8)</td>
<td>(7)%</td>
</tr>
<tr>
<td>Information and trading systems</td>
<td>74.2</td>
<td>77.2</td>
<td>(3.0)</td>
<td>(4)%</td>
</tr>
<tr>
<td>Selling, general and administration</td>
<td>82.9</td>
<td>84.2</td>
<td>(1.3)</td>
<td>(2)%</td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>61.2</td>
<td>69.0</td>
<td>(7.8)</td>
<td>(11)%</td>
</tr>
<tr>
<td></td>
<td>$422.7</td>
<td>$449.6</td>
<td>$(26.9)</td>
<td>(6)%</td>
</tr>
</tbody>
</table>

Operating expenses before strategic re-alignment expenses in 2016 were $422.7 million, down $26.9 million or 6%, from $449.6 million in 2015. There were reduced costs related to Razor Risk of approximately $15.5 million and overall lower headcount following our strategic re-alignment initiative. In addition, there were lower operating expenses related to circuits, infrastructure, projects and occupancy as well as Depreciation and Amortization. Effective July 1, 2016, we excluded operating expenses related to BOX when we ceased to consolidate BOX’s results from operations, and there was a decrease in Equicom costs (sold July 2015). The decreases in costs were partially offset by the write-off of $2.6 million in costs related to discontinued products, higher employee performance incentive plan costs and a lower capitalization of labour costs. There was also an unfavourable impact from a weaker Canadian dollar relative to other currencies, including the U.S. dollar, in 2016 versus 2015. The impact was approximately $1 million.

Compensation and benefits

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ (decrease)</th>
<th>% (decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$204.4</td>
<td>$219.2</td>
<td>$(14.8)</td>
<td>(7)%</td>
</tr>
</tbody>
</table>

- Compensation and benefits costs decreased in 2016 compared with 2015 reflecting reduced costs related to Razor Risk of approximately $13.2 million, lower overall headcount costs, a reduction in Equicom costs (sold in July 2015) and the exclusion of BOX costs effective July 1, 2016 when we ceased to consolidate BOX’s results from operations.
- These decreases were partially offset by higher employee performance incentive plan costs and a lower capitalization of labour costs in 2016 compared with 2015.
- There were 1,075 TMX Group employees at December 31, 2016 versus 1,187 employees at December 31, 2015 reflecting both a reduction in headcount due to the our strategic realignment initiative and the sale of Razor Risk, which employed approximately 30 people.
Information and trading systems

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ (decrease)</th>
<th>% (decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$74.2</td>
<td>$77.2</td>
<td>$(3.0)</td>
<td>(4)%</td>
</tr>
</tbody>
</table>

- **Information and trading systems** expenses decreased in 2016 compared with 2015. The decrease reflected lower circuits infrastructure, projects and Razor Risk costs as well as the exclusion of BOX costs effective July 1, 2016 when we ceased to consolidate BOX’s results from operations.

- The lower costs were somewhat offset by the write-off of $2.6 million in costs related to discontinued products and higher revenue-related costs in NGX.

Selling, general and administration

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ (decrease)</th>
<th>% (decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$82.9</td>
<td>$84.2</td>
<td>$(1.3)</td>
<td>(2)%</td>
</tr>
</tbody>
</table>

- **Selling, general and administration** expenses decreased in 2016 compared with 2015 reflecting lower occupancy costs and lower bad debt expense. There was also a reduction in Equicom costs (sold in July 2015) and Razor Risk costs. In addition, expenses related to BOX were excluded effective July 1, 2016 when we ceased to consolidate BOX’s results from operations.

- There were several items that partially offset the decreases in costs including an increase in marketing expenses as well as external fees mainly related to clearing house platform consolidation. In addition, during the first six months ended June 30, 2015, there was a non-recurring reduction in costs related to BOX.

Depreciation and amortization

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ (decrease)</th>
<th>% (decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$61.2</td>
<td>$69.0</td>
<td>$(7.8)</td>
<td>(11)%</td>
</tr>
</tbody>
</table>

- Lower **Depreciation and amortization** costs reflected a reduction in amortization related to BOX effective July 1, 2016 when we ceased to consolidate BOX’s results from operations and to intangible assets that were fully amortized.

- The **Depreciation and amortization** costs in 2016 of $61.2 million included $34.8 million ($34.3 million, net of non-controlling interests (NCI) for the six months ended June 30, 2016) related to amortization of intangibles related to acquisitions (51 cents per basic and diluted share). The **Depreciation and amortization** costs in 2015 of $69.0 million included $36.8 million ($35.5 million, net of non-controlling interests (NCI)) related to amortization of intangibles related to acquisitions (50 cents per basic and diluted share).
Strategic re-alignment expenses

<table>
<thead>
<tr>
<th>(in millions of dollars, except per share amounts) (unaudited)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-tax Amount</td>
<td>Basic and Diluted Earnings per Share Impact&lt;sup&gt;14&lt;/sup&gt;</td>
</tr>
<tr>
<td>Severance and related costs</td>
<td>$18.3</td>
<td>$0.24</td>
</tr>
<tr>
<td>Professional and consulting fees and other charges</td>
<td>2.7</td>
<td>0.04</td>
</tr>
<tr>
<td>Strategic re-alignment expenses</td>
<td>$21.0</td>
<td>$0.28</td>
</tr>
</tbody>
</table>

The decrease in strategic re-alignment expenses from 2015 to 2016 reflected a decrease in amounts paid to consultants and $0.7 million of exit costs related to the sale of Equicom in 2015. Severance costs in 2016 relate to the initiative we announced in September 2016 (See UPDATE ON INITIATIVES AND REGULATORY CHANGES - Organizational Transformation including Business Integration Initiative).

Additional Information

Impairment charges (Also see CRITICAL ACCOUNTING ESTIMATES)

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ (decrease)</th>
<th>% (decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$8.9</td>
<td>$221.7</td>
<td>$(212.8)</td>
<td>(96)%</td>
</tr>
</tbody>
</table>

- In Q4/16 we determined that the fair value of TMX Atrium and AgriClear were below their carrying value, resulting in impairment charges of $8.9 million.
- In accounting for the Maple Transaction, all of our assets were recorded based on their estimated fair value in Q3/12, resulting in a significant amount of goodwill and intangible assets being recognized at the time. As a result of annual testing of intangibles and goodwill in Q4/15 we determined that Capital Formation (Listings), Equities trading, Derivatives (BOX) and other assets had recoverable amounts less than their carrying amounts. In Q4/15 we recognized a non-cash impairment charge of $215.8 million ($3.57 per basic and diluted share) related to goodwill and intangibles assets.
- In Q2/15, we determined that Equicom and ir2020 had recoverable amounts that were less than their carrying amounts. As a result, we recognized a non-cash impairment charge of $5.9 million (10 cents per basic and diluted share) related to goodwill for those assets.

<sup>14</sup> Earnings per share information is based on net income attributable to TMX Group shareholders.
<sup>15</sup> Earnings per share information is based on net income attributable to TMX Group shareholders.
Net finance costs

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ (decrease)</th>
<th>% (decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$30.9</td>
<td>$37.3</td>
<td>$(6.4)</td>
<td>(17)%</td>
</tr>
</tbody>
</table>

- The decrease in net finance costs is primarily attributable to net foreign exchange gains on U.S dollar Commercial Paper loans in 2016 compared with net foreign exchange losses on this debt in 2015. The decrease was also due to lower interest rates and reduced levels of debt.

Income tax expense and effective tax rate

<table>
<thead>
<tr>
<th>Income Tax Expense (in millions of dollars)</th>
<th>Effective Tax Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year ended December 31, 2016</td>
<td>Year ended December 31, 2015</td>
</tr>
<tr>
<td>$65.8</td>
<td>$57.0</td>
</tr>
</tbody>
</table>

- Excluding adjustments, primarily relating to the items noted below, the effective tax rate would have been approximately 27% for both 2016 and 2015.

2016

- In Q4/16, the Quebec corporate income tax rate decreased from 11.9% to 11.5% (over four years) effective January 1 of each year, starting January 1, 2017. As a result of this change, there was a decrease in the value of net deferred income tax liabilities and a corresponding non-cash net decrease in deferred income tax expense of approximately $3.2 million.

- In Q4/16, we incurred non-cash impairment charges of $8.9 million as well as a loss on the sale of Razor Risk of $0.8 million. On a net basis, the related tax impact increased our effective tax rate for Q4/16.

- In Q3/16, we recorded non-cash income tax adjustments of approximately $2.0 million (net) largely related to the deconsolidation of results from BOX, which reduced income tax expense.

2015

- In Q2/15 and Q4/15 we incurred non-cash impairment charges of $5.9 million and $215.8 million, respectively. On a net basis, the related tax impact increased our effective tax rate for 2015.

- In Q3/15, we recognized a non-cash income tax adjustment of $1.6 million related to BOX, which increased income tax expense.

- In Q2/15, the Alberta corporate income tax rate increased from 10% to 12%, effective July 1, 2015. As a result of this change, there was an increase in the value of net deferred income tax liabilities and a corresponding non-cash net increase in deferred income tax expense of $7.1 million for Q2/15.
Net loss attributable to non-controlling interests

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ (decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$0.7</td>
<td>$16.2</td>
<td>$(15.5)</td>
</tr>
</tbody>
</table>

- As of July 1, 2016, we no longer consolidated BOX as we ceased to hold the majority of voting power on the board of directors and exercise control. As a result our financial results from July 1, 2016 forward do not include the results of BOX, and our share of BOX's net income (loss), is reflected in Net income from equity accounted investees in our financial statements.

- For periods prior to July 1, 2016 our financial results include the results from BOX on a consolidated basis and we reported the net income (loss) attributable to non-controlling interests. There was a higher net loss attributable to non-controlling interests in the six months ended June 30, 2016 compared with the twelve months ended December 31, 2015 reflecting a non-recurring reduction in costs in Q1/15.

Total equity attributable to shareholders of TMX Group

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>As at December 31, 2016</th>
<th>As at December 31, 2015</th>
<th>$ increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total equity attributable to shareholders of TMX Group</td>
<td>$2,920.7</td>
<td>$2,788.0</td>
<td>$132.7</td>
</tr>
</tbody>
</table>

- At December 31, 2016, there were 55,021,569 common shares issued and outstanding and 1,734,569 options outstanding under the share option plan.

- At February 10, 2017, there were 55,037,314 common shares issued and outstanding and 1,703,287 options outstanding under the share option plan.

- The increase in Total equity attributable to shareholders of TMX Group is primarily attributable to the inclusion of net income of $196.4 million less dividend payments to shareholders of TMX Group of $90.2 million.
Segments

The following information reflects TMX Group’s financial statements for the year ended December 31, 2016 compared with the year ended December 31, 2015.

**Year ended December 31, 2016**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue from external customers</td>
<td>$ 182.9</td>
<td>$ 117.5</td>
<td>$ 173.5</td>
<td>$ 55.7</td>
<td>$ 211.0</td>
<td>$ 1.4</td>
<td>$ 742.0</td>
</tr>
<tr>
<td>Inter-segment revenue</td>
<td>—</td>
<td>—</td>
<td>1.8</td>
<td>—</td>
<td>1.8</td>
<td>(3.6)</td>
<td>—</td>
</tr>
<tr>
<td><strong>Total revenue</strong></td>
<td>182.9</td>
<td>117.5</td>
<td>175.3</td>
<td>55.7</td>
<td>212.8</td>
<td>(2.2)</td>
<td>742.0</td>
</tr>
<tr>
<td>Income (loss) from operations before strategic re-alignment expenses</td>
<td>113.6</td>
<td>46.0</td>
<td>75.2</td>
<td>17.4</td>
<td>110.9</td>
<td>(43.8)</td>
<td>319.3</td>
</tr>
</tbody>
</table>

**Year ended December 31, 2015**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue from external customers</td>
<td>$ 179.8</td>
<td>$ 104.5</td>
<td>$ 156.7</td>
<td>$ 52.3</td>
<td>$ 212.8</td>
<td>$ 10.9</td>
<td>$ 717.0</td>
</tr>
<tr>
<td>Inter-segment revenue</td>
<td>0.1</td>
<td>—</td>
<td>1.2</td>
<td>—</td>
<td>2.3</td>
<td>(3.6)</td>
<td>—</td>
</tr>
<tr>
<td><strong>Total revenue</strong></td>
<td>179.9</td>
<td>104.5</td>
<td>157.9</td>
<td>52.3</td>
<td>215.1</td>
<td>7.3</td>
<td>717.0</td>
</tr>
<tr>
<td>Income (loss) from operations before strategic re-alignment expenses</td>
<td>101.7</td>
<td>37.2</td>
<td>54.8</td>
<td>14.4</td>
<td>95.5</td>
<td>(36.2)</td>
<td>267.4</td>
</tr>
</tbody>
</table>

**Income (loss) from operations before strategic re-alignment expenses**

*Income from operations before strategic re-alignment expenses* from Capital Formation increased mainly due to lower costs as well as higher revenue from additional listing fees. The increase was somewhat offset by the impact from the sale of Equicom in July 2015.

The increase in income from operations before strategic re-alignment expenses from Equities and Fixed Income Trading and Clearing was mainly driven by higher revenue from Equities Trading reflecting an increase of 14% in the overall volume of securities traded on our equities marketplaces.

Income from operations before strategic re-alignment expenses from Derivatives increased mainly driven by higher revenue from MX reflecting a 20% increase in volumes, somewhat offset by the impact of a lower average fee. Income from operations before strategic re-alignment expenses from Derivatives also reflects the exclusion of revenue and expenses from BOX effective July 1, 2016 when we ceased to consolidate BOX’s results from operations. Also effective July 1, 2016, Derivatives revenue and expenses include revenue and expenses from licensing SOLA technology and providing other
services to BOX. This revenue and associated expense were previously eliminated when BOX's operating results were consolidated in our financial statements. The net reduction in Derivatives revenue related to BOX from the second half of 2015 to the second half of 2016 was $5.8 million.

The increase in income from operations before strategic re-alignment expenses from Energy Trading and Clearing was mainly driven by higher revenue reflecting an increase of 12% in total energy volumes. Partially offsetting the positive impact from increased total energy volumes for NGX, there was a significant increase in deferred revenue from 2015 to 2016.

Income from operations before strategic re-alignment expenses from Market Insights increased reflecting a decrease in the loss from Razor Risk. While revenue from Razor Risk declined by $12.2 million in 2016 compared with 2015, operating expenses before strategic re-alignment expenses decreased by $15.5 million from 2015 to 2016. There were also lower operating expenses before strategic re-alignment expenses in addition to those related to Razor Risk. There was an increase in revenue from TMX Atrium Wireless as well as higher revenue recoveries of approximately $4.4 million related to under-reported usage of real-time quotes in prior periods and increased revenue from indices. There was also a positive impact on Market Insights revenue from a weaker Canadian dollar relative to the U.S. dollar in 2016 compared with 2015. Offsetting the increases in Market Insights revenue there was an overall decline in subscription revenue in 2016 compared with 2015.

Other includes certain revenue as well as corporate and other costs related to initiatives, 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 before strategic re-alignment expenses for the Other segment was partially due to recognizing net foreign exchange losses on U.S. dollar and other non-Canadian denominated net monetary assets in 2016 compared with net foreign exchange gains over the same period in 2015. The net unfavourable impact of foreign exchange was approximately $9 million.

Geographical Information

The following information provides revenue by geography for the years ended December 31, 2016 and December 31, 2015.

<table>
<thead>
<tr>
<th>2016</th>
<th>(in millions of dollars)</th>
<th>Canada</th>
<th>U.S.</th>
<th>Other</th>
<th>TMX Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td></td>
<td>$526.2</td>
<td>$170.8</td>
<td>$45.0</td>
<td>$742.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2015</th>
<th>(in millions of dollars)</th>
<th>Canada</th>
<th>U.S.</th>
<th>Other</th>
<th>TMX Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td></td>
<td>$515.0</td>
<td>$150.4</td>
<td>$51.6</td>
<td>$717.0</td>
</tr>
</tbody>
</table>

Revenue is allocated based on the country to which customer invoiced are addressed.
LIQUIDITY AND CAPITAL RESOURCES

Summary of Cash Flows

Year ended December 31, 2016 compared with Year ended December 31, 2015

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Year ended December 31, 2016</th>
<th>Year ended December 31, 2015</th>
<th>$ increase in cash</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash flows from operating activities</td>
<td>$314.4</td>
<td>$250.3</td>
<td>$64.1</td>
</tr>
<tr>
<td>Cash flows (used in) financing activities</td>
<td>(207.3)</td>
<td>(292.1)</td>
<td>84.8</td>
</tr>
<tr>
<td>Cash flows (used in) investing activities</td>
<td>(18.3)</td>
<td>(23.0)</td>
<td>4.7</td>
</tr>
</tbody>
</table>

- The increase in Cash flows from operating activities in 2016 compared with 2015 was primarily due to increased income from operations (excluding depreciation and amortization). There was also a reduction in income taxes paid and an increase in cash related to other assets and liabilities. The increases in cash were partially offset by decreased cash from trade and other receivables, and prepaid expenses.

- In 2016, Cash flows used in financing activities were lower than in 2015 primarily due to lower net repayments on our debt (see Commercial Paper and Debentures) and higher proceeds from exercised options. These decreases in Cash flows used in financing activities were partially offset by an increase in dividends paid to equity holders.

- In 2016, there was a decrease in Cash flows used in investing activities compared with 2015 primarily reflecting a net purchase of marketable securities in 2015 compared with a net sale of marketable securities in 2016. In addition, there was a reduction in cash outlays for additions to premises and equipment and intangible assets in 2016 compared with 2015. These decreases in Cash flows used in investing activities were partially offset by decreases in cash from the de-consolidation of BOX effective July 1, 2016, lower dividends received and a decrease in cash related to other investing activities.

Summary of Cash Position and Other Matters

Cash, Cash Equivalents and Marketable Securities

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>As at December 31, 2016</th>
<th>As at December 31, 2015</th>
<th>$ increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash, Cash Equivalents and Marketable Securities</td>
<td>$302.4</td>
<td>$225.3</td>
<td>$77.1</td>
</tr>
</tbody>
</table>

We had $302.4 million of cash, cash equivalents and marketable securities at December 31, 2016. There was an increase in cash, cash equivalents and marketable securities primarily reflecting cash flows from operating activities of $314.4 million and proceeds from exercised options of $31.6 million. These increases in cash were offset by net debt repayments of approximately $115 million, dividends to TMX Group shareholders of $90.2 million, interest paid (net of interest received) of $29.6 million, additions to premises and equipment and intangible assets of $13.5 million and the decrease in cash from the loss of control of BOX of $17.6 million. Based on our current business operations and model, we believe that we have sufficient cash resources 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 Amended and Restated Credit Agreement and commercial

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16 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.
As at December 31,

As at December 31,

$22,201.4

$17,017.4

$5,184.0

Total Assets

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>As at December 31, 2016</th>
<th>As at December 31, 2015</th>
<th>$ increase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$22,201.4</td>
<td>$17,017.4</td>
<td>$5,184.0</td>
</tr>
</tbody>
</table>

- Our consolidated balance sheet as at December 31, 2016 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 $5,184.0 million from 2015 to 2016 was largely attributable to the significant increase in clearing of REPO agreements by CDCC in 2016 compared with 2015. Balances with Clearing Members and Participants relating to CDCC were $14,741.3 million at December 31, 2016 compared with $10,731.9 million at December 31, 2015.

Defined Benefit Pension Plan

Based on the most recent actuarial valuations, we estimate a deficit of approximately $11.3 million of which $4.7 million was funded in 2016. The next tri-annual valuation for the TMX RPP will be as at December 31, 2016.

Commercial Paper, Debentures, Credit and Liquidity Facilities

**Commercial Paper**

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>As at December 31, 2016</th>
<th>As at December 31, 2015</th>
<th>$ increase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$309.9</td>
<td>$74.3</td>
<td>$235.6</td>
</tr>
</tbody>
</table>

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 100% backstopped by a credit agreement with a syndicate of lenders. On May 4, 2016 both the Credit Agreement and the authorized amount under the Commercial Paper Program increased from $400.0 million to $500.0 million.

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).

17 “The Commercial Paper, Debentures, Credit and Liquidity Facilities” section above contain certain forward-looking statements. Please refer to “Caution Regarding Forward-Looking Information” for a discussion of risks and uncertainties related to such statements.
There was $309.9 million outstanding under the program at December 31, 2016 reflecting net issuance in 2016 of approximately $235.6 million. The increase in Commercial Paper outstanding is a result of the issuance of Commercial Paper used to partially re-finance the Series C debenture that matured in 2016. The Commercial Paper outstanding at December 31, 2016 included approximately $289.8 million issued in Canadian dollars and approximately $15.0 million issued in U.S dollars. Commercial paper is short term in nature, and the average term to maturity from the date of issue in Q4/16 was 57.9 days on Canadian dollar Commercial Paper and 31.2 days on U.S.-dollar Commercial Paper. When the program commenced in June 2014, the net cash proceeds from the initial issuance were used to pay down loans under a credit facility. The Commercial Paper Program may also be used for general corporate purposes.

Debentures

TMX Group has the following Debentures outstanding:

<table>
<thead>
<tr>
<th>Debenture</th>
<th>Principal Amount ($ millions)</th>
<th>Coupon</th>
<th>Maturity Date</th>
<th>DBRS Credit Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series A</td>
<td>$400.0</td>
<td>3.253% per annum, payable in arrears in equal semi-annual installments (long first coupon)</td>
<td>October 3, 2018</td>
<td>A (high)</td>
</tr>
<tr>
<td>Series B</td>
<td>250.0</td>
<td>4.461% per annum, payable in arrears in equal semi-annual installments (long first coupon)</td>
<td>October 3, 2023</td>
<td>A (high)</td>
</tr>
</tbody>
</table>

- The Series A and Series B Debentures may be redeemed, at the option of TMX Group, in whole or in part at the redemption price 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 to the date fixed for redemption, together with accrued and unpaid interest to the date fixed for redemption. For the Series B Debentures, if redeemed on or after the date that is three months prior to the maturity date of such series, the redemption price is equal to 100% of the aggregate principal amount outstanding on the Series B Debentures redeemed, together with accrued and unpaid interest to the date fixed for redemption.

- The trust indentures governing the Debentures (the Trust Indentures) include the following covenants:
  - 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.
  - Limitation on indebtedness of material subsidiaries of TMX Group – the Trust Indentures impose restrictions on the ability of material subsidiaries to enter into certain types of indebtedness.
  - Repurchase on change of control of TSX Inc. or MX coupled with a triggering event – in the event of a change of control (as such term is defined in the Trust Indentures) of either TSX Inc. or MX and 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.
As at December 31,

| (in millions of dollars) | As at December 31, 2016 | As at December 31, 2015 | $ increase/
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>(decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Debentures</td>
<td>$0.0</td>
<td>$349.7</td>
<td>($349.7)</td>
</tr>
<tr>
<td>Non-current Debentures</td>
<td>648.7</td>
<td>648.2</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>$648.7</td>
<td>$997.9</td>
<td>($349.2)</td>
</tr>
</tbody>
</table>

• Our Series C Debentures in the amount of $350.0 million matured and were repaid on October 3, 2016. We partially re-financed the Debentures with proceeds from our Commercial Paper program and repaid the remainder with cash on hand.

• There was a reclassification of our Series C Debentures (due October 3, 2016) from non-current liabilities to current liabilities in 2015.

Credit Facility

In 2014, TMX Group entered into a Credit Agreement with a syndicate of lenders establishing a Credit Facility to provide a 100% backstop to the Commercial Paper Program. It is also available for general corporate purposes. The original amount available under the TMX Group credit facility was $400.0 million, or USD equivalent, less the amount of: (i) Commercial Paper outstanding and (ii) inter-company notes payable outstanding to NGX, CDS and CDCC.

On May 2, 2016, we entered into an Amended and Restated Credit Agreement which has a maturity date of May 2, 2019. The new facility for $500.0 million, or USD equivalent, replaces the $400.0 million Credit Agreement described above, which had a maturity date of August 1, 2016. The amount available under this facility is also reduced by the amount of Commercial Paper outstanding and the above-mentioned inter-company notes payable outstanding. In addition to extending the maturity date of the facility and increasing the size, certain terms of the credit agreement were also amended including less restrictive financial covenants as described below:

• an Interest Coverage Ratio of more than 4.0:1, where Interest Coverage Ratio at any time 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:
  • 4.0:1 from May 2, 2016 until December 31, 2016;
  • 3.75:1 on and after January 1, 2017 until December 31, 2017;
  • 3.5:1 on January 1, 2018 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, 2016, all covenants were met under the Amended and Restated Credit Agreement.

The following table summarizes the Applicable Rates and Fee Rates and corresponding Total Leverage Ratios under the Amended and Restated 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

<table>
<thead>
<tr>
<th>Total Leverage Ratio (x)</th>
<th>Standby</th>
<th>Prime Rate Loans and US Base Rate Loans</th>
<th>BA/ Libor / LC</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 2.0</td>
<td>21.5 bps</td>
<td>7.5 bps</td>
<td>107.50 bps</td>
</tr>
<tr>
<td>&gt; 2.0 and ≤ 2.5</td>
<td>24.5 bps</td>
<td>22.5 bps</td>
<td>122.5 bps</td>
</tr>
<tr>
<td>&gt; 2.5 and ≤ 3.0</td>
<td>27.5 bps</td>
<td>37.5 bps</td>
<td>137.5 bps</td>
</tr>
<tr>
<td>&gt; 3.0 and ≤ 3.5</td>
<td>32.5 bps</td>
<td>62.5 bps</td>
<td>162.5 bps</td>
</tr>
<tr>
<td>&gt; 3.5</td>
<td>37.5 bps</td>
<td>87.5 bps</td>
<td>187.5 bps</td>
</tr>
</tbody>
</table>

Interest Rate Swaps (IRS)

As at December 31, 2016 we have the following IRS in place:

<table>
<thead>
<tr>
<th>Interest Rate</th>
<th>Maturity Date</th>
<th>Principal (in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.08%</td>
<td>May 2, 2019</td>
<td>$100.0</td>
</tr>
</tbody>
</table>

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, 2016 for the Debentures and Commercial Paper are shown below:

<table>
<thead>
<tr>
<th>Debentures and Commercial Paper</th>
<th>Principal ($ millions)</th>
<th>Maturity</th>
<th>All-in Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series A Debentures</td>
<td>$400.0</td>
<td>Oct. 3, 2018</td>
<td>3.253%</td>
</tr>
<tr>
<td>Series B Debentures</td>
<td>250.0</td>
<td>Oct. 3, 2023</td>
<td>4.461%</td>
</tr>
<tr>
<td>Commercial Paper, CAD - hedged</td>
<td>100.0</td>
<td>May 2, 2019</td>
<td>1.08%18</td>
</tr>
<tr>
<td>Commercial Paper, CAD - unhedged</td>
<td>189.7</td>
<td>Jan. 3 - Mar. 14, 2017</td>
<td>0.91%19</td>
</tr>
<tr>
<td>Commercial Paper, USD - Unhedged</td>
<td>15.0</td>
<td>Jan. 19 - Feb. 9, 2017</td>
<td>0.81%20</td>
</tr>
</tbody>
</table>

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.

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18 Rate denoted in CAD.
19 Rate denoted in CAD.
20 Rate denoted in USD.
CDCC also maintains a 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. The size of this facility increased from $13,464.0 million of uncommitted liquidity to $13,638.0 million during the year ended December 31, 2016. Also, on February 6, 2017, we increased the size of the repurchase facility from $13,638.0 million to $13,788.0 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.

CDCC maintains a $300.0 million 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. 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, 2016, CDCC had drawn $2.5 million to facilitate a failed REPO settlement. The amount is fully offset by liquid securities included in cash and cash equivalents and was fully repaid subsequent to the reporting date. On March 3, 2017, TMX Group intends to extend the facility from March 3, 2017 to March 2, 2018.

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.

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. No amounts were drawn on these credit facilities as at December 31, 2016.

CDS also has a US$400.0 million or Canadian dollar equivalent secured standby credit agreement with a syndicate of banks 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 U.S. treasury 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 credit arrangement is the U.S. base rate or the Canadian prime rate. No amounts were drawn on these credit facilities as at December 31, 2016.

In addition, CDSC has signed agreements that would allow the Bank of Canada to provide emergency last-resort liquidity to CDSC at the discretion of the Bank of Canada. This liquidity facility is intended to provide end-of-day liquidity for payment obligations arising from CDSCX, and only in the event that CDSC 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.

In 2016, in compliance with the PFMs and additional Canadian regulatory and oversight guidance, CDSC Clearing, CDCC and NGX 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. In connection with the recovery plans, and if certain funding conditions are met, TMX Group agreed to provide certain limited financial support to CDSC Clearing and CDCC, if necessary, in the context of a recovery. TMX Group also provides a guarantee with respect to NGX’s backstop fund, which predates the adoption of the recovery plans (see below).

To backstop its clearing operations, NGX maintains a US$100.0 million credit agreement with a maturity date of December 23, 2017. A US$100.0 million letter of credit has been issued under this credit agreement and TMX Group Inc., a wholly-owned subsidiary of TMX Group maintains a guarantee in favor of the major Canadian chartered bank issuing the letter of credit.
NGX also has an Electronic Funds Transfer (EFT) Daylight liquidity facility of $300.0 million in place with a major Canadian chartered bank. In addition, a $20.0 million overdraft facility is in place with the same major Canadian chartered bank. This facility is only available to repay the Daylight liquidity facility on the business day following a settlement day.

AgriClear maintains a US$10.5 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, 2016, $0.1 million and US$9.2 million of letters of credit were outstanding. TMX Group has issued a US$10.5 million guarantee for this facility. AgriClear maintains an uncommitted credit agreement for $3.0 million and US$3.0 million. The borrowing rates for these facilities, if drawn, are the Canadian prime or the US prime rate, depending on the currency drawn. The facilities are to be used by AgriClear to support its settlement operations.

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**

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>Total</th>
<th>Less than 1 year</th>
<th>1 – 3 years</th>
<th>3– 5 years</th>
<th>5+ years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Paper</td>
<td>$309.9</td>
<td>$309.9 $</td>
<td>—</td>
<td>— $</td>
<td>— $</td>
</tr>
<tr>
<td>Debentures</td>
<td>656.0</td>
<td>6.0</td>
<td>400.0</td>
<td>—</td>
<td>250.0</td>
</tr>
<tr>
<td>Financial Lease Obligation</td>
<td>0.4</td>
<td>0.4</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Operating Leases</td>
<td>155.2</td>
<td>18.7</td>
<td>22.6</td>
<td>20.0</td>
<td>93.9</td>
</tr>
<tr>
<td>Clearing and Other Obligations$21</td>
<td>17,402.3</td>
<td>17,290.8</td>
<td>26.3</td>
<td>8.0</td>
<td>77.2</td>
</tr>
</tbody>
</table>

**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 $200.0 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;
- 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.

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$21 Clearing and Other Obligations includes fair value of open energy contracts, energy contracts payable, balances and cash collateral held with derivatives clearing members and balances with participants of CDS. There are offsetting assets in these clearing operations.
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 NGX, to:
  - maintain adequate financial resources as required by the Alberta Securities Commission;
  - maintain sufficient financial resources to cover 12 months of operating expenses as required by the U.S. Commodity Futures Trading Commission (“CFTC”); and
  - maintain sufficient financial resources to cover the failure of its single largest Contracting Party under extreme but plausible market conditions as required by the CFTC.

- 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 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 4.0:1; 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, 2016, we were in compliance with all of these externally imposed capital requirements. See Credit Facility in this MD&A for a description of the financial covenants imposed on us.

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. There were no unrealized or realized gains reflected in net income for the year ended December 31, 2016, compared with unrealized gains of $0.1 million and realized gains of $0.1 million for the year ended December 31, 2015.

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, 2016, we had restricted cash and cash equivalents of $66.0 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 a provision for that portion which may not be collectible.

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.

Securities held in custody by CDS for participants and associated non-cash entitlement transactions on these securities are not financial assets of the corporation nor do these transactions give rise to a contractual or constructive obligation. All cash dividends, interest, and other cash distributions received by the corporation on securities held in custody awaiting distribution are recognized as an asset and offsetting liability as these amounts are ultimately owed to participants.

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 Clearing Members and participants. 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

In February 2012, CDCC launched the clearing of 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.

NGX – Energy Contracts

The NGX clearing balances include the following:

- Energy contracts receivable and energy contracts payable -- These balances represent the amounts receivable and payable where physical delivery of energy trading contracts has occurred and/or settlement amounts have been determined but payments have not yet been made. There is no impact on the consolidated income statement as an equivalent amount is recognized in both the assets and the liabilities.

- Fair value of open energy contracts – These balances represent the fair value at the balance sheet date of the undelivered physically settled energy trading contracts and the forward cash settled energy trading contracts. Fair value is determined based on the difference between the trade price when the contract was entered into and the settlement price. The settlement price is a price designated by NGX for each trading instrument in each trading hub at market close and is used in conjunction with published market price bands. Depending on the term and type of instrument, some settlement prices can be derived from actual trading data from NGX’s trading system, basis values for NGX markets compared to NYMEX, daily market surveys and/or industry reports. There is no impact on the consolidated income statement as an equivalent amount is recognized in both the assets and the 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 – NGX, Other Market Price Risk – NGX, Market Risk - Foreign Currency Risk, Liquidity Risk - Fair value of open energy contracts and Energy contracts payable - NGX and Liquidity Risk - Credit and liquidity facilities - Clearing operations.

NGX Collateral Pledged

NGX requires each contracting party to provide sufficient collateral, in the form of cash or letters of credit, in excess of the outstanding credit exposure as determined by NGX in accordance with its margin methodology. The cash collateral deposits and letters of credit are held by a major Canadian chartered bank. The collateral may be accessed by NGX in the event of default by a contracting party. The collateral is not included on our consolidated balance sheet.

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 – NGX, Other Market Price Risk – NGX, Market Risk - Foreign Currency Risk, Liquidity Risk - Fair value of open energy contracts and Energy contracts payable - NGX 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.

In connection with the Amended and Restated Credit Agreement (see Credit Facility), we increased the authorized limit of the Commercial Paper program from $400.0 million to $500.0 million on May 4, 2016.

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 $400-million principal amount Series A Debentures with a 3.253% coupon and a five-year term and a $250-million Series B Debentures with a 4.461% 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.

On October 3, 2016, the Series C Debentures matured and were repaid with proceeds from our Commercial Paper program and cash on hand.

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, 2016, the fair value of the IRS was an asset of $0.1 million. There was a charge of $1.1 million to net income for the year ended December 31, 2016, representing the net amount of interest paid. 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.

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

CRITICAL ACCOUNTING ESTIMATES

Goodwill and Intangible Assets – Valuation and Impairment Testing

We recorded goodwill and intangible assets valued at $4,319.8 million as at December 31, 2016, down by $79.9 million from $4,399.7 million at December 31, 2015, largely reflecting non-cash impairment charges of $8.9 million, amortization of $47.8 million and adjustments related to the deconsolidation of BOX of $26.1 million. Management has determined that the testing for impairment for some of these 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 was an impairment loss related to goodwill and intangible assets of $8.9 million for the year ended December 31, 2016 (See Results of Operations - Impairment Charges).

Considerable judgement is required to evaluate the impact of operating performance and macroeconomic changes and to estimate cash flows. Disruptions to our business and economic weakness including a continued decline in the resource sector, could result in further impairment charges related to goodwill and intangible assets. A further significant impairment charge in the future could have a significant impact on our reported net income.

**Capital Formation – Listings**

In 2016, 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 4.5% reduction in the terminal growth rate, or a 18.3% decrease in cash flow.
Capital Markets - Equities Trading

In 2016, management updated its growth projections. Based on current assumptions, the recoverable amount for Equity Trading remains above carrying value, and as such no impairment has been identified.

While TMX Group’s market share of equity trading volume decreased to 69% in 2016 from 74% in 2015,22 overall, equities markets trading volumes on all TMX Group equity marketplaces (TSX, TSXV and Alpha) in 2016 increased by 14%23 compared with 2015.

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 5.7% increase in the pre-tax discount rate, a 10.9% reduction in the terminal growth rate, or a 30.4% decrease in cash flow.

Capital Markets - CDS

In 2016, 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 6.9% increase in the pre-tax discount rate, a 12.6% reduction in the terminal growth rate, or a 41.6% decrease in cash flow.

Market Insights - TMX Datalinx and TMX Analytics

In 2016, management updated its growth projections. Based on current assumptions, the recoverable amount for Market Insights 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 4.1% increase in the pre-tax discount rate, a 7.0% reduction in the terminal growth rate, or a 26.2% decrease in cash flow.

Market Insights - TMX Atrium

Based on current assumptions, the recoverable value of TMX Atrium was below carrying value and as such, the TMX Atrium CGU was impaired by $5.3 million.

Derivatives Trading and Clearing - MX/CDCC

In 2016, management updated its growth projections. Based on current assumptions, the recoverable amount for Derivatives remains above carrying value, and as such no impairment has been identified. Overall trading volume in Derivatives increased by 20% for the year ended December 31, 2016 compared to the prior year. 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 2.0% reduction in the terminal growth rate, or a 16.9% decrease in cash flow.

22 Source: IIROC (excluding intentional crosses)
23 Source: internal data
**Energy Trading and Clearing – NGX**

In 2016, management updated its growth projections, which included assumptions related to new business opportunities. The cash flow projections cover a period of five years. Based on current assumptions, the recoverable amount for NGX remains above carrying value, and as such no impairment has been identified. Total trading volume in *Energy* increased by 11% for the year ended December 31, 2016 compared to the prior year. Management has identified three key assumptions, the pre-tax discount rate, the terminal growth rate, and the cash flow projections, where it would be reasonably possible that an individual change could cause the carrying amount to exceed the recoverable amount. Changes in these assumptions that would cause the carrying value to equal the recoverable amount are a 2.4% increase in the pre-tax discount rate, a 4.0% reduction in the terminal growth rate, or a 15.9% decrease in cash flow.

**Market Solutions - AgriClear**

Launched in 2015, AgriClear is an online transaction platform and payment service for U.S. and Canadian cattle buyers and sellers. In 2016, management updated its growth projections for AgriClear as we re-assess the tactical plan for this business. Based on current assumptions, we have determined the recoverable value of AgriClear is below its carrying value and resulted in an impairment charge of of $3.6 million.
SELECT ANNUAL AND QUARTERLY FINANCIAL INFORMATION

Select Annual Information

<table>
<thead>
<tr>
<th>(in millions of dollars except per share amounts)</th>
<th>2016</th>
<th>2015</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$ 742.0</td>
<td>$ 717.0</td>
<td>$ 717.3</td>
</tr>
<tr>
<td>Net Income (loss) attributable to TMX Group shareholders</td>
<td>196.4</td>
<td>(52.3)</td>
<td>100.5</td>
</tr>
<tr>
<td>Total assets (as at December 31)</td>
<td>22,201.4</td>
<td>17,017.4</td>
<td>14,964.1</td>
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<tr>
<td>Non-current liabilities (as at December 31)</td>
<td>1,547.1</td>
<td>1,536.0</td>
<td>1,889.5</td>
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<tr>
<td>Earnings (loss) per share:24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic</td>
<td>3.60</td>
<td>(0.96)</td>
<td>1.85</td>
</tr>
<tr>
<td>Diluted</td>
<td>3.58</td>
<td>(0.96)</td>
<td>1.85</td>
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<tr>
<td>Adjusted earnings per share:25</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Basic</td>
<td>4.49</td>
<td>3.64</td>
<td>3.84</td>
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<tr>
<td>Diluted</td>
<td>4.47</td>
<td>3.64</td>
<td>3.84</td>
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<tr>
<td>Cash dividends declared per common share</td>
<td>1.65</td>
<td>1.60</td>
<td>1.60</td>
</tr>
</tbody>
</table>

2016 compared with 2015

(See RESULTS OF OPERATIONS and LIQUIDITY AND CAPITAL RESOURCES - Year ended December 31, 2016 compared with Year ended December 31, 2015)

2015 compared with 2014

Revenue

Revenue for 2015, was essentially unchanged from 2014. There were increases in Market Insights, Canadian Derivatives Trading revenue as well as Energy Trading and Clearing revenue offset by declines in Capital Formation and Equities and Fixed Income Trading revenue as well as in Derivatives Trading revenue from BOX. There was a favourable impact from a weaker Canadian dollar relative to other currencies, including the U.S. dollar, in 2015 versus 2014. The impact was approximately $23 million.

Net loss attributable to TMX Group Shareholders, Earnings per share and Adjusted earnings per share

Net loss attributable to TMX Group shareholders in 2015 was $52.3 million, or 96 cent per common share on a basic and diluted basis, compared with net income of $100.5 million, or $1.85 per common share on a basic and diluted basis, for 2014. The net loss in 2015 was driven by non-cash impairment charges related to Capital Formation (Listings) and Equities trading, reflecting the prolonged downturn in the resource market and particularly the junior resource companies, Derivatives (BOX), reflecting the competitive US options market, and other assets of $221.7 million ($200.0 million after tax, net of NCI). In 2014 we also incurred non-cash impairment charges primarily related to BOX’s goodwill and customer list, of which our share was $63.6 million (after tax).

Adjusted earnings per share decreased by 5% from $3.84 in 2014 to $3.64 in 2015. The reduction in earnings was primarily driven by lower revenue from Capital Formation and higher expenses from Razor Risk, partially offset by foreign exchange gains across the business. (See 2014 MD&A for a reconciliation of Earnings per share to Adjusted earnings per share)

24 Earnings per share information is based on net income attributable to TMX Group shareholders.

25 See discussion under the heading "Non-IFRS Financial Measures".
**Total assets**

Our consolidated balance sheet as at December 31, 2015 includes outstanding balances on open REPO agreements within Balances with Clearing Members and Participants. These balances have equal amounts included within Total Liabilities. Balances with Clearing Members and Participants relating to CDCC were $11,117.8 million at December 31, 2015. The increase in Total Assets of $2,053.3 million from December 31, 2014 to December 31, 2015 was largely attributable to the increase in Balances with Clearing Members of $2,671.8 million for CDCC, partially offset by the write-down of assets.

**Non-current liabilities**

Non-current liabilities declined by $353.5 million reflecting the reclassification of our Series C Debentures (due October 3, 2016) from non-current liabilities to current liabilities.
### QUARTERLY FINANCIAL INFORMATION

<table>
<thead>
<tr>
<th></th>
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<tr>
<td>Capital Formation</td>
<td>46.6</td>
<td>45.9</td>
<td>51.8</td>
<td>38.6</td>
<td>38.8</td>
<td>44.7</td>
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<td>Equities and Fixed Income Trading</td>
<td>26.5</td>
<td>23.7</td>
<td>26.5</td>
<td>25.6</td>
<td>20.1</td>
<td>20.9</td>
<td>20.9</td>
<td>24.6</td>
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<td>Equities and fixed Income - clearing, settlement, depository and other services (CDS)</td>
<td>18.2</td>
<td>17.4</td>
<td>18.1</td>
<td>17.5</td>
<td>17.9</td>
<td>17.1</td>
<td>17.7</td>
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<td>Derivatives Trading &amp; Clearing</td>
<td>28.4</td>
<td>27.2</td>
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<td>25.8</td>
<td>27.5</td>
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<tr>
<td>Energy Trading &amp; Clearing</td>
<td>13.7</td>
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<td>13.7</td>
<td>12.2</td>
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<tr>
<td>Market Insights</td>
<td>54.0</td>
<td>52.6</td>
<td>52.7</td>
<td>51.7</td>
<td>58.8</td>
<td>50.9</td>
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<td>53.4</td>
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<tr>
<td>Other</td>
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<td>0.7</td>
<td>(1.6)</td>
<td>2.0</td>
<td>2.6</td>
<td>0.5</td>
<td>5.8</td>
</tr>
<tr>
<td><strong>Revenue</strong></td>
<td>189.4</td>
<td>180.3</td>
<td>194.6</td>
<td>177.7</td>
<td>177.1</td>
<td>175.9</td>
<td>178.7</td>
<td>185.3</td>
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<tr>
<td><strong>Operating expenses before strategic re-alignment expenses</strong></td>
<td>104.8</td>
<td>104.3</td>
<td>106.9</td>
<td>106.7</td>
<td>116.6</td>
<td>109.6</td>
<td>112.1</td>
<td>111.3</td>
</tr>
<tr>
<td><strong>Income from operations before strategic re-alignment expenses</strong></td>
<td>84.6</td>
<td>76.0</td>
<td>87.7</td>
<td>71.0</td>
<td>60.5</td>
<td>66.3</td>
<td>66.6</td>
<td>74.0</td>
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<td><strong>Strategic re-alignment expenses</strong></td>
<td>—</td>
<td>17.7</td>
<td>2.0</td>
<td>1.3</td>
<td>8.2</td>
<td>4.4</td>
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<tr>
<td><strong>Income from operations</strong></td>
<td>84.6</td>
<td>58.3</td>
<td>85.7</td>
<td>69.7</td>
<td>52.3</td>
<td>61.9</td>
<td>63.2</td>
<td>67.3</td>
</tr>
<tr>
<td>Net Income (loss) attributable to TMX Group shareholders</td>
<td>52.6</td>
<td>39.2</td>
<td>58.3</td>
<td>46.3</td>
<td>(159.0)</td>
<td>36.5</td>
<td>27.6</td>
<td>42.6</td>
</tr>
<tr>
<td><strong>Earnings (loss) per share:</strong></td>
<td>Basic 0.96</td>
<td>0.72</td>
<td>1.07</td>
<td>0.85</td>
<td>(2.92)</td>
<td>0.67</td>
<td>0.51</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td>Diluted 0.95</td>
<td>0.72</td>
<td>1.07</td>
<td>0.85</td>
<td>(2.92)</td>
<td>0.67</td>
<td>0.51</td>
<td>0.78</td>
</tr>
</tbody>
</table>

### Review of Fourth Quarter Results

**Q4/16 compared with Q4/15**

- **Revenue** was $189.4 million in Q4/16, up $12.3 million or 7% compared with $177.1 million in Q4/15. There were increases in **Capital Formation** revenue, **Equities and Fixed Income Trading and Clearing** revenue as well as in **Derivatives Trading and Clearing** revenue. The increases in revenue were partially offset by a decline in **Market Insights** revenue reflecting a $6.2 million decrease in revenue from Razor Risk.

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26 See discussion under the heading "Additional IFRS Financial Measures".

27 See discussion under the heading "Additional IFRS Financial Measures".

28 Earnings per share information is based on net income attributable to TMX Group shareholders.
• **Operating expenses before strategic re-alignment expenses** in Q4/16 were $104.8 million, down $11.8 million or 10%, from $116.6 million in Q4/15. There were reduced costs related to Razor Risk of approximately $7.7 million and overall lower headcount following our strategic re-alignment initiative. In addition, there were lower operating expenses related to circuits, infrastructure, projects and occupancy as well as **Depreciation and Amortization**. Effective July 1, 2016, we excluded operating expenses related to BOX when we ceased to consolidate BOX’s results from operations. The decreases in costs were partially offset by higher employee performance incentive plan costs.

• **Net income attributable to TMX Group shareholders** in Q4/16 was $52.6 million, or 96 cents per common share on a basic basis and 95 cents on a diluted basis, compared with a net loss of $159.0 million, or $2.92 per common share on a basic and diluted basis, for Q4/15. In Q4/15, there was a net loss attributable to TMX Group shareholders driven by non-cash impairment charges related to Capital Formation (Listings), Equities Trading and Derivatives (BOX) and other assets of $215.8 million ($194.0 million after tax, net of NCI). In Q4/16, we recorded impairment charges of $8.9 million ($8.9 million after tax) relating to TMX Atrium and AgriClear. The increase in net income in Q4/16 over Q4/15 also reflected higher revenue, lower operating expenses before strategic re-alignment expenses and lower strategic re-alignment expenses. During Q4/16, 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.

• In Q4/16, **Cash flows from operating activities** were higher than in Q4/15 primarily due to increased income from operations (excluding depreciation and amortization) and increased cash from trade and other payables, somewhat offset by decreased cash from trade and other receivables, and prepaid expenses.

• In Q4/16, **Cash flows used in financing activities** were lower than in Q4/15. In Q4/15, there were net repayments on liquidity facilities of $29.0 million compared with net drawings on liquidity facilities of $3.5 million in Q4/16. In addition, there were higher proceeds from exercised options in Q4/16 compared with Q4/15. The increases in cash were partially offset by the impact of higher net repayments on our debt and higher dividends paid to equity holders.

• In Q4/16, there were **Cash flows used in investing activities** compared with **Cash flows from investing activities in Q4/15**. This primarily reflected a net purchase of marketable securities in Q4/16 compared with a net sale of marketable securities in Q4/15. In addition, there was a decrease in dividends received partially offset by a reduction in cash outlays for additions to premises and equipment and intangible assets in Q4/16 compared with Q4/15.
**Q4/16 compared with Q3/16**

- Revenue in Q4/16 increased over Q3/16 reflecting increases in *Equities and Fixed Income Trading and CDS, Derivatives Trading and Clearing, Energy Trading and Clearing* revenue as well as in *Capital Formation, Market Insights* and *Other* revenue.

- Operating expenses before strategic re-alignment expenses for Q4/16 increased by 1% compared with Q3/16 reflecting an increase in *Selling, general and administration* expenses including commodity taxes and external fees, mainly related to clearing house platform consolidation, offset by lower occupancy costs. The increase was partially offset by a sequential decline in *Information and trading systems* expenses as we wrote-off of $2.8 million in costs related to discontinued products in Q3/16. *Compensation and benefits* costs declined slightly as lower costs from reduced headcount were partially offset by other *Compensation and benefits* expenses including those related to higher long-term employee performance incentive plan costs.

- Income from operations before strategic re-alignment expenses and Income from operations increased from Q3/16 to Q4/16 reflecting the higher revenue somewhat offset by slightly higher operating expenses before strategic re-alignment expenses. Income from operations was higher in Q4/16 compared with Q3/16 due to the increase in revenue and significant decrease in strategic re-alignment expenses including severance costs related to the initiative we announced in September 2016.

- Net income attributable to TMX Group shareholders for Q4/16 was $52.6 million, or $0.95 per common share on a diluted basis, compared with net income of $39.2 million, or $0.72 per common share on a basic and diluted basis, for Q3/16 reflecting the higher revenue and significantly lower strategic re-alignment expenses.

**Q3/16 compared with Q2/16**

- Revenue in Q3/16 decreased over Q2/16 reflecting lower revenue from *Derivatives Trading and Clearing*, following the de-consolidation of revenue from BOX effective July 1, 2016. The net reduction in *Derivatives Trading and Clearing* revenue related to BOX from Q2/16 to Q3/16 was $2.7 million. There was also a reduction in *Capital Formation as well as in Equities and Fixed Income Trading and CDS* revenue reflecting less active equity market conditions compared with Q2/16. *Energy Trading and Clearing* and *Market Insights* revenue also declined from Q2/16 to Q3/16.

- Operating expenses before strategic re-alignment expenses for Q3/16 decreased by 2% compared with Q2/16 reflecting the exclusion of operating expenses related to BOX when we ceased to consolidate BOX’s results from operations and reduction in costs attributable to overall lower headcount. There were also reduced commodity tax and marketing expenses in Q3/16 compared with Q2/16. These decreases in expenses were somewhat offset by higher employee performance incentive plan costs and higher overall *Information and trading systems* expenses partially attributable to the write-off of $2.8 million in costs related to discontinued products.

- Income from operations before strategic re-alignment expenses and Income from operations decreased from Q2/16 to Q3/16 reflecting the lower revenue somewhat offset by lower operating expenses before strategic re-alignment expenses. Income from operations was significantly lower in Q3/16 compared with Q2/16 due to the increase in strategic re-alignment expenses including severance costs related to the initiative we announced in September 2016.

- Net income attributable to TMX Group shareholders for Q3/16 was $39.2 million, or 72 cents per common share on a basic and diluted basis, compared with net income of $58.3 million, or $1.07 per common share on a basic and diluted basis, for Q2/16 reflecting the lower revenue and higher strategic re-alignment expenses.

**Q2/16 compared with Q1/16**

- Revenue in Q2/16 increased over Q1/16 reflecting higher revenue from *Capital Formation* (largely additional listing fees), *Market Insights, Equities and Fixed Income Trading and CDS*, as well as *Other* revenue, somewhat offset by a decline in *Derivatives* revenue. The increase in *Other* revenue was primarily due to recognizing lower net foreign exchange losses on U.S. dollar and other non-Canadian denominated net monetary assets in Q2/16 compared with Q1/16. Revenue from *Energy Trading and Clearing* was essentially unchanged.
• **Operating expenses before strategic re-alignment expenses** for Q2/16 were essentially unchanged compared with Q1/16. Higher employee performance incentive plan costs and increased selling, general and administration costs, including higher marketing costs, essentially offset lower compensation and benefits costs related to reduced payroll taxes and a higher capitalization of labour costs in Q2/16 compared with Q1/16.

• **Income from operations before strategic re-alignment expenses** and **Income from operations** increased from Q1/16 to Q2/16 reflecting the higher revenue.

• **Net income attributable to TMX Group shareholders** for Q2/16 was $58.3 million, or $1.07 per common share on a basic and diluted basis, compared with net income of $46.3 million, or 85 cents per common share on a basic and diluted basis, for Q1/16 reflecting the higher revenue.

### Q1/16 compared with Q4/15

• **Revenue** in Q1/16 was essentially unchanged from Q4/15 reflecting an increase in **Equities and Fixed Income Trading, Derivatives Trading and Clearing** as well as **Energy Trading and Clearing** revenue, offset by declines in **Market Insights**, largely driven by **Razor Risk**, **CDS** and **Other revenue**. The decline in **Other revenue** was primarily due to recognizing significant net foreign exchange losses on U.S. dollar and other non-Canadian denominated net monetary assets in Q1/16 compared with net foreign exchange gains in Q4/15. Revenue from **Capital Formation** was essentially unchanged.

• **Operating expenses before strategic re-alignment expenses** decreased by 8% compared with Q4/15 reflecting a decrease of $6.7 million in costs related to Razor Risk and lower **information and trading systems** costs.

• **Income from operations before strategic re-alignment expenses** increased from Q4/15 to Q1/16 reflecting the lower operating expenses before strategic re-alignment expenses.

• **Income from operations** increased from Q4/15 to Q1/16 reflecting lower operating expenses before strategic re-alignment expenses and lower strategic re-alignment expenses.

• **Net loss attributable to TMX Group shareholders** for Q4/15 was $159.0 million, or $2.92 per common share on a basic and diluted basis, compared with net income of $46.3 million, or 85 cents per common share on a basic and diluted basis, for Q1/16. The net loss in Q4/15 was driven by non-cash impairment charges related to **Capital Formation** (Listings), Equities trading, **Derivatives** (BOX) and other assets of $215.8 million, of which our share was $200.0 million after tax, net of NCI. While revenue was essentially unchanged, **operating expenses before strategic re-alignment expenses** and **strategic re-alignment expenses** decreased from Q4/15 to Q1/16.

### Q4/15 compared with Q3/15

• **Revenue** in Q4/15 increased by 1% compared with Q3/15 reflecting an increase in **Market Insights, Energy Trading and Clearing** and **CDS** revenue, partially offset by declines in **Capital Formation, Derivatives Trading and Clearing** and **Equities and Fixed Income Trading** revenue.

• **Operating expenses before strategic realignment expenses** increased by 6% compared with Q3/15 reflecting increased costs related to Razor Risk, higher information and trading systems operating costs, lower capitalization of labour as well as increased marketing and project costs. These increases were partially offset by lower employee performance incentive plan costs and lower expenses from Equicom (sold in July 2015).

• **Income from operations before strategic realignment expenses** decreased from Q3/15 to Q4/15 reflecting higher operating expenses somewhat offset by an increase in revenue.

• **Income from operations** decreased from Q3/15 to Q4/15 reflecting higher operating expenses and an increase in strategic realignment expenses somewhat offset by an increase in revenue.

• **Net loss attributable to TMX Group shareholders** for Q4/15 was $159.0 million, or $2.92 per common share on a basic and diluted basis, compared with net income of 36.5 million, or 67 cents per common share on a basic and diluted basis, for Q3/15. The net loss in Q4/15 was driven by non-cash impairment charges related to Capital formation (Listings), Equities trading, **Derivatives** (BOX) and other assets of $215.8 million, of which our share was ($200.0 million after tax, net of NCI). Operating expenses before strategic realignment expenses increased from Q3/15 to Q4/15 and strategic realignment expenses increased by $3.8 million over the same periods.
**Q3/15 compared with Q2/15**

- **Revenue** in Q3/15 decreased by 2% compared with Q2/15 reflecting a decline in *Capital Formation* revenue from additional listing fees and the loss of revenue from Equicom, which was sold in July 2015. In addition, there was a decline in *CDS* and *Energy Trading and Clearing* revenue. The decreases in revenue were partially offset by an increase in *Market Insights, Derivatives Trading and Clearing* as well as *Other* revenue. Revenue from *Equities and Fixed Income Trading* was essentially unchanged.

- **Operating expenses before strategic realignment expenses** decreased by 2% from Q2/15 to Q3/15. The decrease in these costs reflected lower technology costs, reduced costs related to Razor Risk, lower expenses from Equicom (sold in July 2015), and reduced compensation and benefit costs mainly related to payroll taxes. These decreases were somewhat offset by higher costs related to employee performance incentive plans.

- **Income from operations before strategic realignment expenses** decreased slightly from Q2/15 to Q3/15 reflecting the impact of the lower revenue largely offset by lower operating expenses.

- **Income from operations** decreased from Q2/15 to Q3/15, reflecting the impact of the lower revenue and higher strategic realignment expenses somewhat offset by lower operating expenses.

- **Net income attributable to TMX Group shareholders** in Q3/15 increased by $8.9 million, or 32%, compared with Q2/15. In Q2/15, we recognized impairment charges related to Equicom and ir2020 of $5.9 million. In addition, during Q2/15, the Alberta corporate income tax rate increased from 10% to 12%, effective July 1, 2015. As a result of this change, there was an increase in the value of net deferred income tax liabilities and a corresponding non-cash net increase in deferred income tax expense of $7.1 million for Q2/15, which reduced net income by $7.1 million. Offsetting these increases, income from operations in Q3/15 was lower and net financing costs were higher compared with Q2/15, which reduced net income attributable to TMX Group shareholders. In addition, in Q3/15 we recognized $1.6 million in income tax adjustments related to BOX, which also reduced net income attributable to TMX Group shareholders.

**Q2/15 compared with Q1/15**

- **Revenue** in Q2/15 decreased by 4% compared with Q1/15 reflecting a decline in revenue from *Equities and Fixed Income Trading, Derivatives Trading and Clearing, Energy Trading and Clearing* as well as *Market Insights*. In addition, *Other* revenue was lower in Q2/15 compared with Q1/15 reflecting net foreign exchange losses in Q2/15 compared with net foreign exchange gains in Q1/15. The decreases were somewhat offset by an increase in *Capital Formation* revenue from initial and additional listing fees and other sources and *CDS* revenue.

- **Operating expenses before strategic realignment expenses** increased by 1% from Q1/15 to Q2/15. There were higher technology and marketing expenses related to initiatives in Q2/15 compared with Q1/15. Offsetting these increases, compensation and benefit costs decreased reflecting lower costs associated with our employee performance incentive plans and lower payroll taxes in Q2/15 compared with Q1/15.

- **Income from operations before strategic realignment expenses** decreased from Q1/15 to Q2/15 reflecting the impact of the lower revenue and higher operating expenses.

- **Income from operations** decreased from Q1/15 to Q2/15, reflecting the impact of the lower revenue and higher operating expenses somewhat offset by lower strategic realignment expenses.

- **Net income attributable to TMX Group shareholders** in Q2/15 decreased by $15.0 million, or 35%, compared with Q1/15. In Q2/15, we recognized impairment charges related to Equicom and ir2020 of $5.9 million. In addition, during Q2/15, the Alberta corporate income tax rate increased from 10% to 12%, effective July 1, 2015. As a result of this change, there was an increase in the value of net deferred income tax liabilities and a corresponding non-cash net increase in deferred income tax expense of $7.1 million for Q2/15, which reduced net income by $7.1 million.
ENTERPRISE RISK MANAGEMENT

TMX Group's operating subsidiaries provide essential services to the Canadian capital and commodity markets and effectively managing risk is fundamental to our ability to provide products and services to our clients. In providing the products and services to our clients, 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, materially consistent with our objectives and risk appetite, and appropriately balance risk and reward.

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) divisions. We adequately define responsibilities and 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 our approved risk appetite.
- We employ sufficient resources and effective tools, methods, models and technology to support risk management processes.
- Our ERM 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 undertakes a formal review of these KERs at least annually by evaluating the impact and likelihood of each risk after taking into account known mitigations and established internal controls. 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, OTC markets, and other sources

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 two 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 that are not necessarily traded in public markets including private venture capital and various forms of debt financing.

In addition, crowdfunding, a new way for start-ups and SMEs to raise capital through small amounts of money raised from a large number of people over the Internet via an internet portal intermediary, is emerging. Finally, as we build out our listed company services business, we may also face direct competition from domestic and international companies that provide various shareholder services.

**Toronto Stock Exchange, TSX Venture Exchange 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 that has the second largest market share in Canadian equities trading. 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 Market Insights segments. We face competition from foreign exchanges for listings of Canadian-based issuers and trading in their securities. 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, Alpha, and TMX Select until September 18, 2015) of the total volume traded in Canadian based interlisted issues was 32% versus U.S. exchanges in 2016, compared with 34% in 2015. 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 also 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 71%\(^{29}\) in 2016, down from 75% in 2015. Excluding intentional crosses, in all listed issues in Canada, our combined domestic equities trading market share was 69% in the year ended December 31, 2016, down from 74% in the year ended December 31, 2015.

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

\(^{29}\) Source: IIROC
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 market insights 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 competitively. 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 also offering inverted pricing 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 and CDCC are the only standardized financial derivatives exchange and clearing house headquartered in Canada, their various component activities are exposed. MX is in direct competition with, among others, securities, options and other derivatives exchanges as well as ATSs or Electronic Crossing Networks (ECNs) and other trading and crossing venues, some of our Clearing Members and interdealer brokerage firms. This competition exists particularly in the U.S., but also in Europe and Asia. In Canada, MX's competition in derivatives trading is the OTC market. In addition, OTC regulatory reform that is underway in Canada could encourage the formation of another clearing house in Canada. OTC alternative trading platforms (dark pools) represent increased competitive risk to MX with their lookalike futures products that are centrally cleared. 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, 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 exchange business has seen more foreign entrants in recent years, both in the form of exchanges providing trading and execution services for a range of exchange-traded futures and options on futures, as well as swap execution facilities. In the U.S., MX competes for market share of trading single stock options based on Canadian-based interlistings, or dual listings. However, options traded in the U.S. are not fungible with those traded in Canada.

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

Increasing regulatory requirements imposed upon banks [through Basel capital requirements] 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.
**NGX and Shorcan Energy Brokers face competition from OTC markets and other sources**

The NGX business faces trading competition in Canada and in the U.S. from competing exchanges, OTC electronic trading platforms, and from the OTC voice and bilateral markets. NGX's clearing business faces competition from recognized clearing facilities as well as bilateral credit lines between counterparties in the OTC markets. In the U.S. physical power and gas markets, our competition comes from the bilateral markets.

Shorcan Energy Brokers faces competition primarily from other brokerage firms. If NGX or Shorcan Energy Brokers is unable to compete with these platforms and markets, they may not be able to maintain or expand their businesses, which could materially affect their business and operating results.

**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 operating results.

**Market Insights**

With the advent of a multi-marketplace environment in Canada, we face competition in market data, from other trading venues. 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, and 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 also 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 potential changes relating to NAFTA, could impact our business. In addition, increased uncertainty in Europe, including the impact of Brexit and the possibility of sovereign defaults on debt, can also impact our business. 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, prolonged negative economic conditions 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. In addition, a low-volatility environment can result in lower levels of trading, particularly for derivative products.

**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 and energy 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.

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, 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 condition 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.

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 environment in which we operate as well as significant peer and competitive analysis. 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. Any of these factors could materially adversely affect the success 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 opening offices and acquiring distribution, technology and other systems in foreign jurisdictions, 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:

- 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 not continue to develop successful new products and services or we may not 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 underperforming 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 30, 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.

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30 Recognition orders issued by the securities regulators with respect to the Maple Transaction.
We face risks associated with not being able to divest under-performing businesses

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 markets, trading and clearing on our derivatives and energy 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, 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, energy, 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.

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

Information Security

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

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

Our networks and those of our third-party service providers, our POs and approved participants and our customers may be vulnerable to cyber 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 by 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.

**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 and NGX’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 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, CDCC and NGX, 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, NGX and CDCC have instituted a comprehensive set of internal controls, which are audited by an external party on at least an annual basis. CDS, CDCC and NGX are the sole clearer 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 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, CDCC, and NGX 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 ongoing internal controls to regularly assess the adequacy of the models. In addition, our clearinghouse risk models are subject to independent third-party 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. 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, or if too few contracting parties are able to access NGX’s market. 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 2016, approximately 69% of our trading and related revenue, net of rebates, on TSX and approximately 65% of our trading and related revenue on TSXV were accounted for by the top ten POs on each exchange based on volumes traded.

Approximately 60% of CDS’s revenue, net of rebates, in 2016 was accounted for by the top ten customers (excluding securities regulators).

Approximately 64% of MX and CDCC’s trading and clearing revenue, net of rebates, in 2016 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 the complexity and unpredictability of legal and regulatory environment. 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 the laws and regulations resulting in financial and reputational loss.

**Cost of Regulation**

We incur costs to comply with the additional regulatory requirements that are imposed pursuant to the Recognition Orders. In addition, the ASC amended its capital market filing fee structure to charge new participation and activity fees to specified regulated entities, including exchanges, ATSs and clearing agencies.

For more information on the regulatory impact on our business, please see the TMX Group Annual Information Form, dated March 24, 2016.

**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 Investment Industry Regulatory Organization of Canada (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. NGX operates as an FBOT, is registered as a Derivatives Clearing Organization by the CFTC and has obtained market-based rate authorization from the Federal Energy Regulatory Commission. BOX is regulated by the SEC. 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. NGX and CDCC have been recognized by the European Securities and Markets Authority as foreign clearing houses 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, derivatives and energy 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. 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, NGX, 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 recently implemented National Instrument 24-102 Clearing Agency Requirements. The ongoing implementation of PFMIs by regulators of these businesses will continue to impact the cost of regulatory compliance. In 2016, in compliance with the PFMIs and additional Canadian regulatory and oversight guidance, CDS Clearing, CDCC and NGX 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. 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. TMX Group also provides a guarantee with respect to NGX’s backstop fund, which predates the adoption of the recovery plans.

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 Autorité des marchés financiers (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.

Prior to becoming effective, changes to CDCC fees are filed with the AMF and OSC.

NGX fee changes are self-certified with the U.S. CFTC and filed with the ASC.

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.

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 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 can more easily 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 $1.0 billion 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). 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, derivatives and energy 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 various interest rate hedging arrangements to partially mitigate this risk, there is no assurance that such hedging arrangements will be effective. In addition, if interest rates decrease, we would accrue indebtedness in connection with these hedging arrangements, 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**

In connection with the Debenture offering, we obtained an issuer rating of A (high) from DBRS with a Stable trend. The Debentures obtained 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.

**The shareholdings of the investors may adversely affect the liquidity of TMX Group shares**

In aggregate the Nominating Investors hold a significant proportion of the common shares outstanding of TMX Group. In addition, each of CIBC World Markets, National Bank Group Inc., Scotia Capital Inc. and 1802146 Ontario Limited, an affiliate of TD Securities Inc., has agreed to maintain a specified minimum ownership interest in TMX Group Limited until September 14, 2017. The substantial number of common shares that are held by these investors may adversely affect the liquidity of the common shares held by the public. The liquidity in our common shares did improve somewhat after August

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22, 2016 when three of the Nominating investors sold a combined 5.4 million common shares, or approximately 9.9% of our common shares issued and outstanding, on an underwritten block trade basis. Based on the criteria for eligibility in the S&P/TSX Composite Index, there is a continued risk that we could be removed from the index, which could make our shares less attractive to certain investors, particularly index funds.

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, NGX and CDCC, cash and cash equivalents, restricted cash and cash equivalents, marketable securities, trade receivables, total return swaps, interest rate swaps, the brokerage operations of Shorcan and Shorcan Energy Brokers, and the operations of TSX Trust.

In 2016, in compliance with the PFMs and additional Canadian regulatory and oversight guidance, CDS Clearing, CDCC and NGX 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 exiting businesses or to enter into new business areas)

Credit Risk – CDS

The primary credit risk of CDS and its subsidiaries is 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 the 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.

As of January 1, 2016, the effective date of a new regulatory requirement based on PFMs, 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, 2016, the total amount of collateral required by CDS Clearing was $5,572.0 million (2015 – 4,951.1 million). The actual collateral pledged to CDS Clearing at December 31, 2016 was $6,630.4 million (2015 - $6,062.6 million). The collateral pledged at December 31, 2016 was comprised of Cash (included within Balances with participants on the consolidated balance sheet) of $501.4 million (2015 - $418.0 million) and Treasury bills and Fixed Income Securities of $6,129.0 million (2015 - $5,644.6 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 – NGX**

NGX is exposed to credit risk in the event that contracting parties default on their contractual obligations to NGX resulting in the failure to settle on the amounts due.

NGX is the central counterparty to each transaction (whether it relates to natural gas, electricity or crude oil contracts) cleared through its clearing operations. By providing a clearing and settlement facility, NGX is subject to the risk of a counterparty default. NGX manages this risk by applying standard rules and regulations, and using a conservative margining regime based on industry best practices. This margining regime involves monitoring client portfolios in real-time and requiring participants to deposit liquid collateral in excess of those valuations. NGX conducts market stress scenarios, liquidation simulations, and backtesting regularly to test the ongoing integrity of its clearing operation. NGX also manages and mitigates these risks through a framework of policies, regulations and procedures.

NGX requires each contracting party to provide sufficient collateral, in the form of cash or letters of credit, in excess of the outstanding credit exposure as determined by NGX in accordance with its margining methodology. The cash collateral deposits and letters of credit are held by a major Canadian chartered bank. This collateral may be accessed by NGX in the event of default by a contracting party. NGX measures total potential exposure for both credit and market risk for each contracting party on a real-time basis as the aggregate of:

- outstanding energy contracts receivable;
• “Variation Margin,” comprised of the aggregate “mark to market” exposure for all forward purchase and sale contracts; and

• “Initial Margin,” an amount that estimates the potential contracting party loss in their portfolio under an adverse price movement to a 99.7% confidence interval during a 2-day liquidation period.

As a result of these calculations of contracting party exposure at December 31, 2016, NGX had access to cash collateral deposits of $495.7 million (2015 - $397.2 million) and letters of credit of 2,080.5 million (2015 - 1,887.8 million). These amounts are not included in our consolidated balance sheet.

See Other Credit and Liquidity Facilities for a description of NGX’s credit 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. In 2015, CDCC introduced 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, 2016 was $842.8 million (2015 - $385.9 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, 2016, non-cash margin deposits of $6,926.2 million (2015 - $5,527.8 million) and non-cash clearing fund deposits of $571.3 million (2015 - $637.1 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 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 and Shorcan Energy Brokers**

Shorcan and Shorcan Energy Brokers are 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 or Shorcan Energy Brokers 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 marketable securities. This risk is partially mitigated by having variable interest rates on our short-term debt (Commercial Paper). At December 31, 2016, TMX Group held $61.8 million in marketable securities of which, 100.0% were held in Federal and Provincial treasury bills.

Interest Rate Risk – Commercial Paper and Debentures

We are exposed to market risk relating to interest paid on our Commercial Paper. Assuming Commercial Paper outstanding of approximately $309.9 million (balance at December 31, 2016), 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 $3.1 million and an increase of $3.1 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, NGX, Shorcan, and Shorcan Energy Brokers

We are exposed to market risk factors from the activities of CDS, NGX, CDCC, Shorcan, and Shorcan Energy Brokers if a customer, contracting party or clearing member, as the case may be, fails to take or deliver either securities, energy products 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 of a Participant defaults 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 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.

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.

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 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.

NGX is exposed to market risk through its CCP functions in the event of a contracting party default as it is the legal counterparty to all transactions and must honor the financial obligations despite any contracting party defaults.

The principal mitigation of the market risk exposure post default is the default management process. NGX has developed detailed default management processes that would enable it to minimize market exposures through its liquidation process within prescribed time periods. Any losses from such liquidation would be set-off against the defaulting party's margin and clearing backstop fund (if necessary).

Shorcan and Shorcan Energy Brokers’ risk is limited by their status as an agent, in that they do not purchase or sell securities or commodities 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 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 as at December 31 of the previous year.

**Foreign Currency Risk**

We are 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. We are also exposed to market risk on revenue and expenses where we invoice or procure in a foreign currency, principally in U.S. dollars. Based on 2016 revenue and operating expenses (exclusive of BOX and Razor Risk), 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 $6.5 million.

At December 31, 2016, cash and cash equivalents and trade receivables, net of current liabilities, include US$20.3 million, which are exposed to changes in the US-Canadian dollar exchange rate (2015 – US$21.3 million), £0.2 million which are exposed to changes in the British Pound Sterling-Canadian dollar exchange rate (2015 - £1.5 million), and €0.6 million which are exposed to changes in the Euro-Canadian dollar exchange rate (2015 - €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, 2016 is a $2.8 million decrease or increase in income before income taxes, respectively. 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 transactions as at December 31, 2016 is a $7.7 million decrease or increase in equity attributable to equity holders, respectively.

We are exposed to market risk relating to foreign currency rates applicable to some of our Commercial Paper. As at December 31, 2016 we borrowed US$15.0 million under our Commercial Paper Program. The US$15.0 million is not hedged with forward contracts but is partially hedged by our U.S. dollar assets. With respect to the US$15.0 million of Commercial Paper, the approximate impact of a 10% rise or a 10% decline in the Canadian dollar compared with the U.S. dollar is a $1.5 million increase or decrease in income before income taxes, respectively.

NGX offers contracts denominated in both Canadian and U.S. dollars and accepts collateral in either currency. Settlement always occurs in the contracted currency. Market risk relating to foreign exchange rates could be created if there is a default and the currency of the required payment obligation is different from the currency of the collateral supporting that payment obligation. This risk is mitigated by converting the foreign denominated collateral at current foreign exchange rates and then adjusting collateral positions to mitigate any foreign exchange risk present.

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 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, 2016 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.

**Fair value of open energy contracts and Energy contracts payable – NGX**

NGX requires each contracting party to provide sufficient collateral, in the form of cash or letters of credit, to exceed its outstanding credit exposure, including contract replacement costs at current market prices, as determined by NGX in accordance with its margining methodology. The cash collateral deposits and letters of credit are held by a major Canadian chartered bank. NGX also ensures that it maintains sufficient liquid resources to cover twelve months of operating costs as well as the daily settlement requirement of its largest single participant under a stressed market scenario.

**Credit and liquidity facilities – Clearing operations**

In response to the liquidity risk that CDS, CDCC and NGX 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 loans of $15.0 million and an overnight facility of US$5.5 million are available.

CDS maintains a secured standby liquidity facility of US$400.0 million, or Canadian dollar equivalent, that can be drawn in either U.S. 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 U.S. treasury instruments.

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 CDX, 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.

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 $300.0 million is 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 increased from $13,464.0 million to $13,638.0 million of uncommitted liquidity in 2016. Also, on February 6, 2017, we increased the size of the repurchase facility from $13,638.0 million to $13,788.0 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.

Similarly, in response to the liquidity risk that NGX is exposed to through its clearing and settlement operations, it maintains an unsecured clearing backstop fund in the form of a letter of credit maintained with a custodian in an amount of US$100.0 million, a $300.0 million daylight liquidity facility, and an overdraft facility of $20.0 million.

**Commercial Paper, Debentures and Credit Facility**

Our capital structure includes approximately $1.0 billion 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 amendments and interpretation were effective for the Company from January 1, 2016:

Annual Improvements to IFRSs 2012-2014 Cycle –IFRS 5, Non-current Assets Held for Sale and Discontinued Operations and IFRS 7, Financial Instruments: Disclosures;

Clarification of acceptable methods of depreciation and amortization – Amendments to IAS 16, Property, Plant and Equipment and IAS 38,Intangible Assets); and

Business combination accounting for interest in a joint operation – Amendments to IFRS 11,Joint Arrangements.

There was no impact on the consolidated financial statements as a result of their adoption.

For the year ended December 31, 2016, we adopted the disclosure initiative amendments to IAS 1, Presentation of Financial Statements. We applied our judgement in presenting the notes to the consolidated financial statements including its significant accounting policies.

**Future changes in accounting policies**

A number of other new standards and amendments to standards and interpretations are not yet effective for the year ending December 31, 2016, and have not been applied in preparing the financial statements. These new and amended standards and interpretations are required to be implemented for financial years beginning on or after January 1, 2017, unless otherwise noted:

Annual improvements 2014-2016 cycle (Amendments to various standards) – These narrow-scope amendments apply to a total of three standards as part of the IASB’s annual improvements process. The IASB uses the annual improvements process to make non-urgent but necessary amendments to IFRS. The amendments are effective for annual periods beginning on or after January 1, 2017 and 2018.

Disclosure initiative (Amendments to IAS 7, Statement of Cash Flows) – As a part of the IASB’s major initiative to improve presentation and disclosures in financial reports, the amendments require disclosures that enable users of the financial statements to evaluate changes in liabilities arising from financing activities, including both changes arising from cash flow
and non-cash changes. The amendments are effective for annual periods beginning on or after January 1, 2017 with earlier application permitted.

Recognition of deferred tax assets for unrealized losses (Amendments to IAS 12, Income Taxes) – The amendments clarify that the existence of a deductible temporary difference depends solely on a comparison of the carrying amount of an asset and its tax base at the end of the reporting period, and is not affected by possible future changes in the carrying amount or expected manner of recovery of the asset. The amendments are effective for annual periods beginning on or after January 1, 2017 with earlier application permitted.

IFRS 9, Financial Instruments: Recognition and Measurement, for the classification and measurement of financial assets and financial liabilities and new standards for hedge accounting. Financial assets will be classified into one of two categories on initial recognition: amortized cost or fair value. For financial liabilities measured at fair value under the fair value option, changes in fair value attributable to changes in credit risk will be recognized in other comprehensive income, with the remainder of the change recognized in profit or loss. IFRS 9 will provide for more hedging strategies to qualify for hedge accounting, introduce more judgment in assessing the effectiveness of a hedging relationship, and include a single, forward-looking “expected loss” impairment model. The mandatory date for IFRS 9 is for annual periods beginning on or after January 1, 2018, with early application permitted.

Classification and measurement of share-based payment transactions (Amendments to IFRS 2, Share-based Payments) – The amendments clarify the accounting for the effects of vesting conditions on cash-settled share-based payment transactions, the classification of share-based payment transactions with net settlement features for withholding tax obligations and the accounting for a modification to the terms and conditions of a share-based payment that changes the transaction from cash-settled to equity-settled. The amendments are effective for annual periods beginning on or after January 1, 2018 with earlier application permitted.

IFRIC 22, Foreign currency transactions and advance consideration (Interpretation of IAS 21, The Effects of Changes in Foreign Exchange Rates) – This interpretation clarifies the accounting for transactions that include the receipt or payment of advance consideration in a foreign currency. The interpretation is effective for annual periods beginning on or after January 1, 2018, which early application permitted.

IFRS 15, Revenue from Contracts with Customers. The previous requirements of both IFRS and U.S. GAAP were different and often resulted in different accounting for transactions that were economically similar. IFRS 15 and its U.S. GAAP equivalent, contain a single revenue model that applies to contracts with customers with the exception of contracts for insurance, financial instruments and leases. Under the model, there are two approaches to recognizing revenue: at a point in time or over time. The model features a contract-based five-step analysis of transactions to determine whether, how much and when revenue is recognized. New estimates and judgmental thresholds have been introduced, which may affect the amount and/or timing of revenue recognized. Also in April 2016, amendments were issued to clarify how to identify a performance obligation in a contract, determine whether an entity is a principal or agent and determine whether the revenue from granting a license should be recognized at a point in time or over time. The amendments also include two additional reliefs to reduce cost and complexity when the standard is first applied. The mandatory effective date for IFRS 15 is for annual periods beginning on or after January 1, 2018 with either full retrospective application, retrospective with optional practical expedients or a modified prospective approach with disclosure requirements.

IFRS 16, 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. Further, IFRS 16 requires a front-loaded pattern for the recognition of lease expense over the life of the lease. The mandatory effective date for IFRS 16 is for annual periods beginning on or after January 1, 2019 with earlier application permitted for entities that have also adopted IFRS 15.

Sale or contribution of assets between an investor and its associate or joint venture (Amendments to IFRS 10, Consolidated Financial Statements and IAS 28, Investments in Associates and Joint Ventures) – The amendments require full gain recognition when the transfer of assets involving an associate or joint venture meet the definition of a business under IFRS 3, Business Combinations. The amendments also introduce new accounting that involves neither a cost nor full step-up
of certain retained assets that are not businesses. The effective date of the amendments has been delayed indefinitely; however with early application is permitted.

We intend to adopt each of the above standards and amendments, as applicable to us, in the year in which they are effective. We are reviewing these new standards and amendments to determine the potential impact on our financial statements once they are adopted. At this time, the extent of the impact of adoption of these new standards and amendments has not yet been determined.

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

**Disclosure Controls and Procedures**

TMX Group’s disclosure controls and procedures 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 disclosure controls and procedures as of December 31, 2016. Based on this evaluation, the CEO and CFO have concluded that our disclosure controls and procedures were effective as of December 31, 2016.

**Internal Control over Financial Reporting**

Management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in NI 52-109. Internal control over financial reporting 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 internal control over financial reporting 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 internal control over financial reporting as of December 31, 2016 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 internal control over financial reporting was effective as of December 31, 2016.

**Changes in Internal Control over Financial Reporting**

There were no changes to internal control over financial reporting during the quarter and year ended December 31, 2016 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.
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. While in aggregate the Nominating Investors32 own a significant portion of the common shares outstanding 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:

<table>
<thead>
<tr>
<th>(in millions of dollars)</th>
<th>2016</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries and other short-term employee benefits</td>
<td>$9.9</td>
<td>$9.2</td>
</tr>
<tr>
<td>Post-employment benefits</td>
<td>1.0</td>
<td>1.3</td>
</tr>
<tr>
<td>Share-based payments</td>
<td>15.1</td>
<td>8.7</td>
</tr>
<tr>
<td></td>
<td>26.0</td>
<td>19.2</td>
</tr>
</tbody>
</table>

Related party transactions

In aggregate, the Nominating Investors hold a significant proportion of our common shares outstanding. TMX Group and its subsidiaries transact with a number of the Nominating Investors on a regular basis through their normal operations. Transactions are conducted at prevailing market prices and on general market terms and conditions.

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. 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, statements related to cost reductions, strategic realignment expenses and TMX Group’s business integration initiative, factors relating to stock, derivatives and energy 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; 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 the U.S. dollar-Canadian dollar exchange rate), 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.

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.