MARKETAXESS HOLDINGS INC
Form 10-K
February 21, 2017

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2016

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from to

Commission File Number 001-34091

MARKETAXESS HOLDINGS INC.

(Exact name of registrant as specified in its charter)

Delaware (State of incorporation)	52-2230784 (IRS Employer Identification No.)
299 Park Avenue, New York, New York (Address of principal executive offices)	10171 (Zip Code)

(212) 813-6000

(Registrant’s telephone number, including area code)

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

Title of each class:	Name of each exchange on which registered:
Common Stock, par value $0.003 per share	NASDAQ Global Select Market

SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definition of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	Accelerated filer
Non-accelerated filer (Do not check if a smaller reporting company)	Smaller reporting company

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The aggregate market value of the shares of common stock held by non-affiliates of the registrant as of June 30, 2016 (the last business day of the registrant's most recently completed second fiscal quarter) was approximately $5.3 billion computed by reference to the last reported sale price on the NASDAQ Global Select Market on that date. For purposes of this calculation, affiliates are considered to be officers, directors and holders of 10% or more of the outstanding common stock of the registrant on that date. The registrant had 37,636,974 shares of common stock, 1,048,441 of which were held by affiliates, outstanding on that date.

As of February 16, 2017, the aggregate number of shares of the registrant’s common stock outstanding was 37,586,345.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant’s definitive proxy statement for the 2017 Annual Meeting of Stockholders are incorporated by reference into Items 10, 11, 12, 13 and 14 of Part III of this Form 10-K.

MARKETAXESS HOLDINGS INC.

2016 FORM 10-K ANNUAL REPORT

TABLE OF CONTENTS

PART I

Forward-Looking Statements

This report contains certain “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements may be identified by words such as “expects,” “intends,” “anticipates,” “plans,” “believes,” “seeks,” “estimates,” “will,” or words of similar meaning and include, but are not limited to, statements regarding the outlook for our future business and financial performance. Forward-looking statements are based on management’s current expectations and assumptions, which are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict. It is routine for our internal projections and expectations to change as the year or each quarter in the year progresses, and therefore it should be clearly understood that the internal projections and beliefs upon which we base our expectations may change prior to the end of each quarter or the year. Although these expectations may change, we are under no obligation to revise or update any forward-looking statements contained in this report. Our company policy is generally to provide our expectations only once per quarter, and not to update that information until the next quarter. Actual future events or results may differ, perhaps materially, from those contained in the projections or forward-looking statements. Factors that could cause or contribute to such differences include those discussed below and elsewhere in this report, particularly in Item 1A. “Risk Factors.”

Item 1. Business.

MarketAxess Holdings Inc. (the “Company” or “MarketAxess”) operates a leading electronic trading platform that enables fixed-income market participants to efficiently trade corporate bonds and other types of fixed-income instruments using our patented trading technology. Over 1,200 institutional investor and broker-dealer firms are active users of our trading platform, accessing global liquidity in U.S. high-grade corporate bonds, emerging markets and high-yield bonds, European bonds, U.S. agency bonds, municipal bonds, credit default swaps and other fixed-income securities. Through our Open Trading™ protocols, we execute trades in certain bonds between and among institutional investor and broker-dealer clients in an all-to-all trading environment on a matched principal basis. We also offer a number of trading-related products and services, including: market data to assist clients with trading decisions; connectivity solutions that facilitate straight-through processing; technology services to optimize trading environments; and execution services for exchange-traded fund managers and other clients. Through our Trax® division, we also offer a range of pre- and post-trade services, including trade matching, regulatory transaction reporting, and market and reference data across a range of fixed-income and other products.

Our platform’s innovative technology solutions are designed to increase the number of potential trading counterparties on our electronic trading platform and create a menu of solutions to address different trade sizes and bond liquidity characteristics. Our traditional request-for-quote model allows our institutional investor clients to simultaneously request competing, executable bids or offers from our broker-dealer clients and execute trades with the broker-dealer of their choice from among those that choose to respond. Our Open Trading™ protocols complement our request-for-quote model by increasing the number of potential counterparties and improving liquidity by allowing all participants to interact anonymously in an all-to-all trading environment. Our platform also provides our broker-dealer clients a solution that enables them to efficiently reach our institutional investor clients for the distribution and trading of bonds.

Traditionally, bond trading has been a manual process, with product and price discovery conducted over the telephone between two or more parties. This traditional process has a number of shortcomings resulting primarily from the lack of a central trading facility for fixed-income securities, which makes it difficult to match buyers and sellers for particular issues. Many market participants also use e-mail and other electronic means of communication for trading these securities. While electronic communication methods have addressed some of the limitations associated with traditional bond trading methods, we believe that the process is still hindered by limited liquidity, limited price transparency, significant transaction costs, compliance and regulatory challenges, and difficulty in executing numerous trades at one time.

Our disclosed multi-dealer Request For Quote (“RFQ”) trading functionality addresses many of the remaining shortcomings that result from trading bonds over the telephone or via e-mail. Through our RFQ trading protocols, our institutional investor clients can determine prices available for a security, a process called price discovery, and then trade those securities directly with our broker-dealer clients. The price discovery process includes the ability to view indicative prices from the broker-dealer clients’ inventory available on our platform, access to real-time pricing information and analytical tools (including spread-to-Treasury data, search capabilities and independent third-party credit research) available on our BondTicker™ service and the ability to request executable bids and offers simultaneously from all of our participating broker-dealer clients during the trade process. On average, institutional investor clients receive several bids or offers from broker-dealer clients in response to trade inquiries. However, some trade inquiries may not receive any bids or offers.

Our services relating to trade execution include single and multiple-dealer inquiries; list trading, which is the ability to request bids and offers on multiple bonds at the same time; and swap trading, which is the ability to request an offer to purchase one bond and a bid to sell another bond, in a manner such that the two trades will be executed simultaneously, with payment based on the price differential of the bonds. Once a trade is completed on our platform, the broker-dealer client and institutional investor client may settle the trade with the assistance of our automated post-trade messaging, which facilitates the communication of trade acknowledgment and allocation information between our institutional investor and broker-dealer clients.

We are not a party to any of the disclosed trades that occur on our platform between institutional investor clients and broker-dealer clients; rather, we serve as an intermediary between broker-dealers and institutional investors, enabling them to meet, agree on a price and then transact directly with each other. However, in connection with our Open Trading™ protocols, we execute bond transactions between and among institutional investor and broker-dealer clients on a matched principal basis by serving as counterparty to both the buyer and the seller in matching back-to-back trades which are then settled through a third-party clearing broker. In 2016, 13.2% of all MarketAxess platform volume was executed via Open Trading™ protocols, up from 9.2% in the 2015.

According to the Securities Industry and Financial Markets Association ("SIFMA"), outstanding U.S. high-grade corporate bond debt has increased approximately 21.4% from year-end 2012 to September 30, 2016, the most recent date available. During this same period, financial market regulators have implemented increased capital requirements for bank-owned broker-dealers holding corporate bond inventory. As a result, corporate bond debt owned by institutional investors has increased, while the available base of capital for dealer market making has declined. Partly as a result of these trends, overall secondary turnover as a percentage of corporate debt outstanding has been falling, causing all market participants to look for new electronic trading solutions to improve liquidity and turnover. We have responded with a series of Open Trading™ protocols designed to allow our broker-dealer and institutional investor clients to interact in an all-to-all trading environment. During 2016, over 600 participating client firms provided liquidity via our Open Trading™ solutions and we completed approximately 407,000 Open Trading™ trades, an increase of 130% compared to 2015.

Our broker-dealer clients accounted for approximately 97% of the underwriting of newly-issued U.S. corporate bonds and approximately 82% of the underwriting of newly issued European corporate bonds in 2016. We believe these broker-dealers also represent the principal source of secondary market liquidity in the other markets in which we operate. Secondary market liquidity refers to the ability of market participants to buy or sell a security quickly and in large volume subsequent to the original issuance of the security, without substantially affecting the price of the security. In addition to trading fixed-income securities by traditional means, including the telephone and e-mail, our broker-dealer clients use proprietary single-dealer systems and other trading platforms, as well as our electronic trading platform. We believe that the traditional means of trading remain the manner in which the majority of bond volume is traded between institutional investors and broker-dealers.

In 2016, our volume in U.S. high-grade corporate bonds represented approximately 16% of the total estimated U.S. high-grade corporate bond volume, as reported by the Financial Industry Regulatory Authority ("FINRA") Trade Reporting and Compliance Engine ("TRACE"). TRACE facilitates the mandatory reporting of over-the-counter ("OTC") secondary market transactions in eligible fixed-income securities in the U.S., including trading between institutional investors and broker-dealers, as well as inter-dealer and retail trading. All broker-dealers that are FINRA member firms have an obligation to report transactions in corporate bonds to TRACE under a set of rules approved by the Securities and Exchange Commission ("SEC").

Through our Trax® brand, we provide trade matching and regulatory transaction reporting services for European securities and market and reference data across a range of fixed-income products. Trax® provides the Company with an expanded set of technology solutions ahead of incoming pre-and post-trade transparency mandates from the Markets in Financial Instruments Directive ("MiFID") II in Europe.

In 2016, 90% of our revenues were derived from commissions for trades executed on our platform and distribution fees that are billed to our broker-dealer clients on a monthly basis. We also derive revenues from information and post-trade services, technology products and services, investment income and other income. Our expenses consist of employee compensation and benefits, depreciation and amortization, technology and communication expenses, professional and consulting fees, occupancy, marketing and advertising and other general and administrative expenses.

Industry Background

Fixed-income securities are issued by corporations, governments and other entities, and pay a pre-set absolute or relative rate of return. As of September 30, 2016, the most recent date available, there were approximately $40.8 trillion principal amount of fixed-income securities outstanding in the U.S. market, including $8.6 trillion principal amount of U.S. corporate bonds, according to SIFMA. The estimated average daily trading volume of U.S. corporate bonds, as measured by TRACE, was $26.8 billion in 2016. Primary dealer holdings of U.S. corporate bonds (investment-grade and high-yield) as reported by the Federal Reserve Bank of New York were $9.5 billion as of December 31, 2016. This represents less than one day of trading volume as measured by TRACE.

U.S. High-Grade Corporate Bond Market

The U.S. corporate bond market consists of three broad categories of securities: investment-grade debt (so-called "high-grade"), which typically refers to debt rated BBB- or better by Standard & Poor's or Baa3 or better by Moody's Investor Service; debt rated below investment-grade (so-called "high-yield"), which typically refers to debt rated lower than BBB- by Standard & Poor's or Baa3 by Moody's Investor Service; and debt convertible into equity (so-called "convertible debt"). We use the terms high-grade debt and investment-grade debt interchangeably in this Annual Report on Form 10-K.

The U.S. high-grade corporate bond market represents the largest subset of the U.S. corporate bond market. FINRA includes over 53,000 unique securities in the list of TRACE-eligible bonds, representing the majority of the daily trading volume of high-grade bonds. According to SIFMA, U.S. high-grade corporate bond debt outstanding has increased approximately 21.4% from $7.0 trillion at year-end 2012 to $8.6 trillion at September 30, 2016. Over the last five years, high-grade corporate bond issuance was over $1.0 trillion each year, exceeding pre-financial crisis levels. Notwithstanding the growth in the total amount of debt outstanding, turnover (which is the total amount traded as a percentage of the amount outstanding for the bonds that traded) is below credit-crisis lows. The trading volume of U.S. high-grade corporate bonds as reported by TRACE increased to approximately $4.6 trillion for the year ended December 31, 2016, compared to $4.0 trillion and $3.7 trillion for the years ended December 31, 2015 and 2014, respectively. We believe that the low level of turnover is an indicator of liquidity challenges in the credit markets.

Prior to regulatory reforms such as Basel III and regulations under The Dodd–Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act"), dealer balance sheets were relatively elastic, so dealers were able to facilitate trading in most fixed-income products without dramatic price moves. The regulatory reforms enacted after the global financial crisis resulted in greater capital and liquidity requirements for dealers, which impacted market liquidity and diminished risk appetite by market intermediaries. The Volcker Rule, which limits proprietary trading by banks, has also had an impact on dealer inventories and the ability of dealers to act as effective market-makers. As a result, we believe market participants require new solutions to increase liquidity and we have responded with our Open Trading™ protocols, designed to increase the number of potential trading counterparties on our electronic trading platform by allowing our broker-dealer and institutional investor clients to interact in an all-to-all trading environment.

Emerging Markets Bond Market

We define the emerging markets bond market generally to include U.S. dollar, Euro or local currency denominated bonds issued by sovereign entities or corporations domiciled in a developing country. These issuers are typically located in Latin America, Asia, or Central and Eastern Europe. Examples of countries we classify as emerging markets include: Argentina, Brazil, Colombia, Mexico, Peru, the Philippines, Russia, Turkey and Venezuela.

The institutional investor base for emerging markets bonds includes many crossover investors from the high-yield and high-grade investment areas. Institutional investors have been drawn to emerging markets bonds by their high returns and high growth potential. The average daily trading volume of emerging markets debt, as reported by the Emerging Markets Trade Association for the quarter ended September 30, 2016, the most recent date available, was $7.8 billion of external markets debt and $13.7 billion of local markets debt.

U.S. Crossover and High-Yield Bond Market

We define the high-yield bond market generally to include all debt rated lower than BBB- by Standard & Poor's or Baa3 by Moody's Investor Service. We define the crossover market to include any debt issue rated below investment-grade by one agency but investment-grade by the other. The total amount of high-yield corporate bonds yearly issuance as reported by SIFMA decreased by 9.6% to $236.6 billion in 2016 from $261.7 billion in 2015, primarily due to risk aversion among corporate bond investors that severely limited the ability of high-yield issuers to raise new debt. The average daily trading volume of high-yield bonds as measured by TRACE for the year ended

December 31, 2016 was approximately $8.5 billion.

European Corporate Bond Market

The European corporate bond market consists of a broad range of products, issuers and currencies. We define the European corporate bond market generally to consist of bonds intended to be distributed to European investors, primarily bonds issued by European corporations, excluding bonds that are issued by corporations domiciled in an emerging markets country and excluding most government bonds that trade in Europe. Examples include:

- bonds issued by European corporations, denominated in any currency;
- bonds generally denominated in Euros, U.S. dollars or British Pounds Sterling intended to be distributed to European investors, excluding bonds that are issued by corporations domiciled in an emerging market;
- bonds issued by supra-national organizations (entities that include a number of central banks or government financial authorities, such as the World Bank), agencies and governments located in Europe, generally denominated in Euros,

U.S. dollars or British Pounds Sterling, provided that such currency is not the currency of the country where the bond was issued; and

- floating-rate notes issued by European corporations.

We believe that the European corporate bond market is impacted by many of the same factors as the U.S. high-grade corporate bond market. The total amount of Euro denominated high-grade and high-yield bonds yearly issuance as reported by International Capital Markets Association increased by 4.7% to $390.4 billion in 2016 from $373.0 billion in 2015. The average daily trading volume of European corporate bonds as estimated by Trax® for the year ended December 31, 2016 was approximately $8.2 billion.

U.S. Agency Bond Market

We define the U.S. agency bond market to include debt issued by a U.S. government-sponsored enterprise. Some prominent issuers of agency bonds are the Federal National Mortgage Association and Federal Home Loan Mortgage Corporation. The total amount of U.S. agency bonds outstanding was approximately $2.0 trillion as of September 30, 2016 as reported by SIFMA. The average daily trading volume of U.S. agency bonds (excluding mortgage-backed securities) as measured by TRACE increased from approximately $5.0 billion for the year ended December 31, 2015 to $5.1 billion for the year ended December 31, 2016.

U.S. Municipal Bond Market

Municipal bonds are debt securities issued by states, cities, counties and other governmental entities in the U.S. to fund day-to-day obligations and to finance a wide variety of public projects, such as highways or water systems. Depending on the type of financing, payments of the principal and interest on a municipal bond may come from general revenues of the municipal issuer, specific tax receipts, revenues generated from a public project, or payments from private entities or from a combination of sources. In addition to being issued for many different purposes, municipal securities are also issued in many different forms, such as fixed rate, zero coupon or variable rate bonds. The interest paid on municipal securities is typically exempt from federal income taxation and may be exempt from state income and other taxes as well. As of December 31, 2016, there were over one million different municipal bonds outstanding, in the total aggregate principal amount of more than $3.8 trillion. The average daily trading volume of municipal bonds as measured by the Municipal Securities Rulemaking Board (“MSRB”) for the year ended December 31, 2016 was approximately $7.4 billion.

Credit Derivative Market

Credit derivatives are contracts on an underlying asset that transfer risk and return from one party to another without transferring ownership of the underlying asset, allowing market participants to obtain credit protection or assume credit exposure associated with a broad range of issuers of fixed-income securities and other debt obligations. Among the most significant requirements of the derivatives section of the Dodd-Frank Act are mandatory clearing of certain derivatives transactions (“swaps”) through regulated central clearing organizations and mandatory trading of those swaps through either regulated exchanges or swap execution facilities (“SEFs”), in each case, subject to certain key exceptions. We operate a swap execution facility pursuant to the U.S. Commodity Futures Trading Commission’s (“CFTC”) rules and we list certain credit derivatives for trading by U.S. persons and other participants on our SEF. The U.S. Securities and Exchange Commission (“SEC”) has not yet finalized its rules for security-based SEFs that would govern the execution of single-name credit derivatives, nor has it published a timetable for the finalization and implementation of such rules. According to The Depository Trust & Clearing Corporation Trade Information Warehouse, the average daily trading volume of credit derivatives for the year ended December 31, 2016 was approximately $82.3 billion.

Trade Matching and Regulatory Transaction Reporting Services

In Europe, the first MiFID set best-execution requirements for trades and mandated that financial firms submit to their local regulators detailed end-of-day reports, including the time and price of a trade, the counterparty involved and whether it was a purchase or sale. Firms must either become so-called approved reporting mechanisms (“ARMs”) or use one of the approved providers, such as our Trax® ARM to submit such reports. In the U.K., required transactions are reported to the Financial Conduct Authority (“FCA”). MiFID II will increase the number of fields that must be reported to regulators and we expect the demand for experienced regulatory trade reporting service providers to increase over the next several years.

Trade matching enables counterparties to agree the terms of a trade shortly after execution, reducing the risk of errors and a trade failing during settlement. In 2014, the Central Securities Depositories Regulation shortened the securities settlement cycle for all cash securities, including corporate bonds, across the European Union (“EU”) to no later than two days after the date on which a trade is executed, referred to as a T+2 settlement cycle. With a shortened settlement cycle, firms use trade matching services, such as our Trax® Match service in Europe, to match trade details on trade date and reduce both operational and settlement risk.

Our Competitive Strengths

Our electronic trading platform provides solutions to many of the shortcomings of traditional bond trading methods. The benefits of our solution are demonstrable throughout the trading cycle:

- Pre-trade — In the pre-trade period, our platform assists our participants by providing them with value-added services, such as real time and historical trade price information, liquidity and turnover analytics, bond reference data and trade order matching alerts;
- Trade — Our innovative electronic trading platform enables our participants to, among other things, request and receive single and multiple security trade execution, with access to broad and unique sources of liquidity from our growing network of participating firms, and the ability to choose from a wide menu of electronic trading protocols to address different trade sizes and liquidity characteristics; and
- Post-trade — Following the execution of a trade, our platform supports all of the essential tools and functionalities to enable our participants to realize the full benefits of electronic trading and demonstrate best execution, including real-time trade details, straight-through processing (“STP”), account allocations, automated audit trails, regulatory trade reporting, trade detail matching, and transaction cost analysis.

We believe that we are well positioned to strengthen our market position in electronic trading in our existing products and to extend our presence into new products and services by capitalizing on our competitive strengths, including:

Significant Trading Volumes with Participation by Leading Broker-Dealers and Institutional Investors

Our electronic trading platform provides access to the liquidity provided through the participation on our platform of over 1,200 active institutional investor and broker-dealer clients, including substantially all of the leading broker-dealers in global fixed-income trading. We believe these broker-dealers represent the principal source of secondary market liquidity for U.S. high-grade corporate bonds, emerging markets and high-yield bonds, European high-grade corporate bonds and the other markets in which we operate. Our broker-dealer clients are motivated to continue to utilize our platform due to the presence on the platform of our large network of institutional investor clients.

As shown in the chart below, our total bond trading volume increased from $589.6 billion in 2012 to $1.3 trillion in 2016.

Our adjusted estimated share of U.S. high-grade and high-yield corporate bond volume for 2016 was approximately 16.0% and 7.0%, respectively. Our estimated market share from 2012 to 2016 is shown in the chart below:

* We adjusted the reported U.S. high-grade TRACE volumes to eliminate the increased reporting of affiliate back-to-back trades by certain broker-dealers that occurred from April 2014 through October 2015 because we believe that the TRACE volume, as adjusted by us, provide a more accurate comparison to prior period reporting. We have provided a reconciliation of the reported U.S. high-grade TRACE volumes to the adjusted U.S. high-grade TRACE volumes in the “Investor Relations” section of our website.

Execution Benefits to Clients

Benefits to Institutional Investor Clients

We believe we provide numerous benefits to our institutional investor clients over traditional fixed-income trading methods, including:

Competitive Prices. By enabling institutional investors to simultaneously request bids or offers from our broker-dealer clients, we believe our electronic trading platform creates an environment that motivates our broker-dealer clients to provide competitive prices and gives institutional investors confidence that they are obtaining a competitive price. For typical MarketAxess multi-dealer corporate bond inquiries, the range of competitive spread-to-Treasury responses is approximately 9 basis points (a basis point is 1/100 of 1% in yield). As an example of the potential cost savings to institutional investors, a one basis point savings on a $1 million face amount trade of a bond with 10 years to maturity translates to aggregate savings of approximately $800.00. We believe our Open Trading™ protocols enhance our institutional investor clients' ability to obtain a competitive price by allowing all of our Open Trading™ participants to interact in an all-to-all trading environment, thereby increasing the potential sources of liquidity for each participant, as well as the likelihood of receiving a competitive price response.

Improved Cost Efficiency. We believe that we provide improved efficiency by reducing the time and labor required to conduct broad product and price discovery. Single-security and multi-security (bid or offer lists) inquiries can be efficiently conducted with multiple broker-dealers. In addition, our BondTicker™ service eliminates the need for manually-intensive phone calls or e-mail communication to gather, sort and analyze information concerning historical transaction prices.

Limited Information Leakage. Our Open Trading™ protocols allow our institutional investor clients to maintain their anonymity from trade initiation through to settlement without limiting their number of potential trading counterparties. In addition, our Private Axes™ protocol allows participants to negotiate bilaterally on an anonymous basis to minimize information leakage when transacting in larger trade sizes.

Benefits to Broker-Dealer Clients

We also provide substantial benefits to our broker-dealer clients over traditional fixed-income trading methods, including:

Greater Sales Efficiency. We offer our broker-dealer clients broad connectivity with our institutional investor clients. Through this connectivity, our broker-dealer clients are able to efficiently display their indications of interest to buy and sell various securities. We also enable broker-dealers to broaden their distribution by participating in transactions to which they otherwise may not have had access. In addition, the ability to post prices and electronically execute on straightforward trades enables bond sales professionals at broker-dealer firms to focus their efforts on higher value-added trades and more complex transactions.

More Efficient Inventory Management. The posting of inventory to, and the ability to respond to inquiries from, a broad pool of institutional investors, creates an increased opportunity for broker-dealers to identify demand for their inventory, particularly in less liquid securities. As a result, we believe they can achieve enhanced bond inventory turnover, which may limit credit exposure.

Benefits to Both Institutional Investor and Broker-Dealer Clients

We offer additional benefits over traditional fixed-income trading methods that are shared by both institutional investor and broker-dealer clients, including:

Transparent Pricing on a Range of Securities. Institutional investors and broker-dealer clients can search bonds in inventory based on combinations of issuer, issue, rating, maturity, spread-to-Treasury, size and dealer providing the listing, in a fraction of the time it takes to do so manually. Clients can also request executable bids and offers on our electronic trading platform on any debt security in a database of corporate bonds, although there can be no assurance as to the number of market participants who will choose to provide an executable price. Our platform transmits bid and offer requests in real-time to other participants, who may respond with executable prices within the time period specified by the requestor. Through our Open Trading™ protocols, participants may also elect to display live requests for bids or offers anonymously to all other users of our electronic trading platform, in order to create broader visibility of their inquiry among market participants and increase the likelihood that the request results in a trade. We believe that broader participation in client inquiries will result in more trade matches and lower transaction costs.

Greater Trading Accuracy. Our electronic trading platform includes verification mechanisms at various stages of the execution process which result in greater accuracy in the processing, confirming and clearing of trades between institutional investor and broker-dealer clients. These verification mechanisms are designed to ensure that our broker-dealer and institutional investor clients are sending accurate trade messages by providing multiple opportunities to verify they are trading the correct bond, at the agreed-upon price and size. Our platform assists our institutional investor clients in automating the transmittal of order tickets from the portfolio manager to the trader, and from the trader to back-office personnel. This automation provides more timely execution and a reduction in the likelihood of errors that can result from manual entry of information into different systems.

Efficient Risk Monitoring and Compliance. Institutional investors and their regulators are increasingly focused on ensuring that best execution is achieved for fixed-income trades. Our electronic trading platform offers both institutional investors and broker-dealers an automated audit trail for each stage in the trading cycle. This enables compliance personnel to review information relating to trades more easily and with greater reliability. Trade information, including time, price and spread-to-Treasury, is stored securely and automatically on our electronic trading platform. This data represents a valuable source of information for our clients' compliance personnel. Importantly, we believe the automated audit trail, together with the competitive pricing that is a feature of our electronic trading platform, gives fiduciaries the ability to demonstrate that they have achieved best execution on behalf of their clients.

Other Service Offerings

In addition to services directly related to the execution of trades, we offer our clients several other services, including:

Information Services. The information and analytical tools we provide to our clients help them make investment and trading decisions. Our BondTicker™ service provides access to real-time and historical price, yield and MarketAxess estimated spread-to-Treasuries for publicly disseminated TRACE-eligible bonds. BondTicker™ combines publicly-available TRACE data with the prices for trades executed on our U.S. bond trading platform, integrating the two data sources and providing real-time TRACE data with associated analytical tools that are not otherwise available. Our electronic trading platform allows institutional investors to compile, sort and use information to discover investment opportunities that might have been difficult or impossible to identify using a manual information-gathering process or other electronic services.

Through our Trax® brand, we provide a range of information solutions for financial services firms, utilizing quotes contributed by market participants and leveraging our post-trade services for European securities. Axess All™, the first intra-day trade tape for the European fixed income market, is sourced from over 30,000 bond transactions processed daily by Trax® and includes aggregated volume and pricing for the most actively traded European fixed income instruments. We also provide market participants with access to pricing, liquidity and volume data on over 50,000 unique fixed-income securities and securities reference data for approximately 300,000 fixed-income securities.

Post-Trade Services. Our Trax® service provides post-trade, pre-settlement trade matching and regulatory reporting for the European markets. It allows subscribers to match and report trades in a range of capital market instruments, including bonds, derivatives, equities and swaps. Following the implementation of the T+2 settlement cycle for transferable securities in European markets, subscribers use Trax® to match trades on trade date and help reduce settlement risk. Trax® has approximately 100 clients, including broker-dealers, hedge funds and investment banks. The Trax® platform processed approximately 1.2 billion transactions in 2016.

Straight-Through Processing. STP refers to the integration of systems and processes to automate the trade process from end-to-end — trade execution, confirmation and settlement — without the need for manual intervention. Our electronic trading platform provides broker-dealers and institutional investors with the ability to automate portions of their transaction processing requirements, improving accuracy and efficiency. Through electronic messaging, institutional investors can submit inquiries to, and receive electronic notices of execution from us, in industry standard protocols, complete with all relevant trade details. Institutional investors can download trade messages, allocate trades to the sub-accounts on whose behalf the trades were made and send the allocations to broker-dealers for confirmation.

Technology Products and Services. We provide technology solutions and professional consulting services to fixed-income industry participants. Technology projects have ranged from enhancing regional broker-dealer systems to developing full-fledged globally integrated trading networks.

Robust, Scalable Technology

We have developed proprietary technology that is highly secure, fault-tolerant and provides adequate capacity for our current operations, as well as for substantial growth. Our highly scalable systems are designed to accommodate additional volume, products and clients with relatively little modification and low incremental costs.

Proven Innovator with an Experienced Management Team

Since our inception, we have been an innovator in the fixed-income securities markets. The members of our management team average more than 20 years of experience in the securities industry. We have consistently sought to benefit participants in the markets we serve by attempting to replicate the essential features of fixed-income trading, including the existing relationships between broker-dealers and their institutional investor clients, while applying technology to eliminate weaknesses in traditional trading methods. In recent years, MarketAxess was awarded “OTC Trading Platform of the Year” by Global Capital, “SEF of the Year” by Risk Magazine, and “Best Trading and Execution Technology” by Alt Credit Intelligence.

Some of the innovations we have introduced to electronic trading include:

- the first multi-dealer disclosed trading platform for U.S. high-grade corporate bonds;
- the first electronic Treasury benchmarking for U.S. high-grade corporate bond trades;
- BondTicker™, our information services product, combining TRACE bond data with MarketAxess data and analytical tools;
- bid and offer list technology for corporate bond trading, enabling institutional investors to request executable prices for multiple securities simultaneously;
- the first disclosed client to multi-dealer trading platform for credit derivative indices;
- public Market Lists for corporate bonds, giving institutional investors the ability to display their bid and offer lists anonymously to the entire MarketAxess trading community; and
- Axess All™, the first intra-day trade tape for the European fixed income market.

Independence

We believe the current regulatory environment creates competitive advantages for independent companies like us that are less prone to conflicts of interest. As an independent company, we are free to make business and trading protocol decisions with the best interests of both our institutional investor and broker-dealer clients in mind. We are also able to attract industry leaders with valuable skills and insights to our independent Board of Directors.

Our Strategy

Our objective is to provide the leading global electronic trading platform for fixed-income securities, connecting broker-dealers and institutional investors more easily and efficiently, while offering a broad array of information, trading and technology services to market participants across the trading cycle. The key elements of our strategy are:

Enhance the Liquidity of Securities Traded on Our Platform and Broaden Our Client Base in Our Existing Markets

We intend to further enhance the liquidity of securities traded on our leading electronic, multi-dealer to client fixed-income platform. Our ability to innovate and efficiently add new functionality and product offerings to the MarketAxess platform will help us deepen our market share with our existing clients, as well as expand our client base, which we believe will, in turn, lead to even further increases in the liquidity of the securities provided by our broker-dealer clients and available on our platform. We will seek to increase the amount of cross-regional activity by our institutional investor clients on our electronic trading platform, subject to regulatory requirements.

Leverage our Existing Client Network and Technology to Increase Counterparties and Improve Liquidity

Due to regulatory changes that have caused significant reductions in primary dealer corporate bond balance sheets, our broker-dealer and institutional investor clients need new and innovative electronic trading solutions to promote secondary market liquidity. We intend to continue to develop and deploy a wide range of electronic trading protocols to complement our traditional request-for-quote model. These Open Trading™ protocols increase potential trading counterparties by allowing broker-dealers and institutional investors to interact in an all-to-all trading environment. During 2016, our clients executed approximately 407,000 trades using our Open Trading™ solutions.

Leverage our Existing Technology and Client Relationships to Expand into New Sectors of the Fixed-Income Securities Market

We intend to leverage our technology, as well as our strong broker-dealer and institutional investor relationships, to deploy our electronic trading platform into additional product segments within the fixed-income securities markets and deliver fixed-income securities-related technical services and products. Due in part to our highly scalable systems, we believe we will be able to enter new markets efficiently. For example, during 2016, we expanded our platform to the municipal bond and leveraged loan markets.

Continue to Strengthen and Expand our Trade-Related Service Offerings

We plan to continue building our existing service offerings so that our electronic trading platform is more fully integrated into the workflow of our broker-dealer and institutional investor clients. We expect to continue to add functionality to enhance the ability of our clients to achieve a fully automated, end-to-end straight-through processing solution (automation from trade initiation to settlement). We also plan to expand and enhance the trade matching and regulatory transaction reporting services provided by Trax® in Europe to enable our clients to comply with their heightened obligations pursuant to MiFID II.

Expand our Data and Information Services Offerings

We regularly add new content and analytical capabilities to BondTicker™ and Axess All™ in order to improve the value of the information we provide to our clients. We intend to continue to widen the user base of our data products and to continue adding new content and analytical capabilities, both in the U.S. and to the data service offering provided by Trax® in Europe. As the use of our electronic trading platform continues to grow, we believe that the amount and value of our proprietary trading data will also increase, further enhancing the value of our information services offerings to our clients.

Pursue Select Acquisitions and Strategic Alliances

We plan to continue to increase and supplement our internal growth by entering into strategic alliances, or acquiring businesses or technologies, that will enable us to enter new markets, provide new products or services, or otherwise enhance the value of our platform to our clients. For example, the acquisition of Xtrakter Limited ("Xtrakter") in February 2013 provided us with an expanded set of technology solutions ahead of incoming pre-and post-trade transparency mandates from MiFID II in Europe. In recent years, we entered into, and expanded, a strategic alliance with BlackRock, Inc. (“BlackRock”) to combine BlackRock’s order flow with our Open Trading™ solution to improve the range of trading connections available to global credit market participants. In 2016, we entered into an agreement with S&P Dow Jones Indices to jointly develop indices that will track the most liquid segments of the U.S. corporate bond market.

MarketAxess Electronic Trading Platform

Key Trading Functionalities

The key trading functionalities of the MarketAxess electronic trading platform are detailed below.

Single Inquiry Trading Functionality

We offer institutional investors the ability to request bids or offers in a single inquiry from an unlimited number of our broker-dealer clients in all of our key trading products. Our platform allows institutional investors to view bids and offers from one or more of our broker-dealer clients while permitting each party to know the identity of its counter-party throughout the trading process. This disclosed inquiry trading functionality combines the strength of existing offline client/dealer relationships with the efficiency and transparency of an electronic trading platform. Institutional investors can obtain bids or offers on any security posted in inventory or included in the database available on our platform.

ASAP and Holding Bin Trading Functionalities

We offer both ASAP ("as soon as possible") and Holding Bin trading protocols. In the Holding Bin trading protocol, institutional investor clients set the time when they would like all of the broker-dealers' prices or spreads returned to them, in order to have the ability to see all executable prices available at the same time. In the ASAP trading protocol, institutional investor clients see each broker-dealer's price or spread as soon as it is entered by the broker-dealer.

List Trading Functionality

We offer institutional investors the ability to request bids or offers on a list of up to 200 bonds depending on the market. This facilitates efficient trading for institutional investors such as investment advisors, mutual funds and hedge funds. Institutional investors are able to have multiple lists executable throughout the trading day, enabling them to manage their daily cash flows, portfolio duration, and credit and sector exposure.

Open Trading Functionality

We offer a series of Open Trading™ protocols that allows our broker-dealer and institutional investor clients to interact in an all-to-all trading environment. Our Market List functionality provides our Open Trading™ participants with the ability to display live requests for bids and offers anonymously to the entire MarketAxess trading community, thereby creating broader visibility of their inquiry among market participants and increasing the likelihood that the request results in a trade. Public Axes™ is an order book-style price discovery process that gives clients the ability to view anonymous or disclosed indications of interest from the inventory on our platform. Through the aggregated indication of interest inventory, clients can search for bonds of interest and engage in electronic transactions. For block-sized trades, clients may use our Private Axe™ functionality, a protocol that allows participants to anonymously negotiate round lots (greater than $1.0 million) and block trades to minimize information leakage. We offer Open Trading™ protocols for all of our key trading products, including corporate, municipal and emerging market bonds. Bond trades executed pursuant to any of our anonymous Open Trading™ protocol are conducted with MarketAxess on a matched principal basis.

Click-to-Trade

Our click-to-trade functionality allows our investor clients to initiate an inquiry with a single click on stacks of distinctly displayed dealer bids and offers. In support of this functionality, pools of dealers stream attributable pricing for each instrument. Click-to-trade is offered alongside our existing RFQ product and allows pre-trade price discovery and fast-track execution. Although currently limited to credit derivatives, U.S. Treasuries and emerging markets, click-to-trade functionality may be applied to trading of other market sectors.

SEF Trading for Credit Derivatives

We offer a range of functionality for electronic trading of CFTC regulated credit derivatives on our SEF in compliance with the CFTC's requirements. This includes an RFQ system that allows participants to send anonymous or disclosed RFQs, as well as an order book, which enables market participants to trade anonymously with all other market participants.

Key Trading Products

U.S. High-Grade Corporate Bonds

Our U.S. high-grade corporate bond business consists of U.S. dollar-denominated investment-grade debt issued by corporations for distribution in the U.S. Both domestic and foreign institutional investors have access to U.S. high-grade corporate bond trading on our electronic trading platform. Our 2016 trading volume in the U.S. high-grade corporate bond market was $730.6 billion.

In the U.S. high-grade corporate bond market, 76 broker-dealers utilize our platform, including all of the top 20 broker-dealers as ranked by underwriting volume of new-issue U.S. corporate bonds in 2016. Our broker-dealer clients accounted for approximately 97% of the underwriting of newly-issued U.S. corporate bonds in 2016. More than 900 active institutional investor firms use our platform to trade U.S. high-grade corporate bonds.

Emerging Markets Bonds

Over 70 of our broker-dealer clients and more than 800 active institutional investor firms use our platform to trade emerging markets bonds. These institutional investor clients are predominantly located in the U.S. and Europe. The emerging markets countries whose bonds were most frequently traded on our platform in 2016 were Mexico, Brazil, Turkey, Argentina and the Russian Federation. We also enable our institutional investor clients to transact local currency denominated bonds issued by sovereign entities or corporations in countries that include Argentina, Brazil and Mexico. Our 2016 trading volume in the emerging market bond market was $223.6 billion.

U.S. Crossover and High-Yield Bonds

Over 70 of our broker-dealer clients and more than 800 active institutional investor firms use our platform to trade crossover and high-yield bonds. Trading in crossover and high-yield bonds uses many of the same features available in our U.S. high-grade corporate bond offering. In 2016, we launched leveraged loan trading for our clients that trade high-yield bonds. Our 2016 trading volume in the high-yield bond market was $148.0 billion.

Eurobonds

We offer secondary trading functionality in U.S. dollar- and Euro-denominated European corporate bonds to our broker-dealer and institutional investor clients. We also offer our clients the ability to trade in other European high-grade corporate bonds, including bonds issued in British Pounds Sterling, floating rate notes, European government bonds and bonds denominated in non-core currencies. We offered the first platform in Europe with a multi-dealer disclosed counterparty trading capability for corporate bonds. Our 2016 trading volume in the Eurobond bond market was $133.8 billion.

In the Eurobond credit market, defined as including European high-grade, high-yield and government bonds, 41 broker-dealers utilize our platform, including 19 of the top 20 broker-dealers as ranked by 2016 European corporate new-issue underwriting volume. More than 400 active institutional investor firms use our platform to trade European bonds.

U.S. Agency Bonds

Over 35 of our broker-dealer clients and approximately 300 active institutional investor firms use our platform to trade U.S. agency bonds. Trading in U.S. agency bonds uses many of the same features available in our U.S. high-grade corporate bond offering. Our 2016 trading volume in the U.S. agency bond market was $68.4 billion.

Municipal Bonds

We launched trading of municipal bonds on our platform in 2016 and more than 100 broker-dealer clients and 340 institutional investor firms have been on-boarded to trade municipal bonds. We offer trading for both taxable and non-taxable municipal bonds.

Credit Derivatives

MarketAxess offers a complete solution for the trading of clearable and non-clearable credit derivative instruments, including indices, single-name swaps and index options. Through our CFTC-registered SEF, we offer trading of credit derivative indices and credit options to approximately 150 market participants. We support the trading of single-name credit derivatives through our traditional RFQ protocol, as well as through a central limit order book.

Information and Post-Trade Services

Information Services

BondTicker™ provides real-time TRACE data and enhances it with MarketAxess trade data and analytical tools in order to provide professional market participants with a comprehensive set of corporate bond price information. The data includes trade time and sales information, including execution prices, as well as MarketAxess-estimated spread-to-Treasuries, for trades disseminated by the TRACE system. The data also includes actual execution prices and spread-to-Treasury levels for U.S. high-grade corporate bond trades executed on the MarketAxess platform. BondTicker™ is currently the source of corporate bond trading information for The Wall Street Journal in the U.S.

BondTicker™ allows institutional investors to search for and sort bonds based upon specific criteria, such as volume, time/date of transaction, spread change, issuer or security. This search function allows institutional investors to compile information relating to potential securities trades in a fraction of the time that it takes to manually compile this information from disparate sources or other electronic databases, including direct TRACE feeds.

BondTicker™ also contains pricing information on a broad selection of European fixed-income securities. European pricing information is provided by Trax's end-of-day pricing feed.

BondTicker™ is integrated directly into the MarketAxess electronic trading platform and can be seamlessly accessed, either when viewing securities inventory or when launching an inquiry. BondTicker™ is also available through the Internet for non-trading professional market participants, including, among others, research analysts and rating agencies, who can log in and access the information via a browser-based interface.

We provide BondTicker™ as an ancillary service to our trading clients and also to other industry participants. We derive revenues from our BondTicker™ service by charging for seat licenses per user at our broker-dealer and institutional investor clients, through distribution agreements with other information service providers and through bulk data sales to third parties. Seat license fees are waived for clients that transact a sufficient volume of trades through MarketAxess.

We also offer a set of tools that analyze credit trading activity for institutional investor clients. These tools utilize extensive amounts of market data and have a flexible interface to run and save in a variety of formats, depending on the business purpose. Further, we provide extensive client-specific reports that measure trading performance on our electronic trading platform, including reports for the value of price discovery from multiple dealers, the cost savings generated from Open Trading participation and transaction cost analysis.

Through our Trax® brand, we provide a range of information solutions for financial services firms, utilizing quotes contributed by participants and leveraging our post-trade services for European securities. We recently launched Axess All™, the first intra-day trade tape for the European fixed income market. Axess All™ is sourced from over 30,000 bond transactions processed daily by Trax® through its post-trade services and includes aggregated volume and pricing for the most actively traded European fixed income instruments.

Post-Trade Services

Our Trax® service provides post-trade, pre-settlement trade matching and regulatory transaction reporting services for the European OTC markets. Subscribers use the Trax® platform to match and report trades in a range of capital market instruments, including bonds, derivatives, equities and swaps. Trax® has approximately 100 clients, including broker-dealers, hedge funds and investment banks. The Trax® platform processed approximately 1.2 billion transactions in 2016.

Straight-Through Processing and APIs

Straight-through processing refers to the integration of systems and processes to automate the trade process from end-to-end — trade execution, confirmation and settlement — without the need for manual intervention. There are two elements of straight-through processing: internal straight-through processing and external straight-through processing. Internal straight-through processing relates to the trade and settlement processes that are internal to an industry participant. For example, in the case of an institutional investor, this includes authorization of orders, placement of orders with broker-dealers, receipt of execution details and allocation of trades. External straight-through processing refers to connecting seamlessly to all external counterparts in the trading and settlement process.

Automation by way of straight-through processing improves efficiency throughout the trade cycle. We provide broker-dealers and institutional investors with a range of tools that facilitate straight-through processing, including order upload, easy-to-use online allocation tools and pre- and post-trade messaging features that enable institutional investors to communicate electronically between front- and back-office systems, thereby integrating the order, portfolio management and accounting systems of our broker-dealer and institutional investor clients in real time. Our straight-through processing tools can be customized to meet specific needs of clients. We continue to build industry partnerships to assist our clients in creating connectivity throughout the trade cycle. Through these partnerships, we are increasingly providing solutions that can quickly be deployed within our clients' trading operations.

Usage of our straight-through processing tools increased significantly during the last several years. We maintained over 500 investor client STP connections as of December 31, 2016. In addition, many of our broker-dealer clients use our Application Programming Interfaces ("API") services for pre-trade, trade negotiation and post-trade services to improve efficiency and reduce errors in processing.

Sales and Marketing

We promote our products and services using a variety of direct and indirect sales and marketing strategies. Our sales force is responsible for client acquisition activity and for increasing use of our trading platform and information and post-trade services by our existing clients. Their goal is to train and support existing and new clients on how to use our system and to educate them as to the benefits of utilizing an electronic fixed-income trading platform. We employ various strategies, including advertising, direct marketing, promotional mailings, and participation in industry conferences and media engagement, to increase awareness of our brand and our electronic trading platform. For example, we have worked with The Wall Street Journal to establish BondTicker™ as the source of information for its daily corporate bond and high-yield tables. A similar process also exists for our Trax® post-trade business, employing both direct and indirect sales methods.

Competition

The industry that we participate in is highly competitive and we expect competition to intensify in the future. We face four main areas of competition:

- Telephone and Direct Electronic Communications — We compete with bond trading business conducted over the telephone, e-mail or instant messaging between broker-dealers and their institutional investor clients. Institutional investors have historically purchased fixed-income securities by telephoning or otherwise communicating via e-mail or instant messaging with bond sales professionals at one or more broker-dealers and inquiring about the price and availability of individual bonds. This remains the manner in which the majority of corporate bonds are still traded between institutional investors and broker-dealers.
- Other electronic trading platforms — There are numerous other electronic trading platforms currently in existence, including several that have only commenced, or announced an intention to launch, operations in the last twelve months. Among others, Bloomberg and TradeWeb operate multi-dealer to institutional investor trading platforms for both fixed-income securities and derivatives. The New York Stock Exchange, a subsidiary of Intercontinental Exchange ("ICE"), also offers exchange-style trading for corporate bonds. In addition, some broker-dealers and institutional investors operate, or have invested in, proprietary electronic trading systems or information networks that enable institutional investors to trade directly with a broker-dealer, and/or with other institutional investors over an electronic medium. As we expand our business into new products, we will likely come into more direct competition with other electronic trading platforms or firms offering traditional services.
- Market data and information vendors — Several large market data and information providers currently have a data and analytics relationship with virtually every institutional firm. Some of these entities, including Bloomberg and ICE, currently offer varying forms of electronic trading of fixed-income securities, mostly on a single-dealer basis. Some of these entities have announced their intention to expand their electronic trading platforms or to develop new platforms. These entities are currently direct competitors to our information services business and already are or may in the future become direct competitors to our electronic trading platform.
- Other approved regulatory mechanisms — We compete with other approved regulatory mechanisms in Europe that have the FCA's ARM designation and provide post-trade matching and regulatory transaction reporting services, including the London Stock Exchange's UnaVista.

Competitors, including companies in which some of our clients have invested, have developed electronic trading platforms or have announced their intention to explore the development of electronic trading platforms that compete or will compete with us. Furthermore, some of our clients have made, and may in the future continue to make, investments in or enter into agreements with other businesses that directly or indirectly compete with us.

In general, we compete on the basis of a number of key factors, including:

- broad network of broker-dealer and institutional investor clients using our electronic trading platform;
- liquidity provided by the participating broker-dealers and, to a growing extent, by other institutional investors;
- magnitude and frequency of price improvement;
- enhancing the quality and speed of execution;
- compliance benefits;
- total transaction costs;
- technology capabilities, including the reliability and ease of use of our electronic trading platform; and

- range of products, protocols and services offered.

We believe that our ability to grow volumes and revenues will largely depend on our performance with respect to these factors.

Our competitive position is also enhanced by the familiarity and integration of our broker-dealer and institutional investor clients with our electronic trading platform and other systems. We have focused on the unique aspects of the credit markets we serve in the development of our platform, working closely with our clients to provide a system that is suited to their needs.

Our broker-dealer clients have invested in building API's with us for inventory contributions, electronic trading, government bond benchmark pricing and post-trade messaging. We believe that we have successfully built deep roots with our broker-dealer clients, increasing our level of service to them while at the same time increasing their commitment to our services.

Furthermore, a significant number of our institutional investor firms have built interfaces to enable them to communicate electronically between our platform and their order, portfolio management and accounting systems. We believe that this increases the reliance of these institutional investor firms on our services and creates significant competitive barriers to entry.

Technology

The design and quality of our technology products are critical to our growth and our ability to execute our business strategy. Our electronic trading platform has been designed with secure, scalable client-server architecture that makes broad use of distributed computing to achieve speed, reliability and fault tolerance. The platform is built on industry-standard technologies and has been designed to handle many multiples of our current trading volume.

All critical server-side components, primarily our networks, application servers and databases, have backup equipment running in the event that the main equipment fails. This offers fully redundant system capacity to maximize uptime and minimize the potential for loss of transaction data in the event of an internal failure. We also seek to minimize the impact of external failures by automatically recovering connections in the event of a communications failure. The majority of our broker-dealer clients have redundant dedicated high-speed communication paths to our network in order to provide fast data transfer. Our security measures include industry-standard communications encryption.

We have designed our application with an easy-to-use, Windows-based interface. Our clients are able to access our electronic trading platform through a secure, single sign-on. Clients are also able to execute transactions over our platform directly from their order management systems. We provide users an automatic software update feature that does not require manual intervention.

Intellectual Property

We rely upon a combination of copyright, patent, trade secret and trademark laws, written agreements and common law to protect our proprietary technology, processes and other intellectual property. Our software code, elements of our electronic trading platform, website and other proprietary materials are protected by copyright laws. We have been issued 13 patents covering our most significant trading protocols and other aspects of our trading system technology.

The written agreements upon which we rely to protect our proprietary technology, processes and intellectual property include agreements designed to protect our trade secrets. Examples of these written agreements include third party nondisclosure agreements, employee nondisclosure and inventions assignment agreements, and agreements with customers, contractors and strategic partners. Other written agreements upon which we rely to protect our proprietary technology, processes and intellectual property take many forms and contain provisions related to patent, copyright, trademark and trade secret rights.

We have obtained U.S. federal registration of the MarketAxess® name and logo, and the same mark and logo have been registered in several foreign jurisdictions. In addition, we have obtained U.S. federal registration for the marks AutoSpotting®, FrontPage®, Actives®, DealerAxess®, Trax®, Trade ON®, LiquidityBridge®, BondTicker® and associated designs and have a number of other registered trademarks and service marks. Open Trading™, Axess All™, OpenAxess™, Private Axes™ and MarketAxess Bid-Ask Spread Index (BASI) ™ are trademarks we use, but they have not been registered.

In addition to our efforts to register our intellectual property, we believe that factors such as the technological and creative skills of our personnel, new product and service developments, frequent enhancements and reliability with respect to our services are essential to establishing and maintaining a technology and market leadership position.

Government Regulation

The securities industry and financial markets in the U.S. and elsewhere are subject to extensive regulation. As a matter of public policy, regulatory bodies in the U.S. and the rest of the world are charged with safeguarding the integrity of the securities and other financial markets and with protecting the interests of investors participating in those markets. Our active broker-dealer and regulated venue subsidiaries fall within the scope of their regulations.

Regulation of the U.S. Securities Industry and Broker-Dealers

In the U.S., the SEC is the governmental agency responsible for the administration of the federal securities laws. One of our U.S. subsidiaries, MarketAxess Corporation, is registered with the SEC as a broker-dealer and an alternative trading system operator. It is also a member of FINRA and registered with the Municipal Securities Rulemaking Board, self-regulatory organizations that regulate broker-dealers in the U.S. In addition, MarketAxess Corporation is a member of the Securities Investor Protection Corporation, which provides certain protection for clients' accounts in the event of a liquidation of a broker-dealer to the extent any such accounts are held by the broker-dealer.

Additionally, MarketAxess Corporation is registered with certain states and the District of Columbia as a broker-dealer. The individual states and the District of Columbia are responsible for the administration of their respective "blue sky" laws, rules and regulations.

MarketAxess SEF Corporation, our wholly-owned U.S. subsidiary, operates as a SEF for the trading of certain credit derivatives subject to the CFTC's jurisdiction, including certain index swaps subject to the CFTC's 'made available for trade' determination that are required to be executed on a SEF or regulated exchange. The SEC has not yet finalized its rules for security-based SEFs, nor has it published a timetable for the finalization and implementation of such rules.

Various rules promulgated since the financial crisis could adversely affect our bank-affiliated broker-dealer clients' ability to make markets in a variety of fixed-income securities, thereby negatively impacting the level of liquidity and pricing available on our trading platform. For example, while the Volcker Rule does not apply directly to us, the Volcker Rule bans proprietary trading by banks and their affiliates. In addition, enhanced leverage ratios applicable to large banking organizations in the U.S. and Europe require such organizations to strengthen their balance sheets and may limit their ability or willingness to make markets on our trading platform. We cannot predict the extent to which these rules or any future regulatory changes may adversely affect our business and operations.

Regulation of the Non-U.S. Securities Industries and Investment Service Providers

The securities industry and financial markets in the U.K., the EU and elsewhere are subject to extensive regulation. Our principal regulator in the U.K. is the FCA. MarketAxess Europe Limited is registered as a Multilateral Trading Facility ("MTF") with the FCA and is also a registered platform in Switzerland, Hong Kong and Singapore. Xtrakter is registered as an Approved Reporting Mechanism with the FCA and also has "recognized status" in France, the Netherlands and Belgium in connection with the submission of transaction reports to regulators.

The securities industry in the member states of the EU is regulated by agencies in each member state. EU measures provide for the mutual recognition of regulatory agencies and of prudential supervision making possible the grant of a single authorization for providers of investment services, which, in general, is valid throughout the EU. As an FCA approved MTF, MarketAxess Europe Limited receives the benefit of this authorization. In June 2016, the U.K. voted in an advisory referendum to leave the European Union (commonly referred to as "Brexit"). The U.K. government has not yet delivered an official notice of withdrawal; however, depending on the terms negotiated between E.U. member states and the U.K. following Brexit, our U.K. subsidiaries may not be able to rely on the existence of a "passporting" regime that allows immediate access to the single E.U. market. As a result, we may need to establish one or more new regulated subsidiaries in the E.U. in order to provide our trading platform and certain post-trade services to clients in the E.U.

Similar to the U.S., regulatory bodies in Europe are developing new rules for the fixed-income markets. MiFID II and Markets in Financial Instruments Regulation ("MiFIR") were approved in June 2014 and introduce changes in market structure designed to: (i) enhance pre- and post-trade transparency for fixed income instruments with the scope of requirements calibrated for liquidity, (ii) increase and enhance post-trade reporting obligations with a requirement to submit post-trade data to ARMs, (iii) ensure trading of certain derivatives occurs on regulated trading venues and (iv) establish a consolidated tape for trade data. While some of the technical advice underpinning MiFID II have not yet been finalized, MiFID II will have a significant impact in these areas, as well as on corporate governance and investor protection. MiFID II and MiFIR are expected to take effect in January 2018. The final rules may have an adverse effect on our operations or our ability to provide our electronic trading platform in a manner that can successfully compete against other types of regulated and non-regulated venues for the fixed-income trading needs of our clients. In addition, MiFID II is expected to cause us to expend significantly more compliance, business and technology resources, incur additional operational costs and create additional regulatory exposure for our trading and post-trade businesses. While we generally believe the net impact of the rules and regulations will be positive for our businesses, unintended consequences of the rules and regulations may adversely affect us in ways yet to be determined.

Our Canadian subsidiary, MarketAxess Canada Company, is registered as an Alternative Trading System dealer under the Securities Act of Ontario and is a member of the Investment Industry Regulatory Organization of Canada. Our Brazilian subsidiary, MarketAxess Platforma de Negociacao Ltda., is authorized to provide our platform in Brazil under the jurisdiction of the Securities and Exchange Commission and Central Bank in Brazil. We also provide our platform in other countries pursuant to exemptions from registration under the laws of such countries.

Employees

As of December 31, 2016, we had 383 employees, 230 of whom were based in the U.S. and 153 of whom were based outside of the U.S., principally in the U.K. None of our employees is represented by a labor union. We consider our relationships with our employees to be good and have not experienced any interruptions of operations due to labor disagreements.

Company Information

MarketAxess was incorporated in Delaware in April 2000. Our Internet website address is www.marketaxess.com. Through our Internet website, we will make available, free of charge, the following reports as soon as reasonably practicable after electronically filing them with, or furnishing them to, the SEC: our annual report on Form 10-K; our quarterly reports on Form 10-Q; our current reports on Form 8-K; and amendments to those reports filed or furnished pursuant to Section 13(a) of the Securities Exchange Act of 1934, as amended. Our Proxy Statements for our Annual Meetings are also available through our Internet website. Our Internet website and the information contained therein or connected thereto are not intended to be incorporated into this Annual Report on Form 10-K. You may also obtain copies of our reports without charge by writing to:

MarketAxess Holdings Inc.

299 Park Avenue

New York, NY 10171

Attn: Investor Relations

Our Board of Directors has standing Audit, Compensation, Nominating and Corporate Governance, Risk, Mergers and Acquisitions and Investment Committees. Each of these committees has a written charter approved by our Board of Directors and our Board of Directors has also adopted a set of Corporate Governance Guidelines. Copies of the committee charters and the Corporate Governance Guidelines are also posted on our website.

You may read and copy any document we file with the SEC at the SEC’s public reference room at 100 F Street, NE, Room 1580, Washington, DC 20549. Please call the SEC at 1-800-SEC-0330 for information on the public reference room. The SEC maintains an Internet website that contains annual, quarterly and current reports, proxy and information statements and other information that issuers (including the Company) file electronically with the SEC. The SEC’s internet website is www.sec.gov.

Item 1A. Risk Factors.

Risks Related to Our Business

Global economic, political and market factors beyond our control could reduce demand for our services, and our profitability and business could suffer.

The global financial services business is, by its nature, risky and volatile and is directly affected by many national and international factors that are beyond our control. Any one of these factors may cause a substantial decline in the U.S. and/or global financial services markets, resulting in reduced trading volume. These events could have a material adverse effect on our business, financial condition and results of operations. These factors include:

- economic and political conditions in the United States, Europe and elsewhere;
- adverse market conditions, including unforeseen market closures or other disruptions in trading;
- broad trends in business and finance;
- consolidation or contraction in the number of broker-dealers;
- actual or threatened acts of war or terrorism or other armed hostilities;
- concerns over inflation and weakening consumer confidence levels;
- the availability of cash for investment by mutual funds, exchange traded funds and other wholesale and retail investors;
- the level and volatility of interest rates, the difference between the yields on corporate securities being traded and those on related benchmark securities and foreign currency exchange rates;
- the effect of Federal Reserve Board monetary policy, increased capital requirements for banks and other financial institutions, and other regulatory requirements and political impasses;
- credit availability and other liquidity concerns;
- concerns over credit default or bankruptcy of one or more sovereign nations or corporate entities; and
- legislative and regulatory changes, including changes to financial industry regulations and tax laws.

Any one or more of these factors may contribute to reduced activity and prices in the securities markets generally. Our revenues and profitability are likely to decline significantly during periods of stagnant economic conditions or low trading volume in the U.S. and global financial markets.

Decreases in trading volumes in the fixed-income markets generally or on our platform would harm our business and profitability.

We have experienced significant decreases in overall trading volume in the past and may experience similar decreases in trading volume in the future. Declines in the overall volume of fixed-income securities trading and in market liquidity generally, as well as declines in interest rate volatility, could result in lower revenues from commissions for trades executed on our electronic trading platform and fees generated from related activities.

Likewise, decreases in our share of the segments of the fixed-income trading markets in which we operate, or shifts in trading volume to segments of clients which we have not penetrated, could result in lower trading volume on our platform and, consequently, lower commissions and revenue. During periods of increased volatility in credit markets, the use of electronic trading platforms by market participants may decrease dramatically as institutional investors may seek to obtain additional information during the trade process through conversations with broker-dealers. In addition, during rapidly moving markets, broker-dealers are less likely to post prices electronically. Our market share of the fixed-income trading markets is also impacted by a variety of other factors, including the amount of new issuances of corporate debt, the level of bond fund inflows or outflows, the percentage of volumes comprised of Rule 144A transactions, the percentage of volumes comprised of larger trades known as ‘block trades’ and whether the prevalent market environment is an “offer wanted” or “bid wanted” environment.

A decline in trading volumes on our platform or in our platform's market share for any reason would negatively affect our commission revenue and may have a material adverse effect on our business, financial condition and results of operations.

We face substantial competition that could reduce our market share and harm our financial performance.

The fixed-income securities industry generally, and the electronic financial services markets in which we operate in particular, are highly competitive, and we expect competition to intensify in the future. We will continue to compete with bond trading conducted directly between broker-dealers and their institutional investor clients over the telephone or electronically. In addition, our current and prospective competitors are numerous and include:

- other multi-dealer trading companies;
- market data and information vendors;
- securities and futures exchanges;
- inter-dealer brokerage firms;
- electronic communications networks;
- technology, software, and information services or other companies that have existing commercial relationships with broker-dealers or institutional investors; and
- other electronic marketplaces that are not currently in the securities business.

Many of our current and potential competitors are more established and substantially larger than we are and have substantially greater market presence, as well as greater financial, technical, marketing and other resources. These competitors may aggressively reduce their pricing to enter into, or otherwise compete in, market segments in which we provide services, potentially subsidizing any losses with profits from trading in other fixed-income or equity securities or other business operations. In addition, many of our competitors offer a wider range of services, have broader name recognition and have larger customer bases than we do. Some of them may be able to respond more quickly to new or evolving opportunities, technologies and customer requirements than we can and may be able to undertake more extensive promotional activities.

Any combination of our competitors may enter into joint ventures or consortia to provide services similar to those provided by us. Current and new competitors can launch new platforms at a relatively low cost. Others may acquire the capabilities necessary to compete with us through acquisitions. We expect that we will potentially compete with a variety of companies with respect to each product or service we offer. If we are not able to compete successfully in the future, our business, financial condition and results of operations would be adversely affected.

Our operations also include the sale of information and analytical tools under our BondTicker™ and Trax® brands and post-trade services, such as pre-settlement trade matching and regulatory reporting for the European markets. There is a high degree of competition in data, pricing and transaction reporting products and services and such businesses may become more competitive in the future as new competitors emerge. Our information products and post-trade and services lines may be threatened by new regulations, market trends or technologies that reduce their value. If we are not able to compete successfully in the future, our revenues could be adversely impacted and, as a result, our businesses, financial condition and results of operations would be adversely affected.

Neither the sustainability of our current level of business nor any future growth can be assured. Even if we do experience growth, we cannot assure you that we will grow profitably.

The success of our business strategy depends, in part, on our ability to maintain and expand the network of broker-dealer and institutional investor clients that use our electronic trading platform. Our business strategy also depends on increasing the use of our platform by these clients for a wide range of fixed-income products and trade sizes. Individuals at broker-dealers or institutional investors may have conflicting interests, which may discourage their use of our platform. We cannot assure you that the growth of electronic means of trading securities that we have experienced in recent years will continue.

Our growth may also be dependent on our ability to diversify our revenue base. We currently derive approximately 52.4% of our revenues from secondary trading in U.S. high-grade corporate bonds. Our long-term business strategy includes expanding our service offerings and increasing our revenues from other fixed-income products and other sources. We cannot assure you that our efforts will be successful or result in increased revenues or continued profitability. We have experienced significant growth in trading volumes, revenues and profitability in recent years. We cannot assure you that our business will continue to grow at a similar rate, if at all.

Our businesses are geographically concentrated and could be significantly affected by an adverse change in the regions in which we operate.

Historically, our business operations have been substantially located in the U.S. and the U.K. While we are expanding our businesses to new geographic areas, we are still highly concentrated in these areas. Accordingly, our businesses are exposed to adverse regulatory and competitive changes, economic downturns and changes in political conditions in these two countries, such as

Brexit. Moreover, due to the concentration of our operations in these areas, such operations are less diversified and, accordingly, are subject to greater regional risks than those of some of our competitors. If we are unable to identify and successfully manage or mitigate these risks, our businesses, financial condition, results of operations and prospects could be materially adversely affected.

The U.K. electorate voted in favor of a U.K. exit from the E.U. in a referendum, which could adversely impact our business, results of operations and financial condition.

The U.K. has voted in an advisory referendum to leave the European Union (commonly referred to as "Brexit"). The referendum was non-binding; however, as a result of the referendum, it is expected that the British government will begin negotiating the terms of the U.K. withdrawal from the E.U. Under the process for withdrawing from the E.U. contemplated in the Treaty on European Union, the U.K. will remain a member state until a withdrawal agreement is entered into or, if later (and no extension is agreed), two years following notification of the U.K.'s intention to withdraw from the E.U. The effects of Brexit on us will depend on any agreements the U.K. makes to retain access to E.U. markets – including for financial services – either during a transitional period or more permanently. Although the U.K. government has not yet delivered an official notice of withdrawal, Brexit is expected to significantly affect the fiscal, monetary and regulatory landscape in the U.K., and could have a material impact on its economy and the future growth of its various industries, including the financial services industry in which we operate.

We conduct business in Europe primarily through our U.K. subsidiaries. Depending on the terms of Brexit, we could face new regulatory costs and challenges. For instance, our U.K. subsidiaries may not be able to rely on the existence of a "passporting" regime that allows immediate access to the single E.U. market. If this occurred, we may need to establish one or more new regulated subsidiaries in the E.U. in order to provide our trading platform and certain post-trade services to clients in the E.U.

Although we have an international customer base, we could be adversely affected by reduced growth and greater volatility in the Pound Sterling and the U.K. economy. Changes to U.K. immigration policy could likewise occur as a result of Brexit. In addition, Brexit could lead to legal uncertainty and potentially divergent national laws and regulations as the U.K. determines which E.U. laws to replace or replicate. Any such new laws and regulations in the U.K. may be difficult and/or costly to implement.

Although it is not possible at this point in time to predict fully the effects of an exit of the U.K. from the E.U., any of the foregoing factors could have a material adverse effect on our business, financial condition and results of operations. In addition, Brexit may impact our ability to comply with the extensive government regulation to which we are subject.

Because we operate in a rapidly evolving industry, it is difficult to evaluate our business and prospects.

We face risks and difficulties frequently experienced by companies operating in rapidly evolving industries, such as the electronic financial services industry. These risks and difficulties include, but are not limited to, our ability to:

- attract and retain broker-dealers and institutional investors on our platform on a cost-effective basis;
- expand and enhance reliable and cost-effective product and service offerings to our clients;
- respond effectively to competitive pressures;
- respond effectively to the loss of any of our significant broker-dealer or institutional investor clients, including due to merger, consolidation, bankruptcy, liquidation or other cause (including, among other things, the collection of any amounts due from such clients);
- diversify our sources of revenues;
- maintain adequate control of our expenses;

- operate, support, expand and develop our operations, technology, website, software, communications and other systems;
- manage growth in personnel and operations;
- increase awareness of our brand or market positioning;
- expand our sales and marketing programs;
- take advantage of acquisitions, strategic alliances and other opportunities; and
- respond to regulatory changes or demands.

If we are unsuccessful in addressing these risks or in executing our business strategy, our business, financial condition and results of operations may suffer.

We may enter into new fee plans, the impact of which may be difficult to evaluate; past trends in commissions are not necessarily indicative of future commissions.

From time to time, we may introduce new fee plans for the market segments in which we operate. Any new fee plan may include different fee structures or provide volume incentives. We cannot assure you that any new fee plans will result in an increase in the volume of transactions executed over our platform or that our revenues will increase as a result of the implementation of any such fee plans. It is possible that our broker-dealer or institutional investor clients could respond to a new fee plan by either reducing the amount of their business conducted on our platform or terminating their contractual relationship with us, which could have an adverse impact on our fees and otherwise have a material adverse effect on our business, financial condition and results of operations.

In addition, under certain of our fee plans, our fees are designated in basis points in yield (and, as a result, are subject to fluctuation depending on the duration of the bond traded) or our fees vary based on trade size or maturity. We anticipate that our average fees per million may vary in the future due to changes in yield, years-to-maturity and nominal size of bonds traded on our platform. Consequently, past trends in commissions are not necessarily indicative of future commissions.

We are exposed to risks in connection with certain transactions in which we act as a matched principal intermediary.

In connection with our anonymous Open Trading™ protocols, we execute certain bond transactions between and among institutional investor and broker-dealer clients on a matched principal basis by serving as counterparty to both the buyer and the seller in trades which are then settled through a third-party clearing broker. Settlement typically occurs within one to three trading days after the trade date. Cash settlement of the transaction occurs upon receipt or delivery of the underlying instrument that was traded.

We are exposed to credit and performance risks in our role as matched principal trading counterparty to our clients executing Open Trading™ trades on our platform, including the risk that counterparties that owe us money or securities will not perform their obligations. These parties may default on their obligations to us due to bankruptcy, lack of liquidity, operational failure or other reasons. Adverse movements in the prices of securities that are the subject of these transactions can increase our risk. In connection with Open Trading™ or other anonymous protocols, we expect that the number of transactions in which we act as a matched principal will increase.

In the process of executing matched principal transactions, miscommunications and other errors by our clients or us can arise that involve substantial risks of liability. These risks include, among others, potential liability from disputes over the terms of a trade, the settlement of the trade, or claims that we resolved an error trade dispute incorrectly or that a system malfunction or delay caused monetary loss to a client. In addition, because of the ease and speed with which trades can be executed on our electronic platform, clients can lose substantial amounts by inadvertently entering trade instructions or by entering trade orders inaccurately. A large number of significant error trades could result in participant dissatisfaction and a decline in participant willingness to trade on our electronic platform Although we maintain error trade policies designed to protect our Open Trading™ participants and enable us to manage the risks attendant in acting as a matched principal counterparty, depending on the cause, number and value of the trades that are the subject of an alleged error or dispute, such trades have the potential to have a material adverse effect on our financial condition and results of operations. In addition, if we are required to hold a securities position as a result of an error, there may also be financing costs or regulatory capital charges required to be taken by us.

We have policies and procedures in place to identify and manage our credit risk. In connection with the recent growth of our Open Trading™ protocols, we have implemented additional automated controls to help us manage our credit risk exposure. There can be no assurance that the policies, procedures and automated controls we use to manage this credit risk will effectively mitigate our credit risk exposure. Some of our risk management procedures are reliant upon the evaluation of information regarding the fixed- income markets, our clients or other relevant matters that are publicly available or otherwise acquired from third party sources. Such information may not be accurate, complete, up-to-date or properly assessed and interpreted by us. If our risk management procedures fail, our business, financial condition and results of operations may be adversely affected. Furthermore, our insurance policies are unlikely to provide coverage for such risks.

We are dependent on our broker-dealer clients, who are not restricted from using their own proprietary or third-party platforms to transact with our institutional investor clients.

We rely on our broker-dealer clients to provide liquidity on our electronic trading platform by posting bond prices on our platform for bonds in their inventory and responding to institutional investor client inquiries. The contractual obligations of our broker-dealer clients to us are minimal, non-exclusive and terminable by such clients. Our broker-dealer clients buy and sell fixed-income securities through traditional methods, including by telephone and e-mail messaging, and through other electronic trading platforms. Some of our broker-dealer clients have developed electronic trading networks that compete with us or have announced their intention to explore the development of such electronic trading networks, and many of our broker-dealer and institutional investor clients are involved in other ventures, including other electronic trading platforms or other distribution channels, as trading participants and/or as investors. These competing trading platforms may offer some features that we do not currently offer. Accordingly, there can be no assurance that such broker-dealers' primary commitments will not be to one of our competitors.

In the U.S., the Volcker Rule section of the Dodd-Frank Act bans proprietary trading by banks and their affiliates, which could adversely affect our bank-affiliated broker-dealer clients' ability to make markets in a variety of fixed-income securities. If bank-affiliated entities reduce their trading activity and that activity is not replaced by other market participants, the level of liquidity and pricing available on our trading platform would be negatively impacted, which could adversely affect our operating results. In addition, there has been significant consolidation among firms in the banking and financial services industries over the past several years. Moreover, several of our large broker-dealer clients have reduced their sales and trading businesses in fixed-income in recent years. Further consolidation, instability, and layoffs in the financial services industry could result in a smaller client base and heightened competition, which may lower volumes.

Any reduction in the use of our electronic trading platform by our broker-dealer clients could reduce the volume of trading on our platform, which could, in turn, reduce the use of our platform by our institutional investor clients. The occurrence of any of the foregoing may have a material adverse effect on our business, financial condition and results of operations.

We could lose significant sources of revenue and trading volume if we lose any of our significant institutional investor clients.

We rely on our institutional investor clients to launch inquiries over our trading platform. A limited number of such clients can account for a significant portion of our trading volume. One institutional investor client accounted for approximately 14.2%, 15.3%, and 14.0% of trading volumes during the years ended December 31, 2016, 2015 and 2014, respectively. Based on information filed with the SEC by this institutional investor client, as of December 31, 2016, investment funds managed by this institutional investor client beneficially owned approximately 7.6% of the outstanding shares of our common stock, primarily through passive index and ETF funds.

The obligations of our institutional investor clients to us under our standard contractual agreements are minimal, non-exclusive and terminable by such clients. Our institutional investor clients buy and sell fixed-income securities through traditional methods, including by telephone and e-mail messaging, and through other electronic trading platforms.

There can be no assurance that we will be able to retain our major institutional investor clients or that such clients will continue to use our trading platform. The loss of any major institutional investor client or any reduction in the use of our electronic trading platform by such clients could have a material adverse effect on our business, financial condition and results of operations.

If we experience significant fluctuations in our operating results or fail to meet revenue and earnings expectations, our stock price may fall rapidly and without advance notice.

Our revenues and operating results may fluctuate due to a number of factors, including:

- the unpredictability of the financial services industry;
- difficulty in quickly adjusting our expense base if revenues fall short of expectations;
- our ability to retain existing broker-dealer and institutional investor clients and attract new broker-dealer and institutional investor clients;
- our ability to drive an increase in use of our electronic trading platform by new and existing broker-dealer and institutional investor clients;
- changes in our pricing policies;
- the introduction of new features on our electronic trading platform;
- the effectiveness of our sales force;
- new product and service introductions by us or our competitors;
- fluctuations in overall market trading volume or our market share for our key products;

- technical difficulties or interruptions in our service;
- general economic conditions in our geographic markets;
- additional investment in our services or operations; and
- new regulations that limit or affect how our electronic trading platform can operate or which increase our regulatory compliance costs.

As a result, our operating results may fluctuate significantly on a quarterly basis, which could result in decreases in our stock price.

We may not be able to introduce enhanced versions of our electronic trading platform, new services and/or service enhancements in a timely or acceptable manner, which could harm our competitive position.

Our business environment is characterized by rapid technological change, changing and increasingly sophisticated client demands and evolving industry standards. Our future will depend on our ability to develop and introduce new features to, and new versions of, our electronic trading platform. The success of new features and versions depends on several factors, including the timely completion, introduction and market acceptance of the feature or version. In addition, the market for our electronic trading platform may be limited if prospective clients require customized features or functions that we are unable or unwilling to provide. For example, we have responded to the reduction in fixed-income secondary market liquidity that has been experienced since the credit crisis by, among other things, introducing a number of all-to-all trading options for our institutional investor and broker-dealer clients. However, we cannot assure you that these new features and versions will become or remain successful. If we are unable to anticipate and respond to the demand for new services, products and technologies and develop new features and enhanced versions of our electronic trading platform that achieve widespread levels of market acceptance on a timely and cost-effective basis, it could have a material adverse effect on our business, financial condition and results of operations.

As we enter new markets, we may not be able to successfully attract clients and adapt our technology and marketing strategy for use in those markets.

Our strategy includes leveraging our electronic trading platform to enter new markets, such as our recent entry into the municipal bond market. However, we cannot assure you that we will be able to successfully adapt our proprietary software and technology for use in other markets. Even if we do adapt our software and technology, we cannot assure you that we will be able to attract clients and compete successfully in any such new markets. We cannot assure you that our marketing efforts or our pursuit of any of these opportunities, including among other things, our entrance into the municipal bond market, will be successful. If these efforts are not successful, we may realize less than expected earnings, which in turn could result in a decrease in the market value of our common stock. Furthermore, these efforts may divert management attention or inefficiently utilize our resources.

Rapid market or technological changes may render our technology obsolete or decrease the attractiveness of our products and services to our broker-dealer and institutional investor clients.

We must continue to enhance and improve our electronic trading platform. The electronic financial services industry is characterized by significant structural changes, increasingly complex systems and infrastructures, changes in clients' needs and preferences and new business models. If new industry standards and practices emerge and our competitors release new technology before us, our existing technology, systems and electronic trading platform may become obsolete or our existing business may be harmed. Our future success will depend on our ability to:

- enhance our existing products and services;
- develop and/or license new products and technologies that address the increasingly sophisticated and varied needs of our broker-dealer and institutional investor clients and prospective clients;
- continue to attract highly-skilled technology personnel; and

- respond to technological advances and emerging industry standards and practices on a cost-effective and timely basis.

Developing our electronic trading platform and other technology entails significant technical and business risks. We may use new technologies ineffectively or we may fail to adapt our electronic trading platform, information databases and network infrastructure to broker-dealer or institutional investor client requirements or emerging industry standards. If we face material delays in introducing new services, products and enhancements, our broker-dealer and institutional investor clients may forego the use of our products and use those of our competitors.

Further, the adoption of new Internet, networking or telecommunications technologies may require us to devote substantial resources to modify and adapt our services. We cannot assure you that we will be able to successfully implement new technologies or adapt our proprietary technology and transaction-processing systems to client requirements or emerging industry standards. We cannot assure you that we will be able to respond in a timely manner to changing market conditions or client requirements.

We depend on third-party suppliers for key products and services.

We rely on a number of third parties to supply elements of our trading, information and other systems, as well as computers and other equipment, and related support and maintenance. We cannot assure you that any of these providers will be willing and able to continue to provide these services in an efficient, cost-effective manner, if at all, or that they will be able to adequately expand their services to meet our needs. If we are unable to make alternative arrangements for the supply of critical products or services in the event of a malfunction of a product or an interruption in or the cessation of service by an existing service provider, our business, financial condition and results of operations could be materially adversely affected.

In particular, we depend on third-party vendors for our bond reference databases and the clearing and settlement of our Open Trading™ transactions. Disruptions in the services provided by those third-parties to us, including as a result of their inability or unwillingness to continue to license products or provide services that are critical to the success of our business, could have a material adverse effect on our business, financial condition and results of operations.

We also rely, and expect in the future to continue to rely, on third parties for various computer and communications systems, such as telephone companies, online service providers, data processors, and software and hardware vendors. Other third parties provide, for instance, our data center, telecommunications access lines and significant computer systems and software licensing, support and maintenance services. Any interruption in these or other third-party services or deterioration in their performance could impair the quality of our service. We cannot be certain of the financial viability of all of the third parties on which we rely.

We license software from third parties, much of which is integral to our electronic trading platform and our business. We also hire contractors to assist in the development, quality assurance testing and maintenance of our electronic trading platform and other systems. Continued access to these licensors and contractors on favorable contract terms or access to alternative software and information technology contractors is important to our operations. Adverse changes in any of these relationships could have a material adverse effect on our business, financial condition and results of operations.

We attempt to negotiate favorable pricing, service, confidentiality and intellectual property ownership or licensing and other terms in our contracts with our third-party service providers. These contracts usually have multi-year terms. However, there is no guarantee that these contracts will not terminate and that we will be able to negotiate successor agreements or agreements with alternate service providers on competitive terms. Further, the existing agreements may bind us for a period of time to terms and technology that become obsolete as our industry and our competitors advance their own operations and use of technology.

Our success depends on maintaining the integrity of our electronic trading platform, systems and infrastructure; our computer systems may suffer failures, capacity constraints and business interruptions that could increase our operating costs and cause us to lose clients.

In order to be successful, we must provide reliable, secure, real-time access to our electronic trading platform for our clients. If our electronic trading platform is hampered by slow delivery times, unreliable service or insufficient capacity, our clients may decide to stop using our platform, which would have a material adverse effect on our business, financial condition and results of operations.

As our operations grow in both size and scope, we will need to improve and upgrade our electronic trading platform and infrastructure to accommodate potential increases in order message volume and trading volume, the trading practices of new and existing clients, regulatory changes and the development of new and enhanced trading platform features, functionalities and ancillary products and services. The expansion of our electronic trading platform and infrastructure has required, and will continue to require, substantial financial, operational and technical resources. These resources will typically need to be committed well in advance of any actual increase in trading volumes and order messages. We cannot assure you that our estimates of future trading volumes and order messages will be accurate or that our systems will always be able to accommodate actual trading volumes and order messages without failure or degradation of performance. Furthermore, we use new technologies to upgrade our established systems, and the development of these new technologies also entails technical, financial and business risks. We cannot assure you that we will successfully implement new technologies or adapt our existing electronic trading platform, technology and systems to the requirements of our broker-dealer and institutional investor clients or to emerging industry standards. The inability of our electronic trading platform to accommodate increasing trading volume and order messages would also constrain our ability to expand our business.

We cannot assure you that we, or our third-party service providers, will not experience systems failures. Our electronic trading platform, computer and communication systems and other operations are vulnerable to damage, interruption or failure as a result of, among other things:

- irregular or heavy use of our electronic trading platform during peak trading times or at times of unusual market volatility;
- power, internet or telecommunications failures, hardware failures or software errors;
- human error;
- computer viruses, acts of vandalism or sabotage (and resulting potential lapses in security), both internal and external;
- natural disasters, fires, floods, widespread health emergencies or other acts of God;
- acts of war or terrorism (including cyberterrorism) or other armed hostility;
- cybersecurity breaches; and
- loss of support services from third parties, including those to whom we outsource aspects of our computer infrastructure critical to our business.

In the event that any of our systems, or those of our third-party providers, fail or operate slowly, it may cause any one or more of the following to occur:

- unanticipated disruptions in service to our clients;
- distribution of untimely or inaccurate market data to customers who rely on this data for their trades;
- slower response times or delays in our clients' trade execution;
- incomplete or inaccurate accounting, recording or processing of trades;
- financial losses and liabilities to clients;
- litigation or other claims against us, including formal complaints to industry regulatory organizations; and
- regulatory inquiries, proceedings or sanctions.

Any system failure that causes an interruption in service or decreases the responsiveness of our service, including failures caused by client error or misuse of our systems, could damage our reputation, business and brand name and lead our clients to decrease or cease their use of our electronic trading platform.

In these circumstances, if we were unable to execute our disaster recovery plans, or our redundant systems and disaster recovery plans proved insufficient for the particular situation, it could have a material adverse effect on our business. Similarly, although many of our contracts with our service providers require them to have disaster recovery plans, we cannot be certain that these will be adequate or implemented properly. In addition, our business interruption insurance may not adequately compensate us for losses that may occur.

It is also a risk that we will not have sufficient personnel to properly respond to all such system problems. Our disaster recovery plans are heavily reliant on the availability of the internet and mobile phone technology, so any disruption of those systems would likely affect our ability to recover promptly from a crisis situation.

We internally support and maintain many of our computer systems and networks, including those underlying our electronic trading platform. Our failure to monitor or maintain these systems and networks or, if necessary, to find a replacement for this technology in a timely and cost-effective manner would have a material adverse effect on our business, financial condition and results of operations.

Our systems and those of our third-party service providers may be vulnerable to cybersecurity risks. If our security measures are breached and unauthorized access is obtained to our electronic trading platform, our business could suffer a material adverse effect.

Our electronic trading platform involves the processing, storage and transmission of a very large number of transactions and data (including confidential client information). The secure storage and transmission of confidential information over public networks is a critical element of our operations. Cyber attacks on our systems could expose us to a risk of misappropriation of this information, leading to litigation, reputational harm and possible liability. Despite the defensive measures we have taken, these threats may come from external factors such as governments, organized crime, hackers, and other third parties such as outsource or infrastructure-support providers and application developers, or may originate internally from an employee or service provider to whom we have granted access to our computer systems. If our security measures are breached as a result of third-party action, employee error, malfeasance or otherwise, and, as a result, someone obtains unauthorized access to trading or other confidential information, our reputation could be damaged, our business would suffer and we could incur material liability. Any such breach could compromise our networks and the information stored there could be accessed, publicly disclosed, lost or stolen. Because techniques used to obtain unauthorized access or to sabotage computer systems change frequently and generally are not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventive measures.

We also face the risk of operational disruption, failure or capacity constraints of any of the third party service providers that facilitate our business activities, including clients, clearing agents and network or data providers. Such parties could also be the source of a cyber attack on or breach of our operational systems, data or infrastructure.

There have been an increasing number of malicious cyber incidents in recent years in various industries, including ours. Any such cyber incident involving our computer systems and networks, or those of third parties important to our businesses, could have a material adverse effect on our business, financial condition and results of operations. A cyber attack or security breach on our system or that of a third-party service provider could manifest in different ways and could lead to any number of harmful consequences, including but not limited to:

- misappropriation of financial assets, intellectual property or sensitive information belonging to us, our clients or our third-party service providers;
- corruption of data or causing operational disruption through computer viruses or phishing; and
- denial of service attacks to prevent users from accessing our platform.

Our remediation costs and lost revenues could be significant if we fall victim to a cyber attack. If an actual, threatened or perceived breach of our security occurs, the market perception of the effectiveness of our security measures could be harmed and could cause our broker-dealer and institutional investor clients to reduce or stop their use of our electronic trading platform. We may be required to expend significant resources to repair system damage, protect against the threat of future security breaches or to alleviate problems, including reputational harm, loss of clients and revenues and litigation, caused by any breaches. We may be found liable to our clients for any stolen financial assets or misappropriated confidential information. Although we intend to continue to implement industry-standard security measures, we cannot assure you that those measures will be sufficient.

We may not be able to protect our intellectual property rights or technology effectively, which would allow competitors to duplicate or replicate our electronic trading platform. This could adversely affect our ability to compete.

Intellectual property is critical to our success and ability to compete, and if we fail to protect our intellectual property rights adequately, our competitors might gain access to our technology. We rely primarily on a combination of patent, copyright, trademark and trade secret laws in the United States and other jurisdictions, as well as license agreements, third-party non-disclosure and other agreements and other contractual provisions and technical measures to protect our intellectual property rights. We attempt to negotiate beneficial intellectual property ownership provisions in our contracts and also require employees, consultants, advisors and collaborators to enter into confidentiality agreements in order to protect the confidentiality of our proprietary information. We have been issued 13 patents covering aspects of our technology and/or business, but can give no assurances that any such patents will protect our business and processes from competition or that any patents applied for in the future will be issued. Additionally, laws and our contractual terms may not be sufficient to protect our technology from use or theft by third parties. For instance, a third party might reverse engineer or otherwise obtain and use our technology without our permission and without our knowledge, thereby infringing our rights and allowing competitors to duplicate or replicate our products. Furthermore, we cannot assure you that these protections will be adequate to prevent our competitors from independently developing technologies that are substantially equivalent or superior to our technology.

We may have legal or contractual rights that we could assert against illegal use of our intellectual property rights, but lawsuits claiming infringement or misappropriation are complex and expensive, and the outcome would not be certain. In addition, the laws of some countries in which we now or in the future provide our services may not protect software and intellectual property rights to the same extent as the laws of the United States.

Defending against intellectual property infringement or other claims could be expensive and disruptive to our business. If we are found to infringe the proprietary rights of others, we could be required to redesign our products, pay royalties or enter into license agreements with third parties.

In the technology industry, there is frequent litigation based on allegations of infringement or other violations of intellectual property rights. As the number of participants in our market increases and the number of patents and other intellectual property registrations increases, the possibility of an intellectual property claim against us grows. Although we have never been the subject of a material intellectual property dispute, we cannot assure you that a third party will not assert in the future that our technology or the manner in which we operate our business violates its intellectual property rights. From time to time, in the ordinary course of our business, we may become subject to legal proceedings and claims relating to the intellectual property rights of others, and we expect that third parties may assert intellectual property claims against us, particularly as we expand the complexity and scope of our business, the number of electronic trading platforms increases and the functionality of these platforms further overlaps. Any claims, whether with or without merit, could:

- be expensive and time-consuming to defend;
- prevent us from operating our business, or portions of our business;
- cause us to cease developing, licensing or using all or any part of our electronic trading platform that incorporates the challenged intellectual property;
- require us to redesign our products or services, which may not be feasible;
- result in significant monetary liability;
- divert management's attention and resources; and
- require us to pay royalties or enter into licensing agreements in order to obtain the right to use necessary technologies, which may not be possible on commercially reasonable terms.

We cannot assure you that third parties will not assert infringement claims against us in the future with respect to our electronic trading platform or any of our other current or future products or services or that any such assertion will not require us to cease providing such services or products, try to redesign our products or services, enter into royalty arrangements, if available, or engage in litigation that could be costly to us. Any of these events could have a material adverse effect on our business, financial condition and results of operations.

If we acquire or invest in other businesses, products or technologies, we may be unable to integrate them with our business, our financial performance may be impaired or we may not realize the anticipated financial and strategic goals for any such transactions.

We have in the past and may in the future acquire or invest in companies, products or technologies that we believe are strategic. We may not be able to identify, negotiate or finance any future acquisition or investment successfully. Even if we do succeed in acquiring or investing in a business, product or technology, such acquisitions and investments may involve a number of risks, including:

- we may find that the acquired company or assets do not further our business strategy, or that we overpaid for the company or assets, or the economic conditions underlying our acquisition decision may change;
- we may have difficulty integrating the acquired technologies or products with our existing electronic trading platform, products and services;
- we may have difficulty integrating the operations and personnel of the acquired business, or retaining the key personnel of the acquired business;
- there may be client confusion if our services overlap with those of the acquired company and we may have difficulty retaining key customers, vendors and other business partners of the acquired business;
- our ongoing business and management's attention may be disrupted or diverted by transition or integration issues and the complexity of managing geographically or culturally diverse enterprises;
- entry into markets in which we have limited experience and where competitors hold stronger market positions;
- potential failure of the due diligence processes to identify significant problems, liabilities or other challenges of an acquired company or product; and
- exposure to litigation or other claims in connection with, or inheritance of claims or litigation risk as a result of, an acquisition, including but not limited to, claims from terminated employees, customers, former stockholders or other third parties.

These factors could have a material adverse effect on our business, financial condition, results of operations and cash flows, particularly in the case of a larger acquisition or multiple acquisitions in a short period of time. From time to time, we may enter into negotiations for acquisitions or investments that are not ultimately consummated. Such negotiations could result in significant diversion of management time, as well as out-of-pocket costs.

29

The consideration paid in connection with an investment or acquisition also affects our financial results. If we were to proceed with one or more significant acquisitions in which the consideration included cash, we could be required to use a substantial portion of our available cash to consummate any acquisition. To the extent we issue shares of capital stock or other rights to purchase capital stock, including options or other rights, existing stockholders may be diluted and earnings per share may decrease. In addition, acquisitions may result in the incurrence of debt, large one-time write-offs, such as of acquired in-process research and development costs, and restructuring charges.

Our investments in expanding our information and post-trade services businesses may not produce substantial revenue or profit.

With respect to our information and post-trade services businesses, we may incur substantial development, sales and marketing expenses and expend significant management effort to create a new product or service. Even after incurring these costs, we ultimately may not sell any or sell only small amounts of these products or services. Consequently, if revenue does not increase in a timely fashion as a result of these expansion and development initiatives, the up-front costs associated with them may exceed the related revenue and reduce our working capital and income.

We may be required to recognize impairments of our goodwill or other intangible assets, which could adversely affect our results of operations or financial condition.

The determination of the value of goodwill and other intangible assets requires management to make estimates and assumptions that affect our consolidated financial statements. We test for impairment of goodwill on an annual basis, at year-end, or more frequently if there are changed circumstances. We assess intangible assets for impairment when events or circumstances indicate the existence of a possible impairment.

Determining the fair value of certain assets acquired and liabilities assumed is judgmental in nature and requires management to use significant estimates and assumptions, including assumptions with respect to future cash flows, discount rates, growth rates and asset lives. Any future acquisition may result in goodwill and other intangible assets that are subject to impairment tests, which could result in future impairment charges.

We are dependent on our management team, and the loss of any key member of this team may prevent us from implementing our business plan in a timely manner.

Our success depends largely upon the continued services of our executive officers and other key personnel, particularly Richard M. McVey, Chief Executive Officer and Chairman of our Board of Directors. The terms of Mr. McVey’s employment agreement with us do not require him to continue to work for us and allow him to terminate his employment at any time, subject to certain notice requirements and forfeiture of non-vested equity compensation awards. We do not maintain “key person” life insurance on any of our executive officers and other key personnel. Any loss or interruption of Mr. McVey’s services or that of one or more of our other executive officers or key personnel for any reason, as well as any negative market or industry perception arising from such loss or interruption, could result in our inability to manage our operations effectively and/or pursue our business strategy.

Because competition for our employees is intense, we may not be able to attract and retain the highly skilled employees we need to support our business.

We strive to provide high-quality services that will allow us to establish and maintain long-term relationships with our broker-dealer and institutional investor clients. Our ability to provide these services and maintain these relationships, as well as our ability to execute our business plan generally, depends in large part upon our employees. We must attract and retain highly qualified personnel. Competition for these personnel is intense, especially for software engineers with extensive experience in designing and developing software and Internet-related services, hardware engineers, technicians, product managers and senior sales executives.

The market for qualified personnel has become increasingly competitive as an increasing number of existing and new competitors focus on the electronic trading of credit products. Many of these competitive ventures are interested in hiring our experienced technology personnel and our qualified sales staff. Additionally, highly innovative technology firms may offer attractive employment opportunities to our technology personnel. Many of these firms have greater resources than we have and are able to offer more lucrative compensation packages. In addition, in making employment decisions, particularly in the Internet, high-technology and financial services industries, job candidates often consider the total compensation package offered, including the value of the stock-based compensation they are to receive in connection with their employment. Significant volatility in the price of our common stock may adversely affect our ability to attract or retain key employees. We cannot assure you that we will be successful in our efforts to recruit and retain the required personnel. The failure to attract new personnel or to retain and motivate our current personnel may have a material adverse effect on our business, financial condition and results of operations.

We operate in a highly regulated industry and we may face restrictions with respect to the way we conduct certain of our operations.

Our business is subject to increasingly extensive governmental and other regulations. These regulations are designed to protect public interests generally rather than the interests of our stockholders. The SEC, FINRA, the CFTC and other agencies extensively regulate the United States financial services industry, including most of our operations in the United States. Much of our international operations are subject to similar regulations in their respective jurisdictions, including regulations overseen by the FCA in the United Kingdom, the Swiss Financial Market Supervisory Authority in Switzerland, the Monetary Authority of Singapore, the Hong Kong Securities and Futures Commission, the Investment Industry Regulatory Organization of Canada and provincial regulators in Canada, and the Securities and Exchange Commission and Central Bank in Brazil. In addition, Xtrakter is registered as an ARM with the FCA and has "recognized status" in France, the Netherlands and Belgium in connection with the submission of transaction reports to regulators.

As a matter of public policy, these regulatory bodies are responsible for safeguarding the integrity of the securities and other financial markets and protecting the interests of investors in those markets. These regulatory bodies have broad powers to promulgate and interpret, investigate and sanction non-compliance with their laws, rules and regulations.

Most aspects of our broker-dealer and other licensed subsidiaries are highly regulated, including:

- the way we deal with our clients;
- our capital requirements;
- our financial and regulatory reporting practices;
- required record-keeping and record retention procedures;
- the licensing of our employees; and
- the conduct of our directors, officers, employees and affiliates.

We cannot assure you that we and/or our directors, officers and employees will be able to fully comply with these laws, rules and regulations. If we fail to comply with any of these laws, rules or regulations, we may be subject to censure, fines, cease-and-desist orders, suspension of our business, suspensions of personnel or other sanctions, including revocation of our membership in FINRA and registration as a broker-dealer.

Certain of our regulated subsidiaries, including our registered broker-dealer and MTF, are subject to U.S. or foreign regulations which prohibit repayment of borrowings from the Company or affiliates, paying cash dividends, making loans to the Company or affiliates or otherwise entering into transactions that result in a significant reduction in regulatory net capital or financial resources, without prior notification to or approval from such subsidiary's principal regulator. MarketAxess SEF Corporation is registered with the CFTC as a SEF and is required, among other things, to maintain sufficient financial resources to cover operating costs for at least one year.

Our authority to operate our platform in a jurisdiction is dependent on continued registration or authorization in that jurisdiction or the maintenance of a proper exemption from such registration or authorization. Our ability to comply with all applicable laws and rules is largely dependent on our compliance, credit approval, audit and reporting systems and procedures, as well as our ability to attract and retain qualified compliance, credit approval, audit and risk management personnel. Our systems and procedures may not be sufficiently effective to prevent a violation of all applicable rules and regulations. In addition, the growth and expansion of our business may create additional strain on our compliance systems, procedures and personnel and has resulted, and we expect will continue to result, in increased costs to maintain and improve these systems.

In addition, because our industry is heavily regulated, regulatory approval may be required in order to continue or expand our business activities and we may not be able to obtain the necessary regulatory approvals on a timely basis, if at all. Even if approvals are obtained, they may impose restrictions on our business or we may not be able to continue to comply with the terms of the approvals or applicable regulations. The implementation of unfavorable regulations or unfavorable interpretations of existing regulations by courts or regulatory bodies could require us to incur significant compliance costs or cause the development or continuation of business activities in affected markets to become impractical. For a further description of the regulations which may limit our activities, see "Item 1. Business—Government Regulation."

Some of our subsidiaries are subject to regulations regarding changes in control of their ownership. These regulations generally provide that regulatory approval must be obtained in connection with any transaction resulting in a change in control of the subsidiary, which may include changes in control of MarketAxess. As a result of these regulations, our future efforts to sell shares or raise additional capital may be delayed or prohibited in circumstances in which such a transaction would give rise to a change in control as defined by the applicable regulatory body.

Our business and the trading businesses of many of our clients are subject to increasingly extensive government and other regulation, which may affect our trading volumes and increase our cost of doing business.

The financial services industry, in general, is heavily regulated. Proposals for legislation further regulating the financial services industry are continually being introduced in the United States Congress, in state legislatures and by foreign governments. The government agencies that regulate us continuously review legislative and regulatory initiatives, may adopt new or revised laws and regulations and have broad powers to investigate and enforce compliance and punish noncompliance with their rules, regulations and industry standards of practice. In light of recent conditions in the global financial markets and economy, regulators have increased their focus on the regulation of the financial services industry. We are unable to predict which of these proposals will be implemented or in what form, or whether any additional or similar changes to statutes or regulations, including the interpretation or implementation thereof, will occur in the future. Any such action could affect us in substantial and unpredictable ways and could have an adverse effect on our business, financial condition and results of operations.

Our business and that of our clients are also affected by the policies adopted by the Federal Reserve and international central banking authorities, which may affect the credit quality of our customers or increase the cost for our customers to trade the instruments on our platform. In addition, such changes in monetary policy may directly impact our cost of funds for capital raising and investment activities and may impact the value of financial instruments we hold. Changes in domestic and international monetary policy are beyond our control and are difficult to predict.

In addition, regulatory bodies in Europe are developing new rules for the fixed-income markets. MiFID II and MiFIR were approved in June 2014 and introduce changes in market structure designed to: (i) enhance pre- and post-trade transparency for fixed income instruments with the scope of requirements calibrated for liquidity, (ii) increase and enhance post-trade reporting obligations with a requirement to submit post-trade data to ARMs, (iii) ensure trading of certain derivatives occurs on regulated trading venues and (iv) establish a consolidated tape for trade data. While some of the technical advice underpinning MiFID II have not yet been finalized, MiFID II will have a significant impact in these areas, as well as on corporate governance and investor protection. MiFID II and MiFIR are expected to take effect in January 2018 and may have an adverse effect on our operations or our ability to provide our electronic trading platform in a manner that can successfully compete against other types of regulated and non-regulated venues for the fixed-income trading needs of our clients. In addition, MiFID II is expected to cause us to expend significantly more compliance, business and technology resources, incur additional operational costs and create additional regulatory exposure for our trading and post-trade businesses. We cannot predict the extent to which any of these new regulations or future regulatory changes will impact our European business and operations, but they may have an adverse effect on our business, financial condition and results of operations.

Any changes in laws or regulations or in governmental policies could have a material adverse effect on our business, financial condition and results of operations. Our industry has been and is subject to continuous regulatory changes and may become subject to new regulations or changes in the interpretation or enforcement of existing regulations, which could require us to incur significant compliance costs or cause the development and growth of impacted markets to become impractical. For example, the Volcker Rule section of the Dodd-Frank Act bans proprietary trading by banks and their affiliates, which adversely affects our bank-affiliated broker-dealer clients’ ability to make markets in a variety of fixed-income securities, thereby negatively impacting the level of liquidity and pricing available on our trading platform. Other regulatory initiatives include Basel III, a global regulatory standard on bank capital adequacy designed to strengthen bank capital requirements and liquidity in most of the world’s major economies by 2019. The implementation of these rules could restrict the ability of our large bank and broker-dealer customers to raise additional capital and liquidity. As a result, their businesses could be adversely affected, which might cause them to trade less on our platform. In addition, as we expand our business into new markets, it is likely that we will be subject to additional laws, rules and regulations. We cannot predict the extent to which any future regulatory changes may adversely affect our business and operations.

Our disclosed trading system has not been subjected to regulation as an alternative trading system under Regulation ATS. A determination by the SEC to treat our trading platform as an alternative trading system subject to Regulation ATS would subject us to additional reporting obligations and other limitations on the conduct of our business, many of which could be material. Currently, our central limit order book trading service for single-name credit derivatives and our Mid-X matching service for corporate bonds are regulated as alternative trading systems subject to Regulation ATS.

The activities and consequences described above may result in significant distractions to our management and could have a material adverse effect on our business, financial condition and results of operations.

We may face increasing economic and regulatory challenges in our growing international operations that we may not be able to meet in the future.

We operate an electronic trading platform in Europe, Latin America and Asia and we may further expand our operations throughout these and other regions. We have invested significant resources in our foreign operations and the increasing globalization of our platform and services. However, there are certain risks inherent in doing business in international markets, particularly in the financial services industry, which is heavily regulated in many jurisdictions. These risks include:

- less developed technological infrastructures and generally higher costs, which could result in lower client acceptance of our services or clients having difficulty accessing our trading platform;
- difficulty in obtaining the necessary regulatory approvals for planned expansion, if at all, and the possibility that any approvals that are obtained may impose restrictions on the operation of our business;
- the inability to manage and coordinate the various regulatory requirements of multiple jurisdictions that are constantly evolving and subject to unexpected change;
- difficulties in staffing and managing foreign operations;
- fluctuations in exchange rates;
- reduced or no protection for intellectual property rights;
- seasonal reductions in business activity; and
- potentially adverse tax consequences.

Our international operations are also subject to the legal, economic and market risks associated with geopolitical uncertainties in other regions of the world, including but not limited to the risk of war, inter and intra national conflict, economic crises and terrorism.

In addition, we must comply with the laws, regulations and registration rules of the FCA in the U.K. and foreign governments and regulatory bodies for each country in which we conduct business. For example, regulatory bodies in Europe have approved the final texts of MiFID II and MiFIR, which are expected to take effect in January 2018. We cannot predict the extent to which any of these new regulations or future regulatory changes may impact our European business and operations, but they may cause us to expend significantly more compliance, business and technology resources, incur additional operational costs and create additional regulatory exposure.

We cannot predict what future actions the U.S., U.K. and other regulatory bodies might take, or the impact that any such actions may have on our business. In addition, Brexit could lead to legal uncertainty and potentially divergent national laws and regulations as the U.K. determines which E.U. laws to replace or replicate. Our compliance with these changing laws and regulations may be costly and time-consuming and may have a material adverse effect on our clients’ trading activities on our platform.

Further, we may face unexpected challenges in our international operations due to global competitors, established local markets, and economic and political instability. Our inability to manage these risks effectively could adversely affect our business and limit our ability to expand our international operations, which could have a material adverse effect on our business, financial condition and results of operations.

Extensive regulation of our businesses results in ongoing exposure to potential significant costs and penalties.

Our businesses are subject to regulation by governmental and self-regulatory organizations in the jurisdictions in which we operate around the world. Many of these regulators, including U.S. and non-U.S. government agencies and self-regulatory organizations, as well as state securities commissions in the U.S., are empowered to bring enforcement actions and to conduct administrative proceedings and examinations, inspections, and investigations, which may result in costs, penalties, fines, enhanced oversight, additional requirements, restrictions, or limitations, and censure, suspension, or expulsion. Self-regulatory organizations such as FINRA and the National Futures Association (“NFA”), along with statutory bodies such as the SEC, the CFTC, and the FCA, and other international regulators, require strict compliance with their rules and regulations.

Firms in the financial services industry have experienced increased scrutiny in recent years, and penalties, fines and other sanctions sought by regulatory authorities, including the SEC, the CFTC, FINRA, the NFA, state securities commissions and state attorneys general in the U.S., and the FCA in the U.K. and other international regulators, have increased accordingly. This trend toward a heightened regulatory and enforcement environment can be expected to continue for the foreseeable future, and this environment may create uncertainty. Accordingly, we face the risk of regulatory intervention, investigations and proceedings, any of which could involve extensive scrutiny of our activities and result in significant fines and liability. Any of these developments would require significant time and financial resources and could adversely affect our reputation, financial condition and operating results.

We cannot assure you that our compliance and risk management methods will be effective and our financial condition and results of operations may be materially and adversely affected if they fail.

To manage the risks inherent in our business, we must maintain effective policies, procedures and systems that enable us to identify, monitor and control our exposure to financial, legal, regulatory, operational and market risks. Our risk-management methods are based on internally developed controls, observed historical market behavior and what we believe to be industry practices. Our risk-management methods may prove to be ineffective because of their design, their implementation or the lack of adequate, accurate or timely information. Our risk management methods may also fail to identify a risk or understand a risk that might result in losses. If our risk-management policies and efforts are ineffective, we could suffer losses that could have a material adverse effect on our financial condition and operating results.

We must rely upon our analysis of information regarding markets, personnel, clients or other matters that is publicly available or otherwise accessible to us. That information may not in all cases be accurate, complete, up-to-date or properly analyzed. Furthermore, we rely on a combination of technical and human controls and supervision that are subject to error and potential failure, the challenges of which are exacerbated by the 24-hour-a-day, global nature of our business.

Our success in complying with complex and changing laws and navigating risks in various jurisdictions and markets depends on our maintenance of compliance, auditing and reporting systems and risk management procedures, as well as our ability to recruit and retain qualified compliance and risk management personnel. While we have developed policies and procedures to identify, monitor and manage our legal, regulatory, operational and market risks, we cannot assure you that our systems will always be effective in monitoring or evaluating the risks to which we are exposed.

Our growth initiatives may place significant strain on management and other resources.

We have significantly expanded our business activities and operations over the last several years. Continued growth, both domestic and international, will require further investment in management and new personnel, infrastructure and compliance systems. The expansion of our international operations involves risks that may have an adverse effect on our business and operations, such as the challenge of effectively managing and staffing our international operations, complying with increased and varied regulatory requirements and entering new markets. In addition, we may incur substantial development, sales and marketing expenses and expend significant management effort to create a new product or service, and the period before the product or service is successfully developed, introduced and adopted may extend over many months or years. Even after incurring these costs, our clients may determine that they do not need or prefer the product or service.

We may not be able to manage our growth efficiently, which could result in our expansion costs increasing at a faster rate than our revenues and distracting management from our core business and operations. If we cannot successfully implement the necessary processes to support and manage new initiatives, our business, financial condition and results of operations may suffer.

In the event of employee error or misconduct, our business may be harmed.

Employee misconduct or error could expose us to significant liability, financial losses, regulatory sanctions and reputational harm. Misconduct or error by employees could include engaging in improperly using our confidential information or the confidential information of our clients or engaging in improper or unauthorized activities or transactions.

Over the past few years, there have been several high-profile cases involving fraud or misconduct by employees of financial services firms. Our employees could carry out improper activities on behalf of our clients, or use proprietary client or company information for personal or other improper or illegal uses. Employee errors also expose us to the risk of material loss until such errors are detected and unauthorized transactions or improper activities are reversed.

Errors and misconduct by our current or former employees could cause us to suffer financial losses, regulatory sanctions and reputational harm. The precautions we take to monitor and prevent employee errors and misconduct may not be effective in all cases.

We are subject to the risks of litigation and securities laws liability.

Many aspects of our business, and the businesses of our clients, involve substantial risks of liability. Dissatisfied clients may make claims against us regarding quality of trade execution, improperly settled trades, resolution of trade error claims, system failures, mismanagement or even fraud. We may become subject to these claims as the result of delays, failures or malfunctions of our electronic trading platform and services provided by us. We could incur significant legal expenses defending claims, even those without merit. An adverse resolution of any lawsuits or claims against us could have a material adverse effect on our business, financial condition and results of operations.

We cannot predict our future capital needs or our ability to obtain additional financing if we need it.

Our business is dependent upon the availability of adequate funding and regulatory capital under applicable regulatory requirements. Although we believe that our available cash resources and borrowing capacity under our credit agreement are sufficient to meet our presently anticipated liquidity needs and capital expenditure requirements for at least the next 12 months, we may in the future need to raise additional funds to, among other things:

- support more rapid growth of our business;
- develop new or enhanced services and products;
- fund operating losses;
- respond to competitive pressures;
- acquire complementary companies or technologies;
- enter into strategic alliances;
- increase the regulatory net capital necessary to support our operations; or
- respond to unanticipated or changing capital requirements.

The growth of our Open Trading™ protocols, in particular, is dependent on the willingness of our customers and counterparties to engage in transactions with us and any perceived issues with our capital levels or access to funding could have a material adverse effect on business. In addition, our liquidity could be impaired due to circumstances that we may be unable to control, such as a general market disruption or an operational problem that affects our trading customers or counterparties, other third parties or us.

All or part of any debt financing would likely be pursuant to the terms of our credit agreement with JPMorgan Chase & Co., which includes restrictive covenants with respect to dividends, issuances of additional capital and other financial and operational matters related to our business. For a detailed discussion of the risks associated with our credit agreement, see the Risk Factor captioned “Our credit agreement contains restrictive and financial covenants that could limit our operating flexibility, and we may incur additional debt in the future that may include similar or additional restrictions.”

In the future, we may not be able to obtain additional financing, if needed, in amounts or on terms acceptable to us, if at all. If sufficient funds are not available or are not available on terms acceptable to us, our ability to fund our expansion, take advantage of acquisition opportunities, develop or enhance our services or products, or otherwise respond to competitive pressures would be significantly limited. These limitations could have a material adverse effect on our business, financial condition and results of operations.

Our credit agreement contains restrictive and financial covenants that could limit our operating flexibility, and we may incur additional debt in the future that may include similar or additional restrictions.

We are party to a credit agreement with JPMorgan Chase & Co. that provides for revolving loans and letters of credit up to an aggregate of $100.0 million. Subject to satisfaction of certain specified conditions, we are permitted to upsize the borrowing capacity of the credit agreement by an additional $50.0 million. Our credit agreement contains certain covenants that, among other things, restrict our ability to take certain actions, even if we believe them to be in our best interests. These covenants restrict or prohibit, among other things, our ability to:

- incur or guarantee additional debt;
- create or incur liens;
- change our line of business;
- sell or transfer assets;
- make certain investments or acquisitions;
- pay dividends or distributions, redeem or repurchase our equity or make certain other restricted payments;
- consummate a merger or consolidation;
- enter into certain swap, derivative or similar transactions;

- enter into certain transactions with affiliates; and
- incur restrictions on our ability to grant liens or, in the case of subsidiaries, pay dividends or other distributions.

We are also required by our credit agreement to maintain a maximum consolidated leverage ratio, a minimum consolidated interest coverage ratio and a minimum consolidated adjusted EBITDA level. We cannot assure you that we will be able to meet these requirements or satisfy these covenants in the future. A breach of any of these covenants or the inability to comply with the required financial covenants could result in an event of default under the credit agreement. If any such event of default occurs, the lender under the credit agreement could elect to declare all amounts outstanding and accrued and unpaid interest under the credit agreement to be immediately due and payable, and could foreclose on the assets securing the credit agreement. The lender would also have the right in these circumstances to terminate any commitments it has to provide further credit extensions. We may incur other indebtedness in the future that may contain financial or other covenants more restrictive than those applicable to the credit agreement.

Fluctuations in foreign currency exchange rates may adversely affect our financial results.

We conduct operations in several different countries, including the U.S. and the U.K., and substantial portions of our revenues, expenses, assets and liabilities are denominated in U.S. dollars, British Pounds Sterling and Euros. Since our consolidated financial statements are presented in U.S. dollars, we must translate revenues, income and expenses, as well as assets and liabilities, into U.S. dollars at exchange rates in effect during or at the end of each reporting period. Accordingly, increases or decreases in the value of the U.S. dollar against the other currencies will affect our net operating revenues, operating income and the value of balance sheet items denominated in foreign currencies.

Although we have entered into foreign currency forward contracts to hedge our net investment in our U.K. subsidiaries and may enter into additional hedging transactions in the future to help mitigate our foreign exchange risk exposure, these hedging arrangements may not be effective, particularly in the event of inaccurate forecasts of the levels of our non-U.S. denominated assets and liabilities. Accordingly, if there are adverse movements in exchange rates, we may suffer significant losses, which would adversely affect our operating results and financial condition.

As a public company, we are subject to certain financial and corporate governance requirements that may be difficult for us to satisfy and may divert management's attention from our business.

We are subject to the requirements of Section 404 of the Sarbanes-Oxley Act of 2002 ("SOX") and the related SEC rules and regulations that call for our management to conduct an annual assessment and report on the effectiveness of our internal controls over financial reporting. Our independent registered public accounting firm must also issue an annual report addressing the operating effectiveness of the Company's internal controls over financial reporting.

While our internal controls over financial reporting currently meet the standards set forth in SOX, failure to maintain an effective internal control environment could have a material adverse effect on our business, financial condition and results of operations. We cannot be certain of our ability to continue to comply with the requirements of SOX. If we are unable to continue to comply with the requirements of SOX in an efficient manner, we may be subject to regulatory action. In addition, in the event that we identify a material weakness, there can be no assurance that we would be able to remediate such material weakness in an efficient manner. Moreover, if we are unable to assert that our internal control over financial reporting is effective in any future period (or if our auditors are unable to issue an opinion on the effectiveness of our internal controls), we could suffer reputational harm and incur significant expenses to restructure our internal controls over financial reporting, which may have a material adverse effect on us.

Risks Related to Our Common Stock

Market volatility and future sales of our shares by significant stockholders may cause our stock price and the value of your investment to decline.

The market price of our common stock may be significantly affected by volatility in the markets in general. The market price of our common stock likely will continue to fluctuate in response to factors including the following:

- the other risk factors described in this Annual Report on Form 10-K;
- prevailing interest rates;
- the market for similar securities;
- additional issuances of common stock;
- general economic conditions; and
- our financial condition, performance and prospects, including our ability or inability to meet analyst expectations.

Most of these factors are beyond our control. In addition, the stock markets in general, including the NASDAQ Global Select Market, have experienced and continue to experience significant price and volume fluctuations. These fluctuations have resulted in volatility in the market prices of securities for companies such as ours that often has been unrelated or disproportionate to changes in the operating performance of the affected companies. These broad market and industry fluctuations may affect adversely the market price of our common stock regardless of our operating performance.

In addition, future sales of our common stock, or the perception of potential future sales, may adversely impact the market price of our common stock. If any one or more of our existing stockholders were to sell a large number of shares, the market price of our common stock could be negatively affected. Also, if we issue a large number of shares of our common stock in connection with a public offering, future acquisition, strategic alliance, third-party investment and private placement or otherwise, the market price of our common stock could decline considerably. Furthermore, our stockholders may be diluted by such future sales.

We may decrease or cease paying dividends on our common stock in the future.

We initiated a regular quarterly dividend on our common stock in 2009. However, there is no assurance that we will continue to pay any dividends to holders of our common stock in the future or, if we continue paying dividends, that such dividends will be paid at the rate at which they were paid in prior periods. If we were to decrease the dividend rate or cease paying dividends, investors may need to rely on the sale of their common stock after price appreciation, which may never occur, as the primary or only way to realize any future gains on their investment.

If securities analysts do not publish research or reports about our business or if they downgrade our common stock, the price of our common stock could decline.

The trading market for our common stock relies in part on the research and reports that industry or financial analysts publish about us or our business. These analysts work independently of us. If one or more analysts who cover us downgrade our stock, our stock price could decline rapidly. If one or more of these analysts cease coverage of our company, we could lose visibility in the market, which in turn could cause our stock price to decline.

Provisions in our organizational documents and Delaware law might discourage, delay or prevent a change of control of our company or changes in our management, and therefore, depress the trading price of our common stock.

Provisions of our certificate of incorporation and bylaws may make it substantially more difficult for a third party to acquire control of us and may prevent changes in our management, including provisions that:

- prevent stockholders from calling special meetings;
- allow the directors to amend the bylaws without stockholder approval; and
- set forth advance notice procedures for nominating directors and submitting proposals for consideration at stockholders’ meetings.

Provisions of Delaware law may also inhibit potential acquisition bids for us or prevent us from engaging in business combinations. In addition, we have a severance agreement with one employee and a change of control severance plan that could require an acquirer to pay a higher price. Either collectively or individually, these provisions may prevent holders of our common stock from benefiting from what they may believe are the positive aspects of acquisitions and takeovers, including the potential realization of a higher rate of return on their investment from these types of transactions.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Our corporate headquarters and principal U.S. offices are located in New York, New York, where we lease approximately 57,000 square feet under leases expiring between April 2018 and February 2022. We also collectively lease approximately 21,000 square feet for our other office locations in the U.S., United Kingdom, Brazil, Hong Kong and Singapore under various leases expiring between April 2018 and December 2033. During 2016, we entered into a lease agreement for our new global headquarters in New York City. We expect to relocate our headquarters to approximately 83,000 square feet of newly built office space at 55 Hudson Yards upon the building's completion in late 2018. The fifteen year lease for the new headquarters will commence when we receive possession of the premises, which is currently expected to occur in the first quarter of 2018.

Item 3. Legal Proceedings.

In the normal course of business, we and our subsidiaries included in the consolidated financial statements may be involved in various lawsuits, proceedings and regulatory examinations. We assess liabilities and contingencies in connection with outstanding legal proceedings, if any, utilizing the latest information available. For matters where it is probable that we will incur a material loss and the amount can be reasonably estimated, we would establish an accrual for the loss. Once established, the accrual would be adjusted to reflect any relevant developments. When a loss contingency is not both probable and estimable, we would not establish an accrual.

Based on currently available information, the outcome of our outstanding matters is not expected to have a material adverse impact on our financial position. It is not presently possible to determine our ultimate exposure to these matters and there is no assurance that the resolution of the outstanding matters will not significantly exceed any reserves accrued by us.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Price Range

Our common stock trades on the NASDAQ Global Select Market under the symbol "MKTX". The range of closing price information for our common stock, as reported by NASDAQ, was as follows:

2016:	High	Low
January 1, 2016 to March 31, 2016	$126.29	$101.77
April 1, 2016 to June 30, 2016	$145.40	$120.86
July 1, 2016 to September 30, 2016	$173.34	$143.59
October 1, 2016 to December 31, 2016	$171.02	$145.53
2015:		
January 1, 2015 to March 31, 2015	$88.80	$67.66
April 1, 2015 to June 30, 2015	$97.34	$82.87
July 1, 2015 to September 30, 2015	$103.28	$88.91
October 1, 2015 to December 31, 2015	$114.24	$86.86

On February 16, 2017, the last reported closing price of our common stock on the NASDAQ Global Select Market was $191.68.

Holders

There were 26 holders of record of our common stock as of February 16, 2017.

Dividend Policy

During 2016, 2015 and 2014, we paid quarterly cash dividends of $0.26 per share, $0.20 per share and $0.16 per share, respectively. Any future declaration and payment of dividends will be at the sole discretion of our Board of Directors. The Board of Directors may take into account such matters as general business conditions, our financial results, capital requirements, contractual obligations, legal and regulatory restrictions on the payment of dividends to our stockholders or by our subsidiaries to their respective parent entities, and such other factors as the Board of Directors may deem relevant.

Recent Sales of Unregistered Securities

None.

Securities Authorized for Issuance Under Equity Compensation Plans

Please see the section entitled "Equity Compensation Plan Information" in Item 12.

Issuer Purchases of Equity Securities

During the three months ended December 31, 2016, we repurchased the following shares of common stock:

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans and Programs	Dollar Value of Shares That May Yet Be Purchased Under the Plans and Programs (In thousands)
October 1, 2016 - October 31, 2016	21,178	$ 158.28	20,900	$ 57,865
November 1, 2016 - November 30, 2016	21,108	159.39	21,000	54,516
December 1, 2016 - December 31, 2016	21,073	162.51	20,900	51,120
	63,359	$ 160.06	62,800	

During the three months ended December 31, 2016, we repurchased 63,359 shares of common stock. The repurchases included 559 shares surrendered by employees to us to satisfy the withholding tax obligations upon the vesting of restricted shares and 62,800 shares repurchased in connection with our share repurchase program.

In January 2016, our Board of Directors authorized a two-year share repurchase program for up to $25.0 million of our common stock which commenced on March 1, 2016. In October 2016, our Board of Directors approved a $50.0 million increase in the size of the current share repurchase program. Shares repurchased under the program will be held in treasury for future use.

STOCK PERFORMANCE GRAPH

The following graph shows a comparison from December 31, 2011 through December 31, 2016 of the cumulative total return for (i) our common stock, (ii) the NASDAQ Composite Index and (iii) the Dow Jones US Financial Services Index. The performance graph and related information shall not be deemed “soliciting material” or to be “filed” with the SEC, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, each as amended, except to the extent that the Company specifically incorporates it by reference into such filing.

The figures in this graph assume an initial investment of $100 in our common stock and in each index on December 31, 2011, and that all quarterly dividends were reinvested. The returns illustrated below are based on historical results during the period indicated and should not be considered indicative of future stockholder returns.

Item 6. Selected Financial Data.

The selected statements of operations data for each of the years ended December 31, 2016, 2015 and 2014 and the selected balance sheet data as of December 31, 2016 and 2015 have been derived from our audited financial statements included elsewhere in this Annual Report on Form 10-K. The selected statements of operations data for the years ended December 31, 2013 and 2012, and the balance sheet data as of December 31, 2014, 2013 and 2012 have been derived from our audited financial statements not included in this Annual Report on Form 10-K.

	Year Ended December 31,				
	2016	2015	2014	2013	2012
Statements of Operations Data:	(In thousands, except per share amounts)				
Revenues					
Commissions (1)	$332,307	$266,221	$221,138	$203,652	$174,199
Information and post-trade services (2)	31,225	30,660	31,510	25,377	7,435
Investment income	2,137	905	543	420	1,057
Other (3)	4,250	5,312	9,583	9,284	8,149
Total revenues	369,919	303,098	262,774	238,733	190,840
Expenses					
Employee compensation and benefits	96,785	83,856	74,995	64,406	54,678
Depreciation and amortization	17,838	18,542	17,379	14,123	6,758
Technology and communications	17,275	15,916	17,685	16,037	12,523
Professional and consulting fees	17,175	13,043	14,375	18,220	12,150
Occupancy	4,681	4,685	4,381	5,173	2,446
Marketing and advertising	8,934	6,148	5,769	4,632	5,169
General and administrative	15,629	13,008	9,654	8,862	7,746
Total expenses	178,317	155,198	144,238	131,453	101,470
Income before income taxes from continuing operations	191,602	147,900	118,536	107,280	89,370
Provision for income taxes (4)	65,430	51,863	43,730	38,717	27,586
Net income from continuing operations	126,172	96,037	74,806	68,563	61,784
Income (loss) from discontinued operations, net of income taxes (5)	—	—	—	7,453	(1,715)
Net income	$126,172	$96,037	$74,806	$76,016	$60,069
Basic earnings per common share					
Income from continuing operations	$3.42	$2.62	$2.03	$1.86	$1.69
Income (loss) from discontinued operations	—	—	—	0.20	(0.04)
Net income per common share	$3.42	$2.62	$2.03	$2.06	$1.65
Diluted earnings per common share					
Income from continuing operations	$3.34	$2.55	$1.97	$1.81	$1.64
Income (loss) from discontinued operations	—	—	—	0.20	(0.05)
Net income per common share	$3.34	$2.55	$1.97	$2.01	$1.59
Cash dividends per share	$1.04	$0.80	$0.64	$0.52	$1.74
Weighted average number of shares of common					

stock outstanding:					
Basic	36,844	36,690	36,930	36,886	36,516
Diluted	37,738	37,637	37,889	37,888	37,816

	As of December 31,				
	2016	2015	2014	2013	2012
Balance Sheet Data:	(In thousands)				
Cash and cash equivalents and investments	$362,647	$284,434	$233,787	$200,433	$180,116
Working capital (6)	364,904	284,914	227,743	200,183	180,650
Total assets	528,042	439,041	379,884	353,910	279,841

(1) Commissions include monthly distribution fees and trading commissions.
(2) Information and post-trade services revenue includes information services provided to our broker-dealer clients, institutional investor clients and data-only subscribers. It also includes revenue from trade matching and regulatory transaction reporting services through Xtrakter, which was acquired in February 2013.
(3) Other revenues consist primarily of professional consulting services, technology software licenses, maintenance and support services, telecommunications line charges to broker-dealer clients, initial set-up fees and other miscellaneous revenues.
(4) In 2012, we recorded a favorable income tax adjustment of \$6.7 million, or \$0.18 per share, relating to certain previously unrecognized tax benefits.
(5) In October 2013, we sold Greenline Financial Technologies, Inc. for \$11.0 million and recognized a gain on the sale, net of a tax benefit, of \$7.6 million.
(6) Working capital is defined as current assets minus current liabilities. Current assets consist of cash and cash equivalents, investments, accounts receivable and prepaid and other expenses (excludes cash provided as collateral). Current liabilities consist of accrued employee compensation, income and other tax liabilities, deferred revenue, and accounts payable, accrued expenses and other liabilities.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

You should read the following discussion and analysis of our financial condition and results of operations in conjunction with "Selected Financial Data" and our consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. In addition to historical information, this discussion and analysis contains forward-looking statements relating to future events and the future performance of MarketAxess that are based on our current expectations, assumptions, estimates and projections about us and our industry. These forward-looking statements involve risks and uncertainties. Our actual results and timing of various events could differ materially from those anticipated in such forward-looking statements as a result of a variety of factors, as more fully described in this section, in "Item 1A. Risk Factors" and elsewhere in this Annual Report on Form 10-K. We undertake no obligation to update publicly any forward-looking statements for any reason, even if new information becomes available or other events occur in the future.

Executive Overview

MarketAxess operates a leading electronic trading platform that enables fixed-income market participants to efficiently trade corporate bonds and other types of fixed-income instruments using our patented trading technology. Over 1,200 institutional investor and broker-dealer firms are active users of our trading platform, accessing global liquidity in U.S. high-grade corporate bonds, emerging markets and high-yield bonds, European bonds, U.S. agency bonds, municipal bonds, credit default swaps and other fixed-income securities. Through our Open Trading™ protocols, we execute trades in certain bonds between and among institutional investor and broker-dealer clients in an all-to-all trading environment on a matched principal basis. We also offer a number of trading-related products and services, including: market data to assist clients with trading decisions; connectivity solutions that facilitate straight-through processing; technology services to optimize trading environments; and execution services for exchange-traded fund managers and other clients. Through our Trax® division, we also offer a range of pre- and post-trade services, including trade matching, regulatory transaction reporting, and market and reference data across a range of fixed-income and other products.

Our platform's innovative technology solutions are designed to increase the number of potential trading counterparties on our electronic trading platform and create a menu of solutions to address different trade sizes and bond liquidity characteristics. Our traditional request-for-quote model allows our institutional investor clients to simultaneously request competing, executable bids or offers from our broker-dealer clients and execute trades with the broker-dealer of their choice from among those that choose to respond. Our Open Trading™ protocols complement our request-for-quote model by increasing the number of potential counterparties and improving liquidity by allowing all participants to interact anonymously in an all-to-all trading environment. Our platform also provides our broker-dealer clients a solution that enables them to efficiently reach our institutional investor clients for the distribution and trading of bonds.

The majority of our revenues are derived from commissions for trades executed on our platform and distribution fees that are billed to our broker-dealer clients on a monthly basis. We also derive revenues from information and post-trade services, technology products and services, investment income and other income. Our expenses consist of employee compensation and benefits, depreciation and amortization, technology and communication expenses, professional and consulting fees, occupancy, marketing and advertising and other general and administrative expenses.

Our objective is to provide the leading global electronic trading platform for fixed-income securities, connecting broker-dealers and institutional investors more easily and efficiently, while offering a broad array of information, trading and technology services to market participants across the trading cycle. The key elements of our strategy are:

- to innovate and efficiently add new functionality and product offerings to the MarketAxess platform that we believe will help to increase our market share with existing clients, as well as to expand our client base;
- to leverage our existing client network and technology to increase the number of potential counterparties and improve liquidity by developing and deploying a wide range of electronic trading protocols to complement our traditional request-for-quote model and allowing broker-dealers and institutional investors to interact in our all-to-all Open Trading™ environment;
- to leverage our existing technology and client relationships to deploy our electronic trading platform into additional product segments within the fixed-income securities markets and deliver fixed-income securities-related technical services and products;
- to continue building our existing service offerings so that our electronic trading platform is more fully integrated into the workflow of our broker-dealer and institutional investor clients and to continue to add functionality to allow our clients to achieve a fully automated end-to-end straight-through processing solution (automation from trade initiation to settlement);
- to add new content and analytical capabilities to BondTicker™ and expand Axess All™, the first intra-day trade tape for the European fixed income market, and our other data service offerings provided by Trax® to improve the value of the information we provide to our clients; and
- to continue to increase and supplement our internal growth by entering into strategic alliances, or acquiring businesses or technologies that will enable us to enter new markets, provide new products or services, or otherwise enhance the value of our platform to our clients. For example, the acquisition of Xtrakter Limited (“Xtrakter”) in February 2013 provided us with an expanded set of technology solutions ahead of incoming pre-and post-trade transparency mandates from MiFID II

in Europe. In recent years, we entered into, and expanded, a strategic alliance with BlackRock, Inc. (“BlackRock”) to combine BlackRock’s order flow with our Open Trading™ solution to improve the range of trading connections available to credit market participants in the U.S., Europe and Asia. In 2016, we entered into an agreement with S&P Dow Jones Indices to jointly develop indices that will track the most liquid segments of the U.S. corporate bond market.

Critical Factors Affecting Our Industry and Our Company

Economic, Political and Market Factors

The global fixed-income securities industry is risky and volatile and is directly affected by a number of economic, political and market factors that may result in declining trading volume. These factors could have a material adverse effect on our business, financial condition and results of operations. These factors include, among others, credit market conditions, the current interest rate environment, including the volatility of interest rates and investors’ forecasts of future interest rates, economic and political conditions in the United States, Europe and elsewhere, and the consolidation or contraction of our broker-dealer clients.

In 2016, our business faced a challenging macro environment which we attribute to a number of cyclical factors, including accommodative monetary policies by several major central banks, including the Federal Reserve and the European Central Bank. These monetary policies have resulted in historically low levels of volatility and interest rates across most of the fixed income markets. The global credit markets have also faced structural issues in recent years, such as trading limits imposed by the Volcker Rule, increased bank capital requirements under Basel III and the quantitative easing program of the European Central Bank. Following the U.S. Presidential election in November, however, the global credit markets experienced a significant shift in sentiment and increased volatility with the expectation of an upward trend in interest rates and inflation.

Competitive Landscape

The global fixed-income securities industry generally, and the electronic financial services markets in which we engage in particular, are highly competitive, and we expect competition to intensify in the future. Sources of competition for us will continue to include, among others, bond trading conducted directly between broker-dealers and their institutional investor clients over the telephone or electronically and other multi-dealer or all-to-all trading platforms. Competitors, including companies in which some of our broker-dealer clients have invested, have developed or acquired electronic trading platforms or have announced their intention to explore the development of electronic platforms or information networks that may compete with us.

In general, we compete on the basis of a number of key factors, including, among others, the liquidity provided on our platform, the magnitude and frequency of price improvement enabled by our platform and the quality and speed of execution. We believe that our ability to grow volumes and revenues will largely depend on our performance with respect to these factors.

Our competitive position is also enhanced by the familiarity and integration of our broker-dealer and institutional investor clients with our electronic trading platform and other systems. We have focused on the unique aspects of the credit markets we serve in the development of our platform, working closely with our clients to provide a system that is suited to their needs.

Regulatory Environment

Our industry has been and is subject to continuous regulatory changes and may become subject to new regulations or changes in the interpretation or enforcement of existing regulations, which could require us to incur significant costs.

Following the global financial crisis and other recent events in the financial industry, governments and regulators in both the United States and Europe called for increased regulation and transparency in the over-the-counter markets. As a result, the Dodd-Frank Act was signed into law in July 2010. Among the most significant requirements of the derivatives section of the Dodd-Frank Act are mandatory clearing of certain derivative instruments (“swaps”) through regulated central clearing organizations and mandatory trading of those instruments through either regulated exchanges or swap execution facilities (“SEFs”), in each case, subject to certain key exceptions. MarketAxess SEF Corporation, our wholly-owned U.S. subsidiary, operates as a SEF for the trading of certain index swaps. The SEC has not yet finalized its rules for security-based SEFs, nor has it published a timetable for the finalization and implementation of such rules. Following the U.S. Presidential and Congressional elections in November 2016, President Trump has stated that he will pursue a path of financial deregulation, including by signing an executive order that requires the Treasury Department to review the provisions of the Dodd-Frank Act.

Various rules promulgated since the financial crisis could adversely affect our bank-affiliated broker-dealer clients’ ability to make markets in a variety of fixed-income securities, thereby negatively impacting the level of liquidity and pricing available on our trading platform. For example, while the Volcker Rule does not apply directly to us, the Volcker Rule bans proprietary trading by banks and their affiliates. In addition, enhanced leverage ratios applicable to large banking organizations in the U.S. and Europe require such organizations to strengthen their balance sheets and may limit their ability or willingness to make markets on our trading platform. We cannot predict the extent to which these rules or any future regulatory changes may adversely affect our business and operations.

Similar to the U.S., regulatory bodies in Europe are developing new rules for the fixed-income markets. MiFID II and MiFIR were approved in June 2014 and introduce changes in market structure designed to: (i) enhance pre- and post-trade transparency for fixed income instruments with the scope of requirements calibrated for liquidity, (ii) increase and enhance post-trade reporting obligations with a requirement to submit post-trade data to Approved Reporting Mechanisms, (iii) ensure trading of certain derivatives occurs on regulated trading venues and (iv) establish a consolidated tape for trade data. While some of the technical advice underpinning MiFID II have not yet been finalized, MiFID II will have a significant impact in these areas, as well as on corporate governance and investor protection. MiFID II and MiFIR are expected to take effect in January 2018. The final rules may have an adverse effect on our operations or our ability to provide our electronic trading platform in a manner that can successfully compete against other types of regulated and non-regulated venues for the fixed-income trading needs of our clients. In addition, MiFID II is expected to cause us to expend significantly more compliance, business and technology resources, incur additional operational costs and create additional regulatory exposure for our trading and post-trade businesses. While we generally believe the net impact of the rules and regulations may be positive for our businesses, unintended consequences of the rules and regulations may adversely affect us in ways yet to be determined.

In June 2016, the U.K. voted in an advisory referendum to leave the European Union (commonly referred to as "Brexit"). The follow-up to the referendum is not yet clear as the U.K. government has not yet delivered an official notice of withdrawal. However, depending on the terms negotiated between E.U. member states and the U.K. following Brexit, our U.K. subsidiaries may not be able to rely on the existence of a "passporting" regime that allows immediate access to the single E.U. market and we may need to establish one or more new regulated subsidiaries in the E.U. in order to provide our trading platform and certain post-trade services to clients in the E.U.

Rapid Technological Changes

We must continue to enhance and improve our electronic trading platform. The electronic financial services industry is characterized by increasingly complex systems and infrastructures and new business models. Our future success will depend on our ability to enhance our existing products and services, develop and/or license new products and technologies that address the increasingly sophisticated and varied needs of our existing and prospective broker-dealer and institutional investor clients and respond to technological advances and emerging industry standards and practices on a cost-effective and timely basis. We have been issued 13 patents covering our most significant trading protocols and other aspects of our trading system technology.

Trends in Our Business

The majority of our revenues are derived from commissions for transactions executed on our platform between and among our institutional investor and broker-dealer clients and monthly distribution fees. We believe that there are five key variables that impact the notional value of such transactions on our platform and the amount of commissions and distribution fees earned by us:

- the number of participants on our platform and their willingness to originate transactions through the platform;
- the number of institutional investor and broker-dealer clients on the platform and the frequency and competitiveness of the price responses they provide on our platform;
- the number of markets for which we make trading available to our clients;
- the overall level of activity in these markets; and
- the level of commissions that we collect for trades executed through the platform.

We believe that overall corporate bond market trading volume is affected by various factors including the absolute levels of interest rates, the direction of interest rate movements, the level of new issues of corporate bonds and the volatility of corporate bond spreads versus U.S. Treasury securities. Because a significant percentage of our revenue is tied directly to the volume of securities traded on our platform, it is likely that a general decline in trading volumes, regardless of the cause of such decline, would reduce our revenues and have a significant negative impact on profitability.

Commission Revenue

Commissions are generally calculated as a percentage of the notional dollar volume of bonds traded on our platform and vary based on the type, size, yield and maturity of the bond traded. Under our transaction fee plans, bonds that are more actively traded or that have shorter maturities are generally charged lower commissions, while bonds that are less actively traded or that have longer maturities generally command higher commissions.

U.S. High-Grade Corporate Bond Commissions. Our U.S. high-grade corporate bond fee plans generally incorporate variable transaction fees and distribution fees billed to our broker-dealer clients on a monthly basis. Certain dealers participate in fee programs that do not contain monthly distribution fees and instead incorporate additional per transaction execution fees and minimum monthly fee commitments. Under these fee plans, we electronically add the transaction fee to the spread quoted by the broker-dealer client. The U.S. high-grade transaction fee is generally designated in basis points in yield and, as a result, is subject to fluctuation depending on the duration of the bond traded. The average U.S. high-grade fees per million may vary in the future due to changes in yield, years-to-maturity and nominal size of bonds traded on our platform.

Other Credit Commissions. Other credit includes Eurobonds, emerging markets bonds, high-yield bonds and municipal bonds. Commissions for other credit products generally vary based on the type of the instrument traded using standard fee schedules. During the fourth quarter of 2016, our Eurobond fee plan structure was changed to contain standardized minimum monthly commitments and variable transaction fees. Prior to the fee plan change, our European fee plans generally incorporated some combination of monthly distribution fees and variable transaction fees. The average other credit fees per million may vary in the future due to changes in product mix or trading protocols.

Liquid Products Commissions. Liquid products includes U.S. agency, European government bonds and credit derivatives. Commissions for liquid products generally vary based on the type of the instrument traded using standard fee schedules.

For trades that we execute between and among institutional investor and broker-dealer clients on a matched principal basis by serving as counterparty to both the buyer and the seller, we earn our commission through the difference in price between the two trades. Distribution fees include any unused monthly fee commitments under our variable fee plans.

We anticipate that average fees per million may change in the future. Consequently, past trends in commissions are not necessarily indicative of future commissions.

Other Revenue

In addition to the commissions discussed above, we earn revenue from information and post-trade services, investment income and other income.

Information and post-trade services. We generate revenue from information services provided to our broker-dealer clients, institutional investor clients and data-only subscribers. Information services are invoiced monthly, quarterly or annually. When billed in advance, revenues are deferred and recognized monthly on a straight-line basis. We also generate revenue from trade matching and regulatory transaction reporting services. Revenue is recognized in the period the services are provided.

Investment Income. Investment income consists of income earned on our investments.

Other. Other revenues include revenue from professional consulting services, technology software licenses and maintenance and support services, fees from telecommunications line charges to broker-dealer clients, initial set-up fees and other miscellaneous revenues.

Expenses

In the normal course of business, we incur the following expenses:

Employee Compensation and Benefits. Employee compensation and benefits is our most significant expense and includes employee salaries, stock-based compensation costs, other incentive compensation, employee benefits and payroll taxes.

Depreciation and Amortization. We depreciate our computer hardware and related software, office hardware and furniture and fixtures and amortize our capitalized software development costs on a straight-line basis over three to seven years. We amortize leasehold improvements on a straight-line basis over the lesser of the life of the improvement or the remaining term of the lease. Intangible assets with definite lives, including purchased technologies, customer relationships and other intangible assets, are amortized over their estimated useful lives, ranging from three to 15 years. Intangible assets are assessed for impairment when events or circumstances indicate a possible impairment.

Technology and Communications. Technology and communications expense consists primarily of costs relating to maintenance on software and hardware, our internal network connections, data center hosting costs and data feeds provided by outside vendors or service providers. The majority of our broker-dealer clients have dedicated high-speed communication lines to our network in order to provide fast data transfer. We charge our broker-dealer clients a monthly fee for these connections, which is recovered against the relevant expenses we incur.

Professional and Consulting Fees. Professional and consulting fees consist primarily of accounting fees, legal fees and fees paid to information technology and other consultants for services provided for the maintenance of our trading platform, information and post-trade services products and other services.

Occupancy. Occupancy costs consist primarily of office and equipment rent, utilities and commercial rent tax.

Marketing and Advertising. Marketing and advertising expense consists primarily of print and other advertising expenses we incur to promote our products and services. This expense also includes costs associated with attending or exhibiting at industry-sponsored seminars, conferences and conventions, and travel and entertainment expenses incurred by our sales force to promote our trading platform and information and post-trade services.

General and Administrative. General and administrative expense consists primarily of general travel and entertainment, clearing costs from matched principal trades, board of directors' expenses, charitable contributions, provision for doubtful accounts, and various state franchise and U.K. value-added taxes.

Expenses may grow in the future, notably in employee compensation and benefits, primarily due to investment in new products and geographic expansion. We also expect occupancy expense to increase in each of 2017 and 2018 as a result of the additional amount of office space needed to accommodate our headcount, including our new global headquarters in New York City. See Item 2 of this Annual Report on Form 10-K for a discussion of our properties. However, we believe that operating leverage can be achieved by increasing volumes in existing products and adding new products without substantial additions to our infrastructure.

Critical Accounting Policies and Estimates

This Management's Discussion and Analysis of Financial Condition and Results of Operations discusses our Consolidated Financial Statements, which have been prepared in accordance with accounting principles generally accepted in the United States, also referred to as U.S. GAAP. The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the reported amounts of income and expenses during the reporting periods. We base our estimates and judgments on historical experience and on various other factors that we believe are reasonable under the circumstances. Actual results may differ from these estimates under varying assumptions or conditions. Note 2 of the Notes to our Consolidated Financial Statements includes a summary of the significant accounting policies and methods used in the preparation of our Consolidated Financial Statements.

Use of Estimates

On an ongoing basis, management evaluates its estimates and judgments, particularly as they relate to accounting policies that management believes are critical. These accounting policies are most important to the portrayal of our financial condition and results of operations and they require management's most difficult, subjective or complex judgments, often as a result of the need to make estimates about the effect of matters that are inherently uncertain.

Software Development Costs

We capitalize certain costs associated with the development of internal use software, including among other items, employee compensation and related benefits and third party consulting costs at the point at which the conceptual formulation, design and testing of possible software project alternatives have been completed. Once the product is ready for its intended use, such costs are amortized on a straight-line basis over three years. We review the amounts capitalized for impairment whenever events or changes in circumstances indicate that the carrying amounts of the assets may not be recoverable.

Revenue Recognition

The majority of our revenues are derived from commissions for trades executed on our platform and distribution fees that are billed to our broker-dealer clients on a monthly basis. We also derive revenues from information and post-trade services, technology products and services, investment income and other income.

Commission revenue. Commissions are generally calculated as a percentage of the notional dollar volume of bonds traded on the platform and vary based on the type, size, yield and maturity of the bond traded. Under our transaction fee plans, bonds that are more actively traded or that have shorter maturities are generally charged lower commissions, while bonds that are less actively traded or that have longer maturities generally command higher commissions. For trades that we execute between and among institutional investor and broker-dealer clients on a matched principal basis by serving as counterparty to both the buyer and the seller, we earn our commission through the difference in price between the two matched principal trades. Fee programs for certain products include distribution fees which are recognized monthly.

Information and post-trade services. We generate revenue from information services provided to our broker-dealer clients, institutional investor clients and data-only subscribers. Information services are invoiced monthly, quarterly or annually. When billed in advance, revenues are deferred and recognized monthly on a straight-line basis. We also generate revenue from regulatory transaction reporting and trade matching services. Revenue is recognized in the period the services are provided.

Technology products and services. We generate revenues from professional consulting services, technology software licenses and maintenance and support services (referred to as post-contract technical support or "PCS"). Revenue from professional consulting services is recognized as services are performed and software license subscription revenue and maintenance and support services are recognized ratably over the contract period. Technology products and services revenue is reported in other income in the Consolidated Statements of Operations.

Initial set-up fees. We enter into agreements with our broker-dealer clients pursuant to which we provide access to our platform through a non-exclusive and non-transferable license. Broker-dealer clients may pay an initial set-up fee, which is typically due and payable upon execution of a dealer agreement. The initial set-up fee, if any, varies by agreement. Revenue is recognized over the initial term of the agreement, which is generally two years. Initial set-up fees are reported in other income in our Consolidated Statements of Operations.

Stock-Based Compensation

We measure and recognize compensation expense for all share-based payment awards based on their estimated fair values measured as of the grant date. These costs are recognized as an expense in our Consolidated Statements of Operations over the requisite service period, which is typically the vesting period, with an offsetting increase to additional paid-in capital.

Income Taxes

Income taxes are accounted for using the asset and liability method. Deferred income taxes reflect the net tax effects of temporary differences between the financial reporting and tax bases of assets and liabilities and are measured using the enacted tax rates and laws that will be in effect when such differences are expected to reverse. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. A valuation allowance is recognized against deferred tax assets if it is more likely than not that such assets will not be realized in future years. We recognize interest and penalties related to unrecognized tax benefits in general and administrative expenses in our Consolidated Statements of Operations.

Business Combinations, Goodwill and Intangible Assets

Business combinations are accounted for under the purchase method of accounting. The total cost of an acquisition is allocated to the underlying net assets based on their respective estimated fair values. The excess of the purchase price over the estimated fair values of the net assets acquired is recorded as goodwill. Determining the fair value of certain assets acquired and liabilities assumed is judgmental in nature and often involves the use of significant estimates and assumptions, including assumptions with respect to future cash flows, discount rates, growth rates and asset lives.

We operate as a single reporting unit. Subsequent to an acquisition, goodwill no longer retains its identification with a particular acquisition, but instead becomes identifiable with the entire reporting unit. As a result, all of our fair value is available to support the value of goodwill. An impairment review of goodwill is performed on an annual basis, at year-end, or more frequently if circumstances change. Intangible assets with definite lives, including purchased technologies, customer relationships and other intangible assets, are amortized on a straight-line basis over their estimated useful lives, ranging from three to 15 years. Intangible assets are assessed for impairment when events or circumstances indicate the existence of a possible impairment.

Recent Accounting Pronouncements

See Note 2 to the Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K for a discussion of recent accounting pronouncements.

Segment Results

We operate an electronic multi-party platform for the trading of fixed-income securities and provide related data, analytics, compliance tools and post-trade services. We consider our operations to constitute a single business segment because of the highly integrated nature of these product and services, of the financial markets in which we compete and of our worldwide business activities. We believe that results by geographic region or client sector are not necessarily meaningful in understanding our business. See Note 13 to the Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K for certain geographic information about the Company's business required by U.S. GAAP.

Results of Operations

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

Overview

Total revenues increased by $66.8 million or 22.0% to $369.9 million for the year ended December 31, 2016 from $303.1 million for the year ended December 31, 2015. This increase in total revenues was primarily due to an increase in commission revenue of $66.1 million. An 11.8% change in the average foreign currency exchange rates of the British Pound Sterling compared to the U.S. dollar from 2015 compared to 2016 had the effect of decreasing revenues by $5.9 million for the year ended December 31, 2016.

Total expenses increased by $23.1 million or 14.9% to $178.3 million for the year ended December 31, 2016 from $155.2 million for the year ended December 31, 2015. This increase was primarily due to higher employee compensation and benefits of $12.9 million, professional and consulting fees of $4.1 million, marketing and advertising costs of $2.8 million, general and administrative costs of $2.6 million and technology and communication expenses of $1.4 million. The change in the average foreign currency exchange rates had the effect of decreasing expenses by $5.9 million for the year ended December 31, 2016.

Income before taxes increased by $43.7 million or 29.5% to $191.6 million for the year ended December 31, 2016 from $147.9 million for the year ended December 31, 2015. Net income increased by $30.1 million or 31.4% to $126.2 million for the year ended December 31, 2016 from $96.0 million for the year ended December 31, 2015.

Revenues

Our revenues for the years ended December 31, 2016 and 2015, and the resulting dollar and percentage changes, were as follows:

	Year Ended December 31,					
	2016		2015			
	$	% of Revenues	$	% of Revenues	$ Change	% Change
	($ in thousands)					
Commissions	$332,307	89.8 %	$266,221	88.0 %	$66,086	24.8 %
Information and post-trade services	31,225	8.4	30,660	10.1	565	1.8
Investment income	2,137	0.6	905	0.3	1,232	136.1
Other	4,250	1.2	5,312	1.8	(1,062)	(20.0)
Total revenues	$369,919	100.0 %	$303,098	100.0 %	$66,821	22.0 %

Commissions

Our commission revenues for the years ended December 31, 2016 and 2015, and the resulting dollar and percentage changes, were as follows:

	Year Ended December 31,			
	2016	2015	$ Change	% Change
	($ in thousands)			
Variable transaction fees				
U.S. high-grade	$135,295	$101,348	$33,947	33.5 %
Other credit	129,976	97,323	32,653	33.6
Liquid products	2,795	2,595	200	7.7
Total variable transaction fees	268,066	201,266	66,800	33.2
Distribution fees				
U.S. high-grade	58,705	58,075	630	1.1
Other credit	4,783	5,839	(1,056)	(18.1)
Liquid products	753	1,041	(288)	(27.7)
Total distribution fees	64,241	64,955	(714)	(1.1)
Total commissions	$332,307	$266,221	$66,086	24.8 %

Variable Transaction Fees

The following table shows the extent to which the increase in variable commissions for the year ended December 31, 2016 was attributable to changes in transaction volumes and variable transaction fees per million:

	Change from Year Ended December 31, 2015			
	U.S. High-Grade	Other credit	Liquid products	Total
	(In thousands)			
Volume increase	$26,833	$49,675	$ 239	$76,747
Variable transaction fee per million increase (decrease)	7,114	(17,022)	(39)	(9,947)
Total increase in variable commissions	$33,947	$32,653	$ 200	$66,800

Our trading volume for each of the years presented was as follows:

	Year Ended December 31,			
	2016	2015	$ Change	% Change
Trading Volume Data (in millions)				
U.S. high-grade - fixed rate	$704,648	$549,086	$155,562	28.3 %
U.S. high-grade - floating rate	25,917	28,547	(2,630)	(9.2)
Total U.S. high-grade	730,565	577,633	152,932	26.5

Other credit	506,762	335,513	171,249	51.0	
Liquid products	71,375	65,365	6,010	9.2	
Total	$1,308,702	$978,511	$330,191	33.7	%
Number of U.S. Trading Days	250	250			
Number of U.K. Trading Days	253	253			

For volume reporting purposes, transactions in foreign currencies are converted to U.S. dollars at average monthly rates. The 26.5% increase in our U.S. high-grade volume was principally due to an increase in our estimated market share of adjusted total U.S. high-grade corporate bond volume as reported by Financial Industry Regulatory Authority (“FINRA”) Trade Reporting and Compliance Engine (“TRACE”) from 14.6 % for the year ended December 31, 2015 to 16.0% for the year ended December 31, 2016, coupled with an increase in overall market volume as measured by TRACE. We adjusted the reported U.S. high-grade TRACE volumes to eliminate the increased reporting of affiliate back-to-back trades by certain broker-dealers that occurred from April 2014 through October 2015. Adjusted U.S. high-grade TRACE volume increased 15.4% to $4.6 trillion for the year ended December 31, 2016 from $4.0 trillion for the year ended December 31, 2015. Based on information provided by FINRA, we believe that the TRACE volumes, as adjusted by us, provide a more accurate comparison to prior period reporting. We have provided a reconciliation of the reported U.S. high-grade TRACE volumes to the adjusted U.S. high-grade TRACE volumes in the "Investor Relations" section of our website.

Other credit volumes increased by 51.0% for the year ended December 31, 2016 compared to the year ended December 31, 2015, primarily due to increases of 77.4% in Eurobond volume, 53.5% in emerging markets bond volume and 29.7% in high-yield bond volume. Liquid products volume (excluding credit derivatives) increased by 9.2% for the year ended December 31, 2016 compared to the year ended December 31, 2015, due to an increase in our estimated share of the U.S. agencies bond market.

Our average variable transaction fee per million for the years ended December 31, 2016 and 2015 was as follows:

	Year Ended December 31,	
	2016	2015
U.S. high-grade - fixed rate	$191	$182
U.S. high-grade - floating rate	39	42
Total U.S. high-grade	185	175
Other credit	256	290
Liquid products	39	40
Total	205	206

Total U.S. high-grade average variable transaction fee per million increased to $185 per million for the year ended December 31, 2016 from $175 per million for the year ended December 31, 2015 mainly due to an increase in the duration of bonds traded. Other credit average variable transaction fee per million decreased to $256 per million for the year ended December 31, 2016 from $290 per million from December 31, 2015. The decrease was due to a larger percentage of volume in products that carry lower fees per million, principally Eurobond and emerging market sovereign bonds, and high-yield protocols that carry lower fees per million.

Distribution Fees

U.S. high-grade distribution fees increased $0.6 million principally due to an increase in unused monthly fee commitments under our all variable fee plan. The $1.1 million decrease in Other credit distribution fees principally relates to the change in Eurobond fee plans implemented in the fourth quarter of 2016. The new Eurobond bond fee plans contain standardized minimum monthly commitments and variable transaction fees.

Information and Post-Trade Services. The $0.6 million increase in information and post-trade services revenue comprised of a $2.9 million increase in data revenue due to new contracts and a $0.6 million increase in transaction reporting revenue, offset by a $2.9 million unfavorable impact of the strengthened U.S. dollar. Our transaction reporting business processed 1.21 billion transactions for the year ended December 31, 2016 compared to 1.05 billion for the year ended December 31, 2015.

Investment Income. Investment income increased by $1.2 million due to a higher average investment balances and an increase in interest rates during 2016.

Other. Other income decreased by $1.1 million principally due to the wind-down of a professional consulting service agreement during 2015.

Expenses

Our expenses for the years ended December 31, 2016 and 2015, and the resulting dollar and percentage changes, were as follows:

	Year Ended December 31,					
	2016		2015			
	$	% of Revenues	$	% of Revenues	$ Change	% Change
	($ in thousands)					
Expenses						
Employee compensation and benefits	$96,785	26.2 %	$83,856	27.7 %	$12,929	15.4 %
Depreciation and amortization	17,838	4.8	18,542	6.1	(704)	(3.8)
Technology and communications	17,275	4.7	15,916	5.3	1,359	8.5
Professional and consulting fees	17,175	4.6	13,043	4.3	4,132	31.7
Occupancy	4,681	1.3	4,685	1.5	(4)	(0.1)
Marketing and advertising	8,934	2.4	6,148	2.0	2,786	45.3
General and administrative	15,629	4.2	13,008	4.3	2,621	20.1
Total expenses	$178,317	48.2 %	$155,198	51.2 %	$23,119	14.9 %

Employee Compensation and Benefits. Employee compensation and benefits increased by $12.9 million primarily due to a $5.3 million increase in salaries and benefits on higher employee headcount, higher employee incentive compensation of $3.3 million, which is tied to operating performance and an increase of $2.0 million in stock-based compensation resulting from higher employee equity awards in 2016. The total number of employees increased to 383 as of December 31, 2016 from 342 as of December 31, 2015.

Depreciation and Amortization. Depreciation and amortization decreased by $0.7 million primarily due to lower amortization of intangibles of $1.6 million offset by an increase of $0.8 million in amortization of software development costs. For the years ended December 31, 2016 and 2015, $6.4 million and $4.8 million, respectively, of equipment purchases and leasehold improvements and $12.3 million and $10.6 million, respectively, of software development costs were capitalized.

Technology and Communications. Technology and communications expenses increased by $1.4 million primarily due to higher market data costs of $1.2 million and an increase in technology maintenance and support costs of $0.5 million.

Professional and Consulting Fees. Professional and consulting fees increased by $4.1 million primarily due to higher technology consulting costs of $1.4 million, tax and risk consulting fees of $1.3 million and consulting fees associated with new systems implementations of $1.2 million.

Occupancy. Occupancy costs were $4.7 million for each of the years ended December 31, 2016 and December 31, 2015.

Marketing and Advertising. Marketing and advertising expenses increased by $2.8 million primarily due to higher advertising costs of $1.6 million and higher sales related travel and entertainment costs of $1.0 million.

General and Administrative. General and administrative expenses increased by $2.6 million. The increase was primarily due to higher clearing costs from matched principal trading of $2.8 million.

Provision for Income Tax. The $13.6 million increase in the tax provision was primarily attributable to higher pre-tax income offset by a lower effective tax rate. Our consolidated effective tax rate for the year ended December 31, 2016 was 34.1%, compared to 35.1% for the year ended December 31, 2015. The decrease was principally due to a higher percentage of income attributable to lower tax jurisdictions and a reduction in certain statutory foreign and state tax rates. Our consolidated effective tax rate can vary from period to period depending on, among other factors, the geographic mix of our earnings and changes in tax legislation and tax rates.

As of December 31, 2016, we had restricted U.S. federal net operating loss carryforwards of approximately $5.4 million. The utilization of our restricted U.S. federal net operating loss carryforwards is subject to an annual limitation determined by Section 382 of the Internal Revenue Code.

Year Ended December 31, 2015 Compared to Year Ended December 31, 2014

Overview

Total revenues increased by $40.3 million or 15.3% to $303.1 million for the year ended December 31, 2015 from $262.8 million for the year ended December 31, 2014. This increase in total revenues was primarily due to an increase in commission revenue of $45.1 million, partially offset by a decrease in technology products and services revenue of $3.3 million. A 7.2% change in the average foreign currency exchange rates of the British Pound Sterling compared to the U.S. dollar from 2014 compared to 2015 had the effect of decreasing revenues by $3.0 million for the year ended December 31, 2015.

Total expenses increased by $11.0 million or 7.6% to $155.2 million for the year ended December 31, 2015 from $144.2 million for the year ended December 31, 2014. This increase was primarily due to higher employee compensation and benefits of $8.9 million, general and administrative costs of $3.4 million and depreciation and amortization of $1.2 million, which were partially offset by a decrease in technology and communication costs of $1.8 million and professional and consulting fees of $1.3 million. The change in the average foreign currency exchange rates had the effect of decreasing expenses by $3.3 million for the year ended December 31, 2015.

Income before taxes increased by $29.4 million or 24.8% to $147.9 million for the year ended December 31, 2015 from $118.5 million for the year ended December 31, 2014. Net income increased by $21.2 million or 28.4% to $96.0 million for the year ended December 31, 2015 from $74.8 million for the year ended December 31, 2014.

Revenues

Our revenues for the years ended December 31, 2015 and 2014, and the resulting dollar and percentage changes, were as follows:

	Year Ended December 31,					
	2015		2014			
	$	% of Revenues	$	% of Revenues	$ Change	% Change
	($ in thousands)					
Commissions	$266,221	87.8 %	$221,138	84.2 %	$45,083	20.4 %
Information and post-trade services	30,660	10.1	31,510	12.0	(850)	(2.7)
Investment income	905	0.3	543	0.2	362	66.7
Other	5,312	1.8	9,583	3.6	(4,271)	(44.6)
Total revenues	$303,098	100.0 %	$262,774	100.0 %	$40,324	15.3 %

Commissions

Our commission revenues for the years ended December 31, 2015 and 2014, and the resulting dollar and percentage changes, were as follows:

	Year Ended December 31,			
	2015	2014	$ Change	% Change
	($ in thousands)			
Variable transaction fees				

U.S. high-grade	$101,348	$83,211	$18,137	21.8	%
Other credit	97,323	70,183	27,140	38.7	
Liquid products	2,595	2,840	(245)	(8.6)	
Total variable transaction fees	201,266	156,234	45,032	28.8	
Distribution fees					
U.S. high-grade	58,075	56,659	1,416	2.5	
Other credit	5,839	7,538	(1,699)	(22.5)	
Liquid products	1,041	707	334	47.2	
Total distribution fees	64,955	64,904	51	0.1	
Total commissions	$266,221	$221,138	$45,083	20.4	%

53

Variable Transaction Fees

The following table shows the extent to which the increase in variable commissions for the year ended December 31, 2015 was attributable to changes in transaction volumes and variable transaction fees per million:

	Change from Year Ended December 31, 2014			
	U.S. High-Grade	Other credit	Liquid products	Total
	(In thousands)			
Volume increase (decrease)	$17,901	$33,993	$ (8)	$51,886
Variable transaction fee per million increase (decrease)	236	(6,853)	(237)	(6,854)
Total increase (decrease) in variable commissions	$18,137	$27,140	$ (245)	$45,032

Our trading volume for each of the years presented was as follows:

	Year Ended December 31,			
	2015	2014	$ Change	% Change
Trading Volume Data (in millions)				
U.S. high-grade - fixed rate	$549,086	$450,139	$98,947	22.0 %
U.S. high-grade - floating rate	28,547	25,231	3,316	13.1
Total U.S. high-grade	577,633	475,370	102,263	21.5
Other credit	335,513	226,033	109,480	48.4
Liquid products	65,365	65,558	(193)	(0.3)
Total	$978,511	$766,961	$211,550	27.6 %
Number of U.S. Trading Days	250	250		
Number of U.K. Trading Days	253	253		

For volume reporting purposes, transactions in foreign currencies are converted to U.S. dollars at average monthly rates. The 21.5% increase in our U.S. high-grade volume was principally due to an increase in our estimated market share of adjusted total U.S. high-grade corporate bond volume as reported by TRACE from 12.8% for the year ended December 31, 2014 to 14.6% for the year ended December 31, 2015, coupled with an increase in overall market volume as measured by TRACE. We adjusted the reported U.S. high-grade TRACE volumes to eliminate the increased reporting of affiliate back-to-back trades by certain broker-dealers that occurred from April 2014 through October 2015. Adjusted U.S. high-grade TRACE volume increased 6.5% to $4.0 trillion for the year ended December 31, 2015 from $3.7 trillion for the year ended December 31, 2014. Based on information provided by FINRA, we believe that the TRACE volumes, as adjusted by us, provide a more accurate comparison to prior period reporting. We have provided a reconciliation of the reported U.S. high-grade TRACE volumes to the adjusted U.S. high-grade

TRACE volumes in the "Investor Relations" section of our website.

Other credit volumes increased by 48.4% for the year ended December 31, 2015 compared to the year ended December 31, 2014, primarily due to increases of 78% in Eurobond volume, 62% in high-yield bond volume and 30% in emerging markets bond volume.

Our average variable transaction fee per million for the years ended December 31, 2015 and 2014 was as follows:

	Year Ended December 31,	
	2015	2014
U.S. high-grade - fixed rate	$182	$182
U.S. high-grade - floating rate	42	51
Total U.S. high-grade	175	175
Other credit	290	311
Liquid products	40	43
Total	206	204

The U.S. high-grade average variable transaction fee per million varied during 2015 and 2014 due to changes in yield, years-to-maturity and nominal size of bonds traded on our platform. Other credit average variable transaction fee per million decreased to $290 per million for the year ended December 31, 2015 from $311 per million from December 31, 2014. The decrease was due to a larger percentage of volume in products that carry lower fees per million, principally Eurobond and emerging market sovereign bonds.

Distribution Fees

U.S. high-grade distribution fees increased $1.4 million principally due to the migration over the past year of certain of our broker-dealer clients from an all-variable fee plan to a plan that incorporates a monthly distribution fee. The $1.7 million decrease in Other credit distribution fees principally relates to the migration of certain Eurobond dealers to plans that incorporate a higher level of variable fees and lower level of monthly distribution fees.

Information and Post-Trade Services. Information and post-trade services revenues decreased by $0.9 million. The change in foreign currency exchange rates had the effect of decreasing information and post-trade services revenue by approximately $1.8 million for the year ended December 31, 2015. Excluding the negative impact of foreign exchange, information services revenue increased $2.2 million principally as a result of new data contracts. Post-trade services revenues, excluding the negative impact of foreign exchange, decreased by $1.2 million due to a reduction in transactions. Xtrakter's post-trade transaction reporting business processed approximately 1.05 billion and 1.13 billion transactions for the years ended December 31, 2015 and 2014, respectively.

Investment Income. Investment income increased by $0.4 million primarily due to a higher average investment balance in 2015.

Other. Other revenues decreased by $4.3 million primarily due to a $3.3 million reduction in revenue, attributable to the wind-down of a professional consulting service engagement. Also, in the year ended December 31, 2014, we recognized income of $0.9 million on the sale of certain MF Global bankruptcy claims.

Expenses

Our expenses for the years ended December 31, 2015 and 2014, and the resulting dollar and percentage changes, were as follows:

	Year Ended December 31,					
	2015		2014			
	$	% of Revenues	$	% of Revenues	$ Change	% Change
	($ in thousands)					
Expenses						
Employee compensation and benefits	$83,856	27.7 %	$74,995	28.5 %	$8,861	11.8 %
Depreciation and amortization	18,542	6.1	17,379	6.6	1,163	6.7
Technology and communications	15,916	5.3	17,685	6.7	(1,769)	(10.0)
Professional and consulting fees	13,043	4.3	14,375	5.5	(1,332)	(9.3)
Occupancy	4,685	1.5	4,381	1.7	304	6.9
Marketing and advertising	6,148	2.0	5,769	2.2	379	6.6
General and administrative	13,008	4.3	9,654	3.7	3,354	34.7
Total expenses	$155,198	51.2 %	$144,238	54.9 %	$10,960	7.6 %

Employee Compensation and Benefits. Employee compensation and benefits increased by $8.9 million primarily due to higher employee incentive compensation of $3.6 million, which is tied to operating performance, an increase of $2.7 million in stock-based compensation resulting from higher employee equity awards in 2015 and a $2.5 million increase in salaries and benefits due to higher employee headcount. The total number of employees increased to 342 as of December 31, 2015 from 303 as of December 31, 2014.

Depreciation and Amortization. Depreciation and amortization increased by $1.2 million primarily due to higher amortization of software development costs of $1.7 million offset by a $0.7 million reduction in production hardware depreciation expenses. For the years ended December 31, 2015 and 2014, $4.8 million and $4.6 million, respectively, of equipment purchases and leasehold improvements and $10.6 million and $10.2 million, respectively, of software development costs were capitalized.

Technology and Communications. Technology and communications expenses decreased by $1.8 million primarily due to lower technology maintenance and support costs of $1.1 million and data center hosting costs of $0.6 million.

Professional and Consulting Fees. Professional and consulting fees decreased by $1.3 million primarily due to lower technology consulting costs of $1.1 million.

Occupancy. Occupancy costs increased by $0.3 million primarily due to rent associated with additional New York City office space that was occupied in April 2015.

Marketing and Advertising. Marketing and advertising expenses increased by $0.4 million primarily due to higher sales related travel and entertainment costs of $0.4 million.

General and Administrative. General and administrative expenses increased by $3.4 million. The increase was primarily due to higher clearing costs from matched principal trading of $2.0 million and increases in other miscellaneous costs.

Provision for Income Tax. The $8.1 million increase in the tax provision was primarily attributable to higher pre-tax income offset by a lower effective tax rate. Our consolidated effective tax rate for the year ended December 31, 2015 was 35.1%, compared to 36.9% for the year ended December 31, 2014. The decrease was principally due to a higher percentage of income attributable to lower tax jurisdictions and a reduction in certain statutory foreign and state tax rates. Our consolidated effective tax rate can vary from period to period depending on, among other factors, the geographic mix of our earnings and changes in tax legislation and tax rates.

As of December 31, 2015, we had restricted U.S. federal net operating loss carryforwards of approximately $6.7 million. The utilization of our restricted U.S. federal net operating loss carryforwards is subject to an annual limitation determined by Section 382 of the Internal Revenue Code.

Quarterly Results of Operations

Our quarterly results have varied significantly as a result of:

- changes in trading volume due to market conditions, changes in the number of trading days in certain quarters, and seasonality effects caused by slow-downs in trading activity during certain periods;
- changes in the number of broker-dealers and institutional investors using our trading platform, as well as variation in usage by existing clients;
- expansion of the products we offer to our clients; and
- variance in our expenses, particularly employee compensation and benefits.

The following table sets forth certain unaudited consolidated quarterly income statement data for the eight quarters ended December 31, 2016. In our opinion, this unaudited information has been prepared on a basis consistent with our annual financial statements and includes all adjustments (consisting only of normal recurring adjustments) necessary for a fair statement of the unaudited quarterly data. This information should be read in conjunction with our Consolidated Financial Statements and related Notes included in this Annual Report on Form 10-K. The results of operations for any quarter are not necessarily indicative of results that we may achieve for any subsequent periods.

	Three Months Ended							
	Dec 31, 2016	Sep 30, 2016	Jun 30, 2016	Mar 31, 2016	Dec 31, 2015	Sep 30, 2015	Jun 30, 2015	Mar 31, 2015
	(In thousands, except per share data) (unaudited)							
Revenues								
Commissions	$85,519	$81,456	$86,239	$79,093	$67,613	$65,178	$66,412	$67,018
Information and post-trade services	7,538	7,322	8,586	7,779	7,678	7,671	7,632	7,679
Investment income	668	534	517	418	284	248	190	183
Other	711	959	1,297	1,283	1,069	1,095	1,257	1,891
Total revenues	94,436	90,271	96,639	88,573	76,644	74,192	75,491	76,771
Expenses								
Employee compensation and benefits	22,529	23,914	25,815	24,527	21,087	21,002	20,593	21,174
Depreciation and amortization	4,292	4,325	4,540	4,681	4,685	4,642	4,603	4,612
Technology and communications	4,449	4,245	4,277	4,304	3,720	3,891	3,967	4,338
Professional and consulting fees	4,726	4,342	4,245	3,862	3,540	3,210	3,011	3,282
Occupancy	1,075	1,220	1,225	1,161	1,215	1,246	1,232	992
Marketing and advertising	3,192	2,140	1,824	1,778	1,888	1,304	1,764	1,192
General and administrative	3,846	3,731	4,162	3,890	3,523	3,544	3,262	2,679
Total expenses	44,109	43,917	46,088	44,203	39,658	38,839	38,432	38,269
Income before income taxes	50,327	46,354	50,551	44,370	36,986	35,353	37,059	38,502
Provision for income taxes	17,162	15,436	17,425	15,407	12,495	12,638	12,821	13,909
Net income	$33,165	$30,918	$33,126	$28,963	$24,491	$22,715	$24,238	$24,593
Net income per common share								
Basic	$0.90	$0.84	$0.90	$0.79	$0.67	$0.62	$0.66	$0.67
Diluted	$0.88	$0.82	$0.88	$0.77	$0.65	$0.60	$0.64	$0.65

The following tables set forth trading volume and average variable transaction fee per million traded for the eight quarters ended December 31, 2016.

	Three Months Ended							
	Dec 31, 2016	Sep 30, 2016	Jun 30, 2016	Mar 31, 2016	Dec 31, 2015	Sep 30, 2015	Jun 30, 2015	Mar 31, 2015
	(In millions)							
Trading Volume Data								
U.S. high-grade - fixed rate	$179,317	$172,005	$183,107	$170,219	$136,015	$132,625	$142,459	$137,987
U.S. high-grade - floating rate	5,749	6,441	6,220	7,507	7,234	7,414	6,504	7,395
Total U.S. high-grade	185,066	178,446	189,327	177,726	143,249	140,039	148,963	145,382
Other credit	135,799	122,821	131,168	116,974	91,257	84,333	78,304	81,619
Liquid products	17,393	20,880	17,781	15,321	15,864	15,353	17,473	16,675
Total	$338,258	$322,147	$338,276	$310,021	$250,370	$239,725	$244,740	$243,676

	Three Months Ended							
	Dec 31, 2016	Sep 30, 2016	Jun 30, 2016	Mar 31, 2016	Dec 31, 2015	Sep 30, 2015	Jun 30, 2015	Mar 31, 2015

Average Variable Transaction Fee Per Million								
U.S. high-grade - fixed rate	$189	$195	$194	$184	$180	$174	$183	$192
U.S. high-grade - floating rate	49	38	36	36	33	37	51	46
Total U.S. high-grade	185	189	189	178	172	167	177	185
Other credit	258	246	258	264	285	286	300	291
Liquid products	40	38	38	40	38	39	39	42
Total	207	201	208	204	205	200	207	211
Number of U.S. trading days	61	64	64	61	62	64	63	61
Number of U.K. trading days	63	65	63	62	64	65	61	63

57

Liquidity and Capital Resources

During the past three years, we have met our funding requirements through cash on hand and internally generated funds. Cash and cash equivalents and investments totaled $362.6 million at December 31, 2016.

In January 2013, we entered into a three-year credit agreement that provided for revolving loans and letters of credit up to an aggregate of $50.0 million. In October 2015, we entered into an amended and restated credit agreement (the “Credit Agreement”) increasing the borrowing capacity to an aggregate of $100 million, including a $5.0 million sub-limit for standby letters of credit. The Credit Agreement will mature in October 2017. As of December 31, 2016, we had $0.9 million in letters of credit outstanding and $99.1 million in available borrowing capacity under the Credit Agreement. Subject to satisfaction of certain specified conditions, we are permitted to upsize the borrowing capacity under the Credit Agreement by an additional $50.0 million.

During the past three years, our cash flows were as follows:

	Year Ended December 31,		
	2016	2015	2014
	(In thousands)		
Net cash provided by operating activities	$80,289	$120,196	$109,952
Net cash (used in) investing activities	(53,180)	(37,953)	(13,025)
Net cash (used in) financing activities	(55,836)	(51,054)	(60,223)
Effect of exchange rate changes on cash and cash equivalents	(2,758)	(385)	(471)
Net (decrease) increase for the period	$(31,485)	$30,804	$36,233

Cash Flows for the Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

The $39.9 million decrease in net cash provided by operating activities was primarily due to an increase in corporate debt trading investments of $74.2 million, offset by an increase in net income of $30.1 million and a decrease in working capital of $3.9 million.

The $15.2 million increase in net cash used in investing activities was attributable to an increase in net purchases of securities available-for-sale of $24.3 million, an increase in capital expenditures of $3.1 million offset by proceeds from sales and maturities and other investing activities of $12.2 million.

The $4.8 million increase in net cash used in financing activities was principally due to an increase in cash dividends paid on common stock of $9.0 million offset by excess tax benefits from stock-based compensation of $5.1 million.

Cash Flows for the Year Ended December 31, 2015 Compared to Year Ended December 31, 2014

The $10.2 million increase in net cash provided by operating activities was primarily due to an increase in net income of $21.2 million, an increase in stock compensation expense of $2.8 million, and an increase in depreciation and amortization of $1.2 million, offset by an increase in working capital of $13.2 million and an increase in deferred taxes of $2.1 million.

The $24.9 million increase in net cash used in investing activities was due to an increase in net purchases in securities available-for-sale of $23.1 million and an increase in capital expenditures of $0.6 million.

The $9.2 million decrease in net cash used in financing activities was principally due to a reduction of $14.8 million in repurchases of our common stock offset by an increase in cash dividends paid on common stock of $5.6 million.

Non-GAAP Financial Measures

In addition to cash flow from operating activities in accordance with GAAP, we use a non-GAAP financial measure called “Free Cash Flow”. Free Cash Flow is defined as cash flow from operating activities excluding net purchases of corporate debt trading investments less expenditures for furniture, equipment and leasehold improvements and capitalized software development costs. We believe this non-GAAP financial measure is important in gaining an understanding of our financial strength and cash flow generation.

The table set forth below presents a reconciliation of our cash flow from operating activities to Free Cash Flow, as defined, for the years ended December 31, 2016 and 2015:

	Year ended December 31, 2016	2015
	($ in thousands)	
Cash flow from operating activities	$80,289	$120,196
Add: Net purchases of corporate debt trading investments	74,195	—
Less: Purchases of furniture, equipment and leasehold improvements	(6,385)	(4,795)
Less: Capitalization of software development costs	(12,118)	(10,589)
Free Cash Flow	$135,981	$104,812

Other Factors Influencing Liquidity and Capital Resources

We believe that our current resources are adequate to meet our liquidity needs and capital expenditure requirements for at least the next 12 months. However, our future liquidity and capital requirements will depend on a number of factors, including expenses associated with product development and expansion and new business opportunities that are intended to further diversify our revenue stream. We may also acquire or invest in technologies, business ventures or products that are complementary to our business. In the event we require any additional financing, it will take the form of equity or debt financing. Any additional equity offerings may result in dilution to our stockholders. Any debt financings, if available at all, may involve restrictive covenants with respect to dividends, issuances of additional capital and other financial and operational matters related to our business.

Certain of our U.S. subsidiaries are registered as a broker-dealer or a SEF and therefore are subject to the applicable rules and regulations of the SEC and the CFTC. These rules contain minimum net capital requirements, as defined in the applicable regulations, and also may require a significant part of the registrants' assets be kept in relatively liquid form. Certain of our foreign subsidiaries are regulated by the Financial Conduct Authority in the U.K. or Ontario Securities Commission in Canada and must maintain financial resources, as defined in the applicable regulations, in excess of the applicable financial resources requirement. As of December 31, 2016, each of our subsidiaries that are subject to these regulations had net capital or financial resources in excess of their minimum requirements. As of December 31, 2016, our subsidiaries maintained aggregate net capital and financial resources that were $126.0 million in excess of the required levels of $10.6 million.

Each of our U.S. and foreign regulated subsidiaries are subject to local regulations which generally prohibit repayment of borrowings from our affiliates, paying cash dividends, making loans to our affiliates or otherwise entering into transactions that result in a significant reduction in regulatory net capital or financial resources without prior notification to or approval from such regulated entity's principal regulator.

As of December 31, 2016, the amount of unrestricted cash held by our non-U.S. subsidiaries was $62.8 million. We have determined that unremitted earnings of our foreign subsidiaries are considered indefinitely reinvested outside of the U.S. Any repatriation of such foreign earnings by way of dividend may be subject to both U.S. federal and state income taxes, reduced by applicable foreign tax credits. However, we do not have any current needs or foreseeable plans to repatriate cash by way of dividends from our non-U.S. subsidiaries.

We execute certain bond transactions between and among institutional investor and broker-dealer clients on a matched principal basis by serving as counterparty to both the buyer and the seller in trades which settle through a third-party clearing broker. Settlement typically occurs within one to three trading days after the trade date. Cash settlement of the transaction occurs upon receipt or delivery of the underlying instrument that was traded. For the years ended December 31, 2016, 2015 and 2014, revenues from matched principal trading were approximately $37.7 million, $16.9 million and $7.4 million, respectively. Under securities clearing agreements with third party clearing brokers, we maintain collateral deposits with each clearing broker in the form of cash. As of December 31, 2016, the amount of the collateral deposits included in prepaid expenses and other assets in our Consolidated Statements of Financial Condition was $1.1 million. For the years ended December 31, 2016, 2015 and 2014, clearing expenses associated with matched principal transactions were $6.1 million, $3.3 million and $1.3 million, respectively, and are classified under general and administrative expense on the Consolidated Statements of Operations. We are exposed to credit risk in the event a counterparty does not fulfill its obligation to complete a transaction. Pursuant to the terms of the securities clearing agreements between us and our clearing brokers, each clearing broker has the right to charge us for any losses they suffer resulting from a counterparty credit failure on any of our trades. We did not record any liabilities or losses with regard to this right for the years ended December 31, 2016 and 2015.

In the ordinary course of business, we enter into contracts that contain a variety of representations, warranties and general indemnifications. Our maximum exposure from any claims under these arrangements is unknown, as this would involve claims that have not yet occurred. However, based on past experience, we expect the risk of material loss to be remote.

See Item 5 of this Annual Report on Form 10-K for a discussion of our repurchases of our common stock and our dividend policy.

Effects of Inflation

Because the majority of our assets are short-term in nature, they are not significantly affected by inflation. However, the rate of inflation may affect our expenses, such as employee compensation, office leasing costs and communications expenses, which may not be readily recoverable in the prices of our services. To the extent inflation results in rising interest rates and has other adverse effects on the securities markets, it may adversely affect our financial position and results of operations.

Contractual Obligations and Commitments

As of December 31, 2016, we had the following contractual obligations and commitments:

	Payments due by period				
	Total	Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years
	(In thousands)				
Operating leases	$146,325	$4,438	$13,501	$20,571	$107,815
Foreign currency forward contract	67,238	67,238	—	—	—
	$213,563	$71,676	$13,501	$20,571	$107,815

We enter into foreign currency forward contracts to hedge our exposure to variability in certain foreign currency cash flows resulting from the net investment in our U.K. subsidiaries. As of December 31, 2016, the notional value of the foreign currency forward contract outstanding was $67.2 million and the fair value of the liability was $0.3 million.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Market risk is the risk of the loss resulting from adverse changes in market rates and prices, such as interest rates and foreign currency exchange rates.

Market Risk

The global financial services business is, by its nature, risky and volatile and is directly affected by many national and international factors that are beyond our control. Any one of these factors may cause a substantial decline in the U.S. and global financial services markets, resulting in reduced trading volume and revenues. These events could have a material adverse effect on our business, financial condition and results of operations.

As of December 31, 2016, we had $193.1 million of investments in corporate bonds that were classified as securities available-for-sale or trading securities. Adverse movements, such as a 10% decrease in the value of these securities or a downturn or disruption in the markets for these securities, could result in a substantial loss. In addition, principal gains and losses resulting from these securities could on occasion have a disproportionate effect, positive or negative, on our financial condition and results of operations for any particular reporting period.

See also Item 1A. Risk Factors, "Risks Related to Our Business – Global economic, political and market factors beyond our control could reduce demand for our services, and our profitability and business could suffer."

Interest Rate Risk

Interest rate risk represents our exposure to interest rate changes with respect to our cash, cash equivalents and investments. As of December 31, 2016, our cash and cash equivalents and investments amounted to $362.6 million. A hypothetical five basis point decrease in short-term interest rates would decrease our annual pre-tax earnings by approximately $0.2 million, assuming no change in the amount or composition of our cash and cash equivalents.

As of December 31, 2016, a hypothetical 100 basis point increase or decrease in interest rates would decrease or increase the fair value of the available-for-sale investment portfolio by approximately $0.8 million, assuming no change in the amount or composition of the investments. The hypothetical unrealized gain (loss) of $0.8 million would be recognized in other comprehensive income on the statement of financial condition.

A similar hypothetical 100 basis point increase or decrease in interest rates would decrease or increase the fair value of the trading securities portfolio by approximately $0.9 million. The hypothetical unrealized gain (loss) of $0.9 million would be recognized in other income in the Consolidated Statements of Operations.

We do not maintain an inventory of bonds that are traded on our platform.

Foreign Currency Exchange Rate Risk

We conduct operations in several different countries outside of the U.S., most notably the U.K., and substantial portions of our revenues, expenses, assets and liabilities are generated and denominated in non U.S. dollar currencies. Since our consolidated financial statements are presented in U.S. dollars, we must translate revenues, income and expenses, as well as assets and liabilities, into U.S. dollars at exchange rates in effect during or at the end of each reporting period. Accordingly, increases or decreases in the value of the U.S. dollar against the other currencies will affect our net operating revenues, operating income and the value of balance sheet items denominated in foreign currencies.

During the year ended December 31, 2016, approximately 13% of our revenue and 27% of our expenses were denominated in currencies other than the U.S. dollar, most notably the British Pound Sterling. Based on actual results over the past year, a hypothetical 10% increase or decrease in the U.S. dollar against all other currencies would have increased or decreased revenue by approximately $4.7 million and operating expenses by approximately $4.9 million.

Derivative Risk

Our limited derivative risk stems from our activities in the foreign currency forward contract market. We use this market to mitigate our U.S. dollar versus British Pound Sterling exposure that arises from the activities of our U.K. subsidiaries. As of December 31, 2016, the fair value of the notional amount of our foreign currency forward contract was $67.2 million. We do not speculate in any derivative instruments.

Credit Risk

Two of our subsidiaries, MarketAxess Corporation and MarketAxess Europe Limited, act as a matched principal counterparty in connection with the Open Trading™ transactions that we execute between clients. We act as an intermediary in these transactions by serving as counterparty to both the buyer and the seller in trades which then settle through a third-party clearing broker. Settlement typically occurs within one to three trading days after the trade date. Cash settlement of the transaction occurs upon receipt or delivery of the underlying instrument that was traded.

We are exposed to credit and performance risks in our role as matched principal trading counterparty to our Open Trading™ clients executing bond trades on our platform, including the risk that counterparties that owe us money or securities will not perform their obligations. These parties may default on their obligations to us due to bankruptcy, lack of liquidity, operational failure or other reasons. Adverse movements in the prices of securities that are the subject of these transactions can increase our risk. In connection with Open Trading™ or other anonymous protocols, we expect that the number of transactions in which we act as a matched principal will increase.

We have policies and procedures in place to identify and manage our credit risk. In connection with the recent growth of our Open Trading™ protocols, we have implemented additional automated controls to help us manage our credit risk exposure. There can be no assurance that the policies, procedures and automated controls we use to manage this credit risk will effectively mitigate our credit risk exposure. Some of our risk management procedures are reliant upon the evaluation of information regarding the fixed- income markets, our clients or other relevant matters that are publicly available or otherwise acquired from third party sources. Such information may not be accurate, complete, up-to-date or properly assessed and interpreted by us. If our risk management procedures fail, our business, financial condition and results of operations may be adversely affected. Furthermore, our insurance policies are unlikely to provide coverage for such risks.

Cash and cash equivalents includes cash and money market instruments that are primarily maintained at one major global bank. Given this concentration, we are exposed to certain credit risk in relation to our deposits at this bank.

Item 8. Financial Statements and Supplementary Data.

MARKETAXESS HOLDINGS INC.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

The unaudited supplementary data regarding consolidated quarterly income statement data are incorporated by reference to the information set forth in Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," in the section captioned "Quarterly Results of Operations."

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Management of MarketAxess Holdings Inc. is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934. The Company's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles. The Company's internal control over financial reporting includes those policies and procedures that:

(i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company;

(ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and

(iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2016. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control — Integrated Framework (2013).

Based on our assessment and those criteria, management concluded that the Company maintained effective internal control over financial reporting as of December 31, 2016.

The effectiveness of our internal control over financial reporting as of December 31, 2016 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears herein.

Report of Independent Registered Public Accounting Firm

To Board of Directors and Stockholders of

MarketAxess Holdings Inc.:

In our opinion, the accompanying consolidated statements of financial condition and related consolidated statements of operations, consolidated statements of comprehensive income, consolidated statements of changes in stockholders' equity, and consolidated statements of cash flows, present fairly, in all material respects, the financial position of MarketAxess Holdings Inc. and its subsidiaries at December 31, 2016 and December 31, 2015, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2016 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in "Management's Report on Internal Control over Financial Reporting." Our responsibility is to express opinions on these financial statements and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

PricewaterhouseCoopers LLP

New York, New York

February 21, 2017

MARKETAXESS HOLDINGS INC.

CONSOLIDATED STATEMENTS OF FINANCIAL CONDITION

	As of December 31,	
	2016	2015
	(In thousands, except share and per share amounts)	
ASSETS		
Cash and cash equivalents	$168,243	$199,728
Investments, at fair value	194,404	84,706
Accounts receivable, net of allowance of $82 and $109 as of December 31, 2016 and December 31, 2015, respectively	50,668	40,459
Goodwill and intangible assets, net of accumulated amortization	63,443	64,142
Furniture, equipment, leasehold improvements and capitalized software, net of accumulated depreciation and amortization	31,104	30,897
Prepaid expenses and other assets	11,618	9,880
Deferred tax assets, net	8,562	9,229
Total assets	$528,042	$439,041
LIABILITIES AND STOCKHOLDERS' EQUITY		
Liabilities		
Accrued employee compensation	$34,783	$29,296
Income and other tax liabilities	7,582	4,463
Deferred revenue	2,515	2,312
Accounts payable, accrued expenses and other liabilities	15,149	12,257
Total liabilities	60,029	48,328
Commitments and Contingencies (Note 12)	—	—
Stockholders' equity		
Preferred stock, $0.001 par value, 4,855,000 shares authorized, no shares issued and outstanding as of December 31, 2016 and December 31, 2015	—	—
Series A Preferred Stock, $0.001 par value, 110,000 shares authorized, no shares issued and outstanding as of December 31, 2016 and December 31, 2015	—	—
Common stock voting, $0.003 par value, 110,000,000 shares authorized, 40,106,360 shares and 39,821,519 shares issued and 37,543,775 shares and 37,409,274 shares outstanding as of December 31, 2016 and December 31, 2015, respectively	120	121
Common stock non-voting, $0.003 par value, 10,000,000 shares authorized, no	—	—

shares issued and outstanding as of December 31, 2016 and December 31, 2015		
Additional paid-in capital	342,311	321,215
Treasury stock - Common stock voting, at cost, 2,562,585 shares and 2,412,245 shares as of December 31, 2016 and December 31, 2015, respectively	(117,330)	(93,405)
Retained earnings	255,140	168,011
Accumulated other comprehensive loss	(12,228)	(5,229)
Total stockholders' equity	468,013	390,713
Total liabilities and stockholders' equity	$528,042	$439,041

The accompanying notes are an integral part of these consolidated financial statements.

MARKETAXESS HOLDINGS INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
	2016	2015	2014
	(In thousands, except per share amounts)		
Revenues			
Commissions	$332,307	$266,221	$221,138
Information and post-trade services	31,225	30,660	31,510
Investment income	2,137	905	543
Other	4,250	5,312	9,583
Total revenues	369,919	303,098	262,774
Expenses			
Employee compensation and benefits	96,785	83,856	74,995
Depreciation and amortization	17,838	18,542	17,379
Technology and communications	17,275	15,916	17,685
Professional and consulting fees	17,175	13,043	14,375
Occupancy	4,681	4,685	4,381
Marketing and advertising	8,934	6,148	5,769
General and administrative	15,629	13,008	9,654
Total expenses	178,317	155,198	144,238
Income before income taxes	191,602	147,900	118,536
Provision for income taxes	65,430	51,863	43,730
Net income	$126,172	$96,037	$74,806
Net income per common share			
Basic	$3.42	$2.62	$2.03
Diluted	$3.34	$2.55	$1.97
Cash dividends declared per common share	$1.04	$0.80	$0.64
Weighted average shares outstanding			
Basic	36,844	36,690	36,930
Diluted	37,738	37,637	37,889

The accompanying notes are an integral part of these consolidated financial statements.

MARKETAXESS HOLDINGS INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Year Ended December 31,		
	2016	2015	2014
	(In thousands)		
Net income	$126,172	$96,037	$74,806
Net cumulative translation adjustment and foreign currency exchange hedge, net of tax of $5,407, $(258) and $(275), respectively	(7,037)	(512)	(399)
Net unrealized gain (loss) on securities available-for-sale, net of tax of $24, $(111), and $(9), respectively	38	(180)	(16)
Less: reclassification adjustment for realized gain on the sale of securities available-for-sale included in Other Income, net of tax of $(0), $(0) and $(24), respectively	—	—	(39)
Net change in unrealized gain (loss) on securities available-for-sale, net of tax	38	(180)	(55)
Comprehensive income	$119,173	$95,345	$74,352

The accompanying notes are an integral part of these consolidated financial statements.

MARKETAXESS HOLDINGS INC.

CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY

	Common Stock Voting	Additional Paid-In Capital	Treasury Stock - Common Stock Voting	Retained Earnings (Deficit)	Accumulated Other Comprehen-sive Loss	Total Stockholders' Equity
	(In thousands)					
Balance at December 31, 2013	$ 119	$ 295,557	$ (32,273)	$ 51,042	$ (4,083)	$ 310,362
Net income	—	—	—	74,806	—	74,806
Cumulative translation adjustment and foreign currency exchange hedge, net of tax	—	—	—	—	(399)	(399)
Unrealized net (loss) on securities available-for-sale, net of tax	—	—	—	—	(55)	(55)
Stock-based compensation	—	9,769	—	—	—	9,769
Exercise of stock options	1	2,510	—	—	—	2,511
Withholding tax payments on restricted stock vesting and stock option exercises	—	(5,020)	—	—	—	(5,020)
Excess tax benefits from stock-based compensation	—	4,243	—	—	—	4,243
Repurchases of common stock			(37,974)			(37,974)
Cash dividend on common stock	—	—	—	(24,035)	—	(24,035)
Balance at December 31, 2014	120	307,059	(70,247)	101,813	(4,537)	334,208
Net income	—	—	—	96,037	—	96,037
Cumulative translation adjustment and foreign currency exchange hedge, net of tax	—	—	—	—	(512)	(512)
Unrealized net (loss) on securities available-for-sale, net of tax	—	—	—	—	(180)	(180)
Stock-based compensation	—	12,519	—	—	—	12,519
Exercise of stock options	1	1,823	—	—	—	1,824
Withholding tax payments on restricted stock vesting and stock option exercises	—	(4,496)	—	—	—	(4,496)

Excess tax benefits from stock-based compensation	—	4,310	—	—	—	4,310
Repurchases of common stock			(23,158)			(23,158)
Cash dividend on common stock	—	—	—	(29,839)	—	(29,839)
Balance at December 31, 2015	121	321,215	(93,405)	168,011	(5,229)	390,713
Net income	—	—	—	126,172	—	126,172
Cumulative translation adjustment and foreign currency exchange hedge, net of tax	—	—	—	—	(7,037)	(7,037)
Unrealized net gain on securities available-for-sale, net of tax	—	—	—	—	38	38
Stock-based compensation	—	14,511	—	—	—	14,511
Exercise of stock options	—	2,299	—	—	—	2,299
Withholding tax payments on restricted stock vesting and stock option exercises	(1)	(5,172)	—	—	—	(5,173)
Excess tax benefits from stock-based compensation	—	9,458	—	—	—	9,458
Repurchases of common stock			(23,925)			(23,925)
Cash dividend on common stock	—	—	—	(39,043)	—	(39,043)
Balance at December 31, 2016	$120	$342,311	$(117,330)	$255,140	$(12,228)	$468,013

The accompanying notes are an integral part of these consolidated financial statements.

MARKETAXESS HOLDINGS INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2016	2015	2014
	(In thousands)		
Cash flows from operating activities			
Net income	$126,172	$96,037	$74,806
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	17,838	18,542	17,379
Stock-based compensation expense	14,511	12,519	9,769
Deferred taxes	(2,581)	(2,424)	(374)
Other	1,170	2,049	1,725
Changes in operating assets and liabilities:			
(Increase) decrease in accounts receivable	(10,429)	(6,748)	827
(Increase) decrease in prepaid expenses and other assets	(2,125)	(2,662)	3,344
(Increase) in corporate debt trading investments	(74,195)	—	—
(Increase) in mutual funds held in rabbi trust	(1,327)	—	—
Increase in accrued employee compensation	5,487	3,986	1,309
Increase (decrease) in income and other tax liabilities	3,221	(941)	2,365
Increase (decrease) in deferred revenue	203	(153)	(248)
Increase (decrease) in accounts payable, accrued expenses and other liabilities	2,344	(9)	(950)
Net cash provided by operating activities	80,289	120,196	109,952
Cash flows from investing activities			
Available-for-sale investments:			
Proceeds from maturities and sales	46,347	35,248	17,574
Purchases	(81,438)	(57,175)	(16,423)
Purchases of furniture, equipment and leasehold improvements	(6,385)	(4,795)	(4,627)
Capitalization of software development costs	(12,118)	(10,589)	(10,160)
Other	414	(642)	611
Net cash (used in) investing activities	(53,180)	(37,953)	(13,025)
Cash flows from financing activities			
Cash dividend on common stock	(38,495)	(29,534)	(23,941)
Exercise of stock options	2,299	1,824	2,511
Withholding tax payments on restricted stock vesting and stock option exercises	(5,173)	(4,496)	(5,020)
Excess tax benefits from stock-based compensation	9,458	4,310	4,243
Repurchases of common stock	(23,925)	(23,158)	(37,974)
Other	—	—	(42)
Net cash (used in) financing activities	(55,836)	(51,054)	(60,223)
Effect of exchange rate changes on cash and cash equivalents	(2,758)	(385)	(471)
Cash and cash equivalents			
Net (decrease) increase for the period	(31,485)	30,804	36,233
Beginning of period	199,728	168,924	132,691
End of period	$168,243	$199,728	$168,924
Supplemental cash flow information:			
Cash paid during the year			
Cash paid for income taxes	$58,268	$50,875	$33,627

The accompanying notes are an integral part of these consolidated financial statements.

marketaxess holdings inc.

notes to consolidated financial statements

1. Organization and Principal Business Activity

MarketAxess Holdings Inc. (the “Company” or “MarketAxess”) was incorporated in the State of Delaware on April 11, 2000. Through its subsidiaries, MarketAxess operates a leading electronic trading platform that enables fixed-income market participants to efficiently trade corporate bonds and other types of fixed-income instruments using MarketAxess’ patented trading technology. Over 1,200 institutional investor and broker-dealer firms are active users of the MarketAxess trading platform, accessing global liquidity in U.S. high-grade corporate bonds, emerging markets and high-yield bonds, European bonds, U.S. agency bonds, municipal bonds, credit default swaps and other fixed-income securities. Through its Open Trading™ protocols, MarketAxess executes certain bond transactions between and among institutional investor and broker-dealer clients on a matched principal basis by serving as counterparty to both the buyer and the seller in trades which then settle through a third-party clearing broker. MarketAxess also offers a number of trading-related products and services, including: market data to assist clients with trading decisions; connectivity solutions that facilitate straight-through processing; technology services to optimize trading environments; and execution services for exchange-traded fund managers and other clients. Through its Trax® division, MarketAxess also offers a range of pre- and post-trade services, including trade matching, regulatory transaction reporting and market and reference data, across a range of fixed-income and other products.

2. Significant Accounting Policies

Basis of Presentation

The consolidated financial statements include the accounts of the Company and its subsidiaries. All intercompany transactions and balances have been eliminated.

Cash and Cash Equivalents

Cash and cash equivalents includes cash and money market instruments that are primarily maintained at one major global bank. Given this concentration, the Company is exposed to certain credit risk in relation to its deposits at this bank. The Company defines cash equivalents as short-term interest-bearing investments with maturities at the time of purchase of three months or less.

Investments

The Company determines the appropriate classification of securities at the time of purchase which are recorded in the Consolidated Statements of Financial Condition on the trade date. Securities are classified as available-for-sale or trading. The Company's available-for-sale investments are comprised of municipal bonds and investment grade corporate debt securities. Available-for-sale investments are carried at fair value with the unrealized gains or losses reported in accumulated other comprehensive loss in the Consolidated Statements of Financial Condition. Trading investments primarily include investment grade corporate debt securities and are carried at fair value, with realized and unrealized gains or losses included in other income in the Consolidated Statements of Operations.

The Company assesses whether an other-than-temporary impairment loss on the available-for-sale investments has occurred due to declines in fair value or other market conditions. The portion of an other-than-temporary impairment related to credit loss is recorded as a charge in the Consolidated Statements of Operations. The remainder is recognized in accumulated other comprehensive loss if the Company does not intend to sell the security and it is more likely than not that the Company will not be required to sell the security prior to recovery. No charges for other-than-temporary losses were recorded during the years ended December 31, 2016, 2015 and 2014.

Fair Value Financial Instruments

Fair value is defined as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date." A three-tiered hierarchy for determining fair value has been established that prioritizes inputs to valuation techniques used in fair value calculations. The three levels of inputs are defined as Level 1 (unadjusted quoted prices for identical assets or liabilities in active markets), Level 2 (inputs that are observable in the marketplace other than those inputs classified in Level 1) and Level 3 (inputs that are unobservable in the marketplace). The Company's financial assets and liabilities measured at fair value on a recurring basis consist of its money market funds, securities available-for-sale, trading securities

MARKETAXESS HOLDINGS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

and foreign currency forward contracts. All other financial instruments are short-term in nature and the carrying amount is reported on the Consolidated Statements of Financial Condition at approximate fair value.

Allowance for Doubtful Accounts

All accounts receivable have contractual maturities of less than one year and are derived from trading-related fees and commissions and revenues from products and services. The Company continually monitors collections and payments from its customers and maintains an allowance for doubtful accounts. The allowance for doubtful accounts is based upon the historical collection experience and specific collection issues that have been identified. Additions to the allowance for doubtful accounts are charged to bad debt expense, which is included in general and administrative expense in the Company’s Consolidated Statements of Operations.

The allowance for doubtful accounts was $0.1 million, $0.1 million and $0.0 million as of December 31, 2016, 2015 and 2014, respectively. The provision for bad debts was $0.2 million, $0.2 million and $0.1 million for the years ended December 31, 2016, 2015 and 2014, respectively. Write-offs and other charges against the allowance for doubtful accounts were $0.1 million, $0.1 million and $0.0 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Depreciation and Amortization

Fixed assets are carried at cost less accumulated depreciation. The Company uses the straight-line method of depreciation over three to seven years. The Company amortizes leasehold improvements on a straight-line basis over the lesser of the life of the improvement or the remaining term of the lease.

Software Development Costs

The Company capitalizes certain costs associated with the development of internal use software, including among other items, employee compensation and related benefits and third party consulting costs at the point at which the conceptual formulation, design and testing of possible software project alternatives have been completed. Once the product is ready for its intended use, such costs are amortized on a straight-line basis over three years. The Company reviews the amounts capitalized for impairment whenever events or changes in circumstances indicate that the carrying amounts of the assets may not be recoverable.

Cash Provided as Collateral

Cash is provided as collateral for broker-dealer clearing accounts. Cash provided as collateral is included in prepaid expenses and other assets in the Consolidated Statements of Financial Condition.

Foreign Currency Translation and Forward Contracts

Assets and liabilities denominated in foreign currencies are translated using exchange rates at the end of the period; revenues and expenses are translated at average monthly rates. Gains and losses on foreign currency translation are a component of accumulated other comprehensive loss in the Consolidated Statements of Financial Condition. Transaction gains and losses are recorded in general and administrative expense in the Consolidated Statements of Operations.

The Company enters into foreign currency forward contracts to hedge its net investment in its U.K. subsidiaries. Gains and losses on these transactions are included in accumulated other comprehensive loss in the Consolidated Statements of Financial Condition.

Revenue Recognition

The majority of the Company's revenues are derived from commissions for trades executed on its platform and distribution fees that are billed to its broker-dealer clients on a monthly basis. The Company also derives revenues from information and post-trade services, technology products and services, investment income and other income.

MARKETAXESS HOLDINGS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

Commission revenue. Commissions are generally calculated as a percentage of the notional dollar volume of bonds traded on the platform and vary based on the type, size, yield and maturity of the bond traded. Under the Company's transaction fee plans, bonds that are more actively traded or that have shorter maturities are generally charged lower commissions, while bonds that are less actively traded or that have longer maturities generally command higher commissions. For trades that the Company executes between and among institutional investor and broker-dealer clients on a matched principal basis by serving as counterparty to both the buyer and the seller, the Company earns the commission through the difference in price between the two matched principal trades. Fee programs for certain products include distribution fees which are recognized monthly.

Information and post-trade services. The Company generates revenue from information services provided to our broker-dealer clients, institutional investor clients and data-only subscribers. Information services are invoiced monthly, quarterly or annually. When billed in advance, revenues are deferred and recognized monthly on a straight-line basis. The Company also generates revenue from regulatory transaction reporting and trade matching services. Revenue is recognized in the period the services are provided.

Technology products and services. The Company generates revenues from professional consulting services, technology software licenses and maintenance and support services. Revenue from professional consulting services is recognized as services are performed and software license subscription revenue and maintenance and support services are recognized ratably over the contract period. Technology products and services revenue is reported in other income in the Consolidated Statements of Operations.

Initial set-up fees. The Company enters into agreements with its broker-dealer clients pursuant to which the Company provides access to its platform through a non-exclusive and non-transferable license. Broker-dealer clients may pay an initial set-up fee, which is typically due and payable upon execution of a dealer agreement. The initial set-up fee, if any, varies by agreement. Revenue is recognized over the initial term of the agreement, which is generally two years. Initial set-up fees are reported in other income in the Consolidated Statements of Operations.

Stock-Based Compensation

The Company measures and recognizes compensation expense for all share-based payment awards based on their estimated fair values measured as of the grant date. These costs are recognized as an expense in the Consolidated Statements of Operations over the requisite service period, which is typically the vesting period, with an offsetting increase to additional paid-in capital.

Income Taxes

Income taxes are accounted for using the asset and liability method. Deferred income taxes reflect the net tax effects of temporary differences between the financial reporting and tax bases of assets and liabilities and are measured using the enacted tax rates and laws that will be in effect when such differences are expected to reverse. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. A valuation allowance is recognized against deferred tax assets if it is more likely than not that such assets will not be realized in future years. The Company recognizes interest and penalties related to unrecognized tax benefits in general and administrative expenses in the Consolidated Statements of Operations.

Business Combinations, Goodwill and Intangible Assets

Business combinations are accounted for under the purchase method of accounting. The total cost of an acquisition is allocated to the underlying net assets based on their respective estimated fair values. The excess of the purchase price over the estimated fair values of the net assets acquired is recorded as goodwill. Determining the fair value of certain assets acquired and liabilities assumed is judgmental in nature and often involves the use of significant estimates and assumptions, including assumptions with respect to future cash flows, discount rates, growth rates and asset lives.

The Company operates as a single reporting unit. Subsequent to an acquisition, goodwill no longer retains its identification with a particular acquisition, but instead becomes identifiable with the entire reporting unit. As a result, all of the fair value of the Company is available to support the value of goodwill. An impairment review of goodwill is performed on an annual basis, at year-end, or more frequently if circumstances change. Intangible assets with definite lives, including purchased technologies, customer relationships and other intangible assets, are amortized on a straight-line basis over their estimated useful lives, ranging from three to 15 years. Intangible assets are assessed for impairment when events or circumstances indicate the existence of a possible impairment.

MARKETAXESS HOLDINGS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

Earnings Per Share

Basic earnings per share is computed by dividing the net income attributable to common stock by the weighted-average number of shares of common stock outstanding during the period. For purposes of computing diluted earnings per share, the weighted-average shares outstanding of common stock reflects the dilutive effect that could occur if convertible securities or other contracts to issue common stock were converted into or exercised for common stock.

Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles (“GAAP”) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Out-of-Period Adjustments

During the first quarter of 2016, the Company determined that it had incorrectly recorded deferred taxes for the cumulative translation adjustment (“CTA”) that arises from converting the local currency financial statements into U.S. dollars. Upon making a permanent reinvestment assertion on unremitted earnings from foreign subsidiaries effective January 1, 2013, the Company should have eliminated any deferred tax balances derived from the CTA balance. The Company also determined that gains and losses on the foreign currency forward contracts used to hedge the net investment in certain foreign subsidiaries were not appropriately considered as taxable income or expense in the consolidated tax returns. The Company assessed these errors and determined that they were not material to previous reporting periods. Therefore, the Company recorded these items as out-of-period adjustments in the three months ended March 31, 2016 by decreasing deferred tax assets by $3.1 million, decreasing other comprehensive income by $2.1 million and increasing prepaid expenses and other assets by $1.0 million in the Consolidated Statements of Financial Condition.

Reclassifications

Certain reclassifications have been made to the prior years’ Consolidated Financial Statements in order to conform to the current year presentation. Such reclassifications had no effect on previously reported net income.

Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2014-09, “Revenue from Contracts with Customers” (“ASU 2014-09”) requiring an entity to recognize revenue for the transfer of goods or services equal to the amount that it expects to be entitled to receive for those goods or services. The standard can be implemented using either a retrospective method or a cumulative-effect approach .In August 2015, the FASB deferred the effective date of the new revenue standard for periods beginning after December 15, 2016 to December 15, 2017, with early adoption permitted but not earlier than the original effective date.
The ASU will be effective for the Company beginning January 1, 2018. While certain implementation issues are still

pending resolution, including trade date versus settlement date recognition for broker dealers, the adoption of this accounting guidance is not expected to have a material effect on the Company's Consolidated Financial Statements.

In February 2016, the FASB issued ASU 2016-02, "Leases" ("ASU 2016-02") requiring lessees to recognize lease assets and lease liabilities on the balance sheet for those leases previously classified as operating leases. ASU 2016-02 will be effective for the Company beginning January 1, 2019 and early adoption is permitted. The Company is currently evaluating the potential adoption impact and expects to recognize lease assets and lease liabilities in its Consolidated Statements of Financial Condition. The Company does not expect material changes to the recognition of operating lease expense in its Consolidated Statements of Operations.

In March 2016, the FASB issued ASU 2016-09, "Improvements to Employee Share-Based Payment Accounting" ("ASU 2016-09"). ASU 2016-09 simplifies several aspects related to the accounting for share-based payment transactions, including the accounting for income taxes, statutory tax withholding requirements and classification on the statement of cash flows. The Company will adopt ASU 2016-09 beginning January 1, 2017 and, since the tax effects related to share-based payments will be recorded through the income tax provision, expects the new standard will have a significant impact and cause volatility in the Company's net income, effective tax rate and diluted earnings per share. The volatility in future periods will depend on the Company's stock price at the vest date for restricted stock awards or exercise date for stock options and the number of awards that vest or are exercised in each period.

MARKETAXESS HOLDINGS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

In November 2016, the FASB issued ASU 2016-18, "Statement of Cash Flows (Topic 230): Restricted Cash" ("ASU 2016-18") requiring amounts generally described as restricted cash or restricted cash equivalents be included with cash and cash equivalents when reconciling the total beginning and ending amounts for the periods shown on the statement of cash flows. ASU 2016-18 will be effective for the Company beginning January 1, 2018 and early adoption is permitted. The Company is in the process of determining the method of adoption and assessing the impact of ASU 2016-18 on the Company's Consolidated Financial Statements.

3. Net Capital Requirements

Certain U.S. subsidiaries of the Company are registered as a broker-dealer or swap execution facility and therefore are subject to the applicable rules and regulations of the Securities and Exchange Commission and the Commodity Futures Trading Commission. These rules contain minimum net capital requirements, as defined in the applicable regulations, and also may require a significant part of the registrants' assets be kept in relatively liquid form. Certain of the Company's foreign subsidiaries are regulated by the Financial Conduct Authority in the U.K. or Ontario Securities Commission in Canada and must maintain financial resources, as defined in the applicable regulations, in excess of the applicable financial resources requirement. As of December 31, 2016, each of the Company's subsidiaries that are subject to these regulations had net capital or financial resources in excess of their minimum requirements. As of December 31, 2016, the Company's subsidiaries maintained aggregate net capital and financial resources that was $126.0 million in excess of the required levels of $10.6 million.

Each of the Company's U.S. and foreign regulated subsidiaries are subject to local regulations which generally prohibit repayment of borrowings from the Company or affiliates, paying cash dividends, making loans to the Company or affiliates or otherwise entering into transactions that result in a significant reduction in regulatory net capital or financial resources without prior notification to or approval from such regulated entity's principal regulator.

4. Fair Value Measurements

The following table summarizes the valuation of the Company's assets and liabilities measured at fair value as categorized based on the hierarchy described in Note 2.

	Level 1	Level 2	Level 3	Total
As of December 31, 2016	(In thousands)			
Money market funds	$58,573	$—	$ —	$58,573
Securities available-for-sale				
Corporate debt	—	118,870	—	118,870
Trading securities				

Corporate debt		74,207		74,207
Mutual funds held in rabbi trust	—	1,327	—	1,327
Foreign currency forward position	—	(266)	—	(266)
Total	$58,573	$194,138	$ —	$252,711
As of December 31, 2015				
Money market funds	$61,913	$—	$ —	$61,913
Securities available-for-sale				
Corporate debt	—	82,671	—	82,671
Municipal securities	—	2,035	—	2,035
Foreign currency forward position	—	354	—	354
Total	$61,913	$85,060	$ —	$146,973

Securities classified within Level 2 were valued using a market approach utilizing prices and other relevant information generated by market transactions involving comparable assets. The foreign currency forward contracts are classified within Level 2 as the valuation inputs are based on quoted market prices. The mutual funds held in a rabbi trust represent investments associated with the deferred cash incentive plan (see Note 14). There were no financial assets classified within Level 3 during the years ended December 31, 2016 and 2015.

The Company enters into foreign currency forward contracts to hedge the net investment in the Company’s U.K. subsidiaries. The Company designates each foreign currency forward contract as a hedge and assesses the risk management objective and strategy,

MARKETAXESS HOLDINGS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

including identification of the hedging instrument, the hedged item and the risk exposure and how effectiveness is to be assessed prospectively and retrospectively. These hedges are for a one-month period and are used to limit exposure to foreign currency exchange rate fluctuations. The fair value of the asset is included in prepaid expenses and other assets and the fair value of the liability is included in accounts payable, accrued expenses and other liabilities in the Consolidated Statements of Financial Condition. Gains or losses on foreign currency forward contracts designated as hedges are included in accumulated other comprehensive loss in the Consolidated Statements of Financial Condition. A summary of the foreign currency forward position is as follows:

	As of December 31,	
	2016	2015
	(In thousands)	
Notional value	$66,972	$45,716
Fair value of notional	67,238	45,362
Fair value of the (liability) asset	$(266)	$354

The following is a summary of the Company's investments:

	Amortized cost	Gross unrealized gains	Gross unrealized losses	Estimated fair value
	(In thousands)			
As of December 31, 2016				
Securities available-for-sale				
Corporate debt	$119,073	$ 13	$ (216)	$118,870
Trading securities				
Corporate debt	$74,394	$ 47	$ (234)	$74,207
Mutual funds held in rabbi trust	1,212	115	—	1,327
Total trading securities	$75,606	$ 162	$ (234)	$75,534
Total investments	$194,679	$ 175	$ (450)	$194,404
As of December 31, 2015				
Securities available-for-sale				
Corporate debt	$82,937	$ 4	$ (270)	$82,671
Municipal securities	2,035	—	—	2,035
Total securities available-for-sale	$84,972	$ 4	$ (270)	$84,706

The following table summarizes the fair value of the investments based upon the contractual maturities:

	As of December 31,	
	2016	2015
	(In thousands)	
Less than one year	$117,904	$37,694
Due in 1 - 5 years	76,500	47,012
Total	$194,404	$84,706

Proceeds from the sales and maturities of investments during the years ended December 31, 2016, 2015 and 2014 were $69.5 million, $35.2 million and $17.6 million, respectively. For the year ended December 31, 2016, net realized gains and net unrealized losses on corporate debt trading securities were $12 thousand and $0.2 million, respectively.

MARKETAXESS HOLDINGS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

The following table provides fair values and unrealized losses on investments and by the aging of the securities' continuous unrealized loss position as of December 31, 2016 and 2015 respectively:

	Less than Twelve Months		Twelve Months or More		Total	
	Estimated fair value	Gross unrealized losses	Estimated fair value	Gross unrealized losses	Estimated fair value	Gross unrealized losses
	(In thousands)					
As of December 31, 2016						
Corporate debt	$136,667	$ (449)	$2,000	$ (1)	$138,667	$ (450)
As of December 31, 2015						
Corporate debt	$70,651	$ (270)	$—	$ —	$70,651	$ (270)

5. Goodwill and Intangible Assets

Goodwill and intangible assets with indefinite lives was $59.7 million as of both December 31, 2016 and 2015. Intangible assets that are subject to amortization, including the related accumulated amortization, are comprised of the following:

	December 31, 2016			December 31, 2015		
	Cost	Accumulated Amortization	Net Carrying Amount	Cost	Accumulated Amortization	Net Carrying Amount
	(In thousands)					
Technology	$5,770	$ (5,770)	$ -	$5,770	$ (5,492)	$ 278
Customer relationships	5,628	(1,897)	3,731	5,668	(1,553)	4,115
Non-competition agreements	380	(380)	-	380	(359)	21
Tradenames	370	(370)	-	370	(353)	17
Total	$12,148	$ (8,417)	$ 3,731	$12,188	$ (7,757)	$ 4,431

Amortization expense associated with identifiable intangible assets was $0.7 million, $2.3 million and $2.3 million, respectively, for the years ended December 31, 2016, 2015 and 2014. Estimated total amortization expense is $0.4 million for each year from 2017 through 2021.

6. Capitalized Software, Furniture, Equipment and Leasehold Improvements

Capitalized software development costs, furniture, equipment and leasehold improvements, net of accumulated depreciation and amortization, are comprised of the following:

	As of December 31,	
	2016	2015
	(In thousands)	
Software development costs	$71,551	$60,724
Computer hardware and related software	20,152	26,328
Office hardware	4,228	3,414
Furniture and fixtures	2,001	1,955
Leasehold improvements	8,351	8,457
	106,283	100,878
Accumulated depreciation and amortization	(75,179)	(69,981)
Total	$31,104	$30,897

During the years ended December 31, 2016 and 2015, software development costs totaling $12.3 million and $10.6 million, respectively, were capitalized. Non-capitalized software costs and routine maintenance costs are expensed as incurred and are included in employee compensation and benefits and professional and consulting fees in the Consolidated Statements of Operations.

MARKETAXESS HOLDINGS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

7. Income Taxes

The provision for income taxes consists of the following:

	Year Ended December 31,		
	2016	2015	2014
	(In thousands)		
Current:			
Federal	$45,455	$38,357	$31,700
State and local	7,087	7,180	6,505
Foreign	6,166	4,346	1,456
Total current provision	58,708	49,883	39,661
Deferred:			
Federal	5,884	1,492	3,583
State and local	1,141	299	530
Foreign	(303)	189	(44)
Total deferred provision	6,722	1,980	4,069
Provision for income taxes	$65,430	$51,863	$43,730

Pre-tax income from U.S. operations was $161.9 million, $126.4 million and $112.5 million for the years ended December 31, 2016, 2015 and 2014, respectively. Pre-tax income from foreign operations was $29.7 million, $21.5 million and $6.0 million for the years ended December 31, 2016, 2015 and 2014, respectively.

The difference between the Company's reported provision for income taxes and the U.S. federal statutory rate of 35% is as follows:

	Year Ended December 31,		
	2016	2015	2014
U.S. federal tax at statutory rate	35.0 %	35.0 %	35.0 %
State and local taxes - net of federal benefit	2.9	3.4	4.2
Credits and deductions related to research activities	(1.3)	(1.3)	(1.7)
Foreign rate differential benefit	(2.3)	(2.0)	(0.6)
Other, net	(0.2)	—	—
Provision for income taxes	34.1 %	35.1 %	36.9 %

MARKETAXESS HOLDINGS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

The following is a summary of the Company's net deferred tax assets:

	As of December 31,	
	2016	2015
	(In thousands)	
Deferred tax assets		
U.S. net operating loss carryforwards	$1,909	$2,580
Capital loss carryforwards	7,235	7,294
Stock compensation expense	11,307	9,115
Other	1,468	3,745
Total deferred tax assets	21,919	22,734
Valuation allowance	(7,235)	(7,294)
Net deferred tax assets	14,684	15,440
Deferred tax liabilities		
Depreciation and amortization	(1,456)	(1,953)
Capitalized software development costs	(4,923)	(4,344)
Intangible assets	(1,037)	(1,310)
Deferred tax assets, net	$7,268	$7,833

In 2001 and 2000, MarketAxess Holdings Inc. and MarketAxess Corporation had an ownership change within the meaning of Section 382 of the Internal Revenue Code. As of December 31, 2016, the Company had restricted U.S. federal net operating loss carryforwards of approximately $5.4 million, which begin to expire in 2021. The Company's net operating loss carryforwards may be subject to additional annual limitations if there is a 50% or greater change in the Company's ownership, as determined over a rolling three-year period.

The ultimate realization of deferred income tax assets is dependent upon the generation of future taxable income during the periods in which the temporary differences become deductible. If it is not more likely than not that some portion or all of the gross deferred income tax assets will be realized in future years, a valuation allowance is recorded. As of December 31, 2016, the valuation allowance relates to certain capital loss carryforwards that are not expected to be realized. In October 2013, the Company recognized a $20.6 million capital loss on the sale of Greenline Financial Technologies, Inc. of which $1.2 million was carried back or otherwise utilized against current period capital gains. A full valuation allowance was provided against the remaining capital loss carryforward.

A summary of the changes in the valuation allowance is as follows:

Year Ended December 31,

	2016	2015	2014
	(In thousands)		
Valuation allowance at beginning of year	$7,294	$7,428	$7,743
(Decrease) to valuation allowance attributable to:			
Current year income	—	—	(101)
State net operating loss	—	—	(155)
Other changes	(59)	(134)	(59)
Valuation allowance at end of year	$7,235	$7,294	$7,428

The Company or one of its subsidiaries files U.S. federal, state and foreign income tax returns. Income tax returns for U.S. Federal (through 2013), New York City (through 2003) and state (through 2009) and Connecticut state (through 2003) have been audited. An examination of the Company's New York State income tax returns for 2010 through 2012 is currently underway. The Company cannot estimate when the examination will conclude or the impact such examinations will have on the Company's Consolidated Financial Statements, if any.

MARKETAXESS HOLDINGS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

A reconciliation of the unrecognized tax benefits is as follows:

	Year Ended December 31,		
	2016	2015	2014
	(In thousands)		
Balance at beginning of year	$265	$265	$265
Reductions for tax positions of prior years	(236)	—	—
Balance at end of year	$29	$265	$265

The Company has determined that unremitted earnings of its foreign subsidiaries will be considered indefinitely reinvested outside of the United States. No provision has been made for income tax on approximately $36.9 million of undistributed earnings of foreign subsidiaries at December 31, 2016. If these earnings were repatriated to the United States or no longer determined to be indefinitely reinvested outside the United States, the deferred tax liability associated with such earnings would have been approximately $1.2 million.

8. Stockholders' Equity

Common Stock

As of December 31, 2016 and 2015, the Company had 110,000,000 authorized shares of voting common stock and 10,000,000 authorized shares of non-voting common stock. Voting common stock entitles the holder to one vote per share of common stock held.

The following is a summary of the change in the Company's outstanding shares of voting common stock:

	Year Ended December 31,		
	2016	2015	2014
	(In thousands)		
Outstanding shares of voting common stock at the beginning of year	37,409	37,319	37,729
Exercise of stock options	181	183	120
Issuance of restricted stock, net of shares withheld for tax payments and cancellations	104	178	116
Repurchases	(150)	(271)	(646)
Outstanding shares of voting common stock at the end of year	37,544	37,409	37,319

In January 2014, the Board of Directors of the Company authorized a two-year share repurchase program for up to $35.0 million of the Company's common stock, and in July 2014, the Board of Directors increased the authorization by an additional $65.0 million. A total of 917,354 shares were repurchased under this program. In January 2016, the Board of Directors authorized a new two-year share repurchase program for up to $25.0 million of the Company's common stock which commenced on March 1, 2016. In October 2016, the Board of Directors approved a $50.0 million increase in the size of the repurchase program. A total of 155,868 shares have been repurchased under this program. As of December 31, 2016, approximately $51.1 million was available for future repurchases. Shares repurchased under the programs will be held in treasury for future use.

Dividends

During 2016, 2015 and 2014, we paid quarterly cash dividends of $0.26 per share, $0.20 per share and $0.16 per share, respectively. Any future declaration and payment of dividends will be at the sole discretion of the Company's Board of Directors. The Board of Directors may take into account such matters as general business conditions, the Company's financial results, capital requirements, contractual obligations, legal, and regulatory restrictions on the payment of dividends to the Company's stockholders or by the Company's subsidiaries to their respective parent entities, and any such other factors as the Board of Directors may deem relevant.

9. Stock-Based Compensation Plans

The Company has a stock incentive plan which provides for the grant of stock options, stock appreciation rights, restricted stock, performance shares, performance units, or other stock-based awards as incentives and rewards to encourage employees,

MARKETAXESS HOLDINGS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

consultants and non-employee directors to participate in the long-term success of the Company. As of December 31, 2016, there were 360,035 shares available for grant under the stock incentive plan.

Total stock-based compensation expense was as follows:

	Year Ended December 31,		
	2016	2015	2014
	(In thousands)		
Employee:			
Restricted stock and performance shares	$12,459	$10,792	$8,193
Stock options	1,143	826	676
	13,602	11,618	8,869
Non-employee directors:			
Restricted stock	909	901	900
Total stock-based compensation	$14,511	$12,519	$9,769

The Company records stock-based compensation expense for employees in employee compensation and benefits and for non-employee directors in general and administrative expenses in the Consolidated Statements of Operations.

Stock Options

The exercise price of each option granted is equal to the market price of the Company's common stock on the date of grant. Generally, option grants have provided for vesting over a three or five-year period. Options generally expire in six or ten years from the date of grant. The fair value of each option award is estimated on the date of grant using the Black-Scholes option-pricing model. The determination of fair value of share-based payment awards on the date of grant using an option-pricing model is affected by the Company's stock price as well as assumptions regarding a number of highly complex and subjective variables, including the expected stock price volatility over the term of the awards, the risk-free interest rate, the expected dividend yield rate and the expected term. Expected volatilities are based on historical volatility of the Company's stock. The risk-free interest rate is based on U.S. Treasury securities with a maturity value approximating the expected term of the option. The dividend yield rate is based on the expected annual dividends to be paid divided by the expected stock price. The expected term represents the period of time that options granted are expected to be outstanding based on actual and projected employee stock option exercise behavior.

The weighted-average fair value for options granted during 2016, 2015 and 2014 was $32.24, $36.46 and $19.25, respectively. The following table represents the assumptions used for the Black-Scholes option-pricing model to determine the per share weighted-average fair value for options granted for the three years ended December 31, 2016:

	2016	2015	2014
Expected life (years)	6.0	7.0	5.0
Risk-free interest rate	1.9 %	1.9 %	1.7 %

Expected volatility	33.0 %	56.7 %	35.5 %
Expected dividend yield	1.0 %	1.1 %	1.0 %

In addition to the option grants above, the Company granted 119,981 stock options to the Company's Chief Executive Officer in January 2015 which expire in 5.5 years from the grant date. Subject to the Chief Executive Officer's continued employment with the Company through the applicable vesting date, one-third of the options under the option award will vest and become exercisable on each of January 15, 2018, 2019 and 2020. The fair value of the option award as of the date of the grant was $2.0 million as determined by an independent third party using a Monte Carlo simulation model. Key assumptions used for the Monte Carlo pricing model included an exercise price of $88.25 (125% of the market price on the date of the grant), a risk free interest rate of 1.4%, volatility of 27.3% and a dividend yield of 0.9%.

MARKETAXESS HOLDINGS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

The following table reports stock option activity during the three years ended December 31, 2016 and the intrinsic value as of December 31, 2016:

	Number of Shares	Weighted-Average Exercise Price ($)	Remaining Contractual Term	Intrinsic Value ($) (In thousands)
Outstanding at December 31, 2013	1,220,449	$ 15.01		
Granted	382	63.07		
Canceled	(41,071)	41.47		
Exercised	(165,340)	15.85		
Outstanding at December 31, 2014	1,014,420	13.81		
Granted	120,650	88.15		
Canceled	—	—		
Exercised	(196,034)	11.60		
Outstanding at December 31, 2015	939,036	23.83		
Granted	112,988	102.40		
Canceled	(874)	101.77		
Exercised	(195,410)	12.35		$ 21,929
Outstanding at December 31, 2016	855,740	36.80	2.8	94,235
Exercisable at December 31, 2016	623,076	14.98	2.2	82,208

The intrinsic value is the amount by which the closing price of the Company's common stock on December 31, 2016 of $146.92 or the price on the day of exercise exceeds the exercise price of the stock options multiplied by the number of shares. As of December 31, 2016, there was $4.1 million of total unrecognized compensation cost related to non-vested stock options. That cost is expected to be recognized over a weighted-average period of 3.2 years.

Restricted Stock and Performance Shares

Restricted stock generally vests over a three or five-year period. Compensation expense is measured at the grant date and recognized ratably over the vesting period. Annual performance share awards are granted to certain officers and senior managers. Each performance share award is earned or forfeited based on the level of achievement by the Company of pre-tax operating income, as defined. The pay-out ranges from zero to 150% of the performance share award. For each performance share earned, a participant is awarded an equal number of shares of restricted stock. Any restricted stock awarded to a participant vests and ceases to be restricted stock in two equal installments on each of the second and third anniversaries of the date of grant of the applicable performance share award. Compensation expense for performance shares is measured at the grant date and recognized on a graded basis over the vesting period.

The following table reports performance share activity for annual awards for the three years ended December 31, 2016:

Performance year	2016	2015	2014
Share pay-out at plan	15,390	28,520	29,678
Actual share pay-out in following year	21,423	37,696	25,228
Weighted average fair value per share on grant date	$101.77	$70.60	$63.07

In January 2016, the Company granted 33,509 multi-year performance shares to certain officers and senior managers. Each performance share award is earned or forfeited based on the level of achievement by the Company of aggregate operating income over the three year period beginning January 1, 2016. The pay-out ranges from zero to 150% of the performance award value. Any restricted stock awarded will vest 50% on January 31, 2020 and 50% on January 31, 2021. The fair value per share of the awards on the grant date was $103.30.

In addition to the grants above, the Company granted 116,659 performance shares to the Company's Chief Executive Officer in January 2015. The performance share award provided that the number of performance shares earned by the Chief Executive Officer would be based on the Company's achievement of certain performance levels. Upon achievement of the performance levels, a total of

MARKETAXESS HOLDINGS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

92,419 shares and 24,240 shares were earned in 2015 and 2016, respectively. Subject to the Chief Executive Officer's continued employment, the performance share award will vest 50% on each of January 15, 2019 and January 15, 2020. The fair value of the performance share award as of the date of the grant was $6 million as determined by an independent third party using a Monte Carlo simulation model. Key assumptions used for the Monte Carlo pricing model included a risk free interest rate of 1.3%, volatility of 27.3% and a dividend yield of 0.9%.

The following table reports restricted stock and performance share activity during the three years ended December 31, 2016:

	Number of Restricted Shares	Weighted-Average Grant Date Fair Value
Outstanding at December 31, 2013	569,734	$ 31.86
Granted	149,349	
Performance share pay-out	46,340	
Canceled	(43,185)	
Vested	(286,249)	
Outstanding at December 31, 2014	435,989	$ 41.83
Granted	117,668	
Performance share pay-out	117,647	
Canceled	(3,845)	
Vested	(235,321)	
Outstanding at December 31, 2015	432,138	$ 56.24
Granted	95,419	
Performance share pay-out	61,936	
Canceled	(12,786)	
Vested	(192,729)	
Outstanding at December 31, 2016	383,978	$ 71.50

As of December 31, 2016, there was $18.7 million of total unrecognized compensation expense related to non-vested restricted stock and performance shares. That cost is expected to be recognized over a weighted-average period of 2.0 years.

Employee Stock Purchase Plan

During 2015, the Company established a non-qualified employee stock purchase plan for non-executive employees. Under the plan, participants are granted the right to purchase shares of common stock based on the fair market value on the last day of the six-month offering period. On the purchase date, the Company will grant to the participants a number of shares of common stock equal to 20% of the aggregate shares purchased by the participant. These matching shares vest over a one-year period. The Company issued 1,190 matching shares in connection with the plan for the year ended December 31, 2016. No matching shares were issued for the year ended December 31, 2015.

10. Earnings Per Share

The following table sets forth the computation of basic and diluted earnings per common share:

	Year Ended December 31,		
	2016	2015	2014
	(In thousands, except per share amounts)		
Net income	$126,172	$96,037	$74,806
Basic weighted average shares outstanding	36,844	36,690	36,930
Dilutive effect of stock options and restricted stock	894	947	959
Diluted weighted average shares outstanding	37,738	37,637	37,889
Basic earnings per share	$3.42	$2.62	$2.03
Diluted earnings per share	$3.34	$2.55	$1.97

MARKETAXESS HOLDINGS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

Stock options and restricted stock totaling 84,052 shares, 128,383 shares and 66,637 shares for the years ended December 31, 2016, 2015 and 2014, respectively, were excluded from the computation of diluted earnings per share because their effect would have been antidilutive. The computation of diluted shares can vary among periods due, in part, to the change in the average price of the Company's common stock.

11. Credit Agreement

In January 2013, the Company entered into a three-year credit agreement that provided for revolving loans and letters of credit up to an aggregate of $50.0 million. In October 2015, the company entered into an amended and restated credit agreement (the "Credit Agreement") increasing the borrowing capacity to an aggregate of $100.0 million, including a $5.0 million sub-limit for standby letters of credit. The Credit Agreement will mature in October 2017. As of December 31, 2016, the Company had $0.9 million in letters of credit outstanding and $99.1 million in available borrowing capacity under the Credit Agreement. Subject to satisfaction of certain specified conditions, the Company is permitted to upsize the borrowing capacity under the Credit Agreement by an additional $50.0 million.

Borrowings under the Credit Agreement will bear interest at a rate per annum equal to either of the following, as designated by the Company for each borrowing: (A) the sum of (i) the greatest of (a) the prime rate, as defined, (b) the federal funds effective rate plus 0.50% and (c) one month adjusted LIBOR plus 1.00% plus (ii) 0.50% or (B) the sum of (i) adjusted LIBOR plus (ii) 1.50%. Default interest is 2.00% per annum in excess of the rate otherwise applicable in the case of any overdue principal or any other overdue amount. The Company is also required to pay a commitment fee to the lenders under the Credit Agreement in respect of unutilized revolving loan commitments at a rate of 0.40% per annum.

The Company's existing and future domestic subsidiaries (other than any regulated subsidiary) have guaranteed the Company's obligations under the Credit Agreement. Subject to customary exceptions and exclusions, the Company's borrowings under the Credit Agreement are collateralized by first priority pledges (subject to permitted liens) of substantially all of the Company's personal property assets and the personal property assets of the Company's domestic subsidiaries that have guaranteed the Credit Agreement, including the equity interests of the Company's domestic subsidiaries and the equity interests of certain of the Company's foreign subsidiaries (limited, in the case of the voting equity interests of the foreign subsidiaries, to a pledge of 65% of those equity interests).

The Credit Agreement requires that the Company's consolidated total leverage ratio tested on the last day of each fiscal quarter not exceed 2.5 to 1.0 and a consolidated interest coverage ratio tested on the last day of each fiscal quarter not be less than 3.5 to 1.0. The Credit Agreement also requires that the Company's trailing twelve month adjusted EBITDA tested on the last day of each fiscal quarter not be less than $80 million. The Company was in compliance with all applicable covenants at December 31, 2016 and 2015.

If an event of default occurs, including failure to pay principal or interest due on the loan balance, a voluntary or involuntary proceeding seeking liquidation, change in control of the Company, or one or more material judgments against the Company in excess of $10.0 million, the lenders would be entitled to accelerate the borrowings under the Credit Agreement and take various other actions, including all actions permitted to be taken by a secured creditor. If certain bankruptcy events of default occur, the borrowings under the Credit Agreement will automatically accelerate.

12. Commitments and Contingencies

Lease Commitments

The Company leases office space under non-cancelable lease agreements expiring at various dates through 2033. Office space leases are subject to escalation based on certain costs incurred by the landlord. Minimum rental commitments as of December 31, 2016 under such operating leases were as follows (in thousands):

2017	$4,438
2018	4,296
2019	9,205
2020	10,492
2021	10,079
2022 and thereafter	107,815
	$146,325

MARKETAXESS HOLDINGS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

Rental expense for the years ended December 31, 2016, 2015 and 2014 was $4.0 million, $4.1 million and $3.8 million, respectively, and is included in occupancy expense in the Consolidated Statements of Operations. Rental expense has been recorded based on the total minimum lease payments after giving effect to rent abatement and concessions, which are being amortized on a straight-line basis over the life of the lease. The Company is contingently obligated for standby letters of credit amounting to $0.9 million that were issued to landlords for office space.

During 2016, the Company entered into non-cancelable lease agreements for approximately 108,000 square feet of office space with commencement dates on or after December 1, 2016 that expire through December 31, 2033. The aggregate minimum rental commitment under such leases is $127.4 million.

The Company has assigned a lease agreement on a leased property to a third party and is contingently liable should the assignee default on future lease obligations through the November 2020 lease termination date. The aggregate amount of the future lease obligation under this arrangement is $1.0 million as of December 31, 2016.

Legal

In the normal course of business, the Company and its subsidiaries included in the consolidated financial statements may be involved in various lawsuits, proceedings and regulatory examinations. The Company assesses its liabilities and contingencies in connection with outstanding legal proceedings, if any, utilizing the latest information available. For matters where it is probable that the Company will incur a material loss and the amount can be reasonably estimated, the Company would establish an accrual for the loss. Once established, the accrual would be adjusted to reflect any relevant developments. When a loss contingency is not both probable and estimable, the Company does not establish an accrual.

Based on currently available information, the outcome of the Company’s outstanding matters is not expected to have a material adverse impact on the Company’s financial position. It is not presently possible to determine the ultimate exposure to these matters and there is no assurance that the resolution of the outstanding matters will not significantly exceed any reserves accrued by the Company.

Other

The Company, through two regulated subsidiaries, executes certain bond transactions between and among institutional investor and broker-dealer clients on a matched principal basis by serving as counterparty to both the buyer and the seller in trades which settle through third-party clearing brokers. Settlement typically occurs within one to three trading days after the trade date. Cash settlement of the transaction occurs upon receipt or delivery of the underlying instrument that was traded. For the years ended December 31, 2016, 2015 and 2014, revenues from matched principal trading were approximately $37.7 million, $16.9 million and $7.4 million, respectively. Under securities clearing agreements with third party clearing brokers, the Company maintains collateral deposits with each clearing broker in the form of cash. As of December 31, 2016, the amount of the collateral deposits included in prepaid expenses and other assets in the Consolidated Statements of Financial Condition was $1.1 million. For the years ended December 31, 2016, 2015 and 2014, clearing expenses associated with matched principal transactions were $6.1 million, $3.3 million and $1.3 million, respectively, and are classified under general and administrative expense on the Consolidated Statements of Operations. The Company is exposed to credit risk in the event a counterparty does not fulfill its obligation to complete a transaction or if there is a miscommunication or other error in executing a matched principal transaction. Pursuant to the terms of the securities clearing agreements, each clearing broker has the right to charge the Company for any losses they suffer resulting from a counterparty's failure on any of the Company's trades. The Company did not record any liabilities or losses with regard to this right for the years ended December 31, 2016 and 2015.

In the normal course of business, the Company enters into contracts that contain a variety of representations, warranties and general indemnifications. The Company's maximum exposure under these arrangements is unknown, as this would involve future claims that may be made against the Company that have not yet occurred. However, based on experience, the Company expects the risk of loss to be remote.

13. Segment and Geographic Information

The Company operates an electronic multi-party platform for the trading of fixed-income securities and provides related data, analytics, compliance tools and post-trade services. The Company's operations constitute a single business segment because of the highly integrated nature of these product and services, of the financial markets in which the Company competes and of the Company's worldwide business activities. The Company believes that results by geographic region or client sector are not necessarily meaningful in understanding its business.

MARKETAXESS HOLDINGS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

For the years ended December 31, 2016, 2015 and 2014, the U.K. was the only individual foreign country in which the Company had a subsidiary that accounted for 10% or more of the total revenues or total long-lived assets. Revenues and long-lived assets are attributed to geographic area based on the location of the particular subsidiary. Long-lived assets are defined as furniture, equipment, leasehold improvements and capitalized software. Information regarding revenue for the three years ended December 31, 2016, 2015 and 2014 and long-lived assets as of December 31, 2016 and 2015 follows:

	Year Ended December 31,		
	2016	2015	2014
	(In thousands)		
Revenues			
United States	$314,343	$262,558	$223,741
United Kingdom	54,015	39,338	38,189
Other	1,561	1,202	844
Total	$369,919	$303,098	$262,774

	As of December 31,	
	2016	2015
	(In thousands)	
Long-lived assets, as defined		
United States	$23,370	$21,968
United Kingdom	7,713	8,910
Other	21	19
Total	$31,104	$30,897

14. Retirement and Deferred Compensation Plans

The Company, through its U.S. and U.K. subsidiaries, offers its employees the opportunity to invest in defined contribution plans. For the years ended December 31, 2016, 2015 and 2014, the Company contributed $1.9 million, $1.9 million and $1.8 million, respectively, to the plans.

In 2015, the Company adopted a non-qualified deferred cash incentive plan for certain officers and other employees. Under the plan, eligible employees may defer up to 100% of their annual cash incentive pay. The Company has elected to fund its deferred compensation obligations through a rabbi trust. The rabbi trust is subject to creditor claims in the event of insolvency but such assets are not available for general corporate purposes. Assets held in the rabbi trust are invested in mutual funds, as selected by the participants, which are designated as trading securities and carried at fair value. The initial deferrals occurred in January 2016 and as of December 31, 2016, the fair value of the mutual fund investments and deferred compensation obligation was $1.3 million. Changes in the fair value of securities held in the rabbi trust are recognized as trading gains and losses and included in other revenues and offsetting increases or decreases in the deferred compensation obligation will be recorded in employee compensation and benefits. For the year ended December 31, 2016, the trading gains and compensation expense were each $0.2 million.

15. Customer Concentration

During the years ended December 31, 2016, 2015 and 2014, no single client accounted for more than 10% of total revenue. One institutional investor client accounted for approximately 14.2%, 15.3% and 14.0% of trading volumes during the years ended December 31, 2016, 2015 and 2014, respectively. As of December 31, 2016, investment funds managed by this institutional investor client beneficially owned approximately 7.6% of the outstanding shares of the Company’s common stock, primarily through passive index and ETF funds.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Our management, including the Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our "disclosure controls and procedures," as that term is defined in Rule 13a-15(e) and Rule 15d-15(e) promulgated under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as of December 31, 2016. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that the disclosure controls and procedures are effective to ensure that information required to be disclosed by MarketAxess in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms, and to ensure that information is accumulated and communicated to our management, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

There were no changes in our internal control over financial reporting (as defined in Rule 13a-15(f) and Rule 15d-15(f) under the Exchange Act) during the quarter ended December 31, 2016 identified in connection with the evaluation thereof by our management, including the Chief Executive Officer and Chief Financial Officer, that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's annual report on internal control over financial reporting and the report of our independent registered public accounting firm appears in Part II, Item 8. "Financial Statements and Supplementary Data" of this Annual Report on Form 10-K.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this item is incorporated herein by reference to the sections entitled “Proposal 1 — Election of Directors,” “Corporate Governance and Board Matters,” “Executive Officers” and “Other Matters — Section 16(a) beneficial ownership reporting compliance” in the Company’s definitive Proxy Statement (the “Proxy Statement”) for the Annual Meeting of Stockholders to be held in the second quarter of 2017. The Company intends to file the Proxy Statement within 120 days after the end of its fiscal year (i.e., on or before April 30, 2017). The Company’s Code of Conduct applicable to directors and all employees, including senior financial officers, is available on the Company’s website at www.marketaxess.com. If the Company makes any amendments to its Code of Conduct that is required to be disclosed pursuant to the Exchange Act, the Company will make such disclosures on its website.

Item 11. Executive Compensation.

The information required by this item is incorporated herein by reference to the sections entitled “Compensation Discussion and Analysis,” “Report of the Compensation Committee of the Board of Directors,” “Executive Compensation” and “Corporate Governance and Board Matters – Directors’ compensation” in the Company’s Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this item with respect to the security ownership of certain beneficial owners and management is incorporated herein by reference to the section entitled “Security Ownership of Certain Beneficial Owners and Management” in the Company’s Proxy Statement.

Equity Compensation Plan Information

The following table provides certain information regarding common stock authorized for issuance under the Company’s 2012 Incentive Plan as of December 31, 2016:

	Number of Securities to be Issued upon Exercise of	Weighted-Average Exercise Price of Outstanding Options,	Number of Securities Remaining Available for

Plan Category	Outstanding Options, Warrants and Rights (a)	Warrants and Rights (b)	Future Issuance under Equity Compensation Plans (Excluding Securities Reflected in Column (a)) (c)
Equity compensation plan approved by stockholders	855,740	$ 36.80	360,035

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this item is incorporated herein by reference to the section entitled “Certain Relationships and Related Party Transactions” in the Company’s Proxy Statement.

Item 14. Principal Accounting Fees and Services.

The information required by this item is incorporated herein by reference to the section entitled “Proposal 2 – Ratification of Selection of Independent Registered Public Accounting Firm – Audit and other fees” in the Company’s Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

(a) Financial Statements and Schedules

The financial statements are set forth under Item 8 of this Annual Report on Form 10-K. Financial statement schedules have been omitted since they are either not required, not applicable, or the information is otherwise included.

(b) Exhibit Listing

Number	Description
3.1(a)	Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.2 to the registrant’s Registration Statement on Form S-1, as amended (Registration No. 333-112718))
3.1(b)	Form of Certificate of Designation of Series A Preferred Stock of MarketAxess Holdings Inc. (incorporated by reference to Exhibit 3.1 to the registrant’s Registration Statement on Form 8-A dated June 3, 2008)
3.2(a)	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.4 to the registrant’s Registration Statement on Form S-1, as amended (Registration No. 333-112718))
3.2(b)	Amendment No. 1 to the Amended and Restated Bylaws (incorporated by reference to Exhibit 3.1 to the registrant’s Current Report on Form 8-K dated January 25, 2013)
4.1	Specimen Common Stock certificate (incorporated by reference to Exhibit 4.1 to the registrant’s Registration Statement on Form S-1, as amended (Registration No. 333-112718))
4.2	See Exhibits 3.1 and 3.2 for provisions defining the rights of holders of common stock and non-voting common stock of the registrant
10.1	MarketAxess Holdings Inc. 2012 Incentive Plan (incorporated by reference to Appendix A to the registrant’s Proxy Statement for its Annual Meeting for Stockholders held on June 7, 2016, filed on April 25, 2016)#
10.2	MarketAxess Holdings Inc. 2004 Annual Performance Incentive Plan (incorporated by reference to Exhibit 10.11 to the registrant’s Registration Statement on Form S-1, as amended (Registration No. 333-112718)) #

10.3	MarketAxess Holdings Inc. 2016 Code Section 162(m) Executive Performance Incentive Plan (incorporated by reference to Appendix B to the registrant's Proxy Statement for its Annual Meeting for Stockholders held on June 7, 2016, filed on April 25, 2016)#
10.4(a)	Form of Restricted Stock Agreement for Richard M. McVey pursuant to the MarketAxess Holdings Inc. 2012 Incentive Plan (incorporated by reference to Exhibit 10.1 to the registrant's Current Report on Form 8-K dated January 23, 2009)#
10.4(b)	Form of Restricted Stock Agreement for Employees other than Richard M. McVey pursuant to the MarketAxess Holdings Inc. 2012 Incentive Plan (incorporated by reference to Exhibit 10.3 to the registrant's Current Report on Form 8-K dated January 15, 2008)#
10.5(a)	Form of Restricted Stock Unit Agreement for Richard M. McVey pursuant to the MarketAxess Holdings Inc. 2012 Incentive Plan (incorporated by reference to Exhibit 10.3 to the registrant's Current Report on Form 8-K dated January 19, 2011)#
10.5(b)	Form of Restricted Stock Unit Agreement pursuant to the MarketAxess Holdings Inc. 2012 Incentive Plan (incorporated by reference to Exhibit 10.4 to the registrant's Current Report on Form 8-K dated January 19, 2011)#
10.5(c)	Form of Restricted Stock Unit Agreement for executive officers pursuant to the MarketAxess Holdings Inc. 2012 Incentive Plan (incorporated by reference to Exhibit 10.2 to the registrant's Current Report on Form 8-K dated January 22, 2016)#
10.5(d)	Guidelines for Restricted Stock Units granted under the MarketAxess Holdings Inc. 2012 Incentive Plan (incorporated by reference to Exhibit 10.1 to the registrant's Current Report on Form 8-K dated January 19, 2011)#
10.6(a)	Form of Performance Share Award Agreement pursuant to the MarketAxess Holdings Inc. 2012 Incentive Plan (incorporated by reference to Exhibit 10.2 to the registrant's Current Report on Form 8-K dated January 15, 2008)#

Number	Description
10.6(b)	Form of Performance Share Award Agreement for executive officers pursuant to the MarketAxess Holdings Inc. 2012 Incentive Plan (incorporated by reference to Exhibit 10.1 to the registrant's Current Report on Form 8-K dated January 22, 2016)#
10.7(a)	Form of Incentive Stock Option Agreement for Richard McVey pursuant to the MarketAxess Holdings Inc. 2012 Incentive Plan (incorporated by reference to Exhibit 10.5 to the registrant's Current Report on Form 8-K dated January 15, 2008)#
10.7(b)	Form of Incentive Stock Option Agreement for Employees other than Richard M. McVey pursuant to the MarketAxess Holdings Inc. 2012 Incentive Plan (incorporated by reference to Exhibit 10.4 to the registrant's Current Report on Form 8-K dated January 15, 2008)#
10.7(c)	Form of Incentive Stock Option Agreement pursuant to the MarketAxess Holdings Inc. 2012 Incentive Plan (incorporated by reference to Exhibit 10.3 to the registrant's Current Report on Form 8-K dated January 22, 2016)#
10.7(d)	Form of Non-Qualified Stock Option Agreement pursuant to the MarketAxess Holdings Inc. 2012 Incentive Plan (incorporated by reference to Appendix C to the registrant's Proxy Statement for its Annual Meeting of Stockholders held on June 7, 2006, filed on May 1, 2006)#
10.8(a)	MarketAxess Severance Pay Plan, effective August 1, 2006 (incorporated by reference to Exhibit 10.28(a) to the registrant's Form 10-K for the year ended December 31, 2009 filed on March 3, 2009)#
10.8(b)	Amendment No. 1 to MarketAxess Severance Pay Plan, dated as of December 17, 2008 (incorporated by reference to Exhibit 10.28(b) to the registrant's Form 10-K for the year ended December 31, 2009 filed on March 3, 2009)#
10.9(a)	Incentive Stock Option Agreement, dated January 19, 2011, by and between MarketAxess Holdings Inc. and Richard M. McVey (incorporated by reference to Exhibit 10.6 to the registrant's Current Report on Form 8-K dated January 19, 2011)#
10.9(b)	Restricted Stock Unit Agreement, dated January 19, 2011, by and between MarketAxess Holdings Inc. and Richard M. McVey (incorporated by reference to Exhibit 10.8 to the registrant's Current Report on Form 8-K dated January 19, 2011)#
10.9(c)	Employment Letter Agreement, dated as of January 15, 2015, by and between MarketAxess Holdings Inc. and Richard M. McVey (incorporated by reference to Exhibit 10.1 to the registrant's Current Report on Form

8-K dated January 15, 2015)#

10.9(d) Incentive Stock Option Agreement, dated as of January 15, 2015, by and between MarketAxess Holdings Inc. and Richard M. McVey (incorporated by reference to Exhibit 10.2 to the registrant's Current Report on Form 8-K dated January 15, 2015)#

10.9(e) Performance Award Agreement, dated as of January 15, 2015, by and between MarketAxess Holdings Inc. and Richard M. McVey (incorporated by reference to Exhibit 10.3 to the registrant's Current Report on Form 8-K dated January 15, 2015)#

10.10(a) Restated Credit Agreement, dated as of October 30, 2015, among MarketAxess Holdings Inc., a Delaware corporation, the lenders party thereto and JPMorgan Chase Bank, N.A., as administrative agent (incorporated by reference to Exhibit 10.1 to the registrant's Current Report on Form 8-K dated November 3, 2015)

10.10(b) Amended and Restated Guarantee Agreement, dated as of October 30, 2015, by and among MarketAxess Technologies Inc., as initial guarantor, and JPMorgan Chase Bank, N.A., as administrative agent (incorporated by reference to Exhibit 10.2 to the registrant's Current Report on Form 8-K dated November 3, 2015)

10.10(c) Amended and Restated Pledge and Security Agreement, dated as of October 30, 2015, by and between MarketAxess Holdings Inc., a Delaware corporation, as borrower, MarketAxess Technologies Inc., as guarantor, and JPMorgan Chase Bank, N.A., as administrative agent (incorporated by reference to Exhibit 10.3 to the registrant's Current Report on Form 8-K dated November 3, 2015)

Number	Description
21.1*	Subsidiaries of the Registrant
23.1*	Consent of PricewaterhouseCoopers LLP
31.1*	Certification by Chief Executive Officer pursuant to Exchange Act Rule 13a-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2*	Certification by Chief Financial Officer pursuant to Exchange Act Rule 13a-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1*	Certification by Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2*	Certification by Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS**	XBRL Instance Document
101.SCH**	XBRL Taxonomy Extension Schema Document
101.CAL**	XBRL Taxonomy Extension Calculation Linkbase Document
101.LAB**	XBRL Taxonomy Extension Label Linkbase Document
101.PRE**	XBRL Taxonomy Extension Presentation Linkbase Document
101.DEF**	XBRL Taxonomy Extension Definition Linkbase Document

* Filed herewith.

** Attached as Exhibit 101 to this Annual Report on Form 10-K are the following materials, formatted in XBRL (eXtensible Business Reporting Language): (i) Consolidated Statements of Financial Condition as of December 31, 2016 and December 31, 2015; (ii) Consolidated Statements of Operations for the Years Ended December 31, 2016, 2015 and 2014; (iii) Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2016, 2015 and 2014; (iv) Consolidated Statement of Stockholders' Equity for the Years Ended December 31, 2016, 2015 and 2014; (v) Consolidated Statements of Cash Flows for the Years Ended December 31, 2016, 2015 and 2014; and (vi) Notes to the Consolidated Financial Statements.

Management contract or compensatory plan or arrangement.

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

MARKETAXESS HOLDINGS INC.

By: /s/ RICHARD M. MCVEY
Richard M. McVey
Chief Executive Officer

Date: February 21, 2017

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

Signature	Title(s)	Date
/s/ RICHARD M. MCVEY	Chief Executive Officer and Chairman of the Board of Directors (principal executive officer)	February 21, 2017
Richard M. McVey		
/s/ ANTONIO L. DELISE	Chief Financial Officer (principal financial and accounting officer)	February 21, 2017
Antonio L. DeLise		
/s/ STEVEN L. BEGLEITER	Director	February 21, 2017
Steven L. Begleiter		
/s/ STEPHEN P. CASPER	Director	February 21, 2017
Stephen P. Casper		
/s/ JANE CHWICK	Director	February 21, 2017
Jane Chwick		

/s/ WILLIAM CRUGER	Director	February 21, 2017
William Cruger		
/s/ DAVID G. GOMACH	Director	February 21, 2017
David G. Gomach		
/s/ CARLOS M. HERNANDEZ	Director	February 21, 2017
Carlos M. Hernandez		
/s/ RONALD M. HERSCH	Director	February 21, 2017
Ronald M. Hersch		
/s/ JOHN STEINHARDT	Director	February 21, 2017
John Steinhardt		
/s/ JAMES J. SULLIVAN	Director	February 21, 2017
James J. Sullivan		

92