Letter to Stockholders

Notice of Meeting and Proxy Statement for our
2019 Annual Meeting of Stockholders

2018 Annual Report

Dear Fellow Stockholders and Clients:

Few years in the nearly two-decade history of MarketAxess can rival 2018 in affirming the value we deliver to clients and the transformative impact of our electronic trading network. As volatility tested global fixed-income markets in the opening and closing months of 2018, clients turned to MarketAxess in record numbers for expanded liquidity opportunities, quality execution and significant cost savings.

As a result, MarketAxess reported its tenth consecutive year of record revenue, operating income and trading volume in 2018. Revenues increased 10.7%, to $435.6 million, operating income rose 6.5% to $212.6 million, and earnings per share grew 17.5%.

Driving our financial gains was a 17.5% increase in our total trading volume in 2018 to $1.7 trillion, with strong growth across all major product categories. This broad-based volume growth came as our estimated market share in investment grade bond trading grew to a record 18.1%, up from 16.9% in 2017. Substantial market share gains were also evident in high yield bonds, emerging market bonds and Eurobonds.

Our growth strategy advanced largely on the strength of three achievements in 2018: 1) accelerated adoption of Open Trading™, 2) substantial growth in our international businesses, and 3) broader and deeper engagement with clients.

Open Trading reinforced its position last year as the preferred all-to-all solution in global credit markets, with volume rising 62.6% to a record $376.5 billion. The volume gains extended across our investment grade, high yield, emerging market and Eurobond products as dealers and investor clients alike embraced Open Trading as an important source of liquidity. By the final quarter of 2018, approximately 790 firms were providing liquidity on Open Trading, up 15.5% from a year earlier.

The expansive, diverse liquidity pool created by Open Trading continues to generate significant cost savings for investors and dealers. On an annualized basis, market participants who accessed liquidity through Open Trading realized transaction cost savings totaling an estimated $163 million in 2018, an increase of 82% from 2017.

In our international business, the multi-year investment in markets beyond the United States continues to pay off. International client trading volume grew 20%, to $456 billion, in 2018 and the number of active client firms grew 32% to 744. The five-year compound annual growth rate in international client trading volumes was 45%.

Our emerging market product continued to be a significant contributor to our international progress in 2018. Total emerging market volume was up 23% last year, including a 35% increase in trading volume in the 26 EM local currency markets available on our system. Eurobond volumes were up 31% for the year, a gain we believe was driven by significant growth in market share.

Supporting 2018's growth is the high level of engagement that MarketAxess has achieved with the world's largest asset managers and broker-dealers, as well as a wide range of regional firms, specialist firms and market-makers. At the end of 2018, more than 1,500 firms traded on MarketAxess, with 850 of those client firms active in three or more products, one of several signs that we are playing an increasingly integral role in our clients' business.

The strength of our competitive position comes through in independent research. Greenwich Associates' annual e-trading survey of U.S. institutional investors, released in the fourth quarter of 2018, confirmed that MarketAxess holds an estimated 85% electronic market share in U.S. high grade and high yield bond trading.

We move into 2019 with a focus on substantial opportunities to capitalize on our strengths.

Growth through Open Trading. As adoption of electronic trading accelerates across global markets and a range of fixed-income asset categories, Open Trading has enormous additional potential for growth. In the Greenwich Associates survey, 47% of respondents described "all-to-all" trading as the most likely source of new liquidity in the next two years, and 66% included it in their top three most likely sources of new liquidity. Meanwhile, Open Trading has come to play a vital role in the trading ecosystem that supports the $630 billion-plus market in fixed-income ETFs.

Growth through expansion and product innovation. As e-trading captures an increasing share of global fixed-income markets, MarketAxess is well positioned to empower and support our clients' adoption of automated execution that draws on Artificial Intelligence (AI) and machine-learning technology.

- Growing automation on the MarketAxess trading platform creates a highly competitive environment, including small, micro-lot orders. Both dealer and investor clients are rapidly embracing new automation tools. The use of dealer algorithms has grown tremendously, with algo generated price responses up approximately 150% in 2018. We are also seeing growing use of our auto-execution tools for investors that lower the cost of trading on low market impact transactions. We believe that cost-benefits will continue to drive investor and dealer clients to higher levels of automation in credit trading and we will continue our investment in innovation in this area.
- Data will of course play a critical role in this next phase of the electronification of global fixed-income markets. Our plans include stepped up investment in data products and services that will help clients make the most of our expanding electronic network.

  One example is our CP+™ product, a proprietary algorithmic pricing engine for corporate and emerging market bonds that leverages a range of proprietary and industry data sources, with updates up to every 15 seconds. It was created to help market participants be more confident as price makers, and to support best execution policies. In 2018, the product won two prominent industry awards, *Risk.net's* Market Technology Award for Electronic Trading Support Product of the Year and *Waters Technology's* Best AI Tech Initiative of the Year.
- Our expansion agenda outside of the United States remains a key area of focus and investment. This year, we will launch a technology-driven effort to increase our trading relationships with European private banks.

With the addition of Chris Concannon as President and Chief Operating Officer in January, our leadership team enters 2019 more equipped than ever to seize on these growth opportunities and extend our record of building shareholder value. Chris is widely respected for his record of successful leadership in the electronic trading and exchange fields. His expertise has already proved enormously valuable as we work on the next stage in the transformation in global fixed-income markets.

Our achievements in 2018 – as in every year – are the result of the dedication and talent of our employees. I want to close by thanking them for their commitment to our clients and to our shareholders. Together, we look forward to continued success in 2019.

Sincerely,

Richard M. McVey
Chairman of the Board and Chief Executive Officer
April 24, 2019

MarketAxess Holdings Inc.
55 Hudson Yards, 15th Floor
New York, New York 10001

April 24, 2019

To the Stockholders of MarketAxess Holdings Inc.:

You are invited to attend the 2019 Annual Meeting of Stockholders (the "*Annual Meeting*") of MarketAxess Holdings Inc. (the "*Company*") scheduled for Wednesday, June 5, 2019 at 10:00 a.m., Eastern Daylight Time, on the 15th floor of our principal executive offices located at 55 Hudson Yards, New York, New York 10001. The Company's Board of Directors and management look forward to seeing you.

Details of the business to be conducted at the Annual Meeting are given in the attached Notice of Annual Meeting and Proxy Statement, which you are urged to read carefully.

We are pleased to take advantage of the Securities and Exchange Commission rules that allow issuers to furnish proxy materials to their stockholders on the Internet. We believe these rules allow us to provide our stockholders with the information they need, while lowering the costs of delivery and reducing the environmental impact of our Annual Meeting. On April 24, 2019, we expect to mail to our stockholders a Notice containing instructions on how to access our Proxy Statement and Annual Report on Form 10-K for the year ended December 31, 2018 and vote online. The Notice contains instructions on how you can receive a paper copy of the Proxy Statement, proxy card and Annual Report if you only received a Notice by mail.

Your vote is important to us. Whether or not you plan to attend the Annual Meeting in person, your shares should be represented and voted. After reading the enclosed Proxy Statement, please cast your vote via the Internet or telephone or complete, sign, date and return the proxy card in the pre-addressed envelope that we have included for your convenience. If you hold your shares in a stock brokerage account, please check your proxy card or contact your broker or nominee to determine whether you will be able to vote via the Internet or by telephone.

On behalf of the Board of Directors, thank you for your continued support.

Sincerely,

Richard M. McVey
Chairman and Chief Executive Officer

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MarketAxess Holdings Inc.
55 Hudson Yards, 15th Floor
New York, New York 10001

NOTICE OF
2019 ANNUAL MEETING OF STOCKHOLDERS

To the Stockholders of MarketAxess Holdings Inc.:

NOTICE IS HEREBY GIVEN that the 2019 Annual Meeting of Stockholders (the "*Annual Meeting*") of MarketAxess Holdings Inc., a Delaware corporation (the "*Company*"), will be held on Wednesday, June 5, 2019, at 10:00 a.m., Eastern Daylight Time, on the 15th floor of our principal executive offices located at 55 Hudson Yards, New York, New York 10001.

At the Annual Meeting we will:

1. vote to elect the 10 nominees named in the attached Proxy Statement as members of the Company's Board of Directors for terms expiring at the 2020 Annual Meeting of Stockholders;

2. vote to ratify the appointment of PricewaterhouseCoopers LLP as the Company's independent registered public accounting firm for the year ending December 31, 2019;

3. hold an advisory vote to approve the compensation of the Company's named executive officers as disclosed in the attached Proxy Statement; and

4. transact such other business as may properly come before the Annual Meeting or any adjournment or postponement thereof.

These items are more fully described in the Company's Proxy Statement accompanying this Notice.

The record date for the determination of the stockholders entitled to notice of, and to vote at, the Annual Meeting, or any adjournment or postponement thereof, was the close of business on April 8, 2019. You have the right to receive this Notice and vote at the Annual Meeting if you were a stockholder of record at the close of business on April 8, 2019. Please remember that your shares cannot be voted unless you cast your vote by one of the following methods: (1) vote via the Internet or call the toll-free number as indicated on the proxy card; (2) sign and return a paper proxy card; or (3) vote in person at the Annual Meeting.

By Order of the Board of Directors,

Scott Pintoff
General Counsel and Corporate Secretary

New York, New York
April 24, 2019

YOUR VOTE IS VERY IMPORTANT, REGARDLESS OF THE NUMBER OF SHARES YOU OWN. PLEASE READ THE ATTACHED PROXY STATEMENT CAREFULLY AND COMPLETE AND SUBMIT YOUR PROXY CARD VIA THE INTERNET OR SIGN AND DATE YOUR PAPER PROXY CARD AS PROMPTLY AS POSSIBLE AND RETURN IT IN THE ENCLOSED ENVELOPE. ALTERNATIVELY, YOU MAY BE ABLE TO SUBMIT YOUR PROXY BY TOUCH-TONE PHONE AS INDICATED ON THE PROXY CARD.

TABLE OF CONTENTS

MarketAxess Holdings Inc.
55 Hudson Yards, 15th Floor
New York, New York 10001

PROXY STATEMENT for the 2019 ANNUAL MEETING OF STOCKHOLDERS To Be Held On June 5, 2019

GENERAL INFORMATION

This Proxy Statement is furnished in connection with a solicitation of proxies by the Board of Directors (the "*Board*" or "*Board of Directors*") of MarketAxess Holdings Inc., a Delaware corporation ("*MarketAxess*", the "*Company*", "*we*" or "*our*"), to be used at our 2019 Annual Meeting of Stockholders (the "*Annual Meeting*") scheduled for Wednesday, June 5, 2019, at 10:00 a.m., Eastern Daylight Time, on the 15th floor of our principal executive offices located at 55 Hudson Yards, New York, New York 10001.

This Proxy Statement, the accompanying Notice of Annual Meeting of Stockholders and proxy card are first being mailed to stockholders on or about April 24, 2019. Whenever we refer in this Proxy Statement to the "Annual Meeting," we are also referring to any meeting that results from any postponement or adjournment of the June 5, 2019 meeting.

Holders of record of our Common Stock, par value $0.003 per share ("*Common Stock*"), at the close of business on April 8, 2019 (the "*Record Date*") are entitled to notice of, and to vote at, the Annual Meeting. On that date, there were 37,251,666 shares entitled to be voted.

We encourage you to vote your shares, either by voting in person at the Annual Meeting or by granting a proxy (i.e., authorizing someone to vote your shares). If you vote via the Internet or telephone or execute the attached paper proxy card, the individuals designated will vote your shares according to your instructions. If any matter other than the Proposals listed in the Notice of Annual Meeting of Stockholders is presented at the Annual Meeting, the designated individuals will, to the extent permissible, vote all proxies in the manner that the Board may recommend or, in the absence of such recommendation, in the manner they perceive to be in the best interests of the Company.

If you indicate when voting via the Internet that you wish to vote as recommended by the Board or if you execute the enclosed paper proxy card but do not give instructions, your proxy will be voted as follows: (1) FOR the election of the nominees for director named herein, (2) FOR ratification of the appointment of PricewaterhouseCoopers LLP as our independent registered public accounting firm for the year ending December 31, 2019, (3) FOR the approval, on an advisory basis, of the compensation of the Company's named executive officers as disclosed in this Proxy Statement, and (4) in accordance with the best judgment of the persons appointed as proxies with respect to any other matters that properly come before the Annual Meeting. If your shares are held in a stock brokerage account or by a bank or other nominee, see the information under the heading *Voting — Broker authority to vote*.

Information on how you may vote at the Annual Meeting (such as granting a proxy that directs how your shares should be voted, or attending the Annual Meeting in person), as well as how you can revoke a proxy, is contained in this Proxy Statement under the headings *Solicitation of Proxies* and *Voting*.

We are furnishing proxy materials to our stockholders primarily via the Internet. On April 24, 2019, we expect to mail beneficial owners of our Common Stock a Notice of Internet Availability containing instructions on how to access our proxy materials, including this Proxy Statement and our Annual Report. The Notice of Internet Availability also instructs you on how to vote via the Internet. Other stockholders, in accordance with their prior requests, received e-mail notification of how to access our proxy materials and vote via the Internet, or have been mailed paper copies of our proxy materials and a proxy card or voting form. The proxy card includes instructions on how to vote via the telephone. All beneficial owners will have the ability to access the proxy materials, including this Proxy Statement and our Annual Report, on the website referred to in the Notice of Internet Availability.

Internet distribution of our proxy materials is designed to provide our stockholders with the information they need, while lowering costs of delivery and reducing the environmental impact of our Annual Meeting. However, if you would prefer to receive paper copies of proxy materials, please follow the instructions included in the Notice of Internet Availability. If you have previously elected to receive our proxy materials electronically, you will continue to receive these materials via e-mail unless you elect otherwise.

Important Notice Regarding the Availability of Proxy Materials
for the Stockholder Meeting to be held on June 5, 2019

Our Proxy Statement and 2018 Annual Report to Stockholders are available at
https://materials.proxyvote.com/57060D

SOLICITATION OF PROXIES

General

The attached proxy card allows you to instruct the designated individuals how to vote your shares. You may vote in favor of, against, or abstain from voting on any proposal. In addition, with respect to Proposal 1 (the election of directors), you may, if you desire, indicate on the proxy card that you are not authorizing the designated individuals to vote your shares for one or more of the nominees.

Solicitation

We will bear the entire cost of solicitation, including the preparation, assembly, printing and mailing of a Notice of Internet Availability of Proxy Materials, this Proxy Statement, the proxy card and any additional soliciting materials furnished to stockholders. Copies of solicitation materials will be furnished to brokerage houses, fiduciaries and custodians holding shares in their names that are beneficially owned by others so that they may forward the solicitation materials to such beneficial owners. In addition, we may reimburse such persons for their costs of forwarding the solicitation materials to such beneficial owners. The original solicitation of proxies by mail may be supplemented by solicitation by telephone or other means by our directors, officers, employees or agents. No additional compensation will be paid to these individuals for any such services. Except as described above, we do not presently intend to solicit proxies other than by mail.

VOTING

Stockholders entitled to vote and shares outstanding

Each stockholder is entitled to one vote for each share of Common Stock held on each matter submitted to a vote at the Annual Meeting. As of the Record Date, 37,251,666 shares of Common Stock were outstanding and entitled to be voted at the Annual Meeting.

How to vote

Submitting a proxy via mail, the Internet or telephone

You may vote by calling the toll-free telephone number listed on the proxy card or visiting the website address listed on the Notice or the proxy card. If you choose to submit your proxy with voting instructions by telephone or through the Internet, you will be required to provide your assigned control number noted on the Notice before your proxy will be accepted. In addition to the instructions that appear on the Notice, step-by-step instructions will be provided by recorded telephone message or at the designated website on the Internet. Votes submitted by telephone or via the Internet must be received by 11:59 p.m., EDT, on June 4, 2019 in order for them to be counted at the Annual Meeting.

If you are a stockholder of record, or otherwise received a printed copy of the proxy materials, in addition to the methods described above, you may also submit your proxy with voting instructions by mail by following the instructions set forth on the proxy card included with the proxy materials. Specifically, if you are a stockholder of record on the Record Date, you may vote by mailing your proxy card, with voting instructions, to the address listed on your proxy card.

Voting your shares in person at the Annual Meeting

For Shares Directly Registered in the Name of the Stockholder: You may vote in person at the Annual Meeting; however, we encourage you to vote by proxy card or the Internet even if you plan to attend the meeting. If you plan to attend the Annual Meeting, you will need to bring proof of your ownership of our Common Stock as of the close of business on April 8, 2019, the Record Date.

For Shares Registered in the Name of a Brokerage Firm or Bank: You may vote in person at the Annual Meeting; however, you will need to bring an account statement or other acceptable evidence of ownership of Common Stock as of the close of business on April 8, 2019. Alternatively, in order to vote, you may contact the person in whose name your shares are registered and obtain a proxy from that person and bring it to the Annual Meeting.

Revoking a proxy

A proxy that was submitted via the Internet or by telephone may be revoked at any time before it is exercised by (1) executing a later-dated proxy card via the Internet or by telephone or (2) attending the Annual Meeting and voting in person by ballot.

A proxy that was submitted by mail may be revoked at any time before it is exercised by (1) giving written notice revoking the proxy to our General Counsel and Corporate Secretary at MarketAxess Holdings Inc., 55 Hudson Yards, 15th Floor, New York, NY 10001, (2) subsequently sending another proxy bearing a later date or (3) attending the Annual Meeting and voting in person by ballot.

If your shares are registered in the name of a brokerage firm or bank, you must contact your brokerage firm or bank to change your vote or obtain a proxy to vote your shares if you wish to cast your vote in person at the meeting.

Your attendance at the Annual Meeting in and of itself will not automatically revoke a proxy that was submitted via the Internet, by telephone or by mail.

Broker authority to vote

If your shares are held in a stock brokerage account or by a bank or other nominee, you are considered to be the beneficial owner of shares held in street name. These proxy materials are being forwarded to you by your broker or nominee, who is considered to be the holder of record with respect to your shares. As the beneficial owner, you have the right to direct your broker or nominee how to vote by filling out the voting instruction form provided by your broker or nominee. Telephone and Internet voting options may also be available to beneficial owners. As a beneficial owner, you are also invited to attend the Annual Meeting, but you must obtain an account statement or other acceptable evidence of ownership of our Common Stock or a proxy from the holder of record of your shares in order to vote in person at the Annual Meeting.

If your shares are held in street name, your broker or nominee will ask you how you want your shares to be voted. If you provide voting instructions, your shares must be voted as you direct. If you do not furnish voting instructions, one of two things can happen, depending upon whether a proposal is "routine." Under the rules that govern brokers that have record ownership of shares beneficially owned by their clients, brokers have discretion to cast votes only on routine matters, such as the ratification of the appointment of independent registered public accounting firms, without voting instructions from their clients. Brokers are not permitted, however, to cast votes on "non-routine" matters without such voting instructions, such as the election of directors. A "broker non-vote" occurs when a beneficial owner has not provided voting instructions and the broker holding shares for the beneficial owner does not vote on a particular proposal because the broker does not have discretionary voting power for that proposal.

Quorum

A quorum is required for the conduct of business at the meeting. The presence at the meeting, in person or by proxy, of the holders of shares having a majority of the voting power represented by all outstanding shares entitled to vote on the Record Date will constitute a quorum, permitting us to conduct the business of the meeting. Proxies received but marked as abstentions, if any, and broker non-votes (as described above) will be included in the calculation of the number of shares considered to be present at the meeting for quorum purposes. If we do not have a quorum, we will be forced to reconvene the Annual Meeting at a later date.

Votes necessary to approve each proposal

Election of Directors. Our Bylaws include a majority voting standard for the election of directors in uncontested elections, which are generally defined as elections in which the number of nominees does not exceed the number of directors to be elected at the meeting. In the election of directors (Proposal 1), you may either vote "FOR," "AGAINST" or "ABSTAIN" as to each nominee. Cumulative voting is not permitted. Under the majority voting standard, in uncontested elections of directors, such as this election, each director must be elected by the affirmative vote of a majority of the votes cast by the shares present in person or represented by proxy and entitled to vote. A majority of the votes cast means that the number of votes cast "FOR" a candidate for director exceeds the number of votes cast "AGAINST" that candidate for director. Brokers do not have discretionary authority to vote for directors. Abstentions and broker non-votes will not count as a vote cast "FOR" or "AGAINST" a nominee's election and thus will have no effect in determining whether a director nominee has received a majority of the votes cast.

Other Items. For the ratification of our independent registered public accounting firm (Proposal 2) and the adoption of a resolution approving, on a non-binding, advisory basis, the compensation of the Company's named executive officers (Proposal 3), the proposals will be decided by the affirmative vote of the holders of a majority of the shares present in person or represented by proxy. Abstentions will be counted as shares present and entitled to vote on these proposals and will have the same effect as negative votes. Broker non-votes will not be counted as shares present and entitled to vote.

Certain stockholder-related matters

We do not know of any stockholder proposals that may be properly presented at the Annual Meeting. For information regarding inclusion of stockholder proposals in our 2020 Annual Meeting of Stockholders, see the information in this Proxy Statement under the section heading *Other Matters — Stockholder proposals for 2020 Annual Meeting.*

AVAILABILITY OF CERTAIN DOCUMENTS

Householding of Annual Meeting materials

The Company and some banks, brokers and other nominee record holders may participate in the practice of "householding" proxy statements and their accompanying documents. This means that only one copy of our Proxy Statement is sent to multiple stockholders in your household. We will promptly deliver a separate copy of these documents to you upon written or oral request to our Investor Relations Department at MarketAxess Holdings Inc., 55 Hudson Yards, 15th Floor, New York, NY 10001 or 212-813-6000. If you want to receive separate copies of our proxy statements in the future, or if you are receiving multiple copies and would like to receive only one copy per household, you should contact your bank, broker or other nominee record holder, or you may contact us at the above address and phone number.

Additional information

We are required to file annual, quarterly and current reports, proxy statements and other reports with the U.S. Securities and Exchange Commission ("*SEC*"). Copies of these filings are available through our Internet website at *www.marketaxess.com* or the SEC's website at *www.sec.gov*. We will furnish copies of our SEC filings (without exhibits), including our Annual Report on Form 10-K for the year ended December 31, 2018, without charge to any stockholder upon written or oral request to our Investor Relations Department at MarketAxess Holdings Inc., 55 Hudson Yards, 15th Floor, New York, NY 10001 or 212-813-6000.

PROPOSAL 1 — ELECTION OF DIRECTORS

The first proposal to be voted on at the Annual Meeting is the election of directors. Our Board currently consists of 13 directors, 11 of whom are not our employees. Each of the nominees for director was elected by the Company's stockholders on June 7, 2018, except for Christopher R. Concannon and Nancy Altobello, who were appointed to the Board as of January 22, 2019 and April 16, 2019, respectively. The directors are nominated for a term that begins at the Annual Meeting and ends at the 2020 Annual Meeting of Stockholders. Each director will hold office until such director's successor has been elected and qualified, or until such director's earlier resignation or removal.

David G. Gomach, who has been a director since February 2005, Carlos M. Hernandez, who has been a director since February 2006 and James J. Sullivan, who has been a director since March 2012 will not stand for reelection. Messrs. Gomach, Hernandez and Sullivan's service as directors on the Board will cease as of the date of the Annual Meeting. Following the Annual Meeting, and assuming the election of each director nominee, our Board will consist of 10 directors, 8 of whom are not our employees. The Board will continue to evaluate its composition as part of its focus on self-assessment and board refreshment.

Your vote

If you sign the enclosed proxy card and return it to the Company, your proxy will be voted **FOR** all directors, for terms expiring at the 2020 Annual Meeting of Stockholders, unless you specifically indicate on the proxy card that you are casting a vote against one or more of the nominees or abstaining from such vote.

A majority of the votes cast by stockholders entitled to vote at the Annual Meeting is required for the election of each director. Accordingly, the directorships to be filled at the Annual Meeting will be filled by the nominees receiving a majority of votes for their election. In the election of directors, stockholders will be given the choice to cast votes for or against the election of directors or to abstain from such vote. The number of shares voted for a director must exceed the number of votes cast against that director. Abstentions and broker non-votes will be excluded entirely from the vote and will have no effect on the outcome of the vote.

Board recommendation

THE BOARD UNANIMOUSLY RECOMMENDS THAT YOU VOTE "FOR" THE ELECTION OF EACH OF THE FOLLOWING NOMINEES:

Richard M. McVey
Nancy Altobello
Steven L. Begleiter
Stephen P. Casper
Jane Chwick
Christopher R. Concannon
William F. Cruger
Richard G. Ketchum
Emily H. Portney
John Steinhardt

Each of these nominees is currently serving as a director on our Board, and each nominee has agreed to continue to serve on the Board if he or she is elected at the Annual Meeting. If any nominee is unable (or for good cause declines) to serve as a director at any time before the Annual Meeting, proxies may be voted for the election of a qualified substitute designated by the current Board, or else the size of the Board will be reduced accordingly. Biographical information about each of the nominees is included below under *Director information*.

Qualifications for director nominees

The minimum qualifications for Board consideration are:

- substantial experience working as an executive officer for, or serving on the board of, a public company;
- significant accomplishment in another field of endeavor related to the strategic running of our business; or
- an ability to make a meaningful contribution to the oversight and governance of a company having a scope and size similar to our Company.

A director must have an exemplary reputation and record for honesty in his or her personal dealings and business or professional activity. All directors must demonstrate strong leadership skills and should possess a basic understanding of financial matters; have an ability to review and understand the Company's financial and other reports; and be able to discuss such matters intelligently and effectively. He or she also needs to exhibit qualities of independence in thought and action. A candidate should be committed first and foremost to the interests of the stockholders of the Company. Persons who represent a particular special interest, ideology, narrow perspective or point of view would not, therefore, generally be considered good candidates for election to our Board. The key experience, qualifications and skills each of our directors brings to the Board that are important in light of our business are included in their individual biographies below.

Our Board does not have a formal written policy with regard to the consideration of diversity in identifying director nominees. Our Corporate Governance Guidelines, however, require the Board's Nominating and Corporate Governance Committee to review the qualifications of the directors and the composition of the Board as a whole. This assessment includes not only the independence of the directors, but consideration of required minimum qualifications, skills, expertise and experience in the context of the needs of the Board and its ability to oversee the Company's business.

Director information

At the recommendation of the Nominating and Corporate Governance Committee, the Board has nominated the persons named below to serve as directors of the Company for a term beginning at the Annual Meeting and ending at the 2019 Annual Meeting of Stockholders.

Richard M. McVey
Director since April 2000

Richard M. McVey (59) has been our Chief Executive Officer and Chairman of our Board of Directors since our inception. As an employee of J.P. Morgan & Co., one of our founding broker-dealers, Mr. McVey was instrumental in the founding of MarketAxess in April 2000. Prior to founding MarketAxess, Mr. McVey was Managing Director and Head of North America Fixed-Income Sales at J.P. Morgan, where he managed the institutional distribution of fixed-income securities to investors. Mr. McVey led MarketAxess through the Company's IPO in 2004, and since that time, MarketAxess has been one of the fastest growing financial technology companies in the U.S. public markets, with industry leading total shareholder returns. Mr. McVey was named the Ernst & Young National Entrepreneur of the Year for financial services in 2012, and he has been named to the Institutional Investor Tech 40 list 15 times. Mr. McVey is a member of the SEC's Fixed Income Market Structure Advisory Committee, for which he chairs the Technology and Electronic Trading Sub-Committee. Mr. McVey serves on the Board of Directors of Miami (Ohio) University Foundation, as well as the Board of Trustees of Colby College. He previously served on the board of directors of Blue Mountain Credit Alternatives L.P., an asset management fund focused on the credit markets and equity derivatives markets. Mr. McVey received a B.A. in finance from Miami (Ohio) University and an M.B.A. from Indiana University.

Mr. McVey's role as one of our founders and his service as our Chief Executive Officer for over 19 years give him deep knowledge and understanding of all aspects of the business and operations of MarketAxess. Mr. McVey's extensive experience in the financial services industry, including significant leadership roles at J.P. Morgan, has provided the Company with comprehensive knowledge of the financial markets that we serve and the institutions and dealers that are our clients.

Nancy Altobello
Director since April 2019

Nancy Altobello (61) was most recently Global Vice Chair, Talent of Ernst & Young ("EY"), a professional services firm, where she was responsible for EY's talent and people strategy worldwide from July 2014 until her retirement in June 2018. Previously, Ms. Altobello held a number of senior positions at EY, including Americas Vice Chair, Talent from 2008 to 2014, Managing Partner, Northeast Region Audit and Advisory Practices from 2003 to 2008 and Managing Partner, North American Audit Practice from 1999 to 2003. Throughout this time, Ms. Altobello also served as an audit partner for a number of leading global organizations. She currently serves as a board member of MTS Systems Corporation and a trustee of the Fidelity Charitable board of trustees. Ms. Altobello received a B.S. in accounting from Fairfield University.

Ms. Altobello was selected to serve on the Board due to her financial, audit and Sarbanes Oxley compliance expertise, her knowledge of talent and people strategy, and her global business experience.

Steven L. Begleiter
Director since April 2012

Steven L. Begleiter (57) has been employed with Flexpoint Ford, LLC, a private equity group focused on investments in financial services and healthcare, since October 2008, where he currently serves as Managing Director. Prior to joining Flexpoint Ford, Mr. Begleiter spent 24 years at Bear Stearns & Co., serving first as an investment banker in the Financial Institutions Group and then as Senior Managing Director and member of its Management and Compensation Committee from 2002 to September 2008. Mr. Begleiter also served as head of Bear Stearns' Corporate Strategy Group. Mr. Begleiter currently serves on the board of directors of WisdomTree Investments, Inc., Great Ajax Corp. and on the board of directors of certain portfolio companies of Flexpoint Ford, LLC. Mr. Begleiter received a B.A. with Honors in economics from Haverford College.

Mr. Begleiter brings many years of leadership experience in the financial services and private equity industries to the Board. Mr. Begleiter also has extensive industry knowledge and expertise relating to mergers and acquisitions and capital formation.

Stephen P. Casper
Director since April 2004

Stephen P. Casper (69) is retired. Most recently, Mr. Casper was the President of TRG Management L.P., the investment manager of the TRG Global Opportunity Master Fund, Ltd., from April 2010 to August 2012. From September 2008 to April 2010, Mr. Casper was a partner of Vastardis Capital Services, which provides fund administration and securities processing outsourcing services to hedge funds, funds of funds and private equity funds and their investment management sponsors. Prior to this, Mr. Casper was Chairman and Chief Executive Officer of Charter Atlantic Corporation, the holding company of Fischer Francis Trees & Watts, Inc. ("FFTW"), a specialist manager of U.S., global and international fixed-income portfolios for institutional clients, and Malbec Partners, a manager of single-strategy hedge funds. From April 2004 to January 2008, Mr. Casper was the President and CEO of FFTW. Mr. Casper joined FFTW as Chief Financial Officer in 1990 and was appointed Chief Operating Officer in May 2001. From 1984 until 1990, Mr. Casper was Treasurer of the Rockefeller Family Office. Mr. Casper has been a member of the Board of Directors of multiple fixed income hedge funds managed by KLS Diversified Asset Management since July 2012. Mr. Casper is Vice-Chairman of the Board of Directors of GMO LLC, a global investment management firm providing clients with asset management solutions and services, since May 2014. Mr. Casper is a member of the Investment Committee of the Brooklyn Museum. Mr. Casper is a Certified Public Accountant and received a B.B.A. in accounting from Baruch College, from which he graduated magna cum laude, Beta Gamma Sigma, and an M.S. in finance and accounting from The Wharton School at the University of Pennsylvania.

Mr. Casper's experience in the fixed-income markets and financial services industry and his experience in financial reporting and accounting roles bring extensive public accounting, financial reporting, risk management and leadership skills to the Board.

Jane Chwick
Director since October 2013

Jane Chwick (56) was most recently the Co-Founder and Co-CEO of Trewtec, Inc., a technology advisory firm designed to help board members and CEOs evaluate the technology function in their companies, from September 2014 until the firm ceased operations in August 2017. Prior to this role, she was a Partner and Co-Chief Operating Officer of the Technology Division of Goldman Sachs Group, Inc. where she was responsible for financial and business planning, technical strategy and ongoing management of an 8,000-person organization until her retirement in April 2013. During her 30-year career at Goldman Sachs, Ms. Chwick held a number of senior positions, including Global Head of Technology of the Securities Division and Global Head of Derivatives Technology. Ms. Chwick served on many governance committees at Goldman Sachs, including the firm's Finance Committee, the firm-wide New Activity Committee and the Technology Risk Committee, and served as co-chair of the Technology Division Operating Committee. During her tenure, she drove the design, build and integration of technology across all of Goldman Sachs' derivatives businesses, including fixed income, commodities, currencies and equities. Ms. Chwick is a member of the Board of Directors of Voya Financial, Inc., People's United Financial, Inc., Essent Group and Thoughtworks, and also serves on the Executive Board of Trustees of the Queens College Foundation. Ms. Chwick received a B.A. in mathematics from Queens College and an M.B.A. from St. John's University with a concentration in MIS and quantitative analysis.

Ms. Chwick's extensive technology leadership experience gained in a global financial services firm, combined with her depth of market knowledge and industry insight, bring valuable skills and strategic perspective to the Board.

Christopher R. Concannon Director since January 2019	*Christopher R. Concannon* (51) has been our President and Chief Operating Officer since January 2019. Mr. Concannon previously served as President and Chief Operating Officer of Cboe Global Markets, Inc., one of the world's largest exchange holding companies, a position he was appointed to upon Cboe's acquisition of Bats Global Markets, Inc. in 2017. At Cboe, he was responsible for the company's transaction businesses, including global derivatives, U.S. and European equities, and global foreign exchange – as well as overseeing Cboe's technology, operations, risk, and marketing divisions. Until Bats' acquisition by Cboe, Mr. Concannon served as President of Bats from December 2014, director from February 2015, and Chief Executive Officer from March 2015. Mr. Concannon has more than 20 years of experience as an executive at Nasdaq, Virtu Financial, Instinet and as an attorney at Morgan Lewis and Bockius and the Securities and Exchange Commission. Mr. Concannon has received a B.A. from Catholic University, an M.B.A. from St. John's University, and a J.D. from Catholic University's Columbus School of Law. Mr. Concannon brings to the Board extensive experience leading companies in the global exchange industry. Mr. Concannon also has deep and critical knowledge regarding automated trading, the delivery of innovative technology solutions, market structure and clearing operations.
William F. Cruger Director since November 2013	*William F. Cruger* (60) was most recently Vice Chairman of Investment Banking at JPMorgan Chase & Co. where he was responsible for key client relationships on a global basis until his retirement in August 2013. Previously, Mr. Cruger held a number of senior positions at J.P. Morgan, including Managing Director in the Financial Institutions group from 1996 to 2011. During this time, he oversaw the rationalization of the firm's private equity investments in trading platforms and related ventures at LabMorgan from 2000 to 2001. Prior to this, Mr. Cruger ran the firm's investment banking practices in Japan from 1991 to 1996, Latin America from 1989 to 1991 and Emerging Asia from 1984 to 1988. He currently serves as a board member of People's United Financial, Inc. and Virtu Financial, Inc., and has previously served on the boards of Archipelago, Credittrade and Capital IQ. Mr. Cruger received a B.A. from Clark University and an M.B.A. from Columbia University. Mr. Cruger's diverse experience in investment banking at a global financial services firm, his extensive knowledge of financial institutions and financial markets, his leadership roles as a director of other financial services firms, and his international business experience bring critical skills and strategic insight to the Board.
Richard G. Ketchum Director since April 2017	*Richard G. Ketchum* (68) is retired. Mr. Ketchum was Chief Executive Officer of the Financial Industry Regulatory Authority, Inc. ("FINRA") from March 2009 to July 2016 and served as Chairman of FINRA's Board of Governors from March 2009 to August 2016. Prior to joining FINRA, Mr. Ketchum held a range of senior regulatory positions in the financial industry over twenty years, including as Chief Executive Officer of NYSE Regulation, Inc., President of the NASDAQ OMX Group Inc., a predecessor of Nasdaq, Inc., President and Chief Operating Officer of the National Association of Securities Dealers Inc., a predecessor of FINRA, and Director of the Division of Market Regulation at the SEC. Mr. Ketchum was also the General Counsel of the Corporate and Investment Bank of Citigroup Inc. Mr. Ketchum currently serves as Non-Executive Chairman of the board of directors of Och-Ziff Capital Management. He is also on the board of directors of GSS, a subsidiary of BNY Mellon. Mr. Ketchum received a B.A. from Tufts University and a J.D. from New York University School of Law. Mr. Ketchum brings to the Board substantial regulatory experience in the securities industry and deep knowledge of the legal and compliance issues facing companies in the financial services industry.

Emily H. Portney
Director since October 2017

Emily H Portney (47) has been Head of Asset Servicing, Americas for BNY Mellon since October 2018. Prior to this role, Ms. Portney was Chief Financial Officer of Barclays International from September 2016 to September 2018. From April 2016 to August 2016, she served as North America Chief Financial Officer for Visa, Inc. Prior to that, from June 1993 to January 2016, Ms. Portney worked at JPMorgan Chase & Co., serving in various senior roles including Global Head of Clearing, Collateral Management, and Execution; Chief Financial Officer of Equities and Prime Services; and Chief Operating Officer of Futures and Options. Ms. Portney currently serves on the board of directors of The Depository Trust & Clearing Corporation (DTCC). Ms. Portney received a B.A. from Duke University and an M.B.A. from Columbia University.

Ms. Portney brings leadership experience from a number of financial institutions. Ms. Portney also has in-depth experience relating to clearing operations and strategies and the requirements of operating a firm in a highly regulated industry.

John Steinhardt
Director since April 2000

John Steinhardt (65) is a founder, and has been a Managing Partner, Co-Chief Executive Officer and Co-Chief Investment Officer, of KLS Diversified Asset Management since July 2007. From July 2006 until July 2007, Mr. Steinhardt managed a private investment portfolio. Mr. Steinhardt was the founder, Chief Executive Officer and Chief Investment Officer of Spectrum Investment Group from January 2005 to July 2006. Until October 2004, Mr. Steinhardt was Head of North American Credit Markets for JPMorgan Chase & Co. and a member of the Management Committee of the Investment Banking Division of JPMorgan Chase & Co. Prior to the merger of J.P. Morgan & Co. and the Chase Manhattan Bank, Mr. Steinhardt was the Head of U.S. Securities at Chase Securities Inc. and a member of the Management Committee from 1996 to 2000. He currently serves on the board of directors of the 92nd Street Y and the board of trustees of the Central Park Conservancy. Mr. Steinhardt received a B.S. in economics from St. Lawrence University and an M.B.A. from Columbia University.

Mr. Steinhardt brings substantial leadership experience at a number of financial institutions and extensive experience in the financial markets that we serve. Mr. Steinhardt also has a deep knowledge and understanding of the requirements of operating in a highly regulated industry.

CORPORATE GOVERNANCE AND BOARD MATTERS

Director independence

The Board of Directors has determined that each of our current directors, other than Messrs. McVey, our Chief Executive Officer, and Concannon, our President and Chief Operating Officer, currently meet the independence requirements contained in the NASDAQ listing standards and applicable tax and securities rules and regulations. None of these non-employee directors has a relationship with the Company or its subsidiaries that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

In compliance with the NASDAQ listing standards, we have a Board of Directors comprised of a majority of independent directors. The NASDAQ listing standards have both objective tests and a subjective test for determining who is an "independent director." The objective tests state, for example, that a director is not considered independent if he is an employee of the Company or is a partner in or controlling shareholder or executive officer of an entity to which the Company made, or from which the Company received, payments in the current or any of the past three fiscal years that exceed 5% of the recipient's consolidated gross revenue for that year. The subjective test states that an independent director must be a person who lacks a relationship that, in the opinion of the Board, would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

None of the non-employee directors were disqualified from "independent" status under the objective tests. In assessing independence under the subjective test, the Board took into account the standards in the objective tests, and reviewed and discussed additional information provided by the directors and the Company with regard to each director's business and personal activities as they may relate to MarketAxess' management. Based on all of the foregoing, as required by the NASDAQ listing standards, the Board made a substantive determination as to each of the independent directors that no relationship exists which, in the opinion of the Board, would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

The Board has not established categorical standards or guidelines to make these subjective determinations, but considers all relevant facts and circumstances.

In addition to Board-level standards for director independence, the directors who serve on the Audit Committee and the Compensation Committee each satisfy standards established by the SEC and the NASDAQ listing rules providing that to qualify as "independent" for purposes of membership on the Audit Committee or the Compensation Committee, members of such committees may not accept directly or indirectly any consulting, advisory or other compensatory fee from the Company other than their director compensation. Also, each of the directors who serve on the Compensation Committee has been determined to be a "non-employee director" for purposes of the applicable SEC rules and regulations and an "outside director" for purposes of the applicable tax rules.

In making its independence determinations, the Board considered transactions occurring since the beginning of 2016 between the Company and entities associated with the independent directors or members of their immediate family. In each case, the Board determined that, because of the nature of the director's relationship with the entity and/or the amount involved, the relationship did not impair the director's independence. The Board's independence determinations included reviewing the relationship of certain of our directors who are or, for a portion of the past three years, were senior employees of broker-dealer and institutional investor clients. In addition, the Board considered that Mr. Hernandez is the Head of Global Banking at JPMorgan Chase & Co., which accounted for approximately 5.0% of the Company's consolidated gross revenue for 2018, and is the administrative agent and sole lender under our credit agreement, provides cash and investment management services to the Company and operates our share repurchase program.

We do not have a director tenure requirement, as we believe our efforts to regularly refresh the Board with new directors, as well as natural turnover, has achieved the appropriate balance between maintaining longer-term directors with deep institutional knowledge and new directors who bring new perspectives and diversity to our Board. Notwithstanding this belief and the fact that our corporate governance guidelines and NASDAQ Global Select Market rules do not deem long-tenured directors to be non-independent, our Board reviews director tenure in connection with its director independence determinations.

How nominees to our Board are selected

Candidates for election to our Board of Directors are nominated by our Nominating and Corporate Governance Committee and ratified by our full Board of Directors for nomination to the stockholders. The Nominating and Corporate Governance Committee operates under a charter, which is available on our corporate website at *www.marketaxess.com*.

The Nominating and Corporate Governance Committee will give due consideration to candidates recommended by stockholders. Stockholders may recommend candidates for the Nominating and Corporate Governance Committee's consideration by submitting such recommendations directly to the Nominating and Corporate Governance Committee as described below under *Communicating with our Board members*. In making recommendations, stockholders should be mindful of the discussion of minimum qualifications set forth above under *Qualifications for director nominees*. However, just because a recommended individual meets the minimum qualification standards does not imply that the Nominating and Corporate Governance Committee will necessarily nominate the person so recommended by a stockholder. The Nominating and Corporate Governance Committee may also engage outside search firms to assist in identifying or evaluating potential nominees. Ms. Altobello and Mr. Concannon were recommended to the Nominating and Corporate Governance Committee of the Board by Messrs. Cruger and McVey, respectively.

Board leadership structure

Our Chief Executive Officer ("CEO") also serves as the Chairman of the Board (the "*Chairman*"), and we have a Lead Independent Director who is responsible, among other things, for consulting with the Chairman regarding the agenda for each Board meeting and coordinating the activities of the non-employee directors, including presiding over the executive sessions of non-employee directors. We believe that this structure is appropriate for the Company because it allows one person to speak for and lead the Company and the Board, while also providing for effective oversight by an independent Board through a Lead Independent Director. Our CEO, as the individual with primary responsibility for managing the Company's strategic direction and day-to-day operations, is in the best position to provide Board leadership that is aligned with our stockholders' interests, as well as the Company's needs. Our overall corporate governance policies and practices, combined with the strength of our independent directors, minimize any potential conflicts that may result from combining the roles of CEO and Chairman.

Mr. Casper currently serves as the Lead Independent Director. The full Board, by majority vote, elects the Lead Independent Director.

The Board has established other structural safeguards that serve to preserve the Board's independent oversight of management. First, the Board is comprised almost entirely of independent directors who are highly qualified and experienced, and who exercise a strong, independent oversight function. The Board's Audit Committee, Compensation Committee, Investment Committee, Nominating and Corporate Governance Committee, and Risk Committee are comprised entirely of, and are chaired by, independent directors. Second, independent oversight of our CEO's performance is provided through a number of Board and committee processes and procedures, including regular executive sessions of non-employee directors and annual evaluations of our CEO's performance against pre-determined goals. The Board believes that these safeguards preserve the Board's independent oversight of management and provide a balance between the authority of those who oversee the Company and those who manage it on a day-to-day basis.

Board committees

The Audit Committee of the Board of Directors oversees the accounting and financial reporting process of the Company and the audits of the financial statements of the Company. The Audit Committee is also responsible for preparing the audit committee report required to be included in this proxy statement, and the Audit Committee is directly responsible for the appointment, retention, compensation and oversight of the Company's outside auditor. The Audit Committee currently consists of Mr. Gomach (Chair), Ms. Altobello, Mr. Casper and Mr. Cruger. The Board of Directors has determined that each member of the Audit Committee is both an independent director in accordance with NASDAQ listing standards and an Audit Committee financial expert, as defined by SEC guidelines and as required by the applicable NASDAQ listing standards. For information regarding the experience and qualifications of our Audit Committee financial experts, see the information in this Proxy Statement under the section heading *Proposal 1 — Election of Directors — Director information*.

The Compensation Committee of the Board of Directors has the responsibility, as delegated by the Board, for reviewing and approving the compensation of the CEO and all other officers of the Company, as well as the compensation philosophy, strategy, program design and administrative practices. The compensation programs to be reviewed and approved by the Compensation Committee consist of all forms of compensation, including salaries, cash incentives, stock options and other stock-based awards and benefits. The Compensation Committee currently consists of Messrs. Steinhardt (Chair) and Begleiter. The Board of Directors has determined that each member of the Compensation Committee is an "independent director" in accordance with NASDAQ listing standards, a "non-employee director" under the applicable SEC rules and regulations and an "outside director" under the applicable tax rules. The Compensation Committee may form subcommittees and delegate authority to such subcommittees or individuals as it deems appropriate.

The Nominating and Corporate Governance Committee of the Board of Directors identifies individuals qualified to become Board members, and recommends for selection by the Board the director nominees to stand for election at each annual meeting of the Company's stockholders. In connection therewith, the Nominating and Corporate Governance Committee reviews certain policies regarding the nomination of directors and recommends any changes in such policies to the Board for its approval; identifies individuals qualified to become directors; evaluates and recommends for the Board's selection nominees to fill positions on the Board; and recommends changes in the Company's corporate governance policies, including the Corporate Governance Guidelines, to the Board for its approval. The Nominating and Corporate Governance Committee also oversees the annual review of the performance of the Board of Directors, each director and each committee. The Nominating and Corporate Governance Committee currently consists of Mr. Cruger (Chair), Mr. Casper and Ms. Chwick. The Board of Directors has determined that each member of the Nominating and Corporate Governance Committee is an independent director in accordance with NASDAQ listing standards.

The Risk Committee assists the Board with its oversight of the Company's risk management activities, with particular responsibility for overseeing designated areas of risk that are not the primary responsibility of another committee of the Board or retained for the Board's direct oversight. Items delegated to the Risk Committee by the Board include technology and cyber-security risk, credit risk and regulatory risk. The Risk Committee currently consists of Ms. Chwick (Chair), Mr. Ketchum, Ms. Portney and Mr. Sullivan.

The Investment Committee assists the Board in monitoring whether the Company has adopted and adheres to a rational and prudent investment and capital management policy; whether management's investment and capital management actions are consistent with attainment of the Company's investment policy, financial objectives and business goals; the Company's compliance with legal and regulatory requirements pertaining to investment and capital management; the competence, performance and compensation of the Company's external money managers; and such other matters as the Board or Investment Committee deems appropriate. The Investment Committee currently consists of Messrs. Steinhardt (Chair), Hernandez and Sullivan.

Meetings and attendance

The following table sets forth chairs and membership structure of the Board and each standing Board committee as of April 24, 2019, and the number of Board and Board committee meetings held during 2018.

Board Structure and Meetings

	Board
Chair	*McVey*
Lead Independent Director	*Casper*
Members	13
Meetings	6

	Audit	Compensation	Nominating / Governance	Risk	Investment
Chair	*Gomach*	*Steinhardt*	*Cruger*	*Chwick*	*Steinhardt*
Members	4	2	3	4	3
Meetings (1)	6	7	4	5	2

(1) The Audit and Risk Committees held one joint Audit and Risk Committee meeting in 2018.

The non-management directors met in executive session without management directors or employees at each of the meetings of the Board during 2018. We expect each director to attend each meeting of the full Board and of the committees on which he or she serves and to attend the annual meeting of stockholders. All directors attended at least 75% of the meetings of the full Board and the meetings of the committees on which they served and all directors attended our 2018 annual meeting of stockholders (not counting Ms. Altobello and Mr. Concannon, who were not directors at the time of our 2018 annual meeting).

Board involvement in risk oversight

The Company's management is responsible for defining the various risks facing the Company, formulating risk management policies and procedures, and managing the Company's risk exposures on a day-to-day basis. The Board's responsibility is to monitor the Company's risk management processes by informing itself of the Company's material risks and evaluating whether management has reasonable controls in place to address the material risks. The Board is not responsible, however, for defining or managing the Company's various risks.

The Board of Directors monitors management's responsibility for risk oversight through regular reports from management to the Risk and Audit Committees and the full Board. Furthermore, the Risk and Audit Committees report on the matters discussed at the committee level to the full Board. The Risk and Audit Committees and the full Board focus on the material risks facing the Company, including strategic, operational, market, technology and cyber-security, credit, liquidity, legal and regulatory risks, to assess whether management has reasonable controls in place to address these risks. In addition, the Compensation Committee is charged with reviewing and discussing with management whether the Company's compensation arrangements are consistent with effective controls and sound risk management. Finally, risk management is a factor that the Board and the Nominating and Corporate Governance Committee consider when determining who to nominate for election as a director of the Company and which directors serve on the Risk and Audit Committees. The Board believes this division of responsibilities provides an effective and efficient approach for addressing risk management.

The Company's Global Management Team assists management's efforts to assess and manage risk. The Global Management Team is chaired by the CEO and is comprised of the Company's senior managers with global oversight. The Global Management Team assesses the Company's business strategies and plans and insures that appropriate policies and procedures are in place for identifying, evaluating, monitoring, managing and measuring significant risks. The Chief Audit & Risk Officer regularly prepares updates and reports for the Global Management Team, Risk Committee, Audit Committee and the Board of Directors.

Board Evaluations and Succession planning

Each year, the members of the Board of Directors conduct a confidential written assessment of their performance that is reviewed and summarized by the Company's independent compensation consultant. Each director also conducts a confidential oral assessment of the Board's performance with our lead independent director. As part of the evaluation process, the Board reviews its overall composition, including director tenure, board leadership structure, diversity and individual skill sets, to ensure it serves the best interests of stockholders and positions the Company for future success. Each Board committee also conducts an annual written self-assessment of its performance during the prior year. The results of the assessments are then summarized and communicated back to the appropriate committee chairpersons and our lead independent director. After the evaluations, the Board and management work to improve upon any issues or focus points disclosed during the evaluation process. As part of the evaluation process, each committee reviews its charter annually.

The Board is committed to positioning MarketAxess for further growth through ongoing talent management, succession planning and the deepening of our leadership bench. Management facilitates a formal talent management and leadership development review on an annual basis for the Board. The review is focused on both immediate short-term succession plans for all executives in the event of an unforeseen situation, as well as longer-term, strategic succession planning. A critical element of the review is an evaluation of the Company's formal leadership development and talent acquisition initiatives in order to ensure that our leadership team has the skills, capabilities and experience to effectively lead our existing, and future, global business. The review also focuses on the retention of key managers. The annual talent management and leadership development review is supplemented by an additional year-end review by the Board of the individual performance and year-end compensation proposals for the executive management team and other key staff.

The Board values diversity among the management team and strives to increase the diversity of the executive management team, as well as the management teams reporting to them. The Board considers formal and informal initiatives to promote diversity as part of their annual talent management review.

The Board has formal exposure to the executive team at Board meetings, as well as at Board committee meetings and other discussions. There are other opportunities for more informal interaction with employees across the organization throughout the year through various events and interactions.

Code of Conduct, Code of Ethics and other governance documents

The Board has adopted a Code of Conduct that applies to all officers, directors and employees, and a Code of Ethics for the CEO and Senior Financial Officers, which includes Mr. DeLise, our Chief Financial Officer. Both the Code of Conduct and the Code of Ethics for the CEO and Senior Financial Officers can be accessed in the *Investor Relations — Corporate Governance — Overview* section of our website at *www.marketaxess.com*. We intend to satisfy any disclosure obligations regarding waivers of or amendments to our Code of Conduct and Code of Ethics for the CEO and Senior Financial Officers by posting such information on our website at *www.marketaxess.com*.

You may also obtain a copy of these documents without charge by writing to MarketAxess Holdings Inc., 55 Hudson Yards, 15th Floor, New York, New York 10001, Attention: Investor Relations.

Copies of the charters of our Board's Audit Committee, Compensation Committee, Investment Committee, Risk Committee and Nominating and Corporate Governance Committee, as well as a copy of the Company's Corporate Governance Guidelines, can be accessed in the *Investor Relations — Corporate Governance* section of our website.

Corporate Social Responsibility

MarketAxess is committed to integrating sustainability into our everyday actions to help create long-term value for our stockholders and the communities in which we operate. We aim to operate the company responsibly while managing risks and using our resources wisely. In 2018, the Company formed a Corporate Social Responsibility Committee (the "CSR Committee"), comprised of members of senior management. MarketAxess has exemplified its commitment in 2018 by practicing sustainability, advocating volunteerism and philanthropy and actively partnering with our employees, clients and partners on environmental, social and governance initiatives.

Communicating with our Board members

Although our Board of Directors has not adopted a formal process for stockholder communications with the Board, we make every effort to ensure that the views of stockholders are heard by the Board or by individual directors, as applicable, and we believe that this has been an effective process to date. Stockholders may communicate with the Board by sending a letter to the MarketAxess Holdings Inc. Board of Directors, c/o General Counsel, 55 Hudson Yards, 15th Floor, New York, New York 10001. The General Counsel will receive the correspondence and forward it to the Chairman of the Board and the Lead Independent Director, or to any individual director or directors to whom the communication is directed, as appropriate. Notwithstanding the above, the General Counsel has the authority to discard or disregard any communication that is unduly hostile, threatening, illegal or otherwise inappropriate or to take any other appropriate actions with respect to such communications.

In addition, any person, whether or not an employee, who has a concern regarding the conduct of the Company or our employees, including with respect to our accounting, internal accounting controls or auditing issues, may, in a confidential or anonymous manner, communicate that concern in writing by addressing a letter to the Chairman of the Audit Committee, c/o Corporate Secretary, at our corporate headquarters address, which is 55 Hudson Yards, 15th Floor, New York, New York 10001, or electronically, at our corporate website, *www.marketaxess.com* under the heading *Investor Relations — Corporate Governance*, by clicking the *Confidential Ethics Web Form* link.

Director compensation

The Compensation Committee of the Board of Directors has retained the services of Grahall LLC ("*Grahall*") as its independent compensation consultant. Grahall reports directly to the Compensation Committee in its role and has conducted an annual review of director compensation levels and a bi-annual review of director pay structure and practices, and in each event, shares the results of those reviews with the Compensation Committee. The Compensation Committee then submits any proposed changes in pay level or program structure to the full Board for its consideration, and if appropriate, approval.

Grahall reviews and recommends compensation structure and adjustments based on the board compensation of the following:

- Proxy peer group (see Compensation Discussion and Analysis – *How We Determine Pay Levels – Peer Group*);
- ISS peer group (updated by ISS annually); and
- Industry data sources, including the National Association of Corporate Directors.

All directors, other than Mr. McVey and Mr. Concannon, are regarded as non-employee directors. Mr. McVey and Mr. Concannon receive no additional compensation for service as a director.

In 2018, the only change to our Director compensation program was to increase the annual equity retainer from $105,000 to $115,000. This change was effective in July 2018. The Board believed that this change was appropriate given the market and the pay levels that were indicated by the market data provided by Grahall and reviewed by the Board. The increased equity retainer resulted in a cash/equity mix that is more consistent with prevailing market practice and which the Board determined was desirable to further ensure the alignment of the long-term financial interests of our non-employee directors with those of our stockholders. The director pay recommendations resulted in pay levels just above the 50th percentile of board compensation for our proxy and ISS peers.

A summary of the structure of our Director pay program that is in effect as of July 2018 is as follows:

Director Compensation Pay Structure - Effective August 2018

	Cash Board Retainer ($)	Cash Chair Retainer ($)	Cash Committee Retainer ($)	Restricted Stock ($)
Annual Retainer - All	80,000	—	—	115,000
Audit Committee	—	25,000	12,500	—
Compensation Committee	—	20,000	7,500	—
Governance / Nominating Committee	—	12,000	5,000	—
Investment Committee	—	10,000	2,500	—
Risk Committee	—	20,000	7,500	—
Lead Independent Director (1)	—	20,000	—	20,000

(1) The Lead Independent Director had the choice to receive the $40,000 retainer as 100% cash or 50% cash and 50% equity. For 2018, the Lead Independent Director chose the cash / equity alternative, which resulted in an additional equity award of 104 shares.

In August 2018, we granted 598 shares of restricted stock to each non-employee director. The shares are scheduled to vest over the duration of the non-employee directors' service year: one-half of the award vested on November 30, 2018 and the balance is scheduled to vest on May 31, 2019. The number of shares of restricted stock granted was determined on the grant date by dividing the equity grant value of $115,000 by $192.43, the average of the closing price of our Common Stock for the ten trading days up to and including the grant date. We expect to continue to compensate our non-employee directors with a combination of cash and equity awards. All equity awards to non-employee directors are made under the Company's 2012 Incentive Plan.

Below is a summary of the amount and form of actual compensation received by each non-employee director in 2018 (excluding directors appointed in 2019):

Director Compensation for Fiscal 2018

Name	Fees Earned or Paid in Cash (1)	Stock Awards ($)(2)	All Other Compensation ($)(3)	Total($)
Stephen P. Casper, Lead Independent Director	111,250	130,733	509	242,492
Steven L. Begleiter	92,708	111,366	126	204,200
Jane Chwick	103,333	111,366	429	215,128
William F. Cruger	103,389	111,366	429	215,184
David G. Gomach	102,222	111,366	429	214,017
Carlos M. Hernandez	82,500	111,366	126	193,992
Richard Ketchum	90,625	111,366	477	202,468
Emily Portney	85,625	111,366	520	197,511
John Steinhardt	107,778	111,366	429	219,573
James J. Sullivan	90,000	111,366	429	111,795

(1) The amounts represent Board and Committee retainers as well as adjustments for meeting fees paid in 2017 to Messrs. Cruger, Gomach and Steinhardt.

(2) The amounts represent the aggregate grant date fair value of stock awards granted by the Company in 2018, computed in accordance with FASB ASC Topic 718. For further information on how we account for stock based compensation, see Note 9 to the consolidated financial statement included in the Company's Annual Report on Form 10-K for the year ended December 31, 2018.

(3) Mr. Casper received $20,000 of his retainer for being Lead Independent Director in shares, resulting in additional dividends of $80.34. Messrs. Begleiter and Hernandez deferred receipt of their August 2017 equity awards and related dividends. Therefore, each deferred $303.03 of dividends through May 2018. Mr. Ketchum and Ms. Portney each received an additional equity award in 2017 in consideration of their partial year of service as a director prior to the annual meeting. Therefore, they were paid additional dividends of $47.97 and $91.26, respectively in 2018 when the shares vested.

(4) The table below sets forth information regarding the aggregate number of unvested stock awards and the aggregate number of option awards outstanding at the end of fiscal year 2018 for each non-employee director and does not include directors appointed in 2019. All options are vested. In addition to RSU amounts in the table below, Messrs. Begleiter, Cruger and Hernandez and Ms. Chwick each previously elected to defer receipt of RSUs.

Equity Awards Outstanding

	Aggregate Number of Unvested Stock Awards Outstanding at Fiscal Year End (#)	Aggregate Number of Option Awards Outstanding at Fiscal Year End (#)
Stephen P. Casper, Lead Independent Director	351	3,187
Steven L. Begleiter	817	—
Jane Chwick	1,271	—
William F. Cruger	1,271	—
David G. Gomach	299	3,187
Carlos M. Hernandez	817	3,187
Richard Ketchum	299	—
Emily Portney	299	—
John Steinhardt	299	3,187
James J. Sullivan	299	—

Share Ownership & Holding Guidelines

To better align the interests of non-employee directors and stockholders, the Board of Directors has adopted stock ownership guidelines for our non-employee directors. In July 2017, the Board increased the holding requirement to require that non-employee directors hold not less than the number of shares of Common Stock equal in value to four times the annual base cash retainer payable to a director, or $320,000. As of April 2019, the holding requirement was equal to 1,538 shares, calculated using a price of $208.07 per share, which was the average of the daily closing price of our Common Stock for the twelve-month period ended on March 31, 2019. This new calculation method was implemented by the Board in April 2018 and is intended to moderate the variability of the stock price. The holding requirement must be achieved within five years after the director has become a Board member and maintained throughout the non-employee director's service with the Company. All shares of Common Stock beneficially owned by the director, including shares purchased and held personally, vested and unvested restricted shares, vested and unvested restricted stock units, settled performance shares, and shares deferred under a non-qualified deferred compensation arrangement, count toward the minimum ownership requirement. Vested and unvested stock options and unearned performance shares are excluded.

In addition to the ownership guidelines, all non-employee directors must hold all shares granted for service for a minimum of five years from the date of grant, and a non-employee director must hold no less than 50% of the total number of shares granted for service until they retire from the Board. Directors are also required, for a period of six months following his or her departure from the Board, to comply with the Company's Insider Trading Policy that, among other things, prohibits trading in the Company's securities during specified blackout periods.

All of our non-employee directors have either achieved the designated level of ownership or are in the five-year period following their appointment or election to the Board during which they are expected to achieve compliance:

Directors' Stock Ownership			
		Multiple of Cash Retainer	
Name	**Appointed**	**Requirement**	**Current Holdings**
Stephen P. Casper, Lead Independent Director	April 2004	4x	140x
Steven L. Begleiter	April 2012	4x	22x
Jane Chwick	October 2013	4x	14x
William F. Cruger	November 2013	4x	14x
David G. Gomach	February 2005	4x	50x
Carlos M. Hernandez	February 2006	4x	53x
Richard Ketchum	April 2017	4x	3x
Emily Portney	October 2017	4x	2x
John Steinhardt	April 2000	4x	56x
James J. Sullivan	March 2012	4x	22x

The preceding chart does not include directors appointed in 2019.

Our equity plan provides for the accrual of dividends (or dividend equivalents) on unvested shares. However, dividends are not paid and are subject to forfeiture until all restrictions on the shares have lapsed.

We do not provide any retirement benefits or other perquisites to our non-employee directors.

PROPOSAL 2 — RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Audit Committee of our Board has appointed the firm of PricewaterhouseCoopers LLP ("*PwC*") as our independent registered public accounting firm to audit our consolidated financial statements for the year ending December 31, 2019, and the Board is asking stockholders to ratify that selection. Although current law, rules and regulations, as well as the charter of the Audit Committee, require our independent registered public accounting firm to be engaged, retained and supervised by the Audit Committee, the Board considers the selection of our independent registered public accounting firm to be an important matter of stockholder concern and considers a proposal for stockholders to ratify such selection to be an important opportunity for stockholders to provide direct feedback to the Board on an important issue of corporate governance. In the event that stockholders fail to ratify the appointment, the Audit Committee will reconsider whether or not to retain PwC, but may ultimately determine to retain PwC as our independent registered public accounting firm. Even if the appointment is ratified, the Audit Committee, in its sole discretion, may direct the appointment of a different independent registered public accounting firm at any time during the year if the Audit Committee determines that such a change would be in the best interests of the Company and its stockholders.

Your vote

Unless proxy cards are otherwise marked, the persons named as proxies will vote **FOR** the ratification of PwC as the Company's independent registered public accounting firm for the year ending December 31, 2019. Approval of this proposal requires the affirmative vote of the holders of a majority of the shares present in person or represented by proxy and entitled to vote on the proposal.

Board recommendation

THE BOARD UNANIMOUSLY RECOMMENDS THAT YOU VOTE "FOR" RATIFICATION OF PWC AS THE COMPANY'S INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE YEAR ENDING DECEMBER 31, 2019.

Information about our independent registered public accounting firm

PwC has audited our consolidated financial statements each year since our formation in 2000. Representatives of PwC will be present at our Annual Meeting, will have the opportunity to make a statement if they desire to do so, and will be available to respond to appropriate questions from stockholders.

In 2011, the Company, in the ordinary course of its business, entered into a bulk data agreement with PwC for the purpose of supporting valuation conclusions reached by PwC in the normal course of PwC's audit and other work for its clients. Pursuant to the agreement, the Company provides bond pricing data to PwC on terms consistent with the terms of similar data sales agreements entered into by the Company. The aggregate annual revenue to the Company from the data agreement is $235,000. On an annual basis, the Audit Committee evaluates the effect of such agreement on the independence of PwC and has concurred with the opinion of the Company's management and PwC that the arrangement constitutes an "arm's-length" transaction that would not affect PwC's independence.

Audit and other fees

The aggregate fees billed by our independent registered public accounting firm for professional services rendered in connection with the audit of our annual financial statements set forth in our Annual Report on Form 10-K for the years ended December 31, 2018 and 2017 and the audit of our broker-dealer subsidiaries' annual financial statements, as well as fees paid to PwC for tax compliance and planning, if any, and other services, are set forth below.

Except as set forth in the following sentence, the Audit Committee, or a designated member thereof, pre-approves 100% of all audit, audit-related, tax and other services rendered by PwC to the Company or its subsidiaries. The Audit Committee has authorized the CEO and the Chief Financial Officer to purchase permitted non-audit services rendered by PwC to the Company or its subsidiaries up to, and including, a limit of $10,000 per service and an annual aggregate limit of $20,000 for all such services.

Immediately following the completion of each fiscal year, the Company's independent registered public accounting firm shall submit to the Audit Committee (and the Audit Committee shall request from the independent registered public accounting firm), as soon as possible, a formal written statement describing: (i) the independent registered public accounting firm's internal quality-control procedures; and (ii) all relationships between the independent registered public accounting firm and the Company, including at least the matters set forth in Independence Standards Board Standard No. 1 *(Independence Discussion with Audit Committees)*, in order to assess the independent registered public accounting firm's independence.

Immediately following the completion of each fiscal year, the independent registered public accounting firm also shall submit to the Audit Committee (and the Audit Committee shall request from the independent registered public accounting firm), a formal written statement of the fees billed by the independent registered public accounting firm to the Company in each of the last two fiscal years for each of the following categories of services rendered by the independent registered public accounting firm: (i) the audit of the Company's annual financial statements and the reviews of the financial statements included in the Company's Quarterly Reports on Form 10-Q or services that are normally provided by the independent registered public accounting firm in connection with statutory and regulatory filings or engagements; (ii) assurance and related services not included in clause (i) that are reasonably related to the performance of the audit or review of the Company's financial statements, in the aggregate and by each service; (iii) tax compliance, tax advice and tax planning services, in the aggregate and by each service; and (iv) all other products and services rendered by the independent registered public accounting firm, in the aggregate and by each service.

Set forth below is information regarding fees paid by the Company to PwC during the fiscal years ended December 31, 2018 and 2017.

Fee Category		**2018**		**2017**
Audit Fees(1)	$	1,712,650	$	1,718,650
All Other Fees(2)		5,197		3,593
Total	$	1,717,847	$	1,722,243

(1) The aggregate fees incurred include amounts for the audit of the Company's consolidated financial statements (including fees for the audit of our internal controls over financial reporting) and the audit of our broker-dealer subsidiaries' annual financial statements.

(2) Other Fees are comprised of annual subscription fees for accounting related research and service fees related to XBRL conversion services.

REPORT OF THE AUDIT COMMITTEE OF THE BOARD OF DIRECTORS

The Audit Committee currently consists of Mr. Gomach (Chair), Mr. Casper and Mr. Cruger. Each member of the Audit Committee is independent, as independence is defined for purposes of Audit Committee membership by the listing standards of NASDAQ and the applicable rules and regulations of the SEC. The Board has determined that each member of the Audit Committee is financially literate, in other words, is able to read and understand fundamental financial statements, including the Company's balance sheet, income statement and cash flow statement, as required by NASDAQ rules. In addition, the Board has determined that each member of the Audit Committee satisfies the NASDAQ rule requiring that at least one member of our Board's Audit Committee have past employment experience in finance or accounting, requisite professional certification in accounting, or any other comparable experience or background that results in the member's financial sophistication, including being or having been a chief executive officer, chief financial officer or other senior officer with financial oversight responsibilities. The Board has also determined that each member of the Audit Committee is a "financial expert" as defined by the SEC.

The Audit Committee appoints our independent registered public accounting firm, reviews the plan for and the results of the independent audit, approves the fees of our independent registered public accounting firm, reviews with management and the independent registered public accounting firm our quarterly and annual financial statements and our internal accounting, financial and disclosure controls, reviews and approves transactions between the Company and its officers, directors and affiliates, and performs other duties and responsibilities as set forth in a charter approved by the Board of Directors. A copy of the Audit Committee charter is available in the *Investor Relations — Corporate Governance* section of the Company's website.

During fiscal year 2018, the Audit Committee met five times. The Company's senior financial management and independent registered public accounting firm were in attendance at such meetings. Following each quarterly meeting during 2018, the Audit Committee conducted a private session with the independent registered public accounting firm, without the presence of management. The Audit Committee also had one joint meeting with the Risk Committee during 2018.

The management of the Company is responsible for the preparation and integrity of the financial reporting information and related systems of internal controls. The Audit Committee, in carrying out its role, relies on the Company's senior management, including particularly its senior financial management, to prepare financial statements with integrity and objectivity and in accordance with generally accepted accounting principles, and relies upon the Company's independent registered public accounting firm to review or audit, as applicable, such financial statements in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("*PCAOB*").

We have reviewed and discussed with senior management the Company's audited financial statements for the year ended December 31, 2018 which are included in the Company's 2018 Annual Report on Form 10-K. Management has confirmed to us that such financial statements (i) have been prepared with integrity and objectivity and are the responsibility of management and (ii) have been prepared in conformity with generally accepted accounting principles.

In discharging our oversight responsibility as to the audit process, we have discussed with PwC, the Company's independent registered public accounting firm, the matters required to be discussed by PCAOB AS 1301 *Communication with Audit Committees*, as currently in effect, which requires our independent registered public accounting firm to provide us with additional information regarding the scope and results of their audit of the Company's financial statements, including: (i) their responsibilities under generally accepted auditing standards, (ii) significant accounting policies, (iii) management judgments and estimates, (iv) any significant accounting adjustments, (v) any disagreements with management and (vi) any difficulties encountered in performing the audit.

We have received the written disclosures from PwC concerning their independence, as required by applicable requirements of the PCAOB, and we have discussed with PwC their independence.

Based upon the foregoing review and discussions with our independent registered public accounting firm and senior management of the Company, we have recommended to our Board that the financial statements prepared by the Company's management and audited by its independent registered public accounting firm be included in the Company's Annual Report on Form 10-K for the year ended December 31, 2018, for filing with the SEC. The Committee also has appointed PwC as the Company's independent registered public accounting firm for the year ending December 31, 2019.

As specified in its Charter, it is not the duty of the Audit Committee to plan or conduct audits or to determine that the Company’s financial statements are complete and accurate and in accordance with generally accepted accounting principles. These are the responsibilities of the Company’s management and independent registered public accounting firm. In discharging our duties as a Committee, we have relied on (i) management’s representations to us that the financial statements prepared by management have been prepared with integrity and objectivity and in conformity with generally accepted accounting principles and (ii) the report of the Company’s independent registered public accounting firm with respect to such financial statements.

Submitted by the Audit Committee of the
Board of Directors:

David G. Gomach — Chair
Stephen P. Casper
William F. Cruger

PROPOSAL 3 — ADVISORY VOTE ON EXECUTIVE COMPENSATION

In accordance with the requirements of Section 14A of the Securities Exchange Act of 1934 (which was added by the Dodd-Frank Wall Street Reform and Consumer Protection Act and the related rules of the SEC (the "*Dodd-Frank Act*")), the Company is providing its stockholders the opportunity to cast an advisory vote to approve the compensation of its named executive officers. This proposal, commonly known as a "say-on-pay" proposal, gives the Company's stockholders the opportunity to express their views on the named executive officers' compensation. We will include an advisory vote on executive compensation on an annual basis at least until the next shareholder advisory vote on the frequency of such votes.

As described in detail in the Compensation Discussion and Analysis below, the Company's named executive officer compensation program is designed to attract, reward and retain the caliber of officers needed to ensure the Company's continued growth and profitability. The primary objectives of the program are to:

- align and reward Company and individual performance and decision-making with stockholder value creation and prudent risk management;

- drive long-term growth objectives, thereby creating long-term value for our stockholders; and

- provide rewards that are cost-efficient, equitable to our named executive officers and stockholders, and competitive with organizations that compete for executives with similar skill sets, thereby encouraging high-potential individuals with significant and unique market experience to build a career at the Company.

The Company seeks to accomplish these goals in a manner that is aligned with the long-term interests of the Company's stockholders. The Company believes that its named executive officer compensation program achieves this goal with its emphasis on long-term equity awards and performance-based compensation, in addition to short-term (annual) incentive awards, specifically cash incentives, which has enabled the Company to successfully motivate and reward its named executive officers. The Company believes that its ability to retain its current high-performing team of seasoned executive officers is critical to its continuing financial success and that its focus on the long-term interests of its named executive officers aligns with the interests of its stockholders.

For these reasons, the Board recommends a vote in favor of the following resolution:

"RESOLVED, that the compensation paid to the Company's named executive officers, as disclosed in the Company's proxy statement for the 2019 Annual Meeting, pursuant to the compensation disclosure rules of the Securities and Exchange Commission, including the Compensation Discussion and Analysis, compensation tables and narrative discussion, is hereby APPROVED."

As an advisory vote, this proposal is not binding upon the Company, our Board or our Compensation Committee. Notwithstanding the advisory nature of this vote, our Board and the Compensation Committee, which is responsible for designing and administering the Company's named executive officer compensation program, value the opinions expressed by stockholders in their vote on this proposal, and will consider the outcome of the vote when making future compensation decisions for named executive officers. The affirmative vote of the holders of a majority of the outstanding shares of Common Stock present in person or represented by proxy and entitled to vote is required to approve this Proposal 3.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE "FOR" THE APPROVAL, ON AN ADVISORY BASIS, OF THE COMPENSATION OF THE COMPANY'S NAMED EXECUTIVE OFFICERS AS DISCLOSED IN THIS PROXY STATEMENT.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information regarding the beneficial ownership of the Company's Common Stock as of April 8, 2019 by (i) each person or group of persons known by us to beneficially own more than five percent of our Common Stock, (ii) each of our named executive officers, (iii) each of our directors and nominees for director and (iv) all of our directors and executive officers as a group.

The following table gives effect to the shares of Common Stock issuable within 60 days of April 8, 2019 upon the exercise of all options and other rights beneficially owned by the indicated stockholders on that date. Beneficial ownership is determined in accordance with Rule 13d-3 promulgated under Section 13 of the Securities Exchange Act of 1934, as amended, and includes voting and investment power with respect to shares. Percentage of beneficial ownership is based on 37,251,666 shares of Common Stock outstanding at the close of business on April 8, 2019. Except as otherwise noted below, each person or entity named in the following table has sole voting and investment power with respect to all shares of our Common Stock that he, she or it beneficially owns.

Unless otherwise indicated, the address of each beneficial owner listed below is c/o MarketAxess Holdings Inc., 55 Hudson Yards, 15th Floor, New York, New York 10001.

	Number of Shares Beneficially Owned	Percentage of Stock Owned
5% Stockholders		
Baillie Gifford & Co (1)	4,018,282	10.79%
BlackRock, Inc. (2)	3,479,464	9.34%
The Vanguard Group (3)	3,612,590	9.70%
T. Rowe Price Associates, Inc. (4)	2,206,014	5.92%
Named Executive Officers and Directors		
Richard M. McVey (5)	921,537	2.46%
Nancy Altobello (6)	—	*
Steven Begleiter (7)	7,811	*
Stephen P. Casper (8)	57,097	*
Jane Chwick (9)	4,343	*
Christopher Concannon (10)	—	*
William F. Cruger (11)	4,330	*
David G. Gomach (12)	19,059	*
Carlos M. Hernandez (13)	23,148	*
John Steinhardt (14)	21,712	*
James Sullivan (15)	8,038	*
Richard G. Ketchum (16)	1,198	*
Emily H. Portney (17)	935	*
Antonio L. DeLise (18)	16,658	*
Kevin McPherson (19)	79,996	*
Christophe Roupie (20)	7,867	*
Nicholas Themelis (21)	46,309	*
All Executive Officers and Directors as a Group (17 persons)(22)	1,220,038	—

* **Less than 1%.**

(1) Information regarding the number of shares beneficially owned by Baillie Gifford & Co was obtained from a Schedule 13G filed by Baillie Gifford & Co with the SEC on January 15, 2019. The principal business address of Baillie Gifford & Co is Calton Square, 1 Greenside Row, Edinburgh EH1 3AN. Scotland, UK.

(2) Information regarding the number of shares beneficially owned by BlackRock, Inc. was obtained from a Schedule 13G filed by BlackRock, Inc. with the SEC on February 6, 2019. The principal business address of BlackRock, Inc. is 55 East 52nd Street, New York, NY 10055.

(3) Information regarding the number of shares beneficially owned by The Vanguard Group was obtained from a Schedule 13G filed by The Vanguard Group with the SEC on February 11, 2019. The principal business address of The Vanguard Group is 100 Vanguard Blvd., Malvern, PA 19355.

(4) Information regarding the number of shares beneficially owned by T. Rowe Price Associates, Inc. was obtained from a Schedule 13G filed by T. Rowe Price Associates, Inc. with the SEC on February 14, 2019. The principal business address of T. Rowe Price Associates, Inc. is 100 E. Pratt Street, Baltimore, MD 21202.

(5) Consists of (i) 612,165 shares of Common Stock owned individually; (ii) 2,000 shares of Common Stock owned by immediate family members; (iii) 66,809 shares of unvested restricted stock; and (iv) 240,563 shares of Common Stock issuable pursuant to stock options granted to Mr. McVey that are or become exercisable within 60 days. Does not include (i) 207,275 shares of Common Stock issuable pursuant to stock options that are not exercisable within 60 days, (ii) 327,215 restricted stock units that are unvested and deferred restricted stock units or (iii) 42,913 performance shares.

(6) Ms. Altobello became a director as of April 16, 2019 and did not own shares as of April 8, 2019.

(7) Consists of (i) 7,512 shares of Common Stock owned individual; and (ii) 299 shares of unvested restricted stock. Does not include 518 deferred restricted stock units.

(8) Consists of (i) 9,751 shares of Common Stock owned individually; (ii) 43,808 shares held indirectly in a trust for which Mr. Casper's spouse is the trustee; (iii) 351 shares of unvested restricted stock; and (iv) 3,187 shares of Common Stock issuable pursuant to stock options that are or become exercisable within 60 days.

(9) Consists of (i) 4,044 shares of Common Stock owned individually; and (ii) 299 shares of unvested restricted stock. Does not include 972 deferred restricted stock units.

(10) Does not include (i) 76,868 shares of Common Stock issuable pursuant to stock options that are not exercisable within 60 days; (ii) 27,995 restricted stock units that are unvested; or (iii) 18,914 performance shares.

(11) Consists of (i) 4,031 shares of Common Stock owned individually; and (ii) 299 shares of unvested restricted stock. Does not include 972 deferred restricted stock units.

(12) Consists of (i) 18,760 shares of Common Stock owned individually; and (ii) 299 shares of unvested restricted stock. All shares of Common Stock, other than unvested restricted stock, are held indirectly in a trust for which Mr. Gomach is trustee.

(13) Consists of (i) 19,662 shares of Common Stock owned individually; (ii) 299 shares of unvested restricted stock; and (iii) 3,187 shares of Common Stock issuable pursuant to stock options that are or become exercisable within 60 days. Does not include 518 deferred restricted stock units.

(14) Consists of (i) 21,413 shares of Common Stock owned individually; and (ii) 299 shares of unvested restricted stock.

(15) Consists of (i) 7,739 shares of Common Stock owned individually; and (ii) 299 shares of unvested restricted stock.

(16) Consists of (i) 899 shares of Common Stock owned individually; and (ii) 299 shares of unvested restricted stock.

(17) Consists of (i) 636 shares of Common Stock owned individually; and (ii) 299 shares of unvested restricted stock.

(18) Consists of (i) 6,589 shares of Common Stock; (ii) 8,179 shares of unvested restricted stock; and (iii) 1,890 shares of Common Stock issuable pursuant to stock options that are or become exercisable within 60 days. Does not include (i) 17,051 shares of Common Stock issuable pursuant to stock options that are not exercisable within 60 days; (ii) 29,489 restricted stock units that are unvested and deferred restricted stock units or (iii) 551 performance shares.

(19) Consists of (i) 69,075 shares of Common Stock; and (ii) 10,921 shares of unvested restricted stock. Does not include (i) 22,388 shares of Common Stock issuable pursuant to stock options that are not exercisable within 60 days; (ii) 9,321 restricted stock units that are unvested and deferred restricted stock units or (iii) 495 performance shares.

(20) Consists of (i) 133 shares of Common Stock; and (ii) 7,734 shares of unvested restricted stock. Does not include 4,667 performance shares.

(21) Consists of (i) 30,148 shares of Common Stock owned in joint tenancy with his spouse; (ii) 13,595 shares of unvested restricted stock; and (iii) 2,566 shares of Common Stock issuable pursuant to stock options that are or become exercisable within 60 days. Does not include (i) 28,129 shares of Common Stock issuable pursuant to stock options that are not exercisable within 60 days; (ii) 11,310 restricted stock units that are unvested or (iii) 601 performance shares.

(22) Consists of (i) 858,233 shares of Common Stock; (ii) 110,280 shares of unvested restricted stock; and (iii) 251,393 shares of Common Stock issuable pursuant to stock options that are or become exercisable within 60 days. Does not include (i) 351,711 shares of Common Stock issuable pursuant to stock options that are not exercisable within 60 days; (ii) 408,310 restricted stock units that are unvested or (iii) 68,141 performance shares.

EXECUTIVE OFFICERS

Set forth below is information concerning our executive officers as of April 8, 2019.

Name	Age	Position
Richard M. McVey	59	Chief Executive Officer and Chairman of the Board of Directors
Christopher R. Concannon	51	President and Chief Operating Officer
Antonio L. DeLise	57	Chief Financial Officer
Kevin McPherson	48	Global Head of Sales
Christophe Roupie	53	Head of Europe and Asia
Nicholas Themelis	55	Chief Information Officer

Richard M. McVey has been Chief Executive Officer and Chairman of our Board of Directors since our inception. See *Proposal 1 — Election of Directors — Director information* for a discussion of Mr. McVey's business experience.

Christopher R. Concannon has been President and Chief Operating Officer, and a member of the Board of Directors, since January 2019. See *Proposal 1 — Election of Directors — Director information* for a discussion of Mr. Concannon's business experience.

Antonio L. DeLise has been Chief Financial Officer since March 2010. From July 2006 until March 2010, Mr. DeLise was the Company's Head of Finance and Accounting, where he was responsible for financial regulatory compliance and oversight of all controllership and accounting functions. Prior to joining us, Mr. DeLise was Chief Financial Officer of PubliCard, Inc., a designer of smart card solutions for educational and corporate sites, from April 1995 to July 2006. Mr. DeLise also served as Chief Executive Officer of PubliCard from August 2002 to July 2006, President of PubliCard from February 2002 to July 2006, and a director of PubliCard from July 2001 to July 2006. Prior to PubliCard, Mr. DeLise was employed as a senior manager with the firm of Arthur Andersen LLP from July 1983 through March 1995. Mr. DeLise received a B.S. in accounting from Fairfield University, from which he graduated magna cum laude.

Kevin McPherson has been Global Head of Sales since June 2014. From January 2008 to June 2014, Mr. McPherson was the Company's U.S. Sales Manager. From March 1999 to December 2007, Mr. McPherson was a Sales Representative for the Company, running the Company's West Coast sales and distribution effort. From June 1996 to March 1999, Mr. McPherson worked within the Emerging Markets Fixed Income Group of Scudder Stevens & Clark, where he traded emerging market fixed income securities and supported portfolio administration. Mr. McPherson began his career at State Street Bank & Trust, where he worked from June 1994 to June 1996 as an accountant and auditor for fixed income and equities portfolios. Mr. McPherson received a B.A. in business administration from the University of Maine.

Christophe Roupie has been Head of Europe and Asia since March 2017. Prior to joining us, from October 2015 until October 2016, Mr. Roupie was the CEO of HiRock AG, a family office in Switzerland. From May 2005 to October 2015, Mr. Roupie was Global Head of Trading and Securities Financing at AXA Investment Managers. While at AXA Investment Managers, he managed trading teams in Paris, London, Hong Kong and Greenwich, Connecticut across equities, fixed income, FX, derivatives, repo and stock lending. Prior to this, Mr. Roupie was the Global Head of Fixed Income Trading at IXIS AM (now Natixis Asset Management) from October 2000 to March 2005.

Nicholas Themelis has been Chief Information Officer since March 2005. From June 2004 through February 2005, Mr. Themelis was the Company's Head of Technology and Product Delivery. From March 2004 to June 2004, Mr. Themelis was the Company's Head of Product Delivery. Prior to joining us, Mr. Themelis was a Principal at Promontory Group, an investment and advisory firm focused on the financial services sector, from November 2003 to March 2004. From March 2001 to August 2003, Mr. Themelis was a Managing Director, Chief Information Officer for North America and Global Head of Fixed-Income Technology at Barclays Capital. From March 2000 to March 2001, Mr. Themelis was the Chief Technology Officer and a member of the board of directors of AuthentiDate Holdings Corp., a start-up focused on developing leading-edge content and encryption technology. Prior to his tenure at AuthentiDate, Mr. Themelis spent nine years with Lehman Brothers, ultimately as Senior Vice President and Global Head of the E-Commerce Technology Group.

COMPENSATION DISCUSSION AND ANALYSIS

The Compensation Discussion and Analysis ("*CD&A*") explains our pay for performance methodology, describes and analyzes our compensation programs and practices, and details the specific amounts of compensation paid for fiscal year 2018 to our named executive officers. Our named executive officers for fiscal year 2018 were Mr. McVey, our CEO and Chairman of the Board of Directors, Mr. DeLise, our Chief Financial Officer ("*CFO*"), Mr. McPherson, our Global Head of Sales *("Sales")*, Mr. Roupie, our Head of MarketAxess Europe and Asia *("EU/Asia"),* and Mr. Themelis, our Chief Information Officer ("*CIO*") (collectively, the "*NEOs*").

Executive Summary

Compensation Overview

We believe that compensation should be performance-based, directly correlated with business and financial results, and designed to attract, reward and retain high caliber executives. Compensation decisions are based on individual and Company performance, market data for each position and each NEO's compensation level and structure. As such, the compensation structure for our NEOs is comprised of base salaries, annual cash incentive compensation under our 2009 Employee Performance Incentive Plan (the "Employee Cash Incentive Plan") and various forms of equity under our 2012 Incentive Plan (as amended from time to time, the "Equity Incentive Plan"). Equity awards may be granted on an annual basis or as multi-year retention awards that are attributed over multiple years of compensation. We also offer our NEOs some flexibility in determining the allocation of their annual equity grants between performance shares, restricted stock units and stock options, subject to a general framework and limitations imposed by the Compensation Committee, which we call our "Flex Share Program". We believe that equity awards serve as an important part of an NEO's compensation in that they further ensure alignment of the NEO's interests with those of our stockholders. Annual variable compensation gives the Compensation Committee the flexibility to tie individual and corporate performance to an NEO's compensation is an important element of our pay philosophy and each NEO's compensation program. NEOs also receive standard employee benefits.

Financial Performance

A significant portion of each NEO's compensation is dependent on our financial performance. The following chart provides a summary of our key financial performance metrics used to determine compensation. Each of the financial metrics below reflects record results in 2018:

Key Financial Metrics	2018	2017	Change
Revenues (in millions)	$ 435.6	$ 393.4	10.7%
Operating Income (in millions)	$ 212.6	$ 199.6	6.5%
Diluted Earnings Per Share	$ 4.57	$ 3.89	17.4%
Year-End Stock Price	$ 211.31	$ 201.75	4.7%
Trading Volume (in billions)	$ 1,713.5	$ 1,458.3	17.5%
Estimated U.S. High Grade Market Share	18.1%	16.9%	6.8%

While our 2018 results exceeded 2017 results for all of our key financial metrics, we did not meet our internal targets for revenues and operating income in 2018. As discussed below, this negatively affected the cash accrual from which we paid our NEOs for the 2018 performance period.

Relative Performance

For 2018, we evaluated our year-over-year financial growth as compared to our 2018 Peer Group (as defined below under *How We Determine Pay Levels – Peer Group)*. While our annual growth rate for revenue, operating income, and full-year stock price appreciation slowed on a year-over-year basis, we still ranked second in each of three- and five-year stock price growth and third in year-over-year EPS growth as compared to our U.S. peers.

Our share price growth as compared to the following indices for the one-, three-, and five-year periods ended December 31, 2018 was as follows:

Share Price Growth							
	MKTX	Russell 1000		NASDAQ Comp.		S&P MidCap 400	
	Stock Return	Stock Return	Alpha	Stock Return	Alpha	Stock Return	Alpha
1-year	5.0%	(6.6)%	11.6%	(3.9)%	8.9%	(12.5)%	17.5%
3-year	92.6%	22.3%	70.3%	32.5%	60.1%	18.9%	73.7%
5-year	227.6%	34.3%	193.2%	58.9%	168.7%	23.9%	203.7%

In 2018, we continued to deliver long-term value for our stockholders as evidenced by ranking 103rd in five-year total shareholder return (*"TSR")* (approximately 94th percentile) and 19th in ten-year TSR (approximately 99th percentile) of all 1,783 U.S. public companies with over $1 billion in market capitalization, (as reported by FactSet).

How 2018 Performance Affected Executive Compensation

The chart below shows the change in base salary, total cash (which includes base salary and incentive cash) and Total Direct Compensation ("*TDC*") (which includes cash payments, annual equity awards and the annualized value of multi-year equity awards) for each NEO (see *Annual Variable Performance Awards in Cash* and *Total Direct Compensation* below). Aggregate total cash payments to the NEOs decreased by 1% in 2018 from 2017 levels while TDC remained flat.

	Base Salary			Total Cash Compensation			Total Direct Compensation		
	2018	2017	Change	2018	2017	Change	2018	2017	Change
				($ in thousands)					
Richard M. McVey, CEO	$ 500	$ 500	0%	$ 2,390	$ 2,390	—	$ 7,100	$ 7,000	1%
Antonio L. DeLise, CFO	300	300	0%	1,150	1,100	5%	1,900	1,800	6%
Kevin McPherson, Sales	300	300	0%	1,400	1,475	(5)%	2,250	2,325	(3)%
Christophe Roupie, EU/Asia (1)	399	399	0%	865	831	4%	1,552	1,521	2%
Nicholas Themelis, CIO	300	300	0%	1,475	1,550	(5)%	2,500	2,625	(5)%
Aggregate				**$ 7,280**	**$ 7,346**	**(1)%**	**$ 15,302**	**$ 15,271**	**0%**

(1) All data for Mr. Roupie is shown in USD terms using a conversion rate of 1.33 USD to 1 GBP.

The figures in the preceding chart differ from those shown in the Summary Compensation Table in *Executive Compensation*, as the Summary Compensation Table reflects the full grant date value of any multi-year performance equity award received by the NEOs in the year actually granted (as required by the SEC).

At $253.3 million of adjusted operating income, we were slightly below our 2018 internal target adjusted operating income goal of $262.4 million. Accordingly, the accruals under our cash incentive plans were lower than budgeted (see *Annual Variable Performance Awards Payable in Cash* below*)*. This negatively affected the cash bonuses paid to certain of our NEOs.

The Company satisfied the operating income target range for the performance shares that were granted in 2018. Accordingly, the performance shares settled at 100% of the targeted award amounts (see *Long-Term Incentives – Equity-based Awards* below).

Changes/Key Actions in 2018

In 2018, we implemented the following changes with respect to our executive management and rewards structure to ensure that our executive compensation programs continue to balance the reward and retention of our NEOs with the short- and long-term interests of our stockholders:

- *Annual Incentive Design* – In 2018, we reduced the percentage of annual operating income allocated to the annual cash incentive performance awards payable to our employees, including our NEOs (the *"Bonus Accrual"*) (see *Employee Cash Incentive Plan - 2018)*;

- *Performance Share Metrics* – The thresholds for our performance share program were adjusted to align with our 2018 financial plan. An additional metric based on the Company's composite market share across its core products was added in 2018 (see *2018 Performance Share Metrics and Payout* below); and

- *Elimination of Section 162(m) Incentive Plan* – As a result of the Tax Cuts and Jobs Act of 2017, we no longer maintain a separate cash incentive plan for certain NEOs.

Actions in 2019

- *President & COO Hire* – Mr. Christopher R. Concannon joined the Company on January 22, 2019 as our President and Chief Operating Officer. Our Board determined that Mr. Concannon was an executive officer upon commencement of his employment;

- *Annual Incentive Design* – In 2019, we increased the percentage of annual operating income allocated to the annual cash incentive performance awards payable to our employees, including our NEOs. This modification further aligns our NEOs' compensation with our 2019 financial plan, which includes continued investment to support the Company's growth and new initiatives (see *Annual Variable Performance Awards Payable in Cash* below);

- *Performance Share Metrics* – The performance share targets for our 2019 program were adjusted to align with our new 2019 financial plan (see *2019 Grants for 2018 Performance* below); and

- *CEO Pay Mix* – As a result of the hire of Mr. Concannon, our President & COO, the Committee expects to shift the CEO's pay mix by decreasing his annual cash incentive opportunity. This reduction may be offset by a commensurately larger equity award so that the Company's financial results will continue to have a significant impact on the CEO's overall pay.

Advisory Vote on Executive Compensation

At our 2018 Annual Meeting of Stockholders, 95.77% of the votes present and entitled to vote on the non-binding advisory vote on our executive compensation proposal were voted in favor of our 2017 NEO compensation. In evaluating the 2018 compensation for our NEOs, the Compensation Committee reviewed these final vote results and took into consideration the strong support of our stockholders for our compensation policies. Although it determined that no significant changes to our executive compensation policies were necessary, the Compensation Committee will continue to review our NEO compensation program and goals on an annual basis.

How Compensation Is Determined

Role of the Compensation Committee

The compensation programs for our NEOs are administered by the Compensation Committee with assistance from management and our independent compensation advisors. The Compensation Committee reviews all components of remuneration and decides which elements of compensation, if any, should be adjusted or paid based on corporate and individual performance results and competitive benchmark data. The Compensation Committee's function is fully described in its charter, which is available on our corporate website at *www.marketaxess.com* under the *Investor Relations – Corporate Governance* caption.

In performing its duties, the Compensation Committee:

- annually reviews competitive compensation data, recent compensation trends and any other relevant market data obtained by its compensation consultant and considers the impact on our compensation architecture, policies and strategies;

- reviews all compensation, including equity holdings (both vested and unvested amounts) earned by each NEO;

- consults with the compensation consultant and full Board regarding market and performance data when considering decisions concerning the structure and amount of Mr. McVey's compensation; and

- considers the recommendations of Mr. McVey relating to the performance of our NEOs (other than himself) and the recommendations of its compensation consultant relating to market data and compensation trends when considering decisions concerning the structure and amount of compensation of our NEOs.

All compensation decisions related to cash incentives or equity grants for our NEOs are determined by the Compensation Committee in conjunction with the CEO, except for his own awards, and are approved by the Board.

Use of Outside Advisors

In making its determinations with respect to compensation of our NEOs, the Compensation Committee currently retains the services of Grahall as its independent compensation consultant. In this capacity, Grahall reports directly to the Compensation Committee. During 2018, Grahall provided the following services with respect to NEO compensation:

- *Pay Analysis* — Reviewed and benchmarked competitive market pay levels and conducted retention analyses with respect to 2018 compensation for our NEOs;

- *Proxy Disclosure* — Assisted in the preparation of the Company's CD&A for performance year 2017;

- *Share Ownership Guidelines* — Assisted management and the Compensation Committee in the oversight of our on-going share ownership guidelines;

- *CEO Retention Award* – Assisted the Compensation Committee and the Board in structuring a performance-based retention program for the CEO in advance of his previous multi-year retention award becoming fully vested in January 2020;

- *Executive Hire* – Assisted the CEO and the Compensation Committee in developing the compensation program for Mr. Concannon; and

- *General Advice/Compliance* — Provided other general compensation-related recommendations and performed other services, including providing advice regarding regulatory and advisory compliance issues and the Company's usage of authorized shares (*i.e*., "burn rate"), as well as an ongoing review of our peer group composition (as discussed below in *Peer Group*).

In 2018, Grahall also provided services relating to the compensation of our directors (see *Director Compensation* above).

The Compensation Committee has the sole authority to retain, terminate and set the terms of the relationship with any outside advisors who assist the Compensation Committee in carrying out its responsibilities.

Compensation Objectives and Strategy

Our pay philosophy is intended to balance rewarding our NEOs' contributions to our business and financial performance with stockholder returns while attracting and retaining the caliber of executives we need to ensure our continued growth and profitability.

The compensation program's primary objectives are:

- *Alignment*: align and reward Company and individual performance and decision-making with stockholder value creation while providing for prudent risk management;

- *Value Creation*: drive long-term growth objectives, thereby creating long-term value for our stockholders; and

- *Cost-Effectiveness*: provide rewards that are economically viable, equitable to both our NEOs and stockholders, and competitive with organizations that compete for executives with similar skill sets. This encourages high-potential individuals with significant and unique market experience to build a career at the Company.

Both our unique internal operating characteristics, as well as external competition for talent, directly impact the way we attract, reward and retain key management talent:

- We are one of the few public companies in the financial technology market focused on the electronic trading of fixed income products. Our markets are also undergoing significant changes in market structure, which requires our NEOs to be innovative as they help set the Company's direction and determine the role it plays in the financial markets.

- We are a relatively flat organization; therefore, our NEOs must have the ability to balance strategic decision making with tactical execution, and they must be able to effectively communicate with, and lead, broad teams of employees across all levels of the organization.

- We are a hybrid financial technology company whose NEOs must combine an expertise of the fixed-income securities market with the knowledge and ability to conceptualize, create, implement and deliver technology-driven market solutions. Competitors for talent include newer start-up initiatives trying to compete in our markets; traditional financial services firms, especially those investing in technology solutions; large exchange groups; and software development firms.

In implementing the Company's compensation programs and arriving at individual pay decisions, we consider that other organizations may provide their executives with compensation elements similar to ours, but within compensation structures that may be different than ours. These structures may provide their executives with less variability in year-over-year compensation and earnings opportunities that exceed what we can afford or desire to pay.

To assess the financial impact of our compensation programs, we focus on managing our aggregate compensation and benefits expense expressed as a percentage of our total annual revenues ("*C&B Ratio*"). We believe that monitoring this measure improves our overall profitability. The NEOs' annual incentive payments are a component of aggregate compensation expense; therefore, we may reduce the NEOs' incentives to meet our internal annual C&B ratio target. Additionally, the C&B Ratio provides a normalized efficiency measure by which we can compare our compensation structure to those maintained by our peers and other financial and technology industry companies. Since 2012, our C&B Ratio has been below 30%, which we believe is an appropriate target given our current revenues, employee base and strategic plans.

We believe that continuity of the leadership team benefits the Company and our stockholders. As such, we promote long-term commitments from our NEOs. To support these objectives, we provide our NEOs with a mix of both short-term incentives (base salary and performance-based annual cash awards), long-term (three- to five-year) equity incentives, and where appropriate, contractual protection that supports a long-term commitment to the Company. Ultimately, the value realized by our NEOs from our equity incentive awards depends on several factors: our financial performance, changes in our Common Stock price, satisfaction of an award's vesting schedule, and compliance with any on-going employment or post-termination covenants. Taken together, we believe these factors help create a comprehensive scheme that both reinforces our long-term performance-based orientation and is aligned with the interests of our stockholders.

Compensation Policies and Practices

We maintain a high standard of compensation policies and practices as illustrated below:

Compensation Policies and Practices	
What We Do	**What We Avoid**
√ Emphasis on performance-based compensation	**X** No guaranteed bonuses for existing NEOs
√ Use of clawbacks	**X** No pension / SERP plans
√ Stock ownership guidelines	**X** No single-trigger Change in Control benefits
√ Use of long term equity awards that align with stockholder interests	**X** No §280G excise tax "Gross-Up" Benefits
√ Automatic reduction of severance payments subject to §280G excise tax	**X** No corporate aircraft or other excessive perquisites
	X No dividends on performance shares until earned
	X No "repricing" underwater options without stockholder approval
	X No hedging of MarketAxess stock

Tally Sheets

Our Compensation Committee uses tally sheets to summarize historical compensation, equity holdings and realized value for each NEO, as well as applicable Company performance. Because the Company does not have any extensive retirement benefits, perquisites or other elaborate compensation programs, the primary benefit of using tally sheets is to provide historical perspective for each NEO regarding the elements of pay and equity holdings which facilitate analysis of wealth opportunity and wealth realization. The tally sheets are used to conduct sensitivity analysis regarding each NEO's forfeitable (due to vesting and/or clawback rights) and non-forfeitable equity at different Common Stock prices to help facilitate our retention efforts. In this way, the compensation decisions reflect a more informed perspective regarding prior equity grants and incentive opportunities and consider the retention value of all existing awards as a whole.

Principle Elements of Pay

Elements of Pay Table

Our executive compensation programs are comprised of the following principle elements, each of which is described in more detail below:

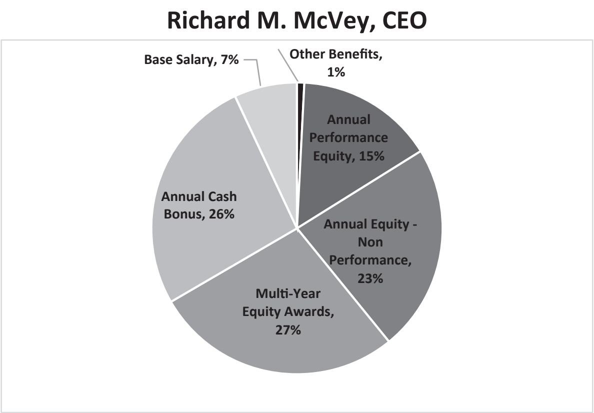
The combination of these elements enables us to offer competitive, cost effective compensation programs that balance variable, or at-risk, compensation with prudent risk taking and stockholder interests.

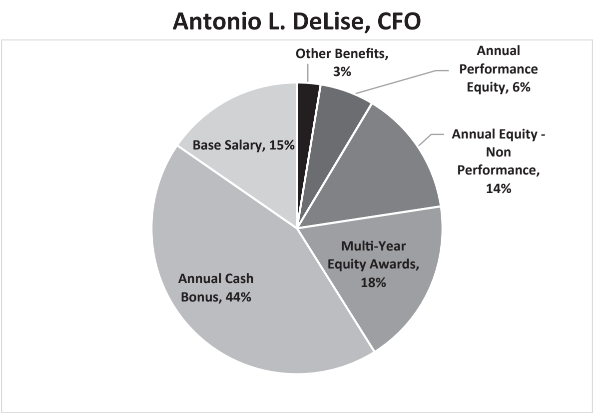
Elements of Pay		
Component	**Description**	**Purpose**
Base Salary	Fixed pay based on role and responsibilities, experience and expertise, and individual performance	Provides a consistent minimum level of compensation that is paid throughout the year at a cost-effective level for the Company
Annual Cash Bonus	Variable cash payments based on achievement of annual corporate financial goals and individual performance	Rewards short-term performance in a framework that discourages excessive risk taking by limiting maximum award opportunities
Annual Equity Awards	Equity awards that vest over three or more years	Designed to tie compensation to stockholder value creation; rewards attainment of corporate and individual goals
Multi-Year Equity Awards	Performance awards that vest over four or more years, often with back-ended vesting	Serve as retention tools while aligning compensation to long-term stockholder value creation
Other Benefits	Include healthcare, life insurance, disability and retirement savings plans	Provide assistance with healthcare related costs and income protection in the event of disability as well as a base level of replacement pay upon retirement

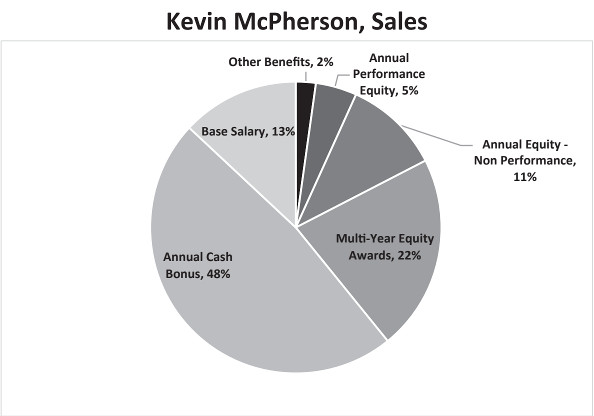
Pay Mix

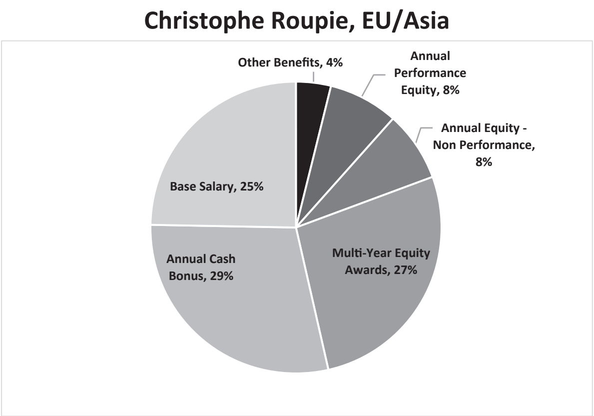
We believe that lower base salaries and higher levels of variable performance awards motivate our NEOs, facilitate the achievement of our growth objectives and promote decision-making that is aligned with our stockholders' interests. A lower base of fixed costs (including base salary) also allows us to better manage expenses, which helps improve profitability. We also believe that the balance among pay components in our compensation program design mitigates against a focus on short-term results and decreases the potential for excessive or inappropriate risk taking (see *Compensation Risk Assessment* below). An overview of the elements of pay provided to each NEO for fiscal year 2018 is as follows:

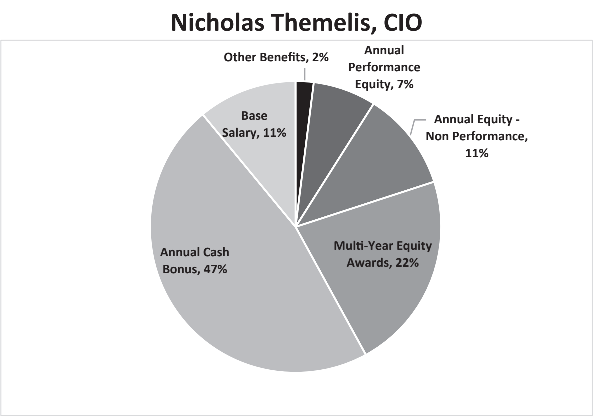
Compensation and Benefits Paid in Respect of 2018











In 2018, all NEOs received over a third of their annual TDC in equity, which was intended to align each NEO's interests with that of our stockholders. As CEO, Mr. McVey receives the highest percentage of TDC (66%) in the form of equity compensation. Given Mr. McVey's level of ownership of the Company's Common Stock, his other pay components and our strategic initiatives, we believe that Mr. McVey's significant percentage of TDC in the form of equity is both appropriate and desirable to further the alignment between him and the Company's stockholders.

How We Determine Pay Levels

Peer Group

The Company uses peer group information to help set competitive market levels and structure for our NEOs. Because several of our closest competitors are private firms with unpublished compensation data, we rely on a broader base of financial services and technology companies to facilitate our review.

While public peers may differ from us in terms of size (whether measured by market capitalization or annual revenues) and core business, these companies are the closest matches available to us in terms of a comparable business model. Each provides technology solutions to the financial markets, and some provide electronic trading platforms similar to ours, albeit in other asset classes.

Grahall performs an ongoing review of the composition of our peer group. Factors considered in determining the peer group ("Peer Group") include:

- financial size – market cap and revenues, generally based on a methodology similar to the method used by Institutional Shareholder Services *("ISS")* of +/- 2.5 times the Company's most recent annual revenues and +/- 5 times the Company's most recent market capitalization;
- whether companies compete with us for customers, executives or other employee talent;
- asset class or product offering;
- peers of peers, as well as peers designated by ISS in its annual review; and
- reviewing the broader market for additional firms in financial services, IT services and software industries, based on relative revenue, market capitalization and operating income similarity.

Due to our desire to broaden the number of companies in our Peer Group, our focus on expanding our international business and to better evaluate our financial performance, the Company has included certain companies not listed on U.S. exchanges ("*Non-U.S. Peers*"), but whose business models are similar to the Company's. The Non-U.S. Peers are generally included in the Compensation Committee's review of our performance.

For the 2018 compensation period, our Peer Group was comprised of the following firms:

2018 Peer Group										
US Based Peers	**Symbol**	**Client Base**	**Products**	**Revenue ($ in millions)**		**Operating Income ($ in millions)**		**Market Cap ($ in millions)(1)**		
ACI Worldwide	ACIW	Institutional and Retail	Payment Systems	$	1,010	$	125.9	$	3,789	
Alliance Bernstein Holding	AB	Institutional and Retail	Various	$	3,367	$	825.3	$	2,726	
BGC Partners	BGCP	Institutional	Various	$	1,938	$	179.8	$	2,067	
CBOE Holdings	CBOE	Institutional	Listed options and futures	$	2,769	$	599.4	$	10,566	
Cohen & Steers	CNS	Institutional	Various	$	381	$	147.0	$	1,968	
Envestnet	ENV	Wealth Management/Cloud Data	Technology	$	812	$	14.2	$	3,110	
Financial Engines	FNGN	Retail	Various		*		*		*	
GAMCO Investors	GBL	Institutional and Retail	Various	$	342	$	186.8	$	593	
Hercules Technology Growth Capital	HTGC	Institutional	Capital / Funding	$	208	$	108.7	$	1,201	
Investment Technology Group	ITG	Institutional	Equities		*		*		*	
Main Street Capital	MAIN	Middle Market, Small Companies	Capital / Funding	$	233	$	156.6	$	2,320	
MSCI	MSCI	Various, including Institutional	Various	$	1,434	$	507.9	$	16,462	
Oaktree Capital Group	OAK	Institutional and Retail	Various	$	1,386	$	489.3	$	7,733	
SS&C Technologies Holdings	SSNC	Institutional	Technology	$	3,421	$	429.1	$	15,736	
Virtu Financial	VIRT	Institutional and Corporate	Various	$	1,879	$	696.4	$	4,574	
Virtus Investment Partners	VRTS	Institutional and Retail	Various	$	552	$	113.1	$	684	
Wisdom Tree Investments	WETF	Institutional & 401(k) Providers	Various	$	274	$	61.3	$	1,106	
MarketAxess Holdings	***MKTX***	***Institutional***	***Fixed Income***	***$***	***436***	***$***	***213***	***$***	***9,172***	
			MKTX Rank		**11 of 16**		**7 of 16**		**4 of 16**	
			Median	**$**	**1,010**		**180**		**2,726**	
			75th Percentile		**1,908**		**499**		**6,154**	
			MKTX Percentile		**30th**		**60th**		**80th**	

(1) Market Capitalization estimated as reported close of business on March 29, 2019.
* Denotes a company that was acquired during 2018 and is no longer used for comparison purposes.

Benchmarking – Importance and Process

Once the Peer Group review is completed, Grahall identifies a broader group of peers for compensation benchmarking purposes, which is accomplished by reviewing the following:

- The group of financial services companies designated as our peer group by ISS for the 2018 compensation period;
- A broader group of financial services companies within S&P's Capital Markets, Diversified Financials and Consumer Finance sub-groups; and
- A broader group of S&P's technology companies within Software & Services and IT Services.

The aggregate information developed by Grahall is used to prepare the recommended pay ranges for review and approval by the Compensation Committee. To minimize the impact of year-to-year data volatility, multiple years of data is used. In addition, variable annual incentives and equity awards may be averaged and/or annualized as appropriate to better estimate market pay level.

The Company's performance and C&B Ratio, as well as individual performance and contributions, role, knowledge and expertise, and the level of competition that exists within the market for a given position collectively drive how the NEO is paid vis-à-vis the recommended pay range.

Individual Performance

The Compensation Committee assesses the individual performance of the Company's NEOs in connection with the determination of each NEO's annual cash bonus, annual equity award and TDC. In assessing the performance of the NEOs for 2018, the Compensation Committee credited them with:

2018 Performance	
NEO	**Contributions**
Richard M. McVey, CEO	● Tenth consecutive year of record revenues, operating income, EPS, and average daily trading volume.
	● Increased share price despite difficult equity market conditions.
	● Continued long-term growth of core products while also accelerating the momentum in Open Trading.
	● From a regulatory perspective, delivered on timely MiFID II solutions through our TRAX post trade business and helped prepare the Company for Brexit.
	● Led a significant investment in hiring senior talent globally in order to expand the Company's ability to deliver on its strategic goals and for longer-term succession planning, including the hire of the Company's new President & Chief Operating Officer.
Antonio L. DeLise, CFO	● Led the Investor Relations function, bringing transparency, accessibility and clear messaging to our stockholders and analysts, and successfully increased the number of analysts covering the Company.
	● Continued to build out the risk management function, including increased risk monitoring, improved credit risk analysis and monitoring, and improved the Company's SOX and internal auditing capabilities.
	● Supported various strategic initiatives, including analysis and decision making support for merger and acquisition opportunities, long-term financial and strategic planning, pricing and premises.
Kevin McPherson, Sales	● Contributed to the Company's record revenues, earnings and trading volume as well as market share gains in core products.
	● Diversified our business through increased trading in newer asset classes and across clients and geographies.
	● Drove the growth of our Open Trading, high yield and emerging markets businesses, as well as the increase in our trading volumes from clients in Europe.
Christophe Roupie, EU/Asia	● Increased our E.U. average daily trading volumes through Open Trading, increased the number of block trades, and helped increase client usage of the Company's crossing and auto-execution functionalities.
	● Increased post prade and data revenues on a year-over-year basis and diversified the client base generating post trade revenues.
	● Delivered on regulatory requirements, including those related to the implementation of MiFID II and the establishment of the Company's Netherlands office in anticipation of Brexit.
	● Drove the hiring of senior staff to add depth and execution capability to the organization.
Nicholas Themelis, CIO	● Delivered three major releases and two minor releases for the trading platform, including the on-going support of new MiFID II requirements throughout the year.
	● Delivered trading system enhancements, including enhancements to auto execution functionality, improvements to settlement workflow to accommodate ten new local markets, and architectural changes to improve reliability and stability of our trading systems.
	● Enhanced the Company's research and data products such as Liquidity Scores, CP+, Like-Bonds, and TCA.
	● 10% increase in year-over-year data revenues.
	● Improved and enhanced the Company's internal infrastructure and systems.

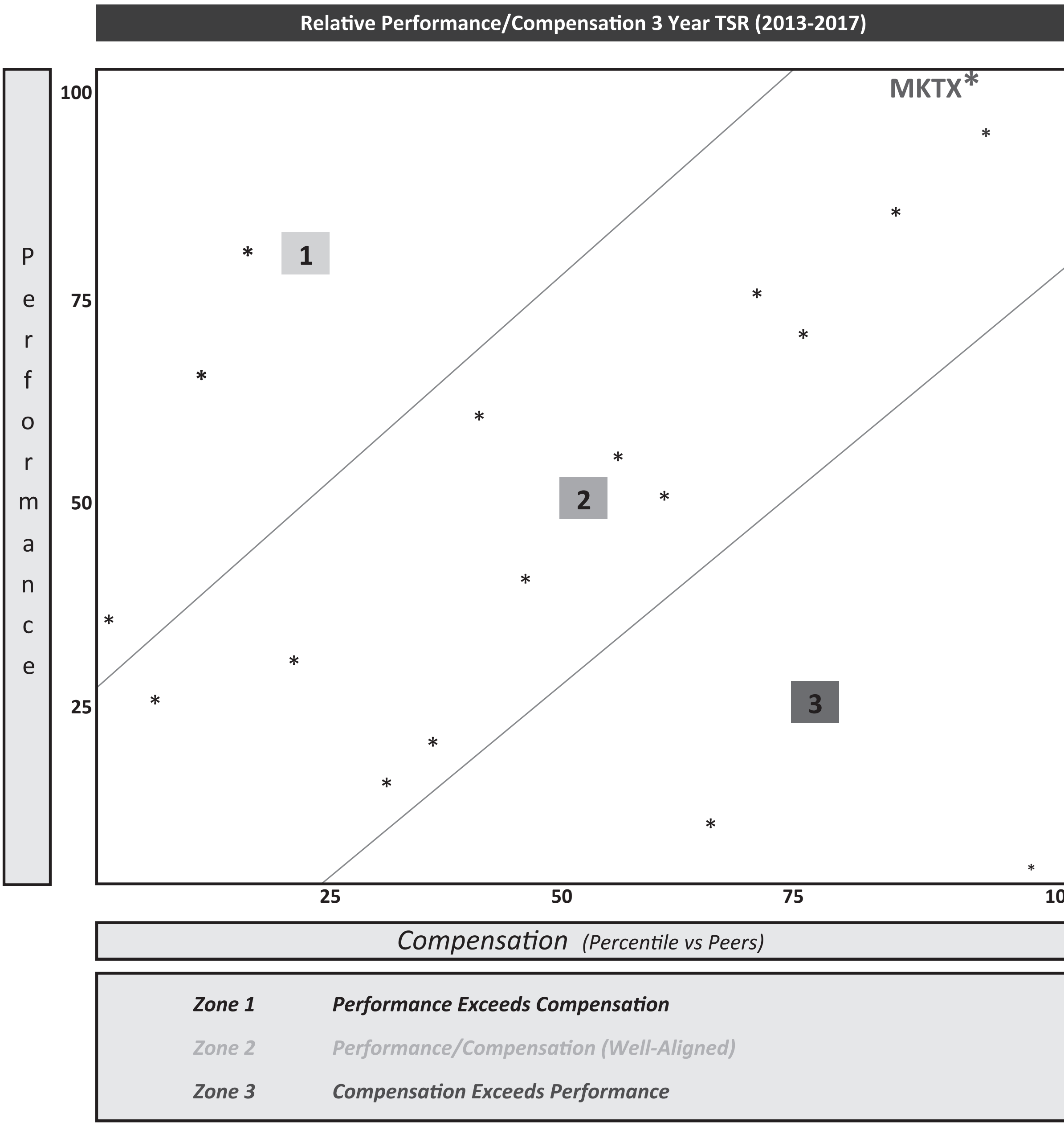
Pay for Performance Alignment – CEO's Realized Compensation

To assess our pay-for-performance alignment, we reviewed all compensation realized (*"Realized Compensation")* by Mr. McVey relative to our TSR for the three-year period ended December 31, 2017 (the most recent period for which peer compensation data was available at the time of filing this proxy statement) against our 2017 peer group.

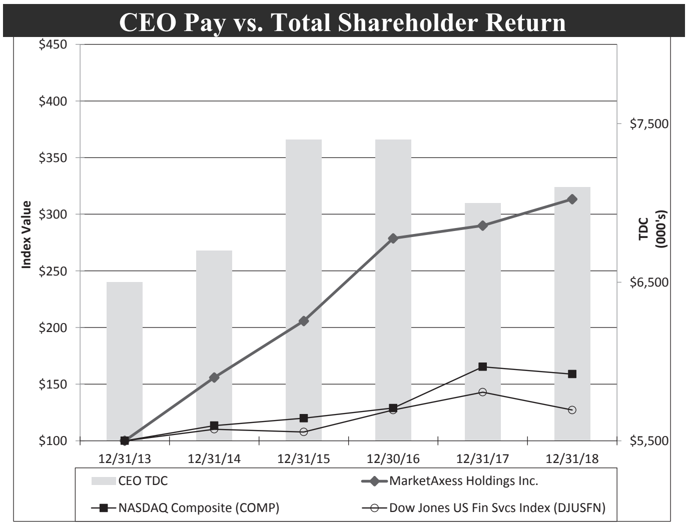
Realized Compensation was determined by adding the following elements together:

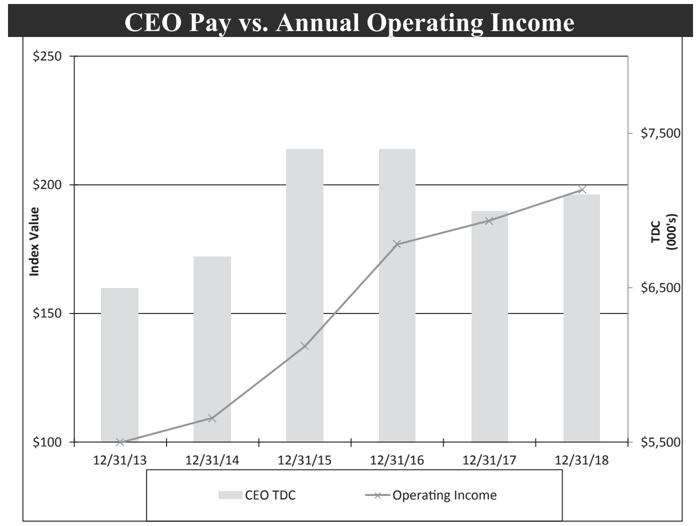
- Sum of three years' base salary;
- Sum of three years' actual annual incentive payments;
- Intrinsic ("in-the-money") value of stock options awarded during the three-year period (using December 31, 2017 closing price);
- Value of three years' restricted stock awards updated for December 31, 2017 closing price;
- Sum of all performance awards made during the three-year period; and
- Any other payments or form of wealth received by the executive as reported in the compensation table for the applicable three-year period.

We believe the structure of our compensation program, which minimizes fixed costs and emphasizes appropriate performance leverage, has fairly and competitively compensated our NEOs, including Mr. McVey, for our above market performance realized during this time period and has exhibited strong pay for performance alignment. The graph below compares the three-year Realized Compensation and the Company's TSR against our 2017 peer group on a percentile basis and indicates that the Company's performance was well-aligned with compensation for the period. Alignment is defined as the Company's relative pay and relative performance percentiles amongst the peers that were within 25 percentile points of each other.



The charts below compare Mr. McVey's TDC to the Company's Common Stock price appreciation, the performance of various indices and the Company's operating income for the five-year period ended December 31, 2018:



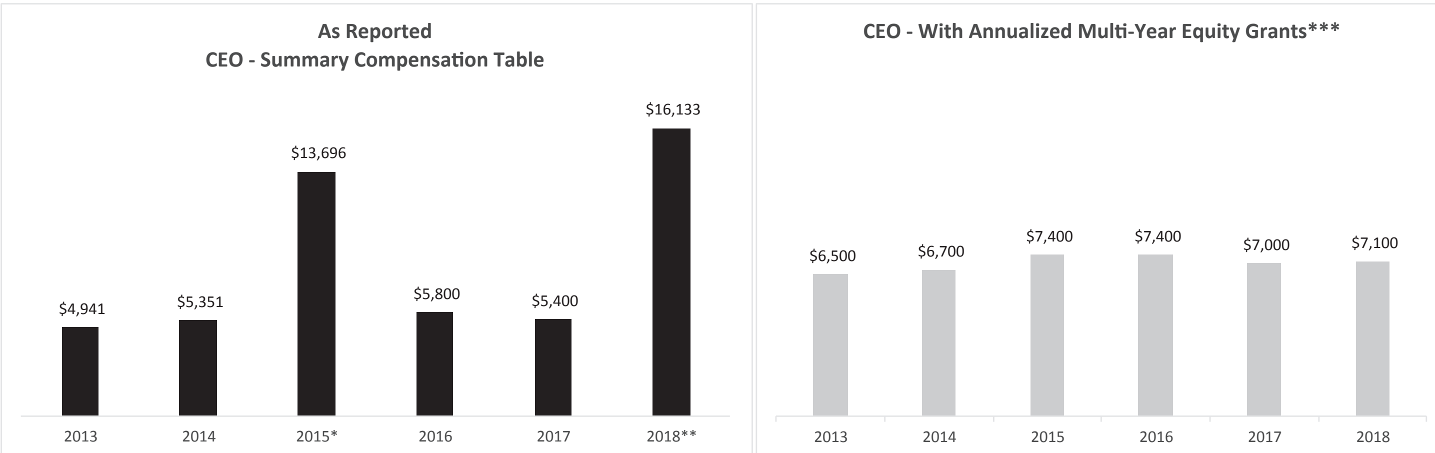


Calendar year 2013 is the baseline year. The measurement period begins with calendar year 2014.

As illustrated in the above graphs, Mr. McVey's annual TDC has increased 9.2% during this 5-year period ending December 31, 2018 (representing an approximately 1.8% compound annual growth rate "*CAGR*"), while the Company's operating income has increased 98.1% (14.6% CAGR over 5 years) and TSR has increased over 313% (25.6% CAGR over 5 years). During this 5-year period, over $5 billion in shareholder value (as measured by increased market capitalization) has been created.

We believe Mr. McVey's compensation has consistently reflected our pay for performance philosophy during this period. However, because the Summary Compensation Table requires multi-year equity awards to be reported in full in the year received, our use of such awards can make an NEO's compensation appear to be volatile. The chart below illustrates and contrasts TDC levels for Mr. McVey over the past 6 years as reported in the Summary Compensation Table (pursuant to SEC rules) versus the TDC calculated by the Company as a result of annualizing multi-year equity awards over the term of each award:

CEO Compensation



*Includes $8 million performance equity grant which is spread over comp years ending 2015 - 2019

** Includes $11 million performance equity award that is spread over 5 years (2 months of cost for year-end 2018, 10 months for year-end 2023, and full-year cost for each year-end 2019 - 2022)

***Annualized Multi-Year Equity Grants spread the grant value of multi-year quity awards over the relevant perfomance / vesting period

CEO - Annual Grant Value Offset

Attribution Years	2015 Performance Award Value	2018 Performance Award Value	Total Offset to Annual Award
		($ in thousands)	
Each Year 2015 - 2017	$ 1,600	$ —	$ 1,600
2018	$ 1,600	$ 367	$ 1,967
2019	$ 1,600	$ 2,200	$ 3,800

Base Salary

We avoid automatic base salary increases and target our NEO's base salaries below applicable median base pay levels to manage our fixed compensation costs and reinforce our pay-for-performance philosophy.

While most of the NEOs' base salaries were at or below the 25th percentile of base salaries reported by our Peer Group, we did not adjust base salaries in 2018. Instead, we provided our NEOs with the opportunity for higher compensation through improved variable and long-term incentive opportunities as described below.

Annual Variable Performance Awards Payable in Cash

Our NEOs are paid cash awards under our Employee Cash Incentive Plan. A summary of cash incentives paid to our NEOs in 2018 and 2017 and a comparison to our key financial metrics for both years can be found below:

Cash Incentive Paid Compared to Financial Metrics			
	2018 ($)	**2017 ($)**	**Change**
Revenues (in millions)	$ 435.6	$ 393.4	11%
Operating Income (in millions)	$ 212.6	$ 199.6	6%
Diluted EPS	$ 4.57	$ 3.89	17%
(in thousands)			
Richard M. McVey, CEO	1,890	1,890	0.0%
Antonio L. DeLise, CFO	850	800	6%
Kevin McPherson, Sales	1,100	1,175	(6)%
Christophe Roupie, EU/Asia	466	432	8%
Nicholas Themelis, CIO	1,175	1,250	(6)%

Employee Cash Incentive Plan - 2018

The pool for our annual employee cash incentive plan is accrued as a percentage of our annual pre-tax operating income before the payment of any incentive compensation ("*Adjusted Operating Income*")*.* The Company sets an Adjusted Operating Income target each year. In 2018, our target Adjusted Operating Income was $262.43 million. At target, the Bonus Accrual would have been $33 million.

The Company must have positive Adjusted Operating Income for there to be an accrual for any particular performance year. If the Company exceeds the Adjusted Operating Income target, the percentage accrual rate is reduced, as shown below:

Employee Cash Incentive Plan Accrual Rate - 2018	
Level of Adjusted Operating Income	**2018 Accrual Rate**
At or below $0	0.00%
≤100% (at target)	12.57%
>100 and <105%	12.00%
105 to 110%	10.00%
>110%	8.00%

Regardless of the accrual rate, the Compensation Committee ultimately has the right to override the formulaic result, thereby changing the actual amount paid.

The total amount accrued under the program for 2018 was $31.7 million, which was available to be awarded to all employees of the Company at the discretion of the Compensation Committee. As shown in the chart below, the actual accrual rate for 2018 was lower than previous years' accrual rate. In addition, the Compensation Committee exercised downward discretion in the payout percentage after reviewing financial performance, market data, staffing levels and the C&B Ratio. The lower accrual and payout rates also allowed the Company to achieve higher incremental margins:

Actual Accrual Rate vs. Target and Previous Year		
	2018	**2017**
Target accrual rate	12.57%	13.82%
Adjusted (actual) accrual rate	12.52%	12.94%
Payout (in thousands)	$ 31,740	$ 29,621

Non-Qualified Deferred Cash Plan – 2018 Contributions

The Company offers a voluntary non-qualified deferred cash plan that allows U.S.-based NEOs and other select participants to defer all or part of their cash bonus. For the cash bonus paid in 2019 for 2018 performance, Mr. DeLise was the only NEO to participate in this plan. He deferred 75% of his $850,000 cash incentive bonus for 2017, or $637,500.

Changes to the Employee Cash Incentive Plan – 2019

For purposes of funding the Bonus Accrual for the 2019 performance year, the accrual rate is slightly higher than in previous years principally due to the headcount investment we have planned for 2019, including the hire of a new President & COO. In addition, for 2019, there is no decline in the accrual rate for out-performance. This allows us to simultaneously invest in new employees and have the best chance to retain high-performing existing employees. The table below shows the accrual rates for each threshold for 2019 as compared to 2018:

Employee Cash Incentive Plan Accrual Rate - 2019		
Level of Adjusted Operating Income	**2019 Accrual Rate**	**2018 Accrual Rate**
0.00%	0.00%	0.00%
≤100% (at target)	12.98%	12.57%
<105%	12.98%	12.00%
105 - 110%	12.98%	10.00%
>110%	12.98%	8.00%

Long-term Incentives – Equity-based Awards

Equity awards have traditionally been granted to our NEOs at the time of hire ("new hire" awards), annually (as part of our on-going compensation scheme), and upon contract renewal. We believe that delivering an appropriate portion of an executive's equity as a multi-year equity award is an effective method of providing an executive with a significant additional incentive to create long-term value for stockholders, while potentially reducing the accounting expense incurred by the Company over a multi-year period to the extent that our Common Stock price increases.

We grant annual awards on January 15 using the average closing price of our Common Stock for the ten consecutive trading days leading up to and including the date of grant. This helps to ensure that the timing of any award and the setting of the exercise price of a stock option will not be subject to manipulation. It also reduces the impact of any significant short-term swings in stock price. All annual awards vest over a minimum of three years, and the first vesting date is at least one year from the date of grant.

The value of the annual equity awarded to each NEO is considered by the Compensation Committee in determining TDC for each NEO. The amount awarded is based upon market data, the Company's desire for our NEOs to maintain appropriate upside leverage in our annual incentive program while managing risk, share ownership guidelines, and our desire to retain our NEOs.

The Executive Compensation Tables require that we report all equity granted during the applicable reporting year. As such, we are providing an overview of all equity awards granted in January 2018 for 2017 performance. However, in calculating TDC for performance year 2018, we used the value of equity granted in January 2019 in recognition of performance during 2018. Accordingly, we have also included an overview of equity awards granted in 2019.

2018 Grants for 2017 Performance

The following chart shows the annual equity awards granted to our NEOs in January 2018 for performance in 2017 and the value of any multi-year awards included in their TDC for 2017 (see *Use of Multi-Year Awards* below

Equity Attributed to Year-End 2017 Compensation			
	Grant Value Jan 2018	**Annualized Portion of Previously Granted Multi-Year Awards**	**Total**
		($ in thousands)	
Richard M. McVey, CEO	3,010	1,600	4,610
Antonio L. DeLise, CFO	340	360	700
Kevin McPherson, Sales	350	500	850
Christophe Roupie, EU/Asia	253	437	690
Nicholas Themelis, CIO	475	600	1,075

The annual equity value received by the NEOs was determined after 1) setting a target TDC for each NEO, 2) subtracting out the base salary already paid and the targeted cash incentive, and 3) subtracting the annualized value of their respective multi-year grants (See *Use of Multi-Year Awards* below).

Flex Share Program

Annual equity awards are made pursuant to our "Flex Share" program that permits our NEOs to have input into the form of their equity compensation (between performance shares, restricted stock units ("*RSUs*") and stock options), subject to a general framework and limitations imposed by the Compensation Committee. The Flex Share program allows the Company to deliver more individualized awards with greater perceived value to the NEOs without incurring additional expense to the Company. For the awards granted in 2018, each annual equity award had a minimum requirement of 35% for performance awards (40% for the CEO), with a maximum amount of 50% of the annual equity award allowed to be in the form of performance shares. Of the remainder of the annual award, 50% was awarded in the form of RSUs. NEOs then had the option to receive the balance of their award in RSUs or stock options. For the awards granted in January 2018, stock options were granted at a ratio of one RSU to 3.63 stock options, based upon the relative accounting cost of each award component on the award date.

RSUs and stock options vest in three equal annual installments beginning a year after grant. Performance shares settle in the first quarter after the completion of the performance year and vest in two equal annual installments beginning two years after grant.

RSU settlement may be deferred at the NEO's election, which provides an added benefit of allowing the NEO to maintain additional upside leverage in our shares of Common Stock through delayed taxation. Generally, deferring RSUs has no impact on an RSU's vesting schedule, except that the initial vesting date for an RSU deferred in the year of grant must occur at least 13 months after the grant date in accordance with Section 409A of the Code.

As a result of their elections, the NEOs were granted the following awards as part of their annual equity award in January 2018:

Annual Equity Award - Share Election - 2018

	Total Value Granted ($ in thousands)	Percentage Allocated as RSUs	RSUs Granted on Jan 15, 2018	Deferred	Percentage Allocated as Stock Options	Stock Options Granted on Jan 15, 2018	Percentage Allocated as Performance Shares	Performance Shares Granted on Jan 15, 2018
Richard M. McVey, CEO	$ 3,010	30%	4,418	Yes	30%	16,037	40%	5,891
Antonio L. DeLise, CFO	$ 340	65%	1,081	No	0%	—	35%	582
Kevin McPherson, Sales	$ 350	65%	1,113	No	0%	—	35%	599
Christophe Roupie, EU/Asia	$ 253	60%	743	N/A	0%	—	40%	743
Nicholas Themelis, CIO	$ 475	60%	1,395	No	0%	—	40%	930

2018 Performance Share Metrics and Payout

The performance share awards were designed to result in a 100% payout if the Company achieved a targeted adjusted operating income range (before expenses incurred in connection with the grant of all performance share awards for performance in 2018). The performance share awards provided for a maximum payout of 150% of the Target award if the high end of the target range was exceeded by at least 10% and would result in no payout if the Company did not achieve at least 80% of the low end of the target range. Our actual adjusted operating income was $222 million, which resulted in a payout of 100%. The table below shows the adjusted operating income goals and corresponding payout results:

2018 Performance Share Metrics and Achievement

2018 Adjusted Operating Income Goal	Performance Share Payout
Below $176.2 million	0.0%
$176.2 million (80%)	50.0%
Actual of $222.03 million	***100.0%***
Target of $220.23 to $230.23 million	100.0%
$253.25 million and higher (110%)	150.0%

The table below shows the adjustment to the performance shares upon settlement:

Performance Share Awards - Granted and Settled				
	Performance Shares Granted	Value on the Date of Grant (1)	Settlement of Performance Shares in 2018	Value of Grant on Date of Settlement (2)
	(in units)	($ in thousands)	(in units)	($ in thousands)
Richard M. McVey, CEO	5,891	1,200	5,891	1,265
Antonio L. DeLise, CFO	582	119	582	125
Kevin McPherson, Sales	599	122	599	129
Christophe Roupie, EU/Asia (3)	743	151	498	107
Nicholas Themelis, CIO	930	189	930	200

(1) Based on the closing price on January 15, 2018 (Grant Date) of $203.72
(2) Based on the closing price on January 31, 2019 (Settlement Date) of $214.77
(3) Due to U.K. tax considerations, Mr. Roupie's performance award was subject to downward adjustment only. Therefore, the grant amount was the maximum amount that could be earned.

2019 Grants for 2018 Performance

The following chart shows the annual equity awards granted to our NEOs in January 2019 for performance in 2018 and the value of any multi-year awards included in their TDC for 2018:

Equity Value Attributed to Year-End 2018 Compensation				
	Grant Value	Annualized Portion of Multi-Year Awards		
	Jan-19	Previous Multi-Year Award	2018 Multi-Year Award	Total
		($ in thousands)		
Richard M. McVey, CEO (1)	2,743	1,600	367	4,710
Antonio L. DeLise, CFO (2)	390	360		750
Kevin McPherson, Sales (2)	350	500		850
Christophe Roupie, EU/Asia (3)	250	170	268	688
Nicholas Themelis, CIO (2)	425	600		1,025

(1) $1.6 million represents the annual value of the multi-year performance award granted in January 2015; $367,000 represents two months of value of a new multi-year performance retention award granted in November 2018 (see *Use of Multi-Year Awards* below)
(2) Multi-year awards were granted in January 2016 and annual attribution began with 2015 year-end compensation.
(3) $170,000 represents the earned amount of a multi-year performance award granted in connection with Mr. Roupie's hire on April 1, 2017; $268,000 represents the value of an award tied to year-end 2018 compensation (see *Use of Multi-Year Awards* below)

There were no changes to the Flex Share program for the 2019 grants, except that the ratio of RSUs to stock options decreased slightly to 3.61 stock options to one RSU.

The performance share metrics for operating income and composite market share were adjusted to align with our 2019 financial plan. In the event that the Company exceeds the composite market share thresholds, the payout of the performance shares can be increased up to the 100% payout level, provided, however, the Company must have first met the minimum threshold for operating income. Notwithstanding the above, market share results cannot increase the payout above 100%. Any payout level above 100% depends solely on exceeding operating income goals.

The NEOs were granted the following awards in January 2019:

Annual Equity Award - Share Election - 2019								
	Total Value Granted ($ in thousands)	**Percentage Allocated as RSUs**	**RSUs Granted on Jan 15, 2019**	**Deferred ?**	**Percentage Allocated as Stock Options**	**Stock Options Granted on Jan 15, 2019**	**Percentage Allocated as Performance Shares**	**Performance Shares Granted on Jan 15, 2019**
Richard M. McVey, CEO	$ 2,743	60%	7,757	Yes	—	—	40%	5,171
Antonio L. DeLise, CFO	$ 390	70%	1,287	No	—	—	30%	551
Kevin McPherson, Sales	$ 350	70%	1,155	No	—	—	30%	495
Christophe Roupie, EU/Asia (1)	$ 1,320	50%	2,522	N/A	—	—	50%	3,783
Nicholas Themelis, CIO	$ 425	70%	1,402	No	—	—	30%	601

(1) Mr. Roupie was awarded Restricted Stock, not RSUs. As discussed below, Mr. Roupie received an additional award with the same structure as his annual award as part of the 2018 year-end compensation process. The share amount for the performance grant reflects the maximum amount that Mr. Roupie can earn. Due to U.K. tax considerations, Mr. Roupie's performance award is subject to downward adjustment only.

Use of Multi-Year Awards as an Offset Against Future Equity Awards

We have enjoyed significant benefits from, and strongly believe in the retention and incentive value created by, up-front equity awards, provided that such awards are appropriately structured. We believe that performance based multi-year awards adhere to this philosophy by offering strong additional incentives – wealth creation and retention opportunities through both the number of shares earned and the potential for an increase in stock price – without creating excessive risk within the overall compensation framework under which our NEOs are compensated.

In all cases, the multi-year awards are attributed to four or more years of future compensation and reduce the annual compensation awarded to the NEOs for those years of attribution. Importantly, these awards act as dollar for dollar offset against future equity awards:

These awards are calibrated to ensure that they deliver enhanced incentive opportunity and retention without significantly compromising the Committee's ability to grant additional equity to our NEOs on an annual basis. The Committee believes that the Company's use of multi-year awards has been a successful practice which has delivered significant benefits to the executives and our stakeholders.

CEO Awards

CEO – 2015 Performance Award

In January 2015, Mr. McVey was awarded a performance based multi-year award in connection with the execution of a new employment agreement. The award is comprised of two separate performance components: (i) $6 million in performance shares, and (ii) $2 million in premium priced stock options ("*Premium Options*").

As previously disclosed, all performance targets for all tranches of this award were met on or before March 2016. Notwithstanding that the performance targets were met in 2016, 50% of the shares delivered to the CEO in settlement of the performance shares did not vest until January 15, 2019 and the remainder will vest January 15, 2020.

The Premium Options vest in three tranches as follows:

Premium Options	
Vesting Date	**Options Vested**
January 15, 2018	39,933
January 15, 2019	39,972
January 15, 2020	40,076

The expiration date for all Premium Options is July 15, 2020.

CEO – 2018 Performance Award

In connection with the execution of an amended employment agreement that extended the CEO's employment term and the fact that a significant portion of the CEO's January 2015 award was vested on or before January 15, 2019, the CEO was awarded another performance retention award on November 8, 2018 ("2018 Performance Award"). The 2018 Performance Award will be attributed to compensation years 2018 through 2023 (although the first and last years are partial year attributions) as outlined below and will reduce the amount of the variable pay, including equity, that the CEO will receive for those performance years on a dollar for dollar basis.

As described in the *2018 Grants for 2017 Performance* section above, multi-year awards reduce the amount of variable compensation, both equity and cash, a NEO can receive in future years. We do not design multi-year awards to fully displace all the annual incentive equity value to the NEO. For example, multi-year awards do not exceed 30-35% of the CEO's target TDC opportunity for any given year. Rather, the portion of the multi-year award attributed to future compensation years is designed to replace a portion of the annual equity incentive value the NEO would have otherwise received in such future year. The Compensation Committee therefore has the flexibility to administer appropriate pay adjustments on an annual basis while still generating enhanced retention value through the multi-year award.

2018 Multi-Year Performance Award		
	Value	**Attribution**
	($ in thousands)	
Total Award Value	11,000	—
Year-End 2018 (2 months)		367
Each Year-End 2019 - 2022		2,200
Year-End 2023 (10 months)		1,833

The 2018 Performance Award is contingent both upon meeting certain stock price thresholds as well as tenure requirements:

2018 Multi-Year Performance Award Structure					
	Value	**Tranche**	**Target**	**Target Share Price or Strike Price**	**Number of Units**
	($ in thousands)			**(in $)**	
Performance Shares	2,750	1	125% of FMV	257.78	17,942
Performance Shares	2,750	2	135% of FMV	278.40	19,800
Stock Options	2,750	3	125% of FMV	257.78	69,113
Stock Options	2,750	4	135% of FMV	278.40	79,411

The fair market value on the date of grant of the 2018 Performance Award was the closing price of the Company's Common Stock of $206.22 ("FMV"). In order for the CEO to satisfy the stock price thresholds, the Company must achieve an average price per share of common stock at 125% of FMV for the first tranche and 135% of FMV for the second tranche, calculated over twenty consecutive trading days (rounded to the nearest cent), during the performance period. The performance period runs from November 8, 2018 through November 8, 2023. If the Target Share Price for each of the 125% and 135% tranches is not met during this period, the respective shares will be forfeited.

The Stock Options were granted with a strike price of 125% of FMV (third tranche) and 135% of FMV (fourth tranche). As premium priced stock options, these awards will provide value to the CEO only to the extent that the strike price is exceeded by the Company's share price on the date of exercise. The Stock Options vest and are fully exercisable on November 8, 2023. The term of both Stock Options ends on May 8, 2024.

The number of units for all tranches of these awards were determined by an outside advisor hired to run a Monte Carlo simulation.

Based on the Company's market capitalization of approximately $7.76 billion on the grant date, the Company's market capitalization must increase by $1.94 billion for the CEO to realize any value from first tranche at 125% of FMV and by $2.7 billion for the CEO to realize any value from the second tranche at 135% FMV.

Other NEO Awards

On January 22, 2016, Messrs. DeLise, McPherson and Themelis were granted -multi-year awards valued at $1.8 million, $2.5 million and $3.0 million, respectively, as of that date ("*NEO Multi-Year Awards*"). The NEO Multi-Year Awards were comprised of three components as follows:

- 40% of the award value was granted in the form of performance shares,
- 30% of the value was granted in the form of time-based RSUs, and
- 30% of the value was granted in at-the-money stock options, as shown below.

The NEO Multi-Year Awards were granted to provide additional performance incentives and promote the retention of these key executives. The performance element will ensure that the NEO's interests are aligned with those of our stockholders, while the time-vested RSUs provide retention value. In contrast to our annual grants, which generally vest in 3 equal annual installments, the NEO Multi-Year Awards vest in two 50% installments on each of January 31, 2020 and 2021, the 4th and 5th anniversaries of the grant date.

The NEO Multi-Year Awards cover a five-year period. Accordingly, one-fifth of the grant date value of the NEO Multi-Year Award is attributed to Messrs. DeLise's, McPherson's and Themelis's compensation for performance years 2015 through 2019. The total and annualized value, as well as the number of units received are summarized below:

Value of the NEO Multi-year Awards and Units Granted						
			Total Units Granted			Units Earned
	Total Grant Value	Annual Grant Value (Performance Years 2015 - 2019)	Performance Shares	RSUs	Stock Options	Performance Shares
	($ in thousands)	($ in thousands)				
Antonio L. DeLise, CFO	1,800	360	6,933	5,200	16,147	7,356
Kevin McPherson, Sales	3,000	600	11,555	8,666	26,865	10,216
Nicholas Themelis, CIO	2,500	500	9,629	7,222	22,388	12,260

The exercise price of the stock options received by Messrs. DeLise, McPherson and Themelis is $103.30, the closing price of the Company's Common Stock on the date of award.

The performance shares are earned based on achieving aggregate operating income targets over three-year and four-year measurement periods ending December 31, 2018 and December 31, 2019. To achieve 100% of the target shares, certain aggregate operating income targets within a target range must be met. The level of performance and the corresponding level of payment are as follows:

	Aggregate Operating Income		
Level	Three-Year Cumulative	Four-Year Cumulative	Payout Percent
	($ in millions)	($ in millions)	
Threshold	527.9	740.2	50%
Target Range - Low	**589.6**	**852.2**	**100%**
Target Range - High	**611.2**	**892.4**	**100%**
Actual Performance through Dec 31, 2018	***619.3***		***106.1%***
Outperform	644.6	955.4	125%
Maximum	691.0	1,045.0	150%

Based on the payout percent of 106.1%, the performance shares settled as follows after the conclusion of the 2018 performance year:

	Original Shares	Adjusted Shares
Antonio L. DeLise, CFO	6,933	7,356
Kevin McPherson, Sales	9,629	10,216
Nicholas Themelis, CIO	11,555	12,260

In connection with his hire, Mr. Roupie was awarded a four-year multi-year hire-on grant of 9,367 shares in April 2017 valued at $1.748 million. The grant is comprised of restricted stock with a performance element. Performance was based on two years (2017 and 2018 measurement periods) of internal financial goals as set by management in the first quarter of 2017. The award made to Mr. Roupie vests over a four-year period. Accordingly, one-fourth of the grant date value of the award (or $437,000) was intended to be attributed to his compensation for performance years 2017 through 2020. The earned shares will vest in two equal installments on the third and fourth anniversaries of the grant (April 2020 and April 2021).

In addition, based on his performance during a challenging transition period in our European business in 2018, Mr. Roupie received an annual equity award of $250,000 and an additional equity award of $1.07 million. Both awards were subject to the structures set out in the Flex Share Program pursuant to which Mr. Roupie elected 50% performance shares and 50% restricted stock. In relation to the additional equity award, $267,500 was attributed his 2018 year-end compensation and $267,500 was attributed to the future compensation years 2019 and 2020.

Total Direct Compensation (TDC)

Our compensation decisions for year-end 2018 were a balance between the Company's record financial results for the tenth consecutive year and its performance in light of its peers, individual performance, market data, and the impact and value of the long-term retention incentives previously awarded to each NEO. A summary of each NEO's 2018 TDC and the relevant market data can be found below.

2018 Compensation Decisions and Market Data

	Base Salary		Cash Incentive / Bonus	Total Cash	
	Actual	Market Positioning	Actual	Actual	Market Positioning
	($ in thousands)		($ in thousands)	($ in thousands)	
Richard M. McVey, CEO	500	Below Median	1,890	2,390	Above Median
Antonio L. DeLise, CFO	300	Below 25th	850	1,150	At 75th
Kevin McPherson, Sales	300	Below Median	1,100	1,400	Above 75th
Christophe Roupie, EU/Asia	399	Below Median	466	865	Above Median
Nicholas Themelis, CIO	300	Below 25th	1,175	1,475	Above 75th

	Equity		TDC			
	Annual Equity Value Granted (1)	Residual Multi-Year Value (2)	2018	Market Positioning	2017	Change 2018 vs. 2017
	($ in thousands)	($ in thousands)	($ in thousands)		($ in thousands)	
Richard M. McVey, CEO	2,743	1,967	7,100	Below 75th	7,000	1.4%
Antonio L. DeLise, CFO	390	360	1,900	Above Median	1,800	5.6%
Kevin McPherson, Sales	350	500	2,250	Above Median	2,325	(3.2)%
Christophe Roupie, EU/Asia	250	438	1,553	Above Median	1,521	2.1%
Nicholas Themelis, CIO	425	600	2,500	Above Median	2,625	(4.8)%

(1) Represents an annual equity award granted on January 15, 2019 for 2018 performance
(2) See discussion regarding the multi-year awards

Common Stock Ownership Guidelines

We believe that equity-based awards are an important factor in aligning the long-term financial interest of our NEOs and our stockholders. As such, we maintain stock ownership guidelines for our NEOs. Generally, under the guidelines, Mr. McVey is required to own not less than a number of shares of Common Stock equal in value to ten times his base salary using a price of $208.07 per share, which was the average of the daily closing price of our Common Stock for the twelve-month period ending March 31, 2019. At his current base salary of $500,000, Mr. McVey's required ownership level is not less than 24,030 shares. Additionally, effective April 2016, for the remainder of the time Mr. McVey holds the title of CEO and for the twelve months thereafter, Mr. McVey will be required to maintain beneficial ownership of at least 50% of the shares that Mr. McVey received as equity compensation as of the date of the guideline or thereafter. All of Mr. McVey's vested and unvested restricted shares, vested and unvested restricted stock units, settled performance shares, and shares deferred under a non-qualified deferred compensation arrangement will be counted for the post-termination holding requirement; vested and unvested stock options are excluded from the requirement. The other NEOs are required to own not less than three times their base salary as in effect on such date. At their current base salaries of $300,000, Messrs. DeLise's, McPherson's, and Themelis' required ownership is not less than 4,325 shares and Mr. Roupie's required ownership, at a base salary equivalent to $399,000, is not less than 5,753 shares. New NEOs will be subject to the same guidelines and will be required to be in compliance within five years of becoming an NEO. Under our ownership guidelines, shares purchased and held beneficially, vested and unvested RSUs and restricted shares and settled performance shares count toward the minimum ownership requirement. Vested and unvested options and unsettled performance shares are not counted toward the ownership requirement. Compliance with the Common Stock ownership guidelines is reviewed by our Board's Nominating and Corporate Governance Committee (the "*Governance Committee*") every year or more often at the discretion of the Board or Governance Committee. All of our NEOs are currently in compliance with the guidelines.

NEO Stock Ownership Requirements

	Requirement	Current Holdings
Richard M. McVey, CEO	10x	434x
Antonio L. DeLise, CFO	3x	31x
Kevin McPherson, Sales	3x	62x
Christophe Roupie, EU/Asia	3x	2x
Nicholas Themelis, CIO	3x	38x

Incentive Compensation Clawback

Each of our incentive plans contain a clawback provision that allows the Company to recoup all or part of the year-end incentive compensation paid to NEOs in the event of a misstatement of financial results discovered within 12 months of December 31st of the respective performance year. The clawback is structured so that funds that were accrued under the Employee Cash Incentive Plan as a result of a misstatement of financial results may be recaptured by the Company. In addition, Mr. McVey's employment agreement provides the Company with the right to recapture all compensation paid, whether in the form of cash, Common Stock or any other form of property, to the extent required by the Dodd-Frank Act and the Remuneration Code published by the U.K. Financial Conduct Authority.

Prohibition of Employee Hedging

NEOs and all other employees are prohibited from engaging in transactions that hedge the market value of the Company's Common Stock. The most readily available and complete hedge is shorting the Common Stock, which is expressly prohibited under the Company's Insider Trading Policy.

Other Benefits

We provide our NEOs with the same benefits offered to all other employees. The cost of these benefits constitutes a small percentage of each NEO's total compensation. In the U.S. and the U.K., key benefits include paid vacation, premiums paid for group life insurance and disability policies, employer contributions to the NEO's retirement account, and the payment of all or some of the NEO's healthcare premiums in fiscal year 2018. We review these other benefits on an annual basis and make adjustments as warranted based on competitive practices and our performance. Comparable benefits are offered to employees in other geographic locations in which we operate.

Compensation Committee Discretion

The Compensation Committee retains the discretion to decrease or eliminate all forms of incentive awards based on its performance assessment, whether individual or Company-based. Likewise, the Compensation Committee retains the discretion to provide additional payouts and/or consider special awards for significant achievements, including but not limited to achieving superior operating results, strategic accomplishments and/or consummation of partnerships, acquisitions or divestitures.

Severance and Change in Control Arrangements

In hiring and retaining executive level talent, the Compensation Committee believes that providing the executive with a level of security in the event of an involuntary termination of employment or in the event of a change in control is an important and competitive part of the executive's compensation package. We entered into an employment agreement with Mr. McVey that provides for severance payments and benefits in the event of the termination of his employment under certain circumstances. In addition, the terms of our annual equity grant award agreements with Mr. McVey provide for accelerated vesting of his equity awards in the event of termination of his employment under certain circumstances or upon a change in control of the Company. While retention grants also accelerate upon certain terminations of employment after a qualifying change in control event, accelerated vesting is limited to 24 months, as the Compensation Committee did not feel it necessary to provide full acceleration of the retention grants.

While Mr. McVey's employment agreement is designed to protect him in the event of a change in control, it does not provide for "single-trigger" protection, nor does the Company provide any 280G protection or "gross-up" for excise taxes that may be imposed under Code Section 4999. The agreement does provide that if any payments or benefits paid or provided to him would be subject to, or result in, the imposition of the excise tax imposed by Code Section 4999, then the amount of such payments will be automatically reduced to one dollar less than the amount that subjects such payment to the excise tax, unless he would, on a net after-tax basis, receive less compensation than if the payment were not so reduced.

The other NEOs are entitled to severance payments and benefits in the event of termination of their employment under certain circumstances pursuant to the terms of the MarketAxess Severance Pay Plan (as amended effective November 21, 2016).

See below under *Executive Compensation — Potential termination or change in control payments and benefits* for information regarding these payments and benefits.

Impact of Tax and Accounting

As a general matter, the Compensation Committee reviews and considers the tax and accounting implications of using the various forms of compensation employed by the Company.

When determining the size of grants to our NEOs and other employees under the Company's Equity Incentive Plan, the Compensation Committee examines the accounting cost associated with the grants. Under FASB ASC Topic 718, grants of stock options, restricted stock, RSUs, performance shares and other share-based payments result in an accounting charge for the Company. The accounting charge is equal to the fair value of the instruments being issued. For restricted stock, RSUs and performance shares, the cost is equal to the fair value of the Common Stock on the date of grant times the number of shares or units granted. For stock options, the cost is equal to the fair value determined using an option pricing model. This expense is recognized over the requisite service or performance period.

Code Section 162(m) generally prohibited any publicly-held corporation from taking a Federal income tax deduction for compensation paid in excess of $1 million in any taxable year to certain executive officers and certain other individuals. Exceptions to this rule had historically included qualified performance-based compensation. However, this performance-based exception from the deduction limit has been repealed, effective for taxable years beginning after December 31, 2017, such that compensation paid to our U.S. named executive officers in excess of $1 million is not deductible unless it qualifies for the limited transition relief applicable to certain arrangements in place as of November 2, 2017. While the Compensation Committee considers tax deductibility as one factor in determining executive compensation, the Compensation Committee also looks at other factors in making its decisions, as noted above, and retains the flexibility to award compensation that it determines to be consistent with the goals of our executive compensation program even if the awards are not deductible by us for tax purposes. There can be no assurance that any compensation will in fact be deductible.

REPORT OF THE COMPENSATION COMMITTEE OF THE BOARD OF DIRECTORS

The Compensation Committee has reviewed and discussed with management the Compensation Discussion and Analysis to be included in this Proxy Statement. Based on the reviews and discussions referred to above, the Compensation Committee recommended to the Board that the Compensation Discussion and Analysis be included in this Proxy Statement.

Submitted by the Compensation Committee of the Board of Directors:

John Steinhardt — Chair
Steven L. Begleiter

COMPENSATION RISK ASSESSMENT

NEOs and Senior Management Team

Our Compensation Committee annually reviews compensation recommendations for our NEOs and certain other employees of the Company. Specifically, the Compensation Committee is presented with benchmark data and compensation recommendations made by Mr. McVey (excluding for himself), in conjunction with Grahall, our independent compensation consultant, for our senior management team. In 2018, in addition to providing market data for our NEOs, Grahall provided market data for the following positions comprising the senior management team (each, a "*Senior Manager*" and collectively "*Senior Management*"):

- Global General Counsel
- Global Head of Human Resources
- Global Head of Marketing and Communications
- Product Manager, Open Trading
- Global Head of Operations

Grahall also provided the Compensation Committee with summary benchmark and compensation data for all other employees of the Company in the aggregate.

The compensation recommendations for Senior Management are reviewed by the Compensation Committee and factor into the Compensation Committee's decision-making process in the same manner as decisions concerning compensation for the NEOs (other than Mr. McVey). The Compensation Committee believes that the Company has the right pay mix in place to mitigate a short-term orientation and short-term risk-taking. While a significant portion of executive compensation is performance-based and provides significant award potential, we believe that our compensation program as a whole is sound and does not encourage excessive risk-taking. Specifically:

- Use of long-term incentives — A meaningful portion of the equity compensation received by our NEOs and Senior Managers vests over a three-year or longer period. Therefore, Senior Managers are encouraged to have a long-term outlook, which mitigates short-term risk. Given their equity holdings, poor performance that decreases our Common Stock price negatively impacts the senior management team and our stockholders alike.

- Detrimental Activity Clause — Each equity award made by the Company is done so pursuant to a written agreement that contains a clause prohibiting certain activities that are detrimental to the Company. Pursuant to this clause, detrimental activity by an equity award recipient can result in the Company's enforcement of a clawback of equity granted to that employee.

- Share ownership guidelines — The Company has adopted share ownership guidelines, which require our NEOs to hold a portion of their annual base salary in shares of Common Stock of the Company. This ensures that each executive will maintain a significant amount of wealth in our Common Stock, and when the Common Stock price declines, executives will lose value as stockholders do. As a significant portion of each NEO's compensation is awarded in equity, we believe the Common Stock ownership guidelines motivate the NEOs to align personal performance and decision-making with stockholder value creation and improvement of our financial results on a long-term basis. Other Senior Managers generally have the same portion of TDC allocated to equity as the NEOs.

- Performance shares — To realize value on any grant of performance shares, Senior Managers and NEOs must satisfy performance criteria after the award is made and then hold the performance shares until they are fully vested. 50% of the shares ultimately earned are not available until the second anniversary of the grant date and the other 50% of the shares ultimately earned are not available until the third anniversary of the grant date (in each case, absent a termination event after a qualifying change in control). This additional holding period requires NEOs and Senior Managers to remain employed with the Company and exposes the shares to additional market risk during the holding period, thus aligning their interests with those of our stockholders.

- Clawbacks for restatements — We have a clawback policy regarding cash incentives for our NEOs that provides that if our financial results are restated within twelve months of December 31st of the respective performance year — whether through mistake or wrongdoing — the Company has the legal right to recapture an appropriate portion of any bonuses paid. This clawback policy was based upon, but exceeds the requirements of, the model presented in the Sarbanes Oxley Act of 2002. In addition, Mr. McVey's employment agreement includes the Company's right to recapture all compensation paid to him, whether in the form of cash, the Company's Common Stock or any other form of property, as required by the Dodd-Frank Act and the Remuneration Code published by the Financial Conduct Authority.

- Limited maximum opportunity — Additionally, our annual incentive pool for NEOs subject to Section 162(m) is capped and we have implemented a decreasing accrual rate at higher performance levels for the incentive pool and our Employee Plan. This reduces the likelihood of the NEOs and Senior Managers taking unnecessary risk for short-term gains.

Other Employees

The Global Management Team regularly reviews our compensation practices to determine whether they create appropriate incentives for our broader employee base and do not motivate imprudent risk taking. Additionally, this team, together with the Chief Audit and Risk Officer and guided by the Risk Committee of the Board, assesses our Company business strategies and plans, as well as departmental strategies and plans, to ensure that appropriate policies and procedures are in place for identifying, evaluating, measuring, monitoring and managing risks. The Chief Audit and Risk Officer regularly prepares updates and reports for both the Risk and Audit Committees of the Board which, in turn, update the full Board as to the Company's risk profile.

Conclusion

Based on our internal analysis and the controls that are in place, each of the Compensation, Risk and Audit Committees of the Board believes that the Company's compensation policies and practices for its employees do not encourage excessive risk-taking or fraud and are not reasonably likely to have a material adverse effect on the Company.

EXECUTIVE COMPENSATION

Summary compensation table

The following table sets forth all compensation received during fiscal years 2016, 2017 and 2018 by our (i) Chief Executive Officer, (ii) Chief Financial Officer, (iii) Global Head of Sales, (iv) Head of Europe and Asia and (v) Chief Information Officer. These executives are referred to as our "named executive officers" or "NEOs" elsewhere in this Proxy Statement.

2018 Summary Compensation Table

Name and Principal Position	Year	Salary($)(1)	Bonus ($)(2)	Stock Awards ($)(3)	Option Awards ($)(3)	Non- Equity Incentive Plan Compensation ($)(4)	All Other Compen-sation ($)(5)	Total ($)
Richard M. McVey	2018	500,000	1,890,000	7,590,245	6,399,840	—	245,098	16,625,183
Chief Executive Officer	2017	500,000	—	2,266,198	982,681	1,890,000	223,757	5,862,636
	2016	500,000	—	2,145,006	893,891	2,100,000	194,565	5,833,462
Antonio L. DeLise	2018	300,000	850,000	337,809	—	—	19,519	1,507,328
Chief Financial Officer	2017	300,000	800,000	232,218	113,080	—	26,073	1,471,371
	2016	300,000	900,000	1,301,273	522,325	—	25,194	3,048,792
Kevin McPherson	2018	300,000	1,100,000	347,762	—	—	22,061	1,769,824
Global Head of Sales	2017	300,000	—	152,009	—	1,175,000	40,728	1,667,737
Christophe Roupie (6)	2018	399,000	466,000	251,441	—	—	16,610	1,133,051
Head of Europe and Asia, MarketAxess Europe Limited and Trax	2017	315,875	432,000	1,749,194	—	—	13,616	2,510,685
Nicholas Themelis	2018	300,000	1,175,000	472,087	—	—	29,238	1,976,325
Chief Information Officer	2017	300,000	—	354,025	153,525	1,250,000	46,071	2,103,621
	2016	300,000	—	2,471,790	870,488	1,400,000	33,077	5,075,355

(1) Mr. Roupie's salary represented a partial year of service for 2017.

(2) Prior to the elimination of Section 162(m), the NEOs were paid under separate incentive plans. As of 2018, all NEOs are paid under the Employee Incentive Plans.

(3) The amounts represent the aggregate grant date fair value of stock and option awards granted by the Company in 2016, 2017 and 2018, computed in accordance with FASB ASC Topic 718. For further information on how we account for stock-based compensation, see Note 9 to the consolidated financial statements included in the Company's Annual Report on Form 10-K for the year ended December 31, 2018, filed with the SEC on February 20, 2019. These amounts reflect the Company's accounting expense for these awards and do not correspond to the actual amounts, if any, that will be realized by the named executive officers. The amounts reported for stock awards in 2016, 2017 and 2018 include performance shares. For 2018, the reported fair value of the performance shares are $1,190,218, $117,587, $121,022, $100,077 and $189,460 for Messrs. McVey, DeLise, McPherson, Roupie and Themelis, respectively. The fair value of the performance shares is reported based on achievement of 100% of the target performance goals, which represents the probable outcome of the performance goals. If the Company achieves the maximum performance goals, then the fair value of the performance shares granted in 2018 would be $1,785,326, $176,380, $181,532, $150,116 and $281,845 for Messrs. McVey, DeLise, McPherson, Roupie and Themelis, respectively. In November 2018, Mr. McVey was awarded a retention equity award that consists of performance shares and performance-based stock options with an aggregate fair value of $11,000,000.

(4) These amounts represent amounts earned under the Performance Incentive Pool prior to 2018 with respect to Messrs. McVey, McPherson and Themelis. The Performance Incentive Plan was discontinued with the passage of the Tax Cuts and Jobs Acts of 2017.

(5) These amounts represent employer matching contributions to the Company's 401(k) defined contribution plan of $7,000 to each NEO (other than Mr. Roupie who received $15,362 under the UK Pension Scheme) for each year reported and dividends credited in each year reported on unvested restricted stock and unvested deferred and non-deferred restricted stock units.

(6) All compensation for Mr. Roupie in this Executive Compensation section is reported in U.S. dollar terms assuming a conversation rate of 1.33 USD to 1 GBP.

Grants of plan-based awards

The following table summarizes the grants of performance shares, performance awards, restricted stock units and stock options we made to the named executive officers in 2018, as well as potential payouts pursuant to certain performance-based compensation arrangements. There can be no assurance that the grant date fair value of stock awards will ever be realized.

2018 Grants of Plan-Based Awards Table

				Estimated Future Payouts Under Equity Incentive Plan Awards						
Name	**Approval Date**	**Grant Date**		**Threshold (#)**	**Target (#)**	**Maximum (#)**	**All Other Stock Awards: Number of Shares of Stock or Units (#)**	**All Other Option Awards: Number of Securities Underlying Options (#)**	**Exercise or Base Price of Option Awards ($ / Sh)**	**Grant Date Fair Value of Stock and Option Awards ($) (1)**
Richard M. McVey	1/8/2018	1/15/2018		—	—	—	4,418	—	—	900,035
	1/8/2018	1/15/2018	(2)	2,946	5,891	8,837	—	—	—	1,190,218
	1/8/2018	1/15/2018	(3)	—	—	—	—	16,037	204	899,831
	11/6/2018	11/8/2018	(4)	—	—	—	17,942	—	—	2,750,000
	11/6/2018	11/8/2018	(4)	—	—	—	19,800	—	—	2,750,000
	11/6/2018	11/8/2018	(5)	—	—	—	—	69,113	258	2,750,000
	11/6/2018	11/8/2018	(5)	—	—	—	—	79,411	278	2,750,000
Antonio L. DeLise	1/8/2018	1/15/2018		—	—	—	1,081	—	—	220,221
	1/8/2018	1/15/2018	(2)	291	582	873	—	—	—	117,587
Kevin McPherson	1/8/2018	1/15/2018		—	—	—	1,113	—	—	226,740
	1/8/2018	1/15/2018	(2)	300	599	899	—	—	—	121,022
Christophe Roupie	1/8/2018	1/15/2018		—	—	—	743	—	—	151,364
	1/8/2018	1/15/2018	(2)	248	495	743	—	—	—	100,077
Nicholas Themelis	1/8/2018	1/15/2018		—	—	—	1,395	—	—	284,189
	1/8/2018	1/15/2018	(2)	465	930	1,395	—	—	—	187,897

(1) The value of a restricted stock unit is based on the fair value of such award, computed in accordance with FASB ASC Topic 718. The value of a performance share is based on the fair value of such award assuming 100% of target, computed in accordance with FASB ASC Topic 718. For further information on how we account for stock-based compensation, see Note 9 to the consolidated financial statements included in the Company's Annual Report on Form 10-K for the year ended December 31, 2018.

(2) Reflects the number of performance shares that would vest based on the level of achievement by the Company of pre-tax operating income targets for the 2018 calendar year performance period. For each performance share earned, a participant would be awarded an equal number of shares of restricted stock that would vest and cease to be restricted stock in equal 50% installments on each of the second and third anniversaries of the date of grant of the applicable performance share, subject to the participant's continued service. For 2018, the pay-out achievement of the performance shares was 100% of target for all NEOs except for Mr. Roupie, who earned 67% of his award. Mr. Roupie's award was structured such that the grant amount was the maximum amount that could be earned under the terms of the award.

(3) The stock option amounts vest in three equal installments on each of January 31, 2019, 2020 and 2021.

(4) On November 8, 2018, Mr. McVey received a performance share award. The fair market value ("FMV") on the date of grant was the closing price of the Company's Common Stock of $206.22. To earn the Performance Shares, the Company must achieve an average price per share of common stock at 125% of FMV for the first tranche of 17,942 shares and 135% of FMV for the second tranche of 19,800 shares, calculated over twenty consecutive trading days (rounded to the nearest cent), during the performance period. The performance period runs from November 8, 2018 through November 8, 2023. If the performance Target Share Price for each of the 125% and 135% tranches is not met during this period, the respective shares are forfeited.

(5) On November 8, 2018, Mr. McVey received performance-based stock options. The Stock Options were granted with a strike price of 125% of FMV and 135% of FMV. As premium priced stock options, these awards provide value to the CEO only to the extent that the strike price is exceeded by the Company's share price on the date of exercise. The Stock Options vest and are fully exercisable on November 8, 2023. The term of both Stock Options expires on May 8, 2024.

Outstanding equity awards at fiscal year-end

The following table summarizes unexercised stock options, shares of restricted stock and restricted stock units that had not vested, and related information for each of our named executive officers, as of December 31, 2018. The market value of restricted stock awards and restricted stock units is based on the closing price of the Company's Common Stock on December 31, 2018 of $211.31.

Outstanding Equity Awards - Year End 2018								
	Option Awards				Stock Awards			
Name	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable(1)	Option Exercise Price ($)	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested (#)(2)	Market Value of Shares or Units of Stock That Have Not Vested ($)	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested (#)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested ($)
Richard M. McVey	110,779		21.56	1/19/2021				
	39,933		88.25	7/15/2020				
	18,761		101.77	1/15/2022				
	8,335		156.85	1/15/2023				
		80,048	88.25	7/15/2020				
		9,241	101.77	1/15/2022				
		16,180	156.85	1/15/2023				
		16,037	203.72	1/15/2024				
		69,113	257.78	5/8/2024				
		79,411	278.40	5/8/2024				
(3)					116,659	24,651,213		
(4)					2,981	629,915		
(4)					8,383	1,771,412		
(5)					4,107	867,850		
(6)					5,177	1,093,952		
(8)					4,418	933,568		
(9)							5,891	1,244,827
(10)							37,742	7,975,262
Antonio L. DeLise	959		156.85	1/15/2023				
		16,120	103.30	1/22/2022				
		1,862	156.85	1/15/2023				
(4)					101	21,342		
(4)					116	24,512		
(11)					5,200	1,098,812		
(5)					473	99,950		
(6)					481	101,640		
(8)					1,081	228,426		
(12)							7,356	1,554,396
(9)							582	122,982
Kevin McPherson		22,388	103.30	1/22/2022				
(11)					7,222	1,526,081		
(5)					418	88,328		
(6)					212	44,798		
(8)					1,113	235,188		
(12)							10,216	2,158,743
(9)							599	126,575
Christophe Roupie (8)					743	157,003		
(7)							9,367	1,979,341
(9)							743	157,003
Nicholas Themelis	1,302		156.85	1/15/2023				
		26,865	103.30	1/22/2022				
		2,528	156.85	1/15/2023				
(4)					808	170,738		
(4)					8,666	1,831,212		
(11)					917	193,771		
(5)					642	135,661		
(6)					809	170,950		
(8)					1,395	294,777		
(12)							12,260	2,590,661
(9)							930	196,518

(1) Of the 80,048 stock options for Mr. McVey, 50% vested on January 15, 2019 and the remainder will vest on January 15, 2020. The 9,241 stock options for Mr. McVey were fully vested on January 31, 2019. Of the 16,180 stock options for Mr. McVey, 50% vested on January 31, 2019 and the remainder will vest on

January 31, 2020. Of the 16,037 stock options for Mr. McVey, 5,452 vested January 31, 2019 and 50% of the remainder will vest on each of January 31, 2020 and 2021. The 69,113 and 79,411 stock options granted to Mr. McVey will vest in full on November 8, 2023. The 16,120 stock options for Mr. DeLise, the 22,388 options for Mr. McPherson, and the 26,865 stock options for Mr. Themelis will vest 50% each on January 31, 2020 and 2021. Of the 2,821 stock options for Mr. DeLise and the 3,830 stock options for Mr. Themelis, 50% vested on January 31, 2019 and the remainder will vest on January 31, 2020. The stock options will also vest and become exercisable in the event of certain terminations of their employment. See *Executive Compensation — Potential termination or change in control payments and benefits* for additional information.

(2) Each share of restricted stock and each restricted stock unit represents one share of the Company's Common Stock that is subject to forfeiture if the applicable vesting requirements are not met. Generally, vesting is subject to the NEOs continued employment through the vesting date, except that shares of restricted stock and restricted stock units will vest in the event of certain terminations of employment and, in certain circumstances, may vest upon a change in control. See *Executive Compensation — Potential termination or change in control payments and benefits* for additional information.

(3) For Mr. McVey, the performance criteria for the 116,659 shares were met. 50% of the shares vested on January 15, 2019 and the remainder will vest on January 15, 2020.

(4) These restricted shares and restricted stock units fully vested on January 31, 2019.

(5) For Messrs. McVey, DeLise, McPherson, and Themelis, 2,053 RSUs, 236 RSUs, 209 RSUs, and 321 RSUs vested, respectively, on January 31, 2019 and 2,054 RSUs, 237 RSUs, 209 RSUs, and 321 RSUs will vest, respectively, on January 31, 2020.

(6) 50% of the unvested shares vested on January 31, 2019 and the remainder will vest on January 31, 2020.

(7) 9,367 shares for Mr. Roupie that were outstanding as of December 31, 2018 represent 100% of his target unearned performance shares awarded on April 1, 2017. 50% of the unsettled shares will settle, subject to achievement of applicable performance goals, and vest on each of April 1, 2020 and 2021.

(8) For Mr. McVey, 1,502 RSUs vested on February 15, 2019, and 50% of the remainder will vest on each of January 31, 2020 and 2021. For Mr. DeLise, 367 RSUs vested on January 31, 2019, and 50% of the remainder will vest on each of January 31, 2020 and 2021. For Mr. McPherson, 378 RSUs vested on January 31, 2019, and 50% of the remainder will vest on each of January 31, 2020 and 2021. For Mr. Roupie, 252 of his restricted stock vested on January 31, 2019, and 50% of the remainder will vest on each of January 31, 2020 and 2021. For Mr. Themelis, 474 RSUs vested on January 31, 2019, and 50% of the remainder will vest on each of January 31, 2020 and 2021.

(9) 5,891 shares for Mr. McVey, 582 shares for Mr. DeLise, 599 shares for Mr. McPherson and 930 shares for Mr. Themelis outstanding as of December 31, 2018 represent 100% of the target performance shares awarded on January 15, 2018 and reflect earned share amounts that settled in January 2019. 495 shares of the original 743 for Mr. Roupie represents 67% of the shares awarded January 15, 2018. The settled share amount will vest in two equal installments each on January 31, 2020 and 2021.

(10) 37,742 shares for Mr. McVey outstanding as of December 31, 2018 represent 100% of the target unearned performance shares awarded on November 8, 2018. The shares will settle when applicable performance goals are met. The shares will vest in full on November 8, 2023.

(11) For Mr. DeLise, 2,600 shares will vest on each of January 31, 2020 and 2021. For Mr. McPherson, 3,611 shares will vest on each of January 31, 2020 and 2021. For Mr. Themelis, 4,333 shares will vest on each of January 31, 2020 and 2021.

(12) 7,356 shares for Mr. DeLise, 10,216 shares for Mr. McPherson and 12,260 shares for Mr. Themelis outstanding as of December 31, 2018 represent 106.1% of their target unearned performance shares awarded on January 22, 2016 that settled in January 2019. The settled shares will vest in two equal installments each on January 31, 2020 and 2021.

Option exercises and stock vested

The following table summarizes each exercise of stock options, each vesting of restricted stock and related information for each of our named executive officers on an aggregated basis during 2018.

2018 Option Exercises and Stock Vesting

	Option Awards		Stock Awards	
Name	Number of Shares Acquired on Exercise (#)	Value Realized on Exercise ($)(1)	Number of Shares Acquired on Vesting (#)	Value Realized on Vesting ($)(2)
Richard M. McVey	109,190	15,447,795	46,031	9,663,175
Antonio L. DeLise	—	—	2,354	461,879
Kevin McPherson	—	—	9,010	1,810,186
Christophe Roupie	—	—	—	—
Nicholas Themelis	—	—	7,739	1,518,469

(1) Value realized represents the market value on the date of exercise in excess of the exercise price.

(2) Value realized represents the market value on the date of vesting.

Nonqualified deferred compensation

All U.S.-based NEOs were eligible to elect to defer the settlement of the RSUs awarded in whole or in part (see *Long-term incentives — Equity-based Awards* above). The following table sets forth information with respect to vested RSUs held by Messrs. McVey and DeLise as of December 31, 2018, for which they have elected to defer the delivery of the underlying shares until the earlier of (i) separation of service (within the meaning of Code Section 409A), subject to the six-month delay required under Code Section 409A, (ii) a change of control of the Company and (iii) the calendar year in which the applicable anniversary following vesting occurs:

Deferral Elections				
Name	**Award / Deferral Date**	**Amount Deferred (#)**	**Re-deferral Date**	**Deferral Period (Years)**
Richard M. McVey	1/14/2011	67,961	12/01/2015	10
	1/19/2011	119,565	12/01/2015	10
	1/13/2012	48,616	N/A (1)	5
	1/15/2013	44,882		7
	1/15/2014	26,067		5
	1/15/2015	25,084		5
	1/15/2016	9,033		5
	1/15/2017	6,222		separation of service
	1/15/2018	4,418		3
	1/15/2019	7,757		
Antonio L. DeLise	1/13/2012	16,260	10/18/2016	10
	1/15/2014	3,028	N/A (2)	5
	1/15/2015	2,763	N/A (2)	4

(1) Mr. McVey did not elect to re-defer his January 2012 RSU award. In each of February 2018 and January 2019, he took receipt of 16,205 shares underlying the previously deferred RSUs.

(2) Mr. DeLise did not elect to re-defer his January 15, 2014 and 2015 RSU awards. He will begin to take receipt of the shares underlying the RSUs in February 2020.

In addition, for Mr. DeLise, the table below includes $637,500 of the cash bonus paid to Mr. DeLise for performance for 2018 that he voluntarily deferred under our non-qualified deferred cash plan.

2018 Non-Qualified Deferred Compensation Table					
Name	**Executive Contributions in Last Fiscal Year ($)(1)(2)**	**Registrant Contributions in Last Fiscal Year ($)**	**Aggregate Earnings in Last Fiscal Year ($)(3)(4)**	**Aggregate Withdrawals / Distributions ($)**	**Aggregate Balance at Last Fiscal Year- End ($)(5)(6)**
Richard M. McVey	2,682,566	—	4,502,009	3,223,175	78,672,947
Antonio L. DeLise	821,660	—	1,164,312	—	9,485,244
Kevin McPherson	—	—	—	—	—
Nicholas Themelis	—	—	—	—	—

(1) For Mr. McVey, reflects the market value of the Common Stock underlying 11,259 RSUs that vested on January 31, 2018, and 2,115 RSUs that vested on February 14, 2018 based on the closing price of our Common Stock on such dates of $196.21 and $197.60, respectively. In addition, it includes the value of amounts accrued and unpaid under dividend equivalent rights in 2015 through 2017 as of such vesting dates. The dividend equivalents are equal in amount to the ordinary cash dividends paid to the holders of our Common Stock in 2015 through 2017 and will be paid when the applicable RSU vests.

For Mr. DeLise, reflects the market value of Common Stock underlying 912 RSUs that vested on January 15, 2018 based on the closing price of our Common Stock of $196.21. In addition, it includes the value of amounts accrued and unpaid under dividend equivalent rights in 2015 through 2017 as of such vesting dates. The dividend equivalents are equal in amount to the ordinary cash dividends paid to the holders of our Common Stock in 2015 through 2017 and will be paid when the applicable RSU vests.

(2) For Mr. DeLise, his 2018 contributions included $637,500 that he elected to defer under the voluntary non-qualified deferred cash plan, which is a portion of the cash bonus of $850,000 reported in the Summary Compensation Table for 2018

(3) Aggregate Earnings with respect to vested and undelivered RSUs includes changes in the market value of the shares of Common Stock underlying the RSUs based on the difference of the closing price of our Common Stock on December 29, 2018 of $211.31 and the closing price of our Common Stock on the date of vesting, as well as the value of amounts accrued under a dividend equivalent right in 2018 that were unpaid as of December 31, 2018. Additionally, Aggregate Earnings include the difference in value of shares of Common Stock underlying the RSUs deferred by Mr. DeLise in 2012, 2014 and 2015 and by Mr. McVey in 2013, 2014, 2015, 2016 and 2017 at Fiscal Year End 2018 versus Fiscal Year End 2017, as well as the value of accrued but unpaid dividend equivalents. These amounts are not included in the Summary Compensation table because plan earnings were not preferential or above market.

(4) Negative earnings of -$130,431 were added to Mr. DeLise's Aggregate Earnings for 2018 representing the negative returns he incurred through the non-qualified deferred cash plan.

(5) The vested and undelivered RSUs were previously reported in the "Stock Awards" column of the Summary Compensation Table for fiscal years 2015, 2016, and 2017, in accordance with SEC rules. The value of the Aggregate Balance at Last Fiscal Year End for the RSUs was determined by adding all Executive Contributions for Fiscal Year-End 2018 to any Aggregate Earnings for Fiscal Year 2018 and the Aggregate Balance at Last Fiscal Year-End as previously reported for year-end 2017 ($74,711,547 for McVey and $7,499,271 for Mr. DeLise).

(6) Mr. Roupie is not included in the table because he is not eligible to be a participant in the plans.

Employment agreements and severance arrangements with our named executive officers

Richard M. McVey Employment Agreement

Effective November 8, 2018, Mr. McVey and the Company entered into an amendment to his employment agreement (the "*CEO Employment Agreement*") providing for an initial term ending on January 15, 2025 with successive one-year automatic renewals unless either party elects not to extend the term at least 90 days prior to the last day of the term.

The CEO Employment Agreement provides that Mr. McVey will be employed by us as Chief Executive Officer and Chairman of the Board of Directors, and his employment may be terminated by him or by the Company at any time. Mr. McVey's annual base salary under the CEO Employment Agreement is a minimum of $500,000 per year.

Under the CEO Employment Agreement, Mr. McVey is eligible to receive an annual bonus in accordance with the Company's annual performance incentive plan as is in effect from time to time and is entitled to participate in all benefit plans and programs available to our other senior executives, at a level commensurate with other senior management of the Company.

The CEO Employment Agreement provides for severance payments and benefits (subject to Mr. McVey's execution of a waiver and general release) if Mr. McVey's employment is terminated under various conditions. See below under *Executive Compensation — potential termination or change in control payments and benefits* for a description of such payments and benefits.

The CEO Employment Agreement provides that any award gains and annual incentive awards received by Mr. McVey are subject to potential claw-back under policies adopted by the Company to comply with applicable law, rules or other regulatory requirements.

For purposes of the CEO Employment Agreement, "Cause" generally means Mr. McVey's:

- willful misconduct or gross negligence in the performance of his duties;
- conviction of, or plea of guilty or *nolo contendere* to, a crime relating to us or any of our affiliates, or any felony; or
- material breach of his employment agreement or any other material written agreement with us.

For purposes of the CEO Employment Agreement, "Good Reason" generally means:

- Mr. McVey's no longer holding the title of Chief Executive Officer, or the failure of the Board to nominate him as a director or, once elected to the Board, the failure of the Board to elect him as Chairman;
- a material diminution in his duties, authorities or responsibilities or the assignment of duties or responsibilities materially adversely inconsistent with his then-current position (other than as a result of his ceasing to be a director);
- our material breach of his employment agreement;
- a relocation of his principal place of business of more than 50 miles; or
- our failure to obtain a reasonably satisfactory written agreement from any successor to all or substantially all of our assets to assume and agree to perform our obligations under his employment agreement.

For purposes of the CEO Employment Agreement, "Change in Control" generally means:

- an acquisition representing 50% or more of the combined voting power of our then outstanding securities;

- a change in the majority of the members of our Board during any two-year period, unless such members are approved by two-thirds of the Board members who were members at the beginning of such period or members whose nominations were so approved;

- our merger or consolidation, other than (a) a transaction resulting in our voting securities outstanding immediately prior thereto continuing to represent more than 50% of the combined voting power of the voting securities of such surviving entity immediately after such transaction or (b) a transaction effected to implement a recapitalization (or similar transaction) in which no person acquires more than 50% of the combined voting power of our then outstanding securities; or

- our stockholders' approval of a plan of complete liquidation or the consummation of the sale or disposition of all or substantially all of our assets other than (a) the sale or disposition of all or substantially all of our assets to a beneficial owner of 50% or more of the combined voting power of our outstanding voting securities at the time of the sale or (b) pursuant to a spinoff type transaction of such assets to our stockholders.

Severance Pay Plan

Messrs. DeLise, McPherson and Themelis do not have employment agreements with us but are entitled to severance payments and benefits under the Company's Severance Pay Plan (the "*Severance Plan*") in the event their employment is terminated by us for any reason other than a termination for Cause. Effective November 2016, we amended our Severance Plan to provide certain executives, excluding the CEO but including our CFO, Head of Sales and CIO ("*Participating Executives*"), with enhanced benefits for a qualifying termination. The amended provision provides the Participating Executives with 52 weeks of continued base salary and healthcare coverage. In addition, they will receive a severance payment equal to one time the average of the annual full-year cash bonuses received by each respective participant for the three prior years. In consideration of eligibility, the Participating Executives agreed to provide us with not less than three months' prior written notice in the event of a voluntary termination.

"Cause" is generally defined in the Severance Plan as (i) an employee's act or omission resulting or intended to result in personal gain at our expense; (ii) an employee's misconduct; (iii) performance of duties by an employee in a manner we deem to be materially unsatisfactory; (iv) "cause" (or words of like import) as defined in an agreement between us and the employee; or (v) an employee's improper disclosure of proprietary or confidential information or trade secrets, or intellectual property that we are under a duty to protect.

Proprietary Information and Non-Competition Agreements

Each of our U.S. – based NEOs has entered into, and is subject to the terms of, a Proprietary Information and Non-Competition Agreement with us that contains, among other things, (i) certain provisions prohibiting disclosure of our confidential information without our prior written consent, (ii) certain non-competition provisions that restrict their engaging in certain activities that are competitive with us during their employment and for one year thereafter for the CEO, and six months thereafter for the CFO, Head of Sales and CIO, and (iii) certain non-solicitation provisions that restrict their recruiting, soliciting or hiring our non-clerical employees or consultants, or soliciting any person or entity to terminate, cease, reduce or diminish their relationship with us, during their employment and for two years thereafter.

Christophe Roupie U.K. Employment Contract

Effective March 15, 2017, Mr. Roupie and MarketAxess Europe Limited entered into an employment agreement ("*EU Employment Agreement*") pursuant to which Mr. Roupie is entitled to receive an annual base salary equal to $399,000 and is eligible to participate in our discretionary cash bonus and equity plans.

In addition, the EU Employment Agreement provides for a mutual notice period of no less than three months in advance of termination of employment. Under the EU Employment Agreement, Mr. Roupie is subject to (i) certain provisions that prohibit disclosure of our confidential information without our prior written consent and (ii) a six-month restricted period during which he is subject to (a) certain non-competition provisions that restrict his engaging in certain activities that are competitive with us and (b) certain non-solicitation provisions that restrict his recruiting, soliciting, and hiring of our non-clerical employees. The EU Employment Agreement allows for adjustment of compensation due to performance, as well as other clawback provisions as required under the U.K. Remuneration Code and similar statutes in Europe.

Under a U.K. redundancy plan, Mr. Roupie receives two weeks of redundancy pay per year of service in the event of any involuntary termination other than for cause.

Potential termination or change in control payments and benefits

Mr. McVey is entitled to certain payments and benefits pursuant to his employment agreement and other agreements entered into between us and him upon a termination of his employment in certain circumstances or in the event of a Change in Control of the Company. Messrs. DeLise, McPherson, and Themelis do not have employment agreements with us but are entitled to severance payments and benefits under the Severance Plan and pursuant to certain equity grants. Mr. Roupie is entitled to benefits associated with certain equity awards.

The following tables estimate the payments we would be obligated to make to each of our NEOs as a result of his termination or resignation under the circumstances shown or because of a Change in Control, in each case assuming such event had occurred on December 31, 2018. We have calculated these estimated payments to meet SEC disclosure requirements. The estimated payments are not necessarily indicative of the actual amounts any of our NEOs would receive in such circumstances. The table excludes (i) compensation amounts accrued through December 31, 2018 that would be paid in the normal course of continued employment, such as accrued but unpaid salary, and (ii) vested account balances under our 401(k) Plan that are generally available to all of our salaried employees. Where applicable, the information in the table uses a price per share for our Common Stock of $211.31, the closing price on December 31, 2018. In addition, where applicable, the amounts listed for bonuses reflect the actual amounts paid to the NEOs in the year following each of the performance years 2015 through 2017, since the hypothetical termination or Change in Control date is the last day of the fiscal year.

Payments and Benefits for Richard M. McVey, CEO	Base Salary (1) ($)	Cash Bonus (2) ($)	Health Benefits (3) ($)	Restricted Stock Acceleration (4) ($)	Performance Share Acceleration (5) ($)	Restricted Stock Unit Acceleration (6) ($)	Stock Option Acceleration (7) ($)	Payment Reduction (8) ($)	Total ($)
Termination Without Cause or for Good Reason Outside a Change in Control Protection Period ("CCPP")	1,000,000	4,060,000	30,789	13,758,394	3,987,631	—	9,850,707	—	32,687,521
Termination i) Without Cause, ii) for Good Reason, and iii) for RSUs only due to Death or by the Company due to Disability, during a CCPP, but prior to a Change in Control	1,000,000	4,060,000	30,789	26,084,001	2,839,795	—	11,865,850	—	45,880,434
Termination i) Without Cause, ii) for Good Reason, and iii) for RSUs only due to Death or by the Company due to Disability, upon or within 24 months following a Change in Control	1,000,000	4,060,000	30,789	27,516,577	2,839,795	1,497,765	11,865,850	—	48,810,776
Award is not continued, assumed or has no new rights substituted upon a Change in Control (no termination)	—	—	—	27,516,577	2,839,795	1,497,765	—	—	31,854,137
Termination for Cause or Without Good Reason	—	—	—	—	—	—	—	—	—
Death, or by the Company due to Disability, outside of CCPP	500,000	2,030,000	20,526	27,516,577	8,597,676	1,215,772	5,932,925	—	45,813,475

(1) The CEO Employment Agreement provides that Mr. McVey will receive continued payment of his base salary for 24 months following termination if (i) his employment is terminated outside of a Change in Control Protection Period (as defined below) for any reason other than his death, his voluntary resignation without Good Reason (including due to his providing a notice of non-extension of the term of the agreement at least 90 days prior to the end of the term (a "*Non-Extension Notice*")), due to our providing a Non-Extension Notice, or by us as a result of his having a disability or for Cause (an "*Enhanced Non-Change in Control Termination*"), or (ii) he resigns for Good Reason or his employment is terminated for any reason other than his resignation without Good Reason (including due to his providing a Non-Extension Notice), or by us for Cause, in any case, within three months prior to a "change in control event" within the meaning of Section 409A of the Code, or within 18 months after a Change in Control as defined in the agreement (such period a "*Change in Control Protection Period*" or "*CCPP*" and any such termination a "*Change in Control Termination*").

The CEO Employment Agreement provides that Mr. McVey will receive continued payment of his base salary for 12 months following termination if his employment is terminated outside of a Change in Control Protection Period due to his death, due to our providing a Non-Extension Notice, or by us as a result of his having a disability (a "*Standard Non-Change in Control Termination*").

(2) The CEO Employment Agreement provides that Mr. McVey will receive an amount equal to two times his average annual cash bonus for the three years prior to termination (payable in 24 equal monthly installments) in the event of an Enhanced Non-Change in Control Termination or a Change in Control Termination.

The CEO Employment Agreement provides that Mr. McVey will receive an amount equal to his average annual cash bonus for the three years prior to termination (payable in 12 equal monthly installments) in the event of a Standard Non-Change in Control Termination.

(3) The CEO Employment Agreement provides that we will pay the cost of continuation health coverage for up to 18 months (the maximum currently allowed under COBRA) following an Enhanced Non Change in Control Termination or a Change in Control Termination. and 12 months following a Standard Non-Change in Control Termination. In both cases, the payments may be made through COBRA.

(4) Pursuant to the Performance Share Agreements between us and Mr. McVey dated January 15, 2016 and 2017 and January 15, 2015:

- all unvested shares of restricted stock granted to Mr. McVey upon settlement of his performance shares (the "*McVey Settlement Shares*") will fully vest upon his death or disability
- in the event of a termination of employment without Cause or for Good Reason, 50% of the unvested McVey Settlement Shares will fully vest; and
- in the event of a Change in Control within three months following Mr. McVey's resignation for Good Reason, a termination without Cause within 24 months following a Change in Control, or if prior to a Change in Control it is determined that the McVey Settlement Shares will not be continued, assumed or have new rights substituted therefor in accordance with the applicable incentive plans, all unvested McVey Settlement Shares will fully.

(5) Pursuant to the CEO Annual Award between us and Mr. McVey dated January 15, 2018:

- in the event of termination of employment due to death or disability prior to the settlement dates (which occurred in the first fiscal quarter of 2018) (the "*Settlement Dates*"), under the CEO Annual Award, he would have been entitled to receive 50% of the shares of restricted stock that he would have received had he been employed on the Settlement Date, based on the actual achievement of the performance goal, which shares would have been fully vested on the Settlement; and
- the Compensation Committee has discretion to determine the treatment of the performance shares upon a Change in Control occurring prior to the Settlement Date based on the likely level of achievement of the performance goal on the Settlement Date. For the purposes of the table above, we have assumed that the Compensation Committee would have granted Mr. McVey the number of shares of restricted stock that would have become fully vested upon a Change in Control based on actual performance.

Pursuant to the Performance Share Agreement between us and Mr. McVey dated November 8, 2018:

- all unvested shares granted to Mr. McVey upon settlement of his performance shares will fully vest upon his death or disability if such event occurs within 12 months prior to achieving the target performance level;
- in the event of a termination of employment without Cause or for Good Reason other than during a Change in Control period, 50% of the unvested Settlement Shares will vest if such an event occurs within 12 months prior to achieving the target performance level; and
- in the event of a termination of employment without Cause or for Good Reason during a Change in Control period or if the shares are not continued, assumed or new rights are not given, all unvested Settlement Shares will fully vest except that on or before January 1, 2020, only 7,548 of the performance shares shall vest and the remainder are forfeited.

(6) If, prior to a Change in Control, the Compensation Committee determines that the restricted stock units granted to Mr. McVey under the Restricted Stock Unit Agreements between us and him dated January 15, 2016 and January 15, 2017 will not be continued, assumed or have new rights substituted therefore, all unvested restricted stock units will fully vest upon the Change in Control. If such awards do not vest upon a Change in Control, then in the event of a termination of employment without Cause upon or within 24 months of a Change in Control, 100% of the restricted stock units granted to Mr. McVey will vest. 50% of the unvested shares of restricted stock units will vest upon his death or disability.

(7) Pursuant to the Stock Option Agreements between us and Mr. McVey dated January 15, 2016, 2017 and 2018:

- in the event of termination of employment due to death or disability, 50% of the unvested portion of the option will become fully vested and exercisable;
- in the event of termination of employment other than voluntary termination or termination for cause, the unvested portions of the options will become fully vested and exercisable.

While there are accelerated vesting provisions associated with the CEO's November 8, 2018 Stock Option Retention Awards, no value was generated as of the measurement date.

(8) Mr. McVey's employment agreement provides that if any payments or benefits paid or provided to him would be subject to, or result in, the imposition of the excise tax imposed by Section 4999 of the Code, then the amount of such payments will be automatically reduced to one dollar less than the amount that subjects such payment to the excise tax, unless he would, on a net after-tax basis, receive less compensation than if the payment were not so reduced.

Payments and Benefits for Antonio L. DeLise, CFO

	Base Salary (1) ($)	Cash Bonus (2) ($)	Health Benefits (3) ($)	Restricted Stock Acceleration (4) ($)	Performance Share Acceleration (5)(6) ($)	Restricted Stock Unit Acceleration (7) ($)	Stock Option Acceleration (8) ($)	Payment Reduction ($)	Total ($)
Termination Without Cause	300,000	846,667	20,526	—	—	274,703	1,741,121	—	3,183,017
Termination Without Cause within 24 months following a Change in Control	300,000	846,667	20,526	119,179	1,677,379	899,124	1,894,753	—	5,757,627
Award is not continued, assumed or has no new rights substituted upon a Change in Control	—	—	—	119,179	1,677,379	899,124	1,894,753	—	4,590,435
Termination for Cause or Without Good Reason	—	—	—	—	—	—	—	—	—
Death/Disability	150,000	423,333	10,263	59,589	1,615,888	724,265	921,263	—	3,904,601

(1) In accordance with the Severance Plan and subject to his execution of a separation agreement and release, as a Participating Executive, Mr. DeLise is entitled to 52 weeks of continued base salary upon a termination of his employment without Cause and 26 weeks of continued base salary in the event of death or disability.

(2) In accordance with the Severance Plan and subject to his execution of a separation agreement and release, as a Participating Executive, Mr. DeLise is entitled to an amount equal to one times his average annual cash bonus for the three years prior to termination (payable as soon as practical) in the event of a termination of his employment Without Cause and 0.5 times his average annual cash bonus for the three years prior to termination in the event of death or disability.

(3) In accordance with the Severance Plan and subject to his execution of a separation agreement and release, as a Participating Executive, Mr. DeLise is entitled to 52 weeks of continued healthcare coverage upon a termination of his employment without Cause.

(4) Pursuant to the Performance Share Agreements between us and Mr. DeLise dated January 15, 2016 and January 15, 2017:

- 50% of the unvested shares of restricted stock granted to Mr. DeLise upon settlement of his performance shares (the "*DeLise Settlement Shares*") will fully vest upon his death or disability; and
- in the event of a termination without Cause within 24 months following a Change in Control, or if prior to a Change in Control it is determined that the DeLise Settlement Shares will not be continued, assumed or have new rights substituted therefor in accordance with the applicable incentive plans, all unvested DeLise Settlement Shares will fully vest. The table above assumes that the DeLise Settlement Shares would have become fully vested upon a Change in Control.

(5) Pursuant to the Performance Award Agreement between us and Mr. DeLise dated January 15, 2018, in the event of termination of employment due to death or disability prior to the settlement date (which occurred in the first fiscal quarter of 2019) (the "*Settlement Date*"), then, on the Settlement Date, he would have been entitled to receive 50% of the shares of restricted stock that he would have actually received had he been employed on the Settlement Date. In addition, in the event of a Change in Control occurring prior to the Settlement Date, the Compensation Committee had discretion to determine the treatment of the performance shares based on the likely level of achievement of the performance goal on the Settlement Date. For the purposes of the table above, we have assumed that the Compensation Committee would have granted Mr. DeLise the actual number of shares of restricted stock that would have become fully vested upon a Change in Control based on actual performance.

(6) If prior to a Change in Control, the Compensation Committee determines that the performance shares granted to Mr. DeLise under the Performance Award Agreement dated January 22, 2016 will not be continued, assumed or have new rights substituted therefore, all unvested shares will fully vest upon the Change in Control. If such awards do not vest upon a Change in Control, then in the event of a termination of employment without Cause upon or within 24 months of a Change in Control, all unvested shares will fully vest. In the event of a termination without cause, 35/36th of the award will vest. In the event of termination of employment due to death or disability, all unvested shares will vest. For purposes of the table above, we have assumed that the Compensation Committee granted Mr. DeLise the settled amount of shares of restricted stock.

(7) If prior to a Change in Control, the Compensation Committee determines that the restricted stock units granted to Mr. DeLise under the Restricted Stock Unit Agreements between us and him dated each of January 15, 2016, 2017, and 2018 will not be continued, assumed or have new rights substituted therefore or in the event of a termination of employment without Cause upon or within 24 months of a Change of Control, all unvested restricted stock units will fully vest upon the Change in Control as will 50% of his January 22, 2016 grant. Twenty-five percent of the unvested restricted stock units from the January 22, 2016 grant will vest in the event of a termination without cause. Fifty percent of the unvested shares of restricted stock units will vest upon his death or disability.

(8) All unvested stock options pursuant to the Stock Option Agreement between Mr. DeLise and us dated January 22, 2016 will vest in the event of a termination without Cause or if the shares will not be continued, assumed or have new rights substituted in the event of a Change in Control. Fifty percent of the unvested stock options will vest upon his death or disability as will 50% percent of the unvested stock options from his agreement dated January 15, 2017.

Payments and Benefits for Kevin McPherson, Sales

	Base Salary (1) ($)	Cash Bonus (2) ($)	Health Benefits (3) ($)	Restricted Stock Acceleration (4) ($)	Performance Share Acceleration (5)(6) ($)	Restricted Stock Unit Acceleration (7) ($)	Stock Option Acceleration (8) ($)	Payment Reduction ($)	Total ($)
Termination Without Cause	300,000	1,241,667	20,526	—	2,098,778	381,520	2,418,128	—	6,460,618
Termination Without Cause within 24 months following a Change in Control	300,000	1,241,667	20,526	44,832	2,285,318	1,086,556	2,418,128	—	7,397,026
Award is not continued, assumed or has no new rights substituted upon a Change in Control	—	—	—	44,832	2,285,318	1,086,556	2,418,128	—	5,834,833
Termination for Cause or Without Good Reason	—	—	—	—	—	—	—	—	—
Death/Disability	150,000	620,833	10,263	22,416	2,222,030	924,798	1,209,064	—	5,159,404

(1) In accordance with the Severance Plan and subject to his execution of a separation agreement and release, as a Participating Executive, Mr. McPherson is entitled to 52 weeks of continued base salary upon a termination of his employment without Cause and 26 weeks of continued base salary in the event of death or disability.

(2) In accordance with the Severance Plan and subject to his execution of a separation agreement and release, as a Participating Executive, Mr. McPherson is entitled to an amount equal to one times his average annual cash bonus for the three years prior to termination (payable as soon as practical) in the event of a termination of his employment without Cause and 0.5 times his average annual cash bonus for the three years prior to termination in the event of death or disability.

(3) In accordance with the Severance Plan and subject to his execution of a separation agreement and release, as a Participating Executive, Mr. McPherson is entitled to 52 weeks of continued healthcare coverage upon a termination of his employment without Cause.

(4) Pursuant to the Performance Share Agreement between us and Mr. McPherson dated January 15, 2017:

- 50% of the unvested shares of restricted stock granted to Mr. McPherson upon settlement of his performance shares (the "*McPherson Settlement Shares*") will fully vest upon his death or disability; and
- in the event of a termination without Cause within 24 months following a Change in Control, or if prior to a Change in Control it is determined that the McPherson Settlement Shares will not be continued, assumed or have new rights substituted therefor in accordance with the applicable incentive plans, all unvested McPherson Settlement Shares will fully vest. The table above assumes that the McPherson Settlement Shares would have become fully vested upon a Change in Control.

(5) Pursuant to the Performance Award Agreement between us and Mr. McPherson dated January 15, 2018, in the event of termination of employment due to death or disability prior to the settlement date (which occurred in the first fiscal quarter of 2019) (the "*Settlement Date*"), then, on the Settlement Date, he would have been entitled to receive 50% of the shares of restricted stock that he would have actually received had he been employed on the Settlement Date. In addition, in the event of a Change in Control occurring prior to the Settlement Date, the Compensation Committee had discretion to determine the treatment of the performance shares based on the likely level of achievement of the performance goal on the Settlement Date. For the purposes of the table above, we have assumed that the Compensation Committee would have granted Mr. McPherson the actual number of shares of restricted stock that would have become fully vested upon a Change in Control based on actual performance.

(6) If prior to a Change in Control, the Compensation Committee determines that the performance shares granted to Mr. McPherson under the Performance Award Agreement dated January 22, 2016 will not be continued, assumed or have new rights substituted therefore, all unvested shares will fully vest upon the Change in Control. If such awards do not vest upon a Change in Control, then in the event of a termination of employment without Cause upon or within 24 months of a Change in Control, all unvested shares will fully vest. In the event of a termination without cause, 35/36th of the award will vest. In the event of termination of employment due to death or disability, all unvested shares will vest. For purposes of the table above, we have assumed that the Compensation Committee granted Mr. McPherson the settled amount of shares of restricted stock.

(7) If prior to a Change in Control, the Compensation Committee determines that the restricted stock units granted to Mr. McPherson under the Restricted Stock Unit Agreements between us and him dated each of January 15 2017 and 2018 will not be continued, assumed or have new rights substituted therefore or in the event of a termination of employment without Cause upon or within 24 months of a Change of Control, all unvested restricted stock units will fully vest upon the Change in Control as will 50% of his January 22, 2016 grant. Twenty-five percent of the unvested restricted stock units from the January 22, 2016 grant will vest in the event of a termination without cause. Fifty percent of the unvested shares of restricted stock units will vest upon his death or disability.

(8) All unvested stock options pursuant to the Stock Option Agreement between Mr. McPherson and us dated January 22, 2016 will vest in the event of a termination without Cause or if the shares will not be continued, assumed or have new rights substituted in the event of a Change in Control. Fifty percent of the unvested stock options will vest upon his death or disability.

Payments to Christophe Roupie, EU/Asia

	Base Salary (1) ($)	Performance Based Restricted Stock Acceleration (2) ($)	Restricted Stock (3) ($)	Total ($)
Involuntary Termination outside a CIC	24,231	—	—	24,231
Termination Without Cause within 24 months following a Change in Control	24,231	2,136,344	157,003	2,317,578
Award is not continued, assumed or has no new rights substituted upon a Change in Control	—	2,136,344	157,003	2,293,347
Termination for Cause or Without Good Reason	—	—	—	—
Death/Disability	—	1,068,172	78,502	1,146,674

(1) In accordance with the U.K. severance program and subject to his execution of a U.K. compromise agreement, Mr. Roupie is eligible for 2 weeks of base salary for each year of service, pro-rated for partial years of service, in the event of any termination without Cause.

(2) The Restricted Stock Award between us and Mr. Roupie dated April 1, 2017 is subject to performance adjustment. As such, in the event of termination of employment due to death or disability prior to the settlement of the award, he would have been entitled to receive 50% of the unvested target shares of restricted stock. In the event of a termination without Cause within 24 months following a Change in Control or if the award is not continued, assumed or given new rights upon a Change in Control, 100% of the unvested target shares would vest. Pursuant to the Performance Award Agreement between us and Mr. Roupie dated January 15, 2018, in the event of termination of employment due to death or disability prior to the settlement date (which occurred in the first fiscal quarter of 2019) (the "*Settlement Date*"), then, on the Settlement Date, he would have been entitled to receive 50% of the shares of restricted stock that he would have actually received had he been employed on the Settlement Date. In addition, in the event of a Change in Control occurring prior to the Settlement Date, the Compensation Committee had discretion to determine the treatment of the performance shares based on the likely level of achievement of the performance goal on the Settlement Date. For the purposes of the table above, we have assumed that the Compensation Committee would have granted Mr. Roupie the actual number of shares of restricted stock that would have become fully vested upon a Change in Control based on actual performance.

(3) If on or prior to a Change in Control, the Compensation Committee determines that the restricted stock granted to Mr. Roupie under the Restricted Stock Agreement between us and him dated each of January 15, 2018 will not be continued, assumed or have new rights substituted therefore or in the event of a termination of employment without Cause upon a Change of Control, all unvested restricted stock will fully vest upon the Change in Control. Fifty percent of the unvested shares of restricted stock will vest upon his death or disability.

Payments and Benefits for Nicholas Themelis, CIO

	Base Salary (1) ($)	Cash Bonus (2) ($)	Health Benefits (3) ($)	Restricted Stock Acceleration (4) ($)	Performance Share Acceleration (5)(6) ($)	Restricted Stock Unit Acceleration (7) ($)	Stock Option Acceleration (8) ($)	Payment Reduction ($)	Total ($)
Termination Without Cause	300,000	1,333,333	20,526	—	2,518,698	457,803	2,901,689	—	7,532,049
Termination Without Cause within 24 months following a Change in Control	300,000	1,333,333	20,526	345,703	2,787,179	1,516,783	3,110,270	—	9,413,795
Award is not continued, assumed or has no new rights substituted upon a Change in Control	—	—	—	345,703	2,787,179	1,516,783	3,110,270	—	7,759,936
Termination for Cause or Without Good Reason	—	—	—	—	—	—	—	—	—
Death/Disability	150,000	666,667	10,263	172,852	2,688,920	1,216,195	1,519,682	—	6,424,577

(1) In accordance with the Severance Plan and subject to his execution of a separation agreement and release, as a Participating Executive, Mr. Themelis is entitled to 52 weeks of continued base salary upon a termination of his employment without Cause and 26 weeks of continued base salary in the event of death or disability.

(2) In accordance with the Severance Plan and subject to his execution of a separation agreement and release, as a Participating Executive, Mr. Themelis is entitled to an amount equal to one times his average annual cash bonus for the three years prior to termination (payable as soon as practical) in the event of a termination of his employment without Cause and 0.5 times his average annual cash bonus for the three years prior to termination in the event of death or disability.

(3) In accordance with the Severance Plan and subject to his execution of a separation agreement and release, as a Participating Executive, Mr. Themelis is entitled to 52 weeks of continued healthcare coverage upon a termination of his employment without Cause.

(4) Pursuant to the Performance Share Agreements between us and Mr. Themelis dated January 15, 2016 and January 15, 2017:

- 50% of the unvested shares of restricted stock granted to Mr. Themelis upon settlement of his performance shares (the "*Themelis Settlement Shares*") will fully vest upon his death or disability; and
- in the event of a termination without Cause within 24 months following a Change in Control, or if prior to a Change in Control it is determined that the Themelis Settlement Shares will not be continued, assumed or have new rights substituted therefor in accordance with the applicable incentive plans, all unvested Themelis Settlement Shares will fully vest. The table above assumes that the Themelis Settlement Shares would have become fully vested upon a Change in Control.

(5) Pursuant to the Performance Award Agreement between us and Mr. Themelis dated January 15, 2018, in the event of termination of employment due to death or disability prior to the settlement date (which occurred in the first fiscal quarter of 2019) (the "*Settlement Date*"), then, on the Settlement Date, he would have been entitled to receive 50% of the shares of restricted stock that he would have actually received had he been employed on the Settlement Date. In addition, in the event of a Change in Control occurring prior to the Settlement Date, the Compensation Committee had discretion to determine the treatment of the performance shares based on the likely level of achievement of the performance goal on the Settlement Date. For the purposes of the table above, we have assumed that the Compensation Committee would have granted Mr. Themelis the actual number of shares of restricted stock that would have become fully vested upon a Change in Control based on actual performance.

(6) If prior to a Change in Control, the Compensation Committee determines that the performance shares granted to Mr. Themelis under the Performance Award Agreement dated January 22, 2016 will not be continued, assumed or have new rights substituted therefore, all unvested shares will fully vest upon the Change in Control. If such awards do not vest upon a Change in Control, then in the event of a termination of employment without Cause upon or within 24 months of a Change in Control, all unvested shares will fully vest. In the event of a termination without cause, 35/36th of the award will vest. In the event of termination of employment due to death or disability, all unvested shares will vest. For purposes of the table above, we have assumed that the Compensation Committee granted Mr. Themelis the settled amount of shares of restricted stock.

(7) If prior to a Change in Control, the Compensation Committee determines that the restricted stock units granted to Mr. Themelis under the Restricted Stock Unit Agreements between us and him dated each of January 15, 2016, 2017, and 2018 will not be continued, assumed or have new rights substituted therefore or in the event of a termination of employment without Cause upon or within 24 months of a Change of Control, all unvested restricted stock units will fully vest upon the Change in Control as will 50% of his January 22, 2016 grant. Twenty-five percent of the unvested restricted stock units from the January 22, 2016 grant will vest in the event of a termination without cause. Fifty percent of the unvested shares of restricted stock units will vest upon his death or disability.

(8) All unvested stock options pursuant to the Stock Option Agreement between Mr. Themelis and us dated January 22, 2016 will vest in the event of a termination without Cause or if the shares will not be continued, assumed or have new rights substituted in the event of a Change in Control. Fifty percent of the unvested stock options will vest upon his death or disability as will 50% of the unvested stock options from his agreement dated January 15, 2017.

Compensation plans

For information with respect to the securities authorized for issuance under equity compensation plans, see *Equity Compensation Plan Information* in Item 12 of our Annual Report on Form 10-K for the year ended December 31, 2018, which has been delivered to you with this Proxy Statement.

Compensation Committee interlocks and insider participation

No member of our Board's Compensation Committee has served as one of our officers or employees at any time. None of our executive officers serves as a member of the compensation committee of any other company that has an executive officer serving as a member of our Board of Directors. None of our executive officers serves as a member of the board of directors of any other company that has an executive officer serving as a member of our Board's Compensation Committee.

CEO PAY RATIO

The Company's compensation and benefits philosophy and the overall structure of our compensation and benefits programs are broadly consistent across the global organization, notwithstanding regional nuances. Our goal is to ensure that the compensation and benefits program of each employee reflects his or her specific role, responsibilities and contributions and is competitive for the employee's location based on the market data provided by our compensation consultants.

As required by Section 953(b) of the Dodd-Frank Wall Street Reform and Consumer Protection Act and Item 402(u) of Regulation S-K, our Company is required to calculate and disclose the total compensation paid to its median employee, as well as the ratio of the total compensation paid to such median employee as compared to the total compensation paid to the Company's CEO. The Company believes that the ratio of pay included in this information is a reasonable estimate calculated in a manner consistent with Item 402(u) of Regulation S-K.

Measurement Date

We identified the median employee using our employee population on October 1, 2018.

Consistently Applied Compensation Measure (CACM)

Under the relevant rules, we were required to identify our median employee by use of a consistently applied compensation measure ("CACM"). We chose a CACM that closely approximates the annual total direct compensation of our employees and corresponds to how we disclose our CEO's compensation in the Summary Compensation Table ("Calculation"). In our Calculation, we included:

- Base salary, annualized for any partial year employees;
- Cash bonus paid in 2019 for 2018 results;
- Other payments including, but not limited to, severance payments, overtime and allowances;
- Value of equity awards granted in 2018, computed in accordance with FASB ASC Topic 718;
- Value of dividends and dividend equivalents accrued on unvested equity in 2018; and
- Company's contribution to a pension or retirement plan, including, but not limited to, a 401(k) defined contribution plan in the U.S.

We did not perform adjustments to the compensation paid to part-time employees to calculate what they would have been paid on a full-time basis.

De Minimus Exception

We did not include employees from the following countries as they represented, in aggregate, less than 5% of our employee population:

- Brazil – 4 employees
- France – 1 employee
- Hong Kong – 5 employees
- Singapore – 7 employees
- The Netherlands – 1 employee

Methodology and Pay Ratio Outcome

Using the above CACM and excluding the employees in the countries referenced above, we identified the median employee. Our median employee compensation was $145,811 according to the Calculation. Based on the Calculation, the CEO's compensation in 2018 was $16,625,183 and the median employee pay ratio was 114:1.

This pay ratio information is being provided solely for compliance purposes. Neither the Compensation Committee nor management of the Company used the pay ratio measure in making compensation decisions.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

Review and approval of related party transactions

Our related parties include our directors, director nominees, executive officers, holders of more than five percent of the outstanding shares of our Common Stock and the foregoing persons' immediate family members. We review relationships and transactions in which the Company and our related parties are or will be participants to determine whether such related persons have a direct or indirect material interest. As required under SEC rules, transactions that are determined to be directly or indirectly material to a related party are disclosed in this Proxy Statement. In addition, the Audit Committee reviews and, if appropriate, approves any related party transaction that is required to be disclosed. Set forth below is information concerning transactions with our related parties that is required to be disclosed under SEC rules.

Transactions with our 5% Stockholders

Each of the 5% stockholders that are listed above under *Security Ownership of Certain Beneficial Owners and Management* or their affiliated entities is a party to a user agreement or dealer agreement that governs their access to, and activity on, our electronic trading platform. These agreements were each entered into in the normal course of business and provide for the fees and expenses to be paid by such entities for the use of the platform.

OTHER MATTERS

Section 16(a) beneficial ownership reporting compliance

The members of our Board of Directors, our executive officers and persons who hold more than 10% of our outstanding Common Stock are subject to the reporting requirements of Section 16(a) of the Securities Exchange Act of 1934, as amended, which requires them to file reports with respect to their ownership of our Common Stock and their transactions in such Common Stock. Based solely upon a review of (i) the copies of Section 16(a) reports that MarketAxess has received from such persons for transactions in our Common Stock and their Common Stock holdings for the 2018 fiscal year and (ii) the written representations of such persons that all required annual Form 5 reports were filed by them for the fiscal year, the Company believes that all reporting requirements under Section 16(a) for such fiscal year were met in a timely manner by its directors, executive officers and beneficial owners of more than 10% of its Common Stock.

Other matters

As of the date of this Proxy Statement, the Company knows of no other matters that will be presented for consideration at the Annual Meeting. If any other matters properly come before the Annual Meeting, it is the intention of the persons named in the enclosed proxy card to vote the shares they represent as such persons deem advisable. Discretionary authority with respect to such other matters is granted by the execution of the enclosed proxy card.

Stockholder proposals for 2020 Annual Meeting

In order to be considered for inclusion in the Company's proxy statement and proxy card relating to the 2020 Annual Meeting of Stockholders, any proposal by a stockholder submitted pursuant to Rule 14a-8 of the Securities Exchange Act of 1934, as amended, must be received by the Company at its principal executive offices in New York, New York, on or before December 26, 2019. In addition, under the Company's bylaws, any proposal for consideration at the 2020 Annual Meeting of Stockholders submitted by a stockholder other than pursuant to Rule 14a-8 will be considered timely if it is received by the Secretary of the Company at its principal executive offices between the close of business on November 26, 2019 and the close of business on December 26, 2019 and is otherwise in compliance with the requirements set forth in the Company's bylaws.

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-K/A

Amendment No. 1

(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, 2018

☐ **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.)**
55 Hudson Yards, New York, New York **(Address of principal executive offices)**	**10001** **(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 every Interactive Data File required to be submitted 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 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, smaller reporting company, or an emerging growth company. See definition of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☑	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indication by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

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, 2018 (the last business day of the registrant's most recently completed second fiscal quarter) was approximately $7.2 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 37,578,970 shares of common stock, 1,012,868 of which were held by affiliates, outstanding on that date.

As of February 15, 2019, the aggregate number of shares of the registrant's common stock outstanding was 37,669,211.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for the 2019 Annual Meeting of Stockholders are incorporated by reference into Items 10, 11, 12, 13 and 14 of Part III of this Form 10-K/A.

EXPLANATORY NOTE

This Amendment No. 1 on Form 10-K/A (the “Amendment”) amends the Annual Report on Form 10-K of MarketAxess Holdings Inc. for the fiscal year ended December 31, 2018, as filed with the Securities and Exchange Commission on February 20, 2019 (the “Original Filing”).

MarketAxess Holdings Inc. is filing this Amendment for the sole purpose of correcting the number of shares of the Company’s common stock outstanding as of February 15, 2019 as disclosed on the cover page of the Original Filing. The number of outstanding shares of the Company’s common stock disclosed in the Original Filing inadvertently included 2,916,082 treasury shares that were issued but were not outstanding. Therefore, the number of shares of the Company’s common stock outstanding as of February 15, 2019 was 37,669,211.

Pursuant to Rule 12b-15 under Securities Exchange Act of 1934, as amended, this Form 10-K/A also contains new Rule 13a-14(a)/15d-14(a) Certifications, which are attached hereto. Because no financial statements have been amended by or included in this Form 10-K/A and this Form 10-K/A does not contain or amend any disclosure with respect to Items 307 and 308 of Regulation S-K, paragraphs 3, 4 and 5 of the certifications have been omitted.

This Form 10-K/A does not change or update any of the other disclosures contained in the Original Filing, including, without limitation, the total number of outstanding shares of common stock otherwise disclosed within the body of the Original Filing.

MARKETAXESS HOLDINGS INC.
2018 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. 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 1,500 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, leveraged loans, credit default swaps and other fixed-income securities. Through our Open Trading™ protocols, we execute bond trades between and among institutional investor and broker-dealer clients in an all-to-all anonymous trading environment in which MarketAxess acts as the matched principal counterparty. We also offer a number of trading-related products and services, including: Composite+ pricing and other market data products to assist clients with trading decisions; auto-execution and other execution services for clients requiring specialized workflow solutions; connectivity solutions that facilitate straight-through processing; and technology services to optimize trading environments. Through our Trax® division, we also offer a range of pre- and post-trade services, including trade matching, trade publication, 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 (“RFQ”) 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 RFQ 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. Clients can use our auto-execution technology with both our traditional RFQ and Open Trading protocols, thereby using rules-based execution to connect to diverse sources of liquidity while reducing trading inefficiencies and human errors. 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 these 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 platform’s functionality addresses many of the remaining shortcomings that result from trading bonds over the telephone or via e-mail.

Our services relating to trade execution range from providing a suite of trading protocols designed to fit the trading needs of our clients to innovative new trading technologies, such as auto-execution and the use of artificial intelligence, to assist our clients’ trading decisions. Trading protocols 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. Auto-execution allows clients to set eligibility criteria for their orders and our system will determine whether or not to execute a trade in accordance with the pre-defined parameters. 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 2018, 22.0% of all MarketAxess platform volume was executed via Open Trading protocols, up from 15.9% in 2017.

In recent years, 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 2018, almost 1,000 participating client firms provided liquidity via our Open Trading solutions and we completed approximately 1.1 million Open Trading trades, an increase of 73.2% compared to 2017.

Our broker-dealer clients accounted for approximately 97.7% of the underwriting of newly-issued U.S. corporate bonds and approximately 83.6% of the underwriting of newly issued European corporate bonds in 2018. Although institutional investors, specialist market-making firms, proprietary trading firms and other non-traditional liquidity providers have increasingly provided liquidity on our platform through Open Trading™, we believe these broker-dealers still represent the principal source of secondary market liquidity in the 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.

In 2018, our volume in U.S. high-grade corporate bonds represented approximately 18.1% 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 reporting services for European investment firms and market and reference data across a range of fixed-income products. In response to the pre-and post-trade transparency mandates from the recast Markets in Financial Instruments Directive ("MiFID II") in Europe, Trax® has been authorized by the UK Financial Conduct Authority ("FCA") as an Approved Publication Arrangement ("APA") and an Approved Reporting Mechanism ("ARM"). In addition to its APA and ARM reporting services, Trax® has developed a comprehensive suite of value-add solutions for MiFID II, including pre-trade transparency services, systematic internaliser ("SI") determination and monitoring, best execution reporting, commodity position reporting, data quality analysis and peer benchmarking.

In 2018, 89.7% 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 services, post-trade services 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, clearing costs 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, 2018, the most recent date available, there were approximately $42.4 trillion principal amount of fixed-income securities outstanding in the U.S. market, including $9.2 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 $28.6 billion in 2018. Primary dealer holdings of U.S. corporate bonds (investment-grade and high-yield) as reported by the Federal Reserve Bank of New York were $5.4 billion as of December 31, 2018. This represents less than one day of trading volume as measured by TRACE.

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 market-makers. As a result, we believe market participants require different 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.

Markets for Securities Traded on our Platform

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.

U.S. High-Grade Corporate Bond Market

The U.S. high-grade corporate bond market represents the largest subset of the U.S. corporate bond market. FINRA includes over 65,000 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 19.6% from $7.7 trillion at year-end 2013 to $9.2 trillion at September 30, 2018. Over the last five years, high-grade corporate bond issuance was over $1 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 pre-credit crisis levels. The trading volume of U.S. high-grade corporate bonds as reported by TRACE increased to approximately $5.1 trillion for the year ended December 31, 2018, compared to $4.9 trillion and $4.6 trillion for the years ended December 31, 2017 and 2016, respectively. We believe that the low level of turnover is an indicator of liquidity challenges in the credit markets.

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 annual amount of high-yield corporate bond issuance as reported by SIFMA decreased by 39.1% to $173.0 billion in 2018 from $284.9 billion in 2017. The average daily trading volume of high-yield bonds as measured by TRACE for the year ended December 31, 2018 was approximately $8.0 billion compared to $8.2 billion and $8.5 billion for the years ended December 31, 2017 and 2016, respectively.

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 nine months ended September 30, 2018, the most recent date available, was $20.3 billion compared to $19.9 billion and $20.7 billion for the years ended December 31, 2017 and 2016, respectively.

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 decreased by 12.0% to $393.6 billion in 2018 from $447.4 billion in 2017. The average daily trading volume of European corporate bonds as estimated by Trax® for the year ended December 31, 2018 was approximately $9.2 billion compared to $8.7 billion and $8.2 billion for the years ended December 31, 2017 and 2016, respectively.

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 $1.9 trillion as of September 30, 2018 as reported by SIFMA. The average daily trading volume of U.S. agency bonds (excluding mortgage-backed securities) as measured by TRACE was $3.6 billion for the year ended December 31, 2018 compared to $3.8 billion and $5.1 billion for the years ended December 31, 2017 and 2016, respectively.

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, 2018, there were over 1.5 million different municipal bonds outstanding, in the total aggregate principal amount of more than $3.8 trillion. In 2018, the average daily trading volume of municipal bonds, excluding variable rate demand notes, as measured by the Municipal Securities Rulemaking Board ("MSRB") was $6.0 billion for the year ended December 31, 2018 compared to $5.5 billion and $7.4 billion for the years ended December 31, 2017 and 2016, respectively.

Credit Derivative Market

Credit derivatives are contracts that allow 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 without ownership of the underlying security. 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 SEC has not yet finalized its rules for security-based SEFs that would govern the execution of single-name credit derivatives.

Post-Trade Reporting, Publishing and Matching Services

In Europe, all firms regulated as "investment firms" under MiFID II are required to submit complete and accurate details of qualifying transactions to their national regulator no later than the close of the working day following the date of the transaction. This process is known as transaction reporting. Pursuant to the associated Markets in Financial Instruments Regulation ("MiFIR"), the number of fields and the complexity of the information that must be reported to regulators was significantly enhanced. Firms may either report directly to the regulator or use an entity that is licensed as an ARM. In addition, under MiFIR, all regulated investment firms are required to comply with pre- and post-trade transparency requirements pursuant to which quotes and trades must be made public subject to a system of waivers and deferrals. Firms are required to utilize an APA to comply with the post-trade transparency requirement. Trade matching enables counterparties to agree on the terms of a trade shortly after execution, reducing the risk of trade errors and fails during settlement.

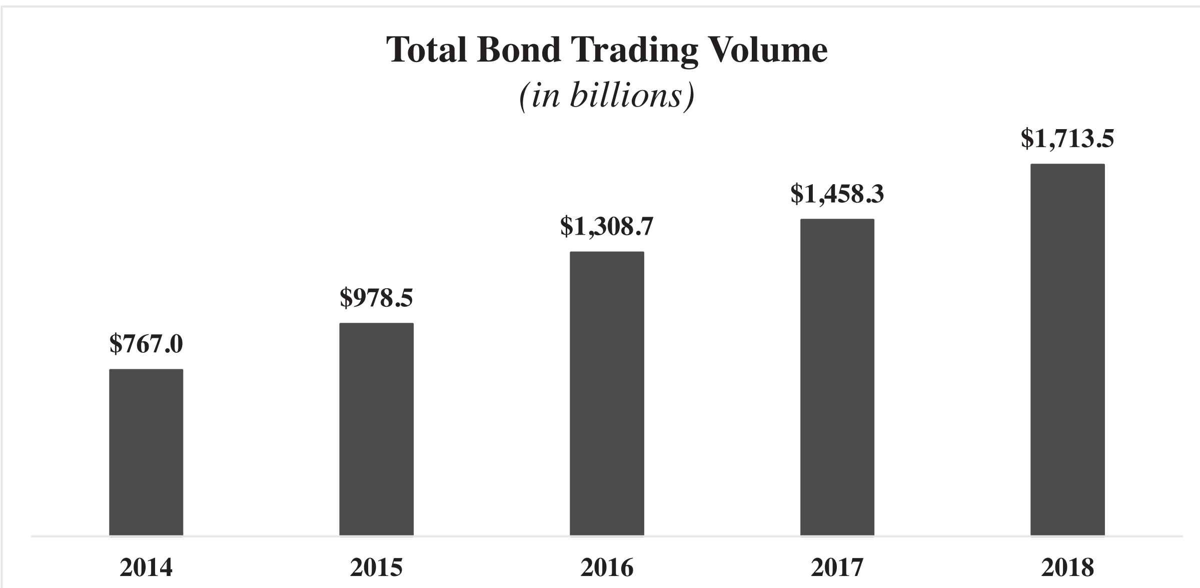
Our Competitive Strengths

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:

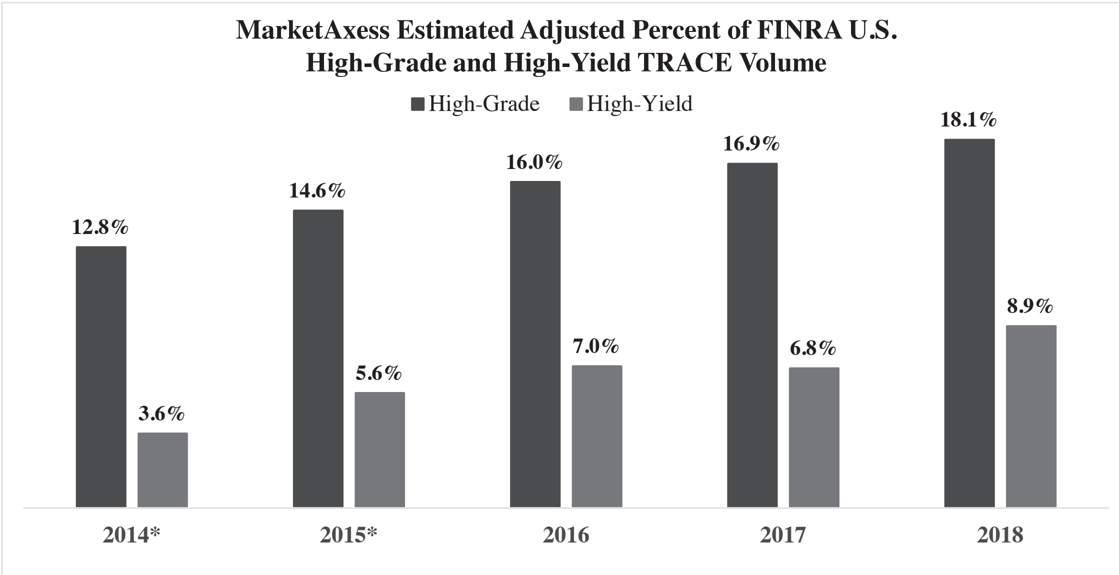
Significant Trading Volumes with Participation by Leading Broker-Dealers and Institutional Investors

Our electronic trading platform provides access to the liquidity provided through the participation on our platform of over 1,500 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 and their ability to use our Open Trading protocols to help manage their risk, source liquidity, and facilitate transactions on behalf of their clients.

As shown in the chart below, our total bond trading volume increased from $767.0 billion in 2014 to $1.7 trillion in 2018.



Our adjusted estimated share of U.S. high-grade and high-yield corporate bond volume from 2014 to 2018 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.

Execution Benefits to Clients

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. The price discovery process includes the ability to view indicative prices from our broker-dealer clients' inventory available on our platform, access to real-time pricing information and analytical tools available on our BondTicker® service (including spread-to-Treasury data, search capabilities and independent third-party credit research) and the ability to request executable bids and offers simultaneously from all of our participating broker-dealer clients during the trade process on any debt security in our database of corporate bonds. 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. 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.

Expanded Liquidity Pool. In the post-financial crisis years, liquidity has remained a persistent concern for market participants as regulators raised banks' capital requirements and adopted other measures that prompted many dealers to reduce market-making activities even as the buy side's bond holdings have grown rapidly. In this environment, Open Trading, our fully electronic, all-to-all trading environment, has emerged as one solution to the post-crisis liquidity problem. As a result, the liquidity options for Open Trading participants are broader and more diverse compared to the traditional model of bilateral trading with a limited set of dealer counterparties. The expanded pool of liquidity providers includes investment managers, global dealers, regional dealers and specialist market-making and proprietary trading firms. During 2018, almost 1,000 unique liquidity providers participated in Open Trading. Open Trading improves the ability of both dealers and institutional investors to find natural and opportunistic matches, move orders more efficiently, and achieve significant increases in execution quality and price improvement.

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, including real-time trade details, STP, account allocations, automated audit trails and trade detail matching. These verification mechanisms are designed to ensure that our institutional investor and broker-dealer 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, broker-dealers 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 and transaction cost analysis 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.

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 13 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 $720. 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. Our auto-execution technology uses rules-based execution logic to reduce trading inefficiencies and human errors while allowing traders to focus on higher-value trades. In addition, our BondTicker® service eliminates the need for manually-intensive phone calls or e-mail communications 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. Broker-dealers are also increasingly turning toward Open Trading as a new source of liquidity as they manage their risk exposure. As a result, we believe they can achieve enhanced bond inventory turnover by using our platform, which may limit credit exposure.

Growing, Comprehensive International Offering and Client Base

Our platform provides global fixed-income market participants with trading functionality across global hard currency and local currency markets, connecting clients in over 50 countries to local and global dealers. MarketAxess has over 740 client firms located outside the U.S. that access our platform through our regulated venues in Europe, Asia and Latin America. Our Open Trading functionality allows international clients to access cross-border liquidity with minimal ramp-up time or regulatory hurdles.

The MarketAxess emerging markets trading platform also offers the most comprehensive offering for local currency bond trading across the Latin America, Central & Eastern Europe, Middle East and Africa ("CEEMEA"), and Asia-Pacific ("APAC") regions. Our platform provides clients with the ability to trade local currency debt denominated in over 25 local currencies with over 100 emerging market dealers.

Full Trading Cycle Service Offerings

In addition to services directly related to the execution of trades, we offer our clients several other services throughout the trading cycle. 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. 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, STP, account allocations, automated audit trails, regulatory trade reporting, trade detail matching, and transaction cost analysis.

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 and improve liquidity. In recent years, MarketAxess has received industry recognition from key independent publications for its innovations and contributions to the fixed-income market. For example, in 2018, Open Trading won the Waters Technology "Buy-Side Technology Award" for the Best Buy-Side Execution Venue, and Composite+ won the Risk "Market Technology Award" for the Electronic Trading Support Product of the Year and the Waters Technology "American Financial Technology Award" for the Best Artificial Intelligence (AI) Technology Initiative.

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:

Broaden Our Client Base in Our Existing Markets and Increase Penetration with Existing Clients

We intend to use our broad network of over 1,500 active institutional investor and broker-dealer participants to drive more clients to our leading electronic fixed-income trading platform. The number of active participants on our platform has increased by over 90% since 2013. We believe that the continued expansion of our client base will lead to even further increases in the liquidity available on our platform. We expect that the increased liquidity on our platform and our ability to innovate and efficiently add new functionality and product offerings will also help us deepen our market share with our existing clients across our product suite. The number of clients trading three or more products on our platform has increased by 67.0% from 509 in 2014 to 850 in 2018. Last, we will seek to increase our international presence by increasing the number of firms located outside the U.S. that access our platform through our venues in Europe, Asia and Latin America, increasing the number of local currencies available for trading on our platform; and, subject to regulatory requirements, increasing the number of countries in which we can offer our platform.

Enhance the Liquidity of Securities Traded on Our Platform by Leveraging our Client Network and Open Trading Protocols

We aim to increase the secondary market liquidity on our trading platform by deploying innovative technology solutions designed to increase the number of potential trading counterparties on our platform and to address different trade sizes, bond liquidity characteristics and trading preferences. Our Open Trading protocols exponentially increase the potential trading counterparties by allowing broker-dealers and institutional investors to interact in an all-to-all trading environment. During 2018, our clients executed approximately 1.1 million trades using our Open Trading solutions, representing 22.0% of the total trading volume on our platform. In recent years, we have also significantly increased the number of participants that provide bond prices to our platform via an algorithm, which has helped increase the number of price responses on our platform by 142.1% from 2015 to 2018. We intend to continue to improve the liquidity of bonds on our platform by increasing the number of connections we have with algorithmic trading firms. We also believe that the combination of Open Trading and our vast client network provides the basis for MarketAxess to deliver meaningful cross-border liquidity or enter into new markets where liquidity is scarcer, such as municipal bonds.

Continue to Develop Innovative Next-Generation Technologies that will Allow Our Clients to Further Automate and Improve the Performance of their Trading Desks

We believe that the increased adoption of next-generation trading technologies by both dealer and investor clients will create improved liquidity, enhanced trading efficiencies and the ability to identify trends within the bond market. In recent years, we have launched a number of innovative technologies that rely on machine-learning, automation and algorithms that are designed to improve the trading decisions and workflows of our clients, while reducing trading inefficiencies and human errors. For example, clients can use our rules-based auto-execution technology with both our traditional RFQ protocol and Open Trading to automatically execute trades meeting defined parameters with diverse sources of liquidity. Our Composite+ pricing algorithm uses machine-learning to generate near real-time prices for over 25,000 corporate bonds based on a variety of data inputs, and our Like Bonds product uses a data-driven methodology to help clients find liquid, tradable alternatives to illiquid bonds. We intend to continue to invest in and develop advanced technologies such as these that will make MarketAxess an increasingly valuable part of our clients' trading decisions and workflows.

Expand and Strengthen our Trade-Related Service, Data and Analytical Offerings Throughout the Trading Cycle

We plan to expand and strengthen our existing service, data and analytical offerings throughout the trading cycle so that MarketAxess is more fully integrated into the workflow of our broker-dealer and institutional investor clients. In the pre-trade period, we intend to continue to enhance the value of our information and analytical offerings, including the content and capabilities of BondTicker®, Axess All® and Composite+. We plan to enhance and expand the usage of LiquidityBridge®, our execution management system (EMS) service that allows users to manage and facilitate the complex liquidity flows across multiple trading platforms, including the MarketAxess system. We also intend to augment our post-trade matching and regulatory reporting services provided by our Trax® brand in Europe that enable our clients to comply with their heightened obligations pursuant to MiFID II. As the use of our pre- and post-trade services and products grow, we believe that MarketAxess will become further entrenched as a value-added resource to our clients at each stage of the trading cycle, which we believe will further increase the attractiveness and use of our trading platform.

Pursue Select Acquisitions and Strategic Alliances

We continually evaluate opportunities to 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 and existing trade-related services to our clients. 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.

Key Products and Services

MarketAxess offers the following key products and services to its clients:

Key Products Traded on our Platform

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. Over 100 broker-dealers utilize our platform to trade U.S. high-grade corporate bonds, including all of the top 20 broker-dealers as ranked by underwriting volume of newly-issued U.S. high-grade corporate bonds in 2018. Our broker-dealer clients accounted for approximately 97.7% of the underwriting of newly-issued U.S. high-grade corporate bonds in 2018. More than 950 active domestic and foreign institutional investor firms use our platform to trade U.S. high-grade corporate bonds. Our 2018 trading volume in the U.S. high-grade corporate bond market was $928.2 billion.

Emerging Markets Bonds

Over 100 of our broker-dealer clients and more than 900 active institutional investor firms use our platform to trade emerging markets bonds. The emerging markets countries whose bonds were most frequently traded on our platform in 2018 were Mexico, Brazil, Argentina, South Africa and Turkey. In 2018, our clients were able to trade corporate and sovereign debt denominated in over 25 local market currencies on our platform. Our 2018 trading volume in the emerging market bond market was $378.3 billion.

U.S. Crossover and High-Yield Bonds

Over 100 of our broker-dealer clients and more than 850 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. We also offer leveraged loan trading for our clients that trade high-yield bonds. Our 2018 trading volume in the high-yield bond market was $177.6 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.

In the Eurobond credit market, defined as including European high-grade, high-yield and government bonds, approximately 50 broker-dealers utilize our platform, including 19 of the top 20 broker-dealers as ranked by 2018 European corporate new-issue underwriting volume. More than 450 active institutional investor firms use our platform to trade European bonds. Our 2018 trading volume in the Eurobond bond market was $166.6 billion.

U.S. Agency Bonds

Over 40 of our broker-dealer clients and more than 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 2018 trading volume in the U.S. agency bond market was $49.1 billion.

Municipal Bonds

Over 70 broker-dealer clients and over 300 institutional investor clients use our platform to trade municipal bonds. We offer trading for both taxable and non-taxable municipal bonds. Our 2018 trading volume in the U.S. municipal bond market was $5.9 billion.

Credit Derivatives

We offer a range of functionality for electronic trading of CFTC-regulated credit derivatives instruments 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. Approximately 40 active market participants use our SEF to trade credit derivative indices and credit options. Our 2018 credit derivatives trading volume was $93.4 billion.

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 completed 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 Axes® 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.

Post-Trade Reporting, Publishing and Matching Services

In Europe, all firms regulated as "investment firms" under MiFID II are required to submit complete and accurate details of qualifying transactions to their national regulator no later than the close of the working day following the date of the transaction. This process is known as transaction reporting. Pursuant to MiFIR, the number of fields and the complexity of the information that must be reported to regulators was significantly enhanced. Firms may either report directly to the regulator or use an entity that is licensed as an ARM, such as our Trax® ARM, to validate and submit such reports. In the U.K., covered transactions are reported to the FCA.

In addition, under MiFIR, all regulated investment firms are required to comply with pre- and post-trade transparency requirements pursuant to which quotes and trades must be made public subject to a system of waivers and deferrals. Firms are required to utilize an APA, such as our Trax® APA, to comply with the post trade transparency requirement and, although optional, many firms also utilize a third party provider, such as Trax®, to satisfy the pre trade transparency requirement. The Trax® Transparency Solution and the Trax® APA trade reporting solution are available through the Trax Insight™ platform, offering our clients a pre- and post-trade transparency solution, including APA trade reporting, quote publication, SI determination and instrument liquidity classification. Trax® also offers a commodity position reporting service to assist firms in compliance with the commodity derivative position limit reporting requirements of MiFID II.

Trade matching enables counterparties to agree on the terms of a trade shortly after execution, reducing the risk of trade errors and fails during settlement. Trax® Match is our near real-time post-trade matching and exception management tool which covers a broad range of securities, including fixed-income and equities. Trax® Match helps our clients to mitigate their operational risk, improve STP and efficiency, address the complexities of MiFID II and the Central Securities Depositories Regulation and confirm all economic details within minutes of execution.

Trax® has over 170 clients, including broker-dealers, hedge funds and investment banks. The Trax® platform processed approximately 0.9 billion transactions in 2018.

Information Services

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, intelligent Composite+ pricing, BondTicker®, liquidity and turnover analytics, bond reference data and trade order matching alerts. The information and analytical tools we provide to our clients help them make investment and trading decisions. 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.

Our Composite+ pricing algorithm generates near real-time prices for over 25,000 corporate bonds based on a variety of data inputs, including feeds from our trading platform, our Trax® post-trade service and TRACE. Composite+ is used by clients as a pre-trade reference price to enhance trading outcomes and transaction cost analysis. Composite+ can be combined with our auto-execution service, providing clients with an alert if a response is "off market".

Through our Trax® brand, we provide a range of information solutions for financial services firms, utilizing quotes contributed by market participants and leveraging data from our post-trade services business. 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 40,000 unique fixed-income securities and securities reference data for approximately 300,000 fixed-income securities.

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 with associated analytical tools that are not otherwise available. 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 and European pricing information 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 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.

LiquidityBridge® is our execution management system ("EMS") service that allows users to manage and facilitate the complex liquidity flows across multiple trading platforms, including the MarketAxess system. LiquidityBridge® brings together real-time comparison and execution of bond prices across multiple sectors allowing users to rapidly react to trading opportunities. Clients can also automatically generate custom pricing and distribute inventory to any destination. By using a library of standard adaptors, LiquidityBridge® can be deployed across a variety of fixed-income markets.

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. We provide our broker-dealer and institutional investor clients 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 our clients to communicate electronically between their front- and back-office systems. Our straight-through processing tools can be customized to meet specific needs of our clients and allow them to integrate their order, portfolio management and accounting systems in real time. 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 1,100 STP connections as of December 31, 2018. In addition, many of our clients use our Application Programming Interface ("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 bond volumes 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 operations in the last few years. Among others, Bloomberg and Tradeweb operate multi-dealer to institutional investor trading platforms for both fixed-income securities and derivatives. Several registered alternative trading systems ("ATSs"), including two ATSs recently acquired by Intercontinental Exchange, also offer exchange-style trading for corporate and municipal bonds, particularly for smaller trade sizes. 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 Intercontinental Exchange, currently offer varying forms of electronic trading of fixed-income securities. 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 and APA designations, such as the London Stock Exchange's UnaVista and Tradeweb, to provide post-trade matching and regulatory transaction reporting and transparency services to European clients.

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, security, 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 use our services; however, the contractual obligations of such clients are non-exclusive. See the Risk Factor captioned "*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.*"

Furthermore, a significant number of our institutional investor clients 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 clients 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 and a significant number of our institutional investor 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 our new logo is pending registration in the U.S. The same mark and logo have been registered or are pending registration 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®, Axess All®, Private Axes®, and associated designs and have a number of other registered trademarks and service marks. Open Trading™, MarketAxess Bid-Ask Spread Index (BASI)™, Mid-Hedging™ and Now You're In The Market™ are trademarks we use, but they have not been registered or are pending registration in the U.S.

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 also has a SEC-registered alternative trading system. MarketAxess Corporation is also a member of FINRA and registered with the MSRB, 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.

Various rules promulgated since the financial crisis have adversely affected our bank-affiliated broker-dealer clients' ability to make markets in a variety of fixed-income securities, which could negatively impact 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 European Union ("E.U.") and elsewhere are subject to extensive regulation. Our principal regulator in the U.K. is the FCA. MarketAxess Europe Limited is authorized and regulated by the FCA to operate a Multilateral Trading Facility ("MTF"), and is also authorized as a foreign platform in Switzerland, Hong Kong and Singapore. MarketAxess Capital Limited, which acts as matched principal counterparty for Open Trading transactions on the MTF, is authorized and regulated by the FCA as an investment firm. Xtrakter Limited ("Xtrakter") is authorized and regulated as a Data Reporting Service Provider with the FCA and the Netherlands Authority for the Financial Markets ("AFM"), which allows it to operate as the Trax® ARM and APA.

The securities industry in the member states of the E.U. is regulated by agencies in each member state. E.U. measures provide for the mutual recognition of national regulatory agencies and their supervision of investment firms, which makes it possible for the grant of a single authorization to be valid throughout the E.U. Currently, both MarketAxess Europe Limited and Xtrakter provide regulated services to European firms outside of the U.K. in reliance on a cross-border services passport under MiFID. However, in March 2017, the U.K. notified the European Council of its intention to leave the E.U. (commonly referred to as "Brexit"). By invoking Article 50 of the Lisbon Treaty, the U.K. is currently set to leave the E.U. on March 29, 2019. Following Brexit, our U.K. subsidiaries will not be able to rely on the existence of a "passporting" regime that allows immediate access to the single E.U. market. Current discussions between the U.K. and the E.U. regarding a withdrawal agreement envisage a temporary continuation of the existing passporting rights during a limited period following March 29, 2019. However, we are not able to predict with any certainty if, or when, the U.K. and the E.U. will sign the withdrawal agreement. Accordingly, we have established new subsidiaries in the E.U. in order to provide our trading platform and certain post-trade services to clients in the E.U. following Brexit. See the Risk Factor captioned "*The U.K. exit from the European Union could materially adversely impact our business, clients, financial condition, results of operations and prospects.*"

Similar to the U.S., regulatory bodies in Europe have recently implemented new rules for the fixed-income markets. MiFID II and MiFIR were implemented in 2018 and introduced significant 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. MiFID II has caused us to expend significantly more compliance, business and technology resources, to incur additional operational costs and has created 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 Singapore subsidiary, MarketAxess Singapore Pte. Limited, is authorized to operate as a Recognized Market Operator ("RMO") and is also a registered platform in Switzerland and Hong Kong. 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 Plataforma 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, 2018, we had 454 employees, 272 of whom were based in the U.S. and 182 of whom were based outside of the U.S., principally in the U.K. None of our employees are 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.
55 Hudson Yards
New York, NY 10001
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.

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 Generally

Risks Related to Global Economic and Market Conditions

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.

The U.K. exit from the European Union could materially adversely impact our business, clients, financial condition, results of operations and prospects.

In March 2017, the U.K. notified the European Council of its intention to leave the E.U. By invoking Article 50 of the Lisbon Treaty, the U.K. is currently set to leave the E.U. on March 29, 2019. In its negotiations with the E.U., the U.K. is not seeking to maintain continued access to the E.U. single market following Brexit, which will lead to the loss of the "passporting" rights for regulated financial services firms to automatically operate throughout the E.U. This future loss of the existing passport right to the E.U. will affect us and many of our clients. For us, it means we will no longer be able to conduct business in the E.U. through our U.K. subsidiaries following Brexit.

Current discussions between the U.K. and the E.U. regarding a withdrawal agreement, however, envisage a temporary continuation of the existing passporting rights during a limited period following March 29, 2019. We are not able to predict with any certainty if, or when, the U.K. and the E.U. will sign the withdrawal agreement. Accordingly, we have established new subsidiaries in the E.U. in order to provide our trading platform and certain post-trade services to clients in the E.U. following Brexit. In addition, our preparation for Brexit involves making changes to the technology underlying out trading platform, obtaining regulatory approvals and onboarding of clients to our new E.U. platform. In the event that the U.K. leaves the E.U. without a withdrawal agreement in place or our preparations for Brexit are insufficient or late, the trading system and post-trade services that we provide to our clients in the U.K. and the E.U. could be significantly disrupted and, as a result, our businesses, financial condition and results of operations could be adversely affected.

Brexit is expected to significantly affect the fiscal, monetary and regulatory landscape in both the U.K. and E.U., and could have a material impact on their economies and the future growth of various industries. In particular, the ecosystem of the E.U. financial services industry in which we operate, which prior to Brexit has been heavily centered in London, will become more decentralized. The exit of the U.K., together with the protracted negotiations around the terms of the exit, could significantly impact the business environment in which we and our clients operate, increase the cost of conducting business in both the E.U. and the U.K., and introduce significant new uncertainties with respect to the legal and regulatory requirements to which we and our clients are subject. As we currently conduct business in Europe primarily through our U.K. subsidiaries, we will face new regulatory and operational costs and challenges associated with the establishment of new subsidiaries in the E.U and the management of a less centralized customer and employee base. We could also be adversely affected by reduced growth and greater volatility in the Pound Sterling and the U.K. economy.

Changes to U.K. immigration policy are likewise expected occur as a result of Brexit and our access to, and our ability to compete for and hire, skilled employees in both the U.K. and the E.U. is expected to become more constrained. 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. Accordingly, the cost and complexity of operating across increasingly divergent regulatory regimes could increase following Brexit.

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., or the substance or timeline for any transitional period, 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.

Risks Related to Operating in the Electronic Fixed-Income Trading 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 market volumes in the past and may experience similar decreases in market volumes 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 overall market volumes, 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.

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 for 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;
- defend our trading platform and other systems from cybersecurity threats;
- 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 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. 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. 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. We cannot assure you that any 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.

U.S. federal income tax reform could have an adverse impact on the issuance of new debt in the U.S.

In December 2017, the Tax Cuts and Jobs Act ("Tax Act") was enacted into law and introduced significant changes to U.S. tax and related laws. In addition to a reduction in the U.S. federal tax rate, the Tax Act caps interest deductibility and reduces the incentives for U.S. companies to keep foreign cash outside the U.S. and, as such, may reduce the levels of new corporate debt issuance in the U.S.

Prior to the Tax Act, federal tax laws generally provided a strong incentive for U.S. companies to finance their operations with debt rather than equity, primarily due to the deductibility of interest on debt financing. The Tax Act limits the deduction for interest expense to 30% of an issuer's adjusted taxable income for taxable years beginning after December 31, 2017 (initially generally keyed to EBITDA and later to EBIT for taxable years beginning after December 31, 2022, possibly resulting in a further increase in the disallowance of interest expense). Debt incurred prior to the passage of the Tax Act is not grandfathered. While issuers may still consider debt financing a viable funding option, the initial reaction to the limitation on interest expense deductibility may be for issuers to consider debt to be less attractive. In addition, because of the cap on interest expense deductibility in the U.S., issuers may be incentivized to issue debt overseas, where an interest deduction may continue to be available and beneficial. A decrease in the issuance of new debt by U.S. issuers could, over time, reduce the size of the secondary market for U.S. bond trading in which we operate.

Prior to the passage of the Tax Act, earnings of U.S. companies accumulated offshore were generally subject to U.S. tax only when repatriated, with an allowance for foreign taxes previously paid. The Tax Act reduced the U.S. corporate tax rate by 40% and created a territorial system of taxation in which most foreign income is permanently exempt from U.S. tax. The Tax Act's territorial regime removes the "lockout" on overseas earnings of a U.S.-parented group, allowing redeployment or repatriation of those earnings to be utilized for investments (in the US. or other parts of the world), debt repayment, share buybacks, dividends and acquisitions. The ability for U.S. companies to efficiently deploy overseas earnings in the U.S. may reduce the need for such companies to issue new debt in the U.S., which could, over time, reduce the size of the secondary market for U.S. bond trading in which we operate.

The Tax Act could have an adverse impact on the issuance of new debt in the U.S., which could impact the amount of secondary trading volumes in the U.S. bond market. While we are unable to ascertain the exact impact of the Tax Act on new bond issuance compared to other contributing factors, U.S. high-grade and U.S. high-yield new issuance declined by 10.2% and 42.9%, respectively, in 2018 compared to 2017. Any material decline in secondary trading volumes in the U.S. bond market would have a material adverse effect on our business, financial condition, results of operations and prospects.

Risks Related to Competition

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-party 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 transaction reporting and transparency services for the European markets. There is a high degree of competition in data, pricing and post-trade 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.

Risks Related to our Future Levels of Business, Profitability and Growth

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 49.8% 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.

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.

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 the use of our electronic trading platform by new and existing broker-dealer and institutional investor clients;
- changes in our fee plans;
- 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.

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 and leveraged loan markets. However, we cannot assure you that we will be able to successfully adapt our proprietary software and technology for use in these and 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 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.

Risks Related to our Geographic and Customer Concentration

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.

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 has adversely affected 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, over the past several years, there has been significant consolidation among firms in the banking and financial services industries and several of our large broker-dealer clients have reduced their sales and trading businesses in fixed-income products. 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 and, increasingly, to provide liquidity through our Open Trading protocols. A limited number of such clients can account for a significant portion of our trading volume. 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 also 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 a 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.

Credit and Market Risks

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 two 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 significant error trade or a large number of 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 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.

The fixed-income products that can be traded through our Open Trading functionality, as well as our investments in fixed and variable rate debt financial instruments, are subject to significant interest-rate and foreign currency exchange rate risks. To manage these and 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.

Technology and IT Systems Risks

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, telecommunications or blockchain 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, cloud computing 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 and capacity of our electronic trading platform, systems and infrastructure.

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 continually 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.

Our computer systems may suffer failures and business interruptions that could increase our operating costs and cause us to lose clients.

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 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.

Cybersecurity Risks

Malicious cyber-attacks and other adverse events affecting our operational systems or infrastructure, or those of third parties, could disrupt our businesses, result in the disclosure of confidential information, damage our reputation and cause losses or regulatory penalties.

The operation of our electronic trading platform relies on the secure processing, storage and transmission of a large amount of transactional data and other confidential sensitive data (including confidential client and personal information). Although we take protective measures such as security-related software programs, firewalls and similar technology to maintain the confidentiality, integrity and availability of our and our customers' information, and endeavor to modify these protective measures as circumstances warrant, the nature of cyber threats continues to evolve. As a result, our computer systems, software and networks may be vulnerable to unauthorized access, loss or destruction of data (including confidential and personal customer information), unavailability or disruption of service, computer viruses, acts of vandalism, or other malicious code, cyber-attack and other adverse events that could have an adverse security impact. Despite the defensive measures we have taken, we are subject to threats, which may come from external factors such as governments, organized crime, hackers, and other third parties such as 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 or personal 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 cyber-attacks in recent years in various industries, including ours, and cyber-security risk management has been the subject of increasing focus by our regulators. If one or more cyber-attacks occur, it could potentially jeopardize the confidential, proprietary and other information processed and stored in, and transmitted through, our computer systems and networks, or otherwise cause interruptions or malfunctions in our, as well as our customers' or other third parties', operations, which could result in reputational damage, financial losses, customer dissatisfaction and/or regulatory penalties, which may not in all cases be covered by insurance. Any such cyber incidents involving our computer systems and networks, or those of third parties important to our businesses, could have a material adverse effect on our businesses, financial condition, results of operations and prospects.

Our regulators in recent years have increased their examination and enforcement focus on matters relating to cybersecurity threats, including the assessment of firms' vulnerability to cyber-attacks. In particular, regulatory concerns have been raised about firms establishing effective cybersecurity governance and risk management policies, practices and procedures; protecting firm networks and information; identifying and addressing risks associated with clients, vendors, and other third parties; preventing and detecting unauthorized activities; adopting effective mitigation and business continuity plans to address the impact of cybersecurity breaches; and establishing protocols for reporting cybersecurity incidents. While any insurance that we may have that covers a specific cybersecurity incident may help to prevent our realizing a significant loss from the incident, it would not protect us from the effects of adverse regulatory actions that may result from the incident or a finding that we had inadequate cybersecurity controls, including the reputational harm that could result from such regulatory actions.

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 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 misappropriated confidential or personal information. Although we intend to continue to implement industry-standard security measures, we cannot assure you that those measures will be sufficient.

Intellectual Property Risks

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 or any of our other current or future products or services. 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.

Risks Related to Possible Transactions or Investments

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. Despite our efforts, we may not be able to identify, negotiate or finance any future acquisition or investment successfully. 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.

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 services 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.

Risks Related to Key Personnel and Employees

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.

Regulatory Risks

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 AFM in the Netherlands, 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 and APA with the FCA and the AFM.

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 us or our affiliates, paying cash dividends, making loans to us or 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 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 have recently developed new rules for the fixed-income markets. MiFID II and MiFIR were implemented in January 2018 and introduced significant 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. MiFID II has caused 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. There is also increasing public concern regarding data privacy and data protection and many jurisdictions have passed laws in this area, such as the European Union General Data Protection Regulation, and other jurisdictions are considering imposing additional restrictions. These laws and regulations are increasing in complexity and number, change frequently and increasingly conflict among the various countries in which we operate. 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 increase our compliance risk and cost, and 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 negatively impacts 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. These rules restrict the ability of our bank-affiliated broker-dealer clients to raise additional capital or use existing capital for trading purposes, 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 disclosed trading platform as an alternative trading system subject to Regulation ATS would subject us to additional reporting obligations, compliance and operational costs and other limitations on the conduct of our business, many of which could be material. If we offer a trading methodology subject to oversight under Regulation ATS in the future, such as a central limit order book for the trading of bonds or other similar automated matching services, these protocols would likely be regulated as an alternative trading system subject to Regulation ATS, which could increase our compliance and operational costs and create additional regulatory exposure for our businesses.

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.

The extensive regulation of our business means we have ongoing exposure to potentially 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 attorney generals in the U.S., and the FCA in the U.K. and other international regulators, have increased accordingly. 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.

Legal Risks

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 or personal information of our clients or engaging in improper or unauthorized activities or transactions.

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, failure to protect their confidential or personal information, 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 the 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.

Risks Related to Growing our U.S. and International 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:

- 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;
- 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;

- 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 foreign governments and regulatory bodies for each country in which we conduct business. For example, MiFID II and MiFIR were implemented by regulatory bodies in Europe 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 that the regulatory bodies that supervise our business 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.

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.

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

We conduct operations in several different countries outside the U.S., most notably the U.K., and substantial portions of our revenues, expenses, assets and liabilities are 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.

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.

Liquidity and Funding Risks

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 the 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.

Risks Related to our Internal Controls

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 our 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;
- changes in the nature of our stockholder base;
- 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 at 55 Hudson Yards in New York, New York, where we lease approximately 83,000 square feet under a lease expiring in August 2034. We also collectively lease approximately 22,000 square feet for our other office locations in the U.S., United Kingdom, Brazil, the Netherlands, Hong Kong and Singapore under various leases expiring between January 2019 and January 2027.

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. 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. See Note 12 to the Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K for a discussion of our commitments and contingencies.

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.***

Our common stock trades on the NASDAQ Global Select Market under the symbol "MKTX".

On February 15, 2019, the last reported closing price of our common stock on the NASDAQ Global Select Market was $229.51.

Holders

There were 22 holders of record of our common stock as of February 15, 2019.

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, 2018, 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, 2018 - October 31, 2018	11,730	$ 191.03	11,300	$ 72,739
November 1, 2018 - November 30, 2018	10,500	$ 211.54	10,500	$ 70,518
December 1, 2018 - December 31, 2018	8,306	$ 216.54	8,306	$ 68,720
	30,536	$ 205.02	30,106	

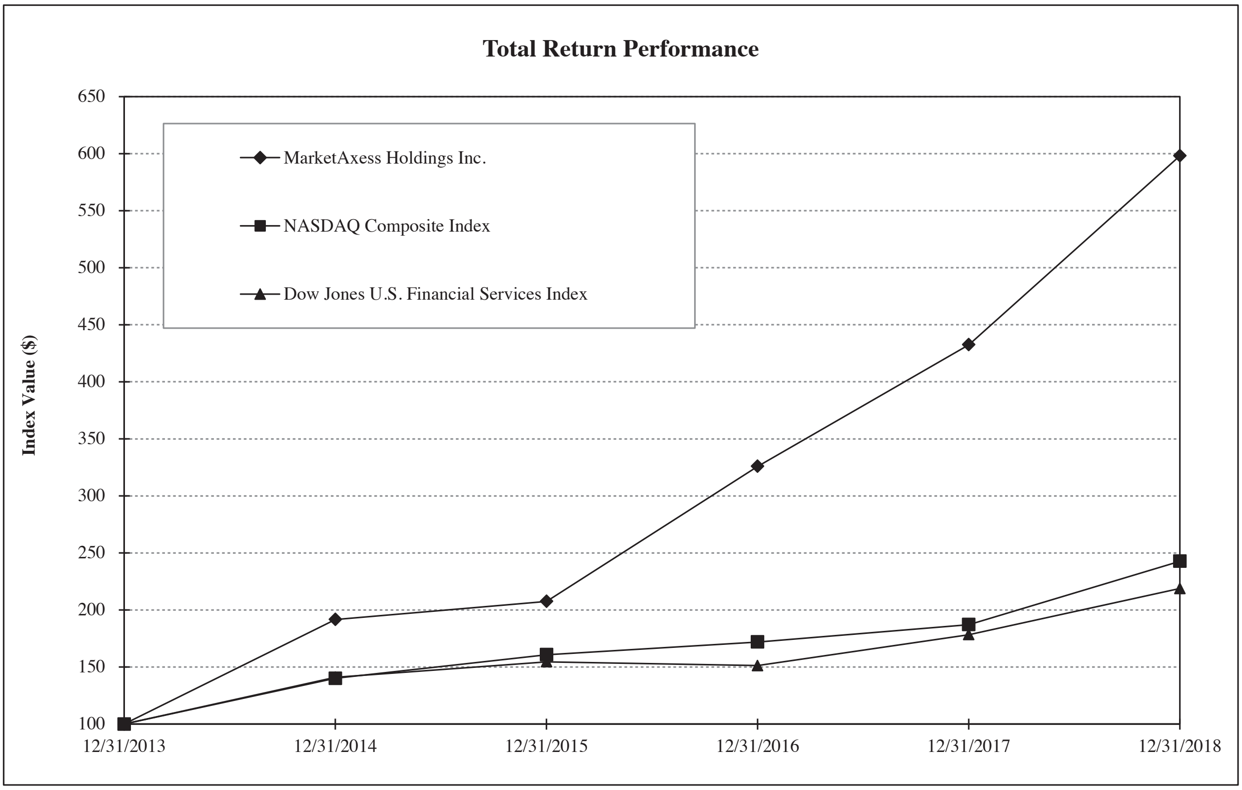
During the three months ended December 31, 2018, we repurchased 30,536 shares of common stock. The repurchases included 30,106 shares repurchased in connection with our share repurchase program and 430 shares surrendered by employees to us to satisfy the withholding tax obligations upon the exercise of stock options and vesting of restricted shares.

In September 2017, our Board of Directors authorized a fifteen-month share repurchase program for up to $100.0 million commencing in October 2017. The expiration date was subsequently extended to March 31, 2019. In January 2019, our Board of Directors authorized a new two-year share repurchase program for up to $100.0 million of our common stock, commencing in April 2019. Shares repurchased under each program will be held in treasury for future use.

STOCK PERFORMANCE GRAPH

The following graph shows a comparison from December 31, 2013 through December 31, 2018 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 we specifically incorporate 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, 2013, 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, 2018, 2017 and 2016 and the selected balance sheet data as of December 31, 2018 and 2017 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, 2015 and 2014, and the balance sheet data as of December 31, 2016, 2015 and 2014 have been derived from our audited financial statements not included in this Annual Report on Form 10-K.

	Year Ended December 31,				
	2018	**2017**	**2016**	**2015**	**2014**
	(In thousands, except per share amounts)				
Statements of Operations Data:					
Revenues					
Commissions (1)	$ 390,834	$ 355,282	$ 332,307	$ 266,221	$ 221,138
Information services (2)	28,227	25,806	23,269	22,585	24,895
Post-trade services (3)	15,346	11,090	10,812	11,648	13,489
Other (4)	1,158	1,244	1,342	1,739	1,772
Total revenues	435,565	393,422	367,730	302,193	261,294
Expenses					
Employee compensation and benefits	109,117	102,313	96,625	83,856	74,995
Depreciation and amortization	23,080	19,274	17,838	18,542	17,379
Technology and communications	23,866	20,048	17,275	15,916	17,685
Professional and consulting fees	21,521	19,367	17,175	13,043	14,375
Occupancy	14,176	6,125	4,681	4,685	4,381
Marketing and advertising	12,114	9,762	8,934	6,148	5,769
Clearing costs (5)	7,754	5,797	6,060	3,313	1,329
General and administrative	11,353	11,121	9,157	9,261	7,895
Total expenses	222,981	193,807	177,745	154,764	143,808
Operating income	212,584	199,615	189,985	147,429	117,486
Other income (expense)					
Investment income	6,112	3,619	2,137	905	543
Other, net (6)	(610)	(1,466)	(520)	(434)	507
Total other income	5,502	2,153	1,617	471	1,050
Income before income taxes	218,086	201,768	191,602	147,900	118,536
Provision for income taxes	45,234	53,679	65,430	51,863	43,730
Net income	$ 172,852	$ 148,089	$ 126,172	$ 96,037	$ 74,806
Net income per common share					
Basic	$ 4.68	$ 4.02	$ 3.42	$ 2.62	$ 2.03
Diluted	$ 4.57	$ 3.89	$ 3.34	$ 2.55	$ 1.97
Cash dividends declared per common share	$ 1.68	$ 1.32	$ 1.04	$ 0.80	$ 0.64
Weighted average number of shares of common stock outstanding:					
Basic	36,958	36,864	36,844	36,690	36,930
Diluted	37,855	38,038	37,738	37,637	37,889

	As of December 31,				
	2018	**2017**	**2016**	**2015**	**2014**
Balance Sheet Data:	(In thousands)				
Cash, cash equivalents and investments	$ 486,427	$ 406,535	$ 362,647	$ 284,434	$ 233,787
Working capital (7)	477,632	410,248	363,787	283,383	226,854
Total assets	695,539	581,232	528,042	439,041	379,884

(1) Commissions include monthly distribution fees and trading commissions.
(2) Information services revenues include data licensed to our broker-dealer clients, institutional investor clients and data-only subscribers, as well as professional consulting services, technology software licenses and maintenance and support services.
(3) Post-trade services revenues include revenue from trade matching and regulatory transaction reporting services.
(4) Other revenues consist primarily of telecommunications line charges to broker-dealer clients.
(5) Clearing costs consist of fees charged by third-party clearing brokers for the clearing and settlement of matched principal trades.
(6) Other, net consists of unrealized gains or losses on trading security investments, realized gains and losses on investments, foreign currency transaction gains or losses, investment advisory fees and other miscellaneous revenues and expenses.
(7) 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. Except as may be required by applicable law, 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 1,500 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 bond trades between and among institutional investor and broker-dealer clients in an all-to-all anonymous trading environment in which we act as the matched principal counterparty. We also offer a number of trading-related products and services, including: Composite+ pricing and other market data products to assist clients with trading decisions; auto-execution and other execution services for clients requiring specialized workflow solutions; connectivity solutions that facilitate straight-through processing; and technology services to optimize trading environments. Through our Trax® division, we also offer a range of pre- and post-trade services, including trade matching, trade publication, 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 RFQ 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. Clients can use our auto-execution technology with both our traditional RFQ and Open Trading protocols, thereby using rules-based execution to connect to diverse sources of liquidity while reducing trading inefficiencies and human errors. 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.

We derive revenue from commissions for trades executed on our platform, information services, post-trade services and other revenues. Our expenses consist of employee compensation and benefits, depreciation and amortization, technology and communication expenses, professional and consulting fees, occupancy, marketing and advertising, clearing costs 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 use our broad network of over 1,500 active institutional investor and broker-dealer participants to drive more clients to our leading electronic fixed-income trading platform;
- to increase the secondary market liquidity on our trading platform by deploying innovative technology solutions, such as our Open Trading protocols, to increase the number of potential trading counterparties on our platform and to address different trade sizes, bond liquidity characteristics and trading preferences;
- to continue to develop innovative next-generation technologies that will allow our clients to further automate and improve the performance of their trading desks through increased liquidity, enhanced trading efficiencies and the ability to identify trends within the bond market;
- to expand and strengthen our existing service, data and analytical offerings throughout the trading cycle so that we are more fully integrated into the workflow of our broker-dealer and institutional investor clients; and
- 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.

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 and institutional investor clients.

In 2018, our business faced a mix of trading environments that impacted our market share and trading volumes. In the first quarter, the trading environment was generally supportive of our business due to a number of factors, including increased volatility resulting from the end of quantitative easing in the U.S. and Europe, higher interest rates and a reduced trading emphasis on new bond issues in favor of the secondary markets in which we operate. In the second and third quarters, however, overall trading conditions were less favorable as credit spreads narrowed, volatility declined and there was an increase in the issuance of new high-grade corporate bond issues. Trading conditions improved considerably in September and the fourth quarter as credit spreads widened and credit spread volatility increased. New issue activity was lighter than normal, and investment managers experienced significant outflows, resulting in increased secondary trading volumes. In addition, the increase in yields and flattening of the yield curve in 2018 resulted in lower duration of bonds traded on the platform, which negatively impacted our fee capture rate.

Our results of operations are also impacted by the overall level of activity in our core products. In 2018, market volumes in the U.S. high-grade market increased 5% compared to 2017 driven by the increased market volatility, trade war tensions and the year-over-year decline of U.S. high-grade new issuance of 10%. International demand for U.S. high-grade bonds also declined in 2018 as a result of an increase in foreign exchange hedging costs. Estimated secondary markets trading volumes for U.S. high-yield bonds, emerging market bonds and Eurobonds, however, declined compared to 2017 as a slowing global economy lead to wider credit spreads and a greater emphasis on risk reduction. As a result, secondary market liquidity was tighter, which contributed to the year-over-year market volume decline for these products.

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, total transaction costs 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 enacted in 2010 and, among other things, mandated the clearing of swaps through regulated central clearing organizations and mandatory trading of those instruments through either regulated exchanges or SEFs, in each case, subject to certain key exceptions.

Various rules promulgated since the financial crisis have adversely affected our bank-affiliated broker-dealer clients' ability to make markets in a variety of fixed-income securities, which could negatively impact 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.

Since the presidential election in November 2016, however, the U.S. has pursued a path of financial deregulation and has rolled back certain provisions of the Dodd-Frank Act. There has also been a growing focus on U.S. capital markets regulations as the U.S. Department of the Treasury issued a report with recommendations to improve corporate bond liquidity and the regulations that implement the Volcker Rule. In 2017, the SEC established a Fixed Income Market Structure Advisory Committee in order to provide the SEC with diverse perspectives on the structure and operations of the U.S. fixed-income markets, as well as advice and recommendations on matters related to fixed-income market structure.

In Europe, MiFID II and MiFIR were implemented in January 2018 and introduced significant 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 an ARM, (iii) ensure trading of certain derivatives occurs on regulated trading venues and (iv) establish a consolidated tape for trade data. MiFID II has caused 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 services 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 March 2017, the U.K. notified the European Council of its intention to leave the E.U. (commonly referred to as "Brexit"). By invoking Article 50 of the Lisbon Treaty, the U.K. is currently set to leave the E.U. in March 2019. Following Brexit, our U.K. subsidiaries will not be able to rely on the existence of a "passporting" regime that allows immediate access to the single E.U. market. Although current discussions between the U.K. and the E.U. regarding a transitional period following March 2019 envisage a temporary continuation of the existing passporting rights during such period, we have established new subsidiaries in the E.U. in order to provide our trading platform and certain post-trade services to clients in the E.U. following Brexit.

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 disclosed trading 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 trades.

U.S. High-Grade Corporate Bond Commissions. Our U.S. high-grade corporate bond fee plans generally incorporate variable transaction fees and fixed 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. Distribution fees include any unused monthly fee commitments under our variable fee plans.

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 third quarter of 2017, we changed our high-yield fee plan structure. Similar to our U.S. high-grade fee plans, certain dealers now participate in a high-yield fee plan that incorporates a variable transaction fee and fixed distribution fee, while other dealers participate in a plan that does not contain monthly distribution fees and instead incorporates additional per transaction execution fees and minimum monthly fee commitments. 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.

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

Information Services

We generate revenue from data licensed to our broker-dealer clients, institutional investor clients and data-only subscribers; professional consulting services; technology software licenses; and maintenance and support services. These revenues are either for subscription based services transferred over time or one-time services. Revenues transferred over time are recognized ratably over the contract period while revenues for services transferred at a point in time are recognized in the period the services are provided. Information services are invoiced monthly, quarterly, or annually; when billed in advance, information services revenues are deferred and recognized ratably over the contract period.

Post-trade Services

We generate revenue from regulatory transaction reporting, trade publication and trade matching services. Revenues are recognized in the period that the transactions are processed. When billed in advance, revenues are recognized ratably over the contract period. We also generate revenue from one-time implementation fees which are recognized in the period the implementation is complete.

Other Revenue

Other revenue includes revenue generated from telecommunications line charges to broker-dealer clients.

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.

Clearing Costs. Clearing costs consist of fees that we are charged by third-party clearing brokers for the clearing and settlement of matched principal trades.

General and Administrative. General and administrative expense consists primarily of general travel and entertainment, 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 additional headcount to support investment in new products and geographic expansion. 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.

Other Income (Expense)

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

Other, Net. Other, net consists of unrealized gains or losses on trading security investments, realized gains or losses on investments, foreign currency transaction gains or losses, investment advisory fees and other miscellaneous revenues and expenses.

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. Effective January 1, 2018, we adopted Revenue from Contracts with Customers ASU 2014-09 using the modified retrospective approach, which did not have a material impact on our Consolidated Financial Statements. There were no other significant changes to our critical accounting policies and estimates during the year ended December 31, 2018, as compared to those we disclosed in Management's Discussion and Analysis of Financial Condition and Results of Operations included in our Annual Report on Form 10-K, as amended, for the year ended December 31, 2017.

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

For further discussion related to revenue recognition, see the preceding *"Trends in Our Business"* section and Note 2 of the Notes to our Consolidated Financial Statements.

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. Effective upon our adoption of ASU 2016-09 on January 1, 2017, "Improvements to Employee Share-Based Payment Accounting" ("ASU-2016-09"), we account for forfeitures as they occur. Prior to the adoption of ASU 2016-09, expected forfeitures were included in determining share-based compensation expense.

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. Effective upon our adoption of ASU 2016-09, all tax effects related to share-based payments are recorded through tax expense in the periods during which the awards are exercised or vest. See Note 7 of the Notes to our Consolidated Financial Statements for further discussion related to income taxes.

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 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.

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 our business required by U.S. GAAP.

Results of Operations

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Overview

Total revenues increased by $42.2 million or 10.7% to $435.6 million for the year ended December 31, 2018 from $393.4 million for the year ended December 31, 2017. This increase in total revenues was primarily due to an increase in commission revenue of $35.6 million. A 2.7% change in the average foreign currency exchange rates of the British Pound Sterling compared to the U.S. dollar for the year ended December 31, 2018 had the effect of increasing revenues by $1.4 million for the year ended December 31, 2018.

Total expenses increased by $29.2 million or 15.1% to $223.0 million for the year ended December 31, 2018 from $193.8 million for the year ended December 31, 2017. This increase was primarily due to higher occupancy of $8.1 million, employee compensation and benefits of $6.8 million, depreciation and amortization of $3.8 million, technology and communication expenses of $3.8 million, marketing and advertising of $2.4 million and professional and consulting fees of $2.2 million. The change in the average foreign currency exchange rates had the effect of increasing expenses by $1.4 million for the year ended December 31, 2018.

Income before taxes increased by $16.3 million or 8.1% to $218.1 million for the year ended December 31, 2018 from $201.8 million for the year ended December 31, 2017. Net income increased by $24.8 million or 16.7 % to $172.9 million for the year ended December 31, 2018 from $148.1 million for the year ended December 31, 2017.

Revenues

Our revenues for the years ended December 31, 2018 and 2017, and the resulting dollar and percentage changes, were as follows:

	Year Ended December 31,					
	2018		2017			
	($ in thousands)					
	$	% of Revenues	$	% of Revenues	$ Change	% Change
Commissions	$ 390,834	89.7 %	$ 355,282	90.3 %	$ 35,552	10.0 %
Information services	28,227	6.5	25,806	6.6	2,421	9.4
Post-trade services	15,346	3.5	11,090	2.8	4,256	38.4
Other	1,158	0.3	1,244	0.3	(86)	(6.9)
Total revenues	$ 435,565	100.0 %	$ 393,422	100.0 %	$ 42,143	10.7 %

Commissions

Our commission revenues for the years ended December 31, 2018 and 2017, and the resulting dollar and percentage changes, were as follows:

	Year Ended December 31,			
	2018	2017	$ Change	% Change
	($ in thousands)			
Variable transaction fees				
U.S. high-grade	$ 144,642	$ 137,034	$ 7,608	5.6 %
Other credit	147,148	140,492	6,656	4.7
Liquid products	2,146	2,277	(131)	(5.8)
Total variable transaction fees	293,936	279,803	14,133	5.1
Distribution fees				
U.S. high-grade	72,135	64,709	7,426	11.5
Other credit	24,077	10,154	13,923	137.1
Liquid products	686	616	70	11.4
Total distribution fees	96,898	75,479	21,419	28.4
Total commissions	$ 390,834	$ 355,282	$ 35,552	10.0 %

Variable Transaction Fees

The following table shows the extent to which the increase in variable commissions for the year ended December 31, 2018 was attributable to changes in transaction volumes and variable transaction fees per million:

	Change from the Year Ended December 31, 2017			
	U.S. High-Grade	Other Credit	Liquid Products	Total
	($ in thousands)			
Volume increase	$ 17,131	$ 36,818	$ 4	$ 53,953
Variable transaction fee per million decrease	(9,523)	(30,162)	(135)	(39,820)
Total increase (decrease) in variable commissions	$ 7,608	$ 6,656	$ (131)	$ 14,133

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

	Year Ended December 31,			
	2018	2017	$ Change	% Change
	($ in millions)			
Trading Volume Data				
U.S. high-grade - fixed rate	$ 867,518	$ 791,194	$ 76,324	9.6 %
U.S. high-grade - floating rate	60,654	33,839	26,815	79.2
Total U.S. high-grade	928,172	825,033	103,139	12.5
Other credit	731,888	579,912	151,976	26.2
Liquid products	53,479	53,383	96	0.2
Total	$1,713,539	$1,458,328	$ 255,211	17.5 %
Number of U.S. Trading Days	249	250		
Number of U.K. Trading Days	253	252		

For volume reporting purposes, transactions in foreign currencies are converted to U.S. dollars at average monthly rates. The 12.5% increase in our U.S. high-grade volume was principally due to an increase in our estimated market share coupled with growth in estimated overall market volume. Our estimated market share of total U.S. high-grade corporate bond volume increased to 18.1% for the year ended December 31, 2018 from 16.9% for the year ended December 31, 2017. Estimated U.S. high-grade TRACE volume increased by 5.2% to $5.1 trillion for the year ended December 31, 2018 from $4.9 trillion for the year ended December 31, 2017.

Other credit volumes increased by 26.2% for the year ended December 31, 2018 compared to the year ended December 31, 2017, primarily due to increases of 30.7% in Eurobond volume, 26.7% in high-yield bond volume and 23.3% in emerging markets bond volume. Our estimated market share of U.S. high-yield TRACE volume increased to 8.9% for the year ended December 31, 2018 from 6.8% for the year ended December 31, 2017.

Our average variable transaction fee per million for the years ended December 31, 2018 and 2017 was as follows:

	Year Ended December 31,	
	2018	2017
Average Variable Transaction fee per million		
U.S. high-grade - fixed rate	$ 161	$ 170
U.S. high-grade - floating rate	87	65
Total U.S. high-grade	156	166
Other credit	201	242
Liquid products	40	43
Total	172	192

Total U.S. high-grade average variable transaction fee per million decreased to $156 per million for the year ended December 31, 2018 from $166 per million for the year ended December 31, 2017, mainly due to a decrease in the duration of bonds traded and the migration of certain of our broker-dealer clients from an all-variable fee plan to a plan that incorporates a monthly distribution fee. Other credit average variable transaction fee per million decreased to $201 per million for the year ended December 31, 2018 from $242 million for the year ended December 31, 2017, mainly due to Eurobond fee schedule reductions implemented effective January 1, 2018, a decrease in high-yield average variable fee per million as a result of the change in the structure of our high-yield fee plan options implemented in August 2017 and a larger percentage of trading volume in emerging market bonds that command lower fees per million.

Distribution Fees

U.S. high-grade distribution fees increased $7.4 million principally due to the migration of certain of our broker-dealer clients from an all-variable fee plan to a plan that incorporates a monthly distribution fee. The $13.9 million increase in Other credit distribution fees principally relates to distribution fees under the high-yield fee plan structure implemented in August 2017 and a $3.1 million increase in unused monthly fee commitments.

Information Services. Information services revenue increased $2.4 million for the year ended December 31, 2018. The increase is attributable to revenue from new data contracts of $2.0 million and the positive impact of foreign exchange of $0.4 million.

Post-Trade Services. Post-trade services revenue increased $4.3 million for the year ended December 31, 2018 principally due to an increase of $3.7 million in trade publication services revenue and $1.2 million in regulatory transaction reporting services revenue, offset by a decrease of $1.1 million related to MiFID II implementation services and the positive impact of foreign exchange of $0.4 million. Our transaction reporting business processed 0.9 billion transactions for the year ended December 31, 2018 compared to 1.0 billion for the year ended December 31, 2017. Revenue from new customers and services and changes in pricing plans more than offset the decline in revenue related to the decreased number of reported transactions.

Other. Other revenue was $1.2 million for each of the years ended December 31, 2018 and 2017.

Expenses

Our expenses for the years ended December 31, 2018 and 2017, and the resulting dollar and percentage changes, were as follows:

	Year Ended December 31,					
	2018		2017			
	($ in thousands)					
	$	% of Revenues	$	% of Revenues	$ Change	% Change
Expenses						
Employee compensation and benefits	$ 109,117	25.1 %	$ 102,313	26.0 %	$ 6,804	6.7 %
Depreciation and amortization	23,080	5.3	19,274	4.9	3,806	19.7
Technology and communications	23,866	5.5	20,048	5.1	3,818	19.0
Professional and consulting fees	21,521	4.9	19,367	4.9	2,154	11.1
Occupancy	14,176	3.3	6,125	1.6	8,051	131.4
Marketing and advertising	12,114	2.8	9,762	2.5	2,352	24.1
Clearing costs	7,754	1.8	5,797	1.5	1,957	33.8
General and administrative	11,353	2.6	11,121	2.8	232	2.1
Total expenses	$ 222,981	51.2 %	$ 193,807	49.3 %	$ 29,174	15.1 %

Employee Compensation and Benefits. Employee compensation and benefits increased by $6.8 million primarily due to a $3.1 million increase in salaries, taxes and benefits on higher employee headcount, higher employee incentive compensation of $2.4 million, which is tied to operating performance, and an increase of $1.3 million in stock-based compensation resulting from higher employee equity awards in 2018. The total number of employees increased to 454 as of December 31, 2018 from 429 as of December 31, 2017.

Depreciation and Amortization. Depreciation and amortization increased by $3.8 million primarily due to higher amortization of software development costs of $1.9 million, depreciation of production hardware of $1.0 million and amortization of software licenses of $0.9 million. For the years ended December 31, 2018 and 2017, $35.9 million and $12.1 million, respectively, of equipment purchases and leasehold improvements and $11.7 million and $13.5 million, respectively, of software development costs were capitalized. In 2018, we incurred capital expenditures of $25.1 million related to the build-out of our new headquarters in New York City.

Technology and Communications. Technology and communications expenses increased by $3.8 million primarily due to increases in market data costs of $1.2 million, software as a service costs of $0.9 million, data center hosting of $0.8 million and technology license and maintenance costs of $0.6 million.

Professional and Consulting Fees. Professional and consulting fees increased by $2.2 million primarily due to higher non-IT consulting fees of $1.0 million, increased recruiting fees of $0.6 million and IT consulting fees of $0.4 million.

Occupancy. Occupancy costs increased by $8.1 million due to duplicate rent expense of $7.3 million during the build-out phase of our new headquarters in New York City and an increase of $0.7 million for the lease of additional office space to accommodate our increased headcount. We relocated to our new headquarters in January 2019.

Marketing and Advertising. Marketing and advertising expenses increased by $2.4 million primarily due to higher advertising and promotion costs of $2.1 million.

Clearing Costs. Clearing costs increased by $2.0 million due to higher Open Trading volume. Third-party clearing costs as a percentage of matched principal trading revenue decreased to 11.8% for the year ended December 31, 2018 from 12.7% for the year ended December 31, 2017.

General and Administrative. General and administrative expenses were $11.4 million and $11.1 million for the years ended December 31, 2018 and 2017, respectively.

Other Income (Expense)

Our other income for the three months ended December 31, 2018 and 2017, and the resulting dollar and percentage changes, were as follows:

	Year Ended December 31,					
	2018		2017			
	($ in thousands)					
	$	% of Revenues	$	% of Revenues	$ Change	% Change
Investment income	$6,112	1.4 %	$ 3,619	0.9 %	$ 2,493	68.9 %
Other, net	(610)	(0.1)	(1,466)	(0.4)	856	(58.4)
Total other income	$5,502	1.3 %	$ 2,153	0.5 %	$ 3,349	155.6 %

Investment income increased by $2.5 million primarily due to higher investment balances and an increase in interest rates in 2018. Other, net increased by $0.9 million primarily due to sales tax refunds of $0.8 million.

Provision for Income Tax. On December 22, 2017, the Tax Act was enacted into law. The Tax Act significantly revised the U.S. corporate income tax regime by, among other things, lowering the U.S. federal corporate income tax rate from 35% to 21%, implementing a territorial tax system and imposing a repatriation tax on deemed earnings of foreign subsidiaries. We recorded a provisional tax charge in 2017 of $11.7 million, composed of $6.7 million to re-measure U.S. deferred tax assets and $5.0 million for the repatriation tax on accumulated undistributed foreign earnings. During the year ended December 31, 2018, we reduced the provisional tax charge by $0.4 million as a result of new regulatory guidance and changes in interpretations and assumptions made by us.

Our consolidated effective tax rate for the year ended December 31, 2018 was 20.7%, compared to 26.6% for the year ended December 31, 2017. The tax provision for the year ended December 31, 2018 reflected a reduction in the federal corporate income tax rate and other changes associated with the Tax Act and $5.6 million of excess tax benefits related to share-based compensation awards that vested or were exercised during the year. The income tax provision for the year ended December 31, 2017 included $26.1 million of excess tax benefits related to share-based compensation awards offset by the provisional tax charge of $11.7 million related to the enactment of the Tax Act. Our consolidated effective tax rate can vary from period to period depending on the geographic mix of our earnings, changes in tax legislation and tax rates and the amount and timing of excess tax benefits related to share-based payments, among other factors.

As of December 31, 2018, we had restricted U.S. federal net operating loss carryforwards of approximately $2.9 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. See Note 7 of the Notes to our Consolidated Financial Statements for further discussion related to income taxes.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Overview

Total revenues increased by $25.7 million or 7.0% to $393.4 million for the year ended December 31, 2017 from $367.7 million for the year ended December 31, 2016. This increase in total revenues was primarily due to an increase in commission revenue of $23.0 million. A 4.0% change in the average foreign currency exchange rates of the British Pound Sterling compared to the U.S. dollar for the year ended December 31, 2017 had the effect of decreasing revenues by $2.3 million for the year ended December 31, 2017.

Total expenses increased by $16.1 million or 9.0% to $193.8 million for the year ended December 31, 2017 from $177.7 million for the year ended December 31, 2016. This increase was primarily due to higher employee compensation and benefits of $5.7 million, technology and communication expenses of $2.8 million, professional and consulting fees of $2.2 million, general and administrative costs of $2.0 million, occupancy of $1.4 million and depreciation and amortization of $1.4 million. The change in the average foreign currency exchange rates had the effect of decreasing expenses by $2.2 million for the year ended December 31, 2017.

Income before taxes increased by $10.2 million or 5.3% to $201.8 million for the year ended December 31, 2017 from $191.6 million for the year ended December 31, 2016. Net income increased by $21.9 million or 17.4% to $148.1 million for the year ended December 31, 2017 from $126.2 million for the year ended December 31, 2016.

Revenues

Our revenues for the years ended December 31, 2017 and 2016, and the resulting dollar and percentage changes, were as follows:

	Year Ended December 31,					
	2017		2016			
	($ in thousands)					
	$	% of Revenues	$	% of Revenues	$ Change	% Change
Commissions	$ 355,282	90.3 %	$ 332,307	90.4 %	$ 22,975	6.9 %
Information services	25,806	6.6	23,269	6.3	2,537	10.9
Post-trade services	11,090	2.8	10,812	2.9	278	2.6
Other	1,244	0.3	1,342	0.4	(98)	(7.3)
Total revenues	$ 393,422	100.0 %	$ 367,730	100.0 %	$ 25,692	7.0 %

Commissions

Our commission revenues for the years ended December 31, 2017 and 2016, and the resulting dollar and percentage changes, were as follows:

	Year Ended December 31,			
	2017	2016	$ Change	% Change
	($ in thousands)			
Variable transaction fees				
U.S. high-grade	$ 137,034	$ 135,295	$ 1,739	1.3 %
Other credit	140,492	129,976	10,516	8.1
Liquid products	2,277	2,795	(518)	(18.5)
Total variable transaction fees	279,803	268,066	11,737	4.4
Distribution fees				
U.S. high-grade	64,709	58,705	6,004	10.2
Other credit	10,154	4,783	5,371	112.3
Liquid products	616	753	(137)	(18.2)
Total distribution fees	75,479	64,241	11,238	17.5
Total commissions	$ 355,282	$ 332,307	$ 22,975	6.9 %

Variable Transaction Fees

The following table shows the extent to which the increase in variable commissions for the year ended December 31, 2017 was attributable to changes in transaction volumes and variable transaction fees per million:

	Change from the Year Ended December 31, 2016			
	U.S. High-Grade	Other Credit	Liquid Products	Total
	($ in thousands)			
Volume increase (decrease)	$ 17,495	$ 18,762	$ (705)	$ 35,552
Variable transaction fee per million (decrease) increase	(15,756)	(8,246)	187	(23,815)
Total increase (decrease) in variable commissions	$ 1,739	$ 10,516	$ (518)	$ 11,737

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

	Year Ended December 31,			
	2017	2016	$ Change	% Change
	($ in millions)			
Trading Volume Data				
U.S. high-grade - fixed rate	$ 791,194	$ 704,648	$ 86,546	12.3 %
U.S. high-grade - floating rate	33,839	25,917	7,922	30.6
Total U.S. high-grade	825,033	730,565	94,468	12.9
Other credit	579,912	506,762	73,150	14.4
Liquid products	53,383	71,375	(17,992)	(25.2)
Total	$1,458,328	$1,308,702	$ 149,626	11.4 %
Number of U.S. Trading Days	250	250		
Number of U.K. Trading Days	252	253		

For volume reporting purposes, transactions in foreign currencies are converted to U.S. dollars at average monthly rates. The 12.9% increase in our U.S. high-grade volume was principally due to an increase in our estimated market share coupled with growth in estimated overall market volume. Our estimated market share of total U.S. high-grade corporate bond volume increased to 16.9% for the year ended December 31, 2017 from 16.0% for the year ended December 31, 2016. Estimated U.S. high-grade TRACE volume increased by 7.0% to $4.9 trillion for the year ended December 31, 2017 from $4.6 trillion for the year ended December 31, 2016.

Other credit volumes increased by 14.4% for the year ended December 31, 2017 compared to the year ended December 31, 2016, primarily due to a 37.2% increase in emerging markets bond volume offset by decreases of 5.3% in our high-yield bond volume and 4.8% in our Eurobond volume. Liquid products volume (excluding credit derivatives) decreased by 25.2% for the year ended December 31, 2017 compared to the year ended December 31, 2016, due mainly to a 27.5% decrease in U.S. agencies bond market volume as reported by TRACE.

Our average variable transaction fee per million for the years ended December 31, 2017 and 2016 was as follows:

	Year Ended December 31,	
	2017	2016
Average Variable Transaction fee per million		
U.S. high-grade - fixed rate	$ 170	$ 191
U.S. high-grade - floating rate	65	39
Total U.S. high-grade	166	185
Other credit	242	256
Liquid products	43	39
Total	192	205

Total U.S. high-grade average variable transaction fee per million decreased to $166 per million for the year ended December 31, 2017 from $185 per million for the year ended December 31, 2016. The decline was mainly due to an increase in the number of larger sized trades, the migration of certain of our broker-dealer clients from an all-variable fee plan to a plan that incorporates a monthly distribution fee and a decrease in the duration of bonds traded. Other credit average variable transaction fee per million decreased to $242 per million for the year ended December 31, 2017 from $256 per million from December 31, 2016, mainly due to a larger percentage of trading volume in emerging market bonds that command lower fees per million, as well as a decrease in high-yield average variable fee per million as a result of the change in the structure of our high-yield fee plan options implemented in August 2017. The decrease in other credit average variable transaction fee per million was partially offset by an increase in Eurobond fees per million as a result of the change in the structure of our Eurobond fee plan that was implemented in the fourth quarter of 2016.

Distribution Fees

U.S. high-grade distribution fees increased $6.0 million principally due to the migration of certain of our broker-dealer clients from an all-variable fee plan to a plan that incorporates monthly a distribution fee. The $5.4 million increase in Other credit distribution fees principally relates to a $8.2 million increase in distribution fees under the high-yield fee plan structure implemented in August 2017 that allows our broker-dealer clients to elect a plan that incorporates a monthly distribution fee. This was offset by a decline of $3.2 million relating to the change in the Eurobond fee plan implemented in the fourth quarter of 2016.

Information Services. Information services revenue increased $2.5 million for the year ended December 31, 2017 due to higher data revenue.

Post-Trade Services. Post-trade services revenue increased $0.3 million for the year ended December 31, 2017 due to a $1.4 million increase in revenues associated with MiFID II implementation services which was offset by a decrease of $1.1 million in transaction reporting revenues. Our transaction reporting business processed approximately 1.0 billion transactions for the year ended December 31, 2017 compared to approximately 1.2 billion for the year ended December 31, 2016.

Other. Other revenue was $1.2 million and $1.3 million for the years ended December 31, 2017 and 2016, respectively.

Expenses

Our expenses for the years ended December 31, 2017 and 2016, and the resulting dollar and percentage changes, were as follows:

	Year Ended December 31,					
	2017		2016			
	($ in thousands)					
	$	% of Revenues	$	% of Revenues	$ Change	% Change
Expenses						
Employee compensation and benefits	$ 102,313	26.0 %	$ 96,625	26.3 %	$ 5,688	5.9 %
Depreciation and amortization	19,274	4.9	17,838	4.9	1,436	8.1
Technology and communications	20,048	5.1	17,275	4.7	2,773	16.1
Professional and consulting fees	19,367	4.9	17,175	4.7	2,192	12.8
Occupancy	6,125	1.6	4,681	1.3	1,444	30.8
Marketing and advertising	9,762	2.5	8,934	2.4	828	9.3
Clearing costs	5,797	1.5	6,060	1.6	(263)	(4.3)
General and administrative	11,121	2.8	9,157	2.5	1,964	21.4
Total expenses	$ 193,807	49.3 %	$ 177,745	48.3 %	$ 16,062	9.0 %

Employee Compensation and Benefits. Employee compensation and benefits increased by $5.7 million primarily due to a $7.1 million increase in salaries and benefits on higher employee headcount, offset by a lower employee incentive compensation of $1.2 million, which is tied to operating performance. The total number of employees increased to 429 as of December 31, 2017 from 383 as of December 31, 2016.

Depreciation and Amortization. Depreciation and amortization increased by $1.4 million primarily due to a $1.2 million increase in amortization expense of leasehold improvements and higher amortization of software development costs of $0.6 million offset by a $0.3 million decrease in production hardware depreciation expense. For the years ended December 31, 2017 and 2016, $12.1 million and $6.4 million, respectively, of equipment purchases and leasehold improvements and $13.5 million and $12.1 million, respectively, of software development costs were capitalized.

Technology and Communications. Technology and communications expenses increased by $2.8 million primarily due to increases in software subscription costs of $1.1 million, technology maintenance and support costs of $0.8 million and market data costs of $0.5 million.

Professional and Consulting Fees. Professional and consulting fees increased by $2.2 million primarily due to a $2.7 million increase in fees related to various regulatory initiatives offset by lower risk consulting services of $0.5 million.

Occupancy. Occupancy increased by $1.4 million due to an increase in rent expense of $1.3 million for additional office space to accommodate our increased headcount.

Marketing and Advertising. Marketing and advertising expenses increased by $0.8 million primarily due to higher sales related travel and entertainment costs of $0.6 million and marketing event costs of $0.3 million.

Clearing Costs. Clearing costs decreased by $0.3 million for the year ended December 31, 2017. During the third quarter of 2016, we amended the terms of our agreements with our third-party clearing brokers, which resulted in a reduction in transaction and other clearing costs. Third-party clearing costs as a percentage of matched principal trading revenue decreased from 16.1% for the year ended December 31, 2016 to 12.7% for the year ended December 31, 2017.

General and Administrative. General and administrative expenses increased by $2.0 million principally due to an increase in general travel and entertainment expenses of $0.8 million and an increase of $0.3 million in employee relocation expenses.

Other Income (Expense)

Our other income for the year ended December 31, 2017 and 2016, and the resulting dollar and percentage changes, were as follows:

	Year Ended December 31,					
	2017		2016			
	($ in thousands)					
	$	% of Revenues	$	% of Revenues	$ Change	% Change
Investment income	$ 3,619	0.9 %	$ 2,137	0.6 %	$ 1,482	69.3 %
Other, net	(1,466)	(0.4)	(520)	(0.1)	(946)	181.9
Total other income	$ 2,153	0.5 %	$ 1,617	0.4 %	$ 536	33.1 %

Investment income increased by $1.5 million primarily due to higher investment balances and an increase in interest rates in 2017. Other, net decreased by $0.9 million due to a decrease in foreign currency transaction gains of $0.7 million.

Provision for Income Tax. Our consolidated effective tax rate for the year ended December 31, 2017 was 26.6%, compared to 34.1% for the year ended December 31, 2016. The tax provision for the year ended December 31, 2017 includes excess tax benefits of $26.1 million relating to a new standard for share-based payments accounting (ASU 2016-09) adopted effective January 1, 2017, offset by the provisional tax charge of $11.7 million related to the enactment of the Tax Act. Our consolidated effective tax rate can vary from period to period depending on the geographic mix of our earnings, changes in tax legislation and tax rates and the amount and timing of excess tax benefits related to share-based payments, among other factors.

As of December 31, 2017, we had restricted U.S. federal net operating loss carryforwards of approximately $4.2 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, 2018. 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, 2018	**Sep 30, 2018**	**Jun 30, 2018**	**Mar 31, 2018**	**Dec 31, 2017**	**Sep 30, 2017**	**Jun 30, 2017**	**Mar 31, 2017**
	(In thousands, except per share amounts) (unaudited)							
Revenues								
Commissions	$101,436	$ 90,513	$ 96,113	$102,772	$87,975	$86,270	$87,015	$ 94,022
Information services	7,057	7,174	6,930	7,066	6,793	6,331	6,497	6,185
Post-trade services	3,675	3,475	3,620	4,576	3,467	2,678	2,489	2,456
Other	276	281	301	300	325	305	313	301
Total revenues	112,444	101,443	106,964	114,714	98,560	95,584	96,314	102,964
Expenses								
Employee compensation and benefits	27,802	26,282	26,199	28,834	24,225	25,485	25,319	27,284
Depreciation and amortization	5,848	6,173	5,790	5,269	5,208	4,583	4,790	4,693
Technology and communications	6,415	5,879	5,793	5,779	5,606	5,035	4,822	4,585
Professional and consulting fees	5,353	5,685	5,426	5,057	5,455	5,547	4,086	4,279
Occupancy	3,844	3,528	3,467	3,337	1,504	1,795	1,422	1,404
Marketing and advertising	3,534	2,980	3,535	2,065	3,005	2,089	2,782	1,886
Clearing costs	2,257	1,760	2,012	1,725	1,477	1,476	1,517	1,327
General and administrative	3,426	2,744	2,708	2,475	3,243	2,939	2,591	2,348
Total expenses	58,479	55,031	54,930	54,541	49,723	48,949	47,329	47,806
Operating income	53,965	46,412	52,034	60,173	48,837	46,635	48,985	55,158
Other income (expense)								
Investment income	1,926	1,635	1,383	1,168	1,068	964	840	747
Other, net	175	(250)	(207)	(328)	(534)	(382)	(252)	(298)
Total other income	2,101	1,385	1,176	840	534	582	588	449
Income before income taxes	56,066	47,797	53,210	61,013	49,371	47,217	49,573	55,607
Provision for income taxes	10,235	9,203	12,723	13,073	15,898	13,087	11,550	13,144
Net income	$ 45,831	$ 38,594	$ 40,487	$ 47,940	$33,473	$34,130	$38,023	$ 42,463
Net income per common share								
Basic	$ 1.24	$ 1.04	$ 1.10	$ 1.30	$ 0.91	$ 0.93	$ 1.03	$ 1.15
Diluted	$ 1.21	$ 1.02	$ 1.07	$ 1.27	$ 0.88	$ 0.90	$ 1.00	$ 1.11

The following tables set forth trading volume and average variable transaction fee per million traded for the eight quarters ended December 31, 2018.

	Three Months Ended							
	Dec 31, 2018	Sep 30, 2018	Jun 30, 2018	Mar 31, 2018	Dec 31, 2017	Sep 30, 2017	Jun 30, 2017	Mar 31, 2017
Trading Volume Data	(In millions)							
U.S. high-grade - fixed rate	$223,737	$191,950	$215,308	$236,523	$191,411	$192,092	$195,717	$211,974
U.S. high-grade - floating rate	16,915	14,066	15,211	14,462	9,815	8,734	7,870	7,420
Total U.S. high-grade	240,652	206,016	230,519	250,985	201,226	200,826	203,587	219,394
Other credit	187,274	166,990	177,681	199,943	141,857	133,757	144,574	159,724
Liquid products	14,345	12,505	12,550	14,079	12,543	12,189	13,345	15,306
Total	$442,271	$385,511	$420,750	$465,007	$355,626	$346,772	$361,506	$394,424

	Three Months Ended							
	Dec 31, 2018	Sep 30, 2018	Jun 30, 2018	Mar 31, 2018	Dec 31, 2017	Sep 30, 2017	Jun 30, 2017	Mar 31, 2017
Average Variable Transaction Fee Per Million								
U.S. high-grade - fixed rate	$ 161	$ 162	$ 162	$ 158	$ 177	$ 174	$ 165	$ 166
U.S. high-grade - floating rate	70	91	96	94	73	67	63	55
Total U.S. high-grade	154	157	158	154	172	169	162	162
Other credit	208	198	196	202	213	235	257	261
Liquid products	41	39	39	41	42	45	43	41
Total	173	171	170	172	184	190	195	197
Number of U.S. trading days	61	63	64	61	62	63	63	62
Number of U.K. trading days	64	64	62	63	63	64	61	64

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 $486.4 million at December 31, 2018.

In October 2015, we entered into a two-year amended and restated credit agreement (the "Credit Agreement") that increased our borrowing capacity to an aggregate of $100.0 million. In October 2017, we amended the Credit Agreement and extended the maturity date to October 2018. The amended Credit Agreement also provided for two additional one-year extension options and modified certain borrowing terms and covenants. In October 2018, we exercised our first option to extend the maturity date to October 2019. 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. As of December 31, 2018, we had $1.7 million in letters of credit outstanding and $98.3 million in available borrowing capacity under the Credit Agreement.

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

	Year Ended December 31,		
	2018	2017	2016
	(In thousands)		
Net cash provided by operating activities	$ 223,917	$ 168,035	$ 89,747
Net cash (used in) investing activities	(50,296)	(53,653)	(53,180)
Net cash (used in) financing activities	(92,673)	(117,068)	(65,294)
Effect of exchange rate changes on cash and cash equivalents	(1,640)	1,457	(2,758)
Net increase (decrease) for the period	$ 79,308	$ (1,229)	$ (31,485)

Cash Flows for the Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

The $55.9 million increase in net cash provided by operating activities was primarily due to an increase in net income of $24.8 million, a decrease in net purchases of corporate debt trading investments of $17.9 million and a decrease in working capital of $14.5 million.

The $3.4 million decrease in net cash used in investing activities was primarily due to an increase in capital expenditures of $22.0 million offset by an increase in net proceeds from sales and maturities of securities available-for-sale of $25.3 million. Capital expenditures in 2018 included $25.1 million related to the build-out of our new headquarters in New York City.

The $24.4 million decrease in net cash used in financing activities was principally due to a decrease in withholding tax payments on restricted stock vesting and stock option exercises of $19.7 million and a decrease in repurchases of our common stock of $17.3 million, offset by an increase in cash dividends paid on common stock of $13.5 million.

Cash Flows for the Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

The $78.3 million increase in net cash provided by operating activities was primarily due to a decrease in net purchases of corporate debt trading investments of $57.1 million and an increase in net income of $21.9 million offset by an increase in working capital of $2.1 million.

The $0.5 million increase in net cash used in investing activities was primarily due to an increase in capital expenditures of $7.1 million offset by an increase in net proceeds from sales and maturities of securities available-for-sale of $7.1 million.

The $51.8 million increase in net cash used in financing activities was principally due to an increase in withholding tax payments on restricted stock vesting and stock option exercises of $22.5 million, an increase in repurchases of our common stock of $18.5 million and an increase in cash dividends paid on common stock of $10.4 million.

Past trends of cash flows are not necessarily indicative of future cash flow levels. A decrease in cash flows may have a material adverse effect on our liquidity, business and financial condition.

Non-GAAP Financial Measures

We use a non-GAAP financial measure called “Free Cash Flow”. Free Cash Flow is defined as cash flow from operating activities excluding the net change in 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 net cash provided by operating activities to Free Cash Flow, as defined, for the years ended December 31, 2018, 2017 and 2016:

	Year Ended December 31,		
	2018	2017	2016
		(In thousands)	
Net cash provided by operating activities	$ 223,917	$ 168,035	$ 89,747
Exclude: Net change in trading investments	(856)	17,081	74,195
Less: Purchases of furniture, equipment and leasehold improvements	(35,888)	(12,086)	(6,385)
Less: Capitalization of software development costs	(11,705)	(13,471)	(12,118)
Free Cash Flow	$ 175,468	$ 159,559	$ 145,439

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 other foreign regulators and must maintain financial resources, as defined in the applicable regulations, in excess of the applicable financial resources requirement. As of December 31, 2018, 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, 2018, our subsidiaries maintained aggregate net capital and financial resources that were $162.8 million in excess of the required levels of $15.0 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, 2018, the amount of unrestricted cash held by our non-U.S. subsidiaries was $93.3 million.

Pursuant to the Tax Act, all previously undistributed earnings have now been subject to U.S. Tax. Notwithstanding the U.S. taxation of these amounts, we consider our undistributed foreign earnings to be indefinitely reinvested outside of the U.S. and do not expect to incur any significant additional taxes related to such amounts.

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 third-party clearing brokers. Settlement typically occurs within one to two trading days after the trade date. Cash settlement of the transaction occurs upon receipt or delivery of the underlying instrument that was traded. 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, 2018 and 2017, the amount of the collateral deposits included in prepaid expenses and other assets in our Consolidated Statements of Financial Condition was $1.1 million and $1.2 million, respectively. We are 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 third-party clearing broker has the right to charge us for any losses they suffer resulting from a counterparty 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, 2018, 2017 and 2016.

In the normal 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, 2018, 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	$ 144,069	$ 9,764	$ 21,033	$ 17,805	$ 95,467
Foreign currency forward contract	107,327	107,327	—	—	—
Total	$ 251,396	$ 117,091	$ 21,033	$ 17,805	$ 95,467

We enter into foreign currency forward contracts to hedge the net investment in our U.K. subsidiaries. As of December 31, 2018, the notional value of the foreign currency forward contract outstanding was $107.3 million and the fair value of the liability was $1.0 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, 2018, we had $236.0 million of investments in corporate bonds and U.S. treasuries 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 Generally – Global Economic and Market Conditions – *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, 2018, our cash and cash equivalents and investments amounted to $486.4 million. A hypothetical 100 basis point decrease in interest rates would decrease our annual investment income by approximately $4.8 million, assuming no change in the amount or composition of our cash and cash equivalents.

As of December 31, 2018, 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 $1.2 million, assuming no change in the amount or composition of the investments. The hypothetical unrealized gain (loss) of $1.2 million would be recognized in other comprehensive income on the Consolidated Statements 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 $1.0 million. The hypothetical unrealized gain (loss) of $1.0 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, 2018, approximately 14.5% of our revenue and 28.6% 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 $6.3 million and operating expenses by approximately $6.4 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, 2018, the fair value of the notional amount of our foreign currency forward contract was $107.3 million. We do not speculate in any derivative instruments.

Credit Risk

Two of our subsidiaries, MarketAxess Corporation and MarketAxess Capital 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 two 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, 2018. 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, 2018.

The effectiveness of our internal control over financial reporting as of December 31, 2018 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 the Board of Directors and Stockholders of MarketAxess Holdings Inc.:

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated statements of financial condition of MarketAxess Holdings Inc. and its subsidiaries (the Company) as of December 31, 2018 and December 31, 2017, and the related consolidated statements of operations, comprehensive income, changes in stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2018, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control − Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and December 31, 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 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, 2018, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated 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 the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. 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.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (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.

/s/ PricewaterhouseCoopers LLP
New York, New York
February 20, 2019

We have served as the Company's auditor since 2000.

MARKETAXESS HOLDINGS INC.
CONSOLIDATED STATEMENTS OF FINANCIAL CONDITION

	As of			
	December 31, 2018		December 31, 2017	
	(In thousands, except share and per share amounts)			
ASSETS				
Cash and cash equivalents	$	246,322	$	167,014
Investments, at fair value		240,105		239,521
Accounts receivable, net of allowance of $80 and $178 as of December 31, 2018 and 2017, respectively		57,535		52,636
Goodwill and intangible assets, net of accumulated amortization		62,675		63,059
Furniture, equipment, leasehold improvements and capitalized software, net of accumulated depreciation and amortization		63,010		38,548
Prepaid expenses and other assets		22,468		18,717
Deferred tax assets, net		3,424		1,737
Total assets	$	695,539	$	581,232
LIABILITIES AND STOCKHOLDERS' EQUITY				
Liabilities				
Accrued employee compensation	$	39,053	$	36,502
Income and other tax liabilities		16,432		13,061
Deferred revenue		2,810		2,660
Accounts payable, accrued expenses and other liabilities		29,366		14,241
Total liabilities		87,661		66,464
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, 2018 and 2017		—		—
Series A Preferred Stock, $0.001 par value, 110,000 shares authorized, no shares issued and outstanding as of December 31, 2018 and 2017		—		—
Common stock voting, $0.003 par value, 110,000,000 shares authorized, 40,540,349 shares and 40,402,059 shares issued and 37,639,917 shares and 37,620,736 shares outstanding as of December 31, 2018 and 2017, respectively		122		121
Common stock non-voting, $0.003 par value, 10,000,000 shares authorized, no shares issued and outstanding as of December 31, 2018 and 2017		—		—
Additional paid-in capital		341,860		331,081
Treasury stock - Common stock voting, at cost, 2,900,432 and 2,781,323 shares as of December 31, 2018 and 2017, respectively		(184,962)		(159,791)
Retained earnings		463,252		353,583
Accumulated other comprehensive loss		(12,394)		(10,226)
Total stockholders' equity		607,878		514,768
Total liabilities and stockholders' equity	$	695,539	$	581,232

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

MARKETAXESS HOLDINGS INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
	2018	2017	2016
	(In thousands, except per share amounts)		
Revenues			
Commissions	$ 390,834	$ 355,282	$ 332,307
Information services	28,227	25,806	23,269
Post-trade services	15,346	11,090	10,812
Other	1,158	1,244	1,342
Total revenues	435,565	393,422	367,730
Expenses			
Employee compensation and benefits	109,117	102,313	96,625
Depreciation and amortization	23,080	19,274	17,838
Technology and communications	23,866	20,048	17,275
Professional and consulting fees	21,521	19,367	17,175
Occupancy	14,176	6,125	4,681
Marketing and advertising	12,114	9,762	8,934
Clearing costs	7,754	5,797	6,060
General and administrative	11,353	11,121	9,157
Total expenses	222,981	193,807	177,745
Operating income	212,584	199,615	189,985
Other income (expense)			
Investment income	6,112	3,619	2,137
Other, net	(610)	(1,466)	(520)
Total other income	5,502	2,153	1,617
Income before income taxes	218,086	201,768	191,602
Provision for income taxes	45,234	53,679	65,430
Net income	$ 172,852	$ 148,089	$ 126,172
Net income per common share			
Basic	$ 4.68	$ 4.02	$ 3.42
Diluted	$ 4.57	$ 3.89	$ 3.34
Cash dividends declared per common share	$ 1.68	$ 1.32	$ 1.04
Weighted average shares outstanding			
Basic	36,958	36,864	36,844
Diluted	37,855	38,038	37,738

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

MARKETAXESS HOLDINGS INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Year Ended December 31,		
	2018	2017	2016
		(In thousands)	
Net income	$ 172,852	$ 148,089	$ 126,172
Net cumulative translation adjustment and foreign currency exchange hedge, net of tax of $1,290, $(2,807) and $5,407, respectively	(2,078)	2,236	(7,037)
Net unrealized (loss) gain on securities available-for-sale, net of tax of $(23), $(39), and $24, respectively	(90)	(234)	38
Comprehensive income	$ 170,684	$ 150,091	$ 119,173

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	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
			(In thousands)			
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
Net income	—	—	—	148,089	—	148,089
Cumulative translation adjustment and foreign currency exchange hedge, net of tax	—	—	—	—	2,236	2,236
Unrealized net (loss) on securities available-for-sale, net of tax	—	—	—	—	(234)	(234)
Stock-based compensation	—	14,421	—	—	—	14,421
Exercise of stock options	1	1,971	—	—	—	1,972
Withholding tax payments on restricted stock vesting and stock option exercises	—	(27,691)	—	—	—	(27,691)
Repurchases of common stock	—	—	(42,461)	—	—	(42,461)
Cumulative effect of change in accounting for employee share based payments	—	69	—	(52)	—	17
Cash dividend on common stock	—	—	—	(49,594)	—	(49,594)
Balance at December 31, 2017	121	331,081	(159,791)	353,583	(10,226)	514,768
Net income	—	—	—	172,852	—	172,852
Cumulative translation adjustment and foreign currency exchange hedge, net of tax	—	—	—	—	(2,078)	(2,078)
Unrealized net (loss) on securities available-for-sale, net of tax	—	—	—	—	(90)	(90)
Stock-based compensation	—	15,850	—	—	—	15,850
Exercise of stock options	1	2,972	—	—	—	2,973
Withholding tax payments on restricted stock vesting and stock option exercises	—	(8,043)	—	—	—	(8,043)
Repurchases of common stock	—	—	(25,171)	—	—	(25,171)
Cash dividend on common stock	—	—	—	(63,183)	—	(63,183)
Balance at December 31, 2018	$ 122	$ 341,860	$ (184,962)	$ 463,252	$ (12,394)	$ 607,878

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

MARKETAXESS HOLDINGS INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2018	2017	2016
		(In thousands)	
Cash flows from operating activities			
Net income	$ 172,852	$ 148,089	$ 126,172
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	23,080	19,274	17,838
Stock-based compensation expense	15,850	14,421	14,511
Deferred taxes	(1,258)	6,590	(2,581)
Other	2,338	1,953	10,628
Changes in operating assets and liabilities:			
(Increase) in accounts receivable	(5,117)	(2,353)	(10,429)
(Increase) in prepaid expenses and other assets	(3,791)	(7,039)	(2,125)
Decrease (increase) in trading investments	856	(17,081)	(74,195)
(Increase) in mutual funds held in rabbi trust	(933)	(1,839)	(1,327)
Increase in accrued employee compensation	2,551	1,719	5,487
Increase in income and other tax liabilities	2,965	5,770	3,221
Increase in deferred revenue	150	145	203
Increase (decrease) in accounts payable, accrued expenses and other liabilities	14,374	(1,614)	2,344
Net cash provided by operating activities	223,917	168,035	89,747
Cash flows from investing activities			
Available-for-sale investments			
Proceeds from maturities and sales	333,791	187,794	46,347
Purchases	(336,533)	(215,831)	(81,438)
Purchases of furniture, equipment and leasehold improvements	(35,888)	(12,086)	(6,385)
Capitalization of software development costs	(11,705)	(13,471)	(12,118)
Other	39	(59)	414
Net cash (used in) investing activities	(50,296)	(53,653)	(53,180)
Cash flows from financing activities			
Cash dividend on common stock	(62,432)	(48,888)	(38,495)
Exercise of stock options	2,973	1,972	2,299
Withholding tax payments on restricted stock vesting and stock option exercises	(8,043)	(27,691)	(5,173)
Repurchases of common stock	(25,171)	(42,461)	(23,925)
Net cash (used in) financing activities	(92,673)	(117,068)	(65,294)
Effect of exchange rate changes on cash and cash equivalents	(1,640)	1,457	(2,758)
Cash and cash equivalents including restricted cash			
Net increase (decrease) for the period	79,308	(1,229)	(31,485)
Beginning of period	168,150	169,379	200,864
End of period	$ 247,458	$ 168,150	$ 169,379
Supplemental cash flow information:			
Cash paid during the year for income taxes	$ 47,208	$ 43,997	$ 58,268

The accompanying notes are an integral part of these 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 1,500 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 bond trades between and among institutional investor and broker-dealer clients in an all-to-all anonymous trading environment in which MarketAxess acts as the matched principal counterparty. MarketAxess also offers a number of trading-related products and services, including: Composite+ pricing and other market data products to assist clients with trading decisions; auto-execution and other execution services for clients requiring specialized workflow solutions; connectivity solutions that facilitate straight-through processing; and technology services to optimize trading environments. Through its Trax® division, the Company also offers a range of pre- and post-trade services, including trade matching, trade publication, 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.

Accounting Pronouncements, Recently Adopted

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 also requires new disclosure concerning contracts with customers, including the significant judgments made when applying the guidance. The Company adopted ASU 2014-09 effective January 1, 2018 using the modified retrospective transition approach. The adoption of this guidance did not have a material impact on the Company's Consolidated Financial Statements.

Effective January 1, 2017, the Company adopted ASU 2016-09, "Improvements to Employee Share-Based Payment Accounting" ("ASU 2016-09"), which 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. Beginning January 1, 2017, the tax effects related to share-based payments were recorded through the income tax provision and the Company has elected to account for forfeitures as they occur. The adoption of ASU 2016-09 will 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 vesting date for restricted stock awards or exercise date for stock options and the number of awards that vest or are exercised in each period. Under the guidance, excess tax benefits from share-based compensation are included as an operating activity in the Company's Consolidated Statements of Cash Flows. Prior period cash flows have been adjusted to conform to the new presentation.

Accounting Pronouncements, Not Yet Adopted as of December 31, 2018

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 with lease terms greater than 12 months. ASU 2016-02 was effective for the Company beginning January 1, 2019. The Company expects to record new right-of-use assets of approximately \$80.0 million, eliminate deferred rent of approximately \$11.0 million and record lease liabilities associated with the future minimum payments required under operating leases of approximately \$91.0 million. The presentation of occupancy expense and the pattern of expense recognition within the Consolidated Statements of Operations and Consolidated Statements of Cash Flows is expected to be consistent with the current lease accounting guidance.

In January 2017, the FASB issued ASU 2017-04, "Intangibles-Goodwill and Other" ("ASU 2017-04"). ASU 2017-04 simplifies the testing for goodwill impairment. The guidance will be effective for the Company beginning January 1, 2020 and early adoption is permitted and should be applied prospectively. The adoption of this guidance is not expected to have a material effect on the Company's Consolidated Financial Statements.

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 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 include investment grade corporate debt securities and U.S. Treasuries 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, 2018, 2017 and 2016.

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 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, $0.2 million and $0.1 million as of December 31, 2018, 2017 and 2016, respectively. The provision for bad debts was $0.2 million, $0.4 million and $0.2 million for the years ended December 31, 2018, 2017 and 2016, respectively. Write-offs and other charges against the allowance for doubtful accounts were $0.2 million, $0.1 million and $0.1 million for the years ended December 31, 2018, 2017 and 2016, 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

On January 1, 2018, the Company adopted ASU 2014-09 using the modified retrospective approach. The adoption of ASU 2014-09 did not have a material impact on the measurement or recognition of revenue in any prior or current reporting periods.

The Company's classification of revenues in the Consolidated Statements of Operations represents revenues from contracts with customers disaggregated by type of revenue. The Company has four revenue streams as described below.

Commission Revenue. The Company charges its broker-dealer clients variable transaction fees for trades executed on its platform and, under certain plans, distribution fees or monthly minimum fees to use the platform for a particular product area. Variable transaction fees 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 disclosed trading transaction fee plans, bonds that are more actively traded or that have shorter maturities generally generate lower commissions, while bonds that are less actively traded or that have longer maturities generally command higher commissions. Variable transaction fees, distribution fees and unused monthly fee commitments are invoiced and recorded on a monthly basis.

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 its commission through the difference in price between the two trades. The commission is collected upon settlement of the trade, which typically occurs within one to two trading days after the trade date. The following table presents commission revenue by fee type for the three years ended December 31, 2018:

	Year Ended December 31,		
	2018	2017	2016
	(In thousands)		
Commission revenue by fee type			
Variable transaction fees			
Disclosed trading	$ 228,004	$ 234,143	$ 230,319
Open Trading - matched principal trading	65,932	45,660	37,747
Total variable transaction fees	293,936	279,803	268,066
Distribution fees and unused minimum fees	96,898	75,479	64,241
Total commissions	$ 390,834	$ 355,282	$ 332,307

Information services – Information services includes data licensed to the Company's broker-dealer clients, institutional investor clients and data-only subscribers; professional and consulting services; technology software licenses; and maintenance and support services. The nature and timing of each performance obligation may vary as these contracts are either subscription based services transferred over time or one-time services that are transferred at a point in time. Revenues for services transferred over time are recognized ratably over the contract period as the Company's performance obligation is met whereas revenues for services transferred at a point in time are recognized in the period the services are provided. Customers are generally billed monthly, quarterly, or annually; revenues billed in advance are deferred and recognized ratably over the contract period. The following table presents information services revenue by timing of recognition for the three years ended December 31, 2018:

	Year Ended December 31,		
	2018	2017	2016
	(In thousands)		
Information services revenue by timing of recognition			
Services transferred over time	$ 27,475	$ 25,242	$ 22,011
Services transferred at a point in time	752	564	1,258
Total information services revenues	$ 28,227	$ 25,806	$ 23,269

Post-trade services – Post-trade services revenue is generated from regulatory transaction reporting, trade publication and trade matching services. Customers are generally billed monthly in arrears and revenue is recognized in the period transactions are processed. Revenues billed in advance are deferred and recognized ratably over the contract period. The Company also generates one-time implementation fees for onboarding clients which are invoiced and recognized in the period the implementation is completed. The following table presents post-trade services revenue by timing of recognition for the three years ended December 31, 2018:

	Year Ended December 31,		
	2018	2017	2016
	(In thousands)		
Post-trade services revenue by timing of recognition			
Services transferred over time	$ 15,013	$ 9,657	$ 10,812
Services transferred at a point in time	333	1,433	—
Total post-trade services revenues	$ 15,346	$ 11,090	$ 10,812

Other revenues – Other revenues primarily includes revenue from telecommunications line charges to broker-dealer clients.

Contract liabilities consist of deferred revenues that the Company records when cash payments are received or due in advance of services to be performed. The revenue recognized from contract liabilities and the remaining balance is shown below:

	December 31, 2017	Payments received in advance of services to be performed	Revenue recognized for services performed during the period	Foreign Currency Translation	December 31, 2018
			(In thousands)		
Information services	$ 1,763	$ 7,109	$ (6,913)	$ —	$ 1,959
Post-trade services	897	11,566	(11,561)	(51)	851
Total deferred revenue	$ 2,660	$ 18,675	$ (18,474)	$ (51)	$ 2,810

The majority of the Company's contracts are short-term in nature with durations of less than one-year. For contracts extending beyond one year, the aggregate amount of the transaction price allocated to remaining performance obligations was $6.3 million as of December 31, 2018. The Company expects to recognize revenue associated with the remaining performance obligations over the next 18 months.

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. Effective upon the Company's adoption of ASU 2016-09 on January 1, 2017, the Company accounts for forfeitures as they occur. Prior to the adoption of ASU 2016-09, expected forfeitures were included in determining share-based compensation expense.

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. Effective upon the Company's adoption of ASU 2016-09 all tax effects related to share-based payments are recorded through tax expense in the periods during which the awards are exercised or vest.

On December 22, 2017, the Securities and Exchange Commission issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act ("SAB 118") to address the application of U.S. generally accepted accounting principles ("GAAP") related to the enactment of the Tax Cuts and Jobs Act (the "Tax Act"). SAB 118 allowed the Company to record a provisional amount when it did not have the necessary information available, prepared, or analyzed in reasonable detail to complete its accounting for the change in the tax law. The Company has completed its analysis within the one-year measurement period in accordance with SAB 118.

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.

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 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.

Reclassifications

Certain reclassifications have been made to the prior period's Consolidated Financial Statements in order to conform to the current year presentation. The Company revised the format of the Consolidated Statements of Operations to separately present non-operating activities. Such activities include investment income, unrealized and realized gains (losses) on trading securities, foreign exchange gains (losses), investment advisory fees and other miscellaneous non-operating activities. Accordingly, the Company reclassified these amounts from the various revenue and expense line items to Other income (expense). The reclassifications had no effect on previously reported income before income taxes or net income.

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 other foreign regulators and must maintain financial resources, as defined in the applicable regulations, in excess of the applicable financial resources requirement. As of December 31, 2018, 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, 2018, the Company's subsidiaries maintained aggregate net capital and financial resources that were $162.8 million in excess of the required levels of $15.0 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
		(In thousands)		
As of December 31, 2018				
Money market funds	$ 112,529	$ —	$ —	$ 112,529
Securities available-for-sale				
Corporate debt	—	146,966	—	146,966
Trading securities				
Corporate debt	—	71,861	—	71,861
U.S. Treasuries	—	17,178	—	17,178
Mutual funds held in rabbi trust	—	4,100	—	4,100
Foreign currency forward position	—	(1,021)	—	(1,021)
Total	$ 112,529	$ 239,084	$ —	$ 351,613
As of December 31, 2017				
Money market funds	$ 88,562	$ —	$ —	$ 88,562
Securities available-for-sale				
Corporate debt	—	145,052	—	145,052
Trading securities				
Corporate debt	—	91,302	—	91,302
Mutual funds held in rabbi trust	—	3,167	—	3,167
Foreign currency forward position	—	(702)	—	(702)
Total	$ 88,562	$ 238,819	$ —	$ 327,381

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, 2018 and 2017.

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, 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,	
	2018	2017
	(In thousands)	
Notional value	$ 106,306	$ 84,422
Fair value of notional	107,327	85,124
Fair value of the (liability)	$ (1,021)	$ (702)

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, 2018				
Securities available-for-sale				
Corporate debt	$ 147,556	$ 27	$ (617)	$ 146,966
Trading securities				
Corporate debt	72,274	8	(421)	71,861
U.S. Treasuries	16,953	225	—	17,178
Mutual funds held in rabbi trust	4,347	—	(247)	4,100
Total trading securities	93,574	233	(668)	93,139
Total investments	$ 241,130	$ 260	$ (1,285)	$ 240,105
As of December 31, 2017				
Securities available-for-sale				
Corporate debt	$ 145,526	$ 9	$ (483)	$ 145,052
Trading securities				
Corporate debt	91,578	30	(306)	91,302
Mutual funds held in rabbi trust	2,729	438	—	3,167
Total trading securities	94,307	468	(306)	94,469
Total investments	$ 239,833	$ 477	$ (789)	$ 239,521

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

	As of December 31, 2018	As of December 31, 2017
	(In thousands)	
Less than one year	$ 134,255	$ 130,738
Due in 1 - 5 years	105,850	108,783
Total	$ 240,105	$ 239,521

Proceeds from the sales and maturities of investments during the years ended December 31, 2018, 2017 and 2016 were $409.3 million, $219.2 million and $69.5 million, respectively. Net realized and unrealized gains or losses on trading securities were immaterial for the years ended December 31, 2018 and 2017.

The following table provides fair values and unrealized losses on corporate debt investments and by the aging of the securities' continuous unrealized loss position as of December 31, 2018 and 2017 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, 2018						
Corporate debt	$ 80,282	$ (256)	$ 87,028	$ (782)	$ 167,310	$ (1,038)
As of December 31, 2017						
Corporate debt	$ 177,114	$ (536)	$ 26,476	$ (253)	$ 203,590	$ (789)

5. Goodwill and Intangible Assets

Goodwill and intangible assets with indefinite lives was $59.7 million as of both December 31, 2018 and 2017. Intangible assets that are subject to amortization, including the related accumulated amortization, are comprised of the following:

	December 31, 2018			December 31, 2017		
	Cost	Accumulated amortization	Net carrying amount	Cost	Accumulated amortization	Net carrying amount
			(In thousands)			
Technology	$ 5,770	$ (5,770)	$ —	$ 5,770	$ (5,770)	$ —
Customer relationships	5,634	(2,672)	2,962	5,647	(2,301)	3,346
Non-competition agreements	380	(380)	—	380	(380)	—
Tradenames	370	(370)	—	370	(370)	—
Total	$ 12,154	$ (9,192)	$ 2,962	$ 12,167	$ (8,821)	$ 3,346

Amortization expense associated with identifiable intangible assets was $0.4 million, $0.4 million and $ 0.7 million for the years ended December 31, 2018, 2017 and 2016, respectively. Estimated total amortization expense is $0.4 million for each year from 2019 through 2022 and $0.3 million for 2023.

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, 2018	As of December 31, 2017
	(In thousands)	
Software development costs	$ 97,113	$ 86,129
Computer hardware and related software	42,705	35,945
Office hardware	5,909	4,575
Furniture and fixtures	5,385	2,347
Leasehold improvements	32,527	11,016
	183,639	140,012
Accumulated depreciation and amortization	(120,629)	(101,464)
Total	$ 63,010	$ 38,548

During the years ended December 31, 2018 and 2017, software development costs totaling $11.7 million and $13.5 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.

7. Income Taxes

The provision for income taxes consists of the following:

	Year Ended December 31, 2018	2017	2016
		(In thousands)	
Current:			
Federal	$ 31,617	$ 36,045	$ 45,455
State and local	5,928	3,848	7,087
Foreign	8,862	7,234	6,166
Total current provision	46,407	47,127	58,708
Deferred:			
Federal	(1,416)	6,171	5,884
State and local	(272)	661	1,141
Foreign	515	(280)	(303)
Total deferred provision	(1,173)	6,552	6,722
Provision for income taxes	$ 45,234	$ 53,679	$ 65,430

Pre-tax income from U.S. operations was $168.5 million, $165.2 million and $161.9 million for the years ended December 31, 2018, 2017 and 2016, respectively. Pre-tax income from foreign operations was $49.6 million, $36.6 million and $29.7 million for the years ended December 31, 2018, 2017 and 2016, respectively.

On December 22, 2017, the Tax Act was enacted into law. The Tax Act significantly revised the U.S. corporate income tax regime by, among other things, lowering the U.S. federal corporate income tax rate from 35% to 21%, implementing a territorial tax system and imposing a repatriation tax on deemed earnings of foreign subsidiaries. The Company recorded a provisional tax charge in 2017 of $11.7 million, composed of $6.7 million to re-measure U.S. deferred tax assets and $5.0 million for the repatriation tax on accumulated undistributed foreign earnings. In 2018, the Company reduced the provisional tax charge by $0.4 million as a result of new regulatory guidance and changes in interpretations and assumptions made by the Company.

Pursuant to the Tax Act, all previously undistributed foreign earnings have now been subject to U.S. tax. Notwithstanding the U.S. taxation of these amounts, the Company considers its undistributed foreign earnings to be indefinitely reinvested outside of the U.S. and does not expect to incur any significant additional taxes related to such amounts.

The difference between the Company's reported provision for income taxes and the U.S. federal statutory rate of 21% is as follows:

	Year Ended December 31,		
	2018	2017	2016
U.S. federal tax at statutory rate	21.0 %	35.0 %	35.0 %
State and local taxes - net of federal benefit	2.0	1.5	2.9
Credits and deductions related to research activities	(0.3)	(1.2)	(1.3)
Foreign rate differential benefit	(0.5)	(2.9)	(2.3)
Excess tax benefit from stock-based compensation	(2.1)	(11.6)	—
Tax Cuts and Jobs Act provisional tax charge	(0.2)	5.8	—
Other, net	0.8	—	(0.2)
Provision for income taxes	20.7 %	26.6 %	34.1 %

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

	As of December 31,	
	2018	2017
	(In thousands)	
Deferred tax assets:		
U.S. net operating loss carryforwards	$ 603	$ 872
Capital loss carryforwards	—	4,648
Stock compensation expense	4,967	4,534
Other	2,966	1,143
Total deferred tax assets	8,536	11,197
Valuation allowance	—	(4,648)
Net deferred tax assets	8,536	6,549
Deferred tax liabilities:		
Depreciation and amortization	(1,847)	(1,369)
Capitalized software development costs	(3,776)	(3,479)
Intangible assets	(898)	(967)
Deferred tax assets, net	$ 2,015	$ 734

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, 2018, the Company had restricted U.S. federal net operating loss carryforwards of approximately $2.9 million related to the prior ownership change, 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. 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. The remaining capital loss carryforward expired as of December 31, 2018.

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

	Year Ended December 31,		
	2018	2017	2016
		(In thousands)	
Valuation allowance at beginning of year	$ 4,648	$ 7,235	$ 7,294
(Decrease) to valuation allowance attributable to:			
Expiration of capital loss carryforwards	(4,648)	—	—
Federal and state tax rate changes	—	(2,587)	(59)
Valuation allowance at end of year	$ —	$ 4,648	$ 7,235

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 2015 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.

A reconciliation of the unrecognized tax benefits is as follows:

	Year Ended December 31,		
	2018	2017	2016
		(In thousands)	
Balance at beginning of year	$ 2,650	$ 29	$ 265
Additions attributable to state and local apportionment	2,068	2,650	—
Reductions for tax positions of prior years	—	(29)	(236)
Balance at end of year	$ 4,718	$ 2,650	$ 29

8. Stockholders’ Equity

Common Stock

As of December 31, 2018 and 2017, 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,		
	2018	2017	2016
		(In thousands)	
Outstanding shares of voting common stock at the beginning of year	37,621	37,544	37,409
Exercise of stock options	121	262	181
Issuance of restricted stock, net of shares withheld for withholding tax payments and cancellations	22	39	104
Repurchases	(124)	(224)	(150)
Outstanding shares of voting common stock at the end of year	37,640	37,621	37,544

In January 2016, the Board of Directors authorized a share repurchase program for up to $25.0 million of the Company’s common stock. In October 2016, the Board of Directors approved a $50.0 million increase in the size of the repurchase program. This program expired in September 2017. In September 2017, the Board of Directors authorized a fifteen-month share repurchase program for up to $100.0 million that commenced in October 2017. The expiration date of this program was subsequently extended to March 31, 2019. In January 2019, the Board of Directors authorized a new two-year share repurchase program for up to $100.0 million. The Company expects the plan to commence in April 2019. Shares repurchased under each program will be held in treasury for future use.

Dividends

During 2018, 2017 and 2016, the Company paid quarterly cash dividends of $0.42 per share, $0.33 per share and $0.26 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, consultants and non-employee directors to participate in the long-term success of the Company. As of December 31, 2018, there were 304,965 shares available for grant under the stock incentive plan.

Total stock-based compensation expense was as follows:

	Year Ended December 31,		
	2018	2017	2016
		(In thousands)	
Employees:			
Restricted stock and performance shares	$ 12,559	$ 11,566	$ 12,459
Stock options	2,193	1,882	1,143
	14,752	13,448	13,602
Non-employee directors:			
Restricted stock	1,098	973	909
Total stock-based compensation	$ 15,850	$ 14,421	$ 14,511

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 2018, 2017 and 2016 was $56.11, $40.08 and $32.24, 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, 2018:

	2018	2017	2016
Expected life (years)	5.0	5.0	6.0
Risk-free interest rate	2.2%	1.9%	1.9%
Expected volatility	26.9%	28.0%	33.0%
Expected dividend yield	0.8%	0.8%	1.0%

In addition to the option grants above, 148,524 stock options were granted to the Company's Chief Executive Officer in November 2018 with a grant date fair value of $5.5 million as determined by an independent third party using a Monte Carlo simulation model. The exercise price is $257.78 for 69,113 of the stock options and $278.40 for the remaining 79,411 stock options, which is equal to 125% and 135%, respectively, of the fair market value of the Company's stock on the grant date. Subject to continued employment with the Company, the options will vest and become exercisable on November 8, 2023. The options expire on May 8, 2024. Key assumptions used for the Monte Carlo model included a risk free interest rate of 3.1%, volatility of 25.9% and a dividend yield of 0.8%.

The following table reports stock option activity during the three years ended December 31, 2018 and the intrinsic value as of December 31, 2018:

	Number of Shares	Weighted-Average Exercise Price ($)	Remaining Contractual Term	Intrinsic Value ($) (In thousands)
Outstanding at December 31, 2015	939,036	$ 23.83		
Granted	112,988	102.40		
Canceled	(874)	101.77		
Exercised	(195,410)	12.35		
Outstanding at December 31, 2016	855,740	36.80		
Granted	54,838	156.85		
Canceled	—	—		
Exercised	(380,967)	11.26		
Outstanding at December 31, 2017	529,611	67.60		
Granted	168,217	261.19		
Canceled	(1,676)	142.69		
Exercised	(120,588)	24.66		$ 21,823
Outstanding at December 31, 2018	575,564	132.93	3.2	53,651
Exercisable at December 31, 2018	203,564	53.49	2.1	32,126

The intrinsic value is the amount by which the closing price of the Company's common stock on December 31, 2018 of $211.31 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, 2018, there was $8.6 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 2.8 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 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, 2018:

Performance year:	2018	2017	2016
Share pay-out plan	10,479	12,971	15,390
Actual share pay-out in following year	10,479	8,094	21,423
Weighted average fair value per share on grant date	$ 202.04	$ 155.53	$ 101.77

In addition to the grants above, 37,742 performance shares were granted to the Company's Chief Executive Officer in November 2018 with a grant date fair value of $5.5 million as determined by an independent third party using a Monte Carlo simulation model. The performance share award provides that the number of shares earned will be based on the Company's achievement of certain share price levels during the five-year performance period. The performance level is $257.78 for 17,942 of the performance shares and $278.40 for the remaining 19,800 performance shares, which is equal to 125% and 135%, respectively, of the fair market value of the Company's stock on the grant date. Subject to continued employment with the Company, earned shares will vest on November 8, 2023. Key assumptions used for the Monte Carlo model included a risk free interest rate of 3.1%, volatility of 26.1% and a dividend yield of 0.8%.

On April 1, 2017, the Company granted 9,367 multi-year performance shares to a certain officer. The performance share awards are earned or forfeited based on attaining certain cumulative operating income thresholds of the Company and select subsidiaries over the two-year period beginning January 1, 2017. The pay-out ranges from zero to 150% of the performance award value. Any restricted stock awarded will vest 50% on April 1, 2020 and 50% on April 1, 2021. The fair value per share of the awards on the grant date was $186.74. The actual share payout was 38.8% or 3,634 shares.

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 four-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. The estimated share payout as of December 31, 2018 was 106.0%.

The following table reports restricted stock and performance share activity during the three years ended December 31, 2018:

	Number of Restricted Shares	Weighted-Average Grant Date Fair Value
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
Granted	61,434	
Performance share pay-out	21,422	
Canceled	(4,590)	
Vested	(142,645)	
Outstanding at December 31, 2017	319,599	$ 88.77
Granted	59,179	
Performance share pay-out	8,094	
Canceled	(4,046)	
Vested	(110,956)	
Outstanding at December 31, 2018	271,870	$ 112.47

As of December 31, 2018, there was $23.3 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 1.7 years.

Employee Stock Purchase Plan

The Company offers 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 grants 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 989, 1,034 and 1,190 matching shares in connection with the plan for the years ended December 31, 2018, 2017, and 2016, respectively.

10. Earnings Per Share

The following table sets forth basic and diluted weighted average shares outstanding used to compute earnings per share:

	Year Ended December 31,		
	2018	2017	2016
		(In thousands)	
Basic weighted average shares outstanding	36,958	36,864	36,844
Dilutive effect of stock options and restricted stock	897	1,174	894
Diluted weighted average shares outstanding	37,855	38,038	37,738

Stock options and restricted stock totaling 83,718 shares, 31,766 shares and 84,052 shares for the years ended December 31, 2018, 2017 and 2016, 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 October 2015, the Company entered into a two-year amended and restated credit agreement (the "Credit Agreement") that provided for revolving loans and letters of credit up to an aggregate of $100.0 million. The Company amended the Credit Agreement in October 2017 and extended the maturity date to October 2018. The amended Credit Agreement also provided for two additional one-year extension options and modified certain borrowing terms and covenants. In October 2018, the Company exercised its first option to extend the maturity date to October 2019. 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. As of December 31, 2018, the Company had $1.7 million in letters of credit outstanding and $98.3 million in available borrowing capacity under the Credit Agreement.

Borrowings under the Credit Agreement will bear interest at a rate per annum equal to the base rate or adjusted LIBOR plus an applicable margin that varies with the Company's consolidated total leverage ratio. The Credit Agreement requires that the Company satisfies certain covenants, which includes leverage ratios and minimum earnings before interest, tax, depreciation and amortization ("EBITDA") requirements. The Company was in compliance with all applicable covenants at December 31, 2018 and December 31, 2017.

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).

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 2034. Office space leases are subject to escalation based on certain costs incurred by the landlord. Minimum rental commitments as of December 31, 2018 under such operating leases were as follows (in thousands):

2019	$	9,764
2020		10,919
2021		10,114
2022		9,067
2023		8,738
2024 and thereafter		95,467
	$	144,069

Rental expense for the years ended December 31, 2018, 2017 and 2016 was $13.1 million, $5.3 million and $4.0 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 total balance of rent abatements and concessions was $11.5 million and $2.7 as of December 31, 2018 and 2017, respectively, and is included in accounts payable, accrued expenses and other liabilities in the Company's Consolidated Statement of Financial Condition. The Company is contingently obligated for standby letters of credit amounting to $1.7 million that were issued to landlords for office space.

During 2016, the Company entered into a lease agreement for its new global headquarters in New York City. The Company relocated its headquarters to approximately 83,000 square feet of newly built office space at 55 Hudson Yards in January 2019. Rent expense recognition commenced upon acceptance of the premises in January 2018.

The Company has entered into agreements that assign the Company's lease obligations on two properties to third parties and is contingently liable should the third parties default on future lease obligations through the lease termination dates of November 2020 and February 2022. The aggregate amount of the future lease obligations under these arrangements is $5.8 million as of December 31, 2018.

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 two trading days after the trade date. Cash settlement of the transaction occurs upon receipt or delivery of the underlying instrument that was traded. 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, 2018 and 2017, the amount of the collateral deposits, which are disclosed in the Consolidated Statements of Cash Flows as restricted cash, and included in prepaid expenses and other assets in the Consolidated Statements of Financial Condition was $1.1 million and $1.2 million, respectively. 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 third-party 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, 2018, 2017 and 2016.

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 products 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.

For the years ended December 31, 2018, 2017 and 2016, 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, 2018, 2017 and 2016 and long-lived assets as of December 31, 2018 and 2017 follows:

	Year Ended December 31,		
	2018	2017	2016
	(In thousands)		
Revenues			
United States	$ 367,373	$ 332,982	$ 312,304
United Kingdom	66,241	58,991	53,865
Other	1,951	1,449	1,561
Total	$ 435,565	$ 393,422	$ 367,730

	As of December 31,	
	2018	2017
	(In thousands)	
Long-lived assets, as defined		
United States	$ 55,200	$ 27,990
United Kingdom	7,787	10,532
Other	23	26
Total	$ 63,010	$ 38,548

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, 2018, 2017 and 2016, the Company contributed $2.6 million, $1.8 million and $1.9 million, respectively, to the plans.

The Company offers a non-qualified deferred cash incentive plan to 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. As of December 31, 2018 and 2017, the fair value of the mutual fund investments and deferred compensation obligations were $4.1 million and $3.2 million, respectively. Changes in the fair value of securities held in the rabbi trust and offsetting increases or decreases in the deferred compensation obligation are recognized in other, net in the Company's Consolidated Statements of Operations. For the years ended December 31, 2018, 2017 and 2016, the trading (losses) gains and changes in deferred compensation liability and expense were $(0.2) million, $0.4 million, and $0.2 million, respectively.

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, 2018. 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, 2018 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 our definitive Proxy Statement (the “Proxy Statement”) for the Annual Meeting of Stockholders to be held in the second quarter of 2019. We intend to file the Proxy Statement within 120 days after the end of our fiscal year (i.e., on or before April 30, 2019). Our Code of Conduct applicable to directors and all employees, including senior financial officers, is available on our website at www.marketaxess.com. If we make any amendments to our Code of Conduct that is required to be disclosed pursuant to the Exchange Act, we will make such disclosures on our 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 our 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 our 2012 Incentive Plan as of December 31, 2018:

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights (a)	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights (b)	Number of Securities Remaining Available for Future Issuance under Equity Compensation Plans (Excluding Securities Reflected in Column (a)) (c)
Equity compensation plan approved by stockholders	575,564	$ 132.93	304,965

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 our 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 our 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(a)	See Exhibits 3.1 for provisions defining the rights of holders of common stock and non-voting common stock of the registrant
4.2(b)	See Exhibits 3.2 for provisions defining the rights of holders of common stock and non-voting common stock of the registrant
10.1(a)	MarketAxess Holdings Inc. 2012 Incentive Plan as Amended and Restated Effective June 7, 2016 (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)#
10.1(b)	Amendment Number One to the MarketAxess Holdings Inc. 2012 Incentive Plan as Amended and Restated Effective June 7, 2016 (incorporated by reference to Exhibit 10.1 to the registrant's Current Report on Form 8-K dated April 21, 2017)#
10.1(c)	Amendment to the MarketAxess Holdings Inc. 2012 Incentive Plan (Amended and Restated Effective June 7, 2016), as amended (incorporated by reference to Appendix A to the registrant's Proxy Statement for its Annual Meeting of Stockholders held on June 7, 2018, filed April 25, 2018)#
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	Form of Indemnification Agreement for Directors (incorporated by reference to Exhibit 10.2 to the registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2017)#
10.5	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)#

Number	Description
10.6(a)	Form of Restricted Stock Unit Agreement for executive officers other than Richard M. McVey 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)#
10.6(b)	Form of Restricted Stock Unit Agreement (annual vesting) for Christopher R. Concannon 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 4, 2019)#
10.6(c)	Form of Restricted Stock Unit Agreement (cliff vesting) for Christopher R. Concannon 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 4, 2019)#
10.6(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)#
10.7(a)	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(b)	Form of Performance Share Award Agreement for Christopher R. Concannon 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 4, 2019)#
10.8(a)	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)#
10.8(b)	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)#
10.8(c)	Form of Incentive Stock Option Agreement for Christopher R. Concannon 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 4, 2019)#
10.9(a)	MarketAxess Holdings Inc. Severance Pay Plan, as amended (incorporated by reference to Exhibit 10.2 to the registrant's Current Report on Form 8-K dated January 6, 2017)#
10.9(b)	Form of Notice of Eligibility to Participate (incorporated by reference to Exhibit 10.3 to the registrant's Current Report on Form 8-K dated January 6, 2017)#
10.10(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)#
10.10(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)#
10.10(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)#
10.10(d)	Amendment to Richard M. McVey Employment Agreement, dated as of January 12, 2017, 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 6, 2017)#

Number	Description
10.10(e)	Second Amendment to Richard M. McVey Employment Agreement, dated as of November 6, 2018, 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 November 6, 2018)#
10.10(f)	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)#
10.10(g)	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(h)	Incentive Stock Option Agreement, dated as of November 8, 2018, 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 November 6, 2018)#
10.10(i)	Incentive Stock Option Agreement, dated as of November 8, 2018, 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 November 6, 2018)#
10.10(j)	Performance Award Agreement, dated as of November 8, 2018, by and between MarketAxess Holdings Inc. and Richard M. McVey (incorporated by reference to Exhibit 10.4 to the registrant's Current Report on Form 8-K dated November 6, 2018)#
10.10(k)	Performance Award Agreement, dated as of November 8, 2018, by and between MarketAxess Holdings Inc. and Richard M. McVey (incorporated by reference to Exhibit 10.5 to the registrant's Current Report on Form 8-K November 6, 2018)#
10.11(a)	Contract of Employment, dated March 15, 2017, between MarketAxess Europe Limited and Christophe Roupie (incorporated by reference to Exhibit 10.4 to the registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2017)#
10.11(b)	Restricted Stock Agreement Pursuant to the MarketAxess Holdings Inc. 2012 Incentive Plan, dated as of April 1, 2017, by and between MarketAxess Holdings, Inc. and Christophe Roupie (incorporated by reference to Exhibit 10.1 to the registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017)#†
10.11(c)	Amendment, dated as of August 14, 2017, to the Restricted Stock Agreement, dated April 1, 2017, between MarketAxess Holdings Inc. and Christophe Roupie (incorporated by reference to Exhibit 10.1 to the registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2017)#
10.12	Employment Letter Agreement, dated as of January 7, 2019, by and between MarketAxess Holdings Inc. and Christopher R. Concannon (incorporated by reference to Exhibit 10.1 to the registrant's Current Report on Form 8-K dated January 4, 2019)#
10.13	Form of Proprietary Information and Non-Competition Agreement for U.S. based Executive Officers (incorporated by reference to Exhibit 10.12 to the registrant's Annual Report on Form 10-K/A for the year ended December 31, 2017)
10.14(a)	Amended and 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)
10.14(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)

Number	Description
10.14(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)
10.14(d)	Omnibus Amendment, dated October 19, 2017, by and among MarketAxess Holdings Inc., the other loan parties party hereto, the lenders party hereto and JPMorgan Chase Bank, N.A. (incorporated by reference to Exhibit 10.1 to the registrant's Current Report on Form 8-K dated October 18, 2017)
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, 2018 and December 31, 2017; (ii) Consolidated Statements of Operations for the Years Ended December 31, 2018, 2017 and 2016; (iii) Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2018, 2017 and 2016; (iv) Consolidated Statement of Stockholders' Equity for the Years Ended December 31, 2018, 2017 and 2016; (v) Consolidated Statements of Cash Flows for the Years Ended December 31, 2018, 2017 and 2016; and (vi) Notes to the Consolidated Financial Statements.

\# Management contract or compensatory plan or arrangement.

† Certain portions of this exhibit have been omitted pursuant to a request for confidential treatment.

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 20, 2019

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 Richard M. McVey	Chief Executive Officer and Chairman of the Board of Directors (principal executive officer)	February 20, 2019
/s/ ANTONIO L. DELISE Antonio L. DeLise	Chief Financial Officer (principal financial and accounting officer)	February 20, 2019
/s/ CHRISTOPHER R. CONCANNON Christopher R. Concannon	Director, President and Chief Operating Officer	February 20, 2019
/s/ STEVEN L. BEGLEITER Steven L. Begleiter	Director	February 20, 2019
/s/ STEPHEN P. CASPER Stephen P. Casper	Director	February 20, 2019
/s/ JANE CHWICK Jane Chwick	Director	February 20, 2019
/s/ WILLIAM CRUGER William Cruger	Director	February 20, 2019
/s/ DAVID G. GOMACH David G. Gomach	Director	February 20, 2019
/s/ CARLOS M. HERNANDEZ Carlos M. Hernandez	Director	February 20, 2019
/s/ RICHARD G. KETCHUM Richard G. Ketchum	Director	February 20, 2019
/s/ EMILY PORTNEY Emily Portney	Director	February 20, 2019
/s/ JOHN STEINHARDT John Steinhardt	Director	February 20, 2019

Signature	Title(s)	Date
/s/ JAMES J. SULLIVAN James J. Sullivan	Director	February 20, 2019

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