UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended March 31, 2017

OR

☐ **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: 000-32651

Nasdaq, Inc.

(Exact name of registrant as specified in its charter)

Delaware **(State or Other Jurisdiction of Incorporation or Organization)**	**52-1165937** **(I.R.S. Employer Identification No.)**
One Liberty Plaza, New York, New York **(Address of Principal Executive Offices)**	**10006** **(Zip Code)**

Registrant's telephone number, including area code:
+1 212 401 8700

No changes
(Former name, former address and former fiscal year, if changed since last report)

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions 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	☐ (Do not check if a smaller reporting company)	Smaller reporting company	☐
Emerging growth company	☐		

If an emerging growth company, indicate 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 ☒

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

Class	Outstanding at May 2, 2017
Common Stock, $.01 par value per share	165,178,479 shares

Nasdaq, Inc.

Form 10-Q
For the Quarterly Period Ended March 31, 2017

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About This Form 10-Q

Throughout this Form 10-Q, unless otherwise specified:

- "Nasdaq," "we," "us" and "our" refer to Nasdaq, Inc.
- "Nasdaq Baltic" refers to collectively, Nasdaq Tallinn AS, Nasdaq Riga, AS, and AB Nasdaq Vilnius.
- "Nasdaq BX" refers to the cash equity exchange operated by NASDAQ BX, Inc.
- "Nasdaq BX Options" refers to the options exchange operated by NASDAQ BX, Inc.
- "Nasdaq Clearing" refers to the clearing operations conducted by Nasdaq Clearing AB.
- "Nasdaq ISE" refers to the options exchange operated by International Securities Exchange, LLC.
- "Nasdaq Nordic" refers to collectively, Nasdaq Clearing AB, Nasdaq Stockholm AB, Nasdaq Copenhagen A/S, Nasdaq Helsinki Ltd, and Nasdaq Iceland hf.
- "Nasdaq PHLX" refers to the options exchange operated by NASDAQ PHLX LLC.
- "Nasdaq PSX" refers to the cash equity exchange operated by NASDAQ PHLX LLC.
- "The Nasdaq Options Market" refers to the options exchange operated by The NASDAQ Stock Market LLC.
- "The Nasdaq Stock Market" refers to the cash equity exchange operated by The NASDAQ Stock Market LLC.

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Nasdaq also provides the following list of abbreviations and acronyms as a tool for the reader that are used throughout this Quarterly Report on Form 10-Q.

401(k) Plan: Voluntary Defined Contribution Savings Plan

2014 Credit Facility: $750 million senior unsecured revolving credit commitment which matures on November 25, 2019

2016 Credit Facility: $400 million senior unsecured term loan facility which matures on November 25, 2019

2018 Notes: $370 million aggregate principal amount of 5.25% senior unsecured notes due January 16, 2018

2020 Notes: $600 million aggregate principal amount of 5.55% senior unsecured notes due January 15, 2020

2021 Notes: €600 million aggregate principal amount of 3.875% senior unsecured notes due June 7, 2021

2023 Notes: €600 million aggregate principal amount of 1.75% senior unsecured notes due May 19, 2023

2024 Notes: $500 million aggregate principal amount of 4.25% senior unsecured notes due June 1, 2024

2026 Notes: $500 million aggregate principal amount of 3.85% senior unsecured notes due June 30, 2026

ASU: Accounting Standards Update

BWise: BWise Beheer B.V. and its subsidiaries

CCP: Central Counterparty

EMIR: European Market Infrastructure Regulation

Equity Plan: Nasdaq Equity Incentive Plan

ESPP: Nasdaq Employee Stock Purchase Plan

ETP: Exchange Traded Product

Exchange Act: Securities Exchange Act of 1934, as amended

FASB: Financial Accounting Standards Board

FICC: Fixed Income and Commodities Trading and Clearing

FINRA: Financial Industry Regulatory Authority

IPO: Initial Public Offering

ISE: U.S. Exchange Holdings, Inc. and its subsidiaries

LIBOR: London Interbank Offered Rate

MTF: Multilateral Trading Facility

NFX: Nasdaq Futures, Inc.

NPM: The Nasdaq Private Market, LLC

NSCC: National Securities Clearing Corporation

OCC: The Options Clearing Corporation

OTC: Over-the-Counter

PSU: Performance Share Unit

SEC: U.S. Securities and Exchange Commission

SERP: Supplemental Executive Retirement Plan

SFSA: Swedish Financial Supervisory Authority

S&P: Standard & Poor's

S&P 500: S&P 500 Stock Index

TSR: Total Shareholder Return

U.S. GAAP: U.S. Generally Accepted Accounting Principles

VAT: Value Added Tax

* * * * * *

The following is a non-exclusive list of registered trademarks, registered service marks, or trademarks or service marks of Nasdaq or its subsidiaries, in the United States and/or other countries or jurisdictions:

@TRADE®, ACES, AT-TRADE®, AGGREGATION, TRANSPARENCY, CONTROL®, AUTO WORKUP®, AXE®, BOARDVANTAGE, BWISE®, BWISE BUSINESS IN CONTROL®, BWISE RAPID DEPLOYMENT SOLUTION®, BX VENTURE MARKET®, CANADIAN DIVIDEND ACHIEVERS®, CCBN®, CCN®, CCN NEWSNET DESIGN, CCNMATTHEWS®, CLICK XT®, CONDICO®, CYBER SECURITY®, D.A.L.I®, DATAXPRESS®, DEFENSE OF INTERNATIONAL MARKETS AND EXCHANGES SYMPOSIUM®, DIMES®, DIRECTORS DESK®, DIRECTORSDESK®, DIVIDEND ACHIEVERS®, DORSEY WRIGHT®, DREAM IT. DO IT.®, DWA®, DWA MATRIX®, DX®, EQQQ, E (design), E-SPEED®, ESPEED®, ESPEEDOMETER®, EXACTEQUITY®, EXIGO, FINQLOUD®, FINQLOUD REGULATORY RECORDS RETENTION® FIRST NORTH®, FONDSBØRSEN®, FTEN®, GENIUM®, GIDS®, GLOBE NEWSWIRE®, GO! POWERED BY MARKETWIRE®, HACK®, IGNITE YOUR AMBITION®, INET®, INVESTOR WORLD®, IPOWORLD®, ISE BIG DATA®, ISE MOBILE PAYMENTS® ISSUERWORLD®, ITCH®, KFXAKTIEINDEX®, LIQUIDITYXPRESS®, LONGITUDE®, MARKET INTELLIGENCE DESK®, MARKET LINQUIDITY,MARKET MECHANICS®, MARKETSITE®, MARKETWIRE BEYOND WORDS®, MARKETWIRE RESONATE®, MARKETWIRE®, MARKETWIRE GO! ®, MARKETWIRED RESONATE®, MARKETWIRED®, MW®, MW MARKET WIRED®, MW MARKETWIRED THE POWER OF INFLUENCE®, MY CCBN®, MYMEDIAINFO®, NASDAQ®, NASDAQ 100 INDEX®, NASDAQ - FINANCIAL®, NASDAQ BIOTECHNOLOGY INDEX®, NASDAQ CANADA®, NASDAQ CANADA COMPOSITE INDEX®, NASDAQ CANADA INDEX®, NASDAQ CAPITAL MARKET®, NASDAQ COMPOSITE®, NASDAQ COMPOSITE INDEX®, NASDAQ COMPUTER INDEX®, NASDAQ DIVIDEND ACHIEVERS®, NASDAQ DUBAI®, NASDAQ EUROPE®, NASDAQ EUROPE COMPOSITE INDEX®, NASDAQ FINANCIAL-100 INDEX®, NASDAQ FX®, NASDAQ GLOBAL MARKET®, NASDAQ GLOBAL SELECT MARKET®, NASDAQ INDUSTRIAL INDEX®, NASDAQ INTERACT®, NASDAQ INTERNET INDEX®, NASDAQ IQ FUND®, NASDAQ IR INSIGHT®, NASDAQ JAPAN®, NASDAQ MARKET ANALYTIX®, NASDAQ MARKET CENTER®, NASDAQ MARKET FORCES®, NASDAQ MARKET VELOCITY®, NASDAQ MARKETSITE®, NASDAQ MAX®, NASDAQ MAX MARKET ANALYTIX®, NASDAQ NATIONAL MARKET®, NASDAQ OMX®, NASDAQ OMX ALPHA INDEXES®, NASDAQ OMX GREEN ECONOMY INDEX®, NASDAQ OMX NORDIC®, NASDAQ PRIVATE MARKET®, NASDAQ Q-50 INDEX®, NASDAQ TELECOMMUNICATIONS INDEX®, NASDAQ TOTALVIEW®, NASDAQ TRADER®, NASDAQ TRANSPORTATION INDEX®, NASDAQ US ALL MARKET®, NASDAQ WORKSTATION®, NASDAQ WORKSTATION II®, NASDAQ WORLD®, NASDAQ-100®, NASDAQ-100 EUROPEANFUND®, NASDAQ-100 EUROPEAN TRACKER®, NASDAQ-100 EUROPEAN TRACKER FUND®, NASDAQ-100 INDEX®, NASDAQ-100 INDEX EUROPEAN TRACKER FUND®, NASDAQ-100 INDEX TRACKING STOCK®, NDX®, NEWS RELEASE EXPRESS®, NFX WORLD CURRENCY FUTURES®, NLX®, NOIS®, NORDIX®, OMX COPENHAGEN 20®, OMX HELSINKI 25®, OMX STIBOR FUTURE®, OMX STOCKHOLM 30®, OMXH25®, OMXS30®, OMXS3FUT®, OMX TECHNOLOGY®, ON THE WIRE®, OTW®, OVERUNDER®, PHILADELPHIA STOCK EXCHANGE®, PHLX®, PHLX XL®, PIXL®, PRECISE TRADE®, PRF®, Q THE NEXT GREAT THING®, QQQ®, QTARGET®, QVIEW®, R3®, RISKWAY®, RISKWRAPPER®, RISKXPOSURE®, RX®, S.A.X.E.S®, SECONDMARKET®, SECONDMARKET ECOSYSTEM®, SIDECAR®, SIGNALXPRESS®, SMARTS®, SMARTSONLINE®, STINA®, STRUCTURED LIQUIDITY PROGRAM®, THE NASDAQ STOCK MARKET®, THE STOCK MARKET FOR THE NEXT 100 YEARS®, TOTAL EQUITY SOLUTION®, TRADEGUARD®, TX®, ULL®, ULTRA LOW LATENCY®, ULTRAFEED®, VX PROXY®, WIZER®, XDE®, XO DORSEY WRIGHT & ASSOCIATES®, YFIRUNDIR®, YLIALLE®, ÖVERUNDER®

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All other trademarks and service marks used herein are the property of their respective owners.

This Quarterly Report on Form 10-Q includes market share and industry data that we obtained from industry publications and surveys, reports of governmental agencies and internal company surveys. Industry publications and surveys generally state that the information they contain has been obtained from sources believed to be reliable, but we cannot assure you that this information is accurate or complete. We have not independently verified any of the data from third-party sources nor have we ascertained the underlying economic assumptions relied upon therein. Statements as to our market position are based on the most currently available market data. For market comparison purposes, The Nasdaq Stock Market data in this Quarterly Report on Form 10-Q for IPOs is based on data generated internally by us, which includes best efforts underwritings; therefore, the data may not be comparable to other publicly-available IPO data. Data in this Quarterly Report on Form 10-Q for new listings of equity securities on The Nasdaq Stock Market is based on data generated internally by us, which includes best efforts underwritings, issuers that switched from other listing venues, closed-end funds and ETPs. Data in this Quarterly Report on Form 10-Q for IPOs and new listings of equity securities on the Nasdaq Nordic and Nasdaq Baltic exchanges also is based on data generated internally by us. IPOs and new listings data is presented as of period end. While we are not aware of any misstatements regarding industry data presented herein, our estimates involve risks and uncertainties and are subject to change based on various factors. We refer you to the “Risk Factors” section in this Quarterly Report on Form 10-Q for the quarter ended March 31, 2017, and the “Risk Factors” section in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016 that was filed with the SEC on March 1, 2017.

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Nasdaq intends to use its website, ir.nasdaq.com, as a means for disclosing material non-public information and for complying with SEC Regulation FD and other disclosure obligations. These disclosures will be included on Nasdaq’s website under “Investor Relations.”

Forward-Looking Statements

The SEC encourages companies to disclose forward-looking information so that investors can better understand a company's future prospects and make informed investment decisions. This Quarterly Report on Form 10-Q contains these types of statements. Words such as "may," "will," "could," "should," "anticipates," "envisions," "estimates," "expects," "projects," "intends," "plans," "believes" and words or terms of similar substance used in connection with any discussion of future expectations as to industry and regulatory developments or business initiatives and strategies, future operating results or financial performance, and other future developments identify forward-looking statements. These include, among others, statements relating to:

- *our 2017 outlook;*
- *the integration of acquired businesses, including accounting decisions relating thereto;*
- *the scope, nature or impact of acquisitions, divestitures, investments, joint ventures or other transactional activities;*
- *the effective dates for, and expected benefits of, ongoing initiatives, including transactional activities and other strategic, restructuring, technology, de-leveraging and capital return initiatives;*
- *our products, order backlog and services;*
- *the impact of pricing changes;*
- *tax matters;*
- *the cost and availability of liquidity and capital; and*
- *any litigation, or any regulatory or government investigation or action, to which we are or could become a party.*

Forward-looking statements involve risks and uncertainties. Factors that could cause actual results to differ materially from those contemplated by the forward-looking statements include, among others, the following:

- *our operating results may be lower than expected;*
- *our ability to successfully integrate acquired businesses, including the fact that such integration may be more difficult, time consuming or costly than expected, and our ability to realize synergies from business combinations and acquisitions;*
- *loss of significant trading and clearing volumes or values, fees, market share, listed companies, data products customers or other customers;*
- *our ability to keep up with rapid technological advances and adequately address cybersecurity risks;*
- *economic, political and market conditions and fluctuations, including interest rate and foreign currency risk, inherent in U.S. and international operations;*
- *the performance and reliability of our technology and technology of third parties;*
- *our ability to continue to generate cash and manage our indebtedness; and*
- *adverse changes that may occur in the litigation or regulatory areas, or in the securities markets generally.*

Most of these factors are difficult to predict accurately and are generally beyond our control. You should consider the uncertainty and any risk related to forward-looking statements that we make. These risk factors are discussed under the caption "Part II. Item 1A. Risk Factors," in this Quarterly Report on Form 10-Q for the quarter ended March 31, 2017 and more fully described in the "Risk Factors" section in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016 that was filed with the SEC on March 1, 2017. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this report. You should carefully read this entire Quarterly Report on Form 10-Q, including "Part 1. Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations," and the condensed consolidated financial statements and the related notes. Except as required by the federal securities laws, we undertake no obligation to update any forward-looking statement, release publicly any revisions to any forward-looking statements or report the occurrence of unanticipated events. For any forward-looking statements contained in any document, we claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995.

PART 1 - FINANCIAL INFORMATION
Item 1. Financial Statements.
Nasdaq, Inc.
Condensed Consolidated Balance Sheets
(in millions, except share and par value amounts)

	March 31, 2017	December 31, 2016
	(unaudited)	
Assets		
Current assets:		
Cash and cash equivalents	$ 386	$ 403
Restricted cash	78	15
Financial investments, at fair value	220	245
Receivables, net	467	429
Default funds and margin deposits	3,633	3,301
Other current assets	163	167
Total current assets	4,947	4,560
Property and equipment, net	376	362
Deferred tax assets	617	717
Goodwill	6,070	6,027
Intangible assets, net	2,082	2,094
Other non-current assets	398	390
Total assets	$ 14,490	$ 14,150
Liabilities		
Current liabilities:		
Accounts payable and accrued expenses	$ 187	$ 175
Section 31 fees payable to SEC	81	108
Accrued personnel costs	110	207
Deferred revenue	322	162
Other current liabilities	174	129
Default funds and margin deposits	3,633	3,301
Current portion of debt obligations	379	—
Total current liabilities	4,886	4,082
Debt obligations	3,242	3,603
Deferred tax liabilities	702	720
Non-current deferred revenue	164	171
Other non-current liabilities	144	144
Total liabilities	9,138	8,720
Commitments and contingencies		
Equity		
Nasdaq stockholders' equity:		
Common stock, $0.01 par value, 300,000,000 shares authorized, shares issued: 169,760,142 at March 31, 2017 and 170,501,186 at December 31, 2016; shares outstanding: 165,168,584, at March 31, 2017 and 166,579,468 at December 31, 2016	2	2
Additional paid-in capital	2,963	3,104
Common stock in treasury, at cost: 4,591,558, shares at March 31, 2017 and 3,921,718 shares at December 31, 2016	(221)	(176)
Accumulated other comprehensive loss	(987)	(979)
Retained earnings	3,595	3,479
Total Nasdaq stockholders' equity	5,352	5,430
Total liabilities and equity	$ 14,490	$ 14,150

See accompanying notes to condensed consolidated financial statements.

Nasdaq, Inc.
Condensed Consolidated Statements of Income
(Unaudited)
(in millions, except per share amounts)

	Three Months Ended March 31,	
	2017	2016
Revenues:		
Market Services	$ 606	$ 572
Corporate Services	160	143
Information Services	138	133
Market Technology	67	57
Total revenues	971	905
Transaction-based expenses:		
Transaction rebates	(301)	(283)
Brokerage, clearance and exchange fees	(87)	(88)
Revenues less transaction-based expenses	583	534
Operating expenses:		
Compensation and benefits	161	152
Professional and contract services	36	35
Computer operations and data communications	30	25
Occupancy	23	20
General, administrative and other	19	14
Marketing and advertising	7	6
Depreciation and amortization	45	38
Regulatory	8	7
Merger and strategic initiatives	6	9
Restructuring charges	—	9
Total operating expenses	335	315
Operating income	248	219
Interest income	2	1
Interest expense	(37)	(28)
Other investment income	—	1
Net income from unconsolidated investees	4	2
Income before income taxes	217	195
Income tax provision	48	63
Net income attributable to Nasdaq	$ 169	$ 132
Per share information:		
Basic earnings per share	$ 1.02	$ 0.80
Diluted earnings per share	$ 0.99	$ 0.78
Cash dividends declared per common share	$ 0.32	$ 0.57

See accompanying notes to condensed consolidated financial statements.

Nasdaq, Inc.
Condensed Consolidated Statements of Comprehensive Income
(Unaudited)
(in millions)

	Three Months Ended March 31,	
	2017	2016
Net income	$ 169	$ 132
Other comprehensive income (loss):		
Foreign currency translation gain (loss):		
Net foreign currency translation gain	42	138
Income tax expense	(50)	(44)
Total other comprehensive income (loss), net of tax	(8)	94
Comprehensive income attributable to Nasdaq	$ 161	$ 226

See accompanying notes to condensed consolidated financial statements.

Nasdaq, Inc.
Condensed Consolidated Statements of Cash Flows
(Unaudited)
(in millions)

	Three Months Ended March 31,	
	2017	**2016**
Cash flows from operating activities:		
Net income	$ 169	$ 132
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	45	38
Share-based compensation	15	16
Deferred income taxes	29	2
Net income from unconsolidated investees	(4)	(2)
Other reconciling items included in net income	7	4
Net change in operating assets and liabilities, net of effects of acquisitions:		
Receivables, net	(38)	(5)
Other assets	4	(2)
Accounts payable and accrued expenses	12	14
Section 31 fees payable to SEC	(27)	(18)
Accrued personnel costs	(98)	(89)
Deferred revenue	149	147
Other liabilities	(19)	18
Net cash provided by operating activities	244	255
Cash flows from investing activities:		
Purchases of trading securities	(93)	(144)
Proceeds from sales and redemptions of trading securities	120	94
Purchases of available-for-sale investment securities	(5)	(5)
Proceeds from maturities of available-for-sale investment securities	6	7
Acquisition of businesses, net of cash and cash equivalents acquired	—	(213)
Purchases of property and equipment	(36)	(23)
Other investment activities	—	(10)
Net cash used in investing activities	(8)	(294)
Cash flows from financing activities:		
Payments of debt obligations	—	(555)
Proceeds from utilization of credit commitment	—	325
Proceeds from issuances of senior unsecured notes and term loan facility	—	399
Cash paid for repurchase of common stock	(156)	(29)
Cash dividends	(53)	(41)
Proceeds received from employee stock activity	1	1
Payments related to employee shares withheld for taxes	(47)	(34)
Proceeds (disbursements) of customer funds	63	(38)
Net cash (used in) provided by financing activities	(192)	28
Effect of exchange rate changes on cash and cash equivalents and restricted cash	2	6
Net increase (decrease) in cash and cash equivalents and restricted cash	46	(5)
Cash and cash equivalents and restricted cash at beginning of period	418	357
Cash and cash equivalents and restricted cash at end of period	$ 464	$ 352
Supplemental Disclosure Cash Flow Information		
Cash paid for:		
Interest	$ 29	$ 28
Income taxes, net of refund	$ 26	$ 35

See accompanying notes to condensed consolidated financial statements.

Nasdaq, Inc.

Notes to Condensed Consolidated Financial Statements (unaudited)

1. Organization and Nature of Operations

Nasdaq, Inc. is a leading provider of trading, clearing, exchange technology, regulatory, securities listing, information and public company services. Our global offerings are diverse and include trading and clearing across multiple asset classes, trade management services, data products, financial indexes, capital formation solutions, corporate solutions, and market technology products and services. Our technology powers markets across the globe, supporting equity derivative trading, clearing and settlement, cash equity trading, fixed income trading and many other functions.

We manage, operate and provide our products and services in four business segments: Market Services, Corporate Services, Information Services and Market Technology.

Market Services

Our Market Services segment includes our Equity Derivative Trading and Clearing, Cash Equity Trading, FICC, and Trade Management Services businesses. We operate multiple exchanges and other marketplace facilities across several asset classes, including derivatives, commodities, cash equity, debt, structured products and ETPs. In addition, in some countries where we operate exchanges, we also provide broker services, clearing, settlement and central depository services. Our transaction-based platforms provide market participants with the ability to access, process, display and integrate orders and quotes. The platforms allow the routing and execution of buy and sell orders as well as the reporting of transactions, providing fee-based revenues.

In the U.S., we operate six electronic options exchanges and three cash equity exchanges. The Nasdaq Stock Market, the largest of our cash equities exchanges, is the largest single venue of liquidity for trading U.S.-listed cash equities. We also operate an electronic platform for trading of U.S. Treasuries and NFX, a U.S. based energy derivatives market which offers cash settled energy derivatives based on key energy benchmarks including oil, natural gas and U.S. power. In addition, we also operate three Canadian markets for the trading of Canadian-listed securities.

In Europe, we operate exchanges in Stockholm (Sweden), Copenhagen (Denmark), Helsinki (Finland), and Reykjavik (Iceland), as well as the clearing operations of Nasdaq Clearing. We also operate exchanges in Tallinn (Estonia), Riga (Latvia) and Vilnius (Lithuania) as Nasdaq Baltic. Collectively, Nasdaq Nordic and Nasdaq Baltic offer trading in cash equities and depository receipts, warrants, convertibles, rights, fund units and exchange traded funds as well as trading and clearing of derivatives and clearing of resale and repurchase agreements.

Nasdaq Commodities is the brand name for Nasdaq's worldwide suite of commodity-related products and services. Nasdaq Commodities' offerings include oil, power, natural gas and carbon emission markets, tanker and dry cargo freight, seafood derivatives, iron ore, electricity certificates and clearing services. The products are listed on two of Nasdaq's derivatives exchanges, Nasdaq Oslo ASA and NFX.

Through our Trade Management Services business, we provide market participants with a wide variety of alternatives for connecting to and accessing our markets via a number of different protocols used for quoting, order entry, trade reporting, DROP functionality and connectivity to various data feeds. We also provide co-location services to market participants, whereby firms may lease cabinet space and power to house their own equipment and servers within our data centers. Our broker services operations offer technology and customized securities administration solutions to financial participants in the Nordic market.

Corporate Services

Our Corporate Services segment includes our Corporate Solutions and Listing Services businesses.

Our Corporate Solutions business serves corporate clients, including companies listed on our exchanges and private companies. We help organizations manage the two-way flow of information with their key constituents, including their board members and investors, and with clients and the public through our suite of advanced technology, analytics, and consultative services. Our Corporate Solutions business primarily offers products to serve the following key areas: IR intelligence, public relations, board and leadership, and digital media services.

Our Listing Services business includes our U.S. and European Listing Services businesses. We operate a variety of listing platforms around the world to provide multiple global capital raising solutions for private and public companies. Our main listing markets are The Nasdaq Stock Market and the Nasdaq Nordic and Nasdaq Baltic exchanges. Through Nasdaq First North, our Nordic and Baltic operations also offer alternative marketplaces for smaller companies and growth companies. Our Listing Services business also includes NPM, which provides services for private companies.

As of March 31, 2017, there were 2,890 total listings on The Nasdaq Stock Market, including 332 separately listed ETPs. The combined market capitalization was approximately $9.7 trillion. In Europe, the Nasdaq Nordic and Nasdaq Baltic exchanges, together with Nasdaq First North, were home to 910 listed companies with a combined market capitalization of approximately $1.3 trillion.

Information Services

Our Information Services segment includes our Data Products and our Index Licensing and Services businesses. Our Data Products business sells and distributes historical and real-time quote and trade information to market participants and data distributors. Our data products enhance transparency of the market activity within the exchanges that we operate and provide critical information to professional and non-professional investors globally.

Our Index Licensing and Services business develops and licenses Nasdaq branded indexes, associated derivatives, and financial products and also provides custom calculation services for third-party clients. As of March 31, 2017, we had 306 ETPs licensed to Nasdaq's indexes which had over $138 billion of assets under management.

Market Technology

Our Market Technology segment is a leading global technology solutions provider and partner to exchanges, clearing organizations, central securities depositories, regulators, banks, brokers and corporate businesses. Our Market Technology business is the sales channel for our complete global offering to other marketplaces.

Market Technology provides technology solutions for trading, clearing, settlement, surveillance and information dissemination to markets with wide-ranging requirements, from the leading markets in the U.S., Europe and Asia to emerging markets in the Middle East, Latin America, and Africa. Our marketplace solutions can handle a wide array of assets, including cash equities, equity derivatives, currencies, various interest-bearing securities, commodities and energy products, and are currently powering more than 89 marketplaces in 50 countries. Market Technology also provides market surveillance services to broker-dealer firms worldwide, as well as enterprise governance, risk management and compliance software solutions.

2. Basis of Presentation and Principles of Consolidation

The condensed consolidated financial statements are prepared in accordance with U.S. GAAP and include the accounts of Nasdaq, its wholly-owned subsidiaries and other entities in which Nasdaq has a controlling financial interest. When we do not have a controlling interest in an entity but exercise significant influence over the entity's operating and financial policies, such investment is accounted for under the equity method of accounting. We recognize our share of earnings or losses of an equity method investee based on our ownership percentage. See "Equity Method Investments," of Note 6, "Investments," for further discussion of our equity method investments.

The accompanying condensed consolidated financial statements reflect all adjustments which are, in the opinion of management, necessary for a fair statement of the results for the interim periods presented. These adjustments are of a normal recurring nature. All significant intercompany accounts and transactions have been eliminated in consolidation.

As permitted under U.S. GAAP, certain footnotes or other financial information can be condensed or omitted in the interim condensed consolidated financial statements. The information included in this Quarterly Report on Form 10-Q should be read in conjunction with the consolidated financial statements and accompanying notes included in Nasdaq's Annual Report on Form 10-K for the fiscal year ended December 31, 2016.

Certain prior year amounts have been reclassified to conform to the current year presentation.

The preparation of condensed consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts and the disclosure of contingent amounts in the condensed consolidated financial statements and accompanying notes. Actual results could differ from those estimates.

Subsequent Events

We have evaluated subsequent events through the issuance date of this Quarterly Report on Form 10-Q. See Note 17, "Subsequent Events," for further discussion.

Tax Matters

We use the asset and liability method to determine income taxes on all transactions recorded in the condensed consolidated financial statements. Deferred tax assets and liabilities are determined based on differences between the financial statement carrying amounts and the tax basis of existing assets and liabilities (i.e., temporary differences) and are measured at the enacted rates that will be in effect when these differences are realized. If necessary, a valuation allowance is established to reduce deferred tax assets to the amount that is more likely than not to be realized.

In order to recognize and measure our unrecognized tax benefits, management determines whether a tax position is more likely than not to be sustained upon examination, including resolution of any related appeals or litigation processes, based on the technical merits of the position. Once it is determined that a position meets the recognition thresholds, the position is measured to determine the amount of benefit to be recognized in the condensed consolidated financial statements. Interest and/or penalties related to income tax matters are recognized in income tax expense.

The following table shows our income tax provision and effective tax rates:

	Three Months Ended March 31,		Percentage Change
	2017	2016	2017 vs. 2016
	($ in millions)		
Income tax provision	$ 48	$ 63	(23.8)%
Effective tax rate	22.1%	32.3%	(10.2)%

The lower income tax provision and effective tax rate in the first quarter of 2017 when compared with the first quarter of 2016 is primarily due to the recognition of excess tax benefits associated with the vesting of employee shared-based compensation arrangements. See "Recently Adopted Accounting Pronouncements" below for further discussion. The lower income tax provision in the first quarter of 2017 is partially offset by an increase in income tax expense associated with the increase in income before taxes in the first quarter of 2017.

The effective tax rate may vary from period to period depending on, among other factors, the geographic and business mix of earnings and losses. These same and other factors, including history of pre-tax earnings and losses, are taken into account in assessing the ability to realize deferred tax assets.

Nasdaq and its eligible subsidiaries file a consolidated U.S. federal income tax return and applicable state and local income tax returns and non-U.S. income tax returns. Federal income tax returns for the years 2011 through 2015 are subject to examination by the Internal Revenue Service. Several state tax returns are currently under examination by the respective tax authorities for the years 2005 through 2014 and we are subject to examination for the year 2015. Non-U.S. tax returns are subject to examination by the respective tax authorities for the years 2008 through 2015. Although the results of such examinations may have an impact on our unrecognized tax benefits, we do not anticipate that such impact will be material to our consolidated financial position or results of operations. In addition, we anticipate that the amount of unrecognized tax benefits at March 31, 2017 will significantly decrease in the next twelve months as we expect to settle certain tax audits.

From 2009 through 2012, we recorded tax benefits associated with certain interest expense incurred in Sweden. Our position is supported by a 2011 ruling we received from the Swedish Supreme Administrative Court. However, under new legislation effective January 1, 2013, limitations are imposed on certain forms of interest expense. Because this legislation is unclear with regard to our ability to continue to claim such interest deductions, Nasdaq filed an application for an advance tax ruling with the Swedish Tax Council for Advance Tax Rulings. In June 2014, we received an unfavorable ruling from the Swedish Tax Council for Advance Tax Rulings. We appealed this ruling to the Swedish Supreme Administrative Court; however the Swedish Supreme Administrative Court denied our request for a ruling based on procedural requirements. In the third quarter of 2015, we received a notice from the Swedish Tax Agency that interest deductions for the year 2013 have been disallowed. In October 2016, we received a notice from the Swedish Tax Agency that interest deductions for the year 2014 have been disallowed. We have appealed to the Swedish Lower Administrative Court and continue to expect a favorable decision. Since January 1, 2013, we have recorded tax benefits of $51 million associated with this matter. We continue to pay all assessments from the Swedish Tax Agency while this matter is pending. If the Swedish Courts agree with our position we will receive a refund of all paid assessments; if the Swedish Courts disagree with our position, we will record tax expense of $40 million, or $0.24 per diluted share, which is gross of any related U.S. tax benefits and reflects the impact of foreign currency translation. We expect to record recurring quarterly tax benefits of $1 million to $2 million with respect to this matter for the foreseeable future.

Although no new U.S. tax legislation has been enacted, we are currently assessing the impact various tax reform proposals will have on our condensed consolidated financial statements.

Other Tax Matter

In December 2012, the Swedish Tax Agency approved our 2010 amended VAT tax return and we received a cash refund for the amount claimed. In 2013, we filed amended VAT tax returns for 2011 and 2012 and utilized the same approach which was approved for the 2010 filing. We also utilized this approach in our 2013 and 2014 filings. However, even though the VAT return position was previously reviewed and approved by the Swedish Tax Agency, the Swedish Tax Agency challenged our approach. The revised position of the Swedish Tax Agency was upheld by the Lower Administrative Court in 2015. As a result, in 2015, we reversed the previously recorded benefit of $12 million, based on the court decision. We had appealed the ruling of the Lower Administrative Court; however, our appeal was denied. There was no further impact to our consolidated statements of income.

Recently Adopted Accounting Pronouncements

Accounting Standard	Description	Effective Date	Effect on the Financial Statements or Other Significant Matters
Compensation - Stock Compensation In March 2016, the FASB issued ASU 2016-09, "Improvements to Employee Share-Based Payment Accounting."	This ASU involves several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. This guidance requires all income tax effects of awards to be recognized as income tax expense or benefit in the income statement when the awards vest or are settled, as opposed to additional paid-in-capital where it was previously recorded. This guidance impacts the calculation of our total diluted share count for the earnings per share calculation, as calculated under the treasury stock method. It also allows an employer to repurchase more of an employee's shares for tax withholding purposes without triggering liability accounting. All tax-related cash flows resulting from share-based payments are reported as operating activities on the statement of cash flows. In regards to forfeitures, a policy election is required to either estimate the number of awards that are expected to vest or account for forfeitures as they occur.	We adopted this new standard on January 1, 2017 on a prospective basis for the impacts on the accounting for income taxes and the effect on earnings per share. We have adopted the changes in cash flow statement classification retrospectively.	See discussion below.

Compensation - Stock Compensation

Accounting for Income Taxes

Under the previous guidance, excess tax benefits and certain tax deficiencies from share-based compensation arrangements were recorded to additional paid-in-capital within stockholders' equity when the awards were vested or settled. The new guidance requires that all excess tax benefits and all tax deficiencies be recognized as income tax expense or benefit in the consolidated statements of income with a prospective adoption. The adoption resulted in the recognition of excess tax benefit in our provision for income taxes rather than additional paid-in capital of $23 million during the first quarter of 2017.

Effect on the Calculation of Earnings Per Share

The new guidance also requires excess tax benefits to be prospectively excluded from assumed future proceeds when applying the treasury stock method to share-based payment awards to determine the dilutive effect on earnings per share. The change resulted in an increase in our diluted weighted-average number of common shares of 834,311 and added $0.13 to our first quarter 2017 diluted EPS.

Classification of Excess Tax Benefits in the Statements of Cash Flows

Under the new guidance, excess tax benefits from share-based compensation arrangements are classified as cash flows from operations, rather than as an inflow within financing activities and an outflow within operating activities. We have elected to apply this cash flow classification guidance retrospectively. The retrospective impact on the Consolidated Statements of Cash Flows for the three months ended March 31, 2016 was an increase to cash provided by operating activities of $2 million, and a decrease to cash provided by financing activities of $2 million.

Accounting for Forfeitures

Under the new guidance, we can elect to account for forfeitures of share-based payments by recognizing forfeitures of awards as they occur or by estimating the number of awards expected to be forfeited and adjusting the estimate when it is no longer probable that the employee will fulfill the service condition. We have elected to estimate the number of awards expected to be forfeited, which is consistent with our current accounting policy. For awards with performance conditions we will continue to assess the probability that a performance condition will be achieved at each reporting period to determine whether and when to recognize compensation cost as this is unchanged by the new guidance.

Recently Issued Accounting Pronouncements

Accounting Standard	Description	Effective Date	Effect on the Financial Statements or Other Significant Matters
Business Combination In January 2017, the FASB issued ASU 2017-01, "Clarifying the Definition of a Business."	This ASU clarifies the definition of a business with the objective of adding guidance to assist companies with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The new guidance is expected to reduce the number of transactions that need to be further evaluated as businesses. Early adoption is permitted for certain types of transactions.	January 1, 2018, with early adoption permitted.	This new standard is required to be applied prospectively and therefore, may impact how we account for future acquisitions.
Goodwill In January 2017, the FASB issued ASU 2017-04, "Simplifying the Test for Goodwill Impairment."	This ASU simplifies how an entity is required to test goodwill for impairment and removes the second step of the goodwill impairment test, which required a hypothetical purchase price allocation if the fair value of a reporting unit is less than its carrying amount. Goodwill impairment will now be measured using the difference between the carrying amount and the fair value of the reporting unit and the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. The amendments in this ASU should be applied on a prospective basis. Early adoption is permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017.	January 1, 2020, with early adoption as of January 1, 2017 permitted.	We do not anticipate a material impact on our consolidated financial statements at the time of adoption of this new standard as the carrying amounts of our reporting units have been less than their corresponding fair values in recent years. Therefore, the second step of the goodwill impairment test was not required. However, changes in future projections, market conditions and other factors may cause a change in the excess of fair value of our reporting units over their corresponding carrying amounts.
Financial Instruments - Credit Losses In June 2016, the FASB issued ASU 2016-13, "Measurement of Credit Losses on Financial Instruments."	This ASU changes the impairment model for certain financial instruments. The new model is a forward looking expected loss model and will apply to financial assets subject to credit losses and measured at amortized cost and certain off-balance sheet credit exposures. This includes loans, held-to-maturity debt securities, loan commitments, financial guarantees and net investments in leases, as well as trade receivables. For available-for-sale debt securities with unrealized losses, credit losses will be measured in a manner similar to today, except that the losses will be recognized as allowances rather than reductions in the amortized cost of the securities.	January 1, 2020, with early adoption as of January 1, 2019 permitted.	We are currently assessing the impact that this standard will have on our consolidated financial statements.
Leases In February 2016, the FASB issued ASU 2016-02, "Leases."	Under this ASU, at the commencement date, lessees will be required to recognize a lease liability, which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis; and a right-of-use asset, which is an asset that represents the lessee's right to use, or control the use of, a specified asset for the lease term. This guidance is not applicable for leases with a term of 12 months or less. Lessor accounting is largely unchanged.	January 1, 2019, with early adoption permitted.	We are currently assessing the impact that this standard will have on our consolidated financial statements.

Accounting Standard	Description	Effective Date	Effect on the Financial Statements or Other Significant Matters
Financial Instruments - Overall In January 2016, the FASB issued ASU 2016-01, “Recognition and Measurement of Financial Assets and Financial Liabilities.”	This ASU requires that most equity investments be measured at fair value, with subsequent changes in fair value recognized in net income. Under this new guidance, Nasdaq will no longer be able to recognize unrealized holding gains and losses on equity securities classified today as available-for-sale in accumulated other comprehensive income within stockholders’ equity. This new standard does not change the guidance for classifying and measuring investments in debt securities and loans. This new guidance also impacts financial liabilities accounted for under the fair value option and affects the presentation and disclosure requirements for financial assets and liabilities.	January 1, 2018. Early adoption is not permitted.	As we do not have a significant investment in financial instruments impacted by this standard, we do not anticipate a material impact on our consolidated financial statements at the time of adoption of this new standard.
Revenue From Contracts With Customers In May 2014, the FASB issued ASU 2014-09, “Revenue from Contracts with Customers (Topic 606),” which supersedes the revenue recognition guidance in Accounting Standards Codification, “Revenue Recognition.”	The new revenue recognition standard sets forth a five-step revenue recognition model to determine when and how revenue is recognized. The core principle of the guidance is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration it expects to receive in exchange for those goods or services. The standard also requires more detailed disclosures. The standard provides alternative methods of initial adoption.	January 1, 2018, with early adoption permitted.	See discussion below.

Revenue From Contracts With Customers

We are currently assessing the materiality of the expected impact that the adoption of Topic 606 will have on our consolidated financial statements. We reviewed customer contracts for all of our businesses and have determined that revenue and expense recognition for our Market Technology business and revenue recognition for our Listing Services business will be impacted. We do not anticipate material changes to revenue and expense recognition for our other businesses.

The following are key items to note regarding the accounting for our Market Technology and Listing Services businesses under the Topic 606:

- revenue recognition for existing and new contracts will be recognized in earlier stages under the new standard;
- expense recognition for Market Technology contracts will be recognized in earlier stages under the new standard;
- a portion of revenues and expenses that were previously deferred will be recognized either in prior period revenues, through restatement, or as an adjustment to retained earnings upon adoption of the new standard; and
- the overall value of our contracts and the timing of cash flows from customers will not change.

We have reviewed substantially all of the existing customer contracts in our Market Technology and Listings businesses and we are currently quantifying the impact of adopting the new standard under both the retrospective and modified approaches. As part of this analysis, we are calculating the cumulative adjustment to retained earnings under both approaches and expect to select a transition approach once we have completed this analysis. In addition, we are gathering the required information to be disclosed for all businesses.

Market Technology. In our Market Technology business, we enter into contracts with customers to develop technology solutions, license the right to use software, and provide post-contract support and other services to our customers. Under current accounting policies, we do not recognize revenue or expense until we begin the final stage of the contract as we are not able to establish vendor specific objective evidence of fair value for individual elements of the contract. Under Topic 606, we will no longer defer recognition of revenue and expense until the final stage of the contract. For each of our contracts, we expect to identify multiple performance obligations, allocate the transaction price to these obligations and recognize revenue for each of these obligations as they are satisfied. Expenses will no longer be deferred, but will be recognized as incurred. Since revenue and expense will be recognized in earlier stages of the contract, the balance sheet accounts for deferred revenue and costs will decline upon adoption of Topic 606. Due to the complexity of certain contracts, the revenue recognition treatment under the new standard will be dependent on contract-specific terms and may vary in some instances.

Listing Services. Amounts received for initial listing fees and additional listing fees are generally deferred and revenue is recognized over estimated service periods of six and four years, respectively. Under Topic 606, we will identify the performance obligation associated with these services and record revenue upon satisfaction of each performance obligation. We expect to recognize both initial listing fees and additional listing fees over shorter periods than the current estimated service periods. Since we expect to recognize revenues earlier under Topic 606, the balance sheet account for deferred revenue will decline upon adoption.

During the remainder of 2017, we will quantify the impact of adoption and implement any required changes to our systems and processes to meet the new accounting, reporting and disclosure requirements and will update our internal controls accordingly. We will also review any new contracts entered into throughout the year. We do not believe there are any significant barriers to implementation of the new standard.

3. Restructuring Charges

2015 Restructuring Plan

During the first quarter of 2015, we performed a comprehensive review of our processes, businesses and systems in a company-wide effort to improve performance, cut costs, and reduce spending. This restructuring plan was completed in the second quarter of 2016.

The following table presents a summary of restructuring plan charges in the Condensed Consolidated Statements of Income:

	Three Months Ended March 31, 2016
Severance	$ 4
Asset impairments	3
Other	2
Total restructuring charges	$ 9

During the first quarter of 2016, we recognized restructuring charges totaling $9 million, including severance costs of $4 million related to workforce reductions of 13 positions across our organization, $3 million for asset impairments, primarily related to fixed assets and capitalized software that have been retired and $2 million of other charges.

Restructuring Reserve

Severance

The accrued severance balance was $14 million at March 31, 2017 and $17 million at December 31, 2016. As of March 31, 2017, the accrued severance is included in other current liabilities in the Condensed Consolidated Balance Sheets and will be paid in 2017.

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4. Acquisitions

We completed the following acquisitions in 2016. Financial results of each transaction are included in our Condensed Consolidated Statements of Income from the date of each acquisition.

2016 Acquisitions

	Purchase Consideration	Total Net Assets (Liabilities) Acquired	Total Net Deferred Tax Liability	Acquired Intangible Assets	Goodwill
			(in millions)		
ISE	$ 1,070	$ 83	$ (185)	$ 623	$ 549
Boardvantage	242	28	(45)	111	148
Marketwired	111	(1)	(5)	31	86
Nasdaq CXC	116	6	(20)	76	54

The amounts in the table above represent the allocation of purchase price as of March 31, 2017. The preliminary allocations of the purchase price are subject to revision during the remainder of the measurement period, a period not to exceed 12 months from the acquisition date. Adjustments to the provisional values, which may include tax and other estimates, during the measurement period will be recorded in the reporting period in which the adjustment amounts are determined. Changes to amounts recorded as assets and liabilities may result in a corresponding adjustment to goodwill. We finalized the allocation of the purchase price for Marketwired and Nasdaq CXC in February 2017. There were no adjustments to the provisional values during the 12 month measurement period for Nasdaq CXC. For Marketwired, we recorded a measurement period adjustment of $5 million which is discussed below under "Acquisition of Marketwired."

See “Intangible Assets” below for further discussion of intangible assets acquired through our 2016 acquisitions.

Acquisition of ISE

On June 30, 2016, we acquired ISE for $1,070 million. We acquired net assets, at fair value, totaling $83 million and recorded a net deferred tax liability of $185 million, comprised of a deferred tax liability of $266 million and a deferred tax asset of $81 million, related to differences in the U.S. GAAP and tax basis of our investment in ISE. ISE is part of our Market Services, Information Services and Market Technology segments.

In May 2016, we issued the 2023 Notes and in June 2016, we issued the 2026 Notes to fund this acquisition. See “1.75% Senior Unsecured Notes,” and “3.85% Senior Unsecured Notes,” of Note 8, “Debt Obligations,” for further discussion.

Acquisition of Boardvantage

In May 2016, we acquired Boardvantage for $242 million ($197 million in cash paid plus $45 million in working capital adjustments, which primarily includes cash acquired). We acquired net assets, at fair value, totaling $28 million and recorded a net deferred tax liability of $45 million, comprised of a deferred tax liability of $46 million and a deferred tax asset of $1 million, related to differences in the U.S. GAAP and tax basis of our investment in Boardvantage. This acquisition expanded our Corporate Solutions board and leadership business within our Corporate Services segment.

Nasdaq borrowed $197 million under the revolving credit commitment of the 2014 Credit Facility to fund this acquisition.

Acquisition of Marketwired

In February 2016, we acquired Marketwired for $111 million ($109 million in cash paid plus $2 million in working capital adjustments). We acquired net liabilities, at fair value, totaling $1 million and recorded a deferred tax liability of $10 million related to differences in the U.S. GAAP and tax basis of our investment in Marketwired. In the second quarter of 2016, we recorded a measurement period adjustment of $5 million to the estimated fair value of deferred tax liabilities to reflect a revised assessment following the receipt of new information. The adjustment resulted in a decrease to both deferred tax liabilities recorded and goodwill. The adjustment did not result in an impact to our Condensed Consolidated Statements of Income. Marketwired is part of our Corporate Solutions business within our Corporate Services segment.

Nasdaq borrowed $109 million under the revolving credit commitment of the 2014 Credit Facility to fund this acquisition.

Acquisition of Nasdaq CXC

In February 2016, we acquired Nasdaq CXC for $116 million ($115 million in cash paid plus $1 million in working capital adjustments). We acquired net assets, at fair value, totaling $6 million and recorded a deferred tax liability of $20 million related to differences in the U.S. GAAP and tax basis of our investment in Nasdaq CXC. Nasdaq CXC is part of our Market Services segment and our Data Products business within our Information Services segment.

Nasdaq used cash on hand and borrowed $55 million under the revolving credit commitment of the 2014 Credit Facility to fund this acquisition.

Intangible Assets

The following table presents the details of acquired intangible assets in our 2016 acquisitions. All acquired intangible assets with finite lives are amortized using the straight-line method.

	2016			
	ISE	**Boardvantage**	**Marketwired**	**Nasdaq CXC**
		($ in millions)		
Intangible Assets				
Exchange registrations	$ 467	$ —	$ —	$ —
Discount rate used	8.6%	—	—	—
Estimated average remaining useful life	Indefinite	—	—	—
Customer relationships	$ 148	$ 103	$ 29	$ 76
Discount rate used	9.1%	15.5%	16.4%	10.3%
Estimated average remaining useful life	13 years	14 years	6 years	17 years
Trade name	$ 8	$ 2	$ 2	$ —
Discount rate used	8.6%	15.0%	15.8%	—
Estimated average remaining useful life	Indefinite	1 year	2 years	—
Technology	$ —	$ 6	$ —	$ —
Discount rate used	—	15.5%	—	—
Estimated average remaining useful life	—	5 years	—	—
Total intangible assets	**$ 623**	**$ 111**	**$ 31**	**$ 76**

Exchange Registrations

As part of our acquisition of ISE we acquired exchange registrations. The exchange registrations represent licenses that provide ISE with the ability to operate its option exchanges. Nasdaq views these intangible assets as a perpetual license to operate the exchanges so long as ISE meets its regulatory requirements. Nasdaq selected a variation of the income approach called the Greenfield Approach to value the exchange registrations. The Greenfield Approach refers to a discounted cash flow analysis that assumes the buyer is building the exchange from a start-up business to a normalized level of operations as of the acquisition date. This discounted cash flow model considers the required resources and eventual returns from the build-out of operational exchanges and the acquisition of customers, once the exchange registrations are obtained. The advantage of this approach is that it reflects the actual expectations that will arise from an investment in the registrations and it directly values the registrations. The Greenfield Approach relies on assumptions regarding projected revenues, margins, capital expenditures, depreciation, and working capital during the two year pre-trade phase, the 10 year ramp-up period, as well as the terminal period.

In developing a discount rate for the exchange registrations, we estimated a weighted average cost of capital for the overall business and we employed this rate when discounting the cash flows. The resulting discounted cash flows were then tax-effected at the applicable statutory rate.

Customer Relationships

As part of our acquisitions of ISE, Boardvantage, Marketwired, and Nasdaq CXC we acquired customer relationships.

Customer relationships represent the non-contractual and contractual relationships with customers.

Methodology

For our acquisitions of ISE, Boardvantage, Marketwired and Nasdaq CXC, customer relationships were valued using the income approach, specifically an excess earnings method. The excess earnings method examines the economic returns contributed by the identified tangible and intangible assets of a company, and then isolates the excess return that is attributable to the intangible asset being valued.

Discount rate

The discount rates used reflect the amount of risk associated with the hypothetical cash flows for the customer relationships relative to the overall business. In developing a discount rate for the customer relationships, we estimated a weighted average cost of capital for the overall business and we employed this rate when discounting the cash flows. The resulting discounted cash flows were then tax-effected at the applicable statutory rate.

For our acquisitions of Marketwired and Nasdaq CXC, a discounted tax amortization benefit was added to the fair value of the assets under the assumption that the customer relationships would be amortized for tax purposes over a period of 15 years.

Estimated Useful Life

We estimate the remaining useful life based on the historical behavior of the customers and a parallel analysis of the customers using the excess earnings method.

Pro Forma Results and Acquisition-related Costs

The condensed consolidated financial statements for the three months ended March 31, 2017 and 2016 include the financial results of the above 2016 acquisitions from the date of each acquisition. Pro forma financial results for the acquisitions completed in 2016 have not been presented since these acquisitions both individually and in the aggregate were not material to our financial results.

Acquisition-related costs for the transactions described above were expensed as incurred and are included in merger and strategic initiatives expense in the Condensed Consolidated Statements of Income.

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5. Goodwill and Acquired Intangible Assets

Goodwill

The following table presents the changes in goodwill by business segment during the three months ended March 31, 2017:

	Market Services	Corporate Services	Information Services	Market Technology	Total
			(in millions)		
Balance at December 31, 2016	$ 3,390	$ 674	$ 1,806	$ 157	$ 6,027
Foreign currency translation adjustment	22	3	13	5	43
Balance at March 31, 2017	$ 3,412	$ 677	$ 1,819	$ 162	$ 6,070

As of March 31, 2017, the amount of goodwill that is expected to be deductible for tax purposes in future periods is $858 million.

Goodwill represents the excess of purchase price over the value assigned to the net assets, including identifiable intangible assets, of a business acquired. Goodwill is allocated to our reporting units based on the assignment of the fair values of each reporting unit of the acquired company. We test goodwill for impairment at the reporting unit level annually, or in interim periods if certain events occur indicating that the carrying amount may be impaired, such as changes in the business climate, poor indicators of operating performance or the sale or disposition of a significant portion of a reporting unit. There was no impairment of goodwill for the three months ended March 31, 2017 and 2016; however, events such as extended economic weakness or unexpected significant declines in operating results of a reporting unit may result in goodwill impairment charges in the future.

Acquired Intangible Assets

The following table presents details of our total acquired intangible assets, both finite- and indefinite-lived:

	March 31, 2017				December 31, 2016			
	Gross Amount	Accumulated Amortization	Net Amount	Weighted-Average Useful Life (in Years)	Gross Amount	Accumulated Amortization	Net Amount	Weighted-Average Useful Life (in Years)
		(in millions)				(in millions)		
Finite-Lived Intangible Assets								
Technology	$ 38	$ (25)	$ 13	5	$ 38	$ (24)	$ 14	5
Customer relationships	1,394	(485)	909	18	1,394	(464)	930	18
Other	7	(6)	1	6	7	(6)	1	6
Foreign currency translation adjustment	(153)	56	(97)		(160)	58	(102)	
Total finite-lived intangible assets	$ 1,286	$ (460)	$ 826		$ 1,279	$ (436)	$ 843	
Indefinite-Lived Intangible Assets								
Exchange and clearing registrations	$ 1,257	$ —	$ 1,257		$ 1,257	$ —	$ 1,257	
Trade names	129	—	129		130	—	130	
Licenses	52	—	52		52	—	52	
Foreign currency translation adjustment	(182)	—	(182)		(188)	—	(188)	
Total indefinite-lived intangible assets	$ 1,256	$ —	$ 1,256		$ 1,251	$ —	$ 1,251	
Total intangible assets	$ 2,542	$ (460)	$ 2,082		$ 2,530	$ (436)	$ 2,094	

Amortization expense for acquired finite-lived intangible assets was $23 million for the three months ended March 31, 2017 and $17 million for the three months ended March 31, 2016. The increase in amortization expense in 2017 compared with 2016 was primarily due to additional acquired intangible assets in the second quarter of 2016.

The estimated future amortization expense (excluding the impact of foreign currency translation adjustments of $97 million as of March 31, 2017) of acquired finite-lived intangible assets as of March 31, 2017 is as follows:

	(in millions)
2017[(1)]	$ 72
2018	90
2019	76
2020	75
2021	74
2022 and thereafter	536
Total	$ 923

(1) Represents the estimated amortization to be recognized for the remaining nine months of 2017.

6. Investments

The following table presents the details of our investments:

	March 31, 2017	December 31, 2016
	(in millions)	
Trading securities	$ 203	$ 228
Available-for-sale investment securities	17	17
Equity method investments	128	124
Cost method investments	145	144

Trading Securities

Trading securities, which are included in financial investments, at fair value in the Condensed Consolidated Balance Sheets, are primarily comprised of highly rated European government debt securities, of which $154 million as of March 31, 2017 and $172 million as of December 31, 2016, are assets utilized to meet regulatory capital requirements primarily for our clearing operations at Nasdaq Clearing.

Available-for-Sale Investment Securities

Available-for-sale investment securities, which are included in financial investments, at fair value in the Condensed Consolidated Balance Sheets, are primarily comprised of short-term certificates of deposit. As of March 31, 2017 and December 31, 2016, the cumulative unrealized gains and losses on these securities were immaterial.

Equity Method Investments

As of March 31, 2017 and December 31, 2016, our equity method investments primarily included equity interests in OCC and EuroCCP N.V.

The carrying amounts of our equity method investments are included in other non-current assets in the Condensed Consolidated Balance Sheets.

Net income recognized from our equity interest in the earnings and losses of these equity method investments was $4 million for the three months ended March 31, 2017 and $2 million for the three months ended March 31, 2016. The increase in the three months ended March 31, 2017 compared with the same period in 2016 was primarily due to our additional 20.0% ownership interest in OCC, which we acquired in connection with our acquisition of ISE on June 30, 2016, bringing our total ownership interest in OCC to 40.0%.

Capital Contribution to OCC

In March 2015, in connection with being designated systemically important by the Financial Stability Oversight Council, OCC implemented a capital plan under which the options exchanges that are OCC's stockholders made new capital contributions to OCC, committed to make further capital contributions in the future under certain specified circumstances, and received certain commitments from OCC with respect to future dividend payments and related matters. Under the OCC capital plan, OCC's existing exchange stockholders, including Nasdaq and ISE, each contributed a pro-rata share of $150 million in new equity capital. Nasdaq's and ISE's capital contributions were each $30 million. OCC's exchange stockholders also committed to provide, as may become necessary from time to time, additional replenishment capital on a pro-rata basis if certain capital thresholds are triggered. For its part, OCC adopted specific policies with respect to fees, customer refunds and stockholder dividends, which envision an annual dividend payment to its stockholders equal to the portion of OCC's after-tax income that exceeds OCC's capital requirements after payment of refunds to OCC's clearing members (with such customer refunds generally to constitute 50% of the portion of OCC's pre-tax income that exceeds OCC's capital requirements). After the SEC staff approved the OCC capital plan and the stockholders made their capital contributions, the plan's further effectiveness was suspended under the applicable SEC rules because certain parties petitioned the full Commission to reconsider the capital plan's approval. This stay was lifted by the SEC in September 2015, allowing OCC to implement the plan and in February 2016, the SEC issued an order approving the OCC capital plan as previously implemented and dismissed the petitions challenging that plan. The petitioners filed for a stay of the SEC's order, which would have blocked OCC from paying a dividend under the OCC capital plan. The Court of Appeals denied the requested stay, permitting OCC to pay a dividend which Nasdaq received in February 2016. The petitioners also appealed the SEC's order to the Federal Court of Appeals for the District of Columbia Circuit. The court heard arguments on the case in March 2017. The case remains pending until the court announces its decision.

Cost Method Investments

The carrying amount of our cost method investments is included in other non-current assets in the Condensed Consolidated Balance Sheets. As of March 31, 2017 and December 31, 2016, our cost method investments primarily represented our 5% ownership interest in Borsa Istanbul, and our 5% ownership interest in LCH.Clearnet Group Limited.

The Borsa Istanbul shares, which were issued to us in the first quarter of 2014, are part of the consideration received under a market technology agreement. This investment has a cost basis of $75 million which is guaranteed to us via a put option negotiated as part of the market technology agreement.

7. Deferred Revenue

Deferred revenue represents consideration received that is yet to be recognized as revenue. The changes in our deferred revenue during the three months ended March 31, 2017 and 2016 are reflected in the following table:

	Initial Listing Revenues	Listing of Additional Shares Revenues	Annual Renewal and Other Revenues	Market Technology Revenues	Total
			(in millions)		
Balance at January 1, 2017	$ 54	$ 37	$ 57	$ 185	$ 333
Additions	4	5	306	46	361
Amortization	(5)	(9)	(142)	(55)	(211)
Translation adjustment	—	—	—	3	3
Balance at March 31, 2017	$ 53	$ 33	$ 221	$ 179	$ 486
Balance at January 1, 2016	$ 59	$ 53	$ 28	$ 187	$ 327
Additions	1	2	314	67	384
Amortization	(4)	(7)	(143)	(64)	(218)
Translation adjustment	—	—	1	(2)	(1)
Balance at March 31, 2016	$ 56	$ 48	$ 200	$ 188	$ 492

The additions and amortization for initial listing revenues, listing of additional shares revenues and annual renewal and other revenues primarily reflect revenues from our Listing Services business within our Corporate Services segment.

For our market technology contracts, total revenues, as well as costs incurred, are deferred until significant customizations are completed and delivered. Once delivered, deferred revenue and the related deferred costs are recognized over the post-contract support period. For these market technology contracts, we have included the deferral of costs in other current assets and other non-current assets in the Condensed Consolidated Balance Sheets.

At March 31, 2017, we estimate that our deferred revenue, which is primarily corporate services and market technology revenues, will be recognized in the following years:

	Initial Listing Revenues	Listing of Additional Shares Revenues	Annual Renewal and Other Revenues	Market Technology Revenues	Total
			(in millions)		
Fiscal year ended:					
2017[1]	$ 12	$ 15	$ 216	$ 58	$ 301
2018	14	11	4	38	67
2019	12	5	1	32	50
2020	8	2	—	30	40
2021	5	—	—	13	18
2022 and thereafter	2	—	—	8	10
	$ 53	$ 33	$ 221	$ 179	$ 486

(1) Represents deferred revenue that is anticipated to be recognized over the remaining nine months of 2017.

The timing of recognition of our deferred market technology revenues is primarily dependent upon the completion of customization and any significant modifications made pursuant to existing market technology contracts. As such, as it relates to market technology revenues, the timing represents our best estimate.

8. Debt Obligations

The following table presents the changes in the carrying amount of our debt obligations during the three months ended March 31, 2017:

	December 31, 2016	Additions	Payments, Accretion and Other	March 31, 2017
		(in millions)		
5.55% senior unsecured notes due January 15, 2020	$ 598	$ —	$ —	$ 598
5.25% senior unsecured notes due January 16, 2018	369	—	—	369
3.875% senior unsecured notes due June 7, 2021	625	—	8	633
4.25% senior unsecured notes due June 1, 2024	495	—	1	496
1.75% senior unsecured notes due May 19, 2023	622	—	9	631
3.85% senior unsecured notes due June 30, 2026	495	—	—	495
$400 million senior unsecured term loan facility due November 25, 2019 (average interest rate of 2.28% for the period January 1, 2017 through March 31, 2017)	399	—	—	399
$750 million revolving credit commitment due November 25, 2019 (average interest rate of 0.00% for the period January 1, 2017 through March 31, 2017)	—	—	—	—
Total debt obligations	3,603	—	18	3,621
Less current portion	—	—	—	(379)
Total long-term debt obligations	$ 3,603	$ —	$ 18	$ 3,242

Senior Unsecured Notes

Our senior unsecured notes were all issued at a discount. As a result of the discount, the proceeds received from each issuance were less than the aggregate principal amount. As of March 31, 2017, the amounts in the table above reflect the aggregate principal amount, less the unamortized debt discount and the unamortized debt issuance costs which are being accreted through interest expense over the life of the applicable notes. Our senior unsecured notes are general unsecured obligations of ours and rank equally with all of our existing and future unsubordinated obligations and they are not guaranteed by any of our subsidiaries. The senior unsecured notes were issued under indentures that, among other things, limit our ability to consolidate, merge or sell all or substantially all of our assets, create liens, and enter into sale and leaseback transactions.

With the exception of the 2020 Notes, upon a change of control triggering event (as defined in the various note indentures), the terms require us to repurchase all or part of each holder's notes for cash equal to 101% of the aggregate principal amount purchased plus accrued and unpaid interest, if any.

5.55% Senior Unsecured Notes

In January 2010, Nasdaq issued the 2020 Notes. The 2020 Notes pay interest semiannually at a rate of 5.55% per annum until January 15, 2020.

5.25% Senior Unsecured Notes

In December 2010, Nasdaq issued the 2018 Notes. The 2018 Notes pay interest semiannually at a rate of 5.25% per annum until January 16, 2018 and such rate may vary with Nasdaq's debt rating up to a rate not to exceed 7.25%. The 2018 Notes mature in January 2018 and are reflected in the current portion of debt obligations in the Condensed Consolidated Balance Sheets as of March 31, 2017.

In April 2017, Nasdaq announced it will redeem all of its 2018 Notes on May 26, 2017, using a combination of cash on hand and proceeds from the sale of commercial paper issued through Nasdaq's newly created commercial paper program. See "Debt Restructuring," of Note 17, "Subsequent Events," to the condensed consolidated financial statements for further discussion.

3.875% Senior Unsecured Notes

In June 2013, Nasdaq issued the 2021 Notes. The 2021 Notes pay interest annually at a rate of 3.875% per annum until June 7, 2021 and such rate may vary with Nasdaq's debt rating up to a rate not to exceed 5.875%.

The 2021 Notes have been designated as a hedge of our net investment in certain foreign subsidiaries to mitigate the foreign exchange risk associated with certain investments in these subsidiaries. The increase in the carrying amount of $8 million noted in the "Payments, Accretion and Other" column in the table above primarily reflects the translation of the 2021 Notes into U.S. dollars and is recorded in accumulated other comprehensive loss within stockholders' equity in the Condensed Consolidated Balance Sheets as of March 31, 2017.

4.25% Senior Unsecured Notes

In May 2014, Nasdaq issued the 2024 Notes. The 2024 Notes pay interest semiannually at a rate of 4.25% per annum until June 1, 2024 and such rate may vary with Nasdaq's debt rating up to a rate not to exceed 6.25%.

1.75% Senior Unsecured Notes

In May 2016, Nasdaq issued the 2023 Notes. We used the net proceeds from the 2023 Notes and the 2026 Notes to fund our acquisition of ISE. See “Acquisition of ISE,” of Note 4, “Acquisitions,” for further discussion of the ISE acquisition.

The 2023 Notes pay interest annually at a rate of 1.75% per annum until May 19, 2023 and such rate may vary with Nasdaq’s debt rating up to a rate not to exceed 3.75%.

The 2023 Notes have been designated as a hedge of our net investment in certain foreign subsidiaries to mitigate the foreign exchange rate risk associated with certain investments in these subsidiaries. The increase in the carrying amount of $9 million noted in the “Payments, Accretion and Other” column in the table above reflects the translation of the 2023 Notes into U.S. dollars and is recorded in accumulated other comprehensive loss within stockholders’ equity in the Condensed Consolidated Balance Sheets as of March 31, 2017.

3.85% Senior Unsecured Notes

In June 2016, Nasdaq issued the 2026 Notes. We used the net proceeds from the 2023 Notes and the 2026 Notes to fund our acquisition of ISE. See “Acquisition of ISE,” of Note 4, “Acquisitions,” for further discussion of the ISE acquisition.

The 2026 Notes pay interest semiannually at a rate of 3.85% per annum until June 30, 2026 and such rate may vary with Nasdaq’s debt rating up to a rate not to exceed 5.85%.

Credit Facilities

As of March 31, 2017, the amounts in the table above reflect the aggregate principal amount, less the unamortized debt issuance costs which are being accreted through interest expense over the life of the applicable credit facility. Nasdaq is permitted to repay borrowings under our credit facilities at any time in whole or in part, without penalty. We are also required to repay loans outstanding under our credit facilities with net cash proceeds from sales of property and assets of Nasdaq and its subsidiaries (excluding inventory sales and other sales in the ordinary course of business) and casualty and condemnation proceeds, in each case subject to specified exceptions and thresholds.

Our credit facilities contain financial and operating covenants. Financial covenants include a minimum interest expense coverage ratio and a maximum leverage ratio. Operating covenants include, among other things, limitations on Nasdaq’s ability to incur additional indebtedness, grant liens on assets, dispose of assets and pay dividends. Our credit facilities allow us to pay cash dividends on our common stock. The facilities also contain customary affirmative covenants, including access to financial statements, notice of defaults and certain other material events, maintenance of business and insurance, and events of default, including cross-defaults to our material indebtedness.

2016 Credit Facility

In March 2016, Nasdaq entered into the 2016 Credit Facility. In March 2016, loans in an aggregate principal amount of $400 million were drawn under the 2016 Credit Facility and the net proceeds were used to partially repay amounts outstanding under the revolving credit commitment of the 2014 Credit Facility as discussed below.

Loans under the 2016 Credit Facility pay interest monthly at a variable interest rate based on either the LIBOR or the base rate (or other applicable rate with respect to non-dollar borrowings), plus an applicable margin that varies with Nasdaq’s debt rating. Under the 2016 Credit Facility, we are required to make quarterly principal payments beginning in March 2018 equal to 2.50% of the aggregate original principal amounts borrowed with the remaining amounts due at maturity. Therefore, $10 million is reflected in current portion of debt obligations in the Condensed Consolidated Balance Sheets as of March 31, 2017.

2014 Credit Facility

In November 2014, Nasdaq entered into the 2014 Credit Facility. The 2014 Credit Facility consists of a $750 million revolving credit commitment (with sublimits for non-dollar borrowings, swingline borrowings and letters of credit). There were no outstanding borrowings under the revolving credit commitment of the 2014 Credit Facility as of March 31, 2017.

Loans under the 2014 Credit Facility have a variable interest rate based on either the LIBOR or the base rate (as defined in the credit agreement) (or other applicable rate with respect to non-dollar borrowings), plus an applicable margin that varies with Nasdaq’s debt rating.

In April 2017, Nasdaq entered into an agreement for a $1 billion five-year revolving credit facility, which replaces our existing 2014 Credit Facility. Nasdaq intends to use funds available under the new revolving credit facility for general corporate purposes and to provide liquidity support for the repayment of commercial paper issued through a newly created commercial paper program. As a result, our 2014 Credit Facility has been terminated. See “Debt Restructuring,” of Note 17, “Subsequent Events,” for further discussion.

Other Credit Facilities

We also have credit facilities related to our Nasdaq Clearing operations in order to provide further liquidity. Credit facilities, which are available in multiple currencies, totaled $172 million at March 31, 2017 and $170 million at December 31, 2016 in available liquidity, none of which was utilized.

Debt Covenants

At March 31, 2017, we were in compliance with the covenants of all of our debt obligations.

9. Retirement Plans

Defined Contribution Savings Plan

We sponsor a 401(k) Plan for U.S. employees. Employees are immediately eligible to make contributions to the plan and are also eligible for an employer contribution match at an amount equal to 100.0% of the first 6.0% of eligible employee contributions. Savings plan expense included in compensation and benefits expense in the Condensed Consolidated Statements of Income was $4 million for the three months ended March 31, 2017 and $3 million for the three months ended March 31, 2016.

Pension and Supplemental Executive Retirement Plans

We maintain non-contributory, defined-benefit pension plans, non-qualified SERPs for certain senior executives and other post-retirement benefit plans for eligible employees in the U.S., collectively referred to as the Nasdaq Benefit Plans. Our pension plans and SERPs are frozen. Future service and salary for all participants do not count toward an accrual of benefits under the pension plans and SERPs. Most employees outside the U.S. are covered by local retirement plans or by applicable social laws. Benefits under social laws are generally expensed in the periods in which the costs are incurred. The total expense for these plans is included in compensation and benefits expense in the Condensed Consolidated Statements of Income and was $4 million for both the three months ended March 31, 2017 and 2016.

10. Share-Based Compensation

We have a share-based compensation program that provides our board of directors broad discretion in creating employee equity incentives. Share-based awards granted under this program include stock options, restricted stock (consisting of restricted stock units), and PSUs. For accounting purposes, we consider PSUs to be a form of restricted stock.

Summary of Share-Based Compensation Expense

The following table shows the total share-based compensation expense resulting from equity awards and the 15.0% discount for the ESPP for the three months ended March 31, 2017 and 2016 in the Condensed Consolidated Statements of Income:

	Three Months Ended March 31,	
	2017	2016
	(in millions)	
Share-based compensation expense before income taxes	$ 15	$ 16
Income tax benefit	(6)	(7)
Share-based compensation expense after income taxes	$ 9	$ 9

Common Shares Available Under Our Equity Plan

As of March 31, 2017, we had approximately 5.6 million shares of common stock authorized for future issuance under our Equity Plan.

Restricted Stock

We grant restricted stock to most active employees. The grant date fair value of restricted stock awards is based on the closing price at the date of grant less the present value of future cash dividends. Restricted stock awards granted generally vest 25.0% on the second anniversary of the grant date, 25.0% on the third anniversary of the grant date, and 50.0% on the fourth anniversary of the grant date. We generally recognize compensation expense for restricted stock awards on a straight-line basis over the requisite service period of the award, taking into account an estimated forfeiture rate.

Summary of Restricted Stock Activity

The following table summarizes our restricted stock activity for the three months ended March 31, 2017:

	Restricted Stock	
	Number of Awards	Weighted-Average Grant Date Fair Value
Unvested balances at January 1, 2017	2,560,578	$ 45.92
Granted	559,698	65.92
Vested	(343,633)	42.83
Forfeited	(79,164)	46.48
Unvested balances at March 31, 2017	2,697,479	$ 50.45

At March 31, 2017, $69 million of total unrecognized compensation cost related to restricted stock is expected to be recognized over a weighted-average period of 1.9 years.

PSUs

The grant date fair value of PSUs is based on the closing price at the date of grant less the present value of future cash dividends. PSUs are based on performance measures that impact the amount of shares that each recipient will receive upon vesting. We report the target number of PSUs granted, unless we have determined that it is more likely than not, based on the actual achievement of performance measures, that an employee will receive a different amount of shares underlying the PSUs, in which case we report the amount of shares the employee is likely to receive. We have two performance-based long-term PSU programs for certain officers, a one-year performance-based program and a three-year cumulative performance-based program that focuses on TSR.

One-Year PSU Program

Under the one-year performance-based program, an employee may receive from 0.0% to 150.0% of the target amount granted, depending on the achievement of performance measures. These awards vest ratably on an annual basis over a three-year period commencing with the end of the performance period. Compensation cost is recognized over the performance period and the three-year vesting period, taking into account an estimated forfeiture rate.

During 2016, certain grants of PSUs with a one-year performance period exceeded the applicable performance parameters. As a result, an additional 56,533 units above target were considered granted in the first quarter of 2017.

Three-Year PSU Program

Under the three-year performance-based program, each individual receives PSUs with a three-year cumulative performance period that vest at the end of the performance period. Compensation cost is recognized over the three-year vesting period. Performance will be determined by comparing Nasdaq's TSR to two peer groups, each weighted 50.0%. The first peer group consists of exchange companies, and the second peer group consists of all companies in the S&P 500. Nasdaq's relative performance ranking against each of these groups will determine the final number of shares delivered to each individual under the program. The payout under this program will be between 0.0% and 200.0% of the number of PSUs granted and will be determined by Nasdaq's overall performance against both peer groups. However, if Nasdaq's TSR is negative for the three-year performance period, regardless of TSR ranking, the payout will not exceed 100.0% of the number of PSUs granted. We estimate the fair value of PSU's granted under the three-year PSU program using the Monte Carlo simulation model, as these awards contain a market condition.

Certain grants of PSUs that were issued in 2014 with a three-year performance period exceeded the applicable performance parameters. As a result, an additional 538,892 units above target were considered granted in the first quarter of 2017.

The following weighted-average assumptions were used to determine the weighted-average fair values of the PSU awards granted under the three-year PSU program for the three months ended March 31, 2017 and 2016:

	Three Months Ended March 31,	
	2017	2016
Weighted-average risk free interest rate[1]	1.44%	0.84%
Expected volatility[2]	19.2%	21.0%
Weighted-average grant date share price	$69.45	$66.38
Weighted-average fair value at grant date	$81.57	$93.30

(1) The risk-free interest rate for periods within the expected life of the award is based on the U.S. Treasury yield curve in effect at the time of grant.

(2) We use historic volatility for PSU awards issued under the three-year PSU program, as implied volatility data could not be obtained for all the companies in the peer groups used for relative performance measurement within the program.

In addition, the annual dividend assumption utilized in the Monte Carlo simulation model is based on Nasdaq's dividend yield at the date of grant.

Summary of PSU Activity

The following table summarizes our PSU activity for the three months ended March 31, 2017:

	PSUs			
	One-Year Program		Three-Year Program	
	Number of Awards	Weighted-Average Grant Date Fair Value	Number of Awards	Weighted-Average Grant Date Fair Value
Unvested balances at January 1, 2017	378,766	$ 52.55	1,314,668	$ 63.18
Granted	193,710	65.50	801,448	55.49
Vested	(10,729)	53.72	(1,079,925)	42.83
Forfeited	(25,782)	53.89	(24,178)	88.98
Unvested balances at March 31, 2017	535,965	$ 57.14	1,012,013	$ 78.19

At March 31, 2017, $16 million of total unrecognized compensation cost related to the one-year PSU program is expected to be recognized over a weighted-average period of 1.6 years. For the three-year PSU program, $38 million of total unrecognized compensation cost is expected to be recognized over a weighted-average period of 1.6 years.

Stock Options

The fair value of stock options are estimated using the Black-Scholes option-pricing model. Each grant has a 10-year life. In 2017, our CEO received 268,817 performance-based non-qualified stock options which will vest annually over a three-year period, starting at the date of the grant with each vesting contingent upon the achievement of performance parameters. There were no stock option awards granted for the three months ended March 31, 2016.

Summary of Stock Option Activity

A summary of stock option activity for the three months ended March 31, 2017 is as follows:

	Number of Stock Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
Outstanding at January 1, 2017	1,406,371	$ 22.32	2.65	$ 63
Granted	268,817	66.68		
Exercised	(40,416)	20.98		
Outstanding at March 31, 2017	1,634,772	$ 29.64	3.62	$ 65
Exercisable at March 31, 2017	1,365,955	$ 22.35	2.44	$ 64

We received net cash proceeds of $1 million from the exercise of 40,416 stock options for the three months ended March 31, 2017 and received net cash proceeds of $2 million from the exercise of 86,811 stock options for the three months ended March 31, 2016.

The aggregate intrinsic value in the above table represents the total pre-tax intrinsic value (i.e., the difference between our closing stock price on March 31, 2017 of $69.45 and the exercise price, times the number of shares) based on stock options with an exercise price less than Nasdaq's closing price of $69.45 as of March 31, 2017, which would have been received by the option holders had the option holders exercised their stock options on that date. This amount can change based on the fair market value of our common stock. The total number of in-the-money stock options exercisable as of March 31, 2017 was 1.4 million. As of March 31, 2016, 2.5 million outstanding stock options were exercisable and the weighted-average exercise price was $27.87.

The total pre-tax intrinsic value of stock options exercised was $2 million for the three months ended March 31, 2017 and $3 million for the three months ended March 31 2016.

ESPP

We have an ESPP under which approximately 2.3 million shares of our common stock have been reserved for future issuance as of March 31, 2017. Under our ESPP, employees may purchase shares having a value not exceeding 10.0% of their annual compensation, subject to applicable annual Internal Revenue Service limitations. We record compensation expense related to the 15.0% discount that is given to our employees which totaled $1 million for both the three months ended March 31, 2017 and 2016.

11. Nasdaq Stockholders' Equity

Common Stock

At March 31, 2017, 300,000,000 shares of our common stock were authorized, 169,760,142 shares were issued and 165,168,584 shares were outstanding. The holders of common stock are entitled to one vote per share, except that our certificate of incorporation limits the ability of any person to vote in excess of 5.0% of the then-outstanding shares of Nasdaq common stock.

Common Stock in Treasury, at Cost

We account for the purchase of treasury stock under the cost method with the shares of stock repurchased reflected as a reduction to Nasdaq stockholders' equity and included in common stock in treasury, at cost in the Condensed Consolidated Balance Sheets. Shares repurchased under our share repurchase program are currently retired and cancelled. When treasury shares are reissued, they are recorded at the average cost of the treasury shares acquired. We held 4,591,558 shares of common stock in treasury as of March 31, 2017 and 3,921,718 shares as of December 31, 2016, most of which are related to shares of our common stock repurchased for the settlement of employee tax withholding obligations arising from the vesting of restricted stock.

Share Repurchase Program

In the fourth quarter of 2014, our board of directors authorized the repurchase of up to $500 million of our outstanding common stock and in the first quarter of 2016, our board of directors authorized the repurchase of an additional $370 million of our outstanding common stock under our share repurchase program.

These purchases may be made from time to time at prevailing market prices in open market purchases, privately-negotiated transactions, block purchase techniques or otherwise, as determined by our management. The purchases are primarily funded from existing cash balances. The share repurchase program may be suspended, modified or discontinued at any time.

The following table summarizes our share repurchase activity:

	Three Months Ended March 31,	
	2017	2016
Number of shares of common stock repurchased	2,215,755	490,032
Average price paid per share	$ 70.64	$ 59.37
Total purchase price (in millions)	$ 156	$ 29

As discussed above in "Common Stock in Treasury, at Cost," shares repurchased under our share repurchase program are currently retired and cancelled. As of March 31, 2017, the remaining amount authorized for share repurchases under the program was $273 million.

Other Repurchases of Common Stock

For the quarter ended March 31, 2017, we repurchased 668,038 shares of our common stock in settlement of employee tax withholding obligations arising from the vesting of restricted stock.

Preferred Stock

Our certificate of incorporation authorizes the issuance of 30,000,000 shares of preferred stock, par value $0.01 per share, issuable from time to time in one or more series. At March 31, 2017 and December 31, 2016, no shares of preferred stock were issued or outstanding.

* * * * * *

Cash Dividends on Common Stock

During the three months ended March 31, 2017, our board of directors declared the following cash dividends:

Declaration Date	Dividend Per Common Share	Record Date	Total Amount Paid	Payment Date
			(in millions)	
January 30, 2017	$ 0.32	March 17, 2017	$ 53	March 31, 2017

The total amount paid of $53 million was recorded in retained earnings in the Condensed Consolidated Balance Sheets at March 31, 2017.

In April 2017, the board of directors declared a regular quarterly cash dividend of $0.38 per share on our outstanding common stock which reflects a 19.0% increase from our prior quarterly cash dividend of $0.32. The dividend is payable on June 30, 2017 to shareholders of record at the close of business on June 16, 2017. Future declarations of quarterly dividends and the establishment of future record and payment dates are subject to approval by the board of directors.

In April 2017, our board of directors adopted a dividend policy with the intention to provide shareholders with regular and growing dividends over the long term as earnings and cash flow grow.

12. Earnings Per Share

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

	Three Months Ended March 31,	
	2017	2016
	(in millions, except share and per share amounts)	
Numerator:		
Net income attributable to common shareholders	$ 169	$ 132
Denominator:		
Weighted-average common shares outstanding for basic earnings per share	166,473,073	164,281,692
Weighted-average effect of dilutive securities:		
Employee equity awards	3,773,874	4,086,752
Weighted-average common shares outstanding for diluted earnings per share	170,246,947	168,368,444
Basic and diluted earnings per share:		
Basic earnings per share	$ 1.02	$ 0.80
Diluted earnings per share	$ 0.99	$ 0.78

Stock options to purchase 1,634,772 shares of common stock and 4,245,457 shares of restricted stock and PSUs were outstanding at March 31, 2017. For the three months ended March 31, 2017, we included 1,365,955 of the outstanding stock options and 3,293,769 shares of restricted stock and PSUs in the computation of diluted earnings per share, on a weighted-average basis, as their inclusion was dilutive. The remaining stock options, shares of restricted stock and PSUs are antidilutive, and as such, they were properly excluded.

Stock options to purchase 2,539,676 shares of common stock and 5,594,549 shares of restricted stock and PSUs were outstanding at March 31, 2016. For the three months ended March 31, 2016, we included all of the outstanding stock options and 4,533,893 shares of restricted stock and PSUs in the computation of diluted earnings per share, on a weighted-average basis, as their inclusion was dilutive. The remaining shares of restricted stock and PSUs are antidilutive, and as such, they were properly excluded.

See "Recently Adopted Accounting Pronouncements," of Note 2, "Basis of Presentation and Principles of Consolidation," for the impact of the adoption of ASU 2016-09, "Improvements to Employee Share-Based Payment Accounting" on diluted earnings per share.

13. Fair Value of Financial Instruments

The following table presents our financial assets that are measured at fair value on a recurring basis as of March 31, 2017 and December 31, 2016. We did not have any financial liabilities measured at fair value on a recurring basis as of March 31, 2017 and December 31, 2016.

	March 31, 2017			
	Total	Level 1	Level 2	Level 3
	(in millions)			
Financial investments, at fair value	$ 220	$ 203	$ 17	$ —
Default fund and margin deposit investments	2,186	1,610	576	—
Total	$ 2,406	$ 1,813	$ 593	$ —

	December 31, 2016			
	Total	Level 1	Level 2	Level 3
	(in millions)			
Financial investments, at fair value	$ 245	$ 228	$ 17	$ —
Default fund and margin deposit investments	1,900	1,763	137	—
Total	$ 2,145	$ 1,991	$ 154	$ —

Our Level 1 financial investments, at fair value were primarily comprised of trading securities, mainly highly rated European government debt securities. Of these securities, $154 million as of March 31, 2017 and $172 million as of December 31, 2016 are assets utilized to meet regulatory capital requirements, primarily for our clearing operations at Nasdaq Clearing. Level 2 financial investments, at fair value were primarily comprised of available-for-sale investment securities in short-term certificates of deposit as of March 31, 2017 and were primarily comprised of available-for-sale investment securities in short-term commercial paper as of December 31, 2016.

Our default fund and margin deposit investments include cash contributions invested by Nasdaq Clearing, in accordance with its investment policy. Of the total balance of $3,633 million recorded in the Condensed Consolidated Balance Sheets as of March 31, 2017, $576 million of cash contributions have been invested in reverse repurchase agreements and $1,610 million of cash contributions have been invested in highly rated European, and to a lesser extent, U.S. government debt securities or central bank certificates. The remainder of this balance is held in cash. Of the total balance of $3,301 million recorded in the Condensed Consolidated Balance Sheets as of December 31, 2016, $137 million of cash contributions have been invested in reverse repurchase agreements and $1,763 million of cash contributions have been invested in highly rated European, and to a lesser extent, U.S. government debt securities and central bank certificates. The remainder of this balance is held in cash. See Note 14, "Clearing Operations," for further discussion of default fund contributions and margin deposits.

There were no transfers between Level 1 and Level 2 of the fair value hierarchy as of March 31, 2017 and December 31, 2016.

Financial Instruments Not Measured at Fair Value on a Recurring Basis

Some of our financial instruments are not measured at fair value on a recurring basis but are recorded at amounts that approximate fair value due to their liquid or short-term nature. Such financial assets and financial liabilities include: cash and cash equivalents, restricted cash, receivables, net, certain other current assets, accounts payable and accrued expenses, Section 31 fees payable to SEC, accrued personnel costs, and certain other current liabilities.

In addition, our investments in OCC and EuroCCP N.V. are accounted for under the equity method of accounting and our investments in Borsa Istanbul and LCH.Clearnet Group Limited are carried at cost. See "Equity Method Investments," and "Cost Method Investments," of Note 6, "Investments," for further discussion.

We also consider our debt obligations to be financial instruments. The fair value of our debt, utilizing discounted cash flow analyses for our floating rate debt and prevailing market rates for our fixed rate debt, was $3.8 billion at March 31, 2017 and December 31, 2016. The discounted cash flow analyses are based on borrowing rates currently available to us for debt with similar terms and maturities. Our fixed rate and our floating rate debt is categorized as Level 2 in the fair value hierarchy. For further discussion of our debt obligations, see Note 8, "Debt Obligations."

14. Clearing Operations

Nasdaq Clearing

Nasdaq Clearing is authorized and supervised under EMIR as a multi-asset clearinghouse by the SFSA and is authorized to conduct clearing operations in Norway by the Norwegian Ministry of Finance. The clearinghouse acts as the CCP for exchange and OTC trades in equity derivatives, fixed income derivatives, resale and repurchase contracts, power derivatives, emission allowance derivatives, freight and fuel oil derivatives, iron ore derivatives and seafood derivatives.

Through our clearing operations in the financial markets, which include the resale and repurchase market, the commodities markets, and the seafood market, Nasdaq Clearing is the legal counterparty for, and guarantees the fulfillment of, each contract cleared. These contracts are not used by Nasdaq Clearing for the purpose of trading on its own behalf. As the legal counterparty of each transaction, Nasdaq Clearing bears the counterparty risk between the purchaser and seller in the contract. In its guarantor role, Nasdaq Clearing has precisely equal and offsetting claims to and from clearing members on opposite sides of each contract, standing as the CCP on every contract cleared. In accordance with the rules and regulations of Nasdaq Clearing, clearing members' open positions are aggregated to create a single portfolio for which default fund and margin collateral requirements are calculated. See "Default Fund Contributions and Margin Deposits" below for further discussion of Nasdaq Clearing's default fund and margin requirements.

Nasdaq Clearing maintains four member sponsored default funds: one related to financial markets, one related to commodities markets, one related to the seafood market, and a mutualized fund. Under this structure, Nasdaq Clearing and its clearing members must contribute to the total regulatory capital related to the clearing operations of Nasdaq Clearing. This structure applies an initial separation of default fund contributions for the financial, commodities and seafood markets in order to create a buffer for each market's counterparty risks. Simultaneously, a mutualized default fund provides capital efficiencies to Nasdaq Clearing's members with regard to total regulatory capital required. See "Default Fund Contributions" below for further discussion of Nasdaq Clearing's default fund. Power of assessment and a liability waterfall also have been implemented. See "Power of Assessment" and "Liability Waterfall" below for further discussion. These requirements ensure the alignment of risk between Nasdaq Clearing and its clearing members.

Default Fund Contributions and Margin Deposits

As of March 31, 2017, clearing member default fund contributions and margin deposits were as follows:

	March 31, 2017		
	Cash Contributions	Non-Cash Contributions	Total Contributions
	(in millions)		
Default fund contributions	$ 334	$ 99	$ 433
Margin deposits	3,299	3,646	6,945
Total	$ 3,633	$ 3,745	$ 7,378

In accordance with its investment policy, of the total cash contributions of $3,633 million, Nasdaq Clearing has invested cash contributions of $576 million in reverse repurchase agreements and $1,610 million in highly rated European, and to a lesser extent, U.S. government debt securities or central bank certificates. The remainder of this balance is held in cash. Of the total default fund contributions of $433 million, Nasdaq Clearing can utilize $370 million as capital resources in the event of a counterparty default. The remaining balance of $63 million pertains to member posted surplus balances.

Default Fund Contributions

Contributions made to the default funds are proportional to the exposures of each clearing member. When a clearing member is active in more than one market, contributions must be made to all markets' default funds in which the member is active. Clearing members' eligible contributions may include cash and non-cash contributions. Cash contributions received are held in cash or invested by Nasdaq Clearing, in accordance with its investment policy, either in highly rated government debt securities, time deposits, central bank certificates or reverse repurchase agreements with highly rated government debt securities as collateral. Nasdaq Clearing maintains and manages all cash deposits related to margin collateral. All risks and rewards of collateral ownership, including interest, belong to Nasdaq Clearing. Clearing members' cash contributions are included in default funds and margin deposits in the Condensed Consolidated Balance Sheets as both a current asset and a current liability. Non-cash contributions include highly rated government debt securities that must meet specific criteria approved by Nasdaq Clearing. Non-cash contributions are pledged assets that are not recorded in the Condensed Consolidated Balance Sheets as Nasdaq Clearing does not take legal ownership of these assets and the risks and rewards remain with the clearing members. These balances may fluctuate over time due to changes in the amount of deposits required and whether members choose to provide cash or non-cash contributions. Assets pledged are held at a nominee account in Nasdaq Clearing's name for the benefit of the clearing members and are immediately accessible by Nasdaq Clearing in the event of a default. In addition to clearing members' required contributions to the liability waterfall, Nasdaq Clearing is also required to contribute capital to the liability waterfall and overall regulatory capital as specified under its clearinghouse rules. As of March 31, 2017, Nasdaq Clearing committed capital totaling $115 million to the liability waterfall and overall regulatory capital, in the form of government debt securities, which are recorded as financial investments, at fair value in the Condensed Consolidated Balance Sheets. The combined regulatory capital of the clearing members and Nasdaq Clearing will serve to secure the obligations of a clearing member and may be used to cover losses sustained by a clearing member in the event of a default.

Margin Deposits

Nasdaq Clearing requires all clearing members to provide collateral, which may consist of cash and non-cash contributions, to guarantee performance on the clearing members' open positions, or initial margin. In addition, clearing members must also provide collateral to cover the daily margin call if needed. See "Default Fund Contributions" above for further discussion of cash and non-cash contributions.

Similar to default fund contributions, Nasdaq Clearing maintains and manages all cash deposits related to margin collateral. All risks and rewards of collateral ownership, including interest, belong to Nasdaq Clearing. These cash deposits are recorded in default funds and margin deposits in the Condensed Consolidated Balance Sheets as both a current asset and current liability. Pledged margin collateral is not recorded in our Condensed Consolidated Balance Sheets as all risks and rewards of collateral ownership, including interest, belong to the counterparty. Assets pledged are held at a nominee account in Nasdaq Clearing's name for the benefit of the clearing members and are immediately accessible by Nasdaq Clearing in the event of a default.

Nasdaq Clearing marks to market all outstanding contracts and requires payment from clearing members whose positions have lost value. The mark-to-market process helps identify any clearing members that may not be able to satisfy their financial obligations in a timely manner allowing Nasdaq Clearing the ability to mitigate the risk of a clearing member defaulting due to exceptionally large losses. In the event of a default, Nasdaq Clearing can access the defaulting member's margin deposits to cover the defaulting member's losses.

Regulatory Capital and Risk Management Calculations

Nasdaq Clearing manages risk through a comprehensive counterparty risk management framework, which is comprised of policies, procedures, standards and financial resources. The level of regulatory capital is determined in accordance with Nasdaq Clearing's regulatory capital policy, as approved by the SFSA. Regulatory capital calculations are continuously updated through a proprietary capital-at-risk calculation model that establishes the appropriate level of capital.

As mentioned above, Nasdaq Clearing is the legal counterparty for each contract traded and thereby guarantees the fulfillment of each contract. Nasdaq Clearing accounts for this guarantee as a performance guarantee. We determine the fair value of the performance guarantee by considering daily settlement of contracts and other margining and default fund requirements, the risk management program, historical evidence of default payments, and the estimated probability of potential default payouts. The calculation is determined using proprietary risk management software that simulates gains and losses based on historical market prices, extreme but plausible market scenarios, volatility and other factors present at that point in time for those particular unsettled contracts. Based on this analysis, the estimated liability was nominal and no liability was recorded as of March 31, 2017.

The market value of derivative contracts outstanding prior to netting was as follows:

	March 31, 2017 (in millions)
Commodity and seafood options, futures and forwards[(1)(2)(3)]	$ 550
Fixed-income options and futures[(1)(2)]	743
Stock options and futures[(1)(2)]	132
Index options and futures[(1)(2)]	101
Total	$ 1,526

(1) We determined the fair value of our option contracts using standard valuation models that were based on market-based observable inputs including implied volatility, interest rates and the spot price of the underlying instrument.

(2) We determined the fair value of our futures contracts based upon quoted market prices and average quoted market yields.

(3) We determined the fair value of our forward contracts using standard valuation models that were based on market-based observable inputs including LIBOR rates and the spot price of the underlying instrument.

The total number of derivative contracts cleared through Nasdaq Clearing for the three months ended March 31, 2017 and 2016 was as follows:

	March 31, 2017	March 31, 2016
Commodity and seafood options, futures and forwards[(1)]	726,739	907,921
Fixed-income options and futures	5,158,237	4,368,986
Stock options and futures	7,383,538	8,303,721
Index options and futures	11,315,176	14,685,731
Total	24,583,690	28,266,359

(1) The total volume in cleared power related to commodity contracts was 379 Terawatt hours (TWh) for the three months ended March 31, 2017 and 420 TWh for the three months ended March 31, 2016.

The outstanding contract value of resale and repurchase agreements was $6.3 billion as of March 31, 2017 and $6.4 billion at March 31, 2016. The total number of contracts cleared was 1,979,972 for the three months ended March 31, 2017 and was 1,820,753 for the three months ended March 31, 2016.

Power of Assessment

To further strengthen the contingent financial resources of the clearinghouse, Nasdaq Clearing has power of assessment that provides the ability to collect additional funds from its clearing members to cover a defaulting member's remaining obligations up to the limits established under the terms of the clearinghouse rules. The power of assessment corresponds to 100.0% of the clearing member's aggregate contribution to the financial, commodities and seafood markets' default funds.

Liability Waterfall

The liability waterfall is the priority order in which the capital resources would be utilized in the event of a default where the defaulting clearing member's collateral would not be sufficient to cover the cost to settle its portfolio. If a default occurs and the defaulting clearing member's collateral, including cash deposits and pledged assets, is depleted, then capital is utilized in the following amount and order:

- junior capital contributed by Nasdaq Clearing, which totaled $18 million at March 31, 2017;
- a loss sharing pool related only to the financial market that is contributed to by clearing members and only applies if the defaulting member's portfolio includes interest rate swap products;
- specific market default fund where the loss occurred (i.e., the financial, commodities, or seafood market), which includes capital contributions of the clearing members on a pro-rata basis;
- senior capital contributed to each specific market by Nasdaq Clearing, calculated in accordance with clearinghouse rules, which totaled $28 million at March 31, 2017; and
- mutualized default fund, which includes capital contributions of the clearing members on a pro-rata basis.

If additional funds are needed after utilization of the mutualized default fund, then Nasdaq Clearing will utilize its power of assessment and additional capital contributions will be required by non-defaulting members up to the limits established under the terms of the clearinghouse rules.

15. Commitments, Contingencies and Guarantees

Guarantees Issued and Credit Facilities Available

In addition to the default fund contributions and margin collateral pledged by clearing members discussed in Note 14, "Clearing Operations," we have obtained financial guarantees and credit facilities which are guaranteed by us through counter indemnities, to provide further liquidity related to our clearing businesses. Financial guarantees issued to us totaled $12 million at March 31, 2017 and $13 million at December 31, 2016. As discussed in "Other Credit Facilities," of Note 8, "Debt Obligations," credit facilities, which are available in multiple currencies, totaled $172 million at March 31, 2017 and $170 million at December 31, 2016, in available liquidity, none of which was utilized.

Execution Access is an introducing broker which operates the trading platform for our Fixed Income business to trade in U.S. Treasury securities. Execution Access has a clearing arrangement with Cantor Fitzgerald. As of March 31, 2017, we have contributed $19 million of clearing deposits to Cantor Fitzgerald in connection with this clearing arrangement. These deposits are recorded in other current assets in our Condensed Consolidated Balance Sheets. Some of the trading activity in Execution Access is cleared by Cantor Fitzgerald through the Fixed Income Clearing Corporation. Execution Access assumes the counterparty risk of clients that do not clear through the Fixed Income Clearing Corporation. Counterparty risk of clients exists for Execution Access between the trade date and the settlement date of the individual transactions, which is one business day. All of Execution Access' obligations under the clearing arrangement with Cantor Fitzgerald are guaranteed by Nasdaq. Counterparties that do not clear through the Fixed Income Clearing Corporation are subject to a credit due diligence process and may be required to post collateral, provide principal letters, or provide other forms of credit enhancement to Execution Access for the purpose of mitigating counterparty risk.

We believe that the potential for us to be required to make payments under these arrangements is mitigated through the pledged collateral and our risk management policies. Accordingly, no contingent liability is recorded in the Condensed Consolidated Balance Sheets for these arrangements.

Lease Commitments

We lease some of our office space under non-cancelable operating leases with third parties and sublease office space to third parties. Some of our lease agreements contain renewal options and escalation clauses based on increases in property taxes and building operating costs.

Other Guarantees

We have provided other guarantees of $3 million as of March 31, 2017 and December 31, 2016. These guarantees are primarily related to obligations for our rental and leasing contracts as well as performance guarantees on certain market technology contracts related to the delivery of software technology and support services. We have received financial guarantees from various financial institutions to support the above guarantees.

Through our clearing operations in the financial markets, Nasdaq Clearing is the legal counterparty for, and guarantees the performance of, its clearing members. See Note 14, "Clearing Operations," for further discussion of Nasdaq Clearing performance guarantees.

We have provided a guarantee related to lease obligations for The Nasdaq Entrepreneurial Center, Inc. which is a not-for-profit organization designed to convene, connect and engage aspiring and current entrepreneurs. This entity is not included in the condensed consolidated financial statements of Nasdaq.

We believe that the potential for us to be required to make payments under these arrangements is unlikely. Accordingly, no contingent liability is recorded in the Condensed Consolidated Balance Sheets for the above guarantees.

Non-Cash Contingent Consideration

As part of the purchase price consideration of a prior acquisition, we have agreed to future annual issuances of 992,247 shares of Nasdaq common stock which approximated certain tax benefits associated with the transaction. Such contingent future issuances of Nasdaq common stock will be paid ratably through 2027 if Nasdaq's total gross revenues equal or exceed $25 million in each such year. The contingent future issuances of Nasdaq common stock are subject to anti-dilution protections and acceleration upon certain events.

Escrow Agreements

In connection with prior acquisitions, we entered into escrow agreements to secure the payment of post-closing adjustments and to ensure other closing conditions. At March 31, 2017, these escrow agreements provide for future payment of $31 million and are included in other current liabilities in the Condensed Consolidated Balance Sheets.

Routing Brokerage Activities

One of our broker-dealer subsidiaries, Nasdaq Execution Services, provides a guarantee to securities clearinghouses and exchanges under its standard membership agreements, which require members to guarantee the performance of other members. If a member becomes unable to satisfy its obligations to a clearinghouse or exchange, other members would be required to meet its shortfalls. To mitigate these performance risks, the exchanges and clearinghouses often require members to post collateral, as well as meet certain minimum financial standards. Nasdaq Execution Services' maximum potential liability under these arrangements cannot be quantified. However, we believe that the potential for Nasdaq Execution Services to be required to make payments under these arrangements is unlikely. Accordingly, no contingent liability is recorded in the Condensed Consolidated Balance Sheets for these arrangements.

Litigation

As previously disclosed, we were named as a defendant in a putative class action, Rabin v. NASDAQ OMX PHLX LLC, et al., No. 15-551 (E.D. Pa.), filed in 2015 in the United States District Court for the Eastern District of Pennsylvania. On April 21, 2016, the court entered an order granting our motion to dismiss the complaint. The plaintiff appealed the dismissal to the Court of Appeals for the Third Circuit on May 18, 2016. Given that the complaint was dismissed at the preliminary stage of the proceeding, we are unable to estimate what, if any, liability may result from this litigation. However, we believe (as the district court concluded) that the claims are without merit, and we intend to defend the dismissal on appeal vigorously.

We also are named as one of many defendants in City of Providence v. BATS Global Markets, Inc., et al., 14 Civ. 2811 (S.D.N.Y.), which was filed on April 18, 2014 in the United States District Court for the Southern District of New York. The district court appointed lead counsel, who filed an amended complaint on September 2, 2014. The amended complaint names as defendants seven national exchanges, as well as Barclays PLC, which operated a private alternative trading system. On behalf of a putative class of securities traders, the plaintiffs allege that the defendants engaged in a scheme to manipulate the markets through high-frequency trading; the amended complaint asserts claims against us under Section 10(b) of the Exchange Act and Rule 10b-5, as well as under Section 6(b) of the Exchange Act. We filed a motion to dismiss the amended complaint on November 3, 2014. In response, the plaintiffs filed a second amended complaint on November 24, 2014, which names the same defendants and alleges essentially the same violations. We then filed a motion to dismiss the second amended complaint on January 23, 2015. On August 26, 2015, the district court entered an order dismissing the second amended complaint in its entirety with prejudice, concluding that most of the plaintiffs' theories were foreclosed by absolute immunity and in any event that the plaintiffs failed to state any claim. The plaintiffs have appealed the judgment of dismissal to the United States Court of Appeals for the Second Circuit. The Second Circuit heard oral argument on August 24, 2016. On August 25, 2016, the Second Circuit issued an order requesting the SEC's views on whether the district court had subject-matter jurisdiction over the case, and whether the defendants are immune from suit regarding the challenged conduct. The SEC filed its brief on November 28, 2016. The exchanges and plaintiffs filed supplemental briefs responding to the SEC's brief on December 12, 2016. Given the preliminary nature of the proceedings, and particularly the fact that the complaints have been dismissed, we are unable to estimate what, if any, liability may result from this litigation. However, we believe (as the district court concluded) that the claims are without merit and will continue to litigate vigorously.

Except as disclosed above and in prior reports filed under the Exchange Act, we are not currently a party to any litigation or proceeding that we believe could have a material adverse effect on our business, consolidated financial condition, or operating results. However, from time to time, we have been threatened with, or named as a defendant in, lawsuits or involved in regulatory proceedings.

Tax Audits

We are engaged in ongoing discussions and audits with taxing authorities on various tax matters, the resolutions of which are uncertain. Currently, there are matters that may lead to assessments, some of which may not be resolved for several years. Based on currently available information, we believe we have adequately provided for any assessments that could result from those proceedings where it is more likely than not that we will be assessed. We review our positions on these matters as they progress.

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16. Business Segments

We manage, operate and provide our products and services in four business segments: Market Services, Corporate Services, Information Services and Market Technology. See Note 1, "Organization and Nature of Operations," for further discussion of our reportable segments.

Our management allocates resources, assesses performance and manages these businesses as four separate segments. We evaluate the performance of our segments based on several factors, of which the primary financial measure is operating income. Results of individual businesses are presented based on our management accounting practices and structure.

The following table presents certain information regarding our operating segments for the three months ended March 31, 2017 and 2016:

	Market Services	Corporate Services	Information Services	Market Technology	Corporate Items	Consolidated
	(in millions)					
Three Months Ended March 31, 2017						
Total revenues	$ 606	$ 160	$ 138	$ 67	$ —	$ 971
Transaction-based expenses	(388)	—	—	—	—	(388)
Revenues less transaction-based expenses	218	160	138	67	—	583
Operating income (loss)	$ 119	$ 43	$ 102	$ 13	$ (29)	$ 248
Three Months Ended March 31, 2016						
Total revenues	$ 572	$ 143	$ 133	$ 57	$ —	$ 905
Transaction-based expenses	(371)	—	—	—	—	(371)
Revenues less transaction-based expenses	201	143	133	57	—	534
Operating income (loss)	$ 113	$ 34	$ 97	$ 10	$ (35)	$ 219

Certain amounts are allocated to corporate items in our management reports based on the decision that those activities should not be used to evaluate the segment's ongoing operating performance. The following items are allocated to corporate items for segment reporting purposes:

Amortization expense of acquired intangible assets: We amortize intangible assets acquired in connection with various acquisitions. Intangible asset amortization expense can vary from period to period due to episodic acquisitions completed, rather than from our ongoing business operations. As such, if intangible asset amortization is included in performance measures, it is more difficult to assess the day-to-day operating performance of the segments, and the relative operating performance of the segments between periods. Management does not consider intangible asset amortization expense for the purpose of evaluating the performance of our segments or their managers or when making decisions to allocate resources. Therefore, we believe performance measures excluding intangible asset amortization expense provide management with a more useful representation of our segment's ongoing activity in each period.

Restructuring charges: Restructuring charges are associated with our 2015 restructuring plan to improve performance, cut costs and reduce spending and as of March 31, 2016 are primarily related to (i) severance and other termination benefits, (ii) asset impairment charges, and (iii) other charges. We do not allocate these restructuring costs because they do not contribute to a meaningful evaluation of a particular segment's ongoing operating performance.

Merger and strategic initiatives expense: We have pursued various strategic initiatives and completed a number of acquisitions in recent years which have resulted in expenses which would not have otherwise been incurred. These expenses generally include integration costs, as well as legal, due diligence and other third party transaction costs. The frequency and the amount of such expenses vary significantly based on the size, timing and complexity of the transaction. Accordingly, we do not allocate these costs for purposes of disclosing segment results because they do not contribute to a meaningful evaluation of a particular segment's ongoing operating performance.

* * * * * *

A summary of our corporate items are as follows:

	Three Months Ended March 31,	
	2017	2016
	(in millions)	
Amortization expense of acquired intangible assets	$ 23	$ 17
Restructuring charges	—	9
Merger and strategic initiatives expense	6	9
Total	$ 29	$ 35

For further discussion of our segments' results, see "Part I. Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations—Segment Operating Results."

17. Subsequent Events

Increase in Quarterly Dividend

In April 2017, Nasdaq announced a 19.0% increase in our quarterly dividend to $0.38.

Debt Restructuring

In April 2017, Nasdaq announced it will redeem all of its 2018 Notes on May 26, 2017, using a combination of cash on hand and proceeds from the sale of commercial paper issued through Nasdaq's newly created commercial paper program. Additionally, Nasdaq entered into an agreement for a $1 billion five-year revolving credit facility, which replaces our existing 2014 Credit Facility. Nasdaq intends to use funds available under the new revolving credit facility for general corporate purposes and to provide liquidity support for the repayment of commercial paper issued through the commercial paper program. As a result, our 2014 Credit Facility has been terminated.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.

The following discussion and analysis of the financial condition and results of operations of Nasdaq should be read in conjunction with our condensed consolidated financial statements and related notes included in this Form 10-Q.

Business Overview

We are a leading provider of trading, clearing, exchange technology, regulatory, securities listing, information and public company services. Our global offerings are diverse and include trading and clearing across multiple asset classes, trade management services, data products, financial indexes, capital formation solutions, corporate solutions, and market technology products and services. Our technology powers markets across the globe, supporting equity derivative trading, clearing and settlement, cash equity trading, fixed income trading and many other functions.

Business Environment

We serve listed companies, market participants and investors by providing derivative, commodities, cash equity, and fixed income markets, thereby facilitating economic growth and corporate entrepreneurship. We provide market technology to exchanges, clearing organizations and central securities depositories around the world. We also offer companies and other organizations access to innovative products, software solutions and services that increase transparency, mitigate risk, improve board efficiency and facilitate better corporate governance. In broad terms, our business performance is impacted by a number of drivers including macroeconomic events affecting the risk and return of financial assets, investor sentiment, government and private sector demands for capital, the regulatory environment for capital markets, changing technology, particularly in the financial services industry, and changes in investment patterns and priorities. Our future revenues and net income will continue to be influenced by a number of domestic and international economic trends including, among others:

- Trading volumes and values in equity derivative, cash equity and FICC, which are driven primarily by overall macroeconomic conditions;
- The number of companies seeking equity financing, which is affected by factors such as investor demand, the global economy, and availability of diverse sources of financing, as well as tax and regulatory policies;
- The demand for information about, or access to, our markets, which is dependent on the products we trade, our importance as a liquidity center, and the quality and pricing of our data and trade management services;
- The demand by companies and other organizations for the products sold by our Corporate Solutions business, which is largely driven by the overall state of the economy and the attractiveness of our offerings;
- The demand for licensed ETPs and other financial products based on our indexes as well as changes to the underlying assets associated with existing licensed financial products;
- The challenges created by the automation of market data consumption, including competition and the quickly evolving nature of the data business;
- The outlook of our technology customers for capital market activity;
- Continuing pressure in transaction fee pricing due to intense competition in the U.S. and Europe;
- Competition related to pricing, product features and service offerings;
- Regulatory changes relating to market structure or affecting certain types of instruments, transactions, pricing structures or capital market participants; and
- Technological advances and members' and customers' demand for speed, efficiency, and reliability.

The current consensus forecast for gross domestic product growth for the U.S. is 2.2% in 2017 and 2.4% in 2018 and the Eurozone is 1.6% in 2017 and 1.5% in 2018. U.S. growth forecasts for 2017 have gradually declined since the start of 2016 and are currently at their lowest level and highly dependent on the fiscal priorities of the new administration. Growth forecasts for the Eurozone in 2017 dropped sharply following the Brexit vote but have since increased back to nearly the level since before the vote. While we expect continued modest annual growth in many of our non-trading segments (Corporate Services, Information Services, and Market Technology), we recognize that there are a number of significant structural and political issues continuing to impact the global economy. Consequently, sustained instability could return at any time, resulting in an increased level of market volatility, oscillating trading volumes, and a more cautious outlook by the clients of our non-trading segments. Following elevated volatility levels in 2015, volatility has continued to decline since the first quarter of 2016 and remained extremely low in the first quarter of 2017.

IPO activity in the U.S. remained muted in the first quarter of 2017 following a weak 2016, although we expect IPO activity in the U.S. to pick up in the second half of this year. Additional impacts on our business drivers include the international enactment and implementation of new legislative and regulatory initiatives, the evolution of market participants' trading and investment strategies, and the continued rapid progression and deployment of new technology in the financial services industry. The business environment that influences our financial performance in 2017 may be characterized as follows:

- Intense competition among U.S. exchanges and dealer-owned systems for cash equity trading and strong competition between MTFs and exchanges in Europe for cash equity trading;
- Globalization of exchanges, customers and competitors extending the competitive horizon beyond national markets; and

- Improvement in fund flows and market performance in ETPs.

Business Segments

We manage, operate and provide our products and services in four business segments: Market Services, Corporate Services, Information Services and Market Technology. See Note 1, "Organization and Nature of Operations," and Note 16, "Business Segments," to the condensed consolidated financial statements for further discussion of our reportable segments, as well as how management allocates resources, assesses performance and manages these businesses as four separate segments.

Nasdaq's Operating Results

Key Drivers

The following table includes key drivers for our Market Services, Corporate Services, Information Services and Market Technology segments. In evaluating the performance of our business, our senior management closely evaluates these key drivers.

	Three Months Ended March 31,	
	2017	2016
Market Services		
Equity Derivative Trading and Clearing		
U.S. equity options		
Total industry average daily volume (in millions)	14.6	15.3
Nasdaq PHLX matched market share	17.1%	16.1%
The Nasdaq Options Market matched market share	9.5%	7.1%
Nasdaq BX Options matched market share	0.7%	0.9%
Nasdaq ISE Options matched market share[1]	9.5%	—%
Nasdaq GEMX Options matched market share[1]	5.6%	—%
Nasdaq MRX Options matched market share[1]	0.1%	—%
Total matched market share executed on Nasdaq's exchanges	42.5%	24.1%
Nasdaq Nordic and Nasdaq Baltic options and futures		
Total average daily volume of options and futures contracts[2]	338,463	452,178
Cash Equity Trading		
Total U.S.-listed securities		
Total industry average daily share volume (in billions)	6.84	8.56
Matched share volume (in billions)	74.7	93.7
The Nasdaq Stock Market matched market share	14.0%	14.9%
Nasdaq BX matched market share	2.7%	2.0%
Nasdaq PSX matched market share	0.9%	1.0%
Total matched market share executed on Nasdaq's exchanges	17.6%	17.9%
Market share reported to the FINRA/Nasdaq Trade Reporting Facility	34.9%	31.9%
Total market share[3]	52.5%	49.8%
Nasdaq Nordic and Nasdaq Baltic securities		
Average daily number of equity trades executed on Nasdaq's exchanges	507,647	525,857
Total average daily value of shares traded (in billions)	$ 4.8	$ 5.7
Total market share executed on Nasdaq's exchanges	66.8%	62.5%
FICC		
Fixed Income		
U.S. fixed income notional trading volume (in billions)	$ 5,041	$ 5,968
Total average daily volume of Nasdaq Nordic and Nasdaq Baltic fixed income contracts	112,004	101,470
Commodities		
Power contracts cleared (TWh)[4]	379	420
Corporate Services		
Initial public offerings		
The Nasdaq Stock Market	17	10
Exchanges that comprise Nasdaq Nordic and Nasdaq Baltic	11	8
Total new listings		
The Nasdaq Stock Market[5]	42	47
Exchanges that comprise Nasdaq Nordic and Nasdaq Baltic[6]	16	14
Number of listed companies		
The Nasdaq Stock Market[7]	2,890	2,852
Exchanges that comprise Nasdaq Nordic and Nasdaq Baltic[8]	910	847
Information Services		
Number of licensed ETPs	306	226
ETP assets under management tracking Nasdaq indexes (in billions)	$ 138	$ 105
Market Technology		
Order intake (in millions)[9]	$ 47	$ 22
Total order value (in millions)[10]	$ 777	$ 783

(1) Matched market share for Nasdaq ISE, Nasdaq GEMX and Nasdaq MRX is not disclosed for the three months ended March 31, 2016 since Nasdaq's acquisition of ISE closed on June 30, 2016.
(2) Includes Finnish option contracts traded on EUREX Group.
(3) Includes transactions executed on The Nasdaq Stock Market's, Nasdaq BX's and Nasdaq PSX's systems plus trades reported through the FINRA/Nasdaq Trade Reporting Facility.
(4) Transactions executed on Nasdaq Commodities or OTC and reported for clearing to Nasdaq Commodities measured by Terawatt hours (TWh).
(5) New listings include IPOs, including those completed on a best efforts basis, issuers that switched from other listing venues, closed-end funds and separately listed ETPs.
(6) New listings include IPOs and represent companies listed on the Nasdaq Nordic and Nasdaq Baltic exchanges and companies on the alternative markets of Nasdaq First North.
(7) Number of total listings on The Nasdaq Stock Market at period end, including 332 separately listed ETPs at March 31, 2017 and 241 at March 31, 2016.
(8) Represents companies listed on the Nasdaq Nordic and Nasdaq Baltic exchanges and companies on the alternative markets of Nasdaq First North at period end.
(9) Total contract value of orders signed during the period.
(10) Represents total contract value of signed orders that are yet to be recognized as revenue. Market technology deferred revenue, as discussed in Note 7, "Deferred Revenue," to the condensed consolidated financial statements, represents consideration received that is yet to be recognized as revenue for these signed orders.

* * * * * *

Financial Summary

The following table summarizes our financial performance for the three months ended March 31, 2017 when compared with the same period in 2016. The comparability of our results of operations between reported periods is impacted by the acquisitions of Nasdaq CXC and Marketwired in February 2016, Boardvantage in May 2016, and ISE in June 2016. See "2016 Acquisitions," of Note 4, "Acquisitions," to the condensed consolidated financial statements for further discussion. For a detailed discussion of our results of operations, see "Segment Operating Results" below.

	Three Months Ended March 31, 2017	Three Months Ended March 31, 2016	Percentage Change
	(in millions, except per share amounts)		
Revenues less transaction-based expenses	$ 583	$ 534	9.2 %
Operating expenses	335	315	6.3 %
Operating income	248	219	13.2 %
Interest expense	(37)	(28)	32.1 %
Income before income taxes	217	195	11.3 %
Income tax provision	48	63	(23.8)%
Net income attributable to Nasdaq	$ 169	$ 132	28.0 %
Diluted earnings per share	$ 0.99	$ 0.78	26.9 %
Cash dividends declared per common share	$ 0.32	$ 0.57	(43.9)%

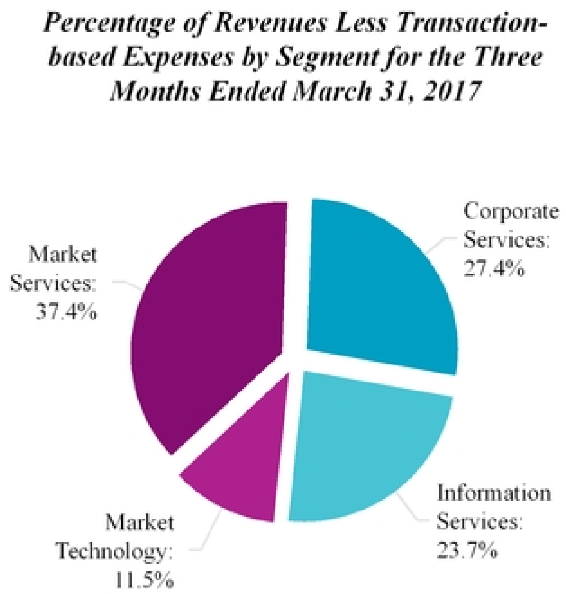
In countries with currencies other than the U.S. dollar, revenues and expenses are translated using monthly average exchange rates. Impacts on our revenues less transaction-based expenses and operating income associated with fluctuations in foreign currency are discussed in more detail under "Item 3. Quantitative and Qualitative Disclosures about Market Risk."

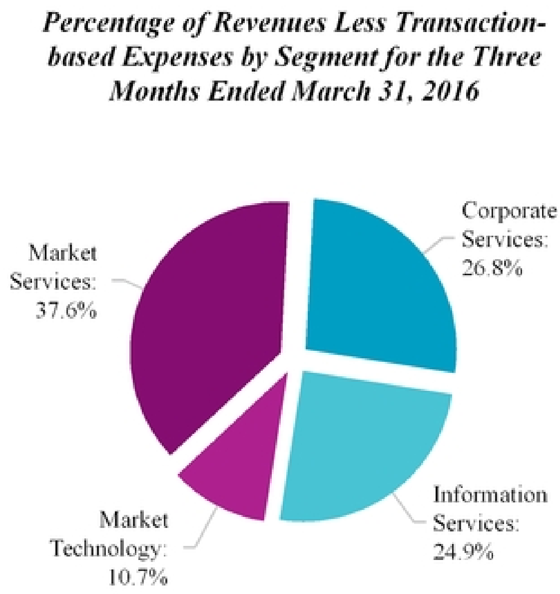
Segment Operating Results

The following table shows our revenues by segment, transaction-based expenses for our Market Services segment and total revenues less transaction-based expenses:

	Three Months Ended March 31, 2017	Three Months Ended March 31, 2016	Percentage Change
	(in millions)		
Market Services	$ 606	$ 572	5.9%
Transaction-based expenses	(388)	(371)	4.6%
Market Services revenues less transaction-based expenses	218	201	8.5%
Corporate Services	160	143	11.9%
Information Services	138	133	3.8%
Market Technology	67	57	17.5%
Total revenues less transaction-based expenses	$ 583	$ 534	9.2%

The following charts show our Market Services, Corporate Services, Information Services and Market Technology segments as a percentage of our total revenues less transaction-based expenses of $583 million for the three months ended March 31, 2017 and $534 million for the three months ended March 31, 2016:





MARKET SERVICES

The following table shows total revenues, transaction-based expenses, and total revenues less transaction-based expenses from our Market Services segment:

	Three Months Ended March 31,		
	2017	2016	Percentage Change
	(in millions)		
Market Services Revenues:			
Equity Derivative Trading and Clearing Revenues[(1)]	$ 191	$ 101	89.1 %
Transaction-based expenses:			
Transaction rebates	(113)	(48)	135.4 %
Brokerage, clearance and exchange fees[(1)]	(10)	(5)	100.0 %
Equity derivative trading and clearing revenues less transaction-based expenses	**68**	**48**	**41.7 %**
Cash Equity Trading Revenues[(2)]	320	382	(16.2)%
Transaction-based expenses:			
Transaction rebates	(183)	(230)	(20.4)%
Brokerage, clearance and exchange fees[(2)]	(76)	(82)	(7.3)%
Cash equity trading revenues less transaction-based expenses	**61**	**70**	**(12.9)%**
FICC Revenues	25	26	(3.8)%
Transaction-based expenses:			
Transaction rebates	(5)	(5)	— %
Brokerage, clearance and exchange fees	(1)	(1)	— %
FICC revenues less transaction-based expenses	**19**	**20**	**(5.0)%**
Trade Management Services Revenues	**70**	**63**	**11.1 %**
Total Market Services revenues less transaction-based expenses	**$ 218**	**$ 201**	**8.5 %**

(1) Includes Section 31 fees of $9 million in the first quarter of 2017 and $5 million in the first quarter of 2016. Section 31 fees are recorded as equity derivative trading and clearing revenues with a corresponding amount recorded in transaction-based expenses.

(2) Includes Section 31 fees of $72 million in the first quarter of 2017 and $75 million in the first quarter of 2016. Section 31 fees are recorded as cash equity trading revenues with a corresponding amount recorded in transaction-based expenses.

Equity Derivative Trading and Clearing Revenues

Equity derivative trading and clearing revenues and equity derivative trading and clearing revenues less transaction-based expenses increased in the first quarter of 2017 compared with the same period in 2016.

The increases in the first quarter of 2017 were primarily due to the inclusion of revenues from our acquisition of ISE.

Further impacting the increase in equity derivative trading and clearing revenues in the first quarter of 2017 was an increase in Section 31 pass-through fee revenue.

Section 31 fees are recorded as equity derivative trading and clearing revenues with a corresponding amount recorded as transaction-based expenses. In the U.S., we are assessed these fees from the SEC and pass them through to our customers in the form of incremental fees. Pass-through fees can increase or decrease due to rate changes by the SEC, our percentage of the overall industry volumes processed on our systems, and differences in actual dollar value of shares traded. Since the amount recorded in revenues is equal to the amount recorded as transaction-based expenses, there is no impact on our revenues less transaction-based expenses. The increase in the first quarter of 2017 compared with the same period in 2016 was primarily due to the inclusion of Section 31 fees from our acquisition of ISE.

Transaction rebates, in which we credit a portion of the per share execution charge to the market participant, increased in the first quarter of 2017 compared with the same period in 2016 primarily due to:

- the inclusion of rebates associated with our acquisition of ISE, partially offset by;
- lower U.S. industry trading volumes.

Brokerage, clearance and exchange fees increased in the first quarter of 2017 compared with the same period in 2016 primarily due to higher Section 31 pass-through fees due to the inclusion of Section 31 fees from our acquisition of ISE.

Cash Equity Trading Revenues

Cash equity trading revenues and cash equity trading revenues less transaction-based expenses decreased in the first quarter of 2017 compared with the same period in 2016. The decreases in the first quarter of 2017 were primarily due to:

- lower U.S. and European industry trading volumes, partially offset by;
- the inclusion of revenues associated with our acquisition of Nasdaq CXC.

Further impacting the decrease in cash equity trading revenues in the first quarter of 2017 was a decrease in Section 31 pass-through fee revenue.

Similar to equity derivative trading and clearing, in the U.S. we record Section 31 fees as cash equity trading revenues with a corresponding amount recorded as transaction-based expenses. We are assessed these fees from the SEC and pass them through to our customers in the form of incremental fees. Since the amount recorded as revenues is equal to the amount recorded as transaction-based expenses, there is no impact on our revenues less transaction-based expenses. The decrease in the first quarter of 2017 compared with the same period in 2016 was primarily due to lower dollar value traded on Nasdaq's exchanges.

Transaction rebates decreased in the first quarter of 2017 compared with the same period in 2016. For The Nasdaq Stock Market, Nasdaq PSX and Nasdaq CXC, we credit a portion of the per share execution charge to the market participant that provides the liquidity, and for Nasdaq BX, we credit a portion of the per share execution charge to the market participant that takes the liquidity. The decrease in transaction rebates in the first quarter of 2017 compared with the same period in 2016 was primarily due to:

- lower U.S. industry trading volumes, partially offset by;
- the inclusion of rebates associated with our acquisition of Nasdaq CXC.

Brokerage, clearance and exchange fees decreased in the first quarter of 2017 compared with the same period in 2016 primarily due to a decrease in Section 31 pass-through fees and a decline in routing fees.

FICC Revenues

FICC revenues and FICC revenues less transaction-based expenses decreased slightly in the first quarter of 2017 compared with the same period in 2016.

Trade Management Services Revenues

Trade management services revenues increased in the first quarter of 2017 compared with the same period in 2016 primarily due to the inclusion of revenues from our acquisition of ISE and an increase in customer demand for network connectivity.

CORPORATE SERVICES

The following table shows revenues from our Corporate Services segment:

	Three Months Ended March 31, 2017	Three Months Ended March 31, 2016	Percentage Change
	(in millions)		
Corporate Services:			
Corporate Solutions	$ 95	$ 77	23.4 %
Listing Services	65	66	(1.5)%
Total Corporate Services	$ 160	$ 143	11.9 %

Corporate Solutions Revenues

Corporate solutions revenues increased in the first quarter of 2017 compared with the same period in 2016 primarily due to the inclusion of revenues associated with the acquisitions of Marketwired and Boardvantage.

Listing Services Revenues

Listing services revenues decreased in the first quarter of 2017 compared with the same period in 2016 primarily due to an unfavorable impact from foreign exchange.

INFORMATION SERVICES

The following table shows revenues from our Information Services segment:

	Three Months Ended March 31, 2017	Three Months Ended March 31, 2016	Percentage Change
	(in millions)		
Information Services:			
Data Products	$ 108	$ 105	2.9%
Index Licensing and Services	30	28	7.1%
Total Information Services	$ 138	$ 133	3.8%

Data Products Revenues

Data products revenues increased in the first quarter of 2017 compared with the same period in 2016 primarily due to growth in proprietary data products revenues and the inclusion of revenues from the acquisition of ISE.

Index Licensing and Services Revenues

Index licensing and services revenues increased in the first quarter of 2017 compared with the same period in 2016 primarily due to the inclusion of revenues from the ISE acquisition and higher assets under management in ETPs linked to Nasdaq indexes, partially offset by lower revenue from derivative products licensing Nasdaq indexes due to lower trading volumes.

MARKET TECHNOLOGY

The following table shows revenues from our Market Technology segment:

	Three Months Ended March 31,		
	2017	2016	Percentage Change
	(in millions)		
Market Technology	$ 67	$ 57	17.5%

Market Technology Revenues

The increase in the first quarter of 2017 compared with the same period in 2016 was primarily due to an increase in revenues from software, licensing and support, surveillance, and BWise advisory.

Total Order Value

Total order value, which represents the total contract value of orders signed that are yet to be recognized as revenues, was $777 million as of March 31, 2017 and December 31, 2016. As of March 31, 2017, market technology deferred revenue of $179 million represents consideration received that is yet to be recognized as revenue for these signed orders. See Note 7, “Deferred Revenue,” to the condensed consolidated financial statements for further discussion. The recognition and timing of these revenues depends on many factors, including those that are not within our control. As such, the following table of market technology revenues to be recognized in the future represents our best estimate:

	Total Order Value
	(in millions)
Fiscal year ended:	
2017[(1)]	$ 172
2018	206
2019	128
2020	118
2021	73
2022 and thereafter	80
Total	$ 777

(1) Represents deferred revenue that is anticipated to be recognized over the remaining nine months of 2017.

Expenses

Operating Expenses

The following table shows our operating expenses:

	Three Months Ended March 31,		
	2017	2016	Percentage Change
	(in millions)		
Compensation and benefits	$ 161	$ 152	5.9 %
Professional and contract services	36	35	2.9 %
Computer operations and data communications	30	25	20.0 %
Occupancy	23	20	15.0 %
General, administrative and other	19	14	35.7 %
Marketing and advertising	7	6	16.7 %
Depreciation and amortization	45	38	18.4 %
Regulatory	8	7	14.3 %
Merger and strategic initiatives	6	9	(33.3)%
Restructuring charges	—	9	(100.0)%
Total operating expenses	$ 335	$ 315	6.3 %

The increase in compensation and benefits expense in the first quarter of 2017 was primarily due to overall higher compensation costs resulting from our 2016 acquisitions, partially offset by a favorable impact from foreign exchange of $2 million.

Headcount increased to 4,286 employees at March 31, 2017 from 4,167 at March 31, 2016.

The increase in computer operations and data communications expense in the first quarter of 2017 was primarily due to higher hardware and license costs associated with our 2016 acquisitions.

The increase in occupancy expense in the first quarter of 2017 primarily reflects additional facility and rent costs associated with our 2016 acquisitions, partially offset by lower facility and rent costs as a result of our restructuring activities.

The increase in general, administrative and other expense in the first quarter of 2017 is primarily due to an increase in bad debt expense, a negative impact from foreign currency, and lower regulatory fine income.

The increase in depreciation and amortization expense in the first quarter of 2017 was primarily due to additional amortization expense associated with acquired intangible assets related to our 2016 acquisitions.

Merger and strategic initiatives expense for the first quarter of 2017 was primarily related to our acquisitions of ISE and Boardvantage. Merger and strategic initiatives expense for the first quarter of 2016 was primarily related to our acquisitions of Marketwired and Nasdaq CXC.

See Note 3, "Restructuring Charges," to the condensed consolidated financial statements for a discussion of our restructuring charges recorded in the first quarter of 2016.

Non-operating Income and Expenses

The following table shows our non-operating income and expenses:

	Three Months Ended March 31,		
	2017	2016	Percentage Change
	(in millions)		
Interest income	$ 2	$ 1	100.0 %
Interest expense	(37)	(28)	32.1 %
Net interest expense	(35)	(27)	29.6 %
Other investment income	—	1	(100.0)%
Net income from unconsolidated investees	4	2	100.0 %
Total non-operating expenses	$ (31)	$ (24)	29.2 %

Interest Income

Interest income increased in the first quarter of 2017 compared with the same period in 2016 primarily due to higher average cash and financial investments balances.

Interest Expense

The following table shows our interest expense:

	Three Months Ended March 31,		
	2017	2016	Percentage Change
	(in millions)		
Interest expense	$ 35	$ 27	29.6%
Accretion of debt issuance costs and debt discount	2	1	100.0%
Total interest expense	$ 37	$ 28	32.1%

Interest expense increased in the first quarter of 2017 compared with the same period in 2016 primarily due to our debt issuances in 2016 related to our 2016 acquisitions.

See Note 8, "Debt Obligations," to the condensed consolidated financial statements for further discussion of our debt obligations.

Net Income from Unconsolidated Investees

Net income from unconsolidated investees in the first quarter of 2017 and 2016 primarily relates to income recognized from our equity method investment in OCC. See "Equity Method Investments," of Note 6, "Investments," to the condensed consolidated financial statements for further discussion of our equity method investments.

Tax Matters

The following table shows our income tax provision and effective tax rate:

	Three Months Ended March 31,		
	2017	2016	Percentage Change
	($ in millions)		
Income tax provision	$ 48	$ 63	(23.8)%
Effective tax rate	22.1%	32.3%	(10.2)%

For further discussion of our tax matters, see "Tax Matters," of Note 2, "Basis of Presentation and Principles of Consolidation," to the condensed consolidated financial statements.

The effective tax rate may vary from period to period depending on, among other factors, the geographic and business mix of earnings and losses. These same and other factors, including history of pre-tax earnings and losses, are taken into account in assessing the ability to realize deferred tax assets.

In order to recognize and measure our unrecognized tax benefits, management determines whether a tax position is more likely than not to be sustained upon examination, including resolution of any related appeals or litigation processes, based on the technical merits of the position. Once it is determined that a position meets the recognition thresholds, the position is measured to determine the amount of benefit to be recognized in the condensed consolidated financial statements. Interest and/or penalties related to income tax matters are recognized in income tax expense.

Although no new U.S. tax legislation has been enacted, we are currently assessing the impact various tax reform proposals will have on our condensed consolidated financial statements.

Non-GAAP Financial Measures

In addition to disclosing results determined in accordance with U.S. GAAP, we also have provided non-GAAP net income attributable to Nasdaq and non-GAAP diluted earnings per share. Management uses this non-GAAP information internally, along with U.S. GAAP information, in evaluating our performance and in making financial and operational decisions. We believe our presentation of these measures provides investors with greater transparency and supplemental data relating to our financial condition and results of operations. In addition, we believe the presentation of these measures is useful to investors for period-to-period comparisons of results as the items described below do not reflect ongoing operating performance.

These measures are not in accordance with, or an alternative to, U.S. GAAP, and may be different from non-GAAP measures used by other companies. Investors should not rely on any single financial measure when evaluating our business. We recommend investors review the U.S. GAAP financial measures included in this Quarterly Report on Form 10-Q, including our condensed consolidated financial statements and the notes thereto. When viewed in conjunction with our U.S. GAAP results and the accompanying reconciliation, we believe these non-GAAP measures provide greater transparency and a more complete understanding of factors affecting our business than U.S. GAAP measures alone.

We understand that analysts and investors regularly rely on non-GAAP financial measures, such as non-GAAP net income attributable to Nasdaq and non-GAAP diluted earnings per share, to assess operating performance. We use non-GAAP net income attributable to Nasdaq and non-GAAP diluted earnings per share because they highlight trends more clearly in our business that may not otherwise be apparent when relying solely on U.S. GAAP financial measures, since these measures eliminate from our results specific financial items that have less bearing on our ongoing operating performance. Non-GAAP net income attributable to Nasdaq for the periods presented below is calculated by adjusting for the following items:

Amortization expense of acquired intangible assets: We amortize intangible assets acquired in connection with various acquisitions. Intangible asset amortization expense can vary from period to period due to episodic acquisitions completed, rather than from our ongoing business operations. As such, if intangible asset amortization is included in performance measures, it is more difficult to assess the day-to-day operating performance of the businesses, the relative operating performance of the businesses between periods, and the earnings power of Nasdaq. Performance measures excluding intangible asset amortization therefore provide investors with a more useful representation of our businesses' ongoing activity in each period.

Restructuring charges: Restructuring charges are associated with our 2015 restructuring plan to improve performance, cut costs and reduce spending and as of March 31, 2016 were primarily related to (i) severance and other termination benefits, (ii) asset impairment charges, and (iii) other charges. We exclude these restructuring costs because these costs do not reflect future operating expenses and do not contribute to a meaningful evaluation of Nasdaq's ongoing operating performance or comparison of Nasdaq's performance between periods.

Merger and strategic initiatives expense: We have pursued various strategic initiatives and completed a number of acquisitions in recent years which have resulted in expenses which would not have otherwise been incurred. These expenses generally include integration costs, as well as legal, due diligence and other third party transaction costs. The frequency and the amount of such expenses vary significantly based on the size, timing and complexity of the transaction. Accordingly, we exclude these costs for purposes of calculating non-GAAP measures which provide a more meaningful analysis of Nasdaq's ongoing operating performance or comparison in Nasdaq's performance between periods.

* * * * * *

The following table represents reconciliations between U.S. GAAP net income attributable to Nasdaq and diluted earnings per share and non-GAAP net income attributable to Nasdaq and diluted earnings per share:

	Three Months Ended March 31, 2017		Three Months Ended March 31, 2016	
	Net Income	Diluted Earnings Per Share	Net Income	Diluted Earnings Per Share
	(in millions, except share and per share amounts)			
U.S. GAAP net income attributable to Nasdaq and diluted earnings per share	$ 169	$ 0.99	$ 132	$ 0.78
Non-GAAP adjustments:				
Amortization expense of acquired intangible assets	23	0.14	17	0.10
Restructuring charges	—	—	9	0.05
Merger and strategic initiatives	6	0.04	9	0.05
Adjustment to the income tax provision to reflect non-GAAP adjustments[(1)]	(11)	(0.07)	(14)	(0.07)
Total non-GAAP adjustments, net of tax	18	0.11	21	0.13
Non-GAAP net income attributable to Nasdaq and diluted earnings per share	$ 187	$ 1.10	$ 153	$ 0.91
Weighted-average common shares outstanding for diluted earnings per share		170,246,947		168,368,444

(1) We determine the tax effect of each item based on the tax rules in the respective jurisdiction where the transaction occurred.

Liquidity and Capital Resources

Historically, we have funded our operating activities and met our commitments through cash generated by operations, augmented by the periodic issuance of our common stock and debt. See Note 8, "Debt Obligations," to the condensed consolidated financial statements for further discussion of our debt obligations. Currently, our cost and availability of funding remain healthy.

As part of the purchase price consideration of a prior acquisition, Nasdaq has contingent future obligations to issue 992,247 shares of Nasdaq common stock annually which approximated certain tax benefits associated with the transaction of $484 million. Such contingent future issuances of Nasdaq common stock will be paid ratably through 2027 if Nasdaq's total gross revenues equal or exceed $25 million in each such year. The contingent future issuances of Nasdaq common stock are subject to anti-dilution protections and acceleration upon certain events.

In May 2016, Nasdaq issued the 2023 Notes and in June 2016, Nasdaq issued the 2026 Notes. We used the majority of the net proceeds from the 2023 Notes of $664 million and the 2026 Notes of $495 million to fund the acquisition of ISE and related expenses. See "3.85% Senior Unsecured Notes," and "1.75% Senior Unsecured Notes," of Note 8, "Debt Obligations," and "Acquisition of ISE," of Note 4, "Acquisitions," to the condensed consolidated financial statements for further discussion.

In March 2016, Nasdaq entered into the 2016 Credit Facility which provides for a $400 million senior unsecured term loan facility. In March 2016, loans in an aggregate principal amount of $400 million were drawn under the 2016 Credit Facility and the net proceeds of $399 million were used to partially repay amounts outstanding under the revolving credit commitment of the 2014 Credit Facility. As of March 31, 2017, the balance of $399 million reflects the aggregate principal amount, less the unamortized debt issuance costs. See "2016 Credit Facility," of Note 8, "Debt Obligations," to the condensed consolidated financial statements for further discussion.

Our 2014 Credit Facility consisted of a $750 million revolving credit commitment (with sublimits for non-dollar borrowings, swingline borrowings and letters of credit). As of March 31, 2017, availability under the revolving credit commitment was $749 million. See "2014 Credit Facility," of Note 8, "Debt Obligations," to the condensed consolidated financial statements for further discussion.

In April 2017, Nasdaq entered into an agreement for a $1 billion five-year revolving credit facility, which replaces our existing 2014 Credit Facility. Nasdaq intends to use funds available under the new revolving credit facility for general corporate purposes and to provide liquidity support for the repayment of commercial paper issued through a newly created commercial paper program. As a result, our 2014 Credit Facility has been terminated. See "Debt Restructuring," of Note 17, "Subsequent Events," for further discussion.

In the near term, we expect that our operations and availability under our revolving credit commitment and newly created commercial paper program will provide sufficient cash to fund our operating expenses, capital expenditures, debt repayments, any share repurchases, and any dividends.

Various assets and liabilities, including cash and cash equivalents, receivables, accounts payable and accrued expenses, can fluctuate from month to month. Working capital (calculated as current assets less current liabilities) was $61 million at March 31, 2017 compared with $478 million at December 31, 2016, a decrease of $417 million. Current asset balance changes increased working capital by $387 million, with increases in default funds and margin deposits, restricted cash, and receivables, net, partially offset by decreases in financial investments, at fair value, cash and cash equivalents, and other current assets. Current liability balance changes decreased working capital by $804 million, due to increases in the current portion of debt obligations, default funds and margin deposits, deferred revenue, other current liabilities, and accounts payable and accrued expenses, partially offset by decreases in accrued personnel costs and Section 31 fees payable to the SEC.

Principal factors that could affect the availability of our internally-generated funds include:

- deterioration of our revenues in any of our business segments;
- changes in our working capital requirements; and
- an increase in our expenses.

Principal factors that could affect our ability to obtain cash from external sources include:

- operating covenants contained in our credit facilities that limit our total borrowing capacity;
- increases in interest rates under our credit facilities;
- credit rating downgrades, which could limit our access to additional debt;
- a decrease in the market price of our common stock; and
- volatility or disruption in the public debt and equity markets.

The following sections discuss the effects of changes in our financial assets, debt obligations, clearing and broker-dealer net capital requirements, and cash flows on our liquidity and capital resources.

Financial Assets

The following table summarizes our financial assets:

	March 31, 2017	December 31, 2016
	(in millions)	
Cash and cash equivalents	$ 386	$ 403
Restricted cash	78	15
Financial investments, at fair value	220	245
Total financial assets	$ 684	$ 663

Cash and Cash Equivalents and Restricted Cash

Cash and cash equivalents includes all non-restricted cash in banks and highly liquid investments with original maturities of 90 days or less at the time of purchase. The balance retained in cash and cash equivalents is a function of anticipated or possible short-term cash needs, prevailing interest rates, our investment policy, and alternative investment choices. As of March 31, 2017, our cash and cash equivalents of $386 million were primarily invested in bank deposits, money market funds and commercial paper. In the long-term, we may use both internally generated funds and external sources to satisfy our debt obligations and other long-term liabilities. Cash and cash equivalents as of March 31, 2017 decreased $17 million from December 31, 2016, primarily due to cash used to repurchase our common stock, cash dividends on our common stock and payments related to employee shares withheld for taxes, partially offset by net cash provided by operating activities. See “Cash Flow Analysis” below for further discussion.

As of March 31, 2017 and December 31, 2016, restricted cash is restricted from withdrawal due to a contractual requirement or not available for general use. Restricted cash was $78 million as of March 31, 2017 and $15 million as of December 31, 2016, an increase of $63 million. The increase relates to customer funds held in connection with privately negotiated securities transactions. Restricted cash is classified as restricted cash in the Condensed Consolidated Balance Sheets.

Repatriation of Cash

Our cash and cash equivalents held outside of the U.S. in various foreign subsidiaries totaled $139 million as of March 31, 2017 and $102 million as of December 31, 2016. The remaining balance held in the U.S. totaled $247 million as of March 31, 2017 and $301 million as of December 31, 2016.

Unremitted earnings of subsidiaries outside of the U.S. are used to finance our international operations and are generally considered to be indefinitely reinvested. It is not our current intent to change this position. However, the majority of cash held outside the U.S. is available for repatriation, but under current law, could subject us to additional U.S. income taxes, less applicable foreign tax credits.

Share Repurchase Program

See “Share Repurchase Program,” of Note 11, “Nasdaq Stockholders’ Equity,” to the condensed consolidated financial statements for further discussion of our share repurchase program.

Cash Dividends on Common Stock

The following table shows quarterly cash dividends declared per common share on our outstanding common stock:

	2017	2016
First quarter	$ 0.32	$ 0.57

See “Cash Dividends on Common Stock,” of Note 11, “Nasdaq Stockholders’ Equity,” to the condensed consolidated financial statements for further discussion of the dividends. In the first quarter of 2016, we declared a cash dividend of $0.25 in January 2016 and $0.32 in March 2016.

Financial Investments, at Fair Value

Our financial investments, at fair value totaled $220 million as of March 31, 2017 and $245 million as of December 31, 2016 and are primarily comprised of trading securities, mainly highly rated European government debt securities. Of these securities, $154 million as of March 31, 2017 and $172 million as of December 31, 2016 are assets utilized to meet regulatory capital requirements, primarily for our clearing operations at Nasdaq Clearing. See Note 6, “Investments,” to the condensed consolidated financial statements for further discussion of our trading investment securities.

Debt Obligations

The following table summarizes our debt obligations by contractual maturity:

	Maturity Date	March 31, 2017	December 31, 2016
		(in millions)	
5.25% senior unsecured notes	January 2018	$ 369	$ 369
$750 million revolving credit commitment	November 2019	—	—
$400 million senior unsecured term loan facility	November 2019	399	399
5.55% senior unsecured notes	January 2020	598	598
3.875% senior unsecured notes	June 2021	633	625
1.75% senior unsecured notes	May 2023	631	622
4.25% senior unsecured notes	June 2024	496	495
3.85% senior unsecured notes	June 2026	495	495
Total debt obligations		3,621	3,603
Less current portion		(379)	—
Total long-term debt obligations		$ 3,242	$ 3,603

In addition to the $750 million revolving credit commitment and $400 million term loan facility, we also have other credit facilities related to our Nasdaq Clearing operations in order to provide further liquidity. Other credit facilities, which are available in multiple currencies, totaled $172 million at March 31, 2017 and $170 million at December 31, 2016, in available liquidity, none of which was utilized.

At March 31, 2017, we were in compliance with the covenants of all of our debt obligations.

See Note 8, "Debt Obligations," to the condensed consolidated financial statements for further discussion of our debt obligations.

In April 2017, Nasdaq announced it will redeem all of its 2018 Notes on May 26, 2017, using a combination of cash on hand and proceeds from the sale of commercial paper issued through Nasdaq's newly created commercial paper program. Additionally, Nasdaq entered into an agreement for a $1 billion five-year revolving credit facility, which replaces our existing 2014 Credit Facility. Nasdaq intends to use funds available under the new revolving credit facility for general corporate purposes and to provide liquidity support for the repayment of commercial paper issued through the commercial paper program. As a result, our 2014 Credit Facility has been terminated.

Clearing and Broker-Dealer Net Capital Requirements

Clearing Operations Regulatory Capital Requirements

We are required to maintain minimum levels of regulatory capital for the clearing operations of Nasdaq Clearing. The level of regulatory capital required to be maintained is dependent upon many factors, including market conditions and creditworthiness of the counterparty. At March 31, 2017, our required regulatory capital of $154 million is primarily comprised of highly rated European government debt securities that are included in financial investments, at fair value in the Condensed Consolidated Balance Sheets.

Broker-Dealer Net Capital Requirements

Our operating broker-dealer subsidiaries, Nasdaq Execution Services, Execution Access, NPM Securities, SMTX, and Nasdaq Capital Markets Advisory are subject to regulatory requirements intended to ensure their general financial soundness and liquidity. These requirements obligate these subsidiaries to comply with minimum net capital requirements. The following table summarizes the net capital requirements for our broker-dealer subsidiaries as of March 31, 2017:

Broker-Dealer Subsidiaries	Total Net Capital	Required Minimum Net Capital	Excess Capital
		(in millions)	
Nasdaq Execution Services	$ 9.2	$ 0.3	$ 8.9
Execution Access	46.9	0.5	46.4
NPM Securities	0.3	—	0.3
SMTX	0.6	0.3	0.3
Nasdaq Capital Markets Advisory	0.6	0.3	0.3

Other Capital Requirements

Nasdaq Execution Services

Nasdaq Execution Services also is required to maintain a $2 million minimum level of net capital under our clearing arrangement with OCC.

Nasdaq CXC

As a member of the Investment Industry Regulatory Organization of Canada, Nasdaq CXC must comply with its dealer member rules which are intended to ensure general financial soundness and liquidity. Under these rules, Nasdaq

CXC is required to comply with minimum net capital requirements. At March 31, 2017, Nasdaq CXC was required to maintain minimum net capital of $0.2 million and had total net capital of approximately $5.8 million, or $5.6 million in excess of the minimum amount required.

* * * * * *

Cash Flow Analysis

The following table summarizes the changes in cash flows:

	Three Months Ended March 31, 2017	Three Months Ended March 31, 2016	Percentage Change
	(in millions)		
Net cash provided by (used in):			
Operating activities	$ 244	$ 255	(4.3)%
Investing activities	(8)	(294)	(97.3)%
Financing activities	(192)	28	(785.7)%
Effect of exchange rate changes on cash and cash equivalents and restricted cash	2	6	(66.7)%
Net increase (decrease) in cash and cash equivalents and restricted cash	46	(5)	(1,020.0)%
Cash and cash equivalents and restricted cash at beginning of period	418	357	17.1 %
Cash and cash equivalents and restricted cash at end of period	$ 464	$ 352	31.8 %

Net Cash Provided by Operating Activities

Net cash provided by operating activities decreased $11 million for the three months ended March 31, 2017 compared with the same period in 2016. The decrease was primarily due to the impact of our 2016 acquisitions, which contributed to an increase in receivables, net, and decreases in other liabilities and accrued personnel costs, partially offset by higher net income.

Net Cash Used in Investing Activities

Net cash used in investing activities decreased $286 million for the three months ended March 31, 2017 compared with the same period in 2016 primarily due to cash paid for acquisitions, net of cash and cash equivalents acquired of $213 million in 2016.

Net Cash Provided by (Used in) Financing Activities

Net cash used in financing activities for the three months ended March 31, 2017 primarily consisted of $156 million related to the repurchase of our common stock, $53 million related to cash dividends paid on our common stock and payments related to employee shares withheld for taxes of $47 million, partially offset by $63 million related to proceeds of customer funds, which are held in connection with privately negotiated securities transactions.

Net cash provided by financing activities for the three months ended March 31, 2016 primarily consisted of net proceeds of $399 million from our 2016 Credit Facility and proceeds from the utilization of our 2014 Credit Facility of $325 million to partially fund our acquisitions of Nasdaq CXC and Marketwired and other general corporate purposes, partially offset by $555 million of cash used in connection with the repayment of the revolving credit commitment under our 2014 Credit Facility, $41 million related to cash dividends paid on our common stock, $38 million related to disbursements of customer funds, which were held in connection with privately negotiated securities transactions, payments related to employee shares withheld for taxes of $34 million and $29 million related to the repurchase of our common stock.

See “2016 Acquisitions,” of Note 4, “Acquisitions,” to the condensed consolidated financial statements for further discussion of our acquisitions.

See Note 8, “Debt Obligations,” to the condensed consolidated financial statements for further discussion of our debt obligations.

See “Share Repurchase Program,” and “Cash Dividends on Common Stock,” of Note 11, “Nasdaq Stockholders’ Equity,” to the condensed consolidated financial statements for further discussion of our share repurchase program and cash dividends paid on our common stock.

Contractual Obligations and Contingent Commitments

Nasdaq has contractual obligations to make future payments under debt obligations by contract maturity, minimum rental commitments under non-cancelable operating leases, net and other obligations. The following table shows these contractual obligations as of March 31, 2017:

	Payments Due by Period				
Contractual Obligations	**Total**	**Less than 1 year**	**1-3 years**	**3-5 years**	**More than 5 years**
			(in millions)		
Debt obligations by contract maturity[1]	$ 4,341	$ 505	$ 626	$ 1,409	$ 1,801
Minimum rental commitments under non-cancelable operating leases, net[2]	407	66	131	91	119
Other obligations[3]	31	31	—	—	—
Total	$ 4,779	$ 602	$ 757	$ 1,500	$ 1,920

(1) Our debt obligations include both principal and interest obligations. At March 31, 2017, an interest rate of 3.00% was used to compute the amount of the contractual obligations for interest on the 2016 Credit Facility. All other debt obligations were primarily calculated on a 360-day basis at the contractual fixed rate multiplied by the aggregate principal amount at March 31, 2017. See Note 8, "Debt Obligations," to the condensed consolidated financial statements for further discussion.

(2) We lease some of our office space under non-cancelable operating leases with third parties and sublease office space to third parties. Some of our leases contain renewal options and escalation clauses based on increases in property taxes and building operating costs.

(3) Other obligations primarily consist of potential future escrow agreement payments related to prior acquisitions.

* * * * * *

Non-Cash Contingent Consideration

As part of the purchase price consideration of a prior acquisition, we have agreed to future annual issuances of 992,247 shares of Nasdaq common stock which approximated certain tax benefits associated with the transaction. Such contingent future issuances of Nasdaq common stock will be paid ratably through 2027 if Nasdaq's total gross revenues equal or exceed $25 million in each such year. The contingent future issuances of Nasdaq common stock are subject to anti-dilution protections and acceleration upon certain events.

Off-Balance Sheet Arrangements

For discussion of off-balance sheet arrangements see:

- Note 14, "Clearing Operations," to the condensed consolidated financial statements for further discussion of our non-cash default fund contributions and margin deposits received for clearing operations; and
- Note 15, "Commitments, Contingencies and Guarantees," to the condensed consolidated financial statements for further discussion of:
  - Guarantees issued and credit facilities available;
  - Lease commitments;
  - Other guarantees;
  - Non-cash contingent consideration;
  - Escrow agreements;
  - Routing brokerage activities;
  - Litigation; and
  - Tax audits.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Market risk represents the potential for losses that may result from changes in the market value of a financial instrument due to changes in market conditions. As a result of our operating, investing and financing activities, we are exposed to market risks such as interest rate risk and foreign currency exchange rate risk. We are also exposed to credit risk as a result of our normal business activities.

We have implemented policies and procedures to measure, manage, monitor and report risk exposures, which are reviewed regularly by management and the board of directors. We identify risk exposures and monitor and manage such risks on a daily basis.

We perform sensitivity analyses to determine the effects of market risk exposures. We may use derivative instruments solely to hedge financial risks related to our financial positions or risks that are incurred during the normal course of business. We do not use derivative instruments for speculative purposes.

Interest Rate Risk

We are subject to the risk of fluctuating interest rates in the normal course of business. Our exposure to market risk for changes in interest rates relates primarily to our financial investments and debt obligations which are discussed below.

Financial Investments

As of March 31, 2017, our investment portfolio was primarily comprised of trading securities, mainly highly rated European government debt securities, which pay a fixed rate of interest. These securities are subject to interest rate risk and will decrease in value if market interest rates increase. If market interest rates were to increase immediately and uniformly by 100 basis points from levels as of March 31, 2017, the fair value of this portfolio would have declined by $5 million.

Debt Obligations

As of March 31, 2017, substantially all of our debt obligations are fixed-rate obligations. While changes in interest rates will have no impact on the interest we pay on fixed-rate obligations, we were exposed to changes in interest rates as a result of borrowings under our 2016 Credit Facility and the 2014 Credit Facility, as these facilities have variable interest rates. As of March 31, 2017, there were no outstanding borrowings under our 2014 Credit Facility. The principal amount outstanding under the 2016 Credit Facility was $400 million. A hypothetical 100 basis points increase in interest rates on the 2016 Credit Facility would increase interest expense by approximately $4 million based on borrowings as of March 31, 2017.

* * * * * *

Foreign Currency Exchange Rate Risk

As a leading global exchange group, we are subject to foreign currency transaction risk. Our primary exposure to foreign currency denominated revenues less transaction-based expenses and operating income for the three months ended March 31, 2017 is presented in the following table:

	Euro	Swedish Krona	Other Foreign Currencies	U.S. Dollar	Total
	(in millions, except currency rate)				
Three Months Ended March 31, 2017					
Average foreign currency rate to the U.S. dollar	1.0652	0.1120	#	N/A	N/A
Percentage of revenues less transaction-based expenses	9.3%	8.8%	5.6 %	76.3%	100.0%
Percentage of operating income	14.3%	2.6%	(4.3)%	87.4%	100.0%
Impact of a 10% adverse currency fluctuation on revenues less transaction-based expenses	$ (6)	$ (5)	$ (3)	$ —	$ (14)
Impact of a 10% adverse currency fluctuation on operating income	$ (4)	$ (1)	$ (1)	$ —	$ (6)

\# Represents multiple foreign currency rates.
N/A Not applicable.

Our investments in foreign subsidiaries are exposed to volatility in currency exchange rates through translation of the foreign subsidiaries' net assets or equity to U.S. dollars. Substantially all of our foreign subsidiaries operate in functional currencies other than the U.S. dollar. Fluctuations in currency exchange rates may create volatility in our results of operations as we are required to translate the balance sheets and operational results of these foreign currency denominated subsidiaries into U.S. dollars for consolidated reporting. The translation of foreign subsidiaries' non-U.S. dollar balance sheets into U.S. dollars for consolidated reporting results in a cumulative translation adjustment which is recorded in accumulated other comprehensive loss within stockholders' equity in the Condensed Consolidated Balance Sheets.

Our primary exposure to net assets in foreign currencies as of March 31, 2017 is presented in the following table:

	Net Assets	Impact of a 10% Adverse Currency Fluctuation
	(in millions)	
Swedish Krona[(1)]	$ 3,197	$ (320)
Norwegian Krone	192	(19)
Canadian Dollar	184	(18)
British Pound	122	(12)
Euro	104	(10)
Australian Dollar	88	(9)

(1) Includes goodwill of $2,435 million and intangible assets, net of $592 million.

Credit Risk

Credit risk is the potential loss due to the default or deterioration in credit quality of customers or counterparties. We are exposed to credit risk from third parties, including customers, counterparties and clearing agents. These parties may default on their obligations to us due to bankruptcy, lack of liquidity, operational failure or other reasons. We limit our exposure to credit risk by rigorously evaluating the counterparties with which we make investments and execute agreements. The financial investment portfolio objective is to invest in securities to preserve principal while maximizing yields, without significantly increasing risk. Credit risk associated with investments is minimized substantially by ensuring that these financial assets are placed with governments which have investment grade ratings, well-capitalized financial institutions and other creditworthy counterparties.

Our subsidiary Nasdaq Execution Services may be exposed to credit risk, due to the default of trading counterparties, in connection with the routing services it provides for our trading customers. System trades in cash equities routed to other market centers for members of our cash equity exchanges are routed by Nasdaq Execution Services for clearing to the NSCC. In this function, Nasdaq Execution Services is to be neutral by the end of the trading day, but may be exposed to intraday risk if a trade extends beyond the trading day and into the next day, thereby leaving Nasdaq Execution Services susceptible to counterparty risk in the period between accepting the trade and routing it to the clearinghouse. In this interim period, Nasdaq Execution Services is not novating like a clearing broker but instead is subject to the short-term risk of counterparty failure before the clearinghouse enters the transaction. Once the clearinghouse officially accepts the trade for novation, Nasdaq Execution Services is legally removed from trade execution risk. However, Nasdaq has membership obligations to NSCC independent of Nasdaq Execution Services' arrangements.

Pursuant to the rules of the NSCC and Nasdaq Execution Services' clearing agreement, Nasdaq Execution Services is liable for any losses incurred due to a counterparty or a clearing agent's failure to satisfy its contractual obligations, either by making payment or delivering securities. Adverse movements in the prices of securities that are subject to these transactions can increase our credit risk. However, we believe that the risk of material loss is limited, as Nasdaq Execution Services' customers are not permitted to trade on margin and NSCC rules limit counterparty risk on self-cleared transactions by establishing credit limits and capital deposit requirements for all brokers that clear with NSCC. Historically, Nasdaq Execution Services has never incurred a liability due to a customer's failure to satisfy its contractual obligations as counterparty to a system trade. Credit difficulties or insolvency, or the perceived possibility of credit difficulties or insolvency, of one or more larger or visible market participants could also result in market-wide credit difficulties or other market disruptions.

Execution Access is an introducing broker which operates the trading platform for our Nasdaq Fixed Income business to trade in U.S. Treasury securities. Execution Access has a clearing arrangement with Cantor Fitzgerald. As of March 31, 2017, we have contributed $19 million of clearing deposits to Cantor Fitzgerald in connection with this clearing arrangement. These deposits are recorded in other current assets in our Condensed Consolidated Balance Sheets. Some of the trading activity in Execution Access is cleared by Cantor Fitzgerald through the Fixed Income Clearing Corporation. Execution Access assumes the counterparty risk of clients that do not clear through the Fixed Income Clearing Corporation. Counterparty risk of clients exists for Execution Access between the trade date and settlement date of the individual transactions, which is one business day. All of Execution Access' obligations under the clearing arrangement with Cantor Fitzgerald are guaranteed by Nasdaq. Counterparties that do not clear through the Fixed Income Clearing Corporation are subject to a credit due diligence process and may be required to post collateral, provide principal letters, or provide other forms of credit enhancement to Execution Access for the purpose of mitigating counterparty risk.

We are exposed to credit risk through our clearing operations with Nasdaq Clearing. See Note 14, "Clearing Operations," to the condensed consolidated financial statements for further discussion.

We also have credit risk related to transaction and subscription-based revenues that are billed to customers on a monthly or quarterly basis, in arrears. Our potential exposure to credit losses on these transactions is represented by the receivable balances in our Condensed Consolidated Balance Sheets. On an ongoing basis, we review and evaluate changes in the status of our counterparties' creditworthiness. Credit losses such as those described above could adversely affect our consolidated financial position and results of operations.

Item 4. Controls and Procedures.

(a). ***Disclosure controls and procedures.*** Nasdaq's management, with the participation of Nasdaq's President and Chief Executive Officer, and Executive Vice President, Corporate Strategy and Chief Financial Officer, has evaluated the effectiveness of Nasdaq's disclosure controls and procedures (as defined in Rule 13a-15(e) and Rule 15d-15(e) under the Exchange Act) as of the end of the period covered by this report. Based upon that evaluation, Nasdaq's President and Chief Executive Officer and Executive Vice President, Corporate Strategy and Chief Financial Officer, have concluded that, as of the end of such period, Nasdaq's disclosure controls and procedures are effective.

(b). ***Internal control over financial reporting***. There have been no changes in Nasdaq's internal control over financial reporting (as defined in Rule 13a-15(f) and Rule 15d-15(f) under the Exchange Act) that occurred during the quarter ended March 31, 2017 that have materially affected, or are reasonably likely to materially affect, Nasdaq's internal control over financial reporting.

PART II - OTHER INFORMATION

Item 1. Legal Proceedings.

See "Litigation," of Note 15, "Commitments, Contingencies and Guarantees," to the condensed consolidated financial statements for further discussion.

Item 1A. Risk Factors.

In addition to the other information set forth in this Quarterly Report on Form 10-Q, you should carefully consider the factors discussed under "Risk Factors" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016 as filed with the SEC on March 1, 2017. These risks could materially and adversely affect our business, financial condition and results of operations. The risks and uncertainties in our Form 10-K and Form 10-Q are not the only ones facing us. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may also adversely affect our business.

* * * * * *

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

Issuer Purchases of Equity Securities

Share Repurchase Program

See "Share Repurchase Program," of Note 11, "Nasdaq Stockholders' Equity," to the condensed consolidated financial statements for further discussion of our share repurchase program.

Employee Transactions

During the fiscal quarter ended March 31, 2017, we purchased shares from employees in connection with the settlement of employee tax withholding obligations arising from the vesting of restricted stock and PSUs. The table below represents repurchases made by or on behalf of us or any "affiliated purchaser" of our common stock during the fiscal quarter ended March 31, 2017:

Period	(a) Total Number of Shares Purchased	(b) Average Price Paid Per Share	(c) Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	(d) Maximum Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (in millions)
January 2017				
Share repurchase program	—	$ —	—	$ 429
Employee transactions	337	$ 67.77	N/A	N/A
February 2017				
Share repurchase program	595,974	$ 70.81	595,974	$ 388
Employee transactions	478	$ 69.74	N/A	N/A
March 2017				
Share repurchase program	1,619,781	$ 70.58	1,619,781	$ 273
Employee transactions	667,223	$ 69.14	N/A	N/A
Total Quarter Ended March 31, 2017				
Share repurchase program	2,215,755	$ 70.64	2,215,755	$ 273
Employee transactions	668,038	$ 69.14	N/A	N/A

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

Not applicable.

Item 6. Exhibits.

The exhibits required by this item are listed on the Exhibit Index.

SIGNATURES

Pursuant to the requirements 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.

	Nasdaq, Inc. (Registrant)		
Date: May 10, 2017	**By:**	/s/ Adena T. Friedman
	Name:	**Adena T. Friedman**
	Title:	**President and Chief Executive Officer**
Date: May 10, 2017	**By:**	/s/ Michael Ptasznik
	Name:	**Michael Ptasznik**
	Title:	**Executive Vice President, Corporate Strategy and Chief Financial Officer**

Exhibit Index

Exhibit Number	
10.1	Form of Nasdaq Continuing Obligations Agreement.*
10.2	Employment Offer Letter, dated as of May 10, 2016, between Nasdaq, Inc. and Michael Ptasznik.*
11	Statement regarding computation of per share earnings (incorporated herein by reference from Note 12 to the condensed consolidated financial statements under Part I, Item 1 of this Form 10-Q).
31.1	Certification of President and Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (“Sarbanes-Oxley”).
31.2	Certification of Executive Vice President, Corporate Strategy and Chief Financial Officer pursuant to Section 302 of Sarbanes-Oxley.
32.1	Certifications Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of Sarbanes-Oxley.
101.INS	XBRL Instance Document.**
101.SCH	XBRL Taxonomy Extension Schema.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase.
101.DEF	Taxonomy Extension Definition Linkbase.
101.LAB	XBRL Taxonomy Extension Label Linkbase.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase.

* Management contract or compensatory plan or arrangement.

** The following materials from the Nasdaq, Inc. Quarterly Report on Form 10-Q for the three months ended March 31, 2017, formatted in XBRL (eXtensible Business Reporting Language): (i) Condensed Consolidated Balance Sheets as of March 31, 2017 and December 31, 2016; (ii) Condensed Consolidated Statements of Income for the three months ended March 31, 2017 and 2016; (iii) Condensed Consolidated Statements of Comprehensive Income for the three months ended March 31, 2017 and 2016; (iv) Condensed Consolidated Statements of Cash Flows for the three months ended March 31, 2017 and 2016; and (v) notes to condensed consolidated financial statements.

Nasdaq

NASDAQ CONTINUING OBLIGATIONS AGREEMENT

During the course of my employment or engagement with Nasdaq, Inc. and/or its subsidiaries and affiliates (collectively, the "***Company***"), I understand that I will have or be given access to, and/or receive, certain non-public, confidential, and proprietary information and or specialized training and trade secrets pertaining to the business of the Company and Company's customers or prospective customers ("***Company Parties***"). Any unauthorized disclosure or use of such information would cause grave harm to the Company Parties. Therefore, to assure the confidentiality and proper use of Confidential Information and other Company Property (each as defined herein), and in consideration of my engagement with the Company, my access to confidential information, training and trade secrets, and the compensation paid or to be paid for my services during that engagement, and the mutual covenants and promises contained herein, I agree to the following:

1. Confidentiality and Company Property.

All Confidential Information and Company Property is owned by and for the Company Parties exclusively; is intended solely for authorized, work-related purposes on behalf of the Company Parties; and shall not be used for personal or other non-work related purposes. I acknowledge that such Confidential Information is a valuable and unique asset of the Company and covenant that I will not disclose any Confidential Information to any person (except as my duties for the Company may require or as required by law or in a judicial or administrative proceeding) without the prior written authorization of the Company. Specifically, without limitation, I shall not, directly or indirectly, at any time during or after engagement with the Company, without prior express written authorization from the Company: (a) divulge, disclose, transmit, reproduce, convey, summarize, quote, share, or make accessible to any other person or entity Confidential Information or non-public Company Property; (b) use any Confidential Information or Company Property for any purpose outside the course of performing the authorized duties of my work with the Company; (c) remove Company Property or Confidential Information from the Company Parties' premises without obtaining prior express written authorization from the Company; or (d) review or seek to access any Confidential Information or Company Property except as required in connection with my work for the Company.

2. Non-Solicitation and Non-Competition.

a) Non-Solicitation of Customers, Potential Customers and Employees (Applicable BOTH to Employees and Contractors).

I agree that, for a period of twelve (12) months following my separation from service for any reason, I shall not, directly or indirectly, without express written consent from Company's Office of General Counsel:

i) Interfere with any customer relationship the Company has with any of its current customers or potential customers that I had any involvement with, directly or indirectly, during the last twelve (12) months of my employment; or

ii)Solicit, or induce to enter into any business arrangement with, any employee or contractor of the Company with whom I had any contact or a relationship with during the last twelve (12) months of my employment; or

iii) Solicit, or induce to enter into any business arrangement with, any employee or contractor of the Company's customers that I knew, or reasonably could be expected to know, was solicited by the Company for any technology, operations, sales or business role during the last twelve (12) months of my employment with the Company.

b) **Non-Competition (NOT applicable in California) (Applicable ONLY to Employees).**

I agree that, for a period of three (3) months following my voluntary separation from service, I will not directly or indirectly act as an officer, director, become employed by, or provide consulting or advisory services to, any person or entity that is a Competitor to the line of business within the same geographic scope and functional area in which I had substantial involvement during my last twelve (12) months of employment at the Company.

3. Inventions Assignment.

a) **Ownership of Nasdaq Inventions by the Company.**

(i) As between me and the Company, all Nasdaq Inventions are owned by the Company. I hereby assign to the Company, without any further consideration, all right, title, and interest in and to the Nasdaq Inventions, including all Intellectual Property Rights associated therewith. I agree that the foregoing assignment includes a present conveyance to the Company of ownership of Nasdaq Inventions that are not yet in existence as of the Effective Date.

(ii) I hereby acknowledge that, to the extent permitted under applicable law, the Nasdaq Inventions constitute “works made for hire” and are deemed to be authored by the Company.

(iii) To the extent, if any, that this Agreement does not provide the Company with full ownership, right, title and interest in and to the Nasdaq Inventions, I hereby grant the Company an exclusive, perpetual, irrevocable, fully-paid, royalty-free, worldwide license to use, exploit, reproduce, perform (publicly or otherwise), display (publicly or otherwise), create derivative works from, modify, improve, develop, distribute, import, make, have made, sell, offer to sell or otherwise dispose of the Nasdaq Inventions, effective immediately on its creation, with the right to sublicense each and every such right, including through multiple tiers, alone or in combination. To the extent that any Moral Rights in the Nasdaq Inventions cannot be assigned under applicable law, I hereby unconditionally and irrevocably waive and agree not to enforce any and all Moral Rights, including any limitation on subsequent modification, to the extent permitted under applicable law.

(iv) I agree to promptly make full disclosure to the Company of any and all Nasdaq Inventions. On request, such disclosure shall be made in writing. During and after my employment or engagement and at the Company’s request and expense, I will (i) assist the Company in every proper way to establish or perfect the Company’s rights in the Nasdaq Inventions and associated Intellectual Property Rights throughout the world, including by executing in favor of the Company or its designee(s) any necessary or desirable documents, including patent and copyright assignment documents, and (ii) consent to or join in any action to enforce any Intellectual Property Right associated with the Nasdaq Inventions. I agree that, if the Company is unable, because of my unavailability, mental or physical incapacity, or for any other reason, to secure my signature with respect to the purposes set forth in the preceding sentence, then I hereby irrevocably designate and appoint the Company and its duly authorized officers and agents as my agent and attorney-in-fact, to act for and on my behalf to execute and file any papers and oaths, and to do all other lawfully permitted acts with respect to such Nasdaq Inventions and associated Intellectual Property Rights to further the prosecution, issuance, and enforcement of such Intellectual Property Rights with the same legal force and effect as if executed by me. This power of attorney shall be deemed coupled with an interest, and shall be irrevocable.

(v) I agree not to challenge the validity of the Nasdaq Inventions or the Intellectual Property Rights associated therewith, or the ownership by the Company (or its designee(s)) of the Nasdaq Inventions or the Intellectual Property Rights associated therewith.

b) **Exception to Designation of Nasdaq Inventions as Works Made for Hire (Applicable ONLY to Consultants/Independent Contractors in California).**

I understand and acknowledge that California Labor Code Section 3351.5(c) provides that, under some circumstances, an employee/employer relationship may be created between parties when the parties enter into a written instrument that designates a work of authorship as a “work made for hire.” This Section 3 is not intended to create an employee/employer relationship when no such relationship exists; accordingly, notwithstanding Paragraph 3(a)(ii), to the extent that any Nasdaq Inventions are made, conceived, expressed, developed, or reduced to practice by me, such Nasdaq Inventions do NOT constitute “works made for hire” under applicable law. For clarity, all of the other provisions within this Section 3 that relate to the Company’s ownership of the Nasdaq Inventions (including the assignment provisions in Paragraph 3(a)(i)) remain in full effect.

c) **Certain Exceptions to Assignment of Rights (Applicable ONLY in California).**

I understand and acknowledge that the provisions of this Agreement related to the Company’s ownership of the Nasdaq Inventions do not apply to any invention that qualifies fully under the provisions of California Labor Code Section 2870, which is reproduced in its entirety as follows:

CALIFORNIA LABOR CODE SECTION 2870
INVENTION ON OWN TIME-EXEMPTION FROM AGREEMENT

(a) Any provision in an employment agreement which provides that an employee shall assign, or offer to assign, any of his or her rights in an invention to his or her employer shall not apply to an invention that the employee developed entirely on his or her own time without using the employer's equipment, supplies, facilities, or trade secret information except for those inventions that either:

(1) Relate at the time of conception or reduction to practice of the invention to the employer's business, or actual or demonstrably anticipated research or development of the employer; or

(2) Result from any work performed by the employee for the employer.

(b) To the extent a provision in an employment agreement purports to require an employee to assign an invention otherwise excluded from being required to be assigned under subdivision (a), the provision is against the public policy of this state and is unenforceable.

4. Non-Disparagement.

I agree that I shall not issue, circulate, publish or utter any false or disparaging, statement, remarks, opinions or rumors about the Company or its shareholders unless giving truthful testimony under subpoena or court order. Notwithstanding the preceding sentence, I understand that I may provide truthful information to any governmental agency or self-regulatory organization with or without subpoena or court order. With the exception of communications made in a private corporate communication as an employee or consultant with regard to a listing decision of my employer or my consulting client, I agree that public communications regarding a preference for listing a security on a market other than the Company, that the quality of the Company as a securities market is in any way inferior to any other securities market or exchange, and/or that the regulatory efforts and programs of the Company are or have been lax in any way, are specifically defined as disparaging and will constitute a material breach of this Agreement. Nothing in this paragraph, however, shall prevent me from making good faith, factual and truthful statements related to listing with the Company as long as my statements are not based on proprietary information.

5. Cooperation.

If I receive a subpoena or process from any person or entity (including, but not limited to, any governmental agency) which may or will require me to disclose documents or information or provide testimony (in a deposition, court proceeding, or otherwise) regarding, in whole or in part, any of the Company Parties or any Confidential Information or Company Property, I shall: (a) to the extent permissible by law, notify Nasdaq's Office of the General Counsel of the subpoena or other process within twenty-four (24) hours of receiving it; and (b) to the maximum extent possible, not make any disclosure until the Company Parties have had a reasonable opportunity to contest the right of the requesting person or entity to such disclosure, limit the scope or nature of such disclosure, and/or seek to participate in the proceeding or matter in which the disclosure is sought.

6. Return Of Confidential Information And Company Property.

Upon my termination of engagement with the Company, for any reason, or if the Company so requests, I shall promptly deliver to the Company all Confidential Information and Company Property, including Nasdaq Inventions in my possession or under my control, as well as all documents, disks, tapes, or other electronic, digital, or computer means of storage, and all copies of such information and property. If at any time after the termination of employment I determine that I have any Confidential Information in my possession or control, I shall immediately return to the Company all such Confidential Information, including all copies and portions thereof.

7. Immunity for Disclosure of Trade Secrets in Certain Circumstances.

I understand and acknowledge that, pursuant to 18 U.S.C. §1833 (as defined in the Defend Trade Secrets Act of 2016) and notwithstanding anything else in this Agreement, I am permitted to disclose trade secrets to third parties under certain circumstances.

The relevant portion of 18 U.S.C. § 1833 is reproduced as follows:

> (b) Immunity From Liability for Confidential Disclosure of a Trade Secret to the Government or in a Court Filing.—
>
> (1) Immunity.—An individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that—
>
> (A) is made—
>
> (i) in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney; and
>
> (ii) solely for the purpose of reporting or investigating a suspected violation of law; or
>
> (B) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal.
>
> (2) Use of trade secret information in anti-retaliation lawsuit.—An individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual—
>
> (A) files any document containing the trade secret under seal; and
>
> (B) does not disclose the trade secret, except pursuant to court order.

I understand that nothing in this Agreement prohibits me from communicating with or reporting possible violations of law or regulation to any federal, state, or local governmental office, official, agency or entity, and that notwithstanding my confidentiality obligations set forth in this Agreement, I will not be held civilly or criminally liable under any U.S. Federal or State trade secret law for disclosure of a trade secret made in accordance with the provisions of 18 U.S.C. §1833. I understand that if a disclosure of trade secrets was not done in good faith pursuant to 18 U.S.C. §1833, then I may be subject to criminal or civil liability, including, without limitation, punitive damages and attorneys' fees.

8. Injunctive Action.

I acknowledge that the provisions and restrictions of this Agreement are reasonable and necessary for the protection of the Company Parties and their respective businesses. These obligations are not limited in time to the duration of my engagement and rather shall survive the termination of my engagement by the Company, regardless of the reason for its termination. I agree that my breach of any of the foregoing provisions will result in irreparable injury to the Company Parties, that monetary relief alone will be inadequate to redress such a breach, and further that the Company shall be entitled to obtain an injunction to prevent and/or remedy such a breach (without first having to post a bond).

In any proceeding for an injunction and upon any motion for a temporary or permanent injunction ("Injunctive Action"), the Company's right to receive monetary damages shall not be a bar or interposed as a defense to the granting of such injunction. The Company's right to an injunction is in addition to, and not in lieu of, any other rights and remedies available to the Company under law or in equity, including any remedy the Company may seek in any arbitration brought pursuant to Section 9 of this Agreement.

I hereby irrevocably submit to the jurisdiction of the courts of New York in any Injunctive Action and waive any claim or defense of inconvenient or improper forum or lack of personal jurisdiction under any applicable law or decision. Upon the issuance (or denial) of an injunction, the underlying merits of any such dispute shall be resolved in accordance with Section 9 of this Agreement.

9. Arbitration.

Except as provided in Section 8 of this Agreement, any dispute arising between the Parties under this Agreement, under any statute, regulation, or ordinance, under any other agreement between the Parties, and/or in way relating to my engagement by the Company, shall be submitted to binding arbitration before the American Arbitration Association ("AAA") for resolution. Such arbitration shall be conducted in New York, New York, and the arbitrator will apply New York law, including federal law as applied in New York courts. The arbitration shall be conducted in accordance with the AAA's Employment Arbitration Rules as modified herein. The arbitration shall be conducted by a single arbitrator, who shall be an attorney who specializes in the field of employment law and who shall have prior experience arbitrating employment disputes. The award of the arbitrator shall be final and binding on the Parties, and judgment on the award may be confirmed and entered in any state or federal court in the State of New York and City of New York. In the event of any court proceeding to challenge or enforce an arbitrator's award, the Parties hereby consent to the exclusive jurisdiction of the state and federal courts in New York, New York and agree to venue in that jurisdiction.

The arbitration shall be conducted on a strictly confidential basis, and I shall not disclose the existence of a claim, the nature of a claim, any documents, exhibits, or information exchanged or presented in connection with such a claim, or the result of any action (collectively, "**Arbitration Materials**"), to any third party, with the sole exception of my legal counsel, who also shall be bound by these confidentiality terms. The Parties agree to take all steps necessary to protect the confidentiality of the Arbitration Materials in connection with any such proceeding, agree to file all Confidential Information (and documents containing Confidential Information) under seal, and agree to the entry of an appropriate protective order encompassing the confidentiality terms of this Agreement.

10. Governing Law; Amendment; Waiver; Severability.

This Agreement shall be construed in accordance with and shall be governed by the laws of the State of New York, excluding any choice of law principles. This Agreement constitutes the entire agreement between the Parties with respect to the subject matter hereof, and may not be amended, discharged, or terminated, nor may any of its provisions be waived, except upon the execution of a valid written instrument executed by me and the Company.

If any term or provision of this Agreement (or any portion thereof) is determined by an arbitrator or a court of competent jurisdiction to be invalid, illegal, or incapable of being enforced, all other terms and provisions of this Agreement shall nevertheless remain in full force and effect.

Upon a determination that any term or provision (or any portion thereof) is invalid, illegal, or incapable of being enforced, the Company and I agree that an arbitrator or reviewing court shall have the authority to amend or modify this Agreement so as to render it enforceable and effect the original intent of the Parties to the fullest extent permitted by applicable law.

11. Definitions.

"Competitor" means any entity or enterprise engaged or having intent to engage in the sale or marketing of any product or service that is sold in competition with, or is being developed to compete with, a product or service developed or sold by the Company. For reference, a discussion of some likely competitors may be found in the Company's SEC Form 10-K (Competition section), for which the last filed version prior to my separation from service shall be considered by the Office of General Counsel in connection with any request for a waiver. That discussion section shall be neither fully determinative, nor fully exhaustive.

"***Confidential Information***" means any non-public, proprietary information regarding the Company Parties, whether in writing or not, whether in digital, hardcopy, or another format, including all personal information, all personnel information, financial data, commercial data, trade secrets, business plans, business models, organizational structures and models, business strategies, pricing and advertising techniques and strategies, research and development activities, software development, market development, exchange registration, studies, market penetration plans, listing retention plans and strategies, marketing plans and strategies, communication and/or public relations products, plans, programs, recruiting strategies, databases, processes, work product or inventions, financial formulas and methods relating to Company Parties' business, computer software programs, accounting policies and practices, and all strategic plans or other matters, strategies, and financial or operating information pertaining to current or potential customers or transactions (including information regarding each Company Party's current or prospective customers, customer names, and customer representatives), templates and agreements, and all other information about or provided by the Company Parties, including information regarding any actual or prospective business opportunities, employment opportunities, finances, investments, and other proprietary information and trade secrets. Notwithstanding the above, Confidential Information shall not include any information that: (a) was known to me prior to my engagement with the Company as evidenced by written records in my possession prior to such disclosure; or (b) is generally and publicly available and known to all persons in the industries where the Company conducts business, other than because of any unauthorized disclosure by me.

"***Company Property***" means all property and resources of the Company Parties, or any Company Party, including Confidential Information, each Company Party's products, each Company Party's computer systems and all software, e-mail, web pages and databases, telephone and facsimile services, and all other administrative and/or support services provided by the Company Parties. I further agree that "Company Property" shall include Nasdaq Inventions that I conceive, originate, develop, author, or create, solely or jointly with others, during or as a result of my employment with the Company, or using Company Property, and without regard to whether any of the foregoing also may be included within "Confidential Information" as defined under this Agreement.

“***Intellectual Property Rights***” shall mean any or all statutory or common law rights in, to, or arising under the following, worldwide: (a) patents, patent applications, and design rights (including industrial design rights); (b) works of authorship, including copyrights, Moral Rights, and mask work rights; (c) trade secrets and other rights in know-how and confidential or proprietary information; (d) trademarks, trade names, logos and service marks; (e) domain names, web addresses and social media identifiers; (f) databases; (g) any registrations or applications for registration for any of the foregoing (a)-(f), including any provisionals, divisions, continuations, continuations-in-part, renewals, reissuances, rights subject to and/or arising out of post-grant review (including re-examinations) and extensions (as applicable); (h) all contract and licensing rights and all claims and causes of action of any kind with respect to any of the foregoing (a)-(h), including the right to sue and recover damages or other compensation and/or obtain equitable relief for any past, present, or future infringement or misappropriation thereof; and (i) analogous rights to those set forth above.

“***Moral Rights***” shall mean all rights of attribution, paternity, integrity, modification, disclosure and withdrawal, and any other rights throughout the world that may be known as or referred to as “moral rights,” “artist’s rights,” “droit moral,” or the like.

“***Nasdaq Inventions***” means ideas, improvements, trade secrets, know-how, data, confidential technical or business information, sales and other commercial relationships, potential sales and other commercial relationships, business methods or processes, copyrightable expression, research, marketing plans, computer software (including source code(s)), computer programs, original works of authorship, industrial designs, trade dress, developments, discoveries, trading systems, trading strategies and methodologies, improvements, modifications, technology, algorithms and designs, (regardless of whether any of the foregoing are subject to patent or copyright protection), that are (a) made, conceived, expressed, developed, or reduced to practice by me (solely or jointly with others) during or as a result of my employment with the Company or using Company Property and (b) which relate in any manner to the Company, the business of the Company (including the services the Company provides to any of the Company Parties), or my engagement by the Company.

12. Miscellaneous.

This Agreement (a) may be executed in identical counterparts, which together shall constitute a single agreement, and (b) shall be fairly interpreted in accordance with its terms and without any strict construction in favor of or against either Party, notwithstanding which Party may have drafted it. The headings herein are included for reference only and are not intended to affect the meaning or interpretation of the Agreement. This Agreement is binding upon, and shall inure to the benefit of, me and the Company and our respective heirs, executors, administrators, successors and assigns.

Without limiting the scope or generality of the terms of this Agreement in any way, I acknowledge and agree that the terms of this Agreement and all discussions regarding this Agreement are confidential, and accordingly I agree not to disclose any such information to any third party, except to my attorney(s), or as otherwise may be required by law. Notwithstanding the foregoing, I may disclose to any prospective employer the fact and existence of this Agreement, and provide copies of this Agreement to such entity. The Company also has the right to apprise any prospective employer or other entity or person of the terms of this Agreement and provide copies to any such persons or entities.

13. <u>Other Terms of My Engagement</u>.

Nothing in this Agreement alters the at-will nature of my employment or engagement with the Company. I acknowledge and agree that my employment or engagement is at-will, which means that both I and the Company shall have the right to terminate such engagement at any time, for any reason, with or without cause and with or without prior notice. To the extent I am signing this Agreement in any capacity other than as an employee (e.g., consultant, independent contractor), the written terms of my engagement supersede any conflicting terms in this Agreement.

14. <u>Signature</u>.

I hereby acknowledge and accept the terms of this Agreement as of the Effective Date, by signature below.

Signature: ______________________________________ Date: _______________________

Print Name: _____________________________________

May 10, 2016

One Liberty Plaza / 50th Floor
New York, NY 10006 / USA

Nasdaq.com

Dear Michael:

I am pleased to offer you employment with Nasdaq, Inc. (“Nasdaq” or the “Company”) in the position of **Executive Vice President, Corporate Strategy and Chief Financial Officer**. We anticipate your full time start date to be on or around June 6, 2016 (the “Start Date”). This position will be located in our New York City office and will report directly to Mr. Robert Greifeld, Chief Executive Officer.

The terms and conditions of your employment are as follows, and are subject to approval by the Nasdaq Management Compensation Committee (“the Committee”):

1) Your **base salary** will be **$500,000** per annum, paid on a bi-weekly basis, in accordance with the Company’s regular payroll practices and subject to appropriate withholdings and deductions.

2) You will be eligible to participate in the Nasdaq Executive Corporate Incentive Program (ECIP) as governed by the provisions of that program. Your **target bonus opportunity will be $750,000**, less applicable taxes and withholdings, and is payable during the normal award payment timeframe (expected first quarter 2017). Your bonus target for 2016 will not be pro-rated due to your start date, however your bonus goals, and associated upside and downside, will cover the timeframe from your start date through December 31, 2016, not the full calendar year. Your maximum 2016 bonus opportunity will be $1,200,000, assuming a start date in June. The level of actual payout could exceed or fall below the target amount of your target bonus opportunity and is based upon corporate financial, business unit and individual performance results.

3) You will be eligible to receive an **annual equity grant** based on our standard Executive Vice President (“EVP”) equity guidelines and subject to the approval of the Committee. Details relating to this equity award will be outlined in the equity award agreements you will be asked to sign and subject to the terms and conditions of the Equity Plan in affect at the time of the grant. Your **target equity grant will be $1,100,000**. Your 2016 grant will consist of 50% percent performance share units (“PSUs”) and 50% restricted stock units (”RSUs”). The PSUs will vest 100% after 3 years, to vest December 31, 2018. The PSU value will be determined based on 3-year relative total shareholder return versus both Nasdaq’s global exchange peers (50%) and the companies in the Standard and Poor’s 500 (50%). The actual payout will range from 0% to 200% of target based on the performance results. The RSUs will vest 1/3 each year over a three year period as measured from your grant date.

   You will also receive a **one-time Welcome Equity Grant of $1,000,000**. This grant will consist of 100% Restricted Stock Units (“RSUs”) which will vest 1/3 each year over a three year period as measured from your grant date.

These equity awards are subject to your continued employment with the Company and will not be pro-rated due to your start date. This equity award is subject to the approval of the Committee. Your PSUs and RSUs will be granted just after your start date; the stock price used for these awards will be the closing stock price on the day the Committee approves these grants.

4) You will be eligible for **relocation assistance** in direct connection with your relocation from Toronto, Canada to New York City, United States as per the below. All benefits are to be received net of tax, unless otherwise stated. Net of tax means that the Company will cover any state, local, federal or FICA tax imposed on the taxable benefits listed below.

- One home finding trip for up to 6 days/5 nights performed by a provider selected by the Company.

- New home purchase closing costs or lease acquisition fees.

- Removal of household goods up to a maximum of 40 cubic meters from Toronto to New York City performed by a provider selected by the Company. Storage of household goods for up to 60 days, if applicable. Movement of two automobiles, if applicable.

- Final trip expenses, including airline tickets, meals, short-term lodging, for you and your immediate family from Toronto to New York City.

- A miscellaneous allowance of $10,000, net of tax, to cover additional relocation expenses not directly reimbursed.

- Destination services for 2 days performed by a provider selected by the Company. The services can include assistance with local matters such as obtaining a social security number, opening bank accounts, obtaining mortgage pre-approval, and other practical items.

- Temporary housing up to 60 days by a provider selected by the Company. The Company may at its sole discretion decide on appropriate location and size of the temporary housing.

- United States tax briefing and tax return filing assistance for Canada and United States filings for 2016 and 2017 tax years performed by a provider selected by the Company. You are responsible for providing the provider with the information requested in a timely manner to ensure completion of your tax returns.

- Visa and immigration assistance by a provider selected by the Company. This benefit includes obtaining the initial residence permit for your family and work permit for you and your spouse.

If you voluntarily resign or if the Company terminates your employment for Cause (as defined in Section 7 below) within one year of your relocation start date, you will be required to repay the relocation expenses, as well as any fees and costs associated with the collection of those expenses, to the company within 60 days of termination. Prior to receiving any of the above listed benefits, you will be required to send the Company a signed version of the Repayment Agreement for International Local Transfers that has been provided to you. If, however, you are involuntarily terminated by the company within one year of your relocation (1) you will not be required to repay relocation expenses, and (2) the Company will pay all reasonable relocation expenses, consistent with those applicable expenses listed above, as well as any early termination of lease fees.

5) As a full-time employee, you will be eligible to participate in Nasdaq's employee benefit programs generally available to similarly situated Company Employees, as may be in effect from time to time at the Company, subject to the terms and conditions of the relevant plans. If you elect health and welfare benefits during your initial enrollment period, they will become effective the first day of the month following employment. An overview of the Nasdaq employee benefit program is enclosed with this letter. In addition, you will be eligible for **five weeks of vacation** per calendar year.

6) As an EVP of the Company, you will be eligible to participate in the Company's executive benefits, including **executive health exams and financial planning services**. These programs are provided to you 100% company-paid; you are responsible for the taxes if you use the financial planning benefit.

7) If you are **terminated by the Company**, other than for Cause, **or for Good Reason**, you will be entitled to severance pay under the EVP severance policy, which will be no less than 1.5x salary plus target bonus plus 12 months of health insurance coverage at the active employee rate. Additionally, your unvested equity at the time of termination of employment will continue to vest for an additional 18 months after termination. If the termination occurs prior to the full vesting of your one time Welcome Equity Grant, 100% of the Welcome Equity Grant vesting will be accelerated upon termination. Per the Nasdaq, Inc. Equity Incentive Plan, the Management Compensation Committee of the Board of Directors shall have the authority to determine any additional vesting continuation or acceleration upon termination of employment.

8) Per the Nasdaq, Inc. Equity Incentive Plan, the Management Compensation Committee of the Board of Directors shall have the authority to determine any additional vesting continuation or acceleration upon termination of employment.

    a. "Cause" means (i) your conviction of, or pleading nolo contendere to, any crime, whether a felony or misdemeanor, involving the purchase or sale of any security, mail or wire fraud, theft, embezzlement, moral turpitude, or Nasdaq or its affiliates' property (with the exception of minor traffic violations or similar misdemeanors); (ii) your repeated neglect of duties; or (iii) your willful misconduct in connection with the performance of duties.

    b. "Good Reason" shall mean (i) reducing your position, duties, or authority; or (ii) relocating your principal work location beyond a 50 mile radius of your work location; provided that no event or condition shall constitute Good Reason unless (A) you give written notice specifying your objection to such event or condition within 90 days following the occurrence of such event or condition, (B) such event or condition is not corrected, in all material respects, in a manner that is reasonably satisfactory to you within 30 days following the receipt of such notice, and (C) you resign from your employment within not more than 30 days following the expiration of the 30-day period described in the foregoing clause (B).

9) If you are **terminated by the Company**, other than for Cause, **or for Good Reason** (Good Reason and Cause defined in the Change in Control Severance Plan) **within two years following a change-in-control,** you will be entitled to severance pay under the EVP Change in Control Severance Plan, which equates to no less than 2x salary plus 1 times target bonus plus prorated current year bonus

plus 12 months of health insurance coverage at the active employee rate. Any unvested equity (including PSUs and RSUs) will vest upon termination, subject to the rules in the Nasdaq Equity Incentive Plan; termination for Good Reason (as defined by the Change in Control Severance Plan) will be considered an Involuntary Termination for purposes of equity vesting.

10) This offer is subject to a satisfactory completion of a drug test, background check, and fingerprint check, as applicable to your location and as evaluated by the Company in its sole discretion. It is recommended that you not resign from, or give notice to, your current employer until you have been notified that you have successfully cleared the background screening. In addition, this offer is contingent upon you providing satisfactory proof of identity and legal authority to work in the United States.

11) As a condition of employment with the Company, you are required to execute the Company's Continuation of Obligations Agreement attached hereto as Appendix A. Please review and execute the Continuation of Obligations Agreement and return it with your signed copy of this letter.

12) The Company maintains and from time to time modifies and implements various Company policies and procedures including, but not limited to, a Company Employee Handbook and Company Code of Ethics. You will be expected to comply with all such policies and procedures.

13) Please disclose to us any and all agreements that may affect your eligibility to be employed by Nasdaq, its affiliates or subsidiaries, or that may limit the manner in which you may be employed. It is our understanding that any such agreements will not prevent you from performing the duties of your position and you represent that such is the case. You agree not to bring any third party confidential information to Nasdaq, its affiliates or subsidiaries, including that of any former employer, and that in performing your duties you will not in any way utilize any such information. You further agree that, during the term of your employment, you will not engage in any other employment, occupation, consulting or other business activity directly related to the business in which we are now involved or become involved during the term of your employment, nor will you engage in any other activities that conflict with your obligations to us.

14) By signing below, you also represent and warrant that you are not subject to any contract, agreement, or restrictive covenant of any kind that would prevent you from accepting employment with the Company and/or beginning work for the Company, or from freely and fully performing your duties hereunder. You further promise that should you become aware of any reason you cannot join or remain employed by the Company, or fully execute your responsibilities for the Company, you will immediately notify the Company of such development, in writing. Similarly, if you receive any communication from a former employer or any other person or entity claiming you cannot join or continue employment at the Company, you will immediately notify the Company in writing. You also represent that you will abide by all contractual obligations you may have to all prior employers and that you will not retain, review, or utilize any other person's or entity's confidential or proprietary information in connection with your work for the Company or share or disclose such information to any other person or entity.

15) This offer of employment, with Appendix A–Continuation of Obligations Agreement, constitutes the entire offer, superseding any prior offers, understandings, communications, representations and/or agreements with respect to the subject matter hereof. This offer of employment shall be governed by the laws of the State of New York without giving effect to the principles of conflicts of law.

16) Your employment will be on an “at-will” basis meaning that either you or the Company may terminate your employment at any time and for any reason, with or without cause or prior notice. The Company also reserves the right to modify the terms, benefits, and conditions of your employment at any time.

Michael, we look forward to having you join Nasdaq, and we believe you will find the work to be both challenging and personally rewarding! Please don’t hesitate to contact me if you have any questions. To acknowledge your acceptance of this offer of employment, please sign below and return it to my attention by mail or soft copy scan to Bryan.Smith@nasdaq.com.

Sincerely,

/s/ Bryan E. Smith

Bryan E. Smith
Senior Vice President, Head of Global Human Resources

Enclosure: Continuation of Obligations Agreement

I accept this offer of employment by Nasdaq, Inc.

/s/ Michael Ptasznik May 10, 2016

Michael Ptasznik **Date**

Exhibit 31.1

CERTIFICATION

I, Adena T. Friedman, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Nasdaq, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

	/s/ Adena T. Friedman
Name:	Adena T. Friedman
Title:	President and Chief Executive Officer

Date: May 10, 2017

Exhibit 31.2

CERTIFICATION

I, Michael Ptasznik, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Nasdaq, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Michael Ptasznik

Name: Michael Ptasznik

Title: Executive Vice President, Corporate Strategy and Chief Financial Officer

Date: May 10, 2017

Exhibit 32.1

Certification of CEO and CFO Pursuant to
18 U.S.C. Section 1350
as Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002

In connection with the Quarterly Report on Form 10-Q of Nasdaq, Inc. (the “Company”) for the quarter ended March 31, 2017 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), Adena T. Friedman, as President and Chief Executive Officer of the Company, and Michael Ptasznik, as Executive Vice President, Corporate Strategy and Chief Financial Officer of the Company, each hereby certifies, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that, to the best of her or his knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of the operations of the Company.

	/s/ Adena T. Friedman
Name:	Adena T. Friedman
Title:	President and Chief Executive Officer
Date:	May 10, 2017

	/s/ Michael Ptasznik
Name:	Michael Ptasznik
Title:	Executive Vice President, Corporate Strategy and Chief Financial Officer
Date:	May 10, 2017

This certification accompanies the Report pursuant to § 906 of the Sarbanes-Oxley Act of 2002 and shall not, except to the extent required by the Sarbanes-Oxley Act of 2002, be deemed filed by the Company for purposes of § 18 of the Securities Exchange Act of 1934, as amended.