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, 2018

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 April 24, 2018
Common Stock, $.01 par value per share	166,965,782 shares

Nasdaq, Inc.
Form 10-Q
For the Quarterly Period Ended March 31, 2018

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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 GEMX" refers to the options exchange operated by Nasdaq GEMX, LLC.
- "Nasdaq ISE" refers to the options exchange operated by Nasdaq ISE, LLC.
- "Nasdaq MRX" refers to the options exchange operated by Nasdaq MRX, 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.

* * * * * *

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

401(k) Plan: Voluntary Defined Contribution Savings Plan

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

2017 Credit Facility: $1 billion senior unsecured revolving credit facility which matures on April 25, 2022

2019 Notes: $500 million aggregate principal amount of senior unsecured floating rate notes due March 22, 2019 with an interest rate equal to the three-month U.S. dollar LIBOR plus 0.39%

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

eVestment: eVestment, Inc. and its subsidiaries

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

Regulation NMS: Regulation National Market System

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

UTP: Unlisted Trading Privileges

UTP Plan: Joint SRO Plan Governing the Collection, Consolidation, and Dissemination of Quotation and Transaction Information for Nasdaq-Listed Securities Traded on Exchanges on a UTP Basis

* * * * *

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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, 2018, and the "Risk Factors" section in our Annual Report on Form 10-K for the fiscal year ended December 31, 2017 that was filed with the SEC on February 28, 2018.

* * * * * *

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 strategy, growth forecasts and 2018 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 or which may affect us.*

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 or divest sold businesses or assets, including the fact that any integration may be more difficult, time consuming or costly than expected, and we may be unable to realize synergies from business combinations, acquisitions, divestitures or other transactional activities;*
- *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 on which we rely;*
- *any significant error in our operational processes;*
- *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, 2018 and more fully described in the "Risk Factors," section in our Annual Report on Form 10-K for the fiscal year ended December 31, 2017 that was filed with the SEC on February 28, 2018. 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 I. 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 I - FINANCIAL INFORMATION
Item 1. Financial Statements.
Nasdaq, Inc.
Condensed Consolidated Balance Sheets
(in millions, except share and par value amounts)

	March 31, 2018	December 31, 2017
	(unaudited)	
Assets		
Current assets:		
Cash and cash equivalents	$ 405	$ 377
Restricted cash	24	22
Financial investments, at fair value	224	235
Receivables, net	486	356
Default funds and margin deposits	4,026	3,988
Other current assets	205	235
Assets held for sale	268	297
Total current assets	5,638	5,510
Property and equipment, net	384	400
Deferred tax assets	416	393
Goodwill	6,549	6,586
Intangible assets, net	2,432	2,468
Other non-current assets	371	374
Total assets	$ 15,790	$ 15,731
Liabilities		
Current liabilities:		
Accounts payable and accrued expenses	$ 237	$ 177
Section 31 fees payable to SEC	128	128
Accrued personnel costs	111	170
Deferred revenue	386	161
Other current liabilities	161	85
Default funds and margin deposits	4,026	3,988
Short-term debt	960	480
Liabilities held for sale	27	45
Total current liabilities	6,036	5,234
Long-term debt	3,155	3,727
Deferred tax liabilities	600	602
Non-current deferred revenue	106	126
Other non-current liabilities	168	162
Total liabilities	10,065	9,851
Commitments and contingencies		
Equity		
Nasdaq stockholders' equity:		
Common stock, $0.01 par value, 300,000,000 shares authorized, shares issued: 172,396,708 at March 31, 2018 and 172,373,432 at December 31, 2017; shares outstanding: 166,946,592 at March 31, 2018 and 167,441,030 at December 31, 2017	2	2
Additional paid-in capital	2,926	3,024
Common stock in treasury, at cost: 5,452,116 shares at March 31, 2018 and 4,932,402 shares at December 31, 2017	(289)	(247)
Accumulated other comprehensive loss	(1,060)	(862)
Retained earnings	4,146	3,963
Total Nasdaq stockholders' equity	5,725	5,880
Total liabilities and equity	$ 15,790	$ 15,731

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, 2018	Three Months Ended March 31, 2017
Revenues:		
Market Services	$ 735	$ 606
Corporate Services	172	160
Information Services	174	138
Market Technology	70	65
Total revenues	1,151	969
Transaction-based expenses:		
Transaction rebates	(348)	(301)
Brokerage, clearance and exchange fees	(137)	(87)
Revenues less transaction-based expenses	666	581
Operating expenses:		
Compensation and benefits	197	161
Professional and contract services	37	36
Computer operations and data communications	32	30
Occupancy	25	23
General, administrative and other	22	19
Marketing and advertising	9	7
Depreciation and amortization	53	45
Regulatory	8	8
Merger and strategic initiatives	10	6
Total operating expenses	393	335
Operating income	273	246
Interest income	2	2
Interest expense	(38)	(37)
Net income from unconsolidated investees	2	4
Income before income taxes	239	215
Income tax provision	62	47
Net income attributable to Nasdaq	$ 177	$ 168
Per share information:		
Basic earnings per share	$ 1.06	$ 1.01
Diluted earnings per share	$ 1.05	$ 0.99
Cash dividends declared per common share	$ 0.82	$ 0.32

See accompanying notes to condensed consolidated financial statements.

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

	Three Months Ended March 31,	
	2018	2017
Net income	$ 177	$ 168
Other comprehensive income (loss):		
Foreign currency translation gains (losses):		
Net foreign currency translation gains (losses)	(76)	42
Income tax expense[(1)]	(115)	(50)
Total	(191)	(8)
Employee benefit plan income tax expense[(1)]	(7)	—
Total other comprehensive loss, net of tax	(198)	(8)
Comprehensive income (loss) attributable to Nasdaq	$ (21)	$ 160

[(1)] Includes the reclassification of the stranded tax effects related to the Tax Cuts and Jobs Act. See Note 17, “Income Taxes,” for further discussion.

See accompanying notes to condensed consolidated financial statements.

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

	Three Months Ended March 31,	
	2018	**2017**
Cash flows from operating activities:		
Net income	$ 177	$ 168
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	53	45
Share-based compensation	15	15
Deferred income taxes	(9)	29
Net income from unconsolidated investees	(2)	(4)
Other reconciling items included in net income	3	7
Net change in operating assets and liabilities, net of effects of acquisitions:		
Receivables, net	(127)	(29)
Other assets	39	(7)
Accounts payable and accrued expenses	65	12
Section 31 fees payable to SEC	—	(27)
Accrued personnel costs	(59)	(98)
Deferred revenue	208	152
Other liabilities	1	(19)
Net assets held for sale	11	—
Net cash provided by operating activities	375	244
Cash flows from investing activities:		
Purchases of trading securities	(70)	(93)
Proceeds from sales and redemptions of trading securities	75	120
Purchases of available-for-sale investment securities	(3)	(5)
Proceeds from maturities of available-for-sale investment securities	6	6
Purchases of property and equipment	(16)	(36)
Net cash used in investing activities	(8)	(8)
Cash flows from financing activities:		
Repayments of commercial paper, net	(18)	—
Repayments of long-term debt	(115)	—
Cash paid for repurchase of common stock	(99)	(156)
Cash dividends paid	(63)	(53)
Proceeds received from employee stock activity	—	1
Payments related to employee shares withheld for taxes	(42)	(47)
Proceeds of customer funds	—	63
Net cash used in financing activities	(337)	(192)
Effect of exchange rate changes on cash and cash equivalents and restricted cash	—	2
Net increase in cash and cash equivalents and restricted cash	30	46
Cash and cash equivalents and restricted cash at beginning of period	399	418
Cash and cash equivalents and restricted cash at end of period	$ 429	$ 464
Supplemental Disclosure Cash Flow Information		
Cash paid for:		
Interest	$ 33	$ 29
Income taxes, net of refund	$ 27	$ 26

See accompanying notes to condensed consolidated financial statements.

Notes to Condensed Consolidated Financial Statements (Unaudited)

1. Organization and Nature of Operations

Nasdaq, Inc. is a leading provider of trading, clearing, marketplace technology, regulatory, securities listing, information and public and private 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, trading surveillance 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 designated contract market which lists cash-settled energy derivatives based on key energy benchmarks including oil, natural gas and U.S. power. In addition, we also operate a Canadian exchange 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, as Nasdaq Nordic. 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, depository receipts, warrants, convertibles, rights, fund units and ETFs, 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. These 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 data center services, including co-location 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. As of March 31, 2018, our Corporate Solutions business offered products to serve the following key areas: investor relations, board & leadership, public relations solutions, and digital media services.

As of September 30, 2017, our Public Relations Solutions and Digital Media Services businesses were classified as held for sale. See Note 5, "Assets and Liabilities Held for Sale," for further discussion. In January 2018, we entered into a definitive agreement to sell these businesses and, in April 2018, we completed the sale of these businesses. In the second quarter of 2018, we expect to recognize a gain on the sale. See Note 19, "Subsequent Event," for further discussion.

We have realigned our services businesses to better serve the needs of our corporate clients. As a result, in the second quarter of 2018, the BWise corporate enterprise risk management business will be included as part of our Corporate Solutions business. BWise is currently part of our Market Technology segment. In addition, for segment reporting purposes, we will include in corporate items the historical revenues and expenses related to the sale of the above businesses which were part of the Corporate Solutions business within our Corporate Services segment. See Note 18, "Business Segments," for further discussion.

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 liquidity solutions for private companies.

As of March 31, 2018, there were 2,969 total listings on The Nasdaq Stock Market, including 376 ETPs. The combined market capitalization was approximately $11.8 trillion. In Europe, the Nasdaq Nordic and Nasdaq Baltic exchanges, together with Nasdaq First North, were home to 986 listed companies with a combined market capitalization of approximately $1.5 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 the sell-side, the buy-side, retail online brokers, proprietary trading shops, other venues, internet portals and data distributors. Our data products enhance transparency of market activity within our exchanges and provide critical information to professional and non-professional investors globally. Also included in our Data Products business is our eVestment business, a leading content and analytics cloud-based solutions provider used by asset managers, investment consultants and asset owners to help facilitate better investment decisions.

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, 2018, we had 328 ETPs licensed to Nasdaq's indexes which had $173 billion in assets under management.

Beginning in the second quarter of 2018, our Information Services segment revenues will be recategorized into the following businesses:

- market data;
- index; and
- investment data & analytics.

See Note 18, "Business Segments," for further discussion.

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 90 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.

As discussed above under "Corporate Services," in the second quarter of 2018, our BWise business which is currently part of our Market Technology business will be included as part of our Corporate Solutions business. See Note 18, "Business Segments," for further discussion.

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 7, "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, 2017.

Certain prior year amounts have been reclassified to conform to the current year presentation which primarily relate to the adoption of ASU 2014-09, "Revenue from Contracts with Customers (Topic 606)," on January 1, 2018. See Note 3, "Significant Accounting Policies Update," for further discussion.

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 19, "Subsequent Event," for further discussion.

Recent Accounting Pronouncements

Accounting Standard	Description	Effective Date	Effect on the Financial Statements or Other Significant Matters
Income Statement - Reporting Comprehensive Income In February 2018, the FASB issued ASU 2018-02, "Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income (Topic 220)."	This ASU provides an election to reclassify tax effects that are stranded in accumulated other comprehensive income as a result of tax reform to retained earnings. An election is also available to reclassify other stranded tax effects that relate to the Tax Cuts and Jobs Act but do not directly relate to the change in the federal rate. Tax effects that are stranded in accumulated other comprehensive income for other reasons (e.g., prior changes in tax law, a change in valuation allowance) may not be reclassified. Previously, the effects of changes in tax rates and laws on deferred tax balances were required to be recorded as a component of tax expense related to continuing operations for the period in which the law was enacted, even if the assets and liabilities related to items of accumulated other comprehensive income. In other words, backward tracing of the income tax effects of items originally recognized through accumulated other comprehensive income was prohibited.	January 1, 2019, with early adoption permitted. We early adopted this standard on January 1, 2018.	As a result of the adoption of this standard, we recorded a reclassification of $142 million for stranded tax effects related to the Tax Cuts and Jobs Act from accumulated other comprehensive loss to retained earnings within stockholders' equity in the Condensed Consolidated Balance Sheets. See Note 17, "Income Taxes," for further discussion.
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.	January 1, 2020, with early adoption permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017.	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. We do not anticipate early adoption of this standard.
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 permitted as of January 1, 2019.	We are currently assessing the impact that this standard will have on our consolidated financial statements. We do not anticipate early adoption of this standard.

Accounting Standard	Description	Effective Date	Effect on the Financial Statements or Other Significant Matters
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. Recognition, measurement and presentation of expenses will depend on classification as a finance or operating lease. The guidance also requires certain quantitative and qualitative disclosures about leasing arrangements. Lessor accounting is largely unchanged. Early adoption is permitted. The standard provides alternative methods of initial adoption.	January 1, 2019, with early adoption permitted.	When adopted, ASU 2016-02 will result in an increase in the assets and liabilities reflected on our consolidated balance sheets. In addition, we will be required to disclose key information about our leases. We have established a cross-functional implementation team to assess the significance that this standard will have on our consolidated financial statements. Based on the preliminary work completed, we are considering the possible implications of this new standard, including the discount rate to be used in valuing new and existing leases, procedural and operational changes that may be necessary to comply with the provisions of the guidance, and all applicable financial statement disclosures required by this new standard. We are also in the process of identifying changes to our business processes, systems and controls to support adoption of this new standard. At this time, we have not completed our full analysis and are unable to quantify the impact of the adoption of this new standard. We have not yet selected a transition approach. We do not anticipate early adoption of this standard.

3. Significant Accounting Policies Update

Our significant accounting policies are detailed in Note 2, "Summary of Significant Accounting Policies," in our Annual Report on Form 10-K for the year ended December 31, 2017 that was filed with the SEC on February 28, 2018. Significant changes to our accounting policies as a result of adopting Topic 606 and ASU 2016-01, "Recognition and Measurement of Financial Assets and Financial Liabilities," or ASU 2016-01, are discussed below.

Revenue From Contracts With Customers

On January 1, 2018, we adopted Topic 606 using the full retrospective method. The adoption of Topic 606 impacted the revenue and expense recognition for our Market Technology business and revenue recognition for our Listing Services business. However, the adoption of Topic 606 did not have a material impact on our consolidated financial statements at the time of adoption or in any prior reporting periods. There was no impact to revenue and expense recognition for our other businesses. Additional disclosures required by Topic 606 are provided below.

<u>Contract Balances</u>

Substantially all of our revenues are considered to be revenues from contracts with customers. The related accounts receivable balances are recorded in our Condensed Consolidated Balance Sheets as receivables which is net of allowance for doubtful accounts of $10 million as of March 31, 2018 and $9 million as of December 31, 2017. The changes in the balance between periods were immaterial. We do not have obligations for warranties, returns or refunds to customers.

For the majority of our contracts with customers, except for our market technology and listings services contracts, our performance obligations are short-term in nature and there is no significant variable consideration.

We do not have significant revenues recognized from performance obligations that were satisfied in prior periods. We have elected not to provide disclosures about transaction price allocated to unsatisfied performance obligations if contract durations are less than one year. For contract durations that are one-year or greater, we do not have a material portion of transaction price allocated to unsatisfied performance obligations that are not included in deferred revenue other than for our market technology contracts which are discussed below under "Market Technology." Deferred revenue primarily represents our contract liabilities related to our fees for annual and initial listings, market technology, corporate solutions and information services contracts. Deferred revenue is the only significant contract asset or liability impacted by our adoption of Topic 606. See Note 8, "Deferred Revenue," for our discussion on deferred revenue balances, activity, and expected timing of recognition. See "Revenue Recognition" below for further descriptions of our revenue contracts.

Sales commissions earned by our sales force are considered incremental and recoverable costs of obtaining a contract with a customer. These costs are deferred and amortized on a straight-line basis over the period of benefit that we have determined to be the contract term or estimated service periods. Sales commissions for renewal contracts are deferred and amortized on a straight-line basis over the related contractual renewal period. Amortization expense is included in compensation and benefits expense in the Condensed Consolidated Statements of Income. The balance of deferred costs and related amortization expense are not material to our consolidated financial statements. We elected the practical expedient of recognizing sales commissions as an expense when incurred if contract durations are one year or less. We also have elected the practical expedient of excluding sales taxes from transaction prices.

Certain judgments and estimates were used in the identification and timing of satisfaction of performance obligations and the related allocation of transaction price and are discussed below. We believe that these represent a faithful depiction of the transfer of services to our customers.

Revenue Recognition

Our primary revenue contract classifications are described below. Though we discuss additional revenue details in our “Management Discussion and Analysis of Financial Condition and Results of Operations,” the categories below best represent those that depict similar economic characteristics of the nature, amount, timing and uncertainty of our revenues and cash flows.

Market Services

Transaction-Based Trading and Clearing

Transaction-based trading and clearing includes equity derivative trading and clearing revenues, cash equity trading revenues and FICC revenues. Nasdaq charges transaction fees for trades executed on our exchanges, as well as on orders that are routed to and executed on other market venues. Nasdaq charges clearing fees for contracts cleared with Nasdaq Clearing.

In the U.S., transaction fees are based on trading volumes for trades executed on our U.S. exchanges and in Europe, transaction fees are based on the volume and value of traded and cleared contracts. In Canada, transaction fees are based on trading volumes for trades executed on our Canadian exchange.

Nasdaq satisfies its performance obligation for trading services upon the execution of a customer trade and clearing services when a contract is cleared, as trading and clearing transactions are substantially complete when they are executed and we have no further obligation to the customer at that time. Transaction-based trading and clearing fees can be variable and are based on trade volume tiered discounts. Transaction revenues, as well as any tiered volume discounts, are calculated and billed monthly in accordance with our published fee schedules. In the U.S., we also pay liquidity payments to customers based on our published fee schedules. We use these payments to improve the liquidity on our markets and therefore recognize those payments as a cost of revenue.

The majority of our FICC trading and clearing customers are charged transaction fees, as discussed above, which are based on the volume and value of traded and cleared contracts. We also enter into annual fixed contracts with customers trading U.S. Treasury securities. The customers are charged an annual fixed fee which is billed per the agreement, on a monthly or quarterly basis. Revenues earned on fixed contracts are recognized over time on a ratable basis over the contract period beginning on the date that our service is made available to the customer since the customer receives and consumes the benefit as Nasdaq provides the service.

For U.S. equity derivative trading, we credit a portion of the per share execution charge to the market participant that provides the liquidity. For U.S. cash equity trading, for Nasdaq and Nasdaq PSX, 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. We record these credits as transaction rebates that are included in transaction-based expense in the Condensed Consolidated Statements of Income. These transaction rebates are paid on a monthly basis and the amounts due are included in accounts payable and accrued expenses in the Condensed Consolidated Balance Sheets.

In the U.S., we pay Section 31 fees to the SEC for supervision and regulation of securities markets. We pass these costs along to our customers through our equity derivative trading and clearing fees and our cash equity trading fees. We collect the fees as a pass-through charge from organizations executing eligible trades on our options exchanges and our cash equity platforms and we recognize these amounts in transaction-based expenses when incurred. Section 31 fees received are included in cash and cash equivalents in the Condensed Consolidated Balance Sheets at the time of receipt and, as required by law, the amount due to the SEC is remitted semiannually and recorded as Section 31fees payable to the SEC in the Condensed Consolidated Balance Sheets until paid. 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. As we hold the cash received until payment to the SEC, we earn interest income on the related cash balances.

Under our Limitation of Liability Rule and procedures, we may, subject to certain caps, provide compensation for losses directly resulting from the systems’ actual failure to correctly process an order, quote, message or other data into our platform. We do not record a liability for any potential claims that may be submitted under the Limitation of Liability Rule unless they meet the provisions required in accordance with U.S. GAAP. As such, losses arising as a result of the rule are accrued and charged to expense only if the loss is probable and estimable.

Trade Management Services

We provide market participants with a wide variety of alternatives for connecting to and accessing our markets for a fee. We also offer market participants co-location services, whereby firms may lease cabinet space and power to house their own equipment and servers within our data centers. These participants are charged monthly fees for cabinet space, connectivity and support in accordance with our published fee schedules and recognized on a monthly basis when the performance obligation is met. We also earn revenues from annual and monthly exchange membership and registration fees. Revenues for providing access to our markets, co-location services and monthly exchange membership and registration fees are recognized on a monthly basis as the service is provided. Revenues from annual fees for exchange membership and registration fees are recognized ratably over the following 12-month period since the customer receives and consumes the benefit as Nasdaq provides the service. We also offer broker services to financial participants in the Nordic market primarily providing flexible back-office systems, which allow customers to entirely or partly outsource their company's back-office functions. Revenues from broker services are based on a fixed basic fee for administration or licensing, maintenance and operations, and an incremental fee depending on the number of transactions completed. Broker services revenues are generally billed and recognized monthly.

Corporate Solutions

As of March 31, 2018, corporate solutions revenues primarily include subscription and transaction-based income from our investor relations, board & leadership, public relations solutions, and digital media services products. Subscription-based revenues earned are recognized over time on a ratable basis over the contract period beginning on the date that our service is made available to the customer since the customer receives and consumes the benefit as Nasdaq provides the service. Generally, fees are billed quarterly in advance and the contract provides for automatic renewal. As part of the subscription agreements, customers can also be charged usage fees based upon actual usage of the services provided. Revenues from usage fees are recognized at a point in time upon completion of the service.

Listing Services

Listing services revenues primarily include initial listing fees and annual renewal fees. Under Topic 606, the initial listing fee is allocated to multiple performance obligations including initial and subsequent listing services and corporate solutions services (when a company qualifies to receive these services under the applicable Nasdaq rule), as well as a customer's material right to renew the option to list on our exchanges. In performing this allocation, the standalone selling price of the performance obligations is based on the initial and annual listing fees and the standalone selling price of the corporate solutions services is based on its market value. All listing fees are billed upfront and the identified performance obligations are satisfied over time since the customer receives and consumes the benefit as Nasdaq provides the listing service. Upon adoption of Topic 606, the amount of revenue related to the corporate solutions services performance obligation is recognized ratably over a two-year period, which is based on contract terms, with the remaining revenue recognized ratably over time as customers continue to list on our exchanges, which is estimated to be over a period of six years based on our historical listing experience and projected future listing duration.

In the U.S., annual renewal fees are charged based on the number of outstanding shares of companies listed in the U.S. at the end of the prior year and are recognized ratably over the following 12-month period since the customer receives and consumes the benefit as Nasdaq provides the service. European annual renewal fees, which are received from companies listed on our Nasdaq Nordic and Nasdaq Baltic exchanges and Nasdaq First North, are directly related to the listed companies' market capitalization on a trailing 12-month basis and are recognized ratably over the following 12-month period since the customer receives and consumes the benefit as Nasdaq provides the service.

Data Products

Data products revenues are earned from U.S. and European proprietary data products, investment and data analytics, and index data products. In the U.S., we also earn revenues from U.S. shared tape plans.

We earn revenues primarily based on the number of data subscribers and distributors of our data. Data products revenues are subscription-based and are recognized on a monthly basis net of amounts due under revenue sharing arrangements with market participants.

These subscription agreements are mostly annual in term, payable in advance, and provide for automatic renewal. Subscription-based revenues are recognized over time on a ratable basis over the contract period beginning on the date that our service is made available to the customer since the customer receives and consumes the benefit as Nasdaq provides the service.

For U.S. tape plans, revenues are collected monthly based on published fee schedules and distributed quarterly to the U.S. exchanges based on a formula required by Regulation NMS that takes into account both trading and quoting activity. Revenues are presented on a net basis as we are acting as an agent in this arrangement.

Data Products Revenue Sharing

The most significant component of data products revenues recorded on a net basis is the UTP Plan revenue sharing in the U.S. All indicators of principal versus agent reporting under U.S. GAAP have been considered in analyzing the appropriate presentation of UTP Plan revenue sharing. However, the following are the primary indicators of net reporting:

- We are the administrator for the UTP Plan, in addition to being a participant in the UTP Plan. In our unique role as administrator, we facilitate the collection and dissemination of revenues on behalf of the UTP Plan participants. As a participant, we share in the net distribution of revenues according to the plan on the same terms as all other plan participants.
- The operating committee of the UTP Plan, which is comprised of representatives from each of the participants, including us solely in our capacity as a UTP Plan participant, is responsible for setting the level of fees to be paid by distributors and subscribers and taking action in accordance with the provisions of the UTP Plan, subject to SEC approval.
- Risk of loss on the revenue is shared equally among plan participants according to the UTP Plan.

The exchanges that comprise Nasdaq Nordic and Nasdaq Baltic do not have any data products revenue sharing agreements.

Index Licensing and Services

We develop and license Nasdaq branded indexes, associated derivatives and financial products as part of our Global Index Family. We also provide custom calculation services for third-party clients. Revenues primarily include license fees from these branded indexes, associated derivatives and financial products in the U.S. and abroad. We primarily have two types of license agreements: transaction-based licenses and asset-based licenses. Transaction-based licenses are generally renewable agreements. Customers are charged based on transaction volume or a minimum contract amount, or both. If a customer is charged based on transaction volume, we recognize revenue when the transaction occurs. If a customer is charged based on a minimum contract amount, we recognize revenue on a pro-rata basis over the licensing term since the customer receives and consumes the benefit as Nasdaq provides the service. Asset-based licenses are also generally renewable agreements. Customers are charged based on a percentage of assets under management for licensed products, per the agreement, on a monthly or quarterly basis. These revenues are recognized over the term of the license agreement since the customer receives and consumes the benefit as Nasdaq provides the service.

Market Technology

Market Technology provides technology solutions for trading, clearing, settlement, surveillance and information dissemination, as well as enterprise governance, risk management and compliance software solutions. Revenues primarily consist of software, license and support revenues, change request and advisory revenues, and software as a service revenues.

In our Market Technology business, we enter into long-term contracts with customers to develop customized technology solutions, license the right to use software, and provide post-contract support and other services to our customers. We also enter into agreements to modify the system solutions sold by Nasdaq after delivery has occurred. In addition, we enter into subscription agreements which allow customers to connect to our servers to access our software.

Our long-term contracts with customers to develop customized technology solutions, license the right to use software and provide post-contract support and other services to our customers have multiple performance obligations. The performance obligations are generally: 1) software license and installation service and 2) software support. We have determined that the software license and installation service are not distinct as the license and the customized installation service are inputs to produce the combined output, a functional and integrated software system.

For contracts with multiple performance obligations, we allocate the contract transaction price to each performance obligation using our best estimate of the standalone selling price of each distinct good or service in the contract. In instances where standalone selling price is not directly observable, such as when we do not sell the product or service separately, we determine the standalone selling price predominately through an expected cost plus a margin approach.

Contract modifications are routine in the performance of our contracts. Contracts are often modified to account for changes in contract specifications or requirements. In most instances, contract modifications are for goods and services that are not distinct, and, therefore, are accounted for as part of the existing contract.

For our long-term contracts, payments are generally made throughout the contract life and can be dependent on either reaching certain milestones or paid upfront in advance of the service period depending on the stage of the contract. For subscription agreements, contract payment terms can be quarterly, annually or monthly, in advance. For all other contracts, payment terms vary.

We generally recognize revenue over time as our customers simultaneously receive and consume the benefits provided by our performance because our customer controls the asset for which we are creating, our performance does not create an asset with alternative use, and we have a right to payment for performance completed to date. For these services, we recognize revenue over time using costs incurred to date relative to total estimated costs at completion to measure progress toward satisfying our performance obligation. Incurred costs represent work performed, which corresponds with, and thereby depicts, the transfer of control to the customer. Contract costs generally include labor and overhead. For software support and update services, and for subscription agreements which allow customers to connect to our servers to access our software, we generally recognize revenue ratably over the service period beginning on the date our service is made available to the customer since the customer receives and consumes the benefit consistently over the period as Nasdaq provides the services.

Accounting for our long-term contracts requires judgment relative to assessing risks and their impact on the estimate of revenues and costs. Our estimates are impacted by factors such as the potential for schedule and technical issues, productivity, and the complexity of work performed. When adjustments in estimated total contract costs are required, any changes in the estimated revenues from prior estimates are recognized in the current period for the effect of such change. If estimates of total costs to be incurred on a contract exceed estimates of total revenues, a provision for the entire estimated loss on the contract is recorded in the period in which the loss is determined.

The following table summarizes the amount of the transaction price allocated to performance obligations that are unsatisfied as of March 31, 2018:

	(in millions)
2018[1]	$ 186
2019	211
2020	119
2021	84
2022	51
2023 and thereafter	84
Total	$ 735

(1) Represents performance obligations to be recognized over the remaining nine months of 2018.

Market technology deferred revenue, as discussed in Note 8, "Deferred Revenue," to the condensed consolidated financial statements, represents consideration received that is yet to be recognized as revenue for unsatisfied performance obligations.

The following tables summarize the disaggregation of revenue by major product and service and by segment for the three months ended March 31, 2018 and 2017:

	Three Months Ended March 31, 2018				
	Market Services	Corporate Services	Information Services	Market Technology	Consolidated
			(in millions)		
Transaction-based trading and clearing, net	$ 175	$ —	$ —	$ —	$ 175
Trade management services	75	—	—	—	75
Corporate solutions	—	100	—	—	100
Listing services	—	72	—	—	72
Data services	—	—	133	—	133
Index licensing and services	—	—	41	—	41
Market technology	—	—	—	70	70
Revenues less transaction-based expenses	$ 250	$ 172	$ 174	$ 70	$ 666

	Three Months Ended March 31, 2017				
	Market Services	Corporate Services	Information Services	Market Technology	Consolidated
			(in millions)		
Transaction-based trading and clearing, net	$ 148	$ —	$ —	$ —	$ 148
Trade management services	70	—	—	—	70
Corporate solutions	—	95	—	—	95
Listing services	—	65	—	—	65
Data services	—	—	108	—	108
Index licensing and services	—	—	30	—	30
Market technology	—	—	—	65	65
Revenues less transaction-based expenses	$ 218	$ 160	$ 138	$ 65	$ 581

For the three months ended March 31, 2018, approximately 66% of Market Services revenues were recognized at a point in time and 34% were recognized over time. For the three months ended March 31, 2017, approximately 64% of Market Services revenues were recognized at a point in time and 36% were recognized over time. Substantially all revenues from the Corporate Services, Information Services and Market Technology segments were recognized over time for both the three months ended March 31, 2018 and 2017.

Equity Securities

On January 1, 2018, we adopted ASU 2016-01 which requires that investments in equity securities (excluding equity method investments) be measured at fair value with changes in fair value recognized in net income. Equity securities are no longer classified as trading or available for sale.

We elected the measurement alternative for equity securities which were historically accounted for under the cost method of accounting. Since these equity securities do not have readily determinable fair values, they are measured at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer. We evaluate these securities for impairment by considering a variety of factors such as the earnings capacity of the investment. If a qualitative assessment indicates that the security is impaired, Nasdaq will estimate the fair value of the security, and if the fair value is less than the carrying amount of the security, recognize an impairment loss in net income equal to the difference between the carrying amount and fair value. There was no impact on our condensed consolidated financial statements as a result of this change.

The guidance for classifying and measuring investments in debt securities is unchanged. Therefore, changes in debt securities classified as trading securities are included in dividend and investment income in the Condensed Consolidated Statements of Income and debt securities classified as available-for-sale investment securities are carried at fair value with unrealized gains and losses, net of tax, reported in accumulated other comprehensive loss within stockholders' equity in the Condensed Consolidated Balance Sheets. Realized gains and losses on these securities are included in earnings upon disposition of the securities using the specific identification method. In addition, realized losses are recognized when management determines that a decline in value is other than temporary, which requires judgment regarding the amount and timing of recovery. For financial investments that are classified as available-for-sale securities, we also consider the extent to which cost exceeds fair value, the duration of that difference, management's judgment about the issuer's current and prospective financial condition, as well as our intent and ability to hold the security until recovery of the unrealized losses.

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4. Acquisitions

We completed the following acquisitions in 2017. Financial results of each transaction are included in our Condensed Consolidated Statements of Income from the date of each acquisition.

2017 Acquisitions

	Purchase Consideration	Total Net Liabilities Acquired	Total Net Deferred Tax Liability	Acquired Intangible Assets	Goodwill
			(in millions)		
eVestment	$ 744	$ (10)	$ (104)	$ 405	$ 453

The amounts in the table above represent the preliminary allocation of purchase price as of March 31, 2018 and 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.

See "Intangible Assets" below for further discussion of intangible assets acquired in the eVestment acquisition.

Acquisition of eVestment

In October 2017, we acquired eVestment for $705 million. The aggregate cash consideration of $744 million, which is net of cash acquired of $22 million, included $39 million of estimated tax benefits associated with the transaction. We acquired net liabilities, at fair value, totaling $10 million and we recorded a net deferred tax liability of $104 million, which is net of the $39 million in estimated tax benefits associated with the transaction. The deferred tax liability recorded of $143 million relates to differences in the U.S. GAAP and tax basis of our investment in eVestment. eVestment is part of our Information Services segment.

Nasdaq used cash on hand and issuances of commercial paper to fund this acquisition.

Acquisition of Sybenetix

In September 2017, we acquired Sybenetix for an immaterial amount. Sybenetix is part of our Market Technology segment.

Intangible Assets

The following table presents the details of acquired intangible assets for eVestment at the date of the acquisition. All acquired intangible assets with finite lives are amortized using the straight-line method.

Intangible Assets

($ in millions)

Customer relationships	$ 378
Discount rate used	9.3%
Estimated average useful life	14 years
Trade name	$ 13
Discount rate used	9.2%
Estimated average useful life	8 years
Technology	$ 14
Discount rate used	9.2%
Estimated average useful life	8 years
Total intangible assets	$ 405

Customer Relationships

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

Methodology

For our acquisition of eVestment, 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 acquisition of eVestment, 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 useful life based on the historical behavior of the customers and a parallel analysis of the customers using the excess earnings method.

Trade Name

As part of our acquisition of eVestment, we acquired a trade name. This trade name is recognized in the industry and carries a reputation for quality. As such, the reputation and positive recognition embodied in this trade name is a valuable asset to Nasdaq.

Methodology

The eVestment trade name was valued using the income approach, specifically the relief-from-royalty method, or RFRM. The RFRM is used to estimate the cost savings that accrue to the owner of an intangible asset who would otherwise have to pay royalties or license fees on revenues earned through the use of the asset. The royalty rate is applied to the projected revenue over the expected remaining life of the intangible asset to estimate royalty savings. The net after-tax royalty savings are calculated for each year in the remaining economic life of the trade name and discounted to present value.

The discount rate used reflects the amount of risk associated with the hypothetical cash flows for the trade name relative to the overall business as discussed above in “Customer Relationships.”

We have estimated the useful life of the eVestment trade name to be 8 years.

Technology

As part of our acquisition of eVestment, we acquired developed technology.

Methodology

The developed technology was valued using the income approach, specifically the RFRM as discussed above in “Trade Names.”

Discount rate

The discount rate used reflects the amount of risk associated with the hypothetical cash flows for the developed technology relative to the overall business as discussed above in “Customer Relationships.”

Estimated Useful Life

We have estimated the useful life of the eVestment technology to be 8 years.

Pro Forma Results and Acquisition-related Costs

The condensed consolidated financial statements for the three months ended March 31, 2018 and 2017 include the financial results of the above 2017 acquisitions from the date of each acquisition. Pro forma financial results for acquisitions completed in 2017 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.

5. Assets and Liabilities Held For Sale

We classify assets and liabilities as held for sale (disposal group) when management, having the authority to approve the action, commits to a plan to sell the disposal group, the sale is probable within one year, and the disposal group is available for immediate sale in its present condition. We also consider whether an active program to locate a buyer has been initiated, whether the disposal group is marketed actively for sale at a price that is reasonable in relation to its current fair value, and whether actions required to complete the plan indicate that it is unlikely that significant changes to the plan will be made or that the plan will be withdrawn. We initially measure a disposal group that is classified as held for sale at the lower of its carrying amount or fair value less costs to sell. Any loss resulting from this measurement is recognized in the period in which the held for sale criteria are met. Conversely, gains are not recognized until the date of sale. We assess the fair value of a disposal group less costs to sell each reporting period it remains classified as held for sale and report any subsequent changes as an adjustment to the carrying amount of the disposal group, as long as the new carrying amount does not exceed the carrying amount of the disposal group at the time it was initially classified as held for sale. Assets are not depreciated or amortized while they are classified as held for sale. Upon determining that a disposal group meets the criteria to be classified as held for sale, we report the assets and liabilities of the disposal group as assets held for sale and liabilities held for sale in our Condensed Consolidated Balance Sheets.

In September 2017, we commenced a process to evaluate strategic alternatives for our Public Relations Solutions and Digital Media Services businesses within our Corporate Solutions business as part of our strategic refinement. The Corporate Solutions business is part of our Corporate Services segment. The Public Relations Solutions and Digital Media Services businesses include the following products and services:

- Nasdaq GlobeNewswire;
- Nasdaq Influencers;
- Nasdaq Media Intelligence;
- Nasdaq IR Websites and Newsrooms; and
- Nasdaq Webcasts.

As a result of the above, we determined that we met all of the criteria to classify the assets and liabilities of these businesses as held for sale as of September 30, 2017. The disposal of these businesses did not represent a strategic shift that would have a major effect on our operations and financial results and is, therefore, not classified as discontinued operations.

In January 2018, we entered into a definitive agreement to sell our Public Relations Solutions and Digital Media Services businesses for $335 million, subject to post-closing adjustments and, in April 2018, we completed the sale of these businesses. In the second quarter of 2018, we expect to recognize a gain on the sale. See Note 19, "Subsequent Event," for further discussion. Nasdaq expects to use the proceeds from the sale for share repurchases.

Based on the sales price in the agreement, no impairment charge was recorded for the three months ended March 31, 2018 as the carrying amount of the net assets was less than the sales price in the agreement less costs to sell.

The following table presents the carrying amounts of the major classes of assets and liabilities classified as held for sale in the Condensed Consolidated Balance Sheets:

	March 31, 2018 (in millions)
Property and equipment, net	$ 21
Goodwill [1]	203
Intangible assets, net[2]	38
Other assets	6
Total assets held for sale	$ 268
Deferred tax liabilities	$ 15
Other current liabilities	12
Total liabilities held for sale	$ 27

[1] The assignment of goodwill was based on the relative fair value of the disposal group and the portion of the remaining reporting unit.

[2] Primarily represents customer relationships.

* * * * * *

6. Goodwill and Acquired Intangible Assets

Goodwill

The following table presents the changes in goodwill by business segment during the three months ended March 31, 2018:

	Market Services	Corporate Services	Information Services	Market Technology	Total
			(in millions)		
Balance at December 31, 2017	$ 3,546	$ 490	$ 2,362	$ 188	$ 6,586
Foreign currency translation adjustment	(19)	(1)	(17)	—	(37)
Balance at March 31, 2018	$ 3,527	$ 489	$ 2,345	$ 188	$ 6,549

As of March 31, 2018, the amount of goodwill that is expected to be deductible for tax purposes in future periods is $849 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, 2018 and 2017; 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, 2018				December 31, 2017			
	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	$ 65	$ (24)	$ 41	8	$ 65	$ (22)	$ 43	8
Customer relationships	1,708	(553)	1,155	18	1,708	(526)	1,182	18
Other	17	(4)	13	8	17	(4)	13	8
Foreign currency translation adjustment	(112)	48	(64)		(111)	46	(65)	
Total finite-lived intangible assets	$ 1,678	$ (533)	$ 1,145		$ 1,679	$ (506)	$ 1,173	
Indefinite-Lived Intangible Assets								
Exchange and clearing registrations	$ 1,257	$ —	$ 1,257		$ 1,257	$ —	$ 1,257	
Trade names	129	—	129		129	—	129	
Licenses	52	—	52		52	—	52	
Foreign currency translation adjustment	(151)	—	(151)		(143)	—	(143)	
Total indefinite-lived intangible assets	$ 1,287	$ —	$ 1,287		$ 1,295	$ —	$ 1,295	
Total intangible assets	$ 2,965	$ (533)	$ 2,432		$ 2,974	$ (506)	$ 2,468	

Amortization expense for acquired finite-lived intangible assets was $28 million for the three months ended March 31, 2018 and $23 million for the three months ended March 31, 2017. Amortization expense increased in 2018 primarily due to additional amortization expense associated with acquired intangible assets in 2017. These amounts are included in depreciation and amortization expense in the Condensed Consolidated Statements of Income.

The estimated future amortization expense (excluding the impact of foreign currency translation adjustments of $64 million as of March 31, 2018) of acquired finite-lived intangible assets as of March 31, 2018 is as follows:

	(in millions)
2018[(1)]	$ 85
2019	99
2020	98
2021	97
2022	94
2023 and thereafter	736
Total	$ 1,209

[(1)] Represents the estimated amortization to be recognized for the remaining nine months of 2018.

7. Investments

The following table presents the details of our investments:

	March 31, 2018	December 31, 2017
	(in millions)	
Trading securities	$ 214	$ 221
Available-for-sale investment securities	10	14
Financial investments, at fair value	$ 224	$ 235
Equity method investments	$ 133	$ 131
Equity securities	$ 152	$ 152

Financial Investments, at Fair Value

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 $157 million as of March 31, 2018 and $160 million as of December 31, 2017, are assets utilized to meet regulatory capital requirements, primarily for our clearing operations at Nasdaq Clearing.

Available-for-Sale Investment Securities

As of March 31, 2018 and December 31, 2017, available-for-sale investment securities, which are included in financial investments, at fair value in the Condensed Consolidated Balance Sheets, are primarily comprised of commercial paper debt securities. As of March 31, 2018 and December 31, 2017, the cumulative unrealized gains and losses on these securities were immaterial.

Equity Method Investments

As of March 31, 2018 and December 31, 2017, 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 $2 million for the three months ended March 31, 2018 and $4 million for the three months ended March 31, 2017.

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 Federal Court of Appeals for the District of Columbia Circuit, or 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 Court of Appeals. The Court of Appeals heard arguments on the case in March 2017 and decided the case in August 2017. The Court of Appeals remanded the case to the SEC for further examination of the record and an independent assessment by the SEC of the evidence OCC submitted. The Court directed that the SEC approval of the OCC capital plan remain in place during the SEC's examination unless the SEC determined not to preserve it. The SEC has allowed OCC to preserve the capital plan, and in September 2017, OCC disbursed an annual dividend of $5 million per ownership share. Nasdaq, as the owner of two shares, received $10 million. The SEC provided OCC and the appellants with an opportunity to submit further briefs and evidence for the administrative record. It appears from public filings that the SEC record is complete and that the matter is now under consideration by the agency. There has been no ruling at this time, and there is no deadline for the SEC to issue its ruling.

Equity Securities

The carrying amounts of our equity securities are included in other non-current assets in the Condensed Consolidated Balance Sheets. As of March 31, 2018 and December 31, 2017, our equity securities primarily represented our 5% ownership interest in Borsa İstanbul and our 5% ownership interest in LCH.Clearnet Group Limited. For the three months ended March 31, 2018, no impairment charges were recorded on our equity securities and there were no upward or downward adjustments recorded.

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 carrying amount of $75 million which is guaranteed to us via a put option negotiated as part of the market technology agreement.

* * * * * *

8. 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, 2018 are reflected in the following table:

	Initial Listing Revenues	Annual Listings Revenues	Market Technology Revenues	Corporate Solutions Revenues	Information Services and Other Revenues	Total
			(in millions)			
Balance at January 1, 2018	$ 63	$ 3	$ 109	$ 37	$ 74	$ 286
Additions	6	239	46	75	58	424
Revenue recognized	(6)	(63)	(48)	(72)	(28)	(217)
Translation adjustment	—	(1)	—	—	—	(1)
Balance at March 31, 2018	$ 63	$ 178	$ 107	$ 40	$ 104	$ 492

On January 1, 2018, we adopted Topic 606. As a result, a portion of revenues that were previously deferred were recognized either in prior period revenues, through restatement, or as an adjustment to retained earnings upon adoption of the new standard. See "Revenue From Contracts With Customers," of Note 3, "Significant Accounting Policies Update," for a description of our initial listing, annual listing, market technology, corporate solutions, and information services revenues and the revenue recognition policy for each of these revenue streams.

* * * * * *

As of March 31, 2018, we estimate that our deferred revenue will be recognized in the following years:

	Initial Listing Revenues	Annual Listings Revenues	Market Technology Revenues	Corporate Solutions Revenues	Information Services and Other Revenues	Total
			(in millions)			
Fiscal year ended:						
2018[(1)]	$ 16	$ 178	$ 58	$ 37	$ 78	$ 367
2019	19	—	22	3	18	62
2020	13	—	19	—	6	38
2021	9	—	8	—	2	19
2022	5	—	—	—	—	5
2023 and thereafter	1	—	—	—	—	1
	$ 63	$ 178	$ 107	$ 40	$ 104	$ 492

(1) Represents deferred revenue that is anticipated to be recognized over the remaining nine months of 2018.

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.

9. Debt Obligations

The following table presents the changes in the carrying amount of our debt obligations during the three months ended March 31, 2018:

	December 31, 2017	Additions	Payments, Accretion and Other	March 31, 2018
		(in millions)		
Short-term debt:				
Commercial paper	$ 480	$ 1,791	$ (1,809)	$ 462
Senior unsecured floating rate notes due March 22, 2019[1]	498	—	—	498
Total short-term debt	978	1,791	(1,809)	960
Long-term debt:				
5.55% senior unsecured notes due January 15, 2020	599	—	—	599
3.875% senior unsecured notes due June 7, 2021	716	—	20	736
4.25% senior unsecured notes due June 1, 2024	496	—	—	496
1.75% senior unsecured notes due May 19, 2023	712	—	20	732
3.85% senior unsecured notes due June 30, 2026	496	—	—	496
$400 million senior unsecured term loan facility due November 25, 2019 (average interest rate of 3.11% for the period January 1, 2018 through March 31, 2018)	100	—	—	100
$1 billion revolving credit commitment due April 25, 2022 (average interest rate of 2.74% for the period January 1, 2018 through March 31, 2018)	110	—	(114)	(4)
Total long-term debt	3,229	—	(74)	3,155
Total debt obligations	$ 4,207	$ 1,791	$ (1,883)	$ 4,115

[1] Balance was reclassified to short-term debt as of March 31, 2018.

Commercial Paper Program

Our U.S. dollar commercial paper program is supported by our 2017 Credit Facility which provides liquidity support for the repayment of commercial paper issued through the commercial paper program. See "2017 Credit Facility" below for further discussion of our 2017 Credit Facility. The effective interest rate of commercial paper issuances fluctuate as short term interest rates and demand fluctuate. The fluctuation of these rates due to market conditions may impact our interest expense.

As of March 31, 2018, commercial paper notes in the table above reflect the aggregate principal amount, less the unamortized discount which is being accreted through interest expense over the life of the applicable notes. The original maturities of these notes range from 4 days to 66 days and the weighted-average maturity is 19 days. The weighted-average effective interest rate is 2.32% per annum.

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, 2018, 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.

Senior Unsecured Floating Rate Notes

In September 2017, Nasdaq issued the 2019 Notes. The 2019 Notes pay interest quarterly in arrears at a rate equal to the three-month U.S. dollar LIBOR as determined at the beginning of each quarterly period plus 0.39% per annum until March 22, 2019.

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.

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 $20 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, 2018.

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. 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 $20 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, 2018.

3.85% Senior Unsecured Notes

In June 2016, Nasdaq issued the 2026 Notes. 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, 2018, 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.

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 properties and insurance, and events of default, including cross-defaults to our material indebtedness.

2017 Credit Facility

In April 2017, Nasdaq entered into the 2017 Credit Facility. The 2017 Credit Facility consists of a $1 billion five-year revolving credit facility (with sublimits for non-dollar borrowings, swingline borrowings and letters of credit), which replaced a former credit facility. Nasdaq intends to use funds available under the 2017 Credit Facility for general corporate purposes and to provide liquidity support for the repayment of commercial paper issued through the commercial paper program.

As of March 31, 2018, no amounts were outstanding on the 2017 Credit Facility. The $4 million credit balance represents unamortized debt issuance costs. Of the $1 billion that is available for borrowing, $462 million provides liquidity support for the principal amount outstanding under the commercial paper program as of March 31, 2018. In addition, $1 million has been utilized for a letter of credit. As such, as of March 31, 2018, the total remaining amount available under the 2017 Credit Facility was $537 million. See "Commercial Paper Program" above for further discussion of our commercial paper program.

Under our 2017 Credit Facility, borrowings under the revolving credit facility and swingline borrowings bear interest on the principal amount outstanding at 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.

The 2017 Credit Facility includes an option for Nasdaq to increase the available aggregate amount by up to $500 million, subject to the consent of the lenders funding the increase and certain other conditions.

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 a former credit facility.

Under our 2016 Credit Facility, borrowings bear interest on the principal amount outstanding 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.

As of March 31, 2018, the remaining amount outstanding of $100 million is due upon maturity at November 25, 2019.

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 $185 million as of March 31, 2018 and $187 million as of December 31, 2017 in available liquidity, none of which was utilized.

Debt Covenants

As of March 31, 2018, we were in compliance with the covenants of all of our debt obligations.

10. 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 both the three months ended March 31, 2018 and 2017.

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 $6 million for the three months March 31, 2018 and $4 million for the three months ended March 31, 2017.

11. 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, 2018 and 2017 in the Condensed Consolidated Statements of Income:

	Three Months Ended March 31,	
	2018	2017
	(in millions)	
Share-based compensation expense before income taxes	$ 15	$ 15
Income tax benefit	(4)	(6)
Share-based compensation expense after income taxes	$ 11	$ 9

Common Shares Available Under Our Equity Plan

As of March 31, 2018, we had approximately 5.0 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, 2018:

	Restricted Stock	
	Number of Awards	Weighted-Average Grant Date Fair Value
Unvested balances at January 1, 2018	1,988,500	$ 57.34
Granted	448,015	$ 81.41
Vested	(588,107)	$ 45.25
Forfeited	(34,190)	$ 59.94
Unvested balances at March 31, 2018	1,814,218	$ 67.16

As of March 31, 2018, $72 million of total unrecognized compensation cost related to restricted stock is expected to be recognized over a weighted-average period of 2.0 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 2017, certain grants of PSUs with a one-year performance period exceeded the applicable performance parameters. As a result, an additional 14,497 units above target were considered granted in the first quarter of 2018 and are included in the below table.

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 PSUs 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 2015 with a three-year performance period exceeded the applicable performance parameters. As a result, an additional 237,876 units above target were considered granted in the first quarter of 2018 and are included in the below table.

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, 2018 and 2017:

	Three Months Ended March 31,	
	2018	2017
Weighted-average risk free interest rate[1]	2.36%	1.44%
Expected volatility[2]	18.7%	19.2%
Weighted-average grant date share price	$86.22	$69.45
Weighted-average fair value at grant date	$116.79	$81.57

(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, 2018:

	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, 2018	333,004	$ 61.39	1,009,958	$ 78.18
Granted	130,507	$ 80.23	481,504	$ 90.75
Vested	(6,702)	$ 49.40	(655,204)	$ 64.08
Forfeited	(6,629)	$ 59.34	—	$ —
Unvested balances at March 31, 2018	450,180	$ 67.20	836,258	$ 96.47

As of March 31, 2018, $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, $46 million of total unrecognized compensation cost is expected to be recognized over a weighted-average period of 1.7 years.

Stock Options

The fair value of stock options is estimated using the Black-Scholes option-pricing model. Each grant has a 10-year life. In
January 2017, our CEO received 268,817 performance-based

non-qualified stock options which will vest annually over a three-year period, with each vesting contingent upon the achievement of annual performance parameters. On January 30, 2018, Nasdaq's management compensation committee and board of directors determined that the performance goal for 2017 was met, resulting in the settlement of the first one-third of the grant. There were no stock option awards granted during the three months ended March 31, 2018.

Summary of Stock Option Activity

A summary of stock option activity for the three months ended March 31, 2018 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, 2018	571,380	$ 43.84	5.40	$ 19
Exercised	(34,195)	24.23		
Forfeited	—	—		
Outstanding at March 31, 2018	537,185	$ 45.09	5.38	$ 22
Exercisable at March 31, 2018	357,973	$ 34.28	3.75	$ 19

We received net cash proceeds of $1 million from the exercise of 34,195 stock options for the three months ended March 31, 2018.

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 29, 2018 of $86.22 and the exercise price, times the number of shares) based on stock options with an exercise price less than Nasdaq's closing price of $86.22 as of March 29, 2018, 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, 2018 was 0.4 million and the weighted-average exercise price was $34.28. As of March 31, 2017, 1.4 million outstanding stock options were exercisable and the weighted-average exercise price was $22.35.

The total pre-tax intrinsic value of stock options exercised was $2 million for both the three months ended March 31, 2018 and 2017.

ESPP

We have an ESPP under which approximately 2.1 million shares of our common stock have been reserved for future issuance as of March 31, 2018. 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 to $1 million for both the three months ended March 31, 2018 and 2017.

12. Nasdaq Stockholders' Equity

Common Stock

As of March 31, 2018, 300,000,000 shares of our common stock were authorized, 172,396,708 shares were issued and 166,946,592 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 canceled. When treasury shares are reissued, they are recorded at the average cost of the treasury shares acquired. We held 5,452,116 shares of common stock in treasury as of March 31, 2018 and 4,932,402 shares as of December 31, 2017, 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 January 2018, our board of directors authorized an additional $500 million for the share repurchase program bringing the total capacity to $726 million.

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 share repurchase program has no defined expiration date.

The following table summarizes our share repurchase activity:

	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017
Number of shares of common stock repurchased	1,258,946	2,215,755
Average price paid per share	$ 78.75	$ 70.64
Total purchase price (in millions)	$ 99	$ 156

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, 2018, the remaining amount authorized for share repurchases under the program was $627 million.

Other Repurchases of Common Stock

During the first three months of 2018, we repurchased 519,714 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. As of March 31, 2018 and December 31, 2017, no shares of preferred stock were issued or outstanding.

* * * * * *

Cash Dividends on Common Stock

During the three months ended March 31, 2018, our board of directors declared the following cash dividends:

Declaration Date	Dividend Per Common Share	Record Date	Total Amount (in millions)	Payment Date
January 30, 2018	$ 0.38	March 16, 2018	$ 63	March 30, 2018
March 26, 2018	0.44	June 15, 2018	73	June 29, 2018
			$ 136	

The total amount declared of $136 million was recorded in retained earnings in the Condensed Consolidated Balance Sheets as of March 31, 2018. As of March 31, 2018, the total amount paid was $63 million.

The regular quarterly cash dividend declared in March 2018 of $0.44 per share on our outstanding common stock reflects a 16.0% increase from our prior quarterly cash dividend of $0.38. Future declarations of quarterly dividends and the establishment of future record and payment dates are subject to approval by the board of directors. The estimated amount of this dividend is $73 million.

Our board of directors maintains a dividend policy with the intention to provide stockholders with regular and growing dividends over the long term as earnings and cash flow grow.

13. Earnings Per Share

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

	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017
	(in millions, except share and per share amounts)	
Numerator:		
Net income attributable to common shareholders	$ 177	$ 168
Denominator:		
Weighted-average common shares outstanding for basic earnings per share	166,921,542	166,473,073
Weighted-average effect of dilutive securities:		
Employee equity awards	2,070,997	3,773,874
Weighted-average common shares outstanding for diluted earnings per share	168,992,539	170,246,947
Basic and diluted earnings per share:		
Basic earnings per share	$ 1.06	$ 1.01
Diluted earnings per share	$ 1.05	$ 0.99

Stock options to purchase 537,185 shares of common stock and 3,100,656 shares of restricted stock and PSUs were outstanding as of March 31, 2018. For the three months ended March 31, 2018, we included all of the outstanding stock options and 2,293,541 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 1,634,772 shares of common stock and 4,245,457 shares of restricted stock and PSUs were outstanding as of 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 shares of restricted stock and PSUs are antidilutive, and as such, they were properly excluded.

14. Fair Value of Financial Instruments

The following tables present our financial assets that are measured at fair value on a recurring basis as of March 31, 2018 and December 31, 2017. We did not have any financial liabilities measured at fair value on a recurring basis as of March 31, 2018 and December 31, 2017.

	March 31, 2018			
	Total	Level 1	Level 2	Level 3
	(in millions)			
Financial investments, at fair value	$ 224	$ 134	$ 90	$ —
Default fund and margin deposit investments	1,895	115	1,780	—
Total	$ 2,119	$ 249	$ 1,870	$ —

	December 31, 2017			
	Total	Level 1	Level 2	Level 3
	(in millions)			
Financial investments, at fair value	$ 235	$ 135	$ 100	$ —
Default fund and margin deposit investments	2,129	371	1,758	—
Total	$ 2,364	$ 506	$ 1,858	$ —

Our Level 1 financial investments, at fair value were primarily comprised of trading securities, mainly highly rated European government debt securities. Level 2 financial investments, at fair value were primarily comprised of trading securities, mainly European mortgage bonds, time deposits and corporate bonds as of March 31, 2018 and December 31, 2017. Of the Level 1 and Level 2 financial investments, at fair value, $157 million as of March 31, 2018 and $160 million as of December 31, 2017 are assets utilized to meet regulatory capital requirements, primarily for our clearing operations at Nasdaq Clearing.

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 $4,026 million recorded in the Condensed Consolidated Balance Sheets as of March 31, 2018, $1,547 million of cash contributions have been invested in highly rated European and U.S. government debt securities or central bank certificates and $348 million in reverse repurchase agreements. The remainder of this balance is held in cash. Of the total balance of $3,988 million recorded in the Condensed Consolidated Balance Sheets as of December 31, 2017, $1,909 million of cash contributions were invested in highly rated European and U.S. government debt securities and central bank certificates and $220 million of cash contributions were invested in reverse repurchase agreements. The remainder of this balance is held in cash. See Note 15, “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, 2018 and December 31, 2017.

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, commercial paper and certain other current liabilities.

Our investments in OCC and EuroCCP N.V. are accounted for under the equity method of accounting. Our investments in Borsa Istanbul and LCH.Clearnet Group Limited are accounted for using the measurement alternative as these investments do not have a readily determinable fair value. See “Equity Securities,” of Note 3, “Significant Accounting Policies Update,” and “Equity Method Investments,” and “Equity Securities,” of Note 7, “Investments,” for further discussion.

We also consider our debt obligations to be financial instruments. The fair value of our debt obligations, utilizing discounted cash flow analyses for our floating rate debt and prevailing market rates for our fixed rate debt, was $4.3 billion as of March 31, 2018 and $4.4 billion as of December 31, 2017. The discounted cash flow analyses are based on borrowing rates currently available to us for debt with similar terms and maturities. The fair value of our commercial paper approximates the carrying value since the rates of interest on this short-term debt approximate market rates as of March 31, 2018. Our commercial paper and our fixed rate and floating rate debt are categorized as Level 2 in the fair value hierarchy.

For further discussion of our debt obligations, see Note 9, “Debt Obligations.”

Non-Financial Assets Measured at Fair Value on a Non-Recurring Basis

Our non-financial assets, which include goodwill, intangible assets, and other long-lived assets, are not required to be carried at fair value on a recurring basis. Fair value measures of non-financial assets are primarily used in the impairment analysis of these assets. Any resulting asset impairment would require that the non-financial asset be recorded at its fair value. Nasdaq uses Level 3 inputs to measure the fair value of the above assets on a non-recurring basis. As of March 31, 2018 and December 31, 2017, there were no non-financial assets measured at fair value on a non-recurring basis.

15. 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, 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, 2018, clearing member default fund contributions and margin deposits were as follows:

	March 31, 2018		
	Cash Contributions	Non-Cash Contributions	Total Contributions
	(in millions)		
Default fund contributions	$ 392	$ 144	$ 536
Margin deposits	3,634	4,246	7,880
Total	$ 4,026	$ 4,390	$ 8,416

In accordance with its investment policy, of the total cash contributions of $4,026 million, Nasdaq Clearing has invested $1,547 million in highly rated European and U.S. government debt securities or central bank certificates and $348 million in reverse repurchase agreements. The remainder of this balance is held in cash. Of the total default fund contributions of $536 million, Nasdaq Clearing can utilize $436 million as capital resources in the event of a counterparty default. The remaining balance of $100 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, 2018, Nasdaq Clearing committed capital totaling $112 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, 2018.

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

	March 31, 2018 (in millions)
Commodity and seafood options, futures and forwards(1)(2)(3)	$ 769
Fixed-income options and futures(1)(2)	724
Stock options and futures(1)(2)	238
Index options and futures(1)(2)	132
Total	$ 1,863

(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, 2018 and 2017 was as follows:

	March 31, 2018	March 31, 2017
Commodity and seafood options, futures and forwards(1)	570,057	726,739
Fixed-income options and futures	6,047,859	5,158,237
Stock options and futures	5,738,212	7,383,538
Index options and futures	13,360,119	11,315,176
Total	25,716,247	24,583,690

(1) The total volume in cleared power related to commodity contracts was 272 Terawatt hours (TWh) for the three months ended March 31, 2018 and 379 TWh for the three months ended March 31, 2017.

The outstanding contract value of resale and repurchase agreements was $3.3 billion as of March 31, 2018 and $6.3 billion as of March 31, 2017. The total number of contracts cleared was 2,280,212 for the three months ended March 31, 2018 and was 1,979,972 for the three months ended March 31, 2017.

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 $17 million as of March 31, 2018;
- 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 $24 million as of March 31, 2018; and
- mutualized default fund, which includes capital contributions of the clearing members on a pro-rata basis.

In addition to the capital held to withstand counterparty defaults described above, Nasdaq Clearing also has committed capital of $71 million to ensure that it can handle an orderly wind-down of its operation, and that it is adequately protected against investment, operational, legal, and business risks. 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.

16. 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 15, "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 $13 million as of March 31, 2018 and $14 million as of December 31, 2017. As discussed in "Other Credit Facilities," of Note 9, "Debt Obligations," clearing-related credit facilities, which are available in multiple currencies, totaled $185 million as of March 31, 2018 and $187 million as of December 31, 2017, 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, 2018, 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. This clearing agreement will end on July 31, 2018, and will be replaced by a clearing agreement with the Industrial and Commercial Bank of China Financial Services LLC, or ICBC. Some of the trading activity in Execution Access is cleared by Cantor Fitzgerald (and similarly will be by ICBC after July 31, 2018) 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 at least one business day (or more, if specified by the U.S. Treasury issuance calendar). 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. Daily position trading limits are also enforced for such counterparties.

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. However, no guarantee can be provided that these arrangements will at all times be sufficient.

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, 2018 and December 31, 2017. 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 15, "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 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. As of March 31, 2018, these escrow agreements provide for future payment of $13 million, of which $9 million is included in other current liabilities and $4 million is included in other non-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.

Legal and Regulatory Matters

As previously disclosed, we 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. The plaintiffs seek injunctive and monetary relief of an unspecified amount. 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 appealed the judgment of dismissal to the United States Court of Appeals for the Second Circuit. On December 19, 2017, the Second Circuit issued an opinion vacating the district court's judgment of dismissal and remanding to the district court for further proceedings. The exchanges filed a petition before the Second Circuit seeking panel or en banc rehearing on January 31, 2018, which the Second Circuit denied on March 13, 2018. On April 16, 2018, the district court established a schedule for further briefing by the parties of a motion to dismiss the amended complaint. Given the preliminary nature of the proceedings, we are unable to estimate what, if any, liability may result from this litigation. However, we believe 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.

In the normal course of business, Nasdaq discusses matters with its regulators raised during regulatory examinations or otherwise subject to their inquiry and oversight. These matters could result in censures, fines, penalties or other sanctions. Management believes the outcome of any resulting actions will not have a material impact on its consolidated financial position or results of operations. However, we are unable to predict the outcome or the timing of the ultimate resolution of these matters, or the potential fines, penalties or injunctive or other equitable relief, if any, that may result from these matters.

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.

17. Income Taxes

We use the asset and liability method to determine income taxes on all transactions recorded in the 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 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 rate:

	Three Months Ended March 31,		Percentage Change
	2018	2017	
	($ in millions)		
Income tax provision	$ 62	$ 47	31.9%
Effective tax rate	25.9%	21.9%	

The higher effective tax rate in the first quarter of 2018 when compared with the first quarter of 2017 is primarily due to a lower recognition of excess tax benefits associated with the vesting of employee shared-based compensation arrangements in the first quarter of 2018 when compared to the same period in 2017, partially offset by a decrease in tax expense due to the reduction of the U.S. corporate tax rate from 35% to 21%, effective January 1, 2018.

The effective tax rate may also 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 2012 through 2015 are currently under examination by the Internal Revenue Services and we are subject to examination by the Internal Revenue Service for 2016. Several state tax returns are currently under examination by the respective tax authorities for the years 2005 through 2016. Non-U.S. tax returns are subject to examination by the respective tax authorities for the years 2009 through 2016. 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 as of March 31, 2018 will decrease in the next twelve months as we expect to settle certain tax audits.

The Swedish Tax Agency has disallowed certain interest expense deductions for the years 2013 - 2015. We appealed to the Lower Administrative Court. In the first quarter of 2018, the Lower Administrative Court denied our appeal. We will appeal to the Administrative Court of Appeal. Despite this negative decision, we continue to expect a favorable decision from the Swedish Courts. Since January 1, 2013, we have recorded tax benefits of $57 million associated with this matter. We continue to pay all assessments from the Swedish Tax Agency while this matter is pending and have paid $34 million through March 31, 2018. 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 $39 million, or $0.23 per diluted share, which is net of any related U.S. tax benefits and reflects the impact of foreign currency translation. We record quarterly tax benefits of $1 million to $2 million related to this matter.

The Tax Cuts and Jobs Act was enacted on December 22, 2017 and is effective January 1, 2018. The new legislation contains several key provisions, including a reduction of the U.S. corporate income tax rate from 35% to 21%. We were required to remeasure all of our U.S. deferred tax assets and liabilities as of December 22, 2017 and record the impact of such remeasurement in our 2017 financial statements. For the year ended December 31, 2017, we recorded a decrease to tax expense of $89 million, substantially all of which reflects the estimated impact associated with the remeasurement of our net U.S. deferred tax liability at the lower U.S. federal corporate income tax rate. The Tax Cuts and Jobs Act also imposes a transition tax on unremitted aggregate accumulated earnings of non-U.S. subsidiaries, which did not impact us.

SAB 118 has provided guidance which allows us to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. As of December 31, 2017, we recorded a provisional estimate of the effects of the new legislation. In the first quarter of 2018, we recorded an increase to tax expense of $5 million, which reflects the reduced federal tax benefit associated with state unrecognized tax benefits. We will continue to analyze the Tax Cuts and Jobs Act and related accounting guidance and interpretations in order to finalize any impacts within the measurement period.

On January 1, 2018, we adopted Topic 220. See “Recent Accounting Pronouncements,” of Note 2, “Basis of Presentation and Principles of Consolidation,” for further discussion of this standard. As a result of the adoption of this standard, we recorded a reclassification of $142 million for stranded tax effects related to the Tax Cuts and Jobs Act from accumulated other comprehensive loss to retained earnings within stockholders’ equity in the Condensed Consolidated Balance Sheets. Of the $142 million of stranded tax effects, $135 million relates to the effect on net foreign currency translation gains and losses and $7 million relates to the effect on employee benefit plan adjustment gains and losses.

18. 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.

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The following table presents certain information regarding our operating segments for the three months ended March 31, 2018 and 2017:

	Market Services	Corporate Services	Information Services	Market Technology	Corporate Items	Consolidated
			(in millions)			
Three Months Ended March 31, 2018						
Total revenues	$ 735	$ 172	$ 174	$ 70	$ —	$ 1,151
Transaction-based expenses	(485)	—	—	—	—	(485)
Revenues less transaction-based expenses	250	172	174	70	—	666
Operating income (loss)	$ 147	$ 52	$ 113	$ 1	$ (40)	$ 273
Three Months Ended March 31, 2017						
Total revenues	$ 606	$ 160	$ 138	$ 65	$ —	$ 969
Transaction-based expenses	(388)	—	—	—	—	(388)
Revenues less transaction-based expenses	218	160	138	65	—	581
Operating income (loss)	$ 119	$ 43	$ 102	$ 11	$ (29)	$ 246

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 segments' ongoing activity in each period.

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.

Other significant item: We have excluded certain other charges or gains that are the result of other non-comparable events to measure operating performance. For the three months ended March 31, 2018, the other significant item included a sublease loss reserve charge recorded on space we currently occupy due to excess capacity. We believe the exclusion of such amounts allows management and investors to better understand the financial results of Nasdaq.

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A summary of our corporate items is as follows:

	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017
	(in millions)	
Amortization expense of acquired intangible assets	$ 28	$ 23
Merger and strategic initiatives expense	10	6
Sublease loss reserve	2	—
Total	$ 40	$ 29

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Recast Summary Segment Financial Information

We have realigned our services businesses to better serve the needs of our corporate clients. As a result, in the second quarter of 2018, our BWise business will be included as part of our Corporate Solutions business. BWise is currently part of our Market Technology segment. In addition, for segment reporting purposes, we will include in corporate items the historical revenues and expenses of the Public Relations Solutions and Digital Media Services businesses which were part of the Corporate Solutions business within our Corporate Services segment. In addition, we have recategorized our Information Services segment revenues into the following businesses:

- market data;
- index; and
- investment data & analytics.

The table below presents certain recast historical financial information as of March 31, 2018 and 2017 as a result of the above:

	Market Services	Corporate Services	Information Services	Market Technology	Corporate Items	Consolidated
	(in millions)					
Three Months Ended March 31, 2018						
Total revenues	$ 735	$ 132	$ 174	$ 60	$ 50	$ 1,151
Transaction-based expenses	(485)	—	—	—	—	(485)
Revenues less transaction-based expenses	250	132	174	60	50	666
Operating income (loss)	$ 147	$ 43	$ 113	$ 2	$ (32)	$ 273
Three Months Ended March 31, 2017						
Total revenues	$ 606	$ 121	$ 138	$ 56	$ 48	$ 969
Transaction-based expenses	(388)	—	—	—	—	(388)
Revenues less transaction-based expenses	218	121	138	56	48	581
Operating income (loss)	$ 119	$ 37	$ 102	$ 11	$ (23)	$ 246

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19. Subsequent Event

Sale of our Public Relations Solutions and Digital Media Services Businesses

In April 2018, we completed the sale of our Public Relations Solutions and Digital Media Services businesses within our Corporate Solutions business to West Corporation for approximately $335 million, subject to adjustments. In the second quarter of 2018, we expect to recognize a gain on the sale.

Through a multi-year partnership with West, Nasdaq will continue to provide eligible Nasdaq-listed clients with access to public relations, webcasting and webhosting products and services as part of the terms of the transaction.

As part of the terms of the transaction, we will provide transition services to West, such as technology, finance and human resources related services for a period of time and the compensation received for such transition services will be reflected as a reduction to the underlying expenses incurred by Nasdaq to provide such transition services.

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, marketplace technology, regulatory, securities listing, information and public and private 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, trading surveillance and many other functions.

Business Environment

Our non-transactional businesses provide 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 our transactional businesses, we serve listed companies, market participants and investors by providing derivative, commodities, cash equity, and fixed income markets, as well as clearing services, thereby facilitating economic growth and corporate entrepreneurship. 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:

- 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 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;
- technological advances and members' and customers' demand for speed, efficiency, and reliability;
- the acceptance of cloud-based services and advanced analytics by our customers and global regulators;
- 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 for licensed ETPs, enhanced analytics and other financial products based on our indexes as well as changes to the underlying assets associated with existing licensed financial products;
- 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; and
- regulatory changes relating to market structure or affecting certain types of instruments, transactions, pricing structures or capital market participants.

The current consensus forecast for gross domestic product growth for the U.S. is 2.8% in 2018 and 2.6% in 2019 and the Eurozone is 2.4% in 2018 and 1.9% in 2019. U.S. growth forecasts for 2018 have continued to rise since the middle of 2017 and are currently 0.5 percentage points higher than the lowest forecast of 2.3% in July 2017. Growth forecasts for the Eurozone in 2018 have steadily risen since an estimate of 1.5% at the start of 2017. While growth is accelerating, there are a number of significant structural and political issues continuing to impact the global economy. Volatility increased in the first quarter of the year, accompanied by increased volumes. The market price of volatility implicit in exchange traded index options spiked up and stocks saw the highest average daily consolidated volume since the first quarter of 2016.

The first quarter of 2018 was a relatively strong quarter for IPOs, with 37 IPOs on The Nasdaq Stock Market compared with 17 in the first quarter of 2017. In addition, there were 13 IPOs in the first quarter of 2018 on the exchanges that comprise Nasdaq Nordic and Nasdaq Baltic compared with 11 in the first quarter of 2017. Additional impacts on our business drivers include the international enactment and implementation of new legislative and regulatory initiatives, notably MiFID II in Europe, 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 2018 may be characterized as follows:

- rapidly evolving technology for our businesses and their clients;

- increased demand for applications using emerging technologies and sophisticated analytics by both new entrants and industry incumbents;
- the expansion of the number of industries, and emergence of new industries, seeking to use advanced market technology;
- 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; and
- globalization of exchanges, customers and competitors extending the competitive horizon beyond national markets.

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 18, "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, 2018	Three Months Ended March 31, 2017
Market Services		
Equity Derivative Trading and Clearing		
U.S. equity options		
Total industry average daily volume (in millions)	19.6	14.6
Nasdaq PHLX matched market share	16.0%	17.1%
The Nasdaq Options Market matched market share	10.1%	9.5%
Nasdaq BX Options matched market share	0.5%	0.7%
Nasdaq ISE Options matched market share	8.4%	9.5%
Nasdaq GEMX Options matched market share	4.6%	5.6%
Nasdaq MRX Options matched market share	0.1%	0.1%
Total matched market share executed on Nasdaq's exchanges	39.7%	42.5%
Nasdaq Nordic and Nasdaq Baltic options and futures		
Total average daily volume of options and futures contracts(1)	354,744	338,463
Cash Equity Trading		
Total U.S.-listed securities		
Total industry average daily share volume (in billions)	7.62	6.84
Matched share volume (in billions)	88.6	74.7
The Nasdaq Stock Market matched market share	14.9%	14.0%
Nasdaq BX matched market share	3.3%	2.7%
Nasdaq PSX matched market share	0.9%	0.9%
Total matched market share executed on Nasdaq's exchanges	19.1%	17.6%
Market share reported to the FINRA/Nasdaq Trade Reporting Facility	33.6%	34.9%
Total market share(2)	52.7%	52.5%
Nasdaq Nordic and Nasdaq Baltic securities		
Average daily number of equity trades executed on Nasdaq's exchanges	651,405	507,647
Total average daily value of shares traded (in billions)	$ 6.0	$ 5.0
Total market share executed on Nasdaq's exchanges	69.6%	65.0%
FICC		
Fixed Income		
U.S. fixed income notional trading volume (in billions)	$ 5,156	$ 5,041
Total average daily volume of Nasdaq Nordic and Nasdaq Baltic fixed income contracts	132,225	112,004
Commodities		
Power contracts cleared (TWh)(3)	272	379
Corporate Services		
Initial public offerings		
The Nasdaq Stock Market	37	17
Exchanges that comprise Nasdaq Nordic and Nasdaq Baltic	13	11
Total new listings		
The Nasdaq Stock Market(4)	62	42
Exchanges that comprise Nasdaq Nordic and Nasdaq Baltic(5)	15	16
Number of listed companies		
The Nasdaq Stock Market(6)	2,969	2,890
Exchanges that comprise Nasdaq Nordic and Nasdaq Baltic(7)	986	910
Information Services		
Number of licensed ETPs	328	306
ETP assets under management tracking Nasdaq indexes (in billions)	$ 173	$ 138
Market Technology		
Order intake (in millions)(8)	$ 55	$ 47
Total order value (in millions)(9)	$ 735	$ 709

(1) Includes Finnish option contracts traded on Eurex.
(2) 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.
(3) Transactions executed on Nasdaq Commodities or OTC and reported for clearing to Nasdaq Commodities measured by Terawatt hours (TWh).
(4) 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.
(5) 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.
(6) Number of total listings on The Nasdaq Stock Market at period end, including 376 ETPs as of March 31, 2018 and 332 as of March 31, 2017.
(7) Represents companies listed on the Nasdaq Nordic and Nasdaq Baltic exchanges and companies on the alternative markets of Nasdaq First North at period end.
(8) Total contract value of orders signed during the period.
(9) Represents total contract value of signed orders that are yet to be recognized as revenue. Market technology deferred revenue, as discussed in Note 8, "Deferred Revenue," to the condensed consolidated financial statements, represents consideration received that is yet to be recognized as revenue for these signed orders. Total order value for the three months ended March 31, 2017 was restated as a result of the adoption of Topic 606.

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Financial Summary

The following table summarizes our financial performance for the three months ended March 31, 2018 when compared with the same period in 2017. The comparability of our results of operations between reported periods is impacted by the acquisition of eVestment in October 2017. See Note 4, "Acquisitions," to the condensed consolidated financial statements for further discussion of this acquisition. For a detailed discussion of our results of operations, see "Segment Operating Results" below.

	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017	Percentage Change
	(in millions, except per share amounts)		
Revenues less transaction-based expenses	$ 666	$ 581	14.6%
Operating expenses	393	335	17.3%
Operating income	273	246	11.0%
Interest expense	(38)	(37)	2.7%
Income before income taxes	239	215	11.2%
Income tax provision	62	47	31.9%
Net income attributable to Nasdaq	$ 177	$ 168	5.4%
Diluted earnings per share	$ 1.05	$ 0.99	6.1%
Cash dividends declared per common share	$ 0.82	$ 0.32	156.3%

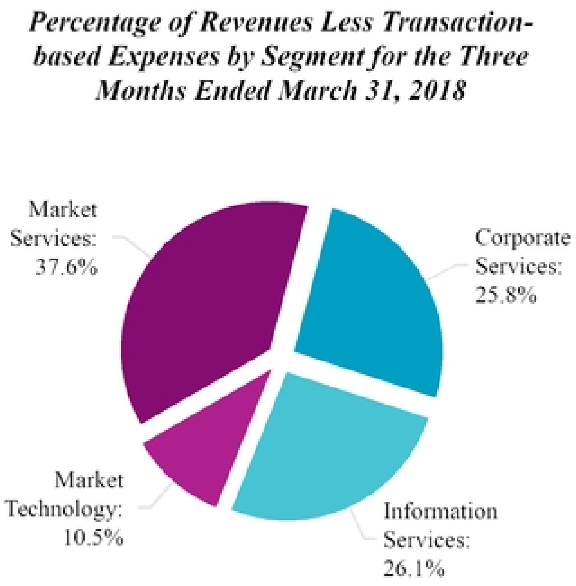
In countries with currencies other than the U.S. dollar, revenues and expenses are translated using monthly average exchange rates. Impacts on our revenues less transaction-based expenses and operating income associated with fluctuations in foreign currency are discussed in more detail under "Item 3.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

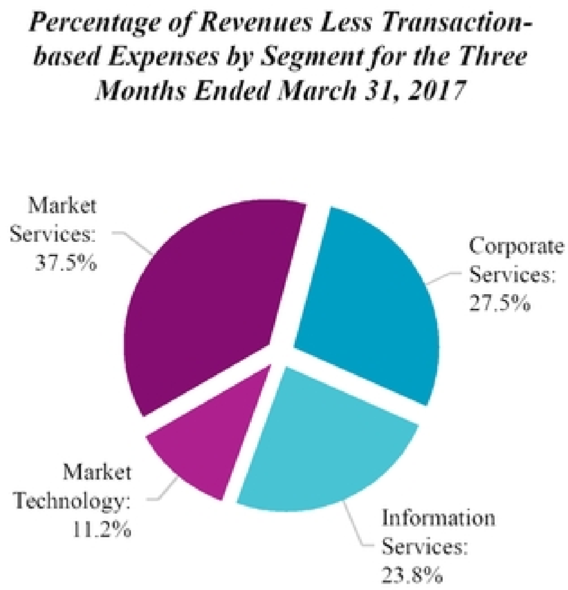
Segment Operating Results

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, 2018	Three Months Ended March 31, 2017	Percentage Change
	(in millions)		
Market Services	$ 735	$ 606	21.3%
Transaction-based expenses	(485)	(388)	25.0%
Market Services revenues less transaction-based expenses	250	218	14.7%
Corporate Services	172	160	7.5%
Information Services	174	138	26.1%
Market Technology	70	65	7.7%
Total revenues less transaction-based expenses	$ 666	$ 581	14.6%

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 $666 million for the three months ended March 31, 2018 and $581 million for the three months ended March 31, 2017:





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, 2018	Three Months Ended March 31, 2017	Percentage Change
	(in millions)		
Market Services Revenues:			
Equity Derivative Trading and Clearing Revenues[1]	$ 231	$ 191	20.9 %
Transaction-based expenses:			
Transaction rebates	(137)	(113)	21.2 %
Brokerage, clearance and exchange fees[1]	(16)	(10)	60.0 %
Equity derivative trading and clearing revenues less transaction-based expenses	**78**	**68**	**14.7 %**
Cash Equity Trading Revenues[2]	402	320	25.6 %
Transaction-based expenses:			
Transaction rebates	(208)	(183)	13.7 %
Brokerage, clearance and exchange fees[2]	(120)	(76)	57.9 %
Cash equity trading revenues less transaction-based expenses	**74**	**61**	**21.3 %**
FICC Revenues	27	25	8.0 %
Transaction-based expenses:			
Transaction rebates	(3)	(5)	(40.0)%
Brokerage, clearance and exchange fees	(1)	(1)	— %
FICC revenues less transaction-based expenses	**23**	**19**	**21.1 %**
Trade Management Services Revenues	**75**	**70**	**7.1 %**
Total Market Services revenues less transaction-based expenses	**$ 250**	**$ 218**	**14.7 %**

(1) Includes Section 31 fees of $14 million in the first quarter of 2018 and $9 million in the first quarter of 2017. 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 $115 million in the first quarter of 2018 and $72 million in the first quarter of 2017. 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 2018 compared with the same period in 2017.

The increases were primarily due to higher U.S. industry trading volumes, partially offset by a decrease in our overall U.S. matched market share. Further impacting the increase in equity derivative trading revenues was higher Section 31 pass-through fee revenue. The increase in equity derivative trading and clearing revenues less transaction-based expenses was also unfavorably impacted by a decrease in the U.S. average net capture rate.

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 2018 compared with the same period in 2017 was primarily due to higher dollar value traded and higher SEC fee rates.

Transaction rebates, in which we credit a portion of the per share execution charge to the market participant, increased in the first quarter of 2018 compared with the same period in 2017 primarily due to higher U.S. industry trading volumes, partially offset by a decrease in our overall U.S. matched market share.

Brokerage, clearance and exchange fees increased in the first quarter of 2018 compared with the same period in 2017 primarily due to higher Section 31 pass-through fees associated with higher U.S. industry trading volumes.

Cash Equity Trading Revenues

Cash equity trading revenues and cash equity trading revenues less transaction-based expenses increased in the first quarter of 2018 compared with the same period in 2017.

The increases were primarily due to:

- higher U.S. industry trading volumes;
- higher European industry trading volumes;
- an increase in our overall U.S. matched market share and European market share executed on Nasdaq's exchanges; and
- a favorable impact from foreign exchange.

The increase in cash equity trading revenues was also due to an increase 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 increase in Section 31 fees in the first quarter of 2018 compared with the same period in 2017 was primarily due to higher dollar value traded on Nasdaq's exchanges and higher SEC fee rates.

Transaction rebates increased in the first quarter of 2018 compared with the same period in 2017. For The Nasdaq Stock Market, Nasdaq PSX and Nasdaq Canada, 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 increase was primarily due to:

- higher U.S. industry trading volumes; and
- an increase in our overall U.S. matched market share executed on Nasdaq's exchanges.

Brokerage, clearance and exchange fees increased in the first quarter of 2018 compared with the same period in 2017 primarily due to higher Section 31 pass-through fees, as discussed above.

FICC Revenues

FICC revenues and FICC revenues less transaction-based expenses increased in the first quarter of 2018 compared with the same period in 2017 primarily due to higher net revenues at NFX and a favorable impact from foreign exchange.

Trade Management Services Revenues

Trade management services revenues increased in the first quarter of 2018 compared with the same period in 2017 primarily due to an increase in revenues from customer demand for third party connectivity and co-location revenues.

CORPORATE SERVICES

The following table shows revenues from our Corporate Services segment:

	Three Months Ended March 31,		Percentage Change
	2018	2017	
	(in millions)		
Corporate Services:			
Corporate Solutions	$ 100	$ 95	5.3%
Listing Services	72	65	10.8%
Total Corporate Services	$ 172	$ 160	7.5%

Corporate Solutions Revenues

Corporate solutions revenues increased in the first quarter of 2018 compared with the same period in 2017 primarily due to an increase in public relations and board & leadership revenues and a favorable impact from foreign currency of $2 million.

Listing Services Revenues

Listing services revenues increased in the first quarter of 2018 compared with the same period in 2017 primarily due to higher U.S. annual listing fee revenues, partially offset by a decrease in U.S. listing of additional share fees as a result of our all-inclusive annual listing fee program. The increase was also due to a favorable impact from foreign currency of $2 million.

INFORMATION SERVICES

The following table shows revenues from our Information Services segment:

	Three Months Ended March 31,		Percentage Change
	2018	2017	
	(in millions)		
Information Services:			
Data Products	$ 133	$ 108	23.1%
Index Licensing and Services	41	30	36.7%
Total Information Services	$ 174	$ 138	26.1%

Data Products Revenues

Data products revenues increased in the first quarter of 2018 compared with the same period in 2017 primarily due to the inclusion of revenues associated with the acquisition of eVestment, growth in proprietary data products revenues and a favorable impact from foreign currency of $4 million.

Index Licensing and Services Revenues

Index licensing and services revenues increased in the first quarter of 2018 compared with the same period in 2017 primarily due to higher assets under management in ETPs linked to Nasdaq indexes and higher licensing revenues from futures trading volume related to the Nasdaq 100 Index.

MARKET TECHNOLOGY

The following table shows revenues from our Market Technology segment:

	Three Months Ended March 31, 2018		2017	Percentage Change
	(in millions)			
Market Technology	$ 70	$	65	7.7%

Market Technology Revenues

Market technology revenues increased in the first quarter of 2018 compared with the same period in 2017 primarily due to an increase in revenues from software as a service, higher change request revenues and a favorable impact from foreign currency of $2 million.

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Expenses

Operating Expenses

The following table shows our operating expenses:

	Three Months Ended March 31, 2018	2017	Percentage Change
	(in millions)		
Compensation and benefits	$ 197	$ 161	22.4%
Professional and contract services	37	36	2.8%
Computer operations and data communications	32	30	6.7%
Occupancy	25	23	8.7%
General, administrative and other	22	19	15.8%
Marketing and advertising	9	7	28.6%
Depreciation and amortization	53	45	17.8%
Regulatory	8	8	—%
Merger and strategic initiatives	10	6	66.7%
Total operating expenses	$ 393	$ 335	17.3%

The increase in compensation and benefits expense in the first quarter of 2018 was primarily due to overall higher compensation costs resulting from our 2017 acquisitions, higher compensation expense reflecting higher performance incentives and an unfavorable impact from foreign exchange of $6 million.

Headcount increased to 4,758 employees as of March 31, 2018 from 4,286 as of March 31, 2017 primarily due to our acquisition of eVestment.

The increase in computer operations and data communications expense in 2018 was primarily due to higher hardware and license costs associated with our 2017 acquisitions.

The increase in occupancy expense in 2018 primarily reflects additional facility and rent costs associated with our 2017 acquisitions.

The increase in general, administrative and other expense in 2018 was primarily due to additional expense associated with our 2017 acquisitions and lower regulatory fine income.

Marketing and advertising expense increased in 2018 primarily due to an increase in advertising spend and additional marketing costs associated with our 2017 acquisitions.

The increase in depreciation and amortization expense in 2018 was primarily due to additional amortization expense associated with acquired intangible assets related to our 2017 acquisitions.

Merger and strategic initiatives expense for 2018 was primarily related to costs associated with the sale of our Public Relations Solutions and Digital Media Services businesses within our Corporate Solutions business. Merger and strategic initiatives expense for 2017 was primarily related to our acquisitions of ISE and Boardvantage.

Non-operating Income and Expenses

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

	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017	Percentage Change
	(in millions)		
Interest income	$ 2	$ 2	— %
Interest expense	(38)	(37)	2.7 %
Net interest expense	(36)	(35)	2.9 %
Net income from unconsolidated investees	2	4	(50.0)%
Total non-operating expenses	$ (34)	$ (31)	9.7 %

Interest Expense

The following table shows our interest expense:

	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017	Percentage Change
	(in millions)		
Interest expense on debt	$ 35	$ 35	—%
Accretion of debt issuance costs and debt discount	2	2	—%
Other bank and investment-related fees	1	—	100.0%
Interest expense	$ 38	$ 37	2.7%

See Note 9, "Debt Obligations," to the condensed consolidated financial statements for further discussion.

Net Income from Unconsolidated Investees

Net income from unconsolidated investees in the first quarter of 2018 and 2017 primarily relates to income recognized from our equity method investment in OCC. See "Equity Method Investments," of Note 7, "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, 2018	Three Months Ended March 31, 2017	Percentage Change
	($ in millions)		
Income tax provision	$ 62	$ 47	31.9%
Effective tax rate	25.9%	21.9%	

For further discussion of our tax matters, see Note 17, "Income Taxes," to the condensed consolidated financial statements.

The effective tax rate may also 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.

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.

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.

Other significant item: We have excluded certain other charges or gains, including certain tax items, that are the result of other non-comparable events to measure operating performance. We believe the exclusion of such amounts allows management and investors to better understand the ongoing financial results of Nasdaq. For the three months ended March 31, 2018, the other significant item included a sublease loss reserve charge recorded on space we currently occupy due to excess capacity.

Significant tax items: The adjustment to the income tax provision includes the tax impact of each non-GAAP adjustment in addition to the following items:

- The impact of the newly enacted U.S. tax legislation is related to the Tax Cuts and Jobs Act which was enacted on December 22, 2017. For the three months ended March 31, 2018, we recorded an increase to tax expense of $5 million, which reflects the reduced federal tax benefit associated with state unrecognized tax benefits.
- For the three months ended March 31, 2018, we recorded excess tax benefits related to employee share-based compensation of $5 million which reflects the recognition of income tax effects of share-based awards when awards vest or are settled. This item is subject to volatility and will vary based on the timing of the vesting of employee share-based compensation arrangements and fluctuation in our stock price.

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, 2018		Three Months Ended March 31, 2017	
	Net Income	Diluted Earnings Per Share	Net Income	Diluted Earnings Per Share
	(in millions, except share and per share amounts)		(in millions, except share and per share amounts)	
U.S. GAAP net income attributable to Nasdaq and diluted earnings per share	$ 177	$ 1.05	$ 168	$ 0.99
Non-GAAP adjustments:				
Amortization expense of acquired intangible assets	28	0.17	23	0.14
Merger and strategic initiatives	10	0.06	6	0.04
Sublease loss reserve	2	0.01	—	—
Adjustment to the income tax provision to reflect non-GAAP adjustments and other tax items	(8)	(0.05)	(12)	(0.08)
Impact of newly enacted U.S. tax legislation	5	0.03	—	—
Excess tax benefits related to employee share-based compensation	(5)	(0.03)	(23)	(0.14)
Total non-GAAP adjustments, net of tax	32	0.19	(6)	(0.04)
Non-GAAP net income attributable to Nasdaq and diluted earnings per share	$ 209	$ 1.24	$ 162	$ 0.95
Weighted-average common shares outstanding for diluted earnings per share		168,992,539		170,246,947

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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 9, "Debt Obligations," to the condensed consolidated financial statements for further discussion. 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 April 2017, we entered into the 2017 Credit Facility which replaced a former credit facility. We also entered into a commercial paper program which enables us to borrow efficiently at reasonable short-term interest rates and is supported by our 2017 Credit Facility. See "Commercial Paper Program," and "2017 Credit Facility," of Note 9, "Debt Obligations," to the condensed consolidated financial statements for further discussion.

As of March 31, 2018, no amounts were outstanding on the 2017 Credit Facility. The $4 million credit balance represents unamortized debt issuance costs. Of the $1 billion that is available for borrowing, $462 million provides liquidity support for the principal amount outstanding under the commercial paper program as of March 31, 2018. In addition, $1 million has been utilized for a letter of credit. As of March 31, 2018, the total remaining amount available under the 2017 Credit Facility was $537 million.

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

The value of various assets and liabilities, including cash and cash equivalents, receivables, accounts payable and accrued expenses, and commercial paper can fluctuate from month to month. Working capital (calculated as current assets less current liabilities) was $(398) million as of March 31, 2018, compared with $276 million as of December 31, 2017, a decrease of $674 million. Current asset balance changes increased working capital by $128 million, with increases in receivables, net, default funds and margin deposits, cash and restricted cash, partially offset by decreases in other current assets, assets held for sale, and financial investments, at fair value. Current liability balance changes decreased working capital by $80

2 million, due to increases in short-term debt as our 2019 Notes became due within one year this quarter, deferred revenue, other current liabilities, accounts payable and accrued expenses, and default funds and margin deposits, partially offset by decreases in accrued personnel costs and liabilities held for sale. 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 regulatory and 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, 2018	December 31, 2017
	(in millions)	
Cash and cash equivalents	$ 405	$ 377
Restricted cash	24	22
Financial investments, at fair value	224	235
Total financial assets	$ 653	$ 634

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, 2018, our cash and cash equivalents of $405 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, 2018 increased $28 million from December 31, 2017, primarily due to:

- net cash provided by operating activities, partially offset by;
- repayments of long-term debt;
- repurchases of our common stock;
- cash dividends paid on our common stock;
- payments related to employee shares withheld for taxes;
- repayments made on commercial paper, net; and
- purchases of property and equipment.

See “Cash Flow Analysis” below for further discussion.

As of March 31, 2018 and December 31, 2017, restricted cash is restricted from withdrawal due to a contractual or regulatory requirement or is not available for general use. Restricted cash was $24 million as of March 31, 2018 and $22 million as of December 31, 2017, an increase of $2 million. The increase relates to an increase in regulatory capital required. 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 $198 million as of March 31, 2018 and $138 million as of December 31, 2017. The remaining balance held in the U.S. totaled $207 million as of March 31, 2018 and $239 million as of December 31, 2017.

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 in certain jurisdictions, could subject us to additional income taxes, less applicable foreign tax credits.

Share Repurchase Program

See “Share Repurchase Program,” of Note 12, “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 paid per common share on our outstanding common stock:

	2018	2017
First quarter	$ 0.38	$ 0.32

In March 2018, we also declared a regular quarterly cash dividend of $0.44 per share on our outstanding common stock, which will be payable in June 2018, and reflects a 16.0% increase from our prior quarterly cash dividend of $0.38. See “Cash Dividends on Common Stock,” of Note 12, “Nasdaq Stockholders’ Equity,” to the condensed consolidated financial statements for further discussion of the dividends.

Financial Investments, at Fair Value

Our financial investments, at fair value totaled $224 million as of March 31, 2018 and $235 million as of December 31, 2017 and are primarily comprised of trading securities, mainly highly rated European government debt securities. Of these securities, $157 million as of March 31, 2018 and $160 million as of December 31, 2017 are assets utilized to meet regulatory capital requirements, primarily for our clearing operations at Nasdaq Clearing. See Note 7, "Investments," to the condensed consolidated financial statements for further discussion of our trading investment securities.

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Debt Obligations

The following table summarizes our debt obligations by contractual maturity:

	Maturity Date	March 31, 2018	December 31, 2017
		(in millions)	
Short-term debt:			
Commercial paper	Weighted-average maturity of 19 days	$ 462	$ 480
Senior unsecured floating rate notes[1]	March 2019	498	498
Total short-term debt		960	978
Long-term debt:			
$400 million senior unsecured term loan facility	November 2019	100	100
5.55% senior unsecured notes	January 2020	599	599
3.875% senior unsecured notes	June 2021	736	716
$1 billion revolving credit commitment	April 2022	(4)	110
1.75% senior unsecured notes	May 2023	732	712
4.25% senior unsecured notes	June 2024	496	496
3.85% senior unsecured notes	June 2026	496	496
Total long-term debt		3,155	3,229
Total debt obligations		$ 4,115	$ 4,207

[1] Balance was reclassified to short-term debt as of March 31, 2018.

In addition to the $1 billion 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 $185 million as of March 31, 2018 and $187 million as of December 31, 2017, in available liquidity, none of which was utilized.

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As of March 31, 2018, we were in compliance with the covenants of all of our debt obligations.

See Note 9, "Debt Obligations," to the condensed consolidated financial statements for further discussion of our debt obligations.

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. As of March 31, 2018, our required regulatory capital of $157 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 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, 2018:

Broker-Dealer Subsidiaries	Total Net Capital	Required Minimum Net Capital	Excess Capital
		(in millions)	
Nasdaq Execution Services	$ 7.4	$ 0.3	$ 7.1
Execution Access	49.8	0.3	49.5
NPM Securities	0.2	—	0.2
SMTX	1.9	0.3	1.6
Nasdaq Capital Markets Advisory	0.5	0.3	0.2

<u>Other Capital Requirements</u>

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 Canada

In March 2018, Nasdaq Canada became an exchange and is no longer required to maintain minimum net capital requirements.

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Cash Flow Analysis

The following table summarizes the changes in cash flows:

	Three Months Ended March 31,		Percentage Change
	2018	2017	2018 vs. 2017
	(in millions)		
Net cash provided by (used in):			
Operating activities	$ 375	$ 244	53.7 %
Investing activities	(8)	(8)	— %
Financing activities	(337)	(192)	75.5 %
Effect of exchange rate changes on cash and cash equivalents and restricted cash	—	2	(100.0)%
Net increase in cash and cash equivalents and restricted cash	30	46	(34.8)%
Cash and cash equivalents and restricted cash at beginning of period	399	418	(4.5)%
Cash and cash equivalents and restricted cash at end of period	$ 429	$ 464	(7.5)%

<u>Net Cash Provided by Operating Activities</u>

Net cash provided by operating activities increased $131 million for the three months ended March 31, 2018 compared with the same period in 2017. The increase was primarily due to lower compensation payments in the first quarter 2018 compared to the first quarter 2017 primarily due to prior year performance and severance payments made in the first quarter 2017 related to our 2016 acquisitions, a decrease in estimated tax payments related to the impact of the Tax Cuts and Jobs Act, and cash flows related to our acquisition of eVestment in the fourth quarter of 2017.

<u>Net Cash Used in Investing Activities</u>

Net cash used in investing activities for both the three months ended March 31, 2018 and March 31, 2017 primarily consisted of purchases of property and equipment and purchases of trading securities, partially offset by proceeds from sales and redemptions of trading securities.

<u>Net Cash Used in Financing Activities</u>

Net cash used in financing activities for the three months ended March 31, 2018 primarily consisted of repayment of our revolving credit commitment of $115 million, $99 million related to the repurchase of our common stock, $63 million related to cash dividends paid on our common stock, $42 million of payments related to employee shares withheld for taxes, and $18 million of repayments of commercial paper, net.

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 $47 million of payments related to employee shares withheld for taxes, partially offset by $63 million related to proceeds of customer funds, which are held in connection with privately negotiated securities transactions.

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

See Note 9, “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 12, “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, 2018:

Contractual Obligations	Payments Due by Period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
			(in millions)		
Debt obligations by contract maturity[1]	$ 4,723	$ 1,096	$ 818	$ 957	$ 1,852
Minimum rental commitments under non-cancelable operating leases, net[2]	694	80	135	116	363
Purchase obligations[3]	22	8	13	1	—
Other obligations[4]	13	9	4	—	—
Total	$ 5,452	$ 1,193	$ 970	$ 1,074	$ 2,215

(1) Our debt obligations include both principal and interest obligations. As of March 31, 2018, an interest rate of 3.79% was used to compute the amount of the contractual obligations for interest on the 2016 Credit Facility and 2.74% was used to compute the amount of the contractual obligations for interest on the 2019 Notes. All other debt obligations were primarily calculated on a 360-day basis at the contractual fixed rate multiplied by the aggregate principal amount as of March 31, 2018. See Note 9, "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) Purchase obligations primarily represent minimum outstanding obligations due under software license agreements.

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

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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 15, "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 16, "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;
  - Legal and regulatory matters; 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, 2018, 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, 2018, the fair value of this portfolio would have declined by $4 million.

Debt Obligations

As of March 31, 2018, 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 are exposed to changes in interest rates as a result of the issuance of our 2019 Notes, borrowings under our 2017 Credit Facility and 2016 Credit Facility, and amounts outstanding from the sale of commercial paper under our commercial paper program, all of which have variable interest rates. As of March 31, 2018, we had principal amounts outstanding of $500 million on the 2019 Notes, $100 million under the 2016 Credit Facility and $462 million of commercial paper. A hypothetical 100 basis points increase in interest rates on our outstanding 2019 Notes, the 2016 Credit Facility and our outstanding commercial paper would increase interest expense by approximately $11 million based on borrowings as of March 31, 2018.

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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, 2018 is presented in the following table:

Three Months Ended March 31, 2018	Euro	Swedish Krona	Other Foreign Currencies	U.S. Dollar	Total
	(in millions, except currency rate)				
Average foreign currency rate to the U.S. dollar	1.2289	0.1232	#	N/A	N/A
Percentage of revenues less transaction-based expenses	9.6%	8.0%	5.7 %	76.7%	100.0%
Percentage of operating income	15.5%	0.7%	(5.8)%	89.6%	100.0%
Impact of a 10% adverse currency fluctuation on revenues less transaction-based expenses	$ (6)	$ (5)	$ (4)	$ —	$ (15)
Impact of a 10% adverse currency fluctuation on operating income	$ (4)	$ —	$ (2)	$ —	$ (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, 2018 is presented in the following table:

	Net Assets	Impact of a 10% Adverse Currency Fluctuation
	(in millions)	
Swedish Krona[(1)]	$ 3,531	$ (353)
Norwegian Krone	211	(21)
Canadian Dollar	190	(19)
British Pound	207	(21)
Euro	139	(14)
Australian Dollar	111	(11)

(1) Includes goodwill of $2,618 million and intangible assets, net of $624 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, 2018, 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. This clearing agreement will end on July 31, 2018, and will be replaced by a clearing agreement with ICBC. Some of the trading activity in Execution Access is cleared by Cantor Fitzgerald (and similarly will be by ICBC after July 31, 2018) 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 at least one business day (or more, if specified by the U.S. Treasury issuance calendar). 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 15, "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, 2018 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 “Legal and Regulatory Matters,” of Note 16, “Commitments, Contingencies and Guarantees,” to the condensed consolidated financial statements, which is incorporated herein by reference.

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, 2017 as filed with the SEC on February 28, 2018. 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.

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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 12, “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, 2018, 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, 2018:

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 2018				
Share repurchase program	459,992	$ 78.33	459,992	$ 690
Employee transactions	308,469	77.66	N/A	N/A
February 2018				
Share repurchase program	798,954	$ 79.00	798,954	$ 627
Employee transactions	3,717	$ 81.11	N/A	N/A
March 2018				
Share repurchase program	—	$ —	—	$ 627
Employee transactions	207,528	$ 85.50	N/A	N/A
Total Quarter Ended March 31, 2018				
Share repurchase program	1,258,946	$ 78.75	1,258,946	$ 627
Employee transactions	519,714	$ 80.82	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.

Exhibit Number	
11	Statement regarding computation of per share earnings (incorporated herein by reference from Note 13 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.

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* The following materials from the Nasdaq, Inc. Quarterly Report on Form 10-Q for the three months ended March 31, 2018, formatted in XBRL (eXtensible Business Reporting Language): (i) Condensed Consolidated Balance Sheets as of March 31, 2018 and December 31, 2017; (ii) Condensed Consolidated Statements of Income for the three months ended March 31, 2018 and 2017; (iii) Condensed Consolidated Statements of Comprehensive Income (Loss) for the three months ended March 31, 2018 and 2017; (iv) Condensed Consolidated Statements of Cash Flows for the three months ended March 31, 2018 and 2017; and (v) notes to condensed consolidated financial statements.

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 2, 2018	**By:**	/s/ Adena T. Friedman
	Name:	**Adena T. Friedman**
	Title:	**President and Chief Executive Officer**
Date: May 2, 2018	**By:**	/s/ Michael Ptasznik
	Name:	**Michael Ptasznik**
	Title:	**Executive Vice President, Corporate Strategy and Chief Financial Officer**

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 2, 2018

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 2, 2018

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 period ended March 31, 2018 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 2, 2018

	/s/ Michael Ptasznik
Name:	Michael Ptasznik
Title:	Executive Vice President, Corporate Strategy and Chief Financial Officer
Date:	May 2, 2018

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.