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 September 30, 2023

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: 001-38855

Nasdaq, Inc.

(Exact name of registrant as specified in its charter)

Delaware	52-1165937
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**

151 W. 42nd Street, New York, New York 10036

(Address of Principal Executive Offices) (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)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.01 par value per share	**NDAQ**	**The Nasdaq Stock Market**
4.500% Senior Notes due 2032	**NDAQ32**	**The Nasdaq Stock Market**
0.900% Senior Notes due 2033	**NDAQ33**	**The Nasdaq Stock Market**
0.875% Senior Notes due 2030	**NDAQ30**	**The Nasdaq Stock Market**
1.75% Senior Notes due 2029	**NDAQ29**	**The Nasdaq Stock Market**

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

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

Indicate by check mark 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	☐	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 November 1, 2023
Common Stock, $0.01 par value per share	576,964,570 shares

Nasdaq, Inc.

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 CXC” and “Nasdaq CX2” refer to the Canadian cash equity trading books operated by Nasdaq CXC Limited.
- “Nasdaq First North” refers to our alternative marketplaces for smaller companies and growth companies in the Nordic and Baltic regions.
- “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 and listing venue 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.

2020 Credit Facility: $1.25 billion senior unsecured revolving credit facility, which was amended and restated by the 2022 Revolving Credit Agreement

2022 Revolving Credit Agreement: $1.25 billion senior unsecured revolving credit facility, which matures on December 16, 2027

2025 Notes: $500 million aggregate principal amount of 5.650% senior unsecured notes due June 28, 2025

2026 Notes: $500 million aggregate principal amount of 3.850% senior unsecured notes due June 30, 2026

2028 Notes: $1 billion aggregate principal amount of 5.350% senior unsecured notes due June 28, 2028

2029 Notes: €600 million aggregate principal amount of 1.75% senior unsecured notes due March 28, 2029

2030 Notes: €600 million aggregate principal amount of 0.875% senior unsecured notes due February 13, 2030

2031 Notes: $650 million aggregate principal amount of 1.650% senior unsecured notes due January 15, 2031

2032 Notes: €750 million aggregate principal amount of 4.500% senior unsecured notes due February 15, 2032

2033 Notes: €615 million aggregate principal amount of 0.900% senior unsecured notes due July 30, 2033

2034 Notes: $1.25 billion aggregate principal amount of 5.550% senior unsecured notes due February 15, 2034

2040 Notes: $650 million aggregate principal amount of 2.500% senior unsecured notes due December 21, 2040

2050 Notes: $500 million aggregate principal amount of 3.250% senior unsecured notes due April 28, 2050

2052 Notes: $550 million aggregate principal amount of 3.950% senior unsecured notes due March 7, 2052

2053 Notes: $750 million aggregate principal amount of 5.950% senior unsecured notes due August 15, 2053

2063 Notes: $750 million aggregate principal amount of 6.100% senior unsecured notes due June 28, 2063

ARR: Annualized Recurring Revenue

ASR: Accelerated Share Repurchase

AUM: Assets Under Management

CCP: Central Counterparty

CFTC: Commodity Futures Trading Commission

Equity Plan: Nasdaq Equity Incentive Plan

ESG: Environmental, Social and Governance

EMIR: European Market Infrastructure Regulation

ESPP: Nasdaq Employee Stock Purchase Plan

ETF: Exchange Traded Fund

ETP: Exchange Traded Product

Exchange Act: Securities Exchange Act of 1934, as amended

FINRA: Financial Industry Regulatory Authority

IPO: Initial Public Offering

NSCC: National Securities Clearing Corporation

OCC: The Options Clearing Corporation

OTC: Over-the-Counter

PSU: Performance Share Unit

SaaS: Software as a Service

SEC: U.S. Securities and Exchange Commission

SERP: Supplemental Executive Retirement Plan

SFSA: Swedish Financial Supervisory Authority

SOFR: Secured Overnight Financing Rate

S&P: Standard & Poor's

S&P 500: S&P 500 Stock Index

SPAC: Special Purpose Acquisition Company

TSR: Total Shareholder Return

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

U.S. Tape plans: U.S. cash equity and U.S. options industry data

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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; 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 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 and Nasdaq First North 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 our Form 10-K for the fiscal year ended December 31, 2022 that was filed with the SEC on February 23, 2023.

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.

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 are intended to identify forward-looking statements. These include, among others, statements relating to:

- *our strategic direction, including changes to our corporate structure;*
- *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, ESG, de-leveraging and capital return initiatives;*
- *our products 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 and any potential settlements of litigation, regulatory or governmental investigations or actions, including with respect to our CFTC investigation.*

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 or transition 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, market data customers or other customers;*
- *our ability to develop and grow our non-trading businesses, including our technology, analytics, ESG and anti-financial crime offerings;*
- *our ability to keep up with rapid technological advances and adequately address cybersecurity risks;*
- *economic, political and market conditions and fluctuations, including inflation, interest rate and foreign currency risk inherent in U.S. and international operations, and geopolitical instability;*
- *the performance and reliability of our technology and technology of third parties on which we rely;*
- *any significant systems failures or errors 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, or increased regulatory oversight domestically or internationally.*

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 more fully described in the "Risk Factors" section in our Form 10-K filed with the SEC on February 23, 2023. 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)

	September 30, 2023 (unaudited)	December 31, 2022
Assets		
Current assets:		
Cash and cash equivalents	$ 5,340	$ 502
Restricted cash and cash equivalents	25	22
Default funds and margin deposits (including restricted cash and cash equivalents of $5,469 and $6,470, respectively)	5,935	7,021
Financial investments	272	181
Receivables, net	595	677
Other current assets	184	201
Total current assets	12,351	8,604
Property and equipment, net	542	532
Goodwill	7,988	8,099
Intangible assets, net	2,446	2,581
Operating lease assets	397	444
Other non-current assets	626	608
Total assets	$ 24,350	$ 20,868
Liabilities		
Current liabilities:		
Accounts payable and accrued expenses	$ 286	$ 185
Section 31 fees payable to SEC	19	243
Accrued personnel costs	211	243
Deferred revenue	451	357
Other current liabilities	146	122
Default funds and margin deposits	5,935	7,021
Short-term debt	—	664
Total current liabilities	7,048	8,835
Long-term debt	9,703	4,735
Deferred tax liabilities, net	509	456
Operating lease liabilities	412	452
Other non-current liabilities	199	226
Total liabilities	17,871	14,704
Commitments and contingencies		
Equity		
Nasdaq stockholders' equity:		
Common stock, $0.01 par value, 900,000,000 shares authorized, shares issued: 514,134,579 at September 30, 2023 and 513,157,630 at December 31, 2022; shares outstanding: 491,316,638 at September 30, 2023 and 491,592,491 at December 31, 2022	5	5
Additional paid-in capital	1,394	1,445
Common stock in treasury, at cost: 22,817,941 shares at September 30, 2023 and 21,565,139 shares at December 31, 2022	(585)	(515)
Accumulated other comprehensive loss	(2,102)	(1,991)
Retained earnings	7,755	7,207
Total Nasdaq stockholders' equity	6,467	6,151
Noncontrolling interests	12	13
Total equity	6,479	6,164
Total liabilities and equity	$ 24,350	$ 20,868

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 September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022
Revenues:				
Market Platforms	$ 892	$ 1,046	$ 2,813	$ 3,121
Capital Access Platforms	456	422	1,309	1,262
Anti-Financial Crime	93	77	265	224
Other revenues	10	12	30	37
Total revenues	1,451	1,557	4,417	4,644
Transaction-based expenses:				
Transaction rebates	(447)	(494)	(1,377)	(1,605)
Brokerage, clearance and exchange fees	(64)	(173)	(262)	(364)
Revenues less transaction-based expenses	940	890	2,778	2,675
Operating expenses:				
Compensation and benefits	260	249	777	750
Professional and contract services	31	34	92	97
Computer operations and data communications	58	50	168	150
Occupancy	28	25	99	78
General, administrative and other	26	38	62	94
Marketing and advertising	12	10	30	31
Depreciation and amortization	64	63	198	195
Regulatory	9	9	27	24
Merger and strategic initiatives	4	14	51	41
Restructuring charges	17	—	49	—
Total operating expenses	509	492	1,553	1,460
Operating income	431	398	1,225	1,215
Interest income	72	2	86	3
Interest expense	(101)	(32)	(174)	(96)
Other income (loss)	1	6	(6)	8
Net income (loss) from unconsolidated investees	(12)	8	(8)	23
Income before income taxes	391	382	1,123	1,153
Income tax provision	97	88	262	270
Net income	294	294	861	883
Net loss attributable to noncontrolling interests	—	—	1	1
Net income attributable to Nasdaq	$ 294	$ 294	$ 862	$ 884
Per share information:				
Basic earnings per share	$ 0.60	$ 0.60	$ 1.76	$ 1.79
Diluted earnings per share	$ 0.60	$ 0.59	$ 1.74	$ 1.77
Cash dividends declared per common share	$ 0.22	$ 0.20	$ 0.64	$ 0.58

See accompanying notes to condensed consolidated financial statements.

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022
Net income	$ 294	$ 294	$ 861	$ 883
Other comprehensive income (loss):				
Foreign currency translation gains (losses)	41	(155)	(96)	(428)
Income tax expense[1]	(24)	(32)	(15)	(77)
Foreign currency translation, net	17	(187)	(111)	(505)
Comprehensive income	311	107	750	378
Comprehensive loss attributable to noncontrolling interests	—	—	1	1
Comprehensive income attributable to Nasdaq	$ 311	$ 107	$ 751	$ 379

(1) Primarily relates to the tax effect of unrealized gains and losses on Euro denominated notes.

See accompanying notes to condensed consolidated financial statements.

Nasdaq, Inc.
Condensed Consolidated Statements of Changes in Stockholders' Equity
(unaudited)
(in millions)

	Three Months Ended September 30,				Nine Months Ended September 30,			
	2023		2022		2023		2022	
	Shares	$	Shares	$	Shares	$	Shares	$
Common stock	491	5	491	5	492	5	500	5
Additional paid-in capital								
Beginning balance		1,363		1,382		1,445		1,949
Share repurchase program	—	—	—	—	(3)	(159)	(11)	(308)
ASR agreement	—	—	—	—	—	—	—	(325)
Share-based compensation	—	31	—	26	3	90	3	76
Other issuances of common stock, net	—	—	—	—	—	18	—	16
Ending balance		1,394		1,408		1,394		1,408
Common stock in treasury, at cost								
Beginning balance		(583)		(509)		(515)		(437)
Other employee stock activity	—	(2)	—	(1)	(1)	(70)	(1)	(73)
Ending balance		(585)		(510)		(585)		(510)
Accumulated other comprehensive loss								
Beginning balance		(2,119)		(1,905)		(1,991)		(1,587)
Other comprehensive income (loss)		17		(187)		(111)		(505)
Ending balance		(2,102)		(2,092)		(2,102)		(2,092)
Retained earnings								
Beginning balance		7,569		6,869		7,207		6,465
Net income attributable to Nasdaq		294		294		862		884
Cash dividends declared and paid		(108)		(99)		(314)		(285)
Ending balance		7,755		7,064		7,755		7,064
Total Nasdaq stockholders' equity		6,467		5,875		6,467		5,875
Noncontrolling interests								
Beginning balance		12		9		13		10
Net activity related to noncontrolling interests		—		—		(1)		(1)
Ending balance		12		9		12		9
Total Equity	491	$ 6,479	491	$ 5,884	491	$ 6,479	491	$ 5,884

See accompanying notes to condensed consolidated financial statements.

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

	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022
Cash flows from operating activities:		
Net income	$ 861	$ 883
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	198	195
Share-based compensation	90	76
Deferred income taxes	44	17
Extinguishment of debt and bridge fees	25	16
Non-cash restructuring charges	12	—
Net income (loss) from unconsolidated investees	8	(23)
Operating lease asset impairments	13	—
Other reconciling items included in net income	22	7
Net change in operating assets and liabilities, net of effects of acquisitions:		
Receivables, net	75	(69)
Other assets	25	41
Accounts payable and accrued expenses	110	27
Section 31 fees payable to SEC	(224)	—
Accrued personnel costs	(28)	(33)
Deferred revenue	90	86
Other liabilities	(42)	(11)
Net cash provided by operating activities	1,279	1,212
Cash flows from investing activities:		
Purchases of securities	(530)	(263)
Proceeds from sales and redemptions of securities	427	305
Acquisition of businesses, net of cash and cash equivalents acquired	—	(41)
Purchases of property and equipment	(116)	(118)
Investments related to default funds and margin deposits, net[1]	64	44
Other investing activities	(3)	48
Net cash used in investing activities	(158)	(25)
Cash flows from financing activities:		
Repayments of commercial paper, net	(662)	(221)
Repayments of debt and credit commitment	—	(499)
Payment of debt extinguishment cost and bridge fees	(25)	(16)
Proceeds from issuances of debt, net of issuance costs	5,011	541
Repurchases of common stock	(159)	(308)
ASR agreement	—	(325)
Dividends paid	(314)	(285)
Proceeds received from employee stock activity and other issuances	18	16
Payments related to employee shares withheld for taxes	(70)	(73)
Default funds and margin deposits	(779)	5,446
Other financing activities	(1)	(1)
Net cash provided by financing activities	3,019	4,275
Effect of exchange rate changes on cash and cash equivalents and restricted cash and cash equivalents	(300)	(1,724)
Net increase in cash and cash equivalents and restricted cash and cash equivalents	3,840	3,738
Cash and cash equivalents, restricted cash and cash equivalents at beginning of period	6,994	5,496
Cash and cash equivalents, restricted cash and cash equivalents at end of period	$ 10,834	$ 9,234
Reconciliation of Cash, Cash Equivalents and Restricted Cash and Cash Equivalents		
Cash and cash equivalents	$ 5,340	$ 301
Restricted cash and cash equivalents	25	51
Restricted cash and cash equivalents (default funds and margin deposits)	5,469	8,882
Total	$ 10,834	$ 9,234
Supplemental Disclosure Cash Flow Information		
Interest paid	$ 89	$ 83
Income taxes paid, net of refund	$ 198	$ 204

(1) Includes purchases and proceeds from sales and redemptions related to the default funds and margin deposits of our clearing operations. For further information, see "Default Fund Contributions and Margin Deposits," within Note 14, "Clearing Operations."

See accompanying notes to condensed consolidated financial statements.

Nasdaq, Inc.

Notes to Condensed Consolidated Financial Statements

(Unaudited)

1. ORGANIZATION AND NATURE OF OPERATIONS

Nasdaq is a global technology company serving corporate clients, investment managers, banks, brokers, and exchange operators as they navigate and interact with the global capital markets and the broader financial system. We aspire to deliver world-leading platforms that improve the liquidity, transparency, and integrity of the global economy. Our diverse offering of data, analytics, software, exchange capabilities, and client-centric services enables clients to optimize and execute their business vision with confidence.

In September 2022, we announced a new organizational structure which aligns our businesses more closely with the foundational shifts that are driving the evolution of the global financial system. In order to amplify our strategy, we aligned the Company more closely with evolving client needs. As a result, our four previous business segments, Market Technology, Investment Intelligence, Corporate Platforms and Market Services, have been changed to align with our new corporate structure that now includes three business segments: Capital Access Platforms, Market Platforms, and Anti-Financial Crime.

Market Platforms

Our Market Platforms segment includes our Trading Services and Marketplace Technology businesses. Our Trading Services business primarily includes revenues from equity derivatives trading, cash equity trading, Nordic fixed income trading & clearing, Nordic commodities and U.S. Tape plans data. 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 certain countries where we operate exchanges, we also provide clearing, settlement and central depository services. In June 2023, we entered into an agreement to sell our European energy trading and clearing business, subject to regulatory approval. Beginning in the third quarter of 2023, revenues from this business are reflected in Other Revenues in the Condensed Consolidated Statements of Income for all periods, and in our Corporate segment for our segment disclosures.

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.

Our Marketplace Technology business includes our trade management services and our market technology businesses. Trade management services provides market participants with a wide variety of alternatives for connecting to and accessing our markets for a fee. Our marketplaces may be accessed via a number of different protocols used for quoting, order entry, trade reporting and connectivity to various data feeds. We also provide colocation services to market participants, whereby we offer firms cabinet space and power to house their own equipment and servers within our data centers. Additionally, we offer a number of wireless connectivity offerings between select data centers using millimeter wave and microwave technology. In June 2022, we completed the wind-down of our Nordic broker services business.

Our market technology business is a leading global technology solutions provider and partner to exchanges, clearing organizations, central securities depositories, regulators, banks, brokers, buy-side firms and corporate businesses. Our solutions are utilized by leading markets in the U.S., Europe and Asia as well as emerging markets in the Middle East, Latin America, and Africa.

Capital Access Platforms

Our Capital Access Platforms segment includes our Data & Listing Services, Index and Workflow & Insights businesses.

Our Data business sells and distributes historical and real-time market data to the sell-side, the institutional investing community, retail online brokers, proprietary trading firms and other venues, as well as internet portals and data distributors. Our data products can enhance transparency of market activity within our exchanges and provide critical information to professional and non-professional investors globally. As noted above, we entered into an agreement to sell our European energy trading and clearing business in June 2023. Beginning in the third quarter of 2023, certain data revenues from this business that were previously included in our Capital Access Platforms segment are reflected in Other Revenues in the Condensed Consolidated Statements of Income for all periods, and in our Corporate segment for our segment disclosures.

Our Listing Services business operates in the U.S. and Europe on a variety of listing platforms around the world to provide multiple global capital raising solutions for 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.

As of September 30, 2023, there were 4,086 total listings on The Nasdaq Stock Market, including 570 ETPs. The combined market capitalization was approximately $23.8 trillion. In Europe, the Nasdaq Nordic and Nasdaq Baltic exchanges, together with Nasdaq First North, were home to 1,236 listed companies with a combined market capitalization of approximately $1.8 trillion.

Our Index business develops and licenses Nasdaq-branded indexes and financial products. We also license cash-settled options, futures and options on futures on our indexes. As of September 30, 2023, 393 ETPs listed on 26 exchanges in over 20 countries tracked a Nasdaq index and accounted for $411 billion in AUM.

Workflow & Insights includes our analytics and corporate solutions businesses. Our analytics business provides asset managers, investment consultants and institutional asset owners with information and analytics to make data-driven investment decisions, deploy their resources more productively, and provide liquidity solutions for private funds. Through our eVestment and Solovis solutions, we provide a suite of cloud-based solutions that help institutional investors and consultants conduct pre-investment due diligence, and monitor their portfolios post-investment. The eVestment platform also enables asset managers to efficiently distribute information about their firms and funds to asset owners and consultants worldwide.

Through our Solovis platform, endowments, foundations, pensions and family offices transform how they collect and aggregate investment data, analyze portfolio performance, model and predict future outcomes, and share meaningful portfolio insights with key stakeholders. The Nasdaq Fund Network and Nasdaq Data Link are additional platforms in our suite of investment data analytics offerings and data management tools.

Our corporate solutions business includes our Investor Relations Intelligence, ESG Solutions and Governance Solutions products, which serve both public and private companies and organizations. Our public company clients can be companies listed on our exchanges or other U.S. and global exchanges. Our private company clients include a diverse group of organizations ranging from family-owned companies, government organizations, law firms, privately held entities, and various non-profit organizations to hospitals and healthcare systems. We help organizations enhance their ability to understand and expand their global shareholder base, improve corporate governance, and navigate the evolving ESG landscape through our suite of advanced technology, analytics, reporting and consulting services. In June 2022, we acquired Metrio, a provider of ESG data collection, analytics and reporting services based in Montreal, Canada.

Anti-Financial Crime

Our Anti-Financial Crime segment provides cloud-based anti-financial crime management solutions to help financial institutions detect, investigate, and report money laundering and financial fraud. This segment also includes Nasdaq Trade Surveillance, a SaaS solution designed for brokers and other market participants to assist them in complying with market rules, regulations and internal market surveillance policies, as well as Nasdaq Market Surveillance, a market surveillance solution for markets and regulators.

2. BASIS OF PRESENTATION AND PRINCIPLES OF CONSOLIDATION

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

The accompanying condensed consolidated financial statements reflect all adjustments which are, in the opinion of management, necessary for a fair statement of the results. 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 Form 10-K. The year-end condensed balance sheet data was derived from the audited financial statements, but does not include all disclosures required by U.S. GAAP.

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

Accounting Estimates

In preparing our condensed consolidated financial statements, we make assumptions, judgments and estimates that can have a significant impact on our revenue, operating income and net income, as well as on the value of certain assets and liabilities in our Condensed Consolidated Balance Sheets. At least quarterly, we evaluate our assumptions, judgments and estimates, and make changes as deemed necessary.

Subsequent Events

We have evaluated subsequent events through the issuance date of this Quarterly Report on Form 10-Q. See Note 4, "Acquisitions," for further discussion.

3. REVENUE FROM CONTRACTS WITH CUSTOMERS

Disaggregation of Revenue

The following tables summarize the disaggregation of revenue by major product and service and by segment for the three and nine months ended September 30, 2023 and 2022:

	Three Months Ended September 30, 2023	2022
	(in millions)	
Market Platforms		
Trading Services, net	$ 236	$ 239
Marketplace Technology	145	140
Capital Access Platforms		
Data & Listing Services	188	179
Index	144	125
Workflow & Insights	124	118
Anti-Financial Crime	93	77
Other revenues	10	12
Revenues less transaction-based expenses	$ 940	$ 890

	Nine Months Ended September 30, 2023	2022
	(in millions)	
Market Platforms		
Trading Services, net	$ 739	$ 743
Marketplace Technology	435	409
Capital Access Platforms		
Data & Listing Services	559	545
Index	383	370
Workflow & Insights	367	347
Anti-Financial Crime	265	224
Other revenues	30	37
Revenues less transaction-based expenses	$ 2,778	$ 2,675

Substantially all revenues from the Capital Access Platforms and Anti-Financial Crime segments as well as our Marketplace Technology business were recognized over time for the three months ended September 30, 2023 and 2022. For the three months ended September 30, 2023 and 2022 approximately 92.5% and 92.0%, respectively, of Trading Services revenues were recognized at a point in time and 7.5% and 8.0%, respectively, were recognized over time. For the nine months ended September 30, 2023 and 2022 approximately 92.9% and 93.3%, respectively, of Trading Services revenues were recognized at a point in time and 7.1% and 6.7%, respectively, were recognized over time.

Contract Balances

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 are net of allowance for doubtful accounts of $13 million as of September 30, 2023 and $15 million as of December 31, 2022. There were no material upward or downward adjustments to the allowance during the nine months ended September 30, 2023. 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 listing services contracts, our performance obligations range from three months to three years and there is no significant variable consideration.

Deferred revenue is the only significant contract asset or liability as of September 30, 2023. Deferred revenue represents consideration received that is yet to be recognized as revenue for unsatisfied performance obligations. Deferred revenue primarily represents our contract liabilities related to our fees for Annual and Initial Listings, Workflow & Insights, Market Technology and Anti-Financial Crime contracts. See Note 7, "Deferred Revenue," for our discussion on deferred revenue balances, activity, and expected timing of recognition.

We do not have a material amount of revenue recognized from performance obligations that were satisfied in prior periods. We do not provide disclosures about transaction price allocated to unsatisfied performance obligations if contract durations are less than one year. For our initial listings, the transaction price allocated to remaining performance obligations is included in deferred revenue. For our Market Technology, Anti-Financial Crime, and Workflow & Insights contracts, the portion of transaction price allocated to unsatisfied performance obligations is presented in the table below. To the extent consideration has been received, unsatisfied performance obligations would be included in the table below as well as deferred revenue.

The following table summarizes the amount of the transaction price allocated to performance obligations that are unsatisfied, for contract durations greater than one year, as of September 30, 2023:

	Market Technology	Anti-Financial Crime	Workflow & Insights	Total
	(in millions)			
Remainder of 2023	$ 46	$ 105	$ 43	$ 194
2024	167	379	134	680
2025	139	180	76	395
2026	101	68	32	201
2027	70	17	22	109
2028+	110	8	11	129
Total	$ 633	$ 757	$ 318	$ 1,708

4. ACQUISITIONS

2023 Acquisition

In June 2023, we entered into a definitive agreement to acquire Adenza Holdings, Inc., or Adenza, a provider of mission-critical risk management and regulatory software to the financial services industry, for $5.75 billion in cash and a fixed amount of 85.6 million shares of Nasdaq common stock, based on the volume-weighted average price per share over 15 consecutive trading days prior to signing. Nasdaq issued $5.0 billion of debt and entered into a $600 million term loan and will use the proceeds for the cash portion of the consideration. See "*Senior Unsecured Notes*" and "*Acquisition Term Loan Agreement*" in "Financing of the Adenza Transaction" of Note 8, "Debt Obligations," for further discussion.

On November 1, 2023, we completed the acquisition of Adenza. Immediately following the closing of the transaction, 85.6 million shares of Nasdaq common stock, at a closing price of $48.71 per share, were issued to Thoma Bravo, the sole shareholder of Adenza, and represented approximately 15% of the outstanding shares of Nasdaq. For further discussion on the rights of common stockholders refer to "Common Stock" of Note 11, "Nasdaq Stockholders' Equity."

Due to the abbreviated timing between the November 1, 2023 acquisition date and the filing of this Form 10-Q, as well as the size and complexity of this transaction, the accounting for the business combination is not yet complete. We are in the process of determining the fair values of intangible and tangible assets acquired and liabilities assumed, including review of third-party valuations. Accordingly, we are not able to provide the preliminary allocation of consideration paid to the assets acquired and liabilities assumed. Further, the supplemental pro forma revenue and earnings of the combined entity are predicated on the completion of the business combination accounting and allocation of consideration paid.

2022 Acquisition

In June 2022, we acquired Metrio, a provider of ESG data collection, analytics and reporting services based in Montreal, Canada. Metrio is part of our Workflow & Insights business in our Capital Access Platforms segment.

Pro Forma Results and Acquisition-Related Costs

The condensed consolidated financial statements for the three and nine months ended September 30, 2023 include the financial results of the 2022 acquisition from the date of the acquisition. Pro forma financial results have not been presented since this acquisition was 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. For the three and nine months ended September 30, 2023 these costs primarily related to our planned acquisition of Adenza. For the three and nine months ended September 30, 2023, these costs mainly included consulting and legal fees. For the nine months ended September 30, 2023, these costs also included fees for the transaction bridge financing, which was subsequently terminated. We expect to incur customary costs related to transaction advisors, including advisors for the Adenza transaction, which will be included in merger and strategic initiatives expense in the Condensed Consolidated Statements of Income in the fourth quarter of 2023.

5. GOODWILL AND ACQUIRED INTANGIBLE ASSETS

Goodwill

The following table presents the changes in goodwill by business segment during the nine months ended September 30, 2023:

	(in millions)
Market Platforms	
Balance at December 31, 2022	$ 2,912
Foreign currency translation adjustments	(67)
Balance at September 30, 2023	$ 2,845
Capital Access Platforms	
Balance at December 31, 2022	$ 4,178
Foreign currency translation adjustments	(40)
Balance at September 30, 2023	$ 4,138
Anti-Financial Crime	
Balance at December 31, 2022	$ 1,009
Foreign currency translation adjustments	(4)
Balance at September 30, 2023	$ 1,005
Total	
Balance at December 31, 2022	$ 8,099
Foreign currency translation adjustments	(111)
Balance at September 30, 2023	$ 7,988

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 and nine months ended September 30, 2023 and 2022; however, events such as prolonged economic weakness or unexpected significant declines in operating results of any of our reporting units or businesses 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:

	September 30, 2023	December 31, 2022
	(in millions)	
Finite-Lived Intangible Assets		
Gross Amount		
Technology	$ 304	$ 304
Customer relationships	2,005	2,005
Trade names and other	57	60
Foreign currency translation adjustment	(227)	(209)
Total gross amount	$ 2,139	$ 2,160
Accumulated Amortization		
Technology	$ (131)	$ (97)
Customer relationships	(859)	(778)
Trade names and other	(17)	(17)
Foreign currency translation adjustment	137	120
Total accumulated amortization	$ (870)	$ (772)
Net Amount		
Technology	$ 173	$ 207
Customer relationships	1,146	1,227
Trade names and other	40	43
Foreign currency translation adjustment	(90)	(89)
Total finite-lived intangible assets	$ 1,269	$ 1,388
Indefinite-Lived Intangible Assets		
Exchange and clearing registrations	$ 1,257	$ 1,257
Trade names	121	121
Licenses	52	52
Foreign currency translation adjustment	(253)	(237)
Total indefinite-lived intangible assets	$ 1,177	$ 1,193
Total intangible assets, net	$ 2,446	$ 2,581

There was no impairment of indefinite-lived intangible assets for the three and nine months ended September 30, 2023 and 2022.

The following table presents our amortization expense for acquired finite-lived intangible assets:

	Three Months Ended September 30,	
	2023	2022
	(in millions)	
Amortization expense	$ 37	$ 38

	Nine Months Ended September 30,	
	2023	2022
	(in millions)	
Amortization expense	$ 112	$ 116

The table below presents the estimated future amortization expense (excluding the impact of foreign currency translation adjustments of $90 million as of September 30, 2023) of acquired finite-lived intangible assets as of September 30, 2023:

	(in millions)
Remainder of 2023	$ 41
2024	153
2025	151
2026	148
2027	147
2028+	719
Total	$ 1,359

6. INVESTMENTS

The following table presents the details of our investments:

	September 30, 2023	December 31, 2022
	(in millions)	
Financial investments	$ 272	$ 181
Equity method investments	378	390
Equity securities	76	86

Financial Investments

Financial investments are comprised of trading securities, primarily highly rated European government debt securities, of which $150 million as of September 30, 2023 and $161 million as of December 31, 2022 are assets primarily utilized to meet regulatory capital requirements, mainly for our clearing operations at Nasdaq Clearing.

Equity Method Investments

We record our estimated pro-rata share of earnings or losses each reporting period and record any dividends as a reduction in the investment balance. As of September 30, 2023 and 2022, our equity method investments primarily included our 40.0% equity interest in OCC.

The carrying amounts of our equity method investments are included in other non-current assets in the Condensed Consolidated Balance Sheets. No impairments were recorded for the three and nine months ended September 30, 2023 and 2022.

Net income (loss) recognized from our equity interest in the earnings and losses of these equity method investments, primarily OCC and Nasdaq Private Market, LLC or NPM, was $(12) million and $8 million for the three months ended September 30, 2023 and 2022, respectively, and $(8) million and $23 million for the nine months ended September 30, 2023 and 2022, respectively.

Equity Securities

The carrying amounts of our equity securities are included in other non-current assets in the Condensed Consolidated Balance Sheets. We elected the measurement alternative for substantially all of our equity securities as they do not have a readily determinable fair value. No material adjustments were made to the carrying value of our equity securities for the three and nine months ended September 30, 2023 and 2022. As of September 30, 2023 and December 31, 2022, our equity securities primarily represent various strategic investments made through our corporate venture program.

7. DEFERRED REVENUE

Deferred revenue represents consideration received that is yet to be recognized as revenue. The changes in our deferred revenue during the nine months ended September 30, 2023 are reflected in the following table:

	Balance at December 31, 2022	Additions	Revenue Recognized	Adjustments	Balance at September 30, 2023
			(in millions)		
Market Platforms:					
Market Technology	$ 29	$ 25	$ (26)	$ (1)	$ 27
Capital Access Platforms:					
Initial Listings	116	15	(30)	(1)	100
Annual Listings	2	92	(1)	(1)	92
Workflow & Insights	172	162	(152)	—	182
Anti-Financial Crime	108	102	(100)	—	110
Other	21	11	(9)	(1)	22
Total	$ 448	$ 407	$ (318)	$ (4)	$ 533

In the above table:

- Additions reflect deferred revenue billed in the current period, net of recognition.
- Revenue recognized includes revenue recognized during the current period that was included in the beginning balance.
- Adjustments reflect foreign currency translation adjustments.
- Other primarily includes deferred revenue from our non-U.S. listing of additional shares fees and our Index business. These fees are included in our Capital Access Platforms segment.

As of September 30, 2023, we estimate that our deferred revenue will be recognized in the following years:

Fiscal year ended:	2023	2024	2025	2026	2027	2028+	Total
				(in millions)			
Market Platforms:							
Market Technology	$ 12	$ 11	$ 2	$ 1	$ 1	$ —	$ 27
Capital Access Platforms:							
Initial Listings	10	34	24	19	10	3	100
Annual Listings	92	—	—	—	—	—	92
Workflow & Insights	84	98	—	—	—	—	182
Anti-Financial Crime	51	59	—	—	—	—	110
Other	6	9	5	2	—	—	22
Total	$ 255	$ 211	$ 31	$ 22	$ 11	$ 3	$ 533

In the above table, the amounts shown under the column for 2023 represent the remaining three months of 2023.

The timing of recognition of deferred revenue related to certain market technology contracts represents our best estimates as the recognition is primarily dependent upon the completion of customization and any significant modifications made pursuant to existing market technology contracts.

8. DEBT OBLIGATIONS

The following table presents the carrying amounts of our debt outstanding, net of unamortized debt issuance costs:

	September 30, 2023	December 31, 2022
	(in millions)	
Short-term debt:		
Commercial paper	$ —	$ 664
Long-term debt - senior unsecured notes:		
2025 Notes, $500 million, 5.650% notes due June 28, 2025	497	—
2026 Notes, $500 million, 3.850% notes due June 30, 2026	499	498
2028 Notes, $1 billion, 5.350% notes due June 28, 2028	991	—
2029 Notes, €600 million, 1.75% notes due March 28, 2029	630	637
2030 Notes, €600 million, 0.875% notes due February 13, 2030	630	637
2031 Notes, $650 million, 1.650% notes due January 15, 2031	644	644
2032 Notes, €750 million, 4.500% notes due February 15, 2032	784	—
2033 Notes, €615 million, 0.900% notes due July 30, 2033	645	653
2034 Notes $1.25 billion, 5.550% notes due February 15, 2034	1,239	—
2040 Notes, $650 million, 2.500% notes due December 21, 2040	644	644
2050 Notes, $500 million, 3.250% notes due April 28, 2050	487	486
2052 Notes, $550 million, 3.950% notes due March 7, 2052	541	541
2053 Notes, $750 million, 5.950% notes due August 15, 2053	738	—
2063 Notes, $750 million, 6.100% notes due June 28, 2063	738	—
2022 Revolving Credit Agreement	(4)	(5)
Total long-term debt	$ 9,703	$ 4,735
Total debt obligations	$ 9,703	$ 5,399

Commercial Paper Program

Our U.S. dollar commercial paper program is supported by our 2022 Revolving Credit Agreement, which provides liquidity support for the repayment of commercial paper issued through this program. See "2022 Revolving Credit Agreement" below for further discussion. The effective interest rate of commercial paper issuances fluctuates as short-term interest rates and demand fluctuate. The fluctuation of these rates may impact our interest expense. As of September 30, 2023, we had no outstanding borrowings under our commercial paper program. As of November 1, 2023, we had $200 million outstanding under the commercial paper program.

Senior Unsecured Notes

Our 2040 Notes were issued at par. All of our other outstanding senior unsecured notes were 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 September 30, 2023, 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. The accretion of these costs was $6 million for the nine months ended September 30, 2023. Our Euro denominated notes are adjusted for the impact of foreign currency translation. Our senior unsecured notes are general unsecured obligations which rank equally with all of our existing and future unsubordinated obligations and 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. The senior unsecured notes may be redeemed by Nasdaq at any time, subject to a make-whole amount.

Upon a change of control triggering event (as defined in the various supplemental indentures governing the applicable notes), 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.

The 2029 Notes, 2030 Notes, 2032 Notes and 2033 Notes pay interest annually. All other notes pay interest semi-annually. The U.S senior unsecured notes coupon rates may vary with Nasdaq's debt rating, to the extent Nasdaq is downgraded below investment grade, up to an upward rate adjustment not to exceed 2%.

Net Investment Hedge

Our Euro denominated 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. Accordingly, the remeasurement of these notes is recorded in accumulated other comprehensive loss within Nasdaq's stockholders' equity in the Condensed Consolidated Balance Sheets. For the nine months ended September 30, 2023, the impact of translation decreased the U.S. dollar value of our Euro denominated notes by $50 million.

Financing of the Adenza Transaction

Senior Unsecured Notes

In June 2023, Nasdaq issued six series of notes for total proceeds of $5,016 million, net of debt issuance costs of $38 million, with various maturity dates ranging from 2025 to 2063. During the third quarter of 2023, we incurred an additional $5 million in debt issuance costs, for total net proceeds from the issuance of the six series of notes of $5,011 million as of September 30, 2023. The net proceeds from these notes were used to finance the majority of the cash consideration due in connection with the Adenza acquisition. For further discussion of the Adenza acquisition, see "2023 Acquisition," of Note 4, "Acquisitions."

Acquisition Term Loan Agreement

In June 2023, in connection with the financing of the Adenza acquisition, we entered into a term loan credit agreement, or the Acquisition Term Loan Agreement. The Acquisition Term Loan Agreement provides us with the ability to borrow up to $600 million to finance a portion of the cash consideration for the Adenza acquisition, for repayment of certain debt of Adenza and its subsidiaries, and to pay fees, costs and expenses related to the transaction.

Under the Acquisition Term Loan Agreement, borrowings bear interest on the principal amount outstanding at a variable interest rate based on either the SOFR or the base rate (or other applicable rate with respect to non-dollar borrowings), plus an applicable margin that varies with Nasdaq's credit rating. As of September 30, 2023, no amounts were outstanding. On November 1, 2023, we borrowed $599 million, net of fees, under this term loan towards payment of the cash consideration due in connection with the Adenza acquisition.

Credit Facilities

2022 Revolving Credit Agreement

In December 2020, Nasdaq entered into the 2020 Credit Facility, which replaced a former credit facility and consists of a $1.25 billion five-year revolving credit facility (with sublimits for non-dollar borrowings, swingline borrowings and letters of credit). We amended and restated the 2020 Credit Facility in December 2022 with a new maturity date of December 16, 2027. Nasdaq intends to use funds available under the 2022 Revolving Credit Agreement for general corporate purposes and to provide liquidity support for the repayment of commercial paper issued through the commercial paper program. Nasdaq is permitted to repay borrowings under our 2022 Revolving Credit Agreement at any time in whole or in part, without penalty.

As of September 30, 2023, no amounts were outstanding on the 2022 Revolving Credit Agreement. The $(4) million balance represents unamortized debt issuance costs which are being accreted through interest expense over the life of the 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 SOFR (or a successor rate to SOFR), the base rate (as defined in the 2022 credit agreement), or other applicable rate with respect to non-dollar borrowings, plus an applicable margin that varies with Nasdaq's debt rating. We are charged commitment fees of 0.100% to 0.250%, depending on our credit rating, whether or not amounts have been borrowed. These commitment fees are included in interest expense and were not material for the three and nine months ended September 30, 2023 and 2022.

The 2022 Revolving Credit Agreement contains financial and operating covenants. Financial covenants include 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 make certain restricted payments. The facility also contains customary affirmative covenants, including access to financial statements, notice of defaults and certain other material events, maintenance of properties and insurance, and customary events of default, including cross-defaults to our material indebtedness.

The 2022 Revolving Credit Agreement includes an option for Nasdaq to increase the available aggregate amount by up to $750 million, subject to the consent of the lenders funding the increase and certain other conditions.

Other Credit Facilities

Certain of our European subsidiaries have several other credit facilities, which are available in multiple currencies, primarily to support our Nasdaq Clearing operations in Europe, as well as to provide a cash pool credit line for one subsidiary. These credit facilities, in aggregate, totaled $176 million as of September 30, 2023 and $184 million as of December 31, 2022 in available liquidity, none of which was utilized. Generally, these facilities each have a one-year term. The amounts borrowed under these various credit facilities bear interest on the principal amount outstanding at a variable interest rate based on a base rate (as defined in the applicable credit agreement), plus an applicable margin. We are charged commitment fees (as defined in the applicable credit agreement), whether or not amounts have been borrowed. These commitment fees are included in interest expense and were not material for the three and nine months ended September 30, 2023 and 2022.

These facilities include customary affirmative and negative operating covenants and events of default.

Debt Covenants

As of September 30, 2023, we were in compliance with the covenants of all of our debt obligations.

9. RETIREMENT PLANS

Defined Contribution Savings Plan

We sponsor a 401(k) plan, which is a voluntary defined contribution savings 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. The following table presents the savings plan expense for the three and nine months ended September 30, 2023 and 2022, which is included in compensation and benefits expense in the Condensed Consolidated Statements of Income:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022
	(in millions)			
Savings Plan expense	$ 4	$ 4	$ 14	$ 13

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. 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 following table presents the total expense for these plans for the three and nine months ended September 30, 2023 and 2022, which is included in compensation and benefits expense in the Condensed Consolidated Statements of Income:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022
	(in millions)			
Retirement Plans expense	$ 6	$ 6	$ 19	$ 18

Nonqualified Deferred Compensation Plan

In June 2022, we established the Nasdaq, Inc. Deferred Compensation Plan, a nonqualified plan. This plan provides certain eligible employees with the opportunity to defer a portion of their annual salary and bonus up to certain approval limits. All deferrals and associated earnings are our general unsecured obligations and were immaterial for the three and nine months ended September 30, 2023.

10. SHARE-BASED COMPENSATION

We have a share-based compensation program for employees and non-employee directors. Share-based awards granted under this program include restricted stock (consisting of restricted stock units), PSUs and stock options. For accounting purposes, we consider PSUs to be a form of restricted stock. Generally, annual employee awards are granted on April 1st of each year.

Summary of Share-Based Compensation Expense

The following table presents the total share-based compensation expense resulting from equity awards and the 15.0% discount for the ESPP for the three and nine months ended September 30, 2023 and 2022, which is included in compensation and benefits expense in the Condensed Consolidated Statements of Income:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022
	(in millions)			
Share-based compensation expense before income taxes	$ 31	$ 26	$ 90	$ 76

Common Shares Available Under Our Equity Plan

As of September 30, 2023, we had approximately 24.7 million shares of common stock authorized for future issuance under our Equity Plan.

Restricted Stock

We grant restricted stock to most employees. The grant date fair value of restricted stock awards is based on the closing stock price at the date of grant less the present value of future cash dividends. Restricted stock awards granted to employees below the manager level generally vest 33% on the first anniversary of the grant date, 33% on the second anniversary of the grant date, and the remainder on the third anniversary of the grant date. Restricted stock awards granted to employees at or above the manager level generally vest 33% on the second anniversary of the grant date, 33% on the third anniversary of the grant date, and the remainder on the fourth anniversary of the grant date.

Summary of Restricted Stock Activity

The following table summarizes our restricted stock activity for the nine months ended September 30, 2023:

	Restricted Stock	
	Number of Awards	Weighted-Average Grant Date Fair Value
Unvested at December 31, 2022	4,380,513	$ 45.48
Granted	1,687,070	52.54
Vested	(1,621,991)	37.07
Forfeited	(220,665)	50.30
Unvested at September 30, 2023	4,224,927	$ 51.28

As of September 30, 2023, $128 million of total unrecognized compensation cost related to restricted stock is expected to be recognized over a weighted-average period of 1.8 years.

PSUs

We grant three-year PSUs to certain eligible employees. PSUs are based on performance measures that impact the amount of shares that each recipient will receive upon vesting. Each eligible individual receives PSUs, subject to the satisfaction of applicable market performance conditions, with a three-year cumulative performance period that vest at the end of the performance period and which settle in shares of our common stock. Compensation cost is recognized over the three-year performance period, taking into account an estimated forfeiture rate, regardless of whether the market condition is satisfied, provided that the requisite service period has been completed. 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 award issuance 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 award issuance 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.

Grants of PSUs that were issued in 2020 with a three-year performance period exceeded the applicable performance parameters. As a result, an additional 764,748 units above the original target were granted in the first quarter of 2023 and were fully vested upon issuance.

The following weighted-average assumptions were used to determine the weighted-average fair values of the outstanding PSU awards granted under the three-year PSU program during the nine months ended September 30, 2023 and 2022:

Grant date	April 3, 2023	April 1, 2022
Weighted-average risk-free interest rate	3.75 %	2.55 %
Expected volatility	23.88 %	30.33 %
Weighted-average grant date share price	$ 54.40	$ 60.64
Weighted-average fair value at grant date	$ 52.56	$ 63.50

In the table above, 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; and 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 nine months ended September 30, 2023:

	PSUs	
	Number of Awards	Weighted-Average Grant Date Fair Value
Unvested at December 31, 2022	1,966,542	$ 56.44
Granted	1,513,538	44.78
Vested	(1,529,496)	37.17
Forfeited	(25,478)	63.59
Unvested at September 30, 2023	1,925,106	$ 62.22

In the table above, the granted amount also includes additional awards granted based on overachievement of performance parameters.

As of September 30, 2023, the total unrecognized compensation cost related to the PSU program is $52 million and is expected to be recognized over a weighted-average period of 1.5 years.

Stock Options

We had no stock option activity for the nine months ended September 30, 2023. A summary of our outstanding and exercisable stock options at September 30, 2023 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 September 30, 2023	1,420,323	$	41.79	5.4	$	21
Exercisable at September 30, 2023	806,451	$	22.23	3.3	$	21

As of September 30, 2023, the aggregate pre-tax intrinsic value of the outstanding and exercisable stock options in the above table was $21 million and represents the difference between our closing stock price on September 30, 2023 of $48.59 and the exercise price, times the number of shares that would have been received by the option holder had the option holder exercised the stock options on that date. This amount can change based on the fair market value of our common stock. As of September 30, 2022, 0.8 million outstanding stock options were exercisable and the weighted-average exercise price was $22.23.

ESPP

We have an ESPP under which approximately 11.7 million shares of our common stock were available for future issuance as of September 30, 2023. 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.

11. NASDAQ STOCKHOLDERS' EQUITY

Common Stock

As of September 30, 2023, 900,000,000 shares of our common stock were authorized, 514,134,579 shares were issued and 491,316,638 shares were outstanding. As of December 31, 2022, 900,000,000 shares of our common stock were authorized, 513,157,630 shares were issued and 491,592,491 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 shareholder 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 and are therefore not included in the common stock in treasury balance. If treasury shares are reissued, they are recorded at the average cost of the treasury shares acquired. We held 22,817,941 shares of common stock in treasury as of September 30, 2023 and 21,565,139 shares as of December 31, 2022, most of which are related to shares of our common stock withheld for the settlement of employee tax withholding obligations arising from the vesting of restricted stock and PSUs.

Share Repurchase Program

In September 2023, our board of directors authorized an increase to our share repurchase program, bringing the aggregate remaining authorized amount to $2.0 billion as of September 30, 2023.

These repurchases may be made from time to time at prevailing market prices in open market purchases, privately-negotiated transactions, block purchase techniques, an accelerated share repurchase program or otherwise, as determined by our management. The repurchases are primarily funded from existing cash balances. The share repurchase program may be suspended, modified or discontinued at any time, and has no defined expiration date.

The following is a summary of our share repurchase activity, reported based on settlement date, for the nine months ended September 30, 2023:

		Nine Months Ended September 30, 2023
Number of shares of common stock repurchased		2,610,000
Average price paid per share	$	61.08
Total purchase price (in millions)	$	159

In the table above, the number of shares of common stock repurchased excludes an aggregate of 1,252,802 shares withheld upon the vesting of restricted stock and PSUs for the nine months ended September 30, 2023.

As discussed above in "Common Stock in Treasury, at Cost," shares repurchased under our share repurchase program are currently retired and cancelled.

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 September 30, 2023 and December 31, 2022, no shares of preferred stock were issued or outstanding.

Cash Dividends on Common Stock

During the first nine months of 2023, our board of directors declared and paid the following cash dividends:

Declaration Date	Dividend Per Common Share	Record Date	Total Amount Paid	Payment Date
			(in millions)	
January 24, 2023	$ 0.20	March 17, 2023	$ 97	March 31, 2023
April 18, 2023	0.22	June 16, 2023	109	June 30, 2023
July 18, 2023	0.22	September 15, 2023	108	September 29, 2023
			$ 314	

The total amount paid of $314 million was recorded in retained earnings within Nasdaq's stockholders' equity in the Condensed Consolidated Balance Sheets at September 30, 2023.

In October 2023, the board of directors approved a regular quarterly cash dividend of $0.22 per share on our outstanding common stock. The dividend is payable on December 22, 2023 to shareholders of record at the close of business on December 8, 2023. The estimated aggregate payment of this dividend is $108 million. Future declarations of quarterly dividends and the establishment of future record and payment dates are subject to approval by the board of directors.

The board of directors maintains a dividend policy with the intention to provide shareholders with regular and increasing dividends as earnings and cash flows increase.

12. EARNINGS PER SHARE

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

	Three Months Ended September 30,	
	2023	2022
Numerator:	(in millions, except share and per share amounts)	
Net income attributable to common shareholders	$ 294	$ 294
Denominator:		
Weighted-average common shares outstanding for basic earnings per share	491,315,824	491,228,889
Weighted-average effect of dilutive securities - Employee equity awards	2,796,138	5,110,197
Weighted-average common shares outstanding for diluted earnings per share	494,111,962	496,339,086
Basic and diluted earnings per share:		
Basic earnings per share	$ 0.60	$ 0.60
Diluted earnings per share	$ 0.60	$ 0.59

	Nine Months Ended September 30,	
	2023	2022
Numerator:	(in millions, except share and per share amounts)	
Net income attributable to common shareholders	$ 862	$ 884
Denominator:		
Weighted-average common shares outstanding for basic earnings per share	490,680,174	492,803,274
Weighted-average effect of dilutive securities - Employee equity awards	3,495,584	5,351,675
Weighted-average common shares outstanding for diluted earnings per share	494,175,758	498,154,949
Basic and diluted earnings per share:		
Basic earnings per share	$ 1.76	$ 1.79
Diluted earnings per share	$ 1.74	$ 1.77

In the table above, employee equity awards from our PSU program, which are considered contingently issuable, are included in the computation of dilutive earnings per share on a weighted average basis when management determines that the applicable performance criteria would have been met if the performance period ended as of the date of the relevant computation.

Securities that were not included in the computation of diluted earnings per share because their effect was antidilutive were immaterial for the three and nine months ended September 30, 2023 and 2022.

13. FAIR VALUE OF FINANCIAL INSTRUMENTS

The following tables present our financial assets and financial liabilities that were measured at fair value on a recurring basis as of September 30, 2023 and December 31, 2022.

	September 30, 2023			
	Total	Level 1	Level 2	Level 3
	(in millions)			
European government debt securities	$ 150	$ 150	$ —	$ —
State-owned enterprises and municipal securities	105	—	105	—
Swedish mortgage bonds	12	—	12	—
Corporate debt securities	5	—	5	—
Total assets at fair value	$ 272	$ 150	$ 122	$ —

	December 31, 2022			
	Total	Level 1	Level 2	Level 3
	(in millions)			
European government debt securities	$ 147	$ 147	$ —	$ —
State-owned enterprises and municipal securities	7	—	7	—
Swedish mortgage bonds	20	—	20	—
Corporate debt securities	7	—	7	—
Total assets at fair value	$ 181	$ 147	$ 34	$ —

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 and cash equivalents, 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.

We have certain investments, primarily our investment in OCC, which are accounted for under the equity method of accounting. We have elected the measurement alternative for the majority of our equity securities, which primarily represent various strategic investments made through our corporate venture program. See “Equity Method Investments,” and “Equity Securities,” of Note 6, “Investments,” for further discussion.

We also consider our debt obligations to be financial instruments. As of September 30, 2023, the majority of our debt obligations were fixed-rate obligations. We are exposed to changes in interest rates as a result of borrowings under our 2022 Revolving Credit Agreement, as the interest rates on this facility have a variable rate depending on the maturity of the borrowing and the implied underlying reference rate. We are also exposed to changes in interest rates on amounts outstanding from the sale of commercial paper under our commercial paper program. As of September 30, 2023, we had no outstanding borrowings under our 2022 Revolving Credit Agreement or commercial paper program. The fair value of our remaining debt obligations utilizing discounted cash flow analyses for our floating rate debt, and prevailing market rates for our fixed rate debt was $8.5 billion as of September 30, 2023 and $4.4 billion as of December 31, 2022. The discounted cash flow analyses are based on borrowing rates currently available to us for debt with similar terms and maturities. 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 8, “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 September 30, 2023 and December 31, 2022, there were no non-financial assets measured at fair value on a non-recurring basis.

14. CLEARING OPERATIONS

Nasdaq Clearing

Nasdaq Clearing is authorized and supervised under EMIR as a multi-asset clearinghouse by the SFSA. Such authorization is effective for all member states of the European Union and certain other non-member states that are part of the European Economic Area, including Norway. 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, and seafood derivatives. In June 2023, we entered into an agreement to sell our European energy trading and clearing business, subject to regulatory approval.

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, default fund and margin collateral requirements are calculated for each clearing member's positions in accounts with the CCP. See "Default Fund Contributions and Margin Deposits" below for further discussion of Nasdaq Clearing's default fund and margin requirements.

Nasdaq Clearing maintains three member sponsored default funds: one related to financial markets, one related to commodities markets and one related to the seafood market. 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. See "Default Fund Contributions" below for further discussion of Nasdaq Clearing's default fund. A power of assessment and a liability waterfall have also been implemented to further align risk between Nasdaq Clearing and its clearing members. See "Power of Assessment" and "Liability Waterfall" below for further discussion.

Default Fund Contributions and Margin Deposits

As of September 30, 2023, clearing member default fund contributions and margin deposits were as follows:

	September 30, 2023		
	Cash Contributions	Non-Cash Contributions	Total Contributions
	(in millions)		
Default fund contributions	$ 957	$ 151	$ 1,108
Margin deposits	4,978	5,069	10,047
Total	$ 5,935	$ 5,220	$ 11,155

Of the total default fund contributions of $1,108 million, Nasdaq Clearing can utilize $905 million as capital resources in the event of a counterparty default. The remaining balance of $203 million pertains to member posted surplus balances.

Our clearinghouse holds material amounts of clearing member cash deposits which are held or invested primarily to provide security of capital while minimizing credit, market and liquidity risks. While we seek to achieve a reasonable rate of return, we are primarily concerned with preservation of capital and managing the risks associated with these deposits.

Clearing member cash contributions are maintained in demand deposits held at central banks and large, highly rated financial institutions or secured through direct investments, primarily central bank certificates and highly rated European government debt securities with original maturities primarily one year or less, reverse repurchase agreements and multilateral development bank debt securities. Investments in reverse repurchase agreements range in maturity from 2 to 6 days and are secured with highly rated government securities and multilateral development banks. The carrying value of these securities approximates their fair value due to the short-term nature of the instruments and reverse repurchase agreements.

Nasdaq Clearing has invested the total cash contributions of $5,935 million as of September 30, 2023 and $7,021 million as of December 31, 2022, in accordance with its investment policy as follows:

	September 30, 2023	December 31, 2022
	(in millions)	
Demand deposits	$ 4,477	$ 4,775
Central bank certificates	992	1,695
Restricted cash and cash equivalents	**$ 5,469**	**$ 6,470**
European government debt securities	172	222
Reverse repurchase agreements	234	192
Multilateral development bank debt securities	60	137
Investments	**$ 466**	**$ 551**
Total	**$ 5,935**	**$ 7,021**

In the table above, the change from December 31, 2022 to September 30, 2023 includes currency translation adjustments of $286 million for restricted cash and cash equivalents and $21 million for investments.

For the nine months ended September 30, 2023 and 2022, investments related to default funds and margin deposits, net includes purchases of investment securities of $33,506 million and $35,019 million, respectively, and proceeds from sales and redemptions of investment securities of $33,570 million and $35,083 million, respectively.

In the investment activity related to default fund and margin contributions, we are exposed to counterparty risk related to reverse repurchase agreement transactions, which reflect the risk that the counterparty might become insolvent and, thus, fail to meet its obligations to Nasdaq Clearing. We mitigate this risk by only engaging in transactions with high credit quality reverse repurchase agreement counterparties and by limiting the acceptable collateral under the reverse repurchase agreement to high quality issuers, primarily government securities and other securities explicitly guaranteed by a government. The value of the underlying security is monitored during the lifetime of the contract, and in the event the market value of the underlying security falls below the reverse repurchase amount, our clearinghouse may require additional collateral or a reset of the contract.

Default Fund Contributions

Required contributions 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 maintained in demand deposits held at central banks and large, highly rated financial institutions or invested by Nasdaq Clearing, in accordance with its investment policy, either in central bank certificates, highly rated government debt securities, reverse repurchase agreements with highly rated government debt securities as collateral, or multilateral development bank debt securities. 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 September 30, 2023, Nasdaq Clearing committed capital totaling $115 million to the liability waterfall and overall regulatory capital, in the form of government debt securities, which are recorded as financial investments in the Condensed Consolidated Balance Sheets. The combined regulatory capital of the clearing members and Nasdaq Clearing is intended to secure the obligations of a clearing member exceeding such member's own margin and default fund deposits 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 and are recorded in revenues. These cash deposits are recorded in default funds and margin deposits in the Condensed Consolidated Balance Sheets as both a current asset and a 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 and default fund 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 and default fund 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 cleared 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, excluding any liability related to the Nasdaq commodities clearing default (see discussion above), the estimated liability was nominal and no liability was recorded as of September 30, 2023.

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 230% 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 and default fund contribution 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 $39 million as of September 30, 2023;
- 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; and
- fully segregated senior capital for each specific market contributed by Nasdaq Clearing, calculated in accordance with clearinghouse rules, which totaled $16 million as of September 30, 2023.

If additional funds are needed after utilization of the liability waterfall, or if part of the waterfall has been utilized and needs to be replenished, 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.

In addition to the capital held to withstand counterparty defaults described above, Nasdaq Clearing also has committed capital of $60 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.

Market Value of Derivative Contracts Outstanding

The following table presents the market value of derivative contracts outstanding prior to netting:

	September 30, 2023
	(in millions)
Commodity and seafood options, futures and forwards	$ 124
Fixed-income options and futures	2,324
Stock options and futures	141
Index options and futures	26
Total	$ 2,615

In the table above:

- 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.
- We determined the fair value of our futures contracts based upon quoted market prices and average quoted market yields.
- We determined the fair value of our forward contracts using standard valuation models that were based on market-based observable inputs including benchmark rates and the spot price of the underlying instrument.

Derivative Contracts Cleared

The following table presents the total number of derivative contracts cleared through Nasdaq Clearing for the nine months ended September 30, 2023 and 2022:

	Nine Months Ended September 30,	
	2023	2022
Commodity and seafood options, futures and forwards	172,222	249,227
Fixed-income options and futures	14,437,712	17,233,036
Stock options and futures	15,584,780	13,737,846
Index options and futures	30,059,441	34,191,390
Total	60,254,155	65,411,499

In the table above, the total volume in cleared power related to commodity contracts was 284 Terawatt hours (TWh) and 337 TWh for the nine months ended September 30, 2023 and 2022, respectively.

Resale and Repurchase Agreements Contracts Outstanding and Cleared

The outstanding contract value of resale and repurchase agreements was $1.9 billion and $2.7 billion as of September 30, 2023 and 2022, respectively. The total number of resale and repurchase agreements contracts cleared was 3,519,163 and 4,835,371 for the nine months ended September 30, 2023 and 2022, respectively.

15. LEASES

We have operating leases which are primarily real estate leases predominantly for our U.S. and European headquarters, data centers and for general office space. The following table provides supplemental balance sheet information related to Nasdaq's operating leases:

Leases	Balance Sheet Classification	September 30, 2023	December 31, 2022
		(in millions)	
Assets:			
Operating lease assets	Operating lease assets	$ 397	$ 444
Liabilities:			
Current lease liabilities	Other current liabilities	$ 57	$ 54
Non-current lease liabilities	Operating lease liabilities	412	452
Total lease liabilities		$ 469	$ 506

The following table summarizes Nasdaq's lease cost:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022
	(in millions)			
Operating lease cost	$ 19	$ 18	$ 68	$ 56
Variable lease cost	10	8	32	25
Sublease income	(1)	(1)	(1)	(3)
Total lease cost	$ 28	$ 25	$ 99	$ 78

In the table above, operating lease costs include short-term lease cost, which was immaterial.

In the first quarter of 2023, we initiated a review of our real estate and facility capacity requirements due to our new and evolving work models. As a result of this ongoing review, for the nine months ended September 30, 2023, we recorded impairment charges of $23 million, of which $13 million related to operating lease asset impairment and is included in operating lease cost in the table above, $5 million related to exit costs and is included in variable lease cost in the table above and $5 million related to impairment of leasehold improvements, which are recorded in depreciation and amortization expense in the Condensed Consolidated Statements of Income. We fully impaired our lease assets for locations that we vacated with no intention to sublease. Substantially all of the property, equipment and leasehold improvements associated with the vacated leased office space were fully impaired as there are no expected future cash flows for these items.

The following table reconciles the undiscounted cash flows for each of the first five years and total of the remaining years to the operating lease liabilities recorded in our Condensed Consolidated Balance Sheets.

	September 30, 2023
	(in millions)
Remainder of 2023	$ 17
2024	71
2025	62
2026	51
2027	48
2028+	316
Total lease payments	565
Less: interest	(96)
Present value of lease liabilities	$ 469

In the table above, interest is calculated using the interest rate for each lease. Present value of lease liabilities includes the current portion of $57 million.

Total lease payments in the table above exclude $44 million of legally binding minimum lease payments for leases signed but not yet commenced.

The following table provides information related to Nasdaq's lease term and discount rate:

	September 30, 2023
Weighted-average remaining lease term (in years)	10.1
Weighted-average discount rate	3.7 %

The following table provides supplemental cash flow information related to Nasdaq's operating leases:

	Nine Months Ended September 30,	
	2023	2022
	(in millions)	
Cash paid for amounts included in the measurement of operating lease liabilities	$ 57	$ 47
Lease assets obtained in exchange for operating lease liabilities	$ 8	$ 130

16. INCOME TAXES

Income Tax Provision

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

	Three Months Ended September 30,	
	2023	2022
	(in millions)	
Income tax provision	$ 97	$ 88
Effective tax rate	24.8 %	23.0 %

	Nine Months Ended September 30,	
	2023	2022
	(in millions)	
Income tax provision	$ 262	$ 270
Effective tax rate	23.3 %	23.4 %

The higher effective tax rate for the three months ended September 30, 2023, as compared to the prior year period, was primarily due to the income tax effect on the geographic mix of earnings. The effective tax rate may vary from period to period depending on, among other factors, the geographic and business mix of earnings and losses. These and other factors, including history of pre-tax earnings and losses, are taken into account in assessing the ability to realize deferred tax assets.

Tax Audits

Nasdaq and its eligible subsidiaries file a consolidated U.S. federal income tax return, applicable state and local income tax returns and non-U.S. income tax returns. We are subject to examination by federal, state and local, and foreign tax authorities. Our federal income tax returns for the years 2018 through 2022 are subject to examination by the Internal Revenue Service. Several state tax returns are currently under examination by the respective tax authorities for the years 2012 through 2021. Non-U.S. tax returns are subject to examination by the respective tax authorities for the years 2017 through 2022.

We regularly assess the likelihood of additional assessments by each jurisdiction and have established tax reserves that we believe are adequate in relation to the potential for additional assessments. Examination outcomes and the timing of examination settlements are subject to uncertainty. 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 condensed consolidated financial position or results of operations, but may be material to our operating results for a particular period and the effective tax rate for that period. We do not expect the settlement of any tax audits to be material in the next twelve months.

17. COMMITMENTS, CONTINGENCIES AND GUARANTEES

Guarantees Issued and Credit Facilities Available

In addition to the default fund contributions and margin collateral pledged by clearing members discussed in Note 14, “Clearing Operations,” we have obtained financial guarantees and credit facilities, which are guaranteed by us through counter indemnities, to provide further liquidity related to our clearing businesses. Financial guarantees issued to us totaled $4 million as of September 30, 2023 and December 31, 2022. As discussed in “Other Credit Facilities,” of Note 8, “Debt Obligations,” we also have credit facilities primarily related to our Nasdaq Clearing operations, which are available in multiple currencies, and totaled $176 million as of September 30, 2023 and $184 million as of December 31, 2022 in available liquidity, none of which was utilized.

Other Guarantees

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

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

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

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

Armenian Stock Exchange Investigation

As disclosed in our prior filings with the SEC, a former non-U.S. subsidiary of Nasdaq, NASDAQ OMX Armenia OJSC, operated the Armenian Stock Exchange and the Central Depository of Armenia, which are regulated by the Central Bank of Armenia under Armenian law. In accordance with the requirements of Armenian law, Mellat Bank SB CJSC, an Armenian entity that is designated under Executive Order 13382, was a market participant on the Armenian Stock Exchange and, as a result, paid participation and transaction fees to the Armenian Stock Exchange during the period from 2012-2014. In 2014, we voluntarily self-disclosed this matter to the U.S. Department of Treasury's Office of Foreign Assets Control, or OFAC, and received authorization from OFAC to continue, if necessary, certain activities pertaining to Mellat Bank SB CJSC in Armenia in a limited manner. In 2015, Nasdaq sold a majority of its ownership of Nasdaq OMX Armenia OJSC, with the remaining minority interest sold in 2018.

OFAC has been conducting an inquiry into the Armenian Stock Exchange matter described above and in our prior filings since 2016, and during the first quarter of 2021, we were advised that OFAC is considering a civil monetary penalty in connection with that matter. We are currently in discussions with OFAC.

We believe our decision to voluntarily self-report this issue and our continued cooperation with OFAC, along with the permit we received from OFAC in connection with our transactions involving the Armenian Stock Exchange, will be mitigating factors with respect to the matter, and that any monetary fines or restrictions will not be material to our financial results. Accordingly, we expect to reach a settlement with OFAC during the fourth quarter of 2023 and have accrued for an immaterial loss contingency.

CFTC Matter

In June 2022, NASDAQ Futures, Inc. ("NFX"), a non-operational, wholly-owned subsidiary of Nasdaq, received a telephonic "Wells Notice" from the staff of the CFTC relating to certain alleged potential violations by NFX of provisions of the Commodity Exchange Act and CFTC rules thereunder during the period beginning July 2015 through October 2018. The Wells Notice informed NFX that the CFTC staff has made, subject to consideration of NFX's response, a preliminary determination to recommend that the CFTC authorize an enforcement action against NFX in connection with its former futures exchange business. Nasdaq sold NFX's futures exchange business to a third-party in November 2019, including the portfolio of open interest in NFX contracts. During 2020, all remaining open interest in NFX contracts was migrated to other exchanges and NFX ceased operation. A Wells Notice is neither a formal charge of wrongdoing nor a final determination that the recipient has violated any law. NFX has submitted a response to the Wells Notice that contests all aspects of the CFTC staff's position. The CFTC staff subsequently informed us that it plans to formally recommend that the CFTC authorize a civil enforcement action. We cannot predict if or when such an action will be brought, including the scope of the claims or the remedy sought, but such action could commence at any time, and the scope of claims or remedies sought could be material. We believe that NFX would have defenses to any claims if they are the same as those alleged by the CFTC staff during the Wells Notice process. We are unable to predict the ultimate outcome of this matter or the amount or type of remedies that the CFTC may seek or obtain, but any such remedies could have a material negative effect on our operating results and reputation. Accordingly, we are unable to reasonably estimate any potential loss or range of loss, and therefore, we have not accrued for a loss contingency.

SFSA Inquiry

In September 2023, Nasdaq Stockholm AB, a wholly-owned subsidiary of Nasdaq and the operator of the Nasdaq Stockholm exchange, received a written notification from the SFSA regarding a review initiated with regard to the obligation of Nasdaq Stockholm AB to report suspected market abuse. The review, which is still at a preliminary stage, was initiated in connection with an investigation of alleged insider trading in the shares of four companies listed on the Nasdaq Stockholm exchange. The notification stated that the SFSA is reviewing whether Nasdaq Stockholm AB, by not reporting certain suspicious transactions in the four listed companies, breached its obligation under certain provisions of the Market Abuse Regulation rules. Nasdaq Stockholm AB is cooperating fully and is engaged in ongoing communications with the SFSA.

Other Matters

Except as disclosed above and in our 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 inquiries. Management believes that censures, fines, penalties or other sanctions that could result from any ongoing examinations or inquiries 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. See "Tax Audits," of Note 16, "Income Taxes," for further discussion.

18. BUSINESS SEGMENTS

In 2022, we announced a new organizational structure, which aligns our businesses more closely with the foundational shifts that are driving the evolution of the global financial system. In order to amplify our strategy, we aligned the Company more closely with evolving client needs. During the fourth quarter of 2022, we began to manage, operate and provide our products and services in line with this new divisional structure. As a result, our four previous business segments, Market Technology, Investment Intelligence, Corporate Platforms and Market Services have been changed to align with our new corporate structure that includes three business segments: Market Platforms, Capital Access Platforms and Anti-Financial Crime. See Note 1, "Organization and Nature of Operations," for further discussion of our reportable segments.

This Quarterly Report on Form 10-Q presents our results in alignment with the new corporate structure. All periods presented are restated to reflect the new structure.

Our management allocates resources, assesses performance and manages these businesses as three 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. Our chief operating decision maker does not review total assets or statements of income below operating income by segments as key performance metrics; therefore, such information is not presented below.

The following tables present certain information regarding our business segments for the three and nine months ended September 30, 2023 and 2022:

	Three Months Ended September 30,	
	2023	2022
	(in millions)	
Market Platforms		
Total revenues	$ 892	$ 1,046
Transaction-based expenses	(511)	(667)
Revenues less transaction-based expenses	381	379
Operating income	200	213
Capital Access Platforms		
Total revenues	456	422
Operating income	254	233
Anti-Financial Crime		
Total revenues	93	77
Operating income	31	21
Corporate Items		
Total revenues	10	12
Operating loss	(54)	(69)
Consolidated		
Total revenues	$ 1,451	$ 1,557
Transaction-based expenses	(511)	(667)
Revenues less transaction-based expenses	$ 940	$ 890
Operating income	$ 431	$ 398

	Nine Months Ended September 30,	
	2023	2022
	(in millions)	
Market Platforms		
Total revenues	$ 2,813	$ 3,121
Transaction-based expenses	(1,639)	(1,969)
Revenues less transaction-based expenses	1,174	1,152
Operating income	634	640
Capital Access Platforms		
Total revenues	1,309	1,262
Operating income	720	703
Anti-Financial Crime		
Total revenues	265	224
Operating income	85	56
Corporate Items		
Total revenues	30	37
Operating loss	(214)	(184)
Consolidated		
Total revenues	$ 4,417	$ 4,644
Transaction-based expenses	(1,639)	(1,969)
Revenues less transaction-based expenses	$ 2,778	$ 2,675
Operating income	$ 1,225	$ 1,215

Certain amounts are allocated to Corporate Items in our management reports as we believe they do not contribute to a meaningful evaluation of a particular segment's ongoing operating performance. Management does not consider these items 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 the below items provide management with a useful representation of our segments' ongoing activity in each period. These items, which are presented in the table below, include the following:

- *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.

- *Merger and strategic initiatives expense:* We have pursued various strategic initiatives and completed acquisitions and divestitures in recent years that 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. For the nine months ended September 30, 2023, these costs primarily relate to the Adenza acquisition.

- *Restructuring charges:* In October 2022, following our September 2022 announcement to realign our segments and leadership, we initiated a divisional alignment program with a focus on realizing the full potential of this structure. See Note 19, "Restructuring Charges," for further discussion of this plan.

- *Revenues and expenses - divested businesses:* For the three and nine months ended September 30, 2023 and 2022, these amounts include revenues and expenses related to our European power trading and clearing business, following our announcement in June 2023 to sell this business, subject to regulatory approval. Historically, these amounts were included in our Market Platforms and Capital Access Platforms results. For the nine months ended September 30, 2022 these amounts also include revenues and expenses related to our Nordic broker services business, for which we completed the wind-down in June 2022. Prior to the closing of the transaction, these amounts were included in our Market Platforms results. For the three and nine months ended September 30, 2023 and 2022, other revenues also include a transitional services agreement associated with a divested business.

- *Other items:* We have included certain other charges or gains in corporate items, to the extent we believe they should be excluded when evaluating the ongoing operating performance of each individual segment. Other items primarily include:

  - for the nine months ended September 30, 2023, impairment charges related to our lease assets and leasehold improvements associated with vacating certain leased office space which are recorded in occupancy expense and depreciation and amortization expense in our Condensed Consolidated Statements of Income;

  - for the nine months ended September 30, 2023, other items include insurance recoveries related to certain legal matters, which are recorded in professional and contract services and general, administrative and other expense in the Condensed Consolidated Statements of Income;

  - for the three and nine months ended September 30, 2022, other items include an accrual related to legal matters which are recorded in professional and contract services and general, administrative and other expense in the Condensed Consolidated Statements of Income; and

  - for the nine months ended September 30, 2022, other items primarily include a loss on extinguishment of debt, which is recorded in general administrative and other expense in the Condensed Consolidated Statements of Income.

The following table summarizes our Corporate Items:

	Three Months Ended September 30,	
	2023	2022
	(in millions)	
Revenues - divested businesses	$ 10	$ 12
Expenses:		
Amortization expense of acquired intangible assets	$ 37	$ 38
Merger and strategic initiatives expense	4	14
Restructuring charges	17	—
Expenses - divested businesses	4	6
Other	2	23
Total expenses	64	81
Operating loss	$ (54)	$ (69)

	Nine Months Ended September 30,	
	2023	2022
	(in millions)	
Revenues - divested businesses	$ 30	$ 37
Expenses:		
Amortization expense of acquired intangible assets	112	116
Merger and strategic initiatives expense	51	41
Restructuring charges	49	—
Lease asset impairments	24	—
Extinguishment of debt	—	16
Expenses - divested businesses	16	20
Other	(8)	28
Total expenses	244	221
Operating loss	$ (214)	$ (184)

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

19. RESTRUCTURING CHARGES

In October 2022, following our September 2022 announcement to realign our segments and leadership, we initiated a divisional alignment program with a focus on realizing the full potential of this structure. In connection with the program, we expect to incur $115 million to $145 million in pre-tax charges principally related to employee-related costs, consulting, asset impairments and contract terminations over a two-year period. Costs related to the divisional alignment program will be recorded as restructuring charges in the Condensed Consolidated Statements of Income.

The following table presents a summary of the divisional alignment program charges for the three and nine months ended September 30, 2023 as well as total program costs incurred since the initiation in October 2022.

	Three Months Ended September 30, 2023	Nine Months Ended September 30, 2023	Total Program Costs Incurred
		(in millions)	
Asset impairment charges	$ —	$ 12	$ 20
Consulting services	9	20	23
Employee-related costs	4	10	13
Other	4	7	8
Total restructuring charges	$ 17	$ 49	$ 64

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.

OVERVIEW

Nasdaq is a global technology company serving corporate clients, investment managers, banks, brokers, and exchange operators as they navigate and interact with the global capital markets and the broader financial system. We aspire to deliver world-leading platforms that improve the liquidity, transparency, and integrity of the global economy. Our diverse offering of data, analytics, software, exchange capabilities, and client-centric services enables clients to optimize and execute their business vision with confidence.

In September 2022, we announced a new organizational structure, which aligns our businesses more closely with the foundational shifts that are driving the evolution of the global financial system. The new corporate structure includes three business segments: Market Platforms, Capital Access Platforms and Anti-Financial Crime. See 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 three separate segments. All prior periods have been restated to conform to the current period presentation.

Third Quarter 2023 and Recent Developments

- On November 1, 2023, we completed the acquisition of Adenza. Following this acquisition, we will modify our corporate structure to operate under three divisions: Market Services, Capital Access Platforms and Financial Technology. Adenza, which is comprised of the Calypso and AxiomSL solutions, will be included in the Financial Technology division.
- In October 2023, the board of directors approved a regular quarterly cash dividend of $0.22 per share on our outstanding common stock.
- The Nasdaq Stock Market led U.S. exchanges for operating company IPOs during the third quarter of 2023 with a 93% total win rate, and there were seven companies that switched to Nasdaq.
- We achieved a new record for third quarter U.S. cash equities closing cross volumes. U.S. cash equities revenue and revenue capture benefited from third quarter closing cross volumes, including a special rebalance of Nasdaq-100 that had approximately 500 million shares and $70 billion notional traded.
- For the three months ended September 30, 2023, we returned $108 million to shareholders through dividend payments.
- In September 2023, our board of directors authorized an increase to our share repurchase program, bringing the aggregate remaining authorized amount to $2 billion as of September 30, 2023.

Nasdaq's Operating Results

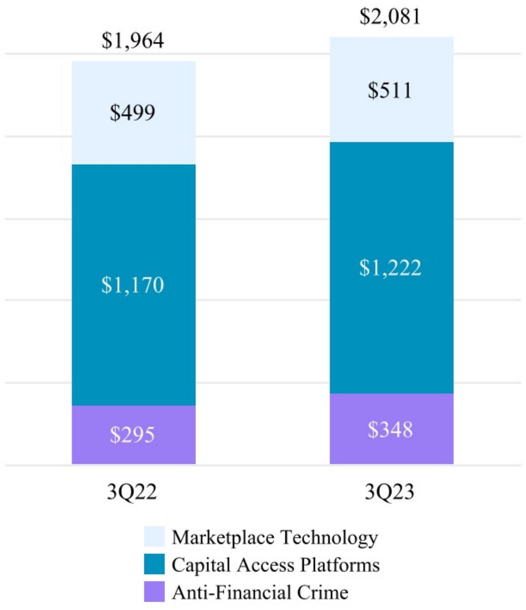
The following tables summarize our financial performance for the three and nine months ended September 30, 2023 compared to the same periods in 2022. For a detailed discussion of our results of operations, see "Segment Operating Results" below.

	Three Months Ended September 30,		Percentage Change
	2023	2022	
	(in millions, except per share amounts)		
Revenues less transaction-based expenses	$ 940	$ 890	5.6 %
Operating expenses	509	492	3.5 %
Operating income	431	398	8.3 %
Net income attributable to Nasdaq	$ 294	$ 294	— %
Diluted earnings per share	$ 0.60	$ 0.59	1.7 %
Cash dividends declared per common share	$ 0.22	$ 0.20	10.0 %

	Nine Months Ended September 30,		Percentage Change
	2023	2022	
	(in millions, except per share amounts)		
Revenues less transaction-based expenses	$ 2,778	$ 2,675	3.9 %
Operating expenses	1,553	1,460	6.4 %
Operating income	1,225	1,215	0.8 %
Net income attributable to Nasdaq	$ 862	$ 884	(2.5)%
Diluted earnings per share	$ 1.74	$ 1.77	(1.7)%
Cash dividends declared per common share	$ 0.64	$ 0.58	10.3 %

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."

The following chart summarizes our ARR (in millions):

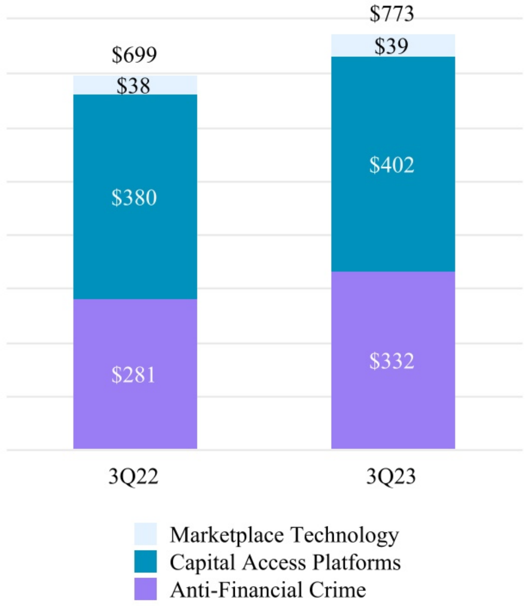


ARR for a given period is the annualized revenue derived from subscription contracts with a defined contract value. This excludes contracts that are not recurring, are one-time in nature, or where the contract value fluctuates based on defined metrics. Also excluded are contracts that are signed but not yet commenced. ARR is one of our key performance metrics to assess the health and trajectory of our recurring business. ARR does not have any standardized definition and is therefore unlikely to be comparable to similarly titled measures presented by other companies. ARR should be viewed independently of revenue and deferred revenue and is not intended to be combined with or to replace either of those items. ARR is not a forecast and the active contracts at the end of a reporting period used in calculating ARR may or may not be extended or renewed by our customers.

The ARR chart includes:

- Market technology support and SaaS subscription contracts as well as trade management services contracts, excluding one-time service requests.
- Proprietary market data subscriptions and annual listing fees within our Data & Listing Services business, index data subscriptions and guaranteed minimum on futures contracts within our Index business and subscription contracts under our Workflow & Insights business.
- Anti-Financial Crime support and SaaS subscription contracts.

The following chart summarizes our quarterly annualized SaaS revenues for our Solutions Businesses, which are comprised of the Capital Access Platforms and Anti-Financial Crime segments and the Marketplace Technology business within the Market Platforms segment, for September 30, 2023 and 2022 (in millions):



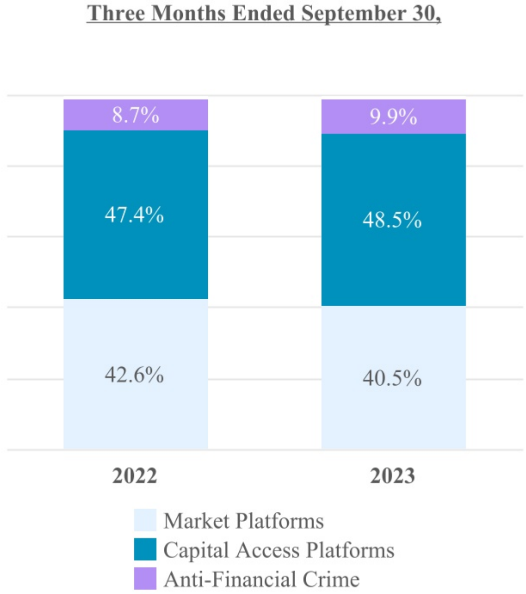
Segment Operating Results

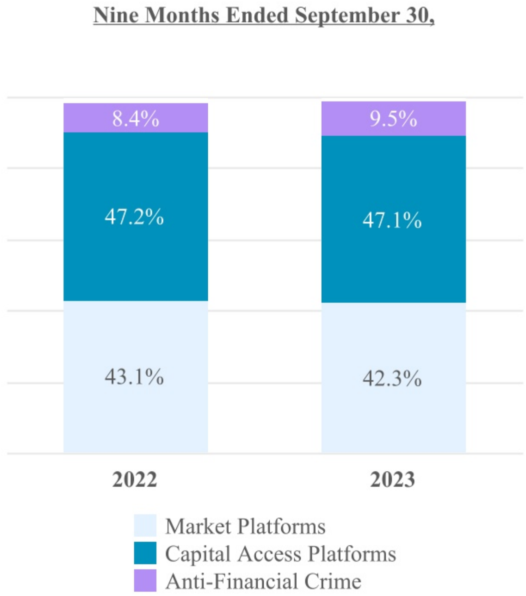
The following table presents our revenues by segment, transaction-based expenses for our Market Platforms segment and total revenues less transaction-based expenses:

	Three Months Ended September 30, 2023	Three Months Ended September 30, 2022	Percentage Change
	(in millions)		
Market Platforms	$ 892	$ 1,046	(14.7)%
Capital Access Platforms	456	422	8.1 %
Anti-Financial Crime	93	77	20.8 %
Other revenues	10	12	(16.7)%
Total revenues	$ 1,451	$ 1,557	(6.8)%
Transaction rebates	(447)	(494)	(9.5)%
Brokerage, clearance and exchange fees	(64)	(173)	(63.0)%
Total revenues less transaction-based expenses	$ 940	$ 890	5.6 %

	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022	Percentage Change
	(in millions)		
Market Platforms	$ 2,813	$ 3,121	(9.9)%
Capital Access Platforms	1,309	1,262	3.7 %
Anti-Financial Crime	265	224	18.3 %
Other revenues	30	37	(18.9)%
Total revenues	4,417	4,644	(4.9)%
Transaction rebates	(1,377)	(1,605)	(14.2)%
Brokerage, clearance and exchange fees	(262)	(364)	(28.0)%
Total revenues less transaction-based expenses	$ 2,778	$ 2,675	3.9 %

The following charts present our Market Platforms, Capital Access Platforms and Anti-Financial Crime segments as a percentage of our total revenues, less transaction-based expenses.





In the charts above, Other revenues, which make up approximately 1% for both periods presented, are not shown.

MARKET PLATFORMS

The following tables present revenues from our Market Platforms segment:

	Three Months Ended September 30, 2023	Three Months Ended September 30, 2022	Percentage Change
	(in millions)		
Trading Services	$ 747	$ 906	(17.5)%
Marketplace Technology	145	140	3.6 %
Total Market Platforms	$ 892	$ 1,046	(14.7)%
Transaction-based expenses:			
Transaction rebates	(447)	(494)	(9.5)%
Brokerage, clearance and exchange fees	(64)	(173)	(63.0)%
Total Market Platforms, net	$ 381	$ 379	0.5 %

	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022	Percentage Change
	(in millions)		
Trading Services	$ 2,378	$ 2,712	(12.3)%
Marketplace Technology	435	409	6.4 %
Total Market Platforms	$ 2,813	$ 3,121	(9.9)%
Transaction-based expenses:			
Transaction rebates	(1,377)	(1,605)	(14.2)%
Brokerage, clearance and exchange fees	(262)	(364)	(28.0)%
Total Market Platforms, net	$ 1,174	$ 1,152	1.9 %

Trading Services

Our Trading Services business includes equity derivatives trading, cash equity trading, Nordic fixed income trading & clearing, U.S. Tape plans and other revenues. The following tables present net revenues by product from our Trading Services business:

	Three Months Ended September 30, 2023	Three Months Ended September 30, 2022	Percentage Change
	(in millions)		
U.S. Equity Derivative Trading	$ 92	$ 92	— %
Cash Equity Trading	93	94	(1.1)%
U.S. Tape plans	35	36	(2.8)%
Other	16	17	(5.9)%
Trading Services, net	$ 236	$ 239	(1.3)%

	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022	Percentage Change
	(in millions)		
U.S. Equity Derivative Trading	$ 283	$ 275	2.9 %
Cash Equity Trading	299	300	(0.3)%
U.S. Tape plans	107	113	(5.3)%
Other	50	55	(9.1)%
Trading Services, net	$ 739	$ 743	(0.5)%

In the tables above, Other includes Nordic fixed income trading & clearing, Nordic derivatives and Canadian cash equities trading.

U.S. Equity Derivative Trading

The following tables present total revenues, transaction-based expenses, and total revenues less transaction-based expenses as well as key drivers from our U.S. Equity Derivative Trading business:

	Three Months Ended September 30, 2023	Three Months Ended September 30, 2022	Percentage Change
	(in millions)		
U.S. Equity Derivative Trading Revenues	$ 316	$ 316	— %
Section 31 fees	9	26	(65.4)%
Transaction-based expenses:			
Transaction rebates	(223)	(222)	0.5 %
Section 31 fees	(9)	(26)	(65.4)%
Brokerage and clearance fees	(1)	(2)	(50.0)%
U.S. Equity derivative trading revenues, net	$ 92	$ 92	— %

	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022	Percentage Change
	(in millions)		
U.S. Equity Derivative Trading Revenues	$ 940	$ 938	0.2 %
Section 31 fees	43	46	(6.5)%
Transaction-based expenses:			
Transaction rebates	(654)	(660)	(0.9)%
Section 31 fees	(43)	(46)	(6.5)%
Brokerage and clearance fees	(3)	(3)	— %
U.S. Equity derivative trading revenues, net	$ 283	$ 275	2.9 %

Section 31 fees are recorded as U.S. equity derivative and cash equity trading revenues with a corresponding amount recorded in transaction-based expenses. 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 traded. Section 31 fees decreased in the third quarter and the first nine months of 2023 compared with the same periods in 2022 primarily due to lower average SEC fee rates. Since the amount recorded in revenues is equal to the amount recorded as Section 31 fees, there is no impact on our net revenues.

	Three Months Ended September 30,	
	2023	2022
U.S. equity options		
Total industry average daily volume (in millions)	39.6	37.0
Nasdaq PHLX matched market share	11.0 %	11.2 %
The Nasdaq Options Market matched market share	5.6 %	8.3 %
Nasdaq BX Options matched market share	4.4 %	3.9 %
Nasdaq ISE Options matched market share	5.7 %	5.5 %
Nasdaq GEMX Options matched market share	3.0 %	2.1 %
Nasdaq MRX Options matched market share	2.0 %	1.6 %
Total matched market share executed on Nasdaq's exchanges	31.7 %	32.6 %

	Nine Months Ended September 30,	
	2023	2022
U.S. equity options		
Total industry average daily volume (in millions)	40.4	37.9
Nasdaq PHLX matched market share	11.2 %	11.4 %
The Nasdaq Options Market matched market share	6.4 %	8.3 %
Nasdaq BX Options matched market share	3.6 %	2.7 %
Nasdaq ISE Options matched market share	5.8 %	5.6 %
Nasdaq GEMX Options matched market share	2.3 %	2.3 %
Nasdaq MRX Options matched market share	1.7 %	1.7 %
Total matched market share executed on Nasdaq's exchanges	31.0 %	32.0 %

U.S. equity derivative trading revenues and U.S. equity derivative trading revenues less transaction-based expenses remained flat in the third quarter compared with the same period in 2022 primarily due to higher industry trading volumes, offset by lower overall matched market share executed on Nasdaq's exchanges and lower capture rates.

U.S. equity derivative trading revenues and U.S. equity derivative trading revenues less transaction-based expenses increased in the first nine months of 2023 compared with the same period in 2022 primarily due to higher industry trading volumes, partially offset by lower overall matched market share executed on Nasdaq's exchanges. U.S. equity derivative trading revenues was also partially offset by lower capture in the first nine months of 2023 compared with the same period in 2022.

Transaction rebates, in which we credit a portion of the execution charge to the market participant, remained relatively flat in the third quarter of 2023 compared with the same period in 2022. Transaction rebates decreased in the first nine months of 2023 compared with the same period in 2022 primarily due to lower rebate capture rate and lower overall U.S. matched market share executed on Nasdaq's exchanges, partially offset by higher industry trading volumes.

Cash Equity Trading Revenues

The following tables present total revenues, transaction-based expenses, and total revenues less transaction-based expenses as well as key drivers and other metrics from our Cash Equity Trading business:

	Three Months Ended September 30,		Percentage Change
	2023	2022	
	(in millions)		
Cash Equity Trading Revenues	$ 316	$ 365	(13.4)%
Section 31 fees	50	140	(64.3)%
Transaction-based expenses:			
Transaction rebates	(219)	(266)	(17.7)%
Section 31 fees	(50)	(140)	(64.3)%
Brokerage and clearance fees	(4)	(5)	(20.0)%
Cash equity trading revenues, net	$ 93	$ 94	(1.1)%

	Nine Months Ended September 30,		Percentage Change
	2023	2022	
	(in millions)		
Cash Equity Trading Revenues	$ 1,022	$ 1,240	(17.6)%
Section 31 fees	201	296	(32.1)%
Transaction-based expenses:			
Transaction rebates	(708)	(921)	(23.1)%
Section 31 fees	(201)	(296)	(32.1)%
Brokerage and clearance fees	(15)	(19)	(21.1)%
Cash equity trading revenues, net	$ 299	$ 300	(0.3)%

See the discussion in "U.S. Equity Derivative Trading" for an explanation of Section 31 fees for the third quarter and the first nine months of 2023 as compared to the same periods in 2022. Since the amount recorded in revenues is equal to the amount recorded as Section 31 fees, there is no impact on our net revenues.

	Three Months Ended September 30,	
	2023	2022
Total U.S.-listed securities		
Total industry average daily share volume (in billions)	10.4	10.9
Matched share volume (in billions)	106.7	119.9
The Nasdaq Stock Market matched market share	15.5 %	15.9 %
Nasdaq BX matched market share	0.4 %	0.5 %
Nasdaq PSX matched market share	0.3 %	0.8 %
Total matched market share executed on Nasdaq's exchanges	16.2 %	17.2 %
Market share reported to the FINRA/Nasdaq Trade Reporting Facility	40.2 %	36.9 %
Total market share	56.4 %	54.1 %
Nasdaq Nordic and Nasdaq Baltic securities		
Average daily number of equity trades executed on Nasdaq's exchanges	556,257	784,672
Total average daily value of shares traded (in billions)	$ 3.6	$ 4.3
Total market share executed on Nasdaq's exchanges	71.6 %	71.1 %

	Nine Months Ended September 30,	
	2023	2022
Total U.S.-listed securities		
Total industry average daily share volume (in billions)	11.0	12.1
Matched share volume (in billions)	342.2	401.2
The Nasdaq Stock Market matched market share	15.9 %	16.3 %
Nasdaq BX matched market share	0.4 %	0.5 %
Nasdaq PSX matched market share	0.4 %	0.8 %
Total matched market share executed on Nasdaq's exchanges	16.7 %	17.6 %
Market share reported to the FINRA/Nasdaq Trade Reporting Facility	35.2 %	34.8 %
Total market share	51.9 %	52.4 %
Nasdaq Nordic and Nasdaq Baltic securities		
Average daily number of equity trades executed on Nasdaq's exchanges	676,132	953,090
Total average daily value of shares traded (in billions)	$ 4.5	$ 5.6
Total market share executed on Nasdaq's exchanges	70.6 %	72.1 %

In the tables above, total market share 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.

Cash equity trading revenues decreased in the third quarter and first nine months of 2023 compared with the same periods in 2022 primarily due to lower industry trading volumes, lower overall U.S. matched market share executed on Nasdaq's exchanges, as well as lower capture rates.

Cash equity trading revenues less transaction-based expenses remained relatively flat in the third quarter and first nine months of 2023 compared with the same periods in 2022 primarily due to lower industry trading volumes and lower overall U.S. matched market share executed on Nasdaq's exchanges, partially offset by higher U.S. capture rate.

Transaction rebates decreased in the third quarter and first nine months of 2023 compared with the same periods in 2022. For The Nasdaq Stock Market 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. The decrease was primarily due to lower rebate capture rate, lower U.S. industry volumes, and lower U.S. matched market share executed on Nasdaq's exchanges.

U.S. Tape Plans

The following table presents revenues from our U.S. Tape plans business:

	Three Months Ended September 30,		Percentage Change
	2023	2022	
	(in millions)		
U.S. Tape plans	$ 35	$ 36	(2.8)%

	Nine Months Ended September 30,		Percentage Change
	2023	2022	
	(in millions)		
U.S. Tape plans	$ 107	$ 113	(5.3)%

U.S. Tape plans revenues remained relatively flat in the third quarter of 2023 compared with the same period in 2022. U.S. Tape plans revenues decreased in the first nine months of 2023 compared with the same period in 2022 primarily due to lower market share and lower collections.

Other

Other includes Nordic fixed income trading and clearing, Nordic derivatives and Canadian cash equities trading. The following table presents revenue and a key driver from our Other business:

	Three Months Ended September 30, 2023	Three Months Ended September 30, 2022	Percentage Change
	(in millions)		
Other	$ 16	$ 17	(5.9)%

	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022	Percentage Change
	(in millions)		
Other	$ 50	$ 55	(9.1)%

In the table above, Other includes transaction rebates of $5 million and $6 million for the three months ended September 30, 2023 and 2022, respectively, and $15 million and $24 million for the nine months ended September 30, 2023 and 2022, respectively.

	Three Months Ended September 30, 2023	Three Months Ended September 30, 2022
Nasdaq Nordic and Nasdaq Baltic options and futures		
Total average daily volume of options and futures contracts	245,986	267,137

	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022
Nasdaq Nordic and Nasdaq Baltic options and futures		
Total average daily volume of options and futures contracts	298,785	303,095

In the tables above, Nasdaq Nordic and Nasdaq Baltic total average daily volume of options and futures contracts include Finnish option contracts traded on Eurex for which Nasdaq and Eurex have a revenue sharing arrangement.

Other revenues decreased in the third quarter and the first nine months of 2023 compared with the same periods in 2022 primarily due to lower trading volumes as well as the unfavorable impact of changes in foreign exchange rates.

Marketplace Technology

Marketplace Technology includes our trade management services and market technology businesses.

The following tables present revenues and key drivers from our Marketplace Technology business:

	Three Months Ended September 30, 2023	Three Months Ended September 30, 2022	Percentage Change
	(in millions)		
Marketplace Technology	$ 145	$ 140	3.6 %

	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022	Percentage Change
	(in millions)		
Marketplace Technology	$ 435	$ 409	6.4 %

	As of or Three Months Ended September 30, 2023	As of or Three Months Ended September 30, 2022
	(in millions)	
ARR	$ 511	$ 499
Quarterly annualized SaaS revenues	39	38
Order intake	33	30

	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022
	(in millions)	
Order intake	155	157

In the table above, order intake is for our market technology business and represents the total contract value of orders signed during the period.

Marketplace technology revenues increased in the third quarter and first nine months of 2023 compared with the same periods in 2022 primarily due to higher market technology revenues due to higher support and licensing and higher professional services fees. Trade management services revenues also increased, primarily driven by demand for connectivity services.

CAPITAL ACCESS PLATFORMS

The following tables present revenues and key drivers from our Capital Access Platforms segment:

	Three Months Ended September 30, 2023	Three Months Ended September 30, 2022	Percentage Change
	(in millions)		
Data & Listing Services	$ 188	$ 179	5.0 %
Index	144	125	15.2 %
Workflow & Insights	124	118	5.1 %
Total Capital Access Platforms	$ 456	$ 422	8.1 %

	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022	Percentage Change
	(in millions)		
Data & Listing Services	$ 559	$ 545	2.6 %
Index	383	370	3.5 %
Workflow & Insights	367	347	5.8 %
Total Capital Access Platforms	$ 1,309	$ 1,262	3.7 %

	As of or Nine Months Ended September 30, 2023	As of or Nine Months Ended September 30, 2022
	(in millions)	
ARR	$ 1,222	$ 1,170
Quarterly annualized SaaS revenues	402	380

Data & Listing Services Revenues

The following table presents key drivers from our Data & Listing Services business:

	Three Months Ended September 30,	
	2023	2022
IPOs		
The Nasdaq Stock Market	39	35
Exchanges that comprise Nasdaq Nordic and Nasdaq Baltic	—	3
Total new listings		
The Nasdaq Stock Market	87	98
Exchanges that comprise Nasdaq Nordic and Nasdaq Baltic	3	9
	Nine Months Ended September 30,	
	2023	**2022**
IPOs		
The Nasdaq Stock Market	102	143
Exchanges that comprise Nasdaq Nordic and Nasdaq Baltic	3	33
Total new listings		
The Nasdaq Stock Market	230	292
Exchanges that comprise Nasdaq Nordic and Nasdaq Baltic	16	53
Number of listed companies		
The Nasdaq Stock Market	4,086	4,296
Exchanges that comprise Nasdaq Nordic and Nasdaq Baltic	1,236	1,253

In the tables above:

- The Nasdaq Stock Market new listings include IPOs, issuers that switched from other listing venues and separately listed ETPs. For the three months ended September 30, 2023 and 2022, IPOs included 4 and 7 SPACs, respectively. For the nine months ended September 30, 2023 and 2022, IPOs included 19 and 66 SPACs, respectively.
- Exchanges that comprise Nasdaq Nordic and Nasdaq Baltic 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.
- Number of total listed companies on The Nasdaq Stock Market for the nine months ended September 30, 2023 and 2022 included 570 and 501 ETPs, respectively.
- Number of total listed companies on the exchanges that comprise Nasdaq Nordic and Nasdaq Baltic represents companies listed on these exchanges and companies on the alternative markets of Nasdaq First North.

Data & Listing Services revenues increased in the third quarter and first nine months of 2023 compared with the same periods in 2022. The increase was primarily due to an increase in proprietary data revenues driven largely by higher international demand and annual listing fee growth, partially offset by lower initial listings fees.

Index Revenues

The following tables present key drivers from our Index business:

	As of or Three Months Ended September 30,	
	2023	2022
Number of licensed ETPs	393	374
TTM change in period end ETP AUM tracking Nasdaq indexes (in billions)		
Beginning balance	$ 311	$ 361
Net appreciation (depreciation)	78	(106)
Net impact of ETP sponsor switches	(2)	—
Net inflows	24	56
Ending balance	$ 411	$ 311
Quarterly average ETP AUM tracking Nasdaq indexes (in billions)	$ 423	$ 346

In the table above, TTM represents trailing twelve months.

Index revenues increased in the third quarter and the first nine months of 2023 compared with the same periods in 2022. The increase in the third quarter was primarily due to higher AUM in exchange traded products linked to Nasdaq indexes and strong futures capture, partially offset by lower futures trading linked to the Nasdaq-100 Index. The increase in the first nine months of 2023 was primarily due to higher AUM in exchange traded products linked to Nasdaq indexes.

Workflow & Insights Revenues

Workflow & Insights revenues increased in the third quarter and first nine months of 2023 compared with the same periods in 2022. The increase was due to an increase in both corporate solutions and analytics revenues. The increase in our corporate solutions revenues was primarily due to continued demand for our ESG solutions. The increase in analytics revenues was primarily due to the growth in our eVestment and Solovis product offerings.

ANTI-FINANCIAL CRIME

The following tables present revenues and key drivers from our Anti-Financial Crime segment:

	Three Months Ended September 30, 2023	Three Months Ended September 30, 2022	Percentage Change
	(in millions)		
Anti-Financial Crime	$ 93	$ 77	20.8 %

	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022	Percentage Change
	(in millions)		
Anti-Financial Crime	$ 265	$ 224	18.3 %

	As of or Three Months Ended September 30, 2023	As of or Three Months Ended September 30, 2022
	(in millions)	
ARR	$ 348	$ 295
Total signed ARR	381	320
Quarterly annualized SaaS revenues	332	281

In the table above, total signed ARR reflects ARR recognized as revenue in the current period as well as ARR for new contracts signed but not yet commenced.

Anti-Financial Crime revenues increased in the third quarter and first nine months of 2023 compared with the same periods in 2022 primarily due to an increase in demand for fraud detection and anti-money laundering solutions and solid performance by our surveillance business.

OTHER REVENUES

For the three and nine months ended September 30, 2023 other revenues include revenues related to our European power trading and clearing business, following our announcement in June 2023 to sell this business to the European Energy Exchange, subject to regulatory approval. For the nine months ended September 30, 2022, other revenues also include revenues related to our Nordic broker services business for which we completed the wind-down in June 2022. For the three and nine months ended September 30, 2023 and 2022, other revenues include a transitional services agreement associated with a divested business.

EXPENSES

Operating Expenses

The following table presents our operating expenses:

	Three Months Ended September 30, 2023	Three Months Ended September 30, 2022	Percentage Change
	(in millions)		
Compensation and benefits	$ 260	$ 249	4.4 %
Professional and contract services	31	34	(8.8)%
Computer operations and data communications	58	50	16.0 %
Occupancy	28	25	12.0 %
General, administrative and other	26	38	(31.6)%
Marketing and advertising	12	10	20.0 %
Depreciation and amortization	64	63	1.6 %
Regulatory	9	9	— %
Merger and strategic initiatives	4	14	(71.4)%
Restructuring charges	17	—	N/M
Total operating expenses	$ 509	$ 492	3.5 %

	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022	Percentage Change
	(in millions)		
Compensation and benefits	$ 777	$ 750	3.6 %
Professional and contract services	92	97	(5.2)%
Computer operations and data communications	168	150	12.0 %
Occupancy	99	78	26.9 %
General, administrative and other	62	94	(34.0)%
Marketing and advertising	30	31	(3.2)%
Depreciation and amortization	198	195	1.5 %
Regulatory	27	24	12.5 %
Merger and strategic initiatives	51	41	24.4 %
Restructuring charges	49	—	N/M
Total operating expenses	$ 1,553	$ 1,460	6.4 %

N/M Not meaningful.

The increase in compensation and benefits expense in the third quarter and first nine months of 2023 compared with the same periods in 2022 was primarily driven by increased headcount and the impact of merit increases. The increase in the first nine months of 2023 was partially offset by a favorable impact from foreign exchange rates of $13 million.

Headcount, including employees of non-wholly owned consolidated subsidiaries, increased to 6,590 employees as of September 30, 2023 from 6,300 as of September 30, 2022, reflecting growth across each of our three segments.

Professional and contract services expense decreased in the third quarter and the first nine months of 2023 compared with the same periods in 2022 primarily due to reduced legal fees.

Computer operations and data communications expense increased in the third quarter and first nine months of 2023 compared with the same periods in 2022 primarily due to higher costs related to our cloud initiatives.

Occupancy expense increased in the third quarter and first nine months of 2023 compared with the same periods in 2022. In the first quarter of 2023, we initiated a review of our real estate and facility capacity requirements due to our new and evolving work models. As a result of this ongoing review, for the nine months ended September 30, 2023, we recorded $18 million in impairment charges and exit related costs following the abandonment of leased office space.

General, administrative and other expense decreased in the third quarter and first nine months of 2023 compared with the same periods in 2022 primarily due to an accrual related to a legal matter in the third quarter of 2022. The decrease in the first nine months of 2023 is also driven by an insurance recovery related to a legal matter in 2023 and a loss on extinguishment of debt recorded in 2022.

Marketing and advertising expense increased in the third quarter of 2023 compared with the same period in 2022 primarily driven by new listing activity in the period. Marketing and advertising expense decreased in the first nine months of 2023 compared with the same period in 2022 primarily due to lower client incentives resulting from lower IPO activity.

Depreciation and amortization expense remained relatively flat in the third quarter of 2023 compared with the same period in 2022. Depreciation and amortization expense increased in the first nine months of 2023 compared with the same period in 2022 primarily due to an impairment charge on leasehold improvements related to vacated leased office space. See Note 15, “Leases,” to the condensed consolidated financial statements for further discussion of our asset impairment charges related to vacated leased office space.

Regulatory expense remained relatively flat in the third quarter of 2023 compared with the same period in 2022. Regulatory expense increased in the first nine months of 2023 compared with the same period in 2022 due to higher trading volumes.

We have pursued various strategic initiatives and completed acquisitions and divestitures 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 and vary based on the size and frequency of the activities described above. The increase for the nine months ended September 30, 2023 compared with the same period in 2022 primarily reflects higher expenses related to the Adenza acquisition.

Restructuring charges increased in the third quarter and first nine months of 2023 compared with the same periods in 2022 as a result of charges from our 2022 divisional alignment program. See Note 19, “Restructuring Charges,” to the condensed consolidated financial statements for further discussion. By 2025, we expect to achieve benefits of the restructuring through combined annual run-rate operating efficiencies and revenue synergies of approximately $30 million annually.

Non-operating Income and Expenses

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

	Three Months Ended September 30,		
	2023	2022	Percentage Change
	(in millions)		
Interest income	$ 72	$ 2	3,500.0%
Interest expense	(101)	(32)	215.6 %
Net interest expense	(29)	(30)	(3.3)%
Other income	1	6	(83.3)%
Net income (loss) from unconsolidated investees	(12)	8	(250.0)%
Total non-operating expense	$ (40)	$ (16)	150.0 %

	Nine Months Ended September 30,		
	2023	2022	Percentage Change
	(in millions)		
Interest income	$ 86	$ 3	2,766.7 %
Interest expense	(174)	(96)	81.3 %
Net interest expense	(88)	(93)	(5.4)%
Other income (loss)	(6)	8	(175.0)%
Net income (loss) from unconsolidated investees	(8)	23	(134.8)%
Total non-operating expenses	$ (102)	$ (62)	64.5 %

The following table presents our interest expense:

	Three Months Ended September 30,		Percentage Change
	2023	2022	
	(in millions)		
Interest expense on debt	$ 97	$ 30	223.3 %
Accretion of debt issuance costs and debt discount	3	1	200.0 %
Other fees	1	1	— %
Interest expense	$ 101	$ 32	215.6 %

	Nine Months Ended September 30,		Percentage Change
	2023	2022	
	(in millions)		
Interest expense on debt	$ 166	$ 89	86.5 %
Accretion of debt issuance costs and debt discount	6	5	20.0 %
Other fees	2	2	— %
Interest expense	$ 174	$ 96	81.3 %

Interest income increased in the third quarter and the first nine months of 2023 compared with the same periods in 2022 primarily due to a higher cash balance and an increase in interest rates.

Interest expense increased in the third quarter and first nine months of 2023 compared with the same periods in 2022 primarily due to the new debt issued in June 2023 to finance the Adenza acquisition as well as an increase in interest rates related to borrowings under our commercial paper program.

Other income (loss) primarily represents realized and unrealized gains and losses from strategic investments related to our corporate venture program.

Net income (loss) from unconsolidated investees decreased in the third quarter and first nine months of 2023 compared with the same periods in 2022 primarily due losses recognized from our equity method investments in OCC and NPM. See "Equity Method Investments," of Note 6, "Investments," to the condensed consolidated financial statements for further discussion.

Tax Matters

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

	Three Months Ended September 30,		Percentage Change
	2023	2022	
	($ in millions)		
Income tax provision	$ 97	$ 88	10.2 %
Effective tax rate	24.8 %	23.0 %	

	Nine Months Ended September 30,		Percentage Change
	2023	2022	
	(in millions)		
Income tax provision	$ 262	$ 270	(3.0)%
Effective tax rate	23.3 %	23.4 %	

For further discussion of our tax matters, see Note 16, "Income Taxes," to the condensed consolidated financial statements.

NON-GAAP FINANCIAL MEASURES

In addition to disclosing results determined in accordance with U.S. GAAP, we also provide 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 our 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. In addition, other companies, including companies in our industry, may calculate such measures differently, which reduces their usefulness as comparative measures. Investors should not rely on any single financial measure when evaluating our business. This non-GAAP information should be considered as supplemental in nature and is not meant as a substitute for our operating results in accordance with U.S. GAAP. 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. We believe that excluding the following items from the non-GAAP net income attributable to Nasdaq provides a more meaningful analysis of Nasdaq's ongoing operating performance and comparisons in Nasdaq's performance between periods:

- *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 and the relative operating performance of the businesses between periods.
- *Merger and strategic initiatives expense:* We have pursued various strategic initiatives and completed acquisitions and divestitures in recent years that have resulted in expenses which would not have otherwise been incurred. The frequency and the amount of such expenses vary significantly based on the size, timing and complexity of the transaction. These expenses primarily include integration costs, as well as legal, due diligence and other third-party transaction costs. The increase for the nine months ended September 30, 2023 compared to the same period in 2022 primarily reflects costs related to the Adenza acquisition.
- *Restructuring charges:* In October 2022, following our September 2022 announcement to realign our segments and leadership, we initiated a divisional alignment program with a focus on realizing the full potential of this structure. See Note 19, "Restructuring Charges," to the condensed consolidated financial statements for further discussion of our 2022 divisional alignment program.
- *Net income from unconsolidated investees*: We exclude our share of the earnings and losses of our equity method investments, primarily our equity interest in OCC and NPM. This provides a more meaningful analysis of Nasdaq's ongoing operating performance or comparisons in Nasdaq's performance between periods. See "Equity Method Investments," of Note 6, "Investments," to the condensed consolidated financial statements for further discussion.
- *Other items:* 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. Other significant items include:
  - for the three and nine months ended September 30, 2023, other items include certain financing costs related to the Adenza acquisition;
  - for the nine months ended September 30, 2023, other items include impairment charges related to our operating lease assets and leasehold improvements associated with vacating certain leased office space, which are recorded in occupancy and depreciation and amortization expense in our Condensed Consolidated Statements of Income;
  - for the nine months ended September 30, 2023, other items also include insurance recoveries related to certain legal matters, which are recorded in professional and contract services and general, administrative and other expense in the Condensed Consolidated Statements of Income;
  - for the nine months ended September 30, 2023 and 2022, other items also include net gains and losses from strategic investments entered into through our corporate venture program included in other income (loss) in our Condensed Consolidated Statements of Income;
  - for the three and nine months ended September 30, 2022, other items include accruals related to legal matters, which are recorded in professional and contract services and general, administrative and other expense in the Condensed Consolidated Statements of Income; and
  - for the nine months ended September 30, 2022, other items primarily include a loss on extinguishment of debt, which is recorded under general, administrative and other expense in our Condensed Consolidated Statements of Income.
- *Significant tax items:* The non-GAAP adjustment to the income tax provision for the three and nine months ended September 30, 2023 and 2022 primarily includes the tax impact of each non-GAAP adjustment.

The following tables present 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 September 30, 2023	2022
	(in millions, except per share amounts)	
U.S. GAAP net income attributable to Nasdaq	$ 294	$ 294
Non-GAAP adjustments:		
Amortization expense of acquired intangible assets	37	38
Merger and strategic initiatives expense	4	14
Restructuring charges	17	—
Net loss (income) from unconsolidated investees	12	(8)
Other income	9	17
Total non-GAAP adjustments	79	61
Total non-GAAP tax adjustments	(24)	(20)
Total non-GAAP adjustments, net of tax	55	41
Non-GAAP net income attributable to Nasdaq	$ 349	$ 335
U.S. GAAP effective tax rate	24.8 %	23.0 %
Total adjustments from non-GAAP tax rate	0.9 %	1.4 %
Non-GAAP effective tax rate	25.7 %	24.4 %
Weighted-average common shares outstanding for diluted earnings per share	494.1	496.3
U.S. GAAP diluted earnings per share	$ 0.60	$ 0.59
Total adjustments from non-GAAP net income	0.11	0.09
Non-GAAP diluted earnings per share	$ 0.71	$ 0.68

	Nine Months Ended September 30, 2023	2022
	(in millions, except per share amounts)	
U.S. GAAP net income attributable to Nasdaq	$ 862	$ 884
Non-GAAP adjustments:		
Amortization expense of acquired intangible assets	112	116
Merger and strategic initiatives expense	51	41
Restructuring charges	49	—
Lease asset impairments	24	—
Extinguishment of debt	—	16
Net loss (income) from unconsolidated investees	8	(23)
Other income	7	19
Total non-GAAP adjustments	251	169
Total non-GAAP tax adjustments	(76)	(48)
Total non-GAAP adjustments, net of tax	175	121
Non-GAAP net income attributable to Nasdaq	$ 1,037	$ 1,005
U.S. GAAP effective tax rate	23.3 %	23.4 %
Total adjustments from non-GAAP tax rate	1.3 %	0.7 %
Non-GAAP effective tax rate	24.6 %	24.1 %
Weighted-average common shares outstanding for diluted earnings per share	494.2	498.2
U.S. GAAP diluted earnings per share	$ 1.74	$ 1.77
Total adjustments from non-GAAP net income	0.36	0.25
Non-GAAP diluted earnings per share	$ 2.10	$ 2.02

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 debt. Currently, our cost and availability of funding remain healthy. We continue to prudently assess our capital deployment strategy through balancing acquisitions, internal investments, debt repayments, and shareholder return activity, including share repurchases and dividends.

In the near term, we expect that our operations and the availability under our revolving credit facility 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, the current portion of long-term debt, and commercial paper, can fluctuate from month to month. Working capital (calculated as current assets less current liabilities) was $5,303 million as of September 30, 2023, compared with $(231) million as of December 31, 2022, an increase of $5,534 million. The increase was primarily driven by an increase in cash and cash equivalents and a decrease in short-term debt. We expect that our cash and cash equivalents combined with cash provided by operating activities will be sufficient to meet our ongoing obligations. In addition, we believe our currently-available borrowing capacity and access to additional financing, including our commercial paper program, provides us additional flexibility to meet our ongoing obligations.

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;
- credit rating downgrades, which could limit our access to additional debt;
- a significant decrease in the market price of our common stock; and
- volatility or disruption in the public debt and equity markets.

The following table summarizes our financial assets:

	September 30, 2023	December 31, 2022
	(in millions)	
Cash and cash equivalents	$ 5,340	$ 502
Financial investments	272	181
Total financial assets	$ 5,612	$ 683

Cash and Cash Equivalents

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 September 30, 2023, our cash and cash equivalents of $5,340 million were primarily invested in treasury bills, money market funds, commercial paper, municipal bonds and bank deposits. 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 September 30, 2023 increased $4,838 million from December 31, 2022. The increase reflected proceeds from issuances of long-term debt, net of issuance costs, in connection with the financing of the Adenza acquisition, partially offset by the repayment of our commercial paper. For further discussion, see “Financing of the Adenza Transaction,” of Note 8, “Debt Obligations,” to the condensed consolidated financial statements.

Repatriation of Cash

Our cash and cash equivalents held outside of the U.S. in various foreign subsidiaries totaled $304 million as of September 30, 2023 and $275 million as of December 31, 2022. The remaining balance held in the U.S. totaled $5,036 million as of September 30, 2023 and $227 million as of December 31, 2022.

Unremitted earnings of certain subsidiaries outside of the U.S. are used to finance our international operations and are considered to be indefinitely reinvested.

Cash Flow Analysis

The following table summarizes the changes in cash flows:

	Nine Months Ended September 30,	
	2023	2022
Net cash provided by (used in):	(in millions)	
Operating activities	$ 1,279	$ 1,212
Investing activities	(158)	(25)
Financing activities	3,019	4,275
Effect of exchange rate changes on cash and cash equivalents and restricted cash and cash equivalents	(300)	(1,724)
Net increase in cash and cash equivalents and restricted cash and cash equivalents	3,840	3,738
Cash and cash equivalents, restricted cash and cash equivalents at beginning of period	6,994	5,496
Cash and cash equivalents, restricted cash and cash equivalents at end of period	$ 10,834	$ 9,234
Reconciliation of Cash, Cash Equivalents and Restricted Cash and Cash Equivalents		
Cash and cash equivalents	$ 5,340	$ 301
Restricted cash and cash equivalents	25	51
Restricted cash and cash equivalents (default funds and margin deposits)	5,469	8,882
Total	$ 10,834	$ 9,234

Net Cash Provided by Operating Activities

Net cash provided by operating activities primarily consists of net income adjusted for certain non-cash items such as: depreciation and amortization expense of property and equipment, amortization expense of acquired finite-lived intangible assets, expense associated with share-based compensation, deferred income taxes, extinguishment of debt and bridge fees, non-cash restructuring charges, operating lease asset impairments and net income from unconsolidated investees.

Net cash provided by operating activities is also impacted by the effects of changes in operating assets and liabilities such as: accounts receivable and deferred revenue which are impacted by the timing of customer billings and related collections from our customers; accounts payable and accrued expenses due to timing of payments; accrued personnel costs, which are impacted by employee performance targets and the timing of payments related to employee bonus incentives; and Section 31 fees payable to the SEC, which is impacted by the changes in SEC fee rates and the timing of collections from customers and payments to the SEC.

Net cash provided by operating activities increased $67 million for the nine months ended September 30, 2023 compared with the same period in 2022. The increase was primarily driven by a decrease in receivables primarily due to a decrease in SEC 31 fees receivable as well as timing of collection and an increase in accounts payable and accrued expenses primarily due to an increase in our accrued interest payable from issuances of senior unsecured notes in connection with the Adenza acquisition. This increase was partially offset by a decrease in Section 31 fees payable to the SEC. The remaining change was primarily due to other fluctuations in our working capital.

Net Cash Used in Investing Activities

Net cash used in investing activities for the nine months ended September 30, 2023 primarily related to purchases of property and equipment of $116 million, net purchases of trading securities of $103 million and $3 million from other investing activities, partially offset by net proceeds from the sale of investments related to default funds and margin deposits of $64 million.

Net cash used in investing activities for the nine months ended September 30, 2022 primarily related to purchases of property and equipment of $118 million and $41 million of cash used for acquisitions, net of cash and cash equivalents acquired, partially offset by proceeds of $48 million from other investing activities, net purchases of investments related to default funds and margin deposits of $44 million and net proceeds from sales and redemptions of securities of $42 million.

Net Cash Provided by Financing Activities

Net cash provided by financing activities for the nine months ended September 30, 2023 primarily related to $5,011 million proceeds from issuances of senior unsecured notes, in connection with the Adenza acquisition, net of debt issuance costs, partially offset by a decrease of $779 million in default funds and margin deposits, $662 million from repayments of our commercial paper, net, $314 million of dividend payments to our shareholders, $159 million in repurchases of common stock and $70 million of payments related to employee shares withheld for taxes.

Net cash provided by financing activities for the nine months ended September 30, 2022 primarily related to an increase in default funds and margin deposits of $5,446 million, proceeds of $541 million from the issuances of long-term-debt, partially offset by $499 million for extinguishment of our 2024 Notes, $325 million of repurchases of common stock pursuant to an ASR agreement, $308 million in other repurchases of common stock, $285 million of dividend payments to our shareholders and $221 million repayment of our commercial paper, net.

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

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

Financial Investments

Our financial investments totaled $272 million as of September 30, 2023 and $181 million as of December 31, 2022. Of these securities, $150 million as of September 30, 2023 and $161 million as of December 31, 2022 are assets primarily utilized to meet regulatory capital requirements, mainly for our clearing operations at Nasdaq Clearing. See Note 6, “Investments,” to the condensed consolidated financial statements for further discussion.

Regulatory 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 September 30, 2023, our required regulatory capital of $115 million was primarily comprised of highly rated European government debt securities that are included in financial investments in the Condensed Consolidated Balance Sheets.

Broker-Dealer Net Capital Requirements

Our broker-dealer subsidiaries, Nasdaq Execution Services, NFSTX, LLC, 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. As of September 30, 2023, the combined required minimum net capital totaled $1 million and the combined excess capital totaled $28 million, substantially all of which is held in cash and cash equivalents in the Condensed Consolidated Balance Sheets. The required minimum net capital is included in restricted cash and cash equivalents in the Condensed Consolidated Balance Sheets.

Nordic and Baltic Exchange Regulatory Capital Requirements

The entities that operate trading venues in the Nordic and Baltic countries are each subject to local regulations and are required to maintain regulatory capital intended to ensure their general financial soundness and liquidity. As of September 30, 2023, our required regulatory capital of $34 million was primarily invested in European mortgage bonds and Icelandic government bonds that are included in financial investments in the Condensed Consolidated Balance Sheets and cash, which is included in restricted cash and cash equivalents in the Condensed Consolidated Balance Sheets.

Other Capital Requirements

We operate several other businesses which are subject to local regulation and are required to maintain certain levels of regulatory capital. As of September 30, 2023, other required regulatory capital of $11 million, primarily related to Nasdaq Central Securities Depository, was primarily invested in European government debt securities that are included in financial investments in the Condensed Consolidated Balance Sheets and cash, which is included in restricted cash and cash equivalents in the Condensed Consolidated Balance Sheets.

Equity and dividends

Share Repurchase Program

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

Cash Dividends on Common Stock

The following table presents our quarterly cash dividends paid per common share on our outstanding common stock:

	2023	2022
First quarter	$ 0.20	$ 0.18
Second quarter	0.22	0.20
Third quarter	0.22	0.20
Total	$ 0.64	$ 0.58

See "Cash Dividends on Common Stock," of Note 11, "Nasdaq Stockholders' Equity," to the condensed consolidated financial statements for further discussion of the dividends.

Debt Obligations

The following table summarizes our debt obligations by contractual maturity:

	Maturity Date	September 30, 2023	December 31, 2022
		(in millions)	
Short-term debt:			
Commercial paper		$ —	$ 664
Total short-term debt		$ —	$ 664
Long-term debt - senior unsecured notes:			
2025 Notes	May 2025	497	—
2026 Notes	June 2026	499	498
2028 Notes	May 2028	991	—
2029 Notes	March 2029	630	637
2030 Notes	February 2030	630	637
2031 Notes	January 2031	644	644
2032 Notes	February 2032	784	—
2033 Notes	July 2033	645	653
2034 Notes	February 2034	1,239	—
2040 Notes	December 2040	644	644
2050 Notes	April 2050	487	486
2052 Notes	March 2052	541	541
2053 Notes	August 2053	738	—
2063 Notes	June 2063	738	—
2022 Revolving Credit Agreement	December 2027	(4)	(5)
Total long-term debt		$ 9,703	$ 4,735
Total debt obligations		$ 9,703	$ 5,399

In December 2022, Nasdaq amended and restated the 2020 Credit Facility with a new maturity date of December 16, 2027. In addition to the 2022 Revolving Credit Agreement, we also have other credit facilities primarily to support our Nasdaq Clearing operations in Europe, as well as to provide a cash pool credit line for one subsidiary. These European credit facilities, which are available in multiple currencies, totaled $176 million as of September 30, 2023 and $184 million as of December 31, 2022 in available liquidity, none of which was utilized.

Financing of the Adenza Transaction

In June 2023, Nasdaq issued six series of notes for total proceeds of $5,016 million, net of debt issuance costs of $38 million, with various maturity dates ranging from 2025 to 2063. During the third quarter of 2023, we incurred an additional $5 million in debt issuance costs, for a total net proceeds from the issuance of the six series of notes of $5,011 million as of September 30, 2023. The net proceeds from these notes were used to finance the majority of the cash consideration due in connection with the Adenza acquisition.

In addition, in connection with the financing of the Adenza acquisition, we entered into the Acquisition Term Loan Agreement. The Acquisition Term Loan Agreement provides us with the ability to borrow up to $600 million to finance a portion of the cash consideration for the Adenza acquisition and other amounts incurred in connection with this transaction.

Under the Acquisition Term Loan Agreement, borrowings bear interest on the principal amount outstanding at a variable interest rate based on either the SOFR 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 September 30, 2023, no amounts were outstanding. On November 1, 2023, we borrowed $599 million, net of fees, under this term loan towards payment of the cash consideration due in connection with the Adenza acquisition.

As of September 30, 2023, we were in compliance with the covenants of all of our debt obligations.

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

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 September 30, 2023:

	Payments Due by Period				
(in millions)	**Total**	**<1 year**	**1-3 years**	**3-5 years**	**5+ years**
Debt obligation by contractual maturity	$ 16,001	$ 386	$ 1,740	$ 1,673	$ 12,202
Operating lease obligations	636	80	136	114	306
Purchase obligations	421	86	107	89	139
Total	$ 17,058	$ 552	$ 1,983	$ 1,876	$ 12,647

In the preceding table:

- Debt obligations by contractual maturity include both principal and interest obligations. As of September 30, 2023, an interest rate of 5.7% was used to compute the amount of the contractual obligations for interest on the 2022 Revolving Credit Agreement. All other debt obligations were primarily calculated on a 365-day basis at the contractual fixed rate multiplied by the aggregate principal amount as of September 30, 2023. See Note 8, “Debt Obligations,” to the condensed consolidated financial statements for further discussion.
- Operating lease obligations represent our undiscounted operating lease liabilities as of September 30, 2023, as well as legally binding minimum lease payments for leases signed but not yet commenced. See Note 15, “Leases,” to the condensed consolidated financial statements for further discussion of our leases.

Acquisition of Adenza

For further discussion of our acquisition of Adenza, see “2023 Acquisition,” of Note 4, “Acquisitions,” to the condensed consolidated financial statements.

<u>Off-Balance Sheet Arrangements</u>

For discussion of off-balance sheet arrangements see:

- Note 14, “Clearing Operations,” to the condensed consolidated financial statements for further discussion of our non-cash default fund contributions and margin deposits received for clearing operations; and
- Note 17, “Commitments, Contingencies and Guarantees,” to the condensed consolidated financial statements for further discussion of:
  - Guarantees issued and credit facilities available;
  - Other guarantees;
  - Routing brokerage activities;
  - Legal and regulatory matters; and
  - Tax audits.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

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 September 30, 2023, our investment portfolio was primarily comprised of highly rated European government debt securities, which pay a fixed rate of interest. These securities are subject to interest rate risk and the fair value of these securities will decrease if market interest rates increase. If market interest rates were to increase immediately and uniformly by a hypothetical 100 basis points from levels as of September 30, 2023, the fair value of this portfolio would decline by $1 million.

Debt Obligations

As of September 30, 2023, substantially all of our debt obligations were fixed-rate obligations. Interest rates on certain tranches of notes are subject to adjustment to the extent our debt rating is downgraded below investment grade, as further discussed in Note 8, "Debt Obligations," to the condensed consolidated financial statements. 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 borrowings under our 2022 Revolving Credit Agreement, as this facility has a variable interest rate. We are also exposed to changes in interest rates as a result of the amounts outstanding from the sale of commercial paper under our commercial paper program, which have variable interest rates. As of September 30, 2023, there were no outstanding borrowings under our 2022 Revolving Credit Agreement or commercial paper program.

We may utilize interest rate swap agreements to achieve a desired mix of variable and fixed rate debt.

Foreign Currency Exchange Rate Risk

We are subject to foreign currency exchange rate risk. Our primary transactional exposure to foreign currency denominated revenues less transaction-based expenses and operating income for the nine months ended September 30, 2023 is presented in the following table:

	Euro	Swedish Krona	Canadian Dollar	Other Foreign Currencies	U.S. Dollar	Total
	(in millions, except currency rate)					
Three Months Ended September 30, 2023						
Average foreign currency rate to the U.S. dollar	1.088	0.093	0.746	#	N/A	N/A
Percentage of revenues less transaction-based expenses	6.1%	3.8%	0.9%	3.1%	86.1%	100.0%
Percentage of operating income	8.5%	(3)%	(6.5)%	(4.9)%	105.9%	100.0%
Impact of a 10% adverse currency fluctuation on revenues less transaction-based expenses	$(6)	$(4)	$(1)	$(2)	$—	$(13)
Impact of a 10% adverse currency fluctuation on operating income	$(4)	$(1)	$(3)	$(2)	$—	$(10)

	Euro	Swedish Krona	Canadian Dollar	Other Foreign Currencies	U.S. Dollar	Total
	(in millions, except currency rate)					
Nine Months Ended September 30, 2023						
Average foreign currency rate to the U.S. dollar	1.083	0.094	0.743	#	N/A	N/A
Percentage of revenues less transaction-based expenses	6.3%	4.2%	0.9%	3.0%	85.6%	100.0%
Percentage of operating income	9.9%	(3.6)%	(6.9)%	(5.7)%	106.3%	100.0%
Impact of a 10% adverse currency fluctuation on revenues less transaction-based expenses	$(18)	$(12)	$(3)	$(8)	$—	$(41)
Impact of a 10% adverse currency fluctuation on operating income	$(12)	$(4)	$(8)	$(7)	$—	$(31)

\# 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. The financial statements of these subsidiaries are translated into U.S. dollars for consolidated reporting using a current rate of exchange, with net gains or losses 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 September 30, 2023 is presented in the following table:

	Net Assets	Impact of a 10% Adverse Currency Fluctuation
	(in millions)	
Swedish Krona	$ 2,976	$ 298
British Pound	144	14
Norwegian Krone	137	14
Canadian Dollar	104	10
Australian Dollar	98	10
Euro	48	5

In the table above, Swedish Krona includes goodwill of $2,435 million and intangible assets, net of $560 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 evaluating the counterparties with which we make investments and execute agreements. For our investment portfolio, our 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.

We 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. 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.

We also are exposed to credit risk through our clearing operations with Nasdaq Clearing. See Note 14, "Clearing Operations," to the condensed consolidated financial statements for further discussion. Our clearinghouse holds material amounts of clearing member cash deposits, which are held or invested primarily to provide security of capital while minimizing credit, market and liquidity risks. While we seek to achieve a reasonable rate of return, we are primarily concerned with preservation of capital and managing the risks associated with these deposits. As the clearinghouse may pass on interest revenues (minus costs) to the members, this could include negative or reduced yield due to market conditions. The following is a summary of the risks associated with these deposits and how these risks are mitigated.

- *Credit Risk.* When the clearinghouse has the ability to hold cash collateral at a central bank, the clearinghouse utilizes its access to the central bank system to minimize credit risk exposures. When funds are not held at a central bank, we seek to substantially mitigate credit risk by ensuring that investments are primarily placed in large, highly rated financial institutions, highly rated government debt instruments and other creditworthy counterparties.

- *Liquidity Risk.* Liquidity risk is the risk a clearinghouse may not be able to meet its payment obligations in the right currency, in the right place and the right time. To mitigate this risk, the clearinghouse monitors liquidity requirements closely and maintains funds and assets in a manner which minimizes the risk of loss or delay in the access by the clearinghouse to such funds and assets. For example, holding funds with a central bank where possible or investing in highly liquid government debt instruments serves to reduce liquidity risks.
- *Interest Rate Risk.* Interest rate risk is the risk that interest rates rise causing the value of purchased securities to decline. If we were required to sell securities prior to maturity, and interest rates had risen, the sale of the securities might be made at a loss relative to the latest market price. Our clearinghouse seeks to manage this risk by making short term investments of members' cash deposits. In addition, the clearinghouse investment guidelines allow for direct purchases or repurchase agreements with short dated maturities of high quality sovereign debt (for example, European government and U.S. Treasury securities), central bank certificates and multilateral development bank debt instruments.
- *Security Issuer Risk.* Security issuer risk is the risk that an issuer of a security defaults on its payment when the security matures. This risk is mitigated by limiting allowable investments and collateral under reverse repurchase agreements to high quality sovereign, government agency or multilateral development bank debt instruments.

Item 4. Controls and Procedures

Disclosure controls and procedures. Nasdaq's management, with the participation of Nasdaq's Chief Executive Officer, and Executive Vice President 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 Chief Executive Officer and Executive Vice President and Chief Financial Officer, have concluded that, as of the end of such period, Nasdaq's disclosure controls and procedures are effective.

Changes in 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 September 30, 2023 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

For a description of our legal proceedings, if any, see "Legal and Regulatory Matters" of Note 17, "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 most recent Form 10-K. These risks could materially and adversely affect our business, financial condition and results of operations. These risks and uncertainties are not the only ones facing us. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may also adversely affect our business.

Item 2. Unregistered Sales of Equity Securities, Use of Proceeds, and Issuer Purchases of Equity Securities

Issuer Purchases of Equity Securities

Share Repurchase Program

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

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

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 September 30, 2023:

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)
July 2023				
Share repurchase program	—	$ —	—	$ 491
Employee transactions	31,331	$ 49.72	N/A	N/A
August 2023				
Share repurchase program	—	$ —	—	$ 491
Employee transactions	—	$ —	N/A	N/A
September 2023				
Share repurchase program	—	$ —	—	$ 2,000
Employee transactions	453	$ 51.94	N/A	N/A
Total Quarter Ended September 30, 2023				
Share repurchase program	—	$ —	—	$ 2,000
Employee transactions	31,784	$ 49.75	N/A	N/A

In the preceding table:

- N/A - Not applicable.
- See "Share Repurchase Program," of Note 11, "Nasdaq Stockholders' Equity," to the condensed consolidated financial statements for further discussion of our share repurchase program.
- Employee transactions represents shares surrendered to us to satisfy tax withholding obligations arising from the vesting of restricted stock and PSUs previously issued to employees.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

During the three months ended September 30, 2023, none of the Company's directors or officers adopted, terminated or modified a "Rule 10b5-1 trading arrangement" or "non-Rule 10b5-1 trading arrangement" (as such terms are defined in Item 408 of Regulation S-K) except as follows: on August 31, 2023, Bryan E. Smith, Executive Vice President and Chief People Officer, adopted a Rule 10b5-1 trading plan for the sale of up to 12,500 shares of our common stock, subject to certain conditions. The plan's expiration date is May 10, 2024.

Item 6. Exhibits

Exhibit Number	
10.1	General Release and Separation Agreement by and between Nasdaq, Inc. and Ann M. Dennison, dated as of August 31, 2023.*
10.2	Employment Offer Letter by and between Nasdaq, Inc. and Sarah Youngwood, dated as of August 31, 2023*
31.1	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 ("Sarbanes-Oxley").
31.2	Certification of Executive Vice President 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	The following materials from the Nasdaq, Inc. Quarterly Report on Form 10-Q for the quarter ended September 30, 2023, formatted in iXBRL (Inline eXtensible Business Reporting Language): (i) Condensed Consolidated Balance Sheets as of September 30, 2023 and December 31, 2022; (ii) Condensed Consolidated Statements of Income for the three and nine months ended September 30, 2023 and 2022; (iii) Condensed Consolidated Statements of Comprehensive Income for the three and nine months ended September 30, 2023 and 2022; (iv) Condensed Consolidated Statements of Changes in Stockholders' Equity for the three and nine months ended September 30, 2023 and 2022; (v) Condensed Consolidated Statements of Cash Flows for the nine months ended September 30, 2023 and 2022; and (vi) notes to condensed consolidated financial statements.
104	Cover Page Interactive Data File, formatted in iXBRL and contained in Exhibit 101.

* Management contract or compensatory plan or arrangement.

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)

By:	/s/ Adena T. Friedman
Name:	**Adena T. Friedman**
Title:	**Chief Executive Officer**
Date:	November 3, 2023

By:	/s/ Ann M. Dennison
Name:	**Ann M. Dennison**
Title:	**Executive Vice President and Chief Financial Officer**
Date:	November 3, 2023

Nasdaq 154 West 42nd Street, NY, 10036 USA | Nasdaq.com

Exhibit 10.1

GENERAL RELEASE AND SEPARATION AGREEMENT

August 31, 2023

Ann Dennison
[Address]

Dear Ann:

This General Release and Separation Agreement ("Agreement"), reflects our mutual agreement and understanding concerning your departure from Nasdaq, Inc. or any of its subsidiaries or affiliates (the "Company"), as set forth below. Please review the following information and address any questions you may have concerning this notice to the Chief People Officer, Bryan Smith. This Agreement becomes valid upon the Company's receipt of your signed and dated copy.

1. Separation Date and Transition Period

As of December 31, 2023 ("Separation Date"), you will longer be an employee of the Company. Between August 30, 2023 ("Transition Date") and December 1, 2023, (the "Transition Period"), you agree to perform the duties of Executive Vice President, Chief Financial Officer as assigned by the Chair and CEO. During the Transition Period, your regular salary will remain unchanged at $650,000 per annum and you shall remain fully eligible for participation in the Company's benefits plans in which you now participate through the Separation Date. As of December 1, 2023, or such other date when your successor commences employment as Executive Vice President and Chief Financial Officer of the Company, you will resign your title as Executive Vice President and Chief Financial Officer as well as your executive responsibilities as an officer or director of any subsidiaries and affiliates of the Company as of such date. During the period of December 1, 2023 through the Separation Date, you shall continue as an employee of the Company and serve as an advisor to the new chief financial officer to facilitate an orderly transition.

You will receive a bonus payment under the Executive Incentive Plan for 2023 based upon your performance and target bonus opportunity of $975,000. The 2023 bonus will be paid on or about March 1, 2024, and the amount will be determined based upon the applicable 2023 goal scoring. If Nasdaq terminates your employment due to gross misconduct or gross negligence, or you voluntarily resign before December 31, 2023, you will not be entitled to any part of the 2023 CIP bonus. All equity grants normally scheduled to vest prior to the Separation Date shall vest on schedule.

You will also be paid for all accrued but unused vacation, following Separation Date. Your health benefits provided through the Company will continue through the end of the month of your Separation Date. You and your eligible dependents may elect benefit continuation coverage if you timely apply for COBRA benefits. The Company will provide you with information regarding your COBRA rights in a separate mailing.

2. **Separation Benefits**

In consideration for signing and not revoking this Agreement, in full settlement of any compensation and benefits to which you would otherwise be entitled, and in exchange for the promises, covenants, releases, and waivers set forth herein, the Company, subject to final approval by the Management Compensation Committee, will do the following:

a. The Company will provide you a separation payment of $1,950,000, equal to 1.5X salary plus 1X TBO (minus applicable taxes and withholdings) ("the Separation Payment"), provided you continue to perform services as described in Section 1, above, through the Transition Period. The Separation Payment will be paid in periodic payments on the Company's regular pay schedule beginning after your Separation Date.

b. You will (i) be entitled to continued vesting of the Three-Year Performance Share Units (PSU's) granted on April 1, 2021 ("2021 Grant") and April 1, 2022 ("2022 Grant"), scheduled to vest on December 31, 2023 and December 31, 2024, unless your employment ends any time before December 31, 2023 due to your resignation, gross misconduct, or gross negligence; and (ii) you will also be entitled to continued vesting of outstanding Restricted Stock Units (RSUs) scheduled to vest on April 1, 2024, April 1, 2025, and April 3, 2025. To the extent this Agreement conflicts with all relevant Equity Agreements, this Agreement will apply, provided that the time and form of settlement of the PSU's shall be governed by the terms of the applicable award agreement and governing plan document.

c. You will receive a one-time discretionary lump sum payment of $40,000 minus applicable taxes and withholdings, within 30 days of the Separation Date to support healthcare costs.

d. You will be eligible for senior executive full service professional outplacement assistance for a period of 12 months, at the Company's expense, up to a maximum of $50,000.

e. The Company will continue to provide, following your Separation Date, financial and tax services (currently provided by Ayco) and executive physical exams (currently provided by EHE International) for 18 months.

f. You acknowledge and agree that the Separation Payments and any other payment or benefits provided to you and on your behalf pursuant to this Agreement, including but not limited to, the legal representation and indemnification identified in Paragraph 6 of this Agreement: (i) are in full discharge of any and all liabilities and obligations of the Company to you, monetarily or with respect to your employment; and (ii) exceed any payment, benefit, or other thing of value to which you might otherwise be entitled.

g. If you accept another position with the Company, or materially violate the terms of any employment restrictions noted herein and such violation remains uncured after written notice from the Company, while you are receiving separation payments and benefits under this paragraph, you will not receive any additional separation payments and benefits following your start date in the new position or date of such material violation.

h. You agree that compensation and benefits provided by the Company, including any under this Agreement, will be subject to clawback or recoupment by the Company under any applicable clawback or recoupment policy that is generally applicable to the Company's executives, as may be in effect from time-to-time, or as required by applicable law.

3. **General Release of Claims.** You, for yourself and your heirs, executors, administrators, assigns, agents and beneficiaries, if any, each in their capacity as such, do hereby agree to execute and be bound by this General Release of Claims. You acknowledge and agree that the Separation Payment and other benefits (including vesting of equity awards) provided to you and on your behalf pursuant to this Agreement: (i) is in full discharge of any and all liabilities and obligations of the Company to you, monetarily or with respect to your employment; and (ii) exceeds any payment, benefit, or other thing of value to which you might otherwise be entitled. You release the Company from all Claims (as defined below) through the date of this Agreement. You agree not to file a lawsuit or arbitration to assert any such Claim. Further, you agree that should any other person, organization or entity file a lawsuit or arbitration to assert any such Claim, you will not seek or accept any personal relief in such action. In exchange for your waiver of Claims, the Company, its subsidiaries, directors, and agents acting on behalf of the Company expressly waive and release any and all Claims against you that may be waived and released by law, and agree not to file a lawsuit or arbitration to assert any such Claims.

a. Definition of "Claims." Except as stated below, "Claims" includes without limitation all actions or demands of any kind that you may now have or have had or reasonably known you should have had (although you are not being asked to waive Claims that may arise after the date of this Agreement). More specifically, Claims include rights, causes of action, damages, penalties, losses, attorneys' fees, costs, expenses, obligations, agreements, judgments and all other liabilities of any kind or description whatsoever, either in law or in equity, whether known or unknown, suspected, or unsuspected. The nature of Claims covered by this release includes without limitation all actions or demands in any way based on your employment with the Company, the terms and conditions of such employment, or your separation from employment. More specifically, all of the following are among the types of Claims which are waived and barred by this General Release of Claims to the extent allowable under applicable law:

- Contract Claims, whether express or implied;
- Tort Claims, such as for defamation or emotional distress;
- Claims under federal, state, and municipal laws, regulations, ordinance or court decisions of any kind;
- Claims of discrimination, harassment, or retaliation, whether based on race, color, religion, gender, sex, age, sexual orientation, handicap and/or disability, genetic information, national origin, or any other legally protected class;
- Claims under the AGE DISCRIMINATION IN EMPLOYMENT ACT, Title VII of the Civil Rights Act of 1964, as amended, the Americans with Disabilities Act as amended, the Genetic Information Nondiscrimination Act, the Family and Medical Leave Act, and similar state and local statutes, laws and ordinances;
- Claims under the Employee Retirement Income Security Act, the Occupational Safety and Health Act, the False Claims Act, and similar state and local statutes, laws and ordinances;
- Claims for wrongful discharge; and
- Claims for attorneys' fees, including litigation expenses and/or costs.

The foregoing description of claims is intended to be illustrative and is not exhaustive.

b. Exclusions**:** Notwithstanding any other provision of this release, the following are **not** barred by the release: (a) Claims arising after the date of this Agreement, including Claims relating to the validity of this Agreement; (b) Claims by either party to enforce this Agreement; (c) Claims which are not legally waivable, including SEC whistleblowing claims pursuant to Rule 21F17, Claims to COBRA, workers' compensation, and unemployment insurance; (d) Claims by you for indemnification, contribution, advancement or defense as provided by, and in accordance with the terms of the Company by-laws, articles of incorporation, liability insurance coverage, or applicable law; and (e) Claims by you for accrued vested benefits and compensation under the Company's respective benefits and compensation plans. In addition, this General Release of Claims will not operate to limit or bar your right to file an administrative charge of discrimination with the Equal Employment Opportunity Commission (EEOC) or to testify, assist or participate in an investigation, hearing or proceeding conducted by the EEOC. However, the release does bar your right to recover any personal or monetary relief for Claims, including if you or anyone on your behalf seeks to file a lawsuit or arbitration on the same basis as the charge of discrimination.

4. **Confidentiality**. You agree to keep the terms of this Separation Agreement confidential, except that you may disclose the terms to your immediate family, attorneys, accountants, or tax planners, in response to a subpoena, or as otherwise specifically permitted, required, or ordered by law. Nothing in this Agreement should have a chilling effect on your ability to engage in whistleblowing activity, by prohibiting or restricting you (or your attorney) from initiating communications directly with, or responding to any inquiry from, or providing testimony before, the SEC or FINRA regarding your employment at the Company, and nothing prevents you from reporting to, communicating with, contacting, responding to an inquiry from, providing relevant information to, participating or assisting in an investigation conducted by, or receiving a monetary award from the SEC or any other governmental enforcement agency related to such communication (except as noted in Section 3(b) above).

5. **Cooperation and Legal Representation**. You agree to reasonably cooperate with the Company in transitioning your responsibilities and in relation to any actual or threatened legal proceedings concerning Companyrelated matters about which you have relevant knowledge. The Company's requests pursuant to this Section shall take into consideration your personal and business commitments and the amount of notice provided to you. The Company will also reimburse you, in accordance with the Company's policy, for reasonable out of pocket travel and other incidental expenses that you incur as a result of your cooperation pursuant to this paragraph (including reasonable attorneys' fees if a conflict arises between you and the Company).

6. **Non-Disparagement**. You agree that you will not disparage or defame the reputation, character, image, products, or services of the Company or the Released Parties, provided that you shall respond accurately and fully to any question, inquiry, or request for information when required by legal process. The Company agrees that neither the Company nor its directors and senior executive officers shall disparage or defame you or your reputation, character, or image, provided that they will respond accurately and fully to any question, inquiry or request for information when required by legal process.

7. **Non-Admission.** This Agreement does not represent an admission of liability or finding of wrongdoing by you, the Company, or any of Releases.

8. **Return of Company Property**. You agree to promptly return to the Company all property that belongs to the Company, including without limitation all equipment, supplies, documents, files (electronic and hardcopy), and computer disks in good working order. You agree not to "wipe" or otherwise destroy, erase, or compromise company files, records or information contained on any Companyissued electronic equipment prior to returning these items. You further agree to remove from any personal computer all data files containing Company information. Notwithstanding the foregoing, you may take and

retain an electronic copy of your contact list and calendar, and any files or information relating to your employment relationship with the Company or this Agreement, or as may be necessary for preparation of your personal income tax returns. You may retain your Company-provided iPad and iPhone (provided the Company shall have the right to delete all files and emails containing confidential or proprietary information) and the Company will take all action necessary with the carrier to transfer your iPhone number to your personal account.

9. **Continuing Obligations**. You acknowledge your continuing obligations to the Company contained in any proprietary rights or other confidentiality agreements that you signed in favor of the Company during your employment, including the continuing obligations agreement you have previously signed related to confidentiality, nonsolicitation of customers and employees, and intellectual property protection/inventions assignment.

10. Non-Competition. For a period of 12 months from your Separation Date you shall not, directly or indirectly, without the prior written permission of the Company, anywhere in the world where at the date of such termination the Company is doing business or planning to do business, enter into the employ of or render any services to: InterContinental Exchange, CME Group, CBOE Holdings, Deutsche Borse, London Stock Exchange Group, TMX, MEMX, IEX, MIAX, LTSE, Fenics, Euronext, BCG Partners, Refinitiv, MSCI, Fidelity National Information Services, Fiserv, SS&C, Marketaxess, Tradeweb, Hong Kong Exchange, Singapore Exchange, Japan Exchange, B3, ASX, S&P Global, Moody's, Thomson-Reuters, IHS Markit, Verisk, Factset, Morningstar, Diligent, and Broadridge. This paragraph supersedes any prior noncompete restriction you signed in your capacity as an employee of the Company. All other restrictions from prior agreements, including nonsolicitation of customers or employees, remain, as noted in Section 9 above.

You acknowledge and agree that the provisions of, and your obligations under, this Agreement are reasonable in scope and necessary for the protection of the Company and its legitimate business interests; that your breach (or threatened breach) of any such provisions or obligations may result in grave and irreparable harm to the Company, inadequately compensable in money damages; and that the Company shall be entitled to seek, in addition to any legal remedies that might be available to it, injunctive relief to prevent and/or remedy such a breach or threatened breach Upon the issuance (or denial) of an injunction, the underlying merits of any dispute shall be resolved in accordance with the arbitration provisions of Section 12 of this Agreement.

11. **Breach.** Should you materially breach this Agreement, and such breach continues for a period of at least 30 days after you receive written notice thereof from the Company, then:

a. The Company shall have no further obligations to you under this Agreement (including but not limited to any obligation to make any further payments to you or on your behalf);

b. The Company shall be entitled to recoup the amount of any payment you received pursuant to this Agreement, but only to the extent that you are determined to owe such an amount pursuant to an arbitration proceeding undertaken pursuant to Section 12 hereof;

c. The Company shall have all rights and remedies available to it under this Agreement and any applicable law; and

d. All of your promises, covenants, representations, and warranties under this Agreement shall remain in full force and effect.

Should the Company materially breach this Agreement and such breach continues for a period of at least 30 days after the Company receives written notice thereof from you asserting such breach has occurred, then you shall have no further obligations under this Agreement, you shall have all rights and remedies available to you under this Agreement and any applicable law, and all of the Company's promises, covenants, representations, and warranties under this Agreement shall remain in full force and effect.

12. **Arbitration.** Any dispute arising between the parties under this Agreement (except as provided in Section 3 of this Agreement), under any statute, regulation, or ordinance, and/or in connection with your employment or termination thereof, shall first be submitted to mandatory mediation at the American Arbitration Association ("AAA") for resolution in New York. If the dispute remains unresolved, it shall then be submitted to binding arbitration before the AAA. Such arbitration shall be conducted in New York, New York, and the arbitrator will apply New York law, including federal law as applied in New York courts. The arbitration shall be conducted by a single arbitrator, in accordance with the AAA's Employment Arbitration Rules. The arbitrator's decision shall be final and binding on the parties, and judgment on any award may be confirmed and entered in any state or federal court in the State and City of New York. The arbitration shall be conducted on a strictly confidential basis, and you shall not disclose the existence of a claim, the nature of a claim, any documents, exhibits, or information exchanged or presented in connection with such a claim, or the result of any action (collectively, "Arbitration Materials"), to any third party, with the sole exception of your legal counsel, who also shall be bound by these confidentiality terms. In the event of any court proceeding to challenge or enforce an arbitrator's award, the parties hereby consent to the exclusive jurisdiction of the state and federal courts in New York, New York and agree to venue in that jurisdiction. To the extent allowable by law, the parties agree to take all steps necessary to protect the confidentiality of the Arbitration Materials in connection with any such proceeding, agree to file all Confidential Information (and documents containing Confidential Information) under seal, and agree to the entry of an appropriate protective order encompassing the confidentiality terms of this Agreement. The Company shall bear the costs and expenses of any mediation and/or arbitration. The arbitrator shall have the authority to award attorneys' fees to a party who substantially prevails.

13. **Severability.** You agree that if any provision of this General Release of Claims is or shall be declared invalid or unenforceable by a court of competent jurisdiction, then such provision will be modified only to the extent necessary to cure such invalidity, with a view to enforcing the parties' intention as set forth in this Agreement to the extent permissible. All remaining provisions of this Agreement shall not be affected thereby and shall remain in full force and effect.

14. **Choice of Law.** This Agreement shall be governed by and construed in accordance with the laws of New York, excluding any choice of law principles. It constitutes the parties' entire agreement, arrangement, and understanding regarding the subject matter herein, superseding any prior or contemporaneous agreements, arrangements, or understandings, whether written or oral, between you on one hand and the Company on the other hand regarding the same subject matter. It may not be modified, amended, discharged, or terminated, nor may any of its provisions be varied or waived, except by a further signed written agreement between the parties. It shall be binding upon the signing parties and their respective heirs, legal representatives, successors, and assigns.

15. **Advice to Consult Legal Representative and Consideration Period.** The Company recommends that you consult with an attorney of your own choosing, at your own expense, with regard to entering into this Agreement. You acknowledge that you have carefully read and understand the provisions of this Agreement. You have been provided with a consideration period consisting of at least twenty-one (21) calendar days to consider the terms of the General Release of Claims from the date this Agreement first was presented to you. You understand that any change to this offer, whether material or immaterial, will not restart the running of the consideration period. You understand that

you may take the entire consideration period to consider this Agreement and that you may return this Agreement in less than the full consideration period only if your decision to shorten it was knowing and voluntary and was not induced in any way by the Company.

16. **Revocation Period.** You have seven (7) calendar days from the date you sign this General Release of Claims to revoke it if you choose to do so. If you elect to revoke, you must give written notice of such revocation to Employer by emailing it to [***] within the seven (7) calendar day period. You understand that if you revoke this General Release of Claims, you will not be entitled to the benefits offered as consideration for this Agreement.

17. **Employee Certification - Validity of Agreement.** You certify that you have carefully read this Agreement and have executed it voluntarily and with full knowledge and understanding of its significance, meaning and binding effect. You further declare that you are competent to understand the content and effect of this Agreement and that your decision to enter into this Agreement has not been influenced in any way by fraud, duress, coercion, mistake or misleading information. You have not relied on any information except what is set forth in this Agreement.

18. **Section 409A.** It is the intent of the parties to this Agreement that no payments under this Agreement be subject to the additional tax on deferred compensation imposed by Section 409A of the Internal Revenue Code of 1986, as amended (the “Code”). Each payment made under this Agreement will be treated as a separate payment for purposes of Section 409A of the Code and the right to a series of installment payments under this Agreement is to be treated as a right to a series of separate payments. If any provision of this Agreement (or of any award of compensation due to you under this Agreement) would cause you to incur any additional tax or interest under Section 409A of the Code or any regulations or Treasury guidance promulgated thereunder, the Company shall modify this Agreement to make it compliant with Section 409A and maintain the value of the payments and benefits under this Agreement. Notwithstanding any provision of this Agreement to the contrary, in the event that any payment to you or any benefit hereunder is made upon, or as a result of your termination of employment, and you are a “specified employee” (as that term is defined under Code Section 409A) at the time you become entitled to any such payment or benefit, and provided further that such payment or benefit does not otherwise qualify for an applicable exemption from Code Section 409A, then no such payment or benefit shall be paid or commenced to be paid to you under this Agreement until the date that is the earlier to occur of: (i) your death, or (ii) six (6) months and one (1) day following your termination of employment (the “Delay Period”). Any payments which you would otherwise have received during the Delay Period shall be payable to you in a lump sum on the date that is six (6) months and one (1) day following the effective date of your termination.

19. Miscellaneous. This Agreement (i) may be executed in identical counterparts, which together shall constitute a single agreement; and (ii) shall inure to the benefit of and shall be binding upon the parties hereto and their respective heirs, legal representatives, successors, and assigns. For the avoidance of doubt, in the unlikely event that you die prior to receiving all consideration set forth herein, the Company shall provide all such consideration to your estate at the same times as otherwise required to the extent permitted by law.

NOTICE TO EMPLOYEE: YOUR SIGNATURE INDICATES THAT YOU HAVE CAREFULLY READ AND UNDERSTAND THE TERMS OF THIS AGREEMENT, RELEASE AND WAIVER OF CLAIMS AND RIGHTS, THAT YOU WERE ADVISED TO CONSULT AN ATTORNEY ABOUT THIS AGREEMENT, THAT THIS AGREEMENT PROVIDES BENEFITS TO WHICH YOU ARE NOT OTHERWISE ENTITLED AND THAT YOU ARE SIGNING THIS DOCUMENT VOLUNTARILY AND NOT AS A RESULT OF COERCION, DURESS OR UNDUE INFLUENCE.

/s/ Ann M. Dennison October 11, 2023
Signature Date

Ann M. Dennison
Print name

On behalf of Company:

/s/ Bryan Smith October 11, 2023
Signature Date

Bryan Smith
Print Name

Exhibit 10.2

151 West 42nd Street

27th Floor

New York, NY 10036 /
USA

August 31, 2023

Sarah Youngwood
[Address]

Dear Sarah:

I am pleased to offer you employment with Nasdaq, Inc. ("Nasdaq" or the "Company") in the position of Executive Vice President, Chief Financial Officer. This position will be based in our New York City headquarters. You will report solely and directly to Adena Friedman, Chair and Chief Executive Officer, be a member of the Management Committee, and perform such duties and functions, consistent with your position, as may be reasonably assigned to you from time to time. Your employment will begin on or about December 1, 2023, or as otherwise mutually agreed upon (the "Start Date").

The terms and conditions of your employment are as follows:

1. Your base salary ("Base Salary") will be $700,000 per annum paid on a bi-weekly basis, in accordance with the Company's regular payroll practices and subject to appropriate withholdings and deductions. The Management Compensation Committee of the Board (the "*Compensation Committee*") shall review the Base Salary at least annually and may (but shall be under no obligation to) increase (but not decrease) the Base Salary on the basis of such review. You hereby agree to devote substantially all your business time and attention to your responsibilities at the Company and the affairs of the Company and not to engage in any business activities other than being employed by and performing the duties required of you by the Company. Notwithstanding the above, if you are to engage in any outside business activity, you must receive prior approval from the Nasdaq Global Ethics Team and your management chain to do so. You may, in accordance with the Company's Code of Ethics (i) engage in personal activities involving charitable, community, educational, religious or similar organizations and (ii) manage your personal investments; provided, however, that, in each case, such activities are in all respects consistent with applicable law and your Nasdaq Continuing Obligations Agreement, 2023 attached as **Appendix B** ("*Continuing Obligations Agreement*").

2. The Company shall pay you a one-time non-deferred Sign-on Cash Bonus equal to $500,000, less applicable taxes and withholdings, payable within thirty days of the Start Date. If you resign your employment with Nasdaq without Good Reason, or Nasdaq terminates your employment for Cause (both defined below), within one year of the Start Date you will be required to pay this Sign-on Cash Bonus back to Nasdaq. You agree to repay the total amount due within 60 days of the last date of employment. For the avoidance of doubt, in the event of your death, termination due to Permanent

Disability or by the Company without Cause or by you with Good Reason (each a "Good Leaver"), you shall not have to repay the Sign-on Cash Bonus. If you are a Good Leaver prior to payment of the Sign-on Cash Bonus, such amount shall be paid to you (or your beneficiaries) within five days following your employment termination.

3. In 2023, you will be eligible to participate in the Nasdaq Executive Incentive Program (XIP). Your one-time cash bonus based on one month of employment, will be equal to $125,000, less applicable withholdings, payable on or around March 1, 2024.

4. Beginning in 2024, you will be eligible to participate in the Nasdaq Executive Incentive Program (XIP) pursuant to which you will be eligible to earn an annual cash bonus (the "*Annual Bonus*"), subject to the terms and conditions therein. Your target bonus opportunity (TBO) will be not less than 200% of your Base Salary, payable during the normal award payout timeframe (expected March of each year), with a maximum opportunity of 200% of TBO. The Compensation Committee shall review the TBO at least annually and may (but shall be under no obligation to) increase the TBO, but shall not decrease the TBO on the basis of such review. The Annual Bonus for each year shall be paid to you on or around March 1 of the year following the performance year.

   The terms and conditions of the XIP, which is a discretionary program, will apply to your bonus, provided, however, that the terms and conditions of your ongoing XIP participation shall be no less favorable than those provided to other senior executive officers of the Company generally.

5. You will receive a Welcome Equity Grant equal to $10,000,000, which will be comprised of 50% Restricted Share Units (RSUs) and 50% Performance Share Units (PSUs). The RSUs will vest 33% after 1 year; 33% after 2 years; 34% after 3 years as measured from the grant date, contingent upon continued employment over that period (except as provided herein). The PSUs will vest on December 31, 2026, based on the program detail and vesting schedule outlined in the Executive Vice President Long Term Incentive Plan Brochure, enclosed with this letter.

   The Company shall grant you the Welcome Equity Grant within 30 days of your Start Date. The equity grant will be based on the closing stock price on the date of the grant.

6. On or around April 1, 2025, you will receive a minimum annual equity grant value of not less than $6,000,000, contingent upon continued employment, which will be comprised of 80% three-year Performance Share Units (PSUs) and 20% Restricted Stock Units (RSUs), based on the 2023 plan design and will be in alignment with other senior executives when the grant is made. The program detail and vesting schedule is outlined in the Executive Vice President Long Term Incentive Plan Brochure, enclosed with this letter.

   Beginning in 2026, you will be eligible to receive further equity grants based upon a target grant level of not less than $6,000,000, subject to the terms and conditions of the Equity Plan in effect at the time of the grant. The terms and conditions of your ongoing equity grants shall be no less favorable than those provided to other senior executive officers of the Company generally. Ongoing equity grants are subject to continued employment, satisfactory performance with the Company, and are subject to applicable Company approvals pursuant to the Plan.

7. As a full-time employee, you will be eligible to participate in Nasdaq's employee benefit programs generally available to similarly situated Company employees and your participation shall be on the same basis as benefits are made available to other

Company executive officers generally, including, without limitation, medical, dental, vision, disability and life insurance, as may be in effect from time to time at the Company, subject to the terms and conditions of the relevant plans. If you elect health and welfare benefits during your initial enrollment period, they will become effective the first day of employment. An overview of the Nasdaq employee benefit program is enclosed with this letter. In addition, you will be eligible for our Flexible Time Off policy, where you may take the appropriate amount of time off that you and your manger agree to. During the term of your employment, the Company shall reimburse you for reasonable business expenses incurred by you in the performance of your duties hereunder in accordance with the policy established by the Compensation Committee.

8. As an Executive Vice President of the Company, you will be eligible to participate in the Company's executive benefits, including nonqualified deferred compensation, executive health exams, and financial and tax planning services on the same basis as Company executive officers generally. These programs are provided to you 100% Company-paid; you are responsible for the taxes if you use the financial planning benefit. You shall be covered under the Company's indemnification agreements and policies and Directors' and Officers' liability insurance at the same levels as provided to senior executive officers of the Company generally.

9. This offer is contingent upon you providing satisfactory proof of identity and legal authority to work in the United States.

10. If the Company terminates your employment, other than for Cause, or if you voluntarily resign with Good Reason, you will be entitled to Severance Pay, which will be no less than the sum of 1.5x Base Salary plus 1x your TBO (which for purposes of this paragraph only shall be treated as $1,400,000 for 2023) plus any pro rata TBO for the calendar year in which the date of termination occurs plus a lump sum payment to reduce the cost of 12 months of COBRA health insurance coverage to the active Nasdaq employee rate. Additionally, your unvested equity at the time of termination of employment will continue to vest for an additional 18 months after termination, as if you continued employment. PSUs will vest based on applicable performance during the respective performance period. If the termination occurs prior to the full vesting of your one-time Welcome Equity Grant, 100% of the Welcome Equity Grant vesting will be accelerated upon termination; PSUs will vest at target performance. Per the Nasdaq, Inc. Equity Incentive Plan, the Management Compensation Committee of the Board of Directors shall have the authority to determine any additional vesting continuation or acceleration upon termination of employment.

    Receipt of severance benefits is subject to you executing and delivering to the Company a general release of claims following the date of termination in substantially the form attached as **Appendix A** (the "Release"), that, within 60 days following your date termination, will become irrevocable by you (such date the Release becomes irrevocable being the "Release Effective Date").

    The Severance Pay is payable in substantially equal monthly installments for the twelve month period following your termination, with the first installment to be paid in the month following the month in which the Release Effective Date occurs; provided, however (consistent with the requirements of Section 409A of the Internal Revenue Code ("Section 409A")), that if the 60 day period described above begins in one calendar year and ends in another, the first installment of the Severance Pay shall be paid not earlier than January 1 of the calendar year following the date of termination.

You will also be entitled to receive payment of (i) any unpaid Base Salary through the date of termination, (ii) any accrued but unpaid vacation through the date of termination, (iii) any earned but unpaid Annual Bonus with respect to the calendar year ended prior to the date of termination, payable when such Annual Bonus would otherwise have been paid, (iv) any unreimbursed expenses pursuant to the Company's expense reimbursement policies and (v) any vested employee benefits pursuant to the terms of the applicable Company benefit plans.

a. Definitions of "Cause" and "Good Reason"

   i. "Cause" means (i) your conviction of, or pleading nolo contendere to, any crime, whether a felony or misdemeanor, involving the purchase or sale of any security, mail or wire fraud, theft, embezzlement, moral turpitude, or Nasdaq or its affiliates' property (with the exception of minor traffic violations or similar misdemeanors); (ii) your repeated neglect of duties; or (iii) your willful misconduct in connection with the performance of duties. The Company may not terminate your employment for Cause unless (x) the Company first gives you written notice of its intention to terminate and of the grounds for such termination within 90 days following the date the Board is informed of such grounds at a meeting of the Board and (y) you have not, within 30 days following receipt of such notice, cured such Cause (if capable of cure) in a manner that is reasonably satisfactory to the Board.

   ii. "Good Reason" shall mean (i) reducing your position, duties, or authority; (ii) failing to secure the agreement of any successor entity to the Company that you shall continue in your position without reduction in position, duties or authority; (iii) relocating your principal work location beyond a 50 mile radius of your work location; or (iv) committing any other material breach of this letter; provided that no event or condition shall constitute Good Reason unless (A) you give written notice specifying your objection to such event or condition within 90 days following the occurrence of such event or condition, (B) such event or condition is not corrected, in all material respects, in a manner that is reasonably satisfactory to you within 30 days following the receipt of such notice, and (C) you resign from your employment within not more than 30 days following the expiration of the 30-day period described in the foregoing clause (B).

   iii. "Permanent Disability" shall mean either (i) your inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than 12 months or (ii) you, by reason of any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than 12 months, receiving income replacement benefits for a period of not less than three months under an accident and health plan covering employees of the Company. You shall be deemed Permanently Disabled if you are determined to be (i) totally disabled by the Social Security Administration or (ii) disabled in accordance with a disability insurance program, provided such definition of disabled under the program complies with the definition of Permanent Disability hereunder. Otherwise, such Permanent

Disability shall be certified by a physician chosen by the Company and reasonably acceptable to you (unless you are then legally incapacitated, in which case such physician shall be reasonably acceptable to your authorized legal representative).

11. If you are terminated by the Company, other than for Cause, or for Good Reason (as those terms are defined in the Change in Control Severance Plan in effect at that time and including a material breach of this letter) within two years following a change-in-control, you will be entitled to severance pay under the EVP Change in Control Severance Plan, which equates to no less than the sum of 2 times Base Salary plus 1 times TBO plus prorated current year bonus plus a lump sum payment to reduce the cost of 12 months of COBRA health insurance coverage to the active Nasdaq employee rate. Any unvested equity (including PSUs and RSUs) will vest upon termination, subject to the rules in the Nasdaq Equity Incentive Plan; termination for Good Reason (as defined by the Change in Control Severance Plan and including a material breach of this letter) will be considered an Involuntary Termination for purposes of equity vesting.

    If (i) any amounts payable to you are characterized as excess parachute payments pursuant to Section 4999 of the Internal Revenue Code of 1986, as amended (the "Section 4999"), and (ii) you thereby would be subject to any United States federal excise tax due to that characterization, your termination benefits hereunder will be reduced to an amount so that none of the amounts payable constitute excess parachute amounts payments if this would result, after taking into account the applicable federal, state and local income taxes and the excise tax imposed by Section 4999, in your receipt on an after-tax basis of the greatest amount of termination and other benefits.

    You will also be entitled to receive payment of (i) any unpaid Base Salary through the date of termination, (ii) any accrued but unpaid vacation through the date of termination (iii) any earned but unpaid Annual Bonus with respect to the calendar year ended prior to the date of termination, payable when such Annual Bonus would otherwise have been paid, (iv) any unreimbursed expenses pursuant to the Company's expense reimbursement policies and (v) any vested employee benefits pursuant to the terms of the applicable Company benefit plans.

12. If your employment terminates due to Retirement (defined as at least age 55 with at least five years of service), death or Permanent Disability, 100% of unvested PSUs and RSUs will continue to vest as though you continued employment through the applicable vesting and/or performance periods. PSUs will vest based on applicable performance during the respective performance period.

    Receipt of benefits is subject to you or your estate executing and delivering to the Company a general release of claims following the date of termination in substantially the form attached as Exhibit A (the "Release"), that, within 60 days following your date termination, will become irrevocable by you.

    You will also be entitled to receive payment of (i) any unpaid Base Salary through the date of termination, (ii) any accrued but unpaid vacation through the date of termination (iii) any earned but unpaid Annual Bonus with respect to the calendar year ended prior to the date of termination, payable when such Annual Bonus would otherwise have been paid, (iv) any unreimbursed expenses pursuant to the Company's expense reimbursement policies and (v) any vested employee benefits pursuant to the terms of the applicable Company benefit plans.

13. As a condition of employment with the Company, you are required to execute the Company's Continuing Obligations Agreement attached hereto as **Appendix B** (the "Continuing Obligations Agreement"). Kindly review and execute the Continuing Obligations Agreement and return it with your signed copy of this letter.

14. The Company maintains and from time to time modifies and implements various Company policies and procedures including, but not limited to, a Company Employee Handbook and Nasdaq's Code of Ethics and Global Trading Policy. The Code, Trading Policy and Prohibited Company List are attached hereto as **Appendix C.** You will be expected to comply with all such policies and procedures.

15. Your employment will be on an "at-will" basis meaning that either you or the Company may terminate your employment at any time and for any reason, with or without cause or prior notice, subject to the applicable severance provisions. The Company also reserves the right to modify the terms, benefits, and conditions of your employment at any time, unrelated to the compensation eligibility amounts offered to you in this letter (other than subsequent increases in your overall eligible compensation package in future years); provided, that, the parties agree and acknowledge that any such modification shall be subject to the Good Reason provisions set forth herein and in any other applicable plan or agreement.

16. By signing below, you also represent that you are not subject to any contract, agreement, or restrictive covenant that would prevent you from working for the Company on the terms herein, or from freely and fully performing your duties here. You agree that you will immediately notify the Company in writing if you become aware of any reason you cannot be or remain employed by, or fully execute your responsibilities for, the Company. Similarly, if you receive any communication from a former employer or any other person or entity claiming you cannot join or continue employment at the Company, you will immediately notify the Company in writing. You also represent that you will abide by all contractual obligations you may have to all prior employers and that you will not retain, review, or utilize any other person's or entity's confidential or proprietary information in connection with your work for the Company or share or disclose such information to any other person or entity. Finally, you agree that you will notify the Company if you are detained or arrested by any law enforcement agency, regardless of the severity of the charges, as soon as possible after such action (this will not necessarily disqualify you from employment).

17. This offer of employment, with all referenced attachments, constitutes the entire offer, superseding any prior offers, understandings, communications, representations and/or agreements with respect to the subject matter hereof. This offer of employment shall be governed by the laws of the State of New York without giving effect to the principles of conflicts of law.

18. You are required to disclose to us any agreements that may affect your eligibility to be employed by Nasdaq, its affiliates or subsidiaries, or that may limit the manner in which you may be employed. If nothing is disclosed, we will proceed on the belief that no such agreements exist and nothing will prevent you from performing the duties of your position.

19. You agree not to bring any third party confidential information to Nasdaq, its affiliates or subsidiaries, including that of any former employer, and that in performing your duties you will not in any way utilize any such information. You further agree that, during the term of your employment, you will not engage in any other employment, occupation, consulting or other business activity directly related to the business in which

we are now involved or become involved during the term of your employment, nor will you engage in any other activities that conflict with your obligations to us, consistent with the Company's Global Code of Ethics.

20. Your Company shareholding requirement shall be four times your Base Salary, governed by the Company's Board approved stock holding requirement policy.

21. Following the termination of your employment under any of the above clauses of this letter, you shall have no obligation or duty to seek subsequent employment or engagement as an employee (including self-employment) or as a consultant or otherwise mitigate the Company's obligations hereunder; nor shall the payments provided by this letter be reduced by the compensation earned by you as an employee or consultant from such subsequent employment or consultancy.

22. The Company shall reimburse you for your reasonable legal fees incurred in connection with the negotiation of this letter and any ancillary documentation, in an amount of approximately $15,000.

23. Notwithstanding any other provision of this offer, any payment, settlement, or benefit triggered by termination of your employment with the Company shall not be made until six months and one day following Date of Termination if such delay is necessary to avoid the imposition of any tax, penalty, or interest under Section 409A of the Internal Revenue Code of 1986, as amended (Section "*409A*"). Any installment payments that are delayed pursuant to this section shall be accumulated and paid in a lump sum on the day that is six months and one day following the Date of Termination (or, if earlier, upon your death) and the remaining installment payments shall begin on such date in accordance with the schedule provided herein. For purposes of this offer, termination or severance of employment will be read to mean a "separation from service" within the meaning of Section 409A where it is reasonably anticipated that no further services would be performed after that date or that the level of services you would perform after that date (whether as an employee or independent contractor) would permanently decrease to no more than 20 percent of the average level of bona fide services performed over the immediately preceding thirty-six (36) month period. Additionally, the amount of expenses eligible for reimbursement or in-kind benefits to be provided during one calendar year may not affect the expenses eligible for reimbursement or any in-kind benefits to be provided in any other calendar year and the right to reimbursement or in-kind benefits is not subject to liquidation or exchange for another benefit. All reimbursements shall be made no later than the last day of the calendar year following the calendar year in which you incur the reimbursable expense. These terms are intended to comply with the requirements of Section 409A (including the exceptions thereto), to the extent applicable, and the Agreement shall be administered and interpreted in accordance with such intent. If any provision contained in this offer conflicts with the requirements of Section 409A (or the exemptions intended to apply under this offer), the offer shall be deemed to be reformed to comply with the requirements of Section 409A (or the applicable exemptions thereto). The Company, after consulting with you, may amend the terms of any award provided for herein in any manner that the Company considers necessary or advisable to ensure that cash compensation, equity awards or other benefits provided for herein are not subject to United States federal income tax, state or local income tax or any equivalent taxes in territories outside the United States prior to payment, exercise, vesting or settlement, as applicable, or any tax, interest or penalties pursuant to Section 409A. Any such amendments shall be made in a manner that preserves to the maximum extent possible the intended benefits to you. This Section does not create an obligation on the part of the Company to modify this offer and does not guarantee that the amounts or benefits

owed under the terms of this offer will not be subject to interest and penalties under Section 409A. For purposes of this offer, all rights to payments and benefits hereunder shall be treated as rights to receive a series of separate payments and benefits to the fullest extent allowed by Section 409A.

24. You agree that compensation and benefits provided by the Company, including any under this Agreement, will be subject to clawback or recoupment by the Company under any applicable clawback or recoupment policy that is generally applicable to the Company's executives, as may be in effect from time-to-time, or as required by applicable law. No such policy shall be applied less favorably to you than to other senior executives of the Company absent any specific wrongdoing by you.

25. Electronic signatures shall be as binding as originals.

We look forward to your joining the Company. Please do not hesitate to contact me if you have any questions at [**] or [**]**.** To accept this offer of employment, please sign below and return no later than **September 1, 2023.**

Sincerely,

Bryan Smith
Executive Vice President, Chief People Officer

I hereby accept the terms of the offer described above for employment with Nasdaq, Inc.

/s/ Sarah Youngwood
Candidate

August 31, 2023
Date

Enclosures:
- Appendix A – General Release of Claims Template
- Appendix B – Continuing Obligations Agreement
- Appendix C – Global Code of Ethics, Global Trading Policy, and Prohibited Company List
- Benefits Program Overview
- Long-Term Incentive Overview

Exhibit A

Release of Claims

GENERAL RELEASE

WHEREAS, Sarah Youngwood (hereinafter referred to as the "*Executive*") and Nasdaq, Inc. (hereinafter referred to as "*Employer*") are parties to an offer letter, dated August 29, 2023 (the "Offer Letter"), which provided for the Executive's employment with Employer on the terms and conditions specified therein; and

WHEREAS, the Executive has agreed to execute a release of the type and nature set forth herein as a condition to her entitlement to certain payments and benefits upon her termination of employment with Employer.

NOW, THEREFORE, in consideration of the premises and mutual promises herein contained and for other good and valuable consideration received or to be received by the Executive in accordance with the terms of the Employment Agreement, it is agreed as follows:

1. Excluding enforcement of the covenants, promises and/or rights reserved herein, the Executive hereby irrevocably and unconditionally releases, acquits and forever discharges Employer and, in their capacities as such, each of Employer's owners, stockholders, predecessors, successors, assigns, directors, officers, employees, divisions, subsidiaries, affiliates (and directors, officers and employees of such companies, divisions, subsidiaries and affiliates) and all persons acting by, through, under or in concert with any of them (collectively "Releasees"), or any of them, from any and all Claims (as defined below) through the date of this Release. You agree not to file a lawsuit or arbitration to assert any such Claim. Further, you agree that should any other person, organization or entity file a lawsuit or arbitration to assert any such Claim, you will not seek or accept any personal relief in such action.

a. Definition of "Claims." Except as stated below, "Claims" includes without limitation all actions or demands of any kind that you may now have or have had or reasonably known you should have had (although you are not being asked to waive Claims that may arise after the date of this Agreement). More specifically, Claims include rights, causes of action, damages, penalties, losses, attorneys' fees, costs, expenses, obligations, agreements, judgments and all other liabilities of any kind or description whatsoever, either in law or in equity, whether known or unknown, suspected or unsuspected. The nature of Claims covered by this release includes without limitation all actions or demands in any way based on your employment with the Company, the terms and conditions of such employment, or your separation from employment. More specifically, all of the following are among the types of Claims which are waived and barred by this General Release of Claims to the extent allowable under applicable law and are considered illustrative but not exhaustive:

- Contract Claims, whether express or implied;
- Tort Claims, such as for defamation or emotional distress;
- Claims under federal, state and municipal laws, regulations, ordinance or court decisions of any kind;
- Claims of discrimination, harassment or retaliation, whether based on race, color, religion, gender, sex, age, sexual orientation, handicap and/or disability, genetic information, national origin, or any other legally protected class;

- Claims under the AGE DISCRIMINATION IN EMPLOYMENT ACT, Title VII of the Civil Rights Act of 1964, as amended, the Americans with Disabilities Act as amended, the Genetic Information Nondiscrimination Act, the Family and Medical Leave Act, and similar state and local statutes, laws and ordinances, including but not limited to the New York State Human Rights Law, the New York Labor Act, the New York Equal Pay Law, the New York Civil Rights Law, the New York Rights of Persons With Disabilities Law, and the New York Equal Rights Law, all as amended;

- Claims under the Employee Retirement Income Security Act, the Occupational Safety and Health Act, the False Claims Act, and similar state and local statutes, laws and ordinances;

- Claims for wrongful discharge; and

- Claims for attorneys' fees, including litigation expenses and/or costs,

provided, *however*, that this release shall not apply to any of the obligations of Employer or any other Releasee under the Offer Letter, or under any agreements, plans, contracts, documents or programs described or referenced in the Offer Letter; and *provided*, *further*, that this release shall not apply to any rights the Executive may have to obtain contribution or indemnity against Employer or any other Releasee pursuant to contract, Employer's certificate of incorporation and by-laws or otherwise or to receive any coverage under applicable directors' and officers' liability insurance policies.

b. <u>Exclusions</u>: Notwithstanding any other provision of this release, the following are <u>not</u> barred by the release: (a) Claims relating to the validity of this Agreement; (b) Claims by either party to enforce this Agreement; (c) Claims which are not legally waiveable, including SEC whistleblowing claims pursuant to Rule 21F-17. In addition, this General Release of Claims will not operate to limit or bar your right to file an administrative charge of discrimination with the Equal Employment Opportunity Commission (EEOC) or to testify, assist or participate in an investigation, hearing or proceeding conducted by the EEOC. However, the Release <u>does</u> bar your right to recover any personal or monetary relief, including if you or anyone on your behalf seeks to file a lawsuit or arbitration on the same basis as the charge of discrimination. Additionally, nothing in this Release should have a chilling effect on your ability to engage in whistleblowing activity, by prohibiting or restricting you (or your attorney) from initiating communications directly with, or responding to any inquiry from, or providing testimony before, the SEC or FINRA regarding your employment at the Company, and nothing prevents you from reporting to, communicating with, contacting, responding to an inquiry from, providing relevant information to, participating or assisting in an investigation conducted by, or receiving a monetary award from the SEC or any other governmental enforcement agency related to such communication (except as noted in Section 3(b) above).

2. The Executive expressly waives and relinquishes all rights and benefits afforded by California Civil Code Section 1542 and does so understanding and acknowledging the significance of such specific waiver of Section 1542. Section 1542 states as follows:

> "A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE,

WHICH IF KNOWN BY HIM OR HER MUST HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR."

Thus, notwithstanding the provisions of Section 1542, and for the purpose of implementing a full and complete release and discharge of the Releasees, the Executive expressly acknowledges that this Agreement is intended to include in its effect, without limitation, all Claims that the Executive does not know or suspect to exist in the Executive's favor at the time of execution hereof, and that this Agreement contemplates the extinguishment of any such Claim or Claims.

3. The Executive understands that she has been given a period of 21 days to review and consider this General Release before signing it pursuant to the Age Discrimination In Employment Act of 1967, as amended. The Executive further understands that she may use as much of this 21-day period as the Executive wishes prior to signing.

4. The Executive acknowledges and represents that she understands that she may revoke the waiver of her rights under the Age Discrimination In Employment Act of 1967, as amended, effectuated in this Agreement within 7 days of signing this Agreement. Revocation can be made by delivering a written notice of revocation to Office of the General Counsel, Nasdaq, Inc. For this revocation to be effective, written notice must be received by the General Counsel no later than the close of business on the seventh day after the Executive signs this Agreement. If the Executive revokes the waiver of her rights under the Age Discrimination in Employment Act of 1967, as amended, Employer shall have no obligations to the Executive under Section 8 (other than the Base Obligations) of the Employment Agreement.

5. The Executive and Employer respectively represent and acknowledge that in executing this Agreement neither of them is relying upon, and has not relied upon, any representation or statement not set forth herein made by any of the agents, representatives or attorneys of the Releasees with regard to the subject matter, basis or effect of this Agreement or otherwise.

6. This Agreement shall not in any way be construed as an admission by any of the Releasees that any Releasee has acted wrongfully or that the Executive has any rights whatsoever against any of the Releasees except as specifically set forth herein, and each of the Releasees specifically disclaims any liability to any party for any wrongful acts.

7. It is the desire and intent of the parties hereto that the provisions of this Agreement be enforced to the fullest extent permissible under law. Should there be any conflict between any provision hereof and any present or future law, such law will prevail, but the provisions affected thereby will be curtailed and limited only to the extent necessary to bring them within the requirements of law, and the remaining provisions of this Agreement will remain in full force and effect and be fully valid and enforceable.

8. The Executive represents and agrees (a) that the Executive has to the extent she desires discussed all aspects of this Agreement with her attorney, (b) that the Executive has carefully read and fully understands all of the provisions of this Agreement, and (c) that the Executive is voluntarily entering into this Agreement.

9. This General Release shall be governed by, and construed in accordance with, the laws of the State of New York, without giving effect to the conflicts of laws principles thereof or to those of any other jurisdiction which, in either case, could cause the application of the laws of any jurisdiction other than the State of New York. This General Release is binding on the successors and assigns of, and sets forth the entire agreement between, the parties hereto; fully supersedes any and all prior agreements or understandings between the parties hereto pertaining to the subject matter hereof; and may not be changed except by explicit written agreement to that effect subscribed by the parties hereto.

PLEASE READ CAREFULLY. THIS GENERAL RELEASE INCLUDES A RELEASE OF ALL KNOWN AND UNKNOWN CLAIMS.

This General Release is executed by the Executive and Employer as of the XX day of MONTH, YEAR.

____
Sarah Youngwood

Nasdaq, Inc.

By: ___________
Name:
Title: Chair and Chief Executive 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 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 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:	Chief Executive Officer

Date: November 3, 2023

Exhibit 31.2

CERTIFICATION

I, Ann M. Dennison, 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 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 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/ Ann M. Dennison
Name:	Ann M. Dennison
Title:	Executive Vice President and Chief Financial Officer

Date: November 3, 2023

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 September 30, 2023 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), Adena T. Friedman, as Chief Executive Officer of the Company, and Ann M. Dennison, as Executive Vice President 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 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:	Chief Executive Officer
Date:	November 3, 2023
	/s/ Ann M. Dennison
Name:	Ann M. Dennison
Title:	Executive Vice President and Chief Financial Officer
Date:	November 3, 2023

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.