Intercontinental Exchange, Inc.
Form 10-Q/A
May 02, 2019

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

Form 10-Q/A
Amendment No. 1

(Mark One)

þ	QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
	For the quarterly period ended March 31, 2019
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 001-36198

INTERCONTINENTAL EXCHANGE, INC.
(Exact name of registrant as specified in its charter)

Delaware	46-2286804
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification Number)
5660 New Northside Drive, Atlanta, Georgia	30328
(Address of principal executive offices)	(Zip Code)

(770) 857-4700
Registrant's telephone number, including area code

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	ICE	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act:
None

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Exchange Act 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 þ 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 during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes þ 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 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 þ 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 þ

As of April 29, 2019, the number of shares of the registrant’s Common Stock outstanding was 563,865,016 shares.

EXPLANATORY NOTE

This Amendment No. 1 to the Form 10-Q (this “Amendment”) amends the Quarterly Report on Form 10-Q of Intercontinental Exchange, Inc. for the period ended March 31, 2019 (the “Form 10-Q”) filed earlier today on May 2, 2019 for the sole purpose of correcting a clerical error. The clerical error resulted in certain headings to be missing from the Accumulated Other Comprehensive Income (Loss) table in Note 9 to the consolidated financial statements.

In addition, as required by Rule 12b-15 under the Securities Exchange Act of 1934, as amended, new certifications by our principal executive officer and principal financial officer are filed as exhibits to this Amendment. No other changes have been made to the Form 10-Q, but for the convenience of the reader, this Amendment restates in its entirety, as amended, the original Form 10-Q. This Amendment does not reflect events that may have occurred subsequent to the original filing date, and does not modify or update in any way the substantive disclosures made in the Form 10-Q.

INTERCONTINENTAL EXCHANGE, INC.
Form 10-Q/A
Quarterly Period Ended March 31, 2019
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PART I. Financial Statements
Item 1. Consolidated Financial Statements (Unaudited)

Intercontinental Exchange, Inc. and Subsidiaries
Consolidated Balance Sheets
(In millions, except per share amounts)
(Unaudited)

	As of March 31, 2019	As of December 31, 2018
Assets:		
Current assets:		
Cash and cash equivalents	$653	$ 724
Short-term restricted cash and cash equivalents	868	818
Customer accounts receivable, net of allowance for doubtful accounts of $7 at March 31, 2019 and December 31, 2018	1,181	953
Margin deposits, guaranty funds and delivery contracts receivable	64,564	63,955
Prepaid expenses and other current assets	219	242
Total current assets	67,485	66,692
Property and equipment, net	1,538	1,241
Other non-current assets:		
Goodwill	13,098	13,085
Other intangible assets, net	10,406	10,462
Long-term restricted cash and cash equivalents	370	330
Other non-current assets	960	981
Total other non-current assets	24,834	24,858
Total assets	$93,857	$ 92,791
Liabilities and Equity:		
Current liabilities:		
Accounts payable and accrued liabilities	$509	$ 521
Section 31 fees payable	70	105
Accrued salaries and benefits	125	280
Deferred revenue	479	135
Short-term debt	1,005	951
Margin deposits, guaranty funds and delivery contracts payable	64,564	63,955
Other current liabilities	283	161
Total current liabilities	67,035	66,108
Non-current liabilities:		
Non-current deferred tax liability, net	2,308	2,337
Long-term debt	6,492	6,490
Accrued employee benefits	203	204
Operating lease liability-non-current	306	—
Other non-current liabilities	312	350
Total non-current liabilities	9,621	9,381
Total liabilities	76,656	75,489
Commitments and contingencies		
Redeemable non-controlling interest in consolidated subsidiaries	71	71
Equity:		

Intercontinental Exchange, Inc. stockholders’ equity:		
Preferred stock, $0.01 par value; 100 shares authorized; no shares issued or outstanding at March 31, 2019 and December 31, 2018	—	—

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Common stock, $0.01 par value; 1,500 shares authorized; 606 and 604 shares issued at March 31, 2019 and December 31, 2018, respectively, and 565 and 569 shares outstanding at March 31, 2019 and December 31, 2018, respectively	6	6
Treasury stock, at cost; 41 and 35 shares at March 31, 2019 and December 31, 2018, respectively	(2,851)	(2,354)
Additional paid-in capital	11,597	11,547
Retained earnings	8,644	8,317
Accumulated other comprehensive loss	(290)	(315)
Total Intercontinental Exchange, Inc. stockholders' equity	17,106	17,201
Non-controlling interest in consolidated subsidiaries	24	30
Total equity	17,130	17,231
Total liabilities and equity	$93,857	$92,791

See accompanying notes.

Intercontinental Exchange, Inc. and Subsidiaries
Consolidated Statements of Income
(In millions, except per share amounts)
(Unaudited)

	Three Months Ended March 31,	
	2019	2018
Revenues:		
Transaction and clearing, net	$862	$898
Data services	546	520
Listings	111	109
Other revenues	64	53
Total revenues	1,583	1,580
Transaction-based expenses:		
Section 31 fees	69	121
Cash liquidity payments, routing and clearing	244	234
Total revenues, less transaction-based expenses	1,270	1,225
Operating expenses:		
Compensation and benefits	248	240
Professional services	33	30
Acquisition-related transaction and integration costs	—	12
Technology and communication	107	105
Rent and occupancy	17	17
Selling, general and administrative	42	33
Depreciation and amortization	158	138
Total operating expenses	605	575
Operating income	665	650
Other income (expense):		
Interest income	9	4
Interest expense	(71)	(52)
Other income, net	23	15
Other income (expense), net	(39)	(33)
Income before income tax expense	626	617
Income tax expense	134	143
Net income	$492	$474
Net income attributable to non-controlling interest	(8)	(10)
Net income attributable to Intercontinental Exchange, Inc.	$484	$464
Earnings per share attributable to Intercontinental Exchange, Inc. common stockholders:		
Basic	$0.85	$0.80
Diluted	$0.85	$0.79
Weighted average common shares outstanding:		
Basic	568	582
Diluted	570	586

See accompanying notes.

Intercontinental Exchange, Inc. and Subsidiaries
Consolidated Statements of Comprehensive Income
(In millions)
(Unaudited)

	Three Months Ended March 31,	
	2019	2018
Net income	$492	$474
Other comprehensive income (loss):		
Foreign currency translation adjustments, net of tax benefit (expense) of $0 and ($1) for the three months ended March 31, 2019 and 2018, respectively	26	33
Change in equity method investment	(1)	—
Other comprehensive income	25	33
Comprehensive income	$517	$507
Comprehensive income attributable to non-controlling interest	(8)	(10)
Comprehensive income attributable to Intercontinental Exchange, Inc.	$509	$497

See accompanying notes.

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Intercontinental Exchange, Inc. and Subsidiaries
Consolidated Statements of Changes in Equity and Redeemable Non-Controlling Interest
(In millions)
(Unaudited)

	Intercontinental Exchange, Inc. Stockholders' Equity							Non-Controlling Interest in Consolidated Subsidiaries	Total Equity	Redeemable Non-Controlling Interest
	Common Stock		Treasury Stock		Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Loss			
	Shares	Value	Shares	Value						
Balance, as of December 31, 2018	604	6	(35)	(2,354)	11,547	8,317	(315)	30	17,231	71
Other comprehensive income	—	—	—	—	—	—	25	—	25	—
Exercise of common stock options	—	—	—	—	5	—	—	—	5	—
Repurchases of common stock	—	—	(6)	(440)	—	—	—	—	(440)	—
Payments relating to treasury shares	—	—	—	(57)	—	—	—	—	(57)	—
Stock-based compensation	—	—	—	—	33	—	—	—	33	—
Issuance under the employee stock purchase plan	—	—	—	—	12	—	—	—	12	—
Issuance of restricted stock	2	—	—	—	—	—	—	—	—	—
Distributions of profits	—	—	—	—	—	—	—	(14)	(14)	—
Dividends paid to stockholders	—	—	—	—	—	(157)	—	—	(157)	—
Net income attributable to non-controlling interest	—	—	—	—	—	(8)	—	8	—	—
Net income	—	—	—	—	—	492	—	—	492	—
Balance, as of March 31, 2019	606	$ 6	(41)	$ (2,851)	$ 11,597	$ 8,644	$ (290)	$ 24	$ 17,130	$ 71

	Intercontinental Exchange, Inc. Stockholders' Equity							Non-Controlling Interest in Consolidated Subsidiaries	Total Equity	Redeemable Non-Controlling Interest
	Common Stock		Treasury Stock		Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Loss			
	Shares	Value	Shares	Value						
Balance, as of December 31, 2017	600	6	(17)	(1,076)	11,392	6,858	(223)	28	16,985	—
Other comprehensive income	—	—	—	—	—	—	33	—	33	—
Exercise of common stock options	—	—	—	—	4	—	—	—	4	—
Repurchases of common stock	—	—	(4)	(300)	—	—	—	—	(300)	—
Payments relating to treasury shares	—	—	(1)	(72)	—	—	—	—	(72)	—
Stock-based compensation	—	—	—	—	32	—	—	—	32	—
Issuance of restricted stock	3	—	—	—	—	—	—	—	—	—
Distributions of profits	—	—	—	—	—	—	—	(10)	(10)	—
Dividends paid to stockholders	—	—	—	—	—	(140)	—	—	(140)	—
	—	—	—	—	—	(10)	—	10	—	—

Net income attributable to non-controlling interest										
Net income	—	—	—	—	—	474	—	—	474	—
Balance, as of March 31, 2018	603	$ 6	(22)	$(1,448)	$ 11,428	$7,182	$ (190)	$ 28	$17,006	$ —

See accompanying notes.

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Intercontinental Exchange, Inc. and Subsidiaries
Consolidated Statements of Cash Flows
(In millions)
(Unaudited)

	Three Months Ended March 31, 2019	Three Months Ended March 31, 2018
Operating activities:		
Net income	$492	$474
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	158	138
Stock-based compensation	29	29
Deferred taxes	(28)	(6)
Other	(21)	1
Changes in assets and liabilities:		
Customer accounts receivable	(227)	(259)
Other current and non-current assets	15	(32)
Section 31 fees payable	(35)	(8)
Deferred revenue	347	343
Other current and non-current liabilities	(76)	(107)
Total adjustments	162	99
Net cash provided by operating activities	654	573
Investing activities:		
Capital expenditures	(26)	(14)
Capitalized software development costs	(39)	(37)
Cash paid for acquisitions	(19)	(400)
Return of capital from equity method investment	44	—
Purchases of investments	—	(304)
Net cash used in investing activities	(40)	(755)
Financing activities:		
Proceeds from commercial paper, net of repayments	54	789
Repurchases of common stock	(440)	(300)
Dividends to stockholders	(157)	(140)
Payments relating to treasury shares received for restricted stock tax payments and stock option exercises	(57)	(72)
Other	4	(7)
Net cash provided by (used in) financing activities	(596)	270
Effect of exchange rate changes on cash, cash equivalents and restricted cash and cash equivalents	1	2
Net increase in cash, cash equivalents, and restricted cash and cash equivalents	19	90
Cash, cash equivalents, and restricted cash and cash equivalents, beginning of period	1,872	1,568
Cash, cash equivalents, and restricted cash and cash equivalents, end of period	$1,891	$1,658
Supplemental cash flow disclosure:		
Cash paid for income taxes	$78	$144
Cash paid for interest	$79	$27

See accompanying notes.

Intercontinental Exchange, Inc. and Subsidiaries
Notes to Consolidated Financial Statements
(Unaudited)

1. Description of Business

Nature of Business and Organization

We are a leading global operator of regulated exchanges, clearing houses and listings venues, and a provider of data services for commodity, financial, fixed income and equity markets. We operate regulated marketplaces for listing, trading and clearing a broad array of derivatives contracts and securities across major asset classes, including energy and agricultural commodities, metals, interest rates, equities, exchange-traded funds, or ETFs, credit derivatives, bonds and currencies. We also offer comprehensive data services to support the trading, investment, risk management, mortgage service and connectivity needs of customers around the world and across asset classes.

Our exchanges include derivative exchanges in the United States, or U.S., United Kingdom, or U.K., European Union, or EU, Canada and Singapore, and cash equities, equity options and bond trading venues in the U.S. We also operate over-the-counter, or OTC, markets for physical energy, fixed income and credit default swaps, or CDS, trade execution. To serve global derivatives markets, we operate central counterparty clearing houses, or CCPs, in the U.S., U.K., EU, Canada and Singapore (Note 11). We offer a range of data services for global financial and commodity markets, including pricing and reference data, exchange data, analytics, feeds, index services, desktops and connectivity solutions. Through our markets, clearing houses, listings and data services, we provide comprehensive solutions for our customers through liquid markets, benchmark products, access to capital markets and related services to support their ability to manage risk and raise capital. Our business is conducted as two reportable business segments, our Trading and Clearing segment and our Data and Listings segment, and the majority of our identifiable assets are located in the U.S. and U.K. (Note 14).

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying unaudited consolidated financial statements have been prepared by us in accordance with U.S. generally accepted accounting principles, or U.S. GAAP, pursuant to the rules and regulations of the Securities and Exchange Commission, or SEC, regarding interim financial reporting. Accordingly, the unaudited consolidated financial statements do not include all of the information and footnotes required by U.S. GAAP for complete financial statements and should be read in conjunction with our audited consolidated financial statements and related notes thereto for the year ended December 31, 2018. The accompanying unaudited consolidated financial statements reflect all adjustments that are, in our opinion, necessary for a fair presentation of results for the interim periods presented. We believe that these adjustments are of a normal recurring nature.

Preparing financial statements requires us to make certain estimates and assumptions that affect the amounts that are reported in our consolidated financial statements and accompanying disclosures. Actual amounts could differ from those estimates. The results of operations for the three months ended March 31, 2019 are not necessarily indicative of the results to be expected for any future period or the full fiscal year.

These statements include the accounts of our wholly-owned and controlled subsidiaries. All intercompany balances and transactions between us and our wholly-owned and controlled subsidiaries have been eliminated in consolidation. For consolidated subsidiaries in which our ownership is less than 100% and for which we have control over the assets and liabilities and the management of the entity, the outside stockholders’ interests are shown as non-controlling interests.

Recently Adopted Accounting Pronouncements

Standard/Description	Effective Date and Adoption Considerations	Effect on Financial Statements
ASU No. 2016-02, Leases. Entities are required to recognize both assets and liabilities arising from finance and operating leases, along with additional qualitative and quantitative disclosures.	We adopted ASU No. 2016-02 on January 1, 2019.	Further disclosures and details on our adoption of ASU 2016-02 are discussed below.

Accounting Pronouncements Not Yet Adopted

Standard/Description	Effective Date and Adoption Considerations	Effect on Financial Statements
ASU No. 2016-13, Financial Instruments - Measurement of Credit Losses on Financial Instruments. Applies to all financial instruments carried at amortized cost including held-to-maturity debt securities and trade receivables. Requires financial assets carried at amortized cost to be presented at the net amount expected to be collected and requires entities to record credit losses through an allowance for credit losses on available-for-sale debt securities.	Effective at the beginning of our first quarter of fiscal year 2020, with early adoption permitted. We do not expect to early adopt.	We are currently evaluating this guidance to determine the potential impact on our consolidated financial statements.

Adoption of ASU 2016-02, "Leases"

On January 1, 2019, we adopted ASU 2016-02, Leases, or ASU 2016-02. This standard requires recognition of both assets and liabilities arising from finance and operating leases, along with additional qualitative and quantitative disclosures. ASU 2016-02 requires lessees to recognize a right-of-use, or ROU, asset representing a right to use the underlying asset over the lease term, and a corresponding lease liability on the balance sheet. Our operating leases primarily relate to our leased office space and data center facilities, and we do not have any leases classified as finance leases.

We adopted ASU 2016-02 using the modified retrospective transition method and did not restate prior periods. Using the modified retrospective approach, we applied the provisions of ASU 2016-02 beginning in the period of adoption, and elected the package of practical expedients available to us. There was no impact to the opening balance of retained earnings as a result of a cumulative-effect adjustment on the adoption date. We elected the practical expedient to not reassess lease classifications, but alternatively to carry forward our historical classifications. In addition, we elected the practical expedient of not separating lease and non-lease components as our lease arrangements are not highly dependent on other underlying assets. Our implementation of the amended lease guidance was subject to the same internal controls over financial reporting that we apply to our consolidated financial statements.

At lease inception, we review the service arrangement and components of a contract to identify if a lease or embedded lease arrangement exists. An indicator of a contract containing a lease is when we have the right to control and use an identified asset over a period of time in exchange for consideration. Operating lease ROU assets and liabilities are recognized at the commencement date based on the present value of lease payments over the lease term, using our estimated incremental borrowing rate. We made the policy election to not record leases with a term of 12 months or less on the balance sheet, and to recognize lease expense on a straight-line basis over the lease term for those leases, the impact of which is nominal. We have also made policy elections related to capitalization thresholds and discount rates. We have elected to use a portfolio approach in consideration of our incremental borrowing rate to our population of lease agreements. Our incremental borrowing rate was determined based on our recent debt issuances that we believe are reflective of current borrowing rates. Certain lease agreements include options to extend, renew or terminate the lease agreement. As of March 31, 2019, the weighted-average remaining lease term was 7.2 years and the weighted average discount rate was 3.6%. Our lease agreements do not contain any residual value guarantees.

Upon adoption of ASU 2016-02, we recorded $357 million in operating lease liabilities, of which $52 million is included in other current liabilities and $305 million is included in operating lease liability-non-current within our accompanying consolidated balance sheet. We also recorded $308 million in operating lease ROU assets that are included as a component of property and equipment, net, in our balance sheet and are recorded in an amount equal to our lease liability, adjusted for any remaining unamortized lease incentives such as our deferred rent balances. As part of our adoption, we eliminated $49 million in deferred rent liabilities, of which $2 million had previously been included in other current liabilities and $47 million had been included in other non-current liabilities on our balance sheet. On the date of adoption, deferred rent liabilities were reclassified and presented as a reduction to the ROU asset, included in property and equipment, net on our consolidated balance sheet. Our adoption did not have an impact on our consolidated income statement.

We recognize rent expense monthly on a straight-line basis for each respective operating leases, as a reduction to both the ROU asset and the lease liability. For the three months ended March 31, 2019, we recognized $10 million of rent expense for office space as rent and occupancy expense and $5 million of rent expense for data center facilities as technology and communication expense within our consolidated income statement. We do not have any significant variable lease costs related to building and maintenance costs, real estate taxes, or other charges.

Details of our lease asset and liability balances are as follows (in millions):

	As of March 31, 2019	As of January 1, 2019
Right-of-use lease assets	$308	$308
Operating lease liability-current	53	52
Operating lease liability-non-current	306	305
Total operating lease liability	$359	$357

As of March 31, 2019, we estimate that our operating lease liabilities will be recognized in the following years (in millions):

Remainder of 2019	$49
2020	63
2021	61
2022	59
2023	43
Thereafter	134
Lease liability amounts repayable	409
Interest costs	50
Total operating lease liability	$359

Supplemental cash flow information and non-cash activity related to our operating leases are as follows:

	Three Months Ended March 31, 2019
Cash paid for amounts included in the measurement of operating lease liabilities	$ 15
Right-of-use assets obtained in exchange for operating lease obligations	$ 372

3. Investments

Our equity investments, including our investments in Euroclear plc, or Euroclear, and Coinbase Global, Inc., among others, are subject to valuation under ASU 2016-01, Financial Instruments- Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities. See Note 13 for a discussion of our determination of fair value of our financial instruments.

In addition, we own a 40% interest in the Options Clearing Corporation, or OCC, through a direct investment by NYSE that we treat as an equity method investment. OCC serves as a clearing house for securities options, security futures, commodity futures and options on futures traded on various independent exchanges. OCC clears securities options traded on NYSE Arca and NYSE Amex Options, along with other non-affiliated exchanges, and is regulated by the SEC as a registered clearing agency and by the Commodity Futures Trading Commission, or CFTC, as a derivatives clearing organization. Under equity method accounting, each reporting period we adjust the carrying value of our OCC investment on our balance sheet by recognizing our pro-rata 40% share of the earnings or losses of OCC, with a corresponding adjustment in our statement of income to other income, after eliminating any intra-entity income or expenses. In addition, if and when OCC issues cash dividends to us, we deduct the amount of these dividends from the carrying amount of our investment.

OCC adopted a new capital plan during the first quarter of 2015, which raised $150 million in equity capital from OCC's shareholders, including $60 million contributed by us. Pursuant to the terms of the capital plan, in exchange for the contributions of equity capital from its shareholders, OCC was required, subject to determination by its board of directors and compliance with legal requirements, to pay an annual dividend to its shareholders on a pro rata basis. The dividend was intended to be equal to the amount (i) of after-tax income of OCC, in excess of the amount required to maintain its target capital requirement and satisfy other capital requirements, and (ii) remaining after refunds to its clearing members equal to 50% of distributable earnings before tax. Related to that capital plan, from 2015-2017 we received a total of $31 million in dividends from OCC.

Subsequent to our $60 million investment, aggrieved parties petitioned the SEC to review its approval, by delegated authority, of the capital plan. As a result of such petition, the SEC's approval of the capital plan was automatically stayed and OCC halted further implementation of the capital plan pending further SEC action. In September 2015, the SEC lifted the stay. During the fourth quarter of 2015, the OCC capital plan was implemented.

In February 2016, after the SEC approved the rule change establishing the OCC capital plan, certain industry participants appealed that approval in the U.S. Court of Appeals. In August 2017, the Court of Appeals remanded the case to the SEC and on February 13, 2019, the SEC disapproved the OCC capital plan established in 2015. The OCC returned $44 million of our original $60 million contribution during the three months ended March 31, 2019 as a result of the disapproval. The remaining $16 million will be returned at a future date, when returning the funds will allow the OCC to maintain target capital requirements.

Following the SEC disapproval, the OCC also announced they will not be providing a refund to clearing members or declaring a dividend to shareholders for the year ended December 31, 2018, which resulted in higher reported OCC 2018 net income than we had estimated. Therefore, during the three months ended March 31, 2019, we adjusted equity earnings in OCC by recording an additional $19 million earnings in other income to reflect our share of OCC's 2018 net income. In addition, during the three months ended March 31, 2019, we recognized $8 million of equity earnings as our share of OCC's estimated 2019 profits, which is also included in other income.

4. Revenue Recognition

Substantially all of our revenues are considered to be revenues from contracts with customers. The related accounts receivable balances are recorded in our balance sheets as customer accounts receivable. We do not have obligations for warranties, returns or refunds to customers, other than the rebates discussed below, which are settled each period and therefore do not result in variable consideration. We do not have significant revenue recognized from performance obligations that were satisfied in prior periods, and we do not have any transaction price allocated to unsatisfied performance obligations other than in our deferred revenue. Deferred revenue represents our contract liabilities related to our annual, original and other listings revenues as well as certain data services, clearing services and other revenues. See Note 6 for our discussion of deferred revenue balances, activity, and expected timing of recognition. As permitted by U.S. GAAP, we have elected not to provide disclosures about transaction price allocated to unsatisfied performance obligations if contract durations are less than one year, or if we are not required to estimate the transaction price. For all of our contracts with customers, except for listings and certain data and clearing services, our performance obligations are short-term in nature and there is no significant variable consideration. See the bullets below for further descriptions of our revenue contracts. In addition, we have elected the practical expedient of excluding sales taxes from transaction prices. We have assessed the costs incurred to obtain or fulfill a contract with a customer and determined them to be immaterial.

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

Our primary revenue contract classifications are described below. These categories best represent those with similar economic characteristics of the nature, amount, timing and uncertainty of revenues and cash flows.

- Transaction and clearing, net - Transaction and clearing revenues represent fees charged for the performance obligations of derivatives trading and clearing, and from our cash trading, equity options, mortgage services and fixed income exchanges. The derivatives trading and clearing fees contain two performance obligations: (1) trade execution/clearing novation and (2) risk management of open interest. While we allocate the transaction price between these two performance obligations, since they generally are satisfied almost simultaneously there is no significant deferral of revenue. Cash trading, equity options, mortgage services and fixed income fees contain one performance obligation related to trade execution which occurs instantaneously and the revenue is recorded at the point in time of the trade execution. Our transaction and clearing revenues are reported net of rebates, except for the NYSE transaction-based expenses. Rebates were $215 million and $220 million for the three months ended March 31, 2019 and 2018, respectively. Transaction and clearing fees can be variable based on trade volume discounts used in the determination of rebates, however virtually all volume discounts are calculated and recorded on a monthly basis. Transaction and clearing fees, as well as any volume discounts rebated to our customers, are calculated and billed monthly in accordance with our published fee schedules. We make liquidity payments to certain customers in our NYSE businesses and recognize those payments as a cost of revenue. In addition, we pay NYSE regulatory oversight fees to the SEC and collect equal amounts from our customers. These are also considered a cost of revenue, and both of these NYSE-related fees are included in transaction-based expenses. Transaction and clearing revenues and the related transaction-based expenses are all recognized in our Trading and Clearing segment.

- Data services - Data service revenues represent the following:

Pricing and analytics services provide global securities evaluations, reference data, market indices, risk analytics, derivatives pricing and other information designed to meet our customers' portfolio management, trading, risk management, reporting and regulatory compliance needs.
Exchange data and feeds services provide real-time, historical and derived pricing data, order book and transaction information related to our trading venues as well as data from a broad array of third-party trading venues and news feeds.
Desktops and connectivity services provide the connection to our exchanges, clearing houses and data centers and comprise hosting, colocation, infrastructure, technology-based information platforms, workstations and connectivity solutions through the ICE Global Network.

The nature and timing of each contract type for the data services above are similar in nature. Data services revenues are primarily subscription-based, billed monthly, quarterly or annually in advance and recognized ratably over time as our performance obligations of data delivery are met consistently throughout the period. Considering these contracts primarily consist of single performance obligations with fixed prices, there is no variable consideration and no need to allocate the transaction price. In certain of our data contracts, where third parties are involved, we arrange for the third party to transfer the services to our customers; in these arrangements we are acting as an agent and revenue is recorded net. All data services fees are included in our Data and Listings segment.

- Listings - Listings revenues include original and annual listings fees, and other corporate action fees. Each distinct listing fee is allocated to multiple performance obligations including original and incremental listing and investor relations services, as well as a customer’s material right to renew the option to list on our exchanges. In performing this allocation, the standalone selling price of the listing services is based on the original and annual listing fees and the standalone selling price of the investor relations services is based on its market value. All listings fees are billed upfront and the identified performance obligations are satisfied over time. Revenue related to the investor relations performance obligation is recognized ratably over a two-year period, with the remaining revenue recognized ratably over time as customers continue to list on our exchanges, which is generally estimated to be over a period of up to nine years for NYSE and up to five years for NYSE Arca and NYSE American. Listings fees related to other corporate actions are considered contract modifications of our listing contracts and are recognized ratably over time as customers continue to list on our exchanges, which is generally estimated to be a period of six years for NYSE and three years for NYSE Arca and NYSE American. All listings fees are recognized in our Data and Listings segment.

- Other revenues - Other revenues primarily include interest income on certain clearing margin deposits, regulatory penalties and fines, fees for use of our facilities, regulatory fees charged to member organizations of our U.S. securities exchanges, designated market maker service fees, exchange membership fees and agricultural grading and certification fees. Generally, fees for other revenues contain one performance obligation. Because these contracts primarily consist of single performance obligations with fixed prices, there is no variable consideration and no need to allocate the transaction price. Services for other revenues are primarily satisfied at a point in time. Therefore, there is no need to allocate the fee and no deferral results as we have no further obligation to the customer at that time. Other revenues are recognized in our Trading and Clearing segment.

The following table depicts the disaggregation of our revenue according to business line and segment (in millions). Segment totals here are consistent with the segment totals in Note 14:

	Trading and Clearing Segment	Data and Listings Segment	Total Consolidated
Three months ended March 31, 2019			
Transaction and clearing, net	$ 862	$ —	$ 862
Data services	—	546	546
Listings	—	111	111
Other revenues	64	—	64
Total revenues	926	657	1,583
Transaction-based expenses	313	—	313
Total revenues, less transaction-based expenses	$ 613	$ 657	$ 1,270
Timing of Revenue Recognition			
Services transferred at a point in time	$ 528	$ —	$ 528
Services transferred over time	85	657	742
Total revenues, less transaction-based expenses	$ 613	$ 657	$ 1,270

	Trading and Clearing Segment	Data and Listings Segment	Total Consolidated
Three months ended March 31, 2018			
Transaction and clearing, net	$ 898	$ —	$ 898
Data services	—	520	520
Listings	—	109	109
Other revenues	53	—	53
Total revenues	951	629	1,580
Transaction-based expenses	355	—	355
Total revenues, less transaction-based expenses	$ 596	$ 629	$ 1,225
Timing of Revenue Recognition			
Services transferred at a point in time	$ 509	$ —	$ 509
Services transferred over time	87	629	716
Total revenues, less transaction-based expenses	$ 596	$ 629	$ 1,225

The Trading and Clearing segment revenues above include $60 million and $63 million for the three months ended March 31, 2019 and 2018, respectively, for services transferred over time related to risk management of open interest performance obligations. A majority of these performance obligations are performed over a short period of time of one month or less.

5. Goodwill and Other Intangible Assets

The following is a summary of the activity in the goodwill balance for the three months ended March 31, 2019 (in millions):

Goodwill balance at December 31, 2018	$13,085
Foreign currency translation	11
Other activity, net	2
Goodwill balance at March 31, 2019	$13,098

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The following is a summary of the activity in the other intangible assets balance for the three months ended March 31, 2019 (in millions):

Other intangible assets balance at December 31, 2018	$10,462
Acquisitions	9
Foreign currency translation	12
Amortization of other intangible assets	(77)
Other intangible assets balance at March 31, 2019	$10,406

Foreign currency translation adjustments result from a portion of our goodwill and other intangible assets being held at our U.K., EU and Canadian subsidiaries, whose functional currencies are not the U.S. dollar. We did not recognize any impairment losses on goodwill or other intangible assets during the three months ended March 31, 2019 and 2018. The change in other activity, net, in the goodwill table above primarily relates to adjustments to the fair value of the net tangible assets relating to the acquisition of CHX Holdings, Inc., or CHX, with a corresponding adjustment to goodwill.

6. Deferred Revenue

Our contract liabilities, or deferred revenue, represent consideration received that is yet to be recognized as revenue. Total deferred revenue was $565 million as of March 31, 2019, including $479 million in current deferred revenue and $86 million in non-current deferred revenue. The changes in our deferred revenue during the three months ended March 31, 2019 are as follows (in millions):

	Annual Listings Revenues	Original Listings Revenues	Other Listings Revenues	Data Services and Other Revenues	Total
Deferred revenue balance at December 31, 2018	$ —	$ 25	$ 100	$ 92	$217
Additions	382	3	20	139	544
Amortization	(96)	(6)	(9)	(85)	(196)
Deferred revenue balance at March 31, 2019	$ 286	$ 22	$ 111	$ 146	$565

The changes in our deferred revenue during the three months ended March 31, 2018 are as follows (in millions):

	Annual Listings Revenues	Original Listings Revenues	Other Listings Revenues	Data Services and Other Revenues	Total
Deferred revenue balance at December 31, 2017	$ —	$ 25	$ 98	$ 93	$216
Additions	380	7	15	147	549
Amortization	(95)	(6)	(8)	(96)	(205)
Deferred revenue balance at March 31, 2018	$ 285	$ 26	$ 105	$ 144	$560

Included in the amortization recognized during the three months ended March 31, 2019 is $45 million related to the deferred revenue balance as of January 1, 2019. Included in the amortization recognized for the three months ended March 31, 2018 is $49 million related to the deferred revenue balance as of January 1, 2018. As of March 31, 2019, the remaining deferred revenue balance for original listings revenue, other listings revenue and data services and other revenues will be recognized over the period of time we satisfy our performance obligations as described in Note 4.

7. Debt

Our total debt, including short-term and long-term debt, consisted of the following as of March 31, 2019 and December 31, 2018 (in millions):

	As of March 31, 2019	As of December 31, 2018
Debt:		
Short-term debt:		
Commercial Paper	$1,005	$ 951
Total short-term debt	1,005	951
Long-term debt:		
2020 Senior Notes (2.75% senior unsecured notes due December 1, 2020)	1,247	1,246
2022 Senior Notes (2.35% senior unsecured notes due September 15, 2022)	496	496
2023 Senior Notes (3.45% senior unsecured notes due September 21, 2023)	397	397
2023 Senior Notes (4.00% senior unsecured notes due October 15, 2023)	793	793
2025 Senior Notes (3.75% senior unsecured notes due December 1, 2025)	1,243	1,243
2027 Senior Notes (3.10% senior unsecured notes due September 15, 2027)	496	496
2028 Senior Notes (3.75% senior unsecured notes due September 21, 2028)	592	591
2048 Senior Notes (4.25% senior unsecured notes due September 21, 2048)	1,228	1,228
Total long-term debt	6,492	6,490
Total debt	$7,497	$ 7,441

Credit Facility

We have a $3.4 billion senior unsecured revolving credit facility, or the Credit Facility, with a maturity date of August 9, 2023. The Credit Facility includes an option for us to propose an increase in the aggregate amount available for borrowing by up to $975 million, subject to the consent of the lenders funding the increase and certain other conditions. No amounts were outstanding under the Credit Facility as of March 31, 2019.

As of March 31, 2019, of the $3.4 billion that is currently available for borrowing under the Credit Facility, $1.0 billion is required to back-stop the amount outstanding under our Commercial Paper Program and $105 million is required to support certain broker-dealer subsidiary commitments. The amount required to back-stop the amounts outstanding under the Commercial Paper Program will fluctuate as we increase or decrease our commercial paper borrowings. The remaining $2.3 billion is available for working capital and general corporate purposes including, but not limited to, acting as a back-stop to future increases in the amounts outstanding under the Commercial Paper Program.

Commercial Paper Program

We have a U.S. dollar commercial paper program, or the Commercial Paper Program. It is currently backed by the borrowing capacity available under the Credit Facility, as described above. The effective interest rate of commercial paper issuances does not materially differ from short-term interest rates (such as USD LIBOR) which fluctuate due to market conditions and as a result may impact our interest expense. During the three months ended March 31, 2019, we had net issuances of $54 million under the Commercial Paper Program, the proceeds of which were used for general corporate purposes.

Commercial paper notes of $1.0 billion with original maturities ranging from one to 88 days were outstanding as of March 31, 2019 under our Commercial Paper Program, with a weighted average interest rate of 2.54% per annum and a weighted average maturity of 22 days.

8. Share-Based Compensation

We currently sponsor employee and director stock option, restricted stock and employee stock purchase plans. Stock options and restricted stock are granted at the discretion of the Compensation Committee of our Board of Directors based on estimated fair value on the date of grant. The fair value of the stock options and restricted stock on the date of grant is recognized as expense over the vesting period, net of forfeitures. The non-cash compensation expenses recognized in our consolidated statements of income for stock options, restricted stock and under our employee stock purchase plan were $29 million for both the three months ended March 31, 2019 and 2018.

Stock Option Plans

The following is a summary of stock option activity for the three months ended March 31, 2019:

	Number of Options (in thousands)	Weighted Average Exercise Price per Option
Outstanding at December 31, 2018	3,610	$ 46.44
Granted	493	76.16
Exercised	(172)	29.07
Outstanding at March 31, 2019	3,931	50.93

Details of stock options outstanding as of March 31, 2019 are as follows:

	Number of Options (in thousands)	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (Years)	Aggregate Intrinsic Value (In millions)
Vested or expected to vest	3,931	$ 50.93	6.6	$ 99
Exercisable	2,848	$ 43.98	5.7	$ 92

The total intrinsic value of stock options exercised was $8 million and $9 million for the three months ended March 31, 2019 and 2018, respectively. As of March 31, 2019, there were $7 million in total unrecognized compensation costs related to stock options. These costs are expected to be recognized over a weighted average period of 2.1 years as the stock options vest.

We use the Black-Scholes option pricing model to value our stock option awards. During the three months ended March 31, 2019 and 2018, we used the weighted-average assumptions in the table below to compute the value of all options for shares of common stock granted to employees:

	Three Months Ended March 31,	
Assumptions:	2019	2018
Risk-free interest rate	2.49 %	2.66 %
Expected life in years	5.9	6.0
Expected volatility	20 %	20 %
Expected dividend yield	1.44 %	1.43 %
Estimated weighted-average fair value of options granted per share	$15.45	$13.98

The risk-free interest rate is based on the zero-coupon U.S. Treasury yield curve in effect at the date of grant. The expected life is derived from historical and anticipated future exercise patterns. Expected volatility is based on historical volatility data of our stock.

Restricted Stock Plans

Our restricted shares have vesting conditions based on company performance linked to both short-term and long-term stockholder return as well as retention objectives. The grant date fair value of our restricted stock awards is based on the closing stock price on the date of grant.

In February 2019, we reserved a maximum of 1.1 million restricted shares for potential issuance as performance-based restricted shares to certain of our employees. The number of shares that will ultimately be granted under this award will be based on our actual financial performance as compared to financial performance targets set by our Board of Directors and the Compensation Committee of the Board of Directors for the year ending December 31, 2019, as well as our 2019 total stockholder return, or TSR, as compared to that of the S&P 500 Index. The maximum compensation expense to be recognized under these performance-based restricted shares is $82 million if the maximum financial performance target is met and all 1.1 million shares vest. The compensation expense to be recognized under these performance-based restricted shares will be $41 million if the target financial performance is met, which would result in 0.6 million shares vesting. We recognize expense on an accelerated basis over the three-year vesting period based on our quarterly assessment of the probable 2019 actual financial performance as compared to the 2019 financial performance targets. As of March 31, 2019, we determined that it is probable that the financial performance level will be at target for 2019. Based on this assessment, we recorded non-cash compensation expense of $3 million for the three months ended March 31, 2019 related to these shares and the remaining $38 million in non-cash compensation expense will be recorded on an accelerated basis over the remaining vesting period, including $19 million of which will be recorded over the remainder of 2019.

The following is a summary of the non-vested restricted share activity for the three months ended March 31, 2019:

	Number of Restricted Stock Shares (in thousands)	Weighted Average Grant-Date Fair Value per Share
Non-vested at December 31, 2018	4,470	$ 60.56
Granted	1,569	76.19
Vested	(1,991)	57.14
Forfeited	(73)	64.06
Non-vested at March 31, 2019	3,975	68.38

The shares granted include 0.9 million time-based and the remainder are performance-based. Performance-based restricted shares have been presented to reflect the actual shares to be issued based on the achievement of past performance targets, also considering the impact of any market conditions. Non-vested performance-based restricted shares granted are presented in the table above at the target number of restricted shares that would vest if the performance targets are met. As of March 31, 2019, there were $188 million in total unrecognized compensation costs related to time-based and performance-based restricted stock. These costs are expected to be recognized over a weighted-average period of 1.8 years as the restricted stock vests. These unrecognized compensation costs assume that a target performance level will be met on the performance-based restricted shares granted in February 2019. During the three months ended March 31, 2019 and 2018, the total fair value of restricted stock vested under all restricted stock plans was $149 million and $182 million, respectively.

Bakkt Incentive Units

We own a majority of Bakkt Holdings, LLC, or Bakkt, and consolidate its operations. In February 2019, our Board approved the adoption of the Bakkt Equity Incentive Plan to issue various Bakkt equity unit awards. Under this plan, on February 28, 2019, Bakkt issued 86 million, 4 million and 1 million of its preferred, common and phantom incentive units, respectively, to certain employees and a member of its Board. The issued units are unvested at the issuance date, are subject to the vesting terms in the award agreements and upon vesting are converted into Bakkt equity or cash. With the assistance of third-party valuation experts and based on our assumptions as of the issuance date, we estimate that approximately $41 million of compensation expense will be recognized over an eight-year period associated with these awards.

9. Equity

Stock Repurchase Program

In September 2018, our Board of Directors approved an aggregate of $2.0 billion for repurchases of our common stock with no fixed expiration date that became effective January 1, 2019. During the three months ended March 31, 2019, we repurchased 4.6 million shares of our outstanding common stock at a cost of $340 million under our Rule 10b5-1 trading plan and 1.3 million shares at a cost of $100 million on the open market. As of March 31, 2019, up to $1.6 billion remains from the board authorization for repurchases of our common stock. We expect to fund repurchases from our operating cash flow or borrowings under our debt facilities or our Commercial Paper Program. Repurchases may be made from time to time on the open market, through established trading plans, in privately-negotiated transactions or otherwise, in accordance with all applicable securities laws, rules and regulations. We have entered into a Rule 10b5-1 trading plan, as authorized by our Board, to govern some of the repurchases of our shares of common stock. We may discontinue the stock repurchases at any time and may amend or terminate the Rule 10b5-1 trading plan at any time. The approval of our Board for the share repurchases does not obligate us to acquire any particular amount of our common stock. In addition, our Board of Directors may increase or decrease the amount available for repurchases from time to time.

Dividends

During the three months ended March 31, 2019 and 2018, we declared and paid cash dividends per share of $0.275 and $0.24, respectively, for an aggregate payout of $157 million and $140 million, respectively. The declaration of dividends is subject to the discretion of our Board, and may be affected by various factors, including our future earnings, financial condition, capital requirements, levels of indebtedness, credit ratings and other considerations which our Board of Directors deem relevant. Our Board has adopted a quarterly dividend declaration policy providing that the declaration of any dividends will be determined quarterly by the Board or its Audit Committee, taking into account such factors as our evolving business model, prevailing business conditions and our financial results and capital requirements, without a predetermined annual net income payout ratio.

Accumulated Other Comprehensive Income (Loss)

The following tables present changes in the accumulated balances for each component of other comprehensive income (loss):

	Changes in Accumulated Other Comprehensive Income (Loss) by Component			
	Foreign currency translation adjustments	Comprehensive income from equity method investment	Employee benefit plans adjustments	Total
Balance, as of December 31, 2018	$(227)	$ 2	$ (90)	$(315)
Other comprehensive income (loss)	26	(1)	—	25
Income tax benefit (expense)	—	—	—	—
Net current period other comprehensive income (loss)	26	(1)	—	25
Balance, as of March 31, 2019	$(201)	$ 1	$ (90)	$(290)

	Changes in Accumulated Other Comprehensive Income (Loss) by Component			
	Foreign currency translation adjustments	Comprehensive income from equity method investment	Employee benefit plans adjustments	Total
Balance, as of December 31, 2017	$(136)	$ 2	$ (89)	$(223)
Other comprehensive income	34	—	—	34
Income tax benefit (expense)	(1)	—	—	(1)
Net current period other comprehensive income	33	—	—	33
Balance, as of March 31, 2018	$(103)	$ 2	$ (89)	$(190)

10.Income Taxes

Our effective tax rate was 21% and 23% for the three months ended March 31, 2019 and 2018, respectively. The effective tax rate for the three months ended March 31, 2019 was lower than the effective tax rate for the comparable period in 2018 primarily due to reduced U.S. federal and state income taxes on our non-U.S. income under certain international tax provisions enacted as part of the Tax Cuts and Jobs Act, or TCJA, and deferred tax benefits related to state apportionment changes. The reduced U.S. federal and state income taxes are a result of clarifications provided by subsequent federal and state legislative or administrative guidance to those international provisions of the TCJA and related state provisions.

11.Clearing Operations

We operate six clearing houses, each of which acts as a central counterparty that becomes the buyer to every seller and the seller to every buyer for its clearing members. Through this central counterparty function, the clearing houses provide financial security for each transaction for the duration of the position by limiting counterparty credit risk.

Our clearing houses are responsible for providing clearing services to each of our futures exchanges, and in some cases outside of our execution venues, and are as follows, referred to herein collectively as "the ICE Clearing Houses":

				ICE Portion of Guaranty Fund Contribution (in millions)	
Clearing House	Products Cleared	Exchange where Executed	Location	As of March	As of December

				31, 2019	31, 2018
ICE Clear Europe	Energy, agricultural, interest rates and equity index futures and options contracts and OTC European CDS instruments	ICE Futures Europe, ICE Futures U.S., ICE Endex and third-party venues	U.K.	$233	$206
ICE Clear US	Agricultural, metals, FX and equity index futures and options contracts	ICE Futures U.S.	U.S.	68	61
ICE Clear Credit	North American, European, Asian-Pacific and Emerging Market CDS instruments	Creditex and third-party venues	U.S.	50	50
ICE Clear Netherlands	Derivatives on equities and equity indices traded on regulated markets	ICE Endex	The Netherlands	2	2
ICE Clear Singapore	Energy, metals and financial futures products	ICE Futures Singapore	Singapore	1	1
ICE NGX	Physical North American natural gas, electricity and oil futures	ICE NGX	Canada	N/A	N/A
Total				$354	$320

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As of March 31, 2019, ICE NGX maintains a guaranty fund utilizing a $100 million letter of credit and a default insurance policy discussed below.

Original & Variation Margin

Each of the ICE Clearing Houses generally require all clearing members or participants to deposit collateral in cash or certain pledged assets. The collateral deposits are known as “original margin.” In addition, the ICE Clearing Houses may make intraday original margin calls in circumstances where market conditions require additional protection. The daily profits and losses to and from the ICE Clearing Houses due to the marking-to-market of open contracts is known as “variation margin.” With the exception of ICE NGX’s physical natural gas and physical power products discussed separately below, the ICE Clearing Houses mark all outstanding contracts to market, and therefore pay and collect variation margin, at least once daily.

The amounts that the clearing members and participants are required to maintain are determined by proprietary risk models established by each ICE Clearing House and reviewed by the relevant regulators, independent model validators, risk committees and the boards of directors of the respective ICE Clearing House. The amounts required may fluctuate over time. Each of the ICE Clearing Houses is a separate legal entity and is not subject to the liabilities of the others, or the obligations of the members of the other ICE Clearing Houses.

Should a particular clearing member or participant fail to deposit its original margin or fail to make a variation margin payment, when and as required, the relevant ICE Clearing House may liquidate or hedge its open positions and use their original margin and guaranty fund deposits to pay any amount owed. In the event that the defaulting clearing member's deposits are not sufficient to pay the amount owed in full, the ICE Clearing Houses will first use their respective contributions to the guaranty fund, often referred to as Skin In The Game, or SITG, to pay any remaining amount owed. In the event that the SITG is not sufficient, the ICE Clearing Houses may utilize the respective guaranty fund deposits, or collect additional funds from their respective non-defaulting clearing members on a pro-rata basis, to pay any remaining amount owed.

As of March 31, 2019 and December 31, 2018, the ICE Clearing Houses have received or have been pledged $125.9 billion and $121.4 billion, respectively, in cash and non-cash collateral in original margin and guaranty fund deposits to cover price movements of underlying contracts for both periods.

Guaranty Funds & ICE Contribution

As described above, mechanisms have been created, called guaranty funds, to provide partial protection in the event of a clearing member default. With the exception of ICE NGX, each of the ICE Clearing Houses require that each clearing member make deposits into a guaranty fund.

In addition, we have contributed our own capital which could be used if a defaulting clearing member’s original margin and guaranty fund deposits are insufficient. Such amounts are recorded as long-term restricted cash and cash equivalents in our balance sheets and included in the table above.

In January 2019, we increased our contribution to ICE Clear Europe’s guaranty fund by $27 million and in March 2019, we increased our ICE Clear US guaranty fund contribution by $7 million.

Cash and Cash Equivalent Deposits

We have recorded cash and cash equivalent margin deposits and amounts due in our balance sheets as current assets with corresponding current liabilities to the clearing members. As of March 31, 2019, our cash and cash equivalent margin deposits are as follows (in millions):

	ICE Clear Europe (1)	ICE Clear Credit	ICE Clear US	ICE NGX	Other ICE Clearing Houses	Total
Original margin	$27,787	$21,487	$ 7,400	$—	$ 4	$56,678
Unsettled variation margin, net	—	—	—	290	—	290
Guaranty fund	4,123	2,335	458	—	6	6,922
Delivery contracts receivable/payable, net	—	—	—	674	—	674
Total	$31,910	$23,822	$ 7,858	$964	$ 10	$64,564

As of December 31, 2018, our cash and cash equivalent deposits, are as follows (in millions):

	ICE Clear Europe (2)	ICE Clear Credit	ICE Clear US	ICE NGX	Other ICE Clearing Houses	Total
Original margin	$27,597	$22,770	$ 6,260	$—	$ 3	$56,630
Unsettled variation margin, net	—	—	—	417	—	417
Guaranty fund	3,267	2,456	460	—	5	6,188
Delivery contracts receivable/payable, net	—	—	—	720	—	720
Total	$30,864	$25,226	$ 6,720	$1,137	$ 8	$63,955

(1) $27.5 billion and $4.4 billion is related to futures/options and CDS, respectively.

(2) $25.8 billion and $5.1 billion is related to futures/options and CDS, respectively.

Our cash and cash equivalent margin and guaranty fund deposits are maintained in accounts with national banks and reputable financial institutions or secured through direct investments, primarily in U.S. Treasury securities with original maturities of less than three months, or reverse repurchase agreements with primarily overnight maturities. Details of our cash and cash equivalent deposits are as follows (in millions):

Clearing House	Investment Type	As of March 31, 2019	As of December 31, 2018
ICE Clear Europe	National Bank Account (1)	$3,639	$ 8,647
ICE Clear Europe	Reverse repo	24,515	18,097
ICE Clear Europe	Sovereign Debt	3,737	4,035
ICE Clear Europe	Demand deposits	19	85
ICE Clear Credit	National Bank Account (2)	18,735	19,484
ICE Clear Credit	Reverse repo	2,189	1,935
ICE Clear Credit	Demand deposits	2,898	3,807
ICE Clear US	Reverse repo	5,269	4,380
ICE Clear US	U.S. Treasuries	2,589	2,340
Other ICE Clearing Houses	Demand deposits	10	8
ICE NGX	Unsettled Variation Margin and Delivery Contracts Receivable/Payable	964	1,137

Total	$64,564	$ 63,955

(1) As of March 31, 2019, ICE Clear Europe held €2.7 billion ($3.0 billion based on the euro/U.S. dollar exchange rate of 1.1224 as of March 31, 2019) at De Nederlandsche Bank, or DNB, and £500 million ($652 million based on the pound sterling/U.S. dollar exchange rate of 1.3046 as of March 31, 2019) at the Bank of England, or BOE. As of December 31, 2018, ICE Clear Europe held €7.0 billion ($8.0 billion based on the euro/U.S. dollar exchange rate of 1.1466 as of December 31, 2018) at DNB and £500 million ($638 million based on the pound sterling/U.S. dollar exchange rate of 1.2756 as of December 31, 2018) at the BOE.

(2) ICE Clear Credit is a systemically important financial market utility, or SIFMU, as designated by the Financial Stability Oversight Council, and holds its U.S. dollar cash margin in cash accounts at the Federal Reserve Bank of Chicago.

Other Deposits

In addition to the cash deposits above, the ICE Clearing Houses have also received other assets from clearing members, which include government obligations, and may include other non-cash collateral such as letters of credit or gold to mitigate credit risk. For certain deposits, we may impose discount or “haircut” rates to ensure adequate collateral if market values fluctuate. The value-related risks and rewards of these assets remain with the clearing members. Any gain or loss accrues to the clearing member. The ICE Clearing Houses do not rehypothecate or re-pledge these assets. These pledged assets are not reflected in our balance sheets, and are as follows:

	As of March 31, 2019				
	ICE Clear Europe	ICE Clear Credit	ICE Clear US	ICE NGX	Total
Original margin:					
Government securities at face value	$31,479	$14,231	$ 11,561	$ —	$57,271
Letters of credit	—	—	—	2,486	2,486
ICE NGX cash deposits	—				