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

FORM 10-Q

(Mark One)

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

For the quarterly period ended March 31, 2020

- 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 001-31553

CME GROUP INC.

(Exact name of registrant as specified in its charter)

Delaware	**36-4459170**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
20 South Wacker Drive Chicago Illinois	**60606**
(Address of principal executive offices)	**(Zip Code)**

(312) 930-1000

(Registrant's telephone number, including area code)

Not Applicable

(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	Name of each exchange on which registered
Class A Common Stock	CME	Nasdaq

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 and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of “large accelerated filer,” “accelerated filer,” “smaller reporting company” and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	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 ☒

The number of shares outstanding of each of the registrant's classes of common stock as of April 15, 2020 was as follows: 358,585,174 shares of Class A common stock, $0.01 par value; 625 shares of Class B-1 common stock, $0.01 par value; 813 shares of Class B-2 common stock, $0.01 par value; 1,287 shares of Class B-3 common stock, $0.01 par value; and 413 shares of Class B-4 common stock, $0.01 par value.

CME GROUP INC.

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PART I. FINANCIAL INFORMATION

Certain Terms

All references to “options” or “options contracts” in the text of this document refer to options on futures contracts.

Further information about CME Group and its products can be found at http://www.cmegroup.com. Information made available on our website does not constitute a part of this Quarterly Report on Form 10-Q.

Information about Contract Volume and Average Rate per Contract

All amounts regarding contract volume and average rate per contract are for CME Group's listed futures and options on futures contracts unless otherwise noted.

Trademark Information

CME Group, the Globe logo, CME, Chicago Mercantile Exchange, Globex, and E-mini are trademarks of Chicago Mercantile Exchange Inc. CBOT and Chicago Board of Trade are trademarks of Board of Trade of the City of Chicago, Inc. NYMEX, New York Mercantile Exchange and ClearPort are trademarks of New York Mercantile Exchange, Inc. COMEX is a trademark of Commodity Exchange, Inc. NEX, BrokerTec, EBS, TriOptima, and Traiana are trademarks of various entities of NEX Group Limited (NEX). Dow Jones, Dow Jones Industrial Average, S&P 500 and S&P are service and/or trademarks of Dow Jones Trademark Holdings LLC, Standard & Poor's Financial Services LLC and S&P/Dow Jones Indices LLC, as the case may be, and have been licensed for use by Chicago Mercantile Exchange Inc. All other trademarks are the property of their respective owners.

Forward-Looking Statements

From time to time, in this Quarterly Report on Form 10-Q as well as in other written reports and verbal statements, we discuss our expectations regarding future performance. These forward-looking statements are identified by their use of terms and phrases such as “believe,” “anticipate,” “could,” “estimate,” “intend,” “may,” “plan,” “expect” and similar expressions, including references to assumptions. These forward-looking statements are based on currently available competitive, financial and economic data, current expectations, estimates, forecasts and projections about the industries in which we operate and management's beliefs and assumptions. These statements are not guarantees of future performance and involve risks, uncertainties and assumptions that are difficult to predict. Therefore, actual outcomes and results may differ materially from what is expressed or implied in any forward-looking statements. We want to caution you not to place undue reliance on any forward-looking statements. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. Among the factors that might affect our performance are:

- increasing competition by foreign and domestic entities, including increased competition from new entrants into our markets and consolidation of existing entities;
- our ability to keep pace with rapid technological developments, including our ability to complete the development, implementation and maintenance of the enhanced functionality required by our customers while maintaining reliability and ensuring that such technology is not vulnerable to security risks;
- our ability to continue introducing competitive new products and services on a timely, cost-effective basis, including through our electronic trading capabilities, and our ability to maintain the competitiveness of our existing products and services, including our ability to provide effective services to the swaps market;
- our ability to adjust our fixed costs and expenses if our revenues decline;
- our ability to maintain existing customers at substantially similar trading levels, develop strategic relationships and attract new customers;
- our ability to expand and globally offer our products and services;
- changes in regulations, including the impact of any changes in laws or government policy with respect to our products or services or our industry, such as any changes to regulations and policies that require increased financial and operational resources from us or our customers;
- the costs associated with protecting our intellectual property rights and our ability to operate our business without violating the intellectual property rights of others;
- decreases in revenue from our market data as a result of decreased demand or changes to regulations in various jurisdictions;
- changes in our rate per contract due to shifts in the mix of the products traded, the trading venue and the mix of customers (whether the customer receives member or non-member fees or participates in one of our various incentive programs) and the impact of our tiered pricing structure;

- the ability of our credit and liquidity risk management practices to adequately protect us from the credit risks of clearing members and other counterparties, and to satisfy the margin and liquidity requirements associated with the BrokerTec matched principal business;
- the ability of our compliance and risk management methods to effectively monitor and manage our risks, including our ability to prevent errors and misconduct and protect our infrastructure against security breaches and misappropriation of our intellectual property assets;
- our dependence on third-party providers and exposure to risk through third-parties, including risks related to the performance, reliability and security of technology used by our third-party providers;
- volatility in commodity, equity and fixed income prices, and price volatility of financial benchmarks and instruments such as interest rates, credit spreads, equity indices, fixed income instruments and foreign exchange rates;
- economic, social, political and market conditions, including the volatility of the capital and credit markets and the impact of economic conditions on the trading activity of our current and potential customers;
- the impact of the novel coronavirus (COVID-19) outbreak and response by governments and other third parties;
- our ability to accommodate increases in contract volume and order transaction traffic and to implement enhancements without failure or degradation of the performance of our trading and clearing systems;
- our ability to execute our growth strategy and maintain our growth effectively;
- our ability to manage the risks, control the costs and achieve the synergies associated with our strategy for acquisitions, investments and alliances, including those associated with the acquisition of NEX;
- our ability to continue to generate funds and/or manage our indebtedness to allow us to continue to invest in our business;
- industry and customer consolidation;
- decreases in trading and clearing activity;
- the imposition of a transaction tax or user fee on futures and options transactions and/or repeal of the 60/40 tax treatment of such transactions;
- our ability to maintain our brand and reputation; and
- the unfavorable resolution of material legal proceedings.

For a detailed discussion of these and other factors that might affect our performance, see Item 1A. of our Annual Report on Form 10-K, filed with the Securities and Exchange Commission on February 28, 2020 and Item 1A. of this Quarterly Report on Form 10-Q.

ITEM 1. FINANCIAL STATEMENTS

CME GROUP INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(dollars in millions, except par value data; shares in thousands)

	March 31, 2020	December 31, 2019
	(unaudited)	
Assets		
Current Assets:		
Cash and cash equivalents	$ 851.7	$ 1,551.4
Marketable securities	77.5	83.2
Accounts receivable, net of allowance of $4.8 and $3.4	799.7	491.8
Other current assets (includes $4.3 and $4.3 in restricted cash)	315.9	364.4
Performance bonds and guaranty fund contributions	100,371.8	37,077.0
Total current assets	102,416.6	39,567.8
Property, net of accumulated depreciation and amortization of $885.6 and $867.5	538.4	544.0
Intangible assets—trading products	17,175.3	17,175.3
Intangible assets—other, net	4,997.9	5,117.7
Goodwill	10,742.5	10,742.5
Other assets (includes $0.8 and $0.9 in restricted cash)	2,061.6	2,068.0
Total Assets	$ 137,932.3	$ 75,215.3
Liabilities and Equity		
Current Liabilities:		
Accounts payable	$ 74.3	$ 61.9
Other current liabilities	607.9	1,384.8
Performance bonds and guaranty fund contributions	100,371.5	37,075.8
Total current liabilities	101,053.7	38,522.5
Long-term debt	3,539.8	3,743.2
Deferred income tax liabilities, net	5,622.1	5,635.2
Other liabilities	1,118.0	1,155.1
Total Liabilities	111,333.6	49,056.0
Shareholders' Equity:		
Preferred stock, $0.01 par value, 10,000 shares authorized at March 31, 2020 and December 31, 2019; none issued	—	—
Class A common stock, $0.01 par value, 1,000,000 shares authorized at March 31, 2020 and December 31, 2019; 357,677 and 357,469 shares issued and outstanding as of March 31, 2020 and December 31, 2019, respectively	3.6	3.6
Class B common stock, $0.01 par value, 3 shares authorized, issued and outstanding as of March 31, 2020 and December 31, 2019	—	—
Additional paid-in capital	21,120.4	21,113.2
Retained earnings	5,469.9	5,008.7
Accumulated other comprehensive income (loss)	(26.2)	3.4
Total CME Group Shareholders' Equity	26,567.7	26,128.9
Non-controlling interests	31.0	30.4
Total Equity	26,598.7	26,159.3
Total Liabilities and Equity	$ 137,932.3	$ 75,215.3

See accompanying notes to unaudited consolidated financial statements.

CME GROUP INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME
(dollars in millions, except per share data; shares in thousands)
(unaudited)

	Quarter Ended March 31, 2020	Quarter Ended March 31, 2019
Revenues		
Clearing and transaction fees	$ 1,278.8	$ 952.6
Market data and information services	131.5	130.1
Other	111.8	96.9
Total Revenues	1,522.1	1,179.6
Expenses		
Compensation and benefits	207.5	230.3
Technology	47.7	47.1
Professional fees and outside services	41.7	39.4
Amortization of purchased intangibles	77.3	80.7
Depreciation and amortization	35.3	32.9
Licensing and other fee agreements	73.9	40.5
Other	78.8	77.7
Total Expenses	562.2	548.6
Operating Income	959.9	631.0
Non-Operating Income (Expense)		
Investment income	95.9	178.7
Interest and other borrowing costs	(40.9)	(48.1)
Equity in net earnings of unconsolidated subsidiaries	51.2	40.5
Other non-operating income (expense)	(76.8)	(161.9)
Total Non-Operating Income (Expense)	29.4	9.2
Income before Income Taxes	989.3	640.2
Income tax provision	222.5	144.3
Net Income	766.8	495.9
Less: net (income) loss attributable to non-controlling interests	(0.6)	1.0
Net Income Attributable to CME Group	$ 766.2	$ 496.9
Earnings per Common Share Attributable to CME Group:		
Basic	$ 2.14	$ 1.39
Diluted	2.14	1.39
Weighted Average Number of Common Shares:		
Basic	357,524	356,886
Diluted	358,455	358,047

See accompanying notes to unaudited consolidated financial statements.

CME GROUP INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in millions)
(unaudited)

	Quarter Ended March 31, 2020	Quarter Ended March 31, 2019
Net income	$ 766.8	$ 495.9
Other comprehensive income (loss), net of tax:		
Investment securities:		
Net unrealized holding gains (losses) arising during the period	(0.6)	0.8
Income tax benefit (expense)	0.2	(0.2)
Investment securities, net	(0.4)	0.6
Defined benefit plans:		
Net change in defined benefit plans arising during the period	(2.0)	(2.7)
Amortization of net actuarial (gains) losses included in compensation and benefits expense	1.2	1.2
Income tax benefit (expense)	0.2	0.4
Defined benefit plans, net	(0.6)	(1.1)
Derivative investments:		
Net unrealized holding gains (losses) arising during the period	—	0.3
Reclassification of net unrealized (gains) losses to interest expense and other non-operating income (expense)	(1.8)	(0.3)
Income tax benefit (expense)	0.4	—
Derivative investments, net	(1.4)	—
Foreign currency translation:		
Foreign currency translation adjustments	(27.8)	(4.0)
Reclassification of net currency (gains) losses from foreign entities to other expenses	0.6	—
Income tax benefit (expense)	—	—
Foreign currency translation, net	(27.2)	(4.0)
Other comprehensive income (loss), net of tax	(29.6)	(4.5)
Comprehensive income	737.2	491.4
Less: comprehensive (income) loss attributable to non-controlling interests	(0.6)	1.0
Comprehensive income attributable to CME Group	$ 736.6	$ 492.4

See accompanying notes to unaudited consolidated financial statements.

CME GROUP INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF EQUITY
(dollars in millions, except per share data; shares in thousands)
(unaudited)

	Class A Common Stock (Shares)	Class B Common Stock (Shares)	Common Stock and Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total CME Group Shareholders' Equity	Non-controlling Interest	Total Equity
Balance at December 31, 2019	357,469	3	$ 21,116.8	$ 5,008.7	$ 3.4	$ 26,128.9	$ 30.4	$ 26,159.3
Net income				766.2		766.2	0.6	766.8
Other comprehensive income (loss)					(29.6)	(29.6)	—	(29.6)
Dividends on common stock of $0.85 per share				(304.7)		(304.7)		(304.7)
Impact of adoption of accounting standards updates on credit losses				(0.3)		(0.3)		(0.3)
Exercise of stock options	55		3.2			3.2		3.2
Vesting of issued restricted Class A common stock	153		(19.1)			(19.1)		(19.1)
Stock-based compensation			23.1			23.1		23.1
Balance at March 31, 2020	357,677	3	$ 21,124.0	$ 5,469.9	$ (26.2)	$ 26,567.7	$ 31.0	$ 26,598.7

See accompanying notes to unaudited consolidated financial statements.

CME GROUP INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF EQUITY (continued)
(dollars in millions, except per share data; shares in thousands)
(unaudited)

	Class A Common Stock (Shares)	Class B Common Stock (Shares)	Common Stock and Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total CME Group Shareholders' Equity	Non-controlling Interest	Total Equity
Balance at December 31, 2018	356,824	3	$ 21,057.9	$ 4,855.3	$ 5.3	$ 25,918.5	$ 46.8	$ 25,965.3
Net income				496.9		496.9	(1.0)	495.9
Other comprehensive income (loss)					(4.5)	(4.5)		(4.5)
Dividends on common stock of $0.75 per share				(268.0)		(268.0)		(268.0)
Impact of adoption of standards updates on leasing				6.9		6.9		6.9
Changes in non-controlling interest due to measurement period						—	(16.9)	(16.9)
Exercise of stock options	64		3.3			3.3		3.3
Vesting of issued restricted Class A common stock	125		(13.8)			(13.8)		(13.8)
Stock-based compensation			18.3			18.3		18.3
Balance at March 31, 2019	357,013	3	$ 21,065.7	$ 5,091.1	$ 0.8	$ 26,157.6	$ 28.9	$ 26,186.5

See accompanying notes to unaudited consolidated financial statements.

CME GROUP INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in millions)
(unaudited)

	Quarter Ended March 31,	
	2020	**2019**
Cash Flows from Operating Activities		
Net income	$ 766.8	$ 495.9
Adjustments to reconcile net income to net cash provided by operating activities:		
Stock-based compensation	23.1	18.3
Amortization of purchased intangibles	77.3	80.7
Depreciation and amortization	35.3	32.9
Net losses on impaired assets	23.1	—
Net (gain) loss on derivative contracts	(1.5)	14.4
Net realized and unrealized losses (gains) on investments	(2.9)	3.4
Undistributed net earnings of unconsolidated subsidiaries	(0.2)	(22.6)
Deferred income taxes	(9.7)	(0.6)
Change in:		
Accounts receivable	(309.5)	(5.5)
Other current assets	(14.5)	45.4
Other assets	18.8	(9.8)
Accounts payable	12.4	(50.6)
Income taxes payable	186.1	141.3
Other current liabilities	(22.1)	(73.1)
Other liabilities	(29.5)	0.3
Other	4.1	(1.2)
Net Cash Provided by Operating Activities	757.1	669.2
Cash Flows from Investing Activities		
Proceeds from maturities of available-for-sale marketable securities	2.2	6.1
Purchases of available-for-sale marketable securities	(2.4)	(5.6)
Purchases of property, net	(42.8)	(49.1)
Net Cash Used in Investing Activities	(43.0)	(48.6)
Cash Flows from Financing Activities		
Issuance of commercial paper, net of maturities	(204.6)	462.3
Repayment of debt	—	(569.2)
Cash dividends	(1,197.6)	(892.1)
Settlement of derivative contracts	—	16.0
Employee taxes paid on restricted stock vesting	(19.1)	(13.8)
Other	7.4	(0.9)
Net Cash Used in Financing Activities	(1,413.9)	(997.7)

CME GROUP INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS (continued)
(in millions)
(unaudited)

	Quarter Ended March 31,	
	2020	**2019**
Net change in cash, cash equivalents and restricted cash	$ (699.8)	$ (377.1)
Cash, cash equivalents and restricted cash, beginning of period	1,556.6	1,377.2
Cash, Cash Equivalents and Restricted Cash, End of Period	$ 856.8	$ 1,000.1
Reconciliation of cash, cash equivalents and restricted cash:		
Cash and cash equivalents	$ 851.7	$ 997.4
Short-term restricted cash	4.3	1.6
Long-term restricted cash	0.8	1.1
Total	$ 856.8	$ 1,000.1
Supplemental Disclosure of Cash Flow Information		
Income taxes paid	$ 39.0	$ —
Interest paid	42.4	55.4

See accompanying notes to unaudited consolidated financial statements.

NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS

1. Basis of Presentation

The consolidated financial statements consist of CME Group Inc. (CME Group) and its subsidiaries (collectively, the company), including Chicago Mercantile Exchange Inc. (CME), Board of Trade of the City of Chicago, Inc. (CBOT), New York Mercantile Exchange, Inc. (NYMEX), Commodity Exchange, Inc. (COMEX) and NEX Group Limited (NEX). The clearing house is a division of CME.

The accompanying interim consolidated financial statements have been prepared by CME Group without audit. Certain notes and other information normally included in financial statements prepared in accordance with accounting principles generally accepted in the United States have been condensed or omitted. In the opinion of management, the accompanying consolidated financial statements include all normal recurring adjustments considered necessary to present fairly the financial position of the company at March 31, 2020 and December 31, 2019 and the results of operations and cash flows for the periods indicated. Quarterly results are not necessarily indicative of results for any subsequent period.

The accompanying consolidated financial statements should be read in conjunction with the consolidated financial statements and notes thereto in CME Group's Annual Report on Form 10-K for the year ended December 31, 2019, filed with the Securities and Exchange Commission (SEC) on February 28, 2020.

2. Accounting Policies

Newly Adopted Accounting Policies. The company adopted the following accounting policies during 2020:

Credit Losses. In June 2016, the FASB issued guidance that changes how credit losses are measured for most financial assets measured at amortized cost and certain other instruments. The standard requires an entity to estimate its lifetime expected credit loss and record an allowance, that when deducted from the amortized cost basis of the financial asset, presents the net amount expected to be collected on the financial asset. This forward-looking expected loss model generally will result in the earlier recognition of allowances for losses. The standard also amends the impairment model for available for sale debt securities and requires entities to determine whether all or a portion of the unrealized loss on an available for sale debt security is a credit loss. Severity and duration of the unrealized loss are no longer permissible factors in concluding whether a credit loss exists. Entities will recognize improvements to estimated credit losses on available for sale debt securities immediately in earnings rather than as interest income over time. The company implemented this standard on January 1, 2020 by recognizing an immaterial cumulative-effect adjustment to the beginning balance of retained earnings.

The company has not experienced significant levels of underpayment or nonpayment by customers and does not expect changes to this trend over the payment terms of our receivables. Exposure to losses on receivables for clearing and transaction fees and other amounts owed by clearing and trading firms is dependent on each firm's financial condition. With respect to clearing firms, the company's credit loss exposure is mitigated by the memberships that collateralize fees owed to the company. The allowance for credit losses on accounts receivable is calculated by evaluating the aging of the company's billings by revenue stream: clearing and transaction, market data, and other. This aging assessment, as well as contemplation of current and anticipated economic factors, including the interest rate environment and pricing levels are the primary considerations that most significantly impact the collectibility of accounts receivable. The allowance for accounts receivable is $4.8 million at March 31, 2020.

Income Taxes. In December 2019, the FASB issued an accounting update that is intended to reduce cost and complexity related to accounting for income taxes. The update removes specific exceptions to the general principles for accounting for income taxes. Specifically, it eliminates the need for an entity to analyze whether the following exceptions apply in a given period: incremental approach for intraperiod tax allocation, accounting basis differences when there are ownership changes in foreign investments, and interim period income tax accounting for year-to-date losses that exceed anticipated losses. The update also simplifies the accounting for the following: franchise taxes that are partially based on income, transactions with a government that result in a step up in the tax basis of goodwill, separate financial statements of legal entities that are not subject to tax, and enacted changes in tax laws in interim periods. This update is effective for reporting periods beginning after December 15, 2020. The company has early adopted this standard on January 1, 2020. The impact of adoption of this standard was immaterial to the consolidated financial statements.

Recently Issued Accounting Pronouncements. In August 2018, the FASB issued a standards update that modifies the disclosure requirements for employers that sponsor defined pension or other postretirement plans. The guidance clarifies certain existing disclosures and expands the requirements for others. Disclosures that are not considered cost beneficial are removed by the update. Also, there is a new disclosure requirement to include an explanation of the reasons for significant gains and losses related to changes in the benefit obligation for the period. This guidance is effective for reporting periods beginning in 2021. Early adoption is permitted. The company plans to update the disclosures for these changes upon adoption of the guidance in 2021.

3. Revenue Recognition

The company generates revenue from customers from the following sources:

Clearing and transaction fees. Clearing and transaction fees include electronic trading fees and brokerage commissions, surcharges for privately-negotiated transactions, portfolio reconciliation and compression services, risk mitigation and other volume-related charges for trade contracts. Clearing and transaction fees are assessed upfront at the time of trade execution. As such, the company recognizes the majority of the fee revenue upon successful execution of the trade. The minimal remaining portion of the fee revenue related to settlement activities performed after trade execution is recognized over the short-term period that the contract is outstanding, based on management’s estimates of the average contract lifecycle. These estimates are based on various assumptions to approximate the amount of fee revenue to be attributed to services performed through contract settlement, expiration, or termination. For cleared trades, these assumptions include the average number of days that a contract remains in open interest, contract turnover, average revenue per day, and revenue remaining in open interest at the end of each period.

The nature of contracts gives rise to several types of variable consideration, including volume-based pricing tiers, customer incentives associated with market maker programs and other fee discounts. The company includes fee discounts and incentives in the estimated transaction price when there is a basis to reasonably estimate the amount of the fee reduction. These estimates are based on historical experience, anticipated performance, and best judgment at the time. Because of the company's certainty in estimating these amounts, they are included in the transaction price of contracts.

Market data and information services. Market data and information services represent revenue from the dissemination of market data to subscribers, distributors, and other third-party licensees of market data. Pricing for market data is primarily based on the number of reportable devices used as well as the number of subscribers enrolled under the arrangement. Fees for these services are generally billed monthly. Market data services are satisfied over time and revenue is recognized on a monthly basis as the customers receive and consume the benefit of the market data services. However, the company also maintains certain annual license arrangements with one-time upfront fees. The fees for annual licenses are initially recorded as a contract liability and recognized as revenue monthly over the term of the annual period.

Other. Other revenues include certain access and communication fees, fees for collateral management and fees for trade order routing through agreements from various strategic relationships. Access and communication fees are charges to customers that utilize various telecommunications networks and communications services. Fees for these services are generally billed monthly and the associated fee revenue is recognized as billed. Collateral management fees are charged to clearing firms that have collateral on deposit with the clearing house to meet their minimum performance bond and guaranty fund obligations on the exchange. These fees are calculated based on daily collateral balances and are billed monthly. This fee revenue is recognized monthly as billed as the customers receive and consume the benefits of the services. Pricing for strategic relationships may be driven by customer levels and activity. There are fee arrangements which provide for monthly as well as quarterly payments in arrears. Revenue is recognized monthly for strategic relationship arrangements as the customers receive and consume the benefits of the services.

The following table represents a disaggregation of revenue from contracts with customers for the quarters ended March 31, 2020 and 2019:

	Quarter Ended March 31,	
(in millions)	**2020**	**2019**
Interest rates	$ 418.3	$ 302.8
Equity indexes	248.2	145.9
Foreign exchange	48.2	41.2
Agricultural commodities	117.7	105.0
Energy	221.8	165.0
Metals	78.8	51.0
Cash markets business	124.4	122.9
Interest rate swap	21.4	18.8
Total clearing and transaction fees	1,278.8	952.6
Market data and information services	131.5	130.1
Other	111.8	96.9
Total revenues	$ 1,522.1	$ 1,179.6
Timing of Revenue Recognition		
Services transferred at a point in time	$ 1,211.2	$ 892.9
Services transferred over time	307.5	277.7
One-time charges and miscellaneous revenues	3.4	9.0
Total revenues	$ 1,522.1	$ 1,179.6

The timing of revenue recognition, billings and cash collections results in billed accounts receivable, and customer advances and deposits (contract liabilities) on the consolidated balance sheets. Certain fees for transactions, annual licenses, and other revenue arrangements are billed upfront before revenue is recognized, which results in the recognition of contract liabilities. These liabilities are recognized on the consolidated balance sheets on a contract-by-contract basis at the end of each reporting period. For annual licenses and upfront fee arrangements, the company generally bills customers upon contract execution. These payments are recognized as revenue over time as the obligations under the contracts are satisfied. Changes in the contract liability balances during the quarter ended March 31, 2020 were not materially impacted by any other factors. The balance of contract liabilities was $61.8 million and $42.6 million as of March 31, 2020 and December 31, 2019, respectively.

4. Performance Bonds and Guaranty Fund Contributions

Performance Bonds and Guaranty Fund Contributions. At March 31, 2020, performance bonds and guaranty fund contribution assets on the consolidated balance sheets include cash as well as U.S. Treasury securities and U.S. government agency securities. U.S. Treasury securities and U.S. government agency securities are purchased by CME, at its discretion, using cash collateral. The benefits, including interest earned, and risks of ownership accrue to CME. Interest earned is included in investment income on the consolidated statements of income. These debt securities are classified as available-for-sale. At March 31, 2020, the amortized cost and fair value of the U.S. Treasury securities were both $1.4 billion. At March 31, 2020, the amortized cost and fair value of the U.S. government agency securities were both $1.8 billion.

CME has been designated as a systemically important financial market utility by the Financial Stability Oversight Council and is authorized to establish and maintain a cash account at the Federal Reserve Bank of Chicago. At March 31, 2020, CME maintained $84.9 billion within the cash account at the Federal Reserve Bank of Chicago. The cash deposit at the Federal Reserve Bank of Chicago is included within performance bonds and guaranty fund contributions on the consolidated balance sheets.

Clearing House Contract Settlement. The clearing house marks-to-market open positions for all futures and options contracts twice a day (once a day for CME's cleared-only interest rate swap contracts). Based on values derived from the mark-to-market process, the clearing house requires payments from clearing firms whose positions have lost value and makes payments to clearing firms whose positions have gained value. Under the extremely unlikely scenario of simultaneous default by every clearing firm who has open positions with unrealized losses, the maximum exposure related to positions other than cleared-only interest rate swap contracts would be one half day of changes in fair value of all open positions, before considering the clearing house's ability to access defaulting clearing firms' collateral deposits.

For CME's cleared-only interest rate swap contracts, the maximum exposure related to CME's guarantee would be one full day of changes in fair value of all open positions, before considering CME's ability to access defaulting clearing firms' collateral.

During the first quarter of 2020, the clearing house transferred an average of approximately $6.8 billion a day through its clearing systems for settlement from clearing firms whose positions had lost value to clearing firms whose positions had gained value. The clearing house reduces its guarantee exposure through initial and maintenance performance bond requirements and mandatory guaranty fund contributions. The company believes that its guarantee liability is immaterial and therefore has not recorded any liability at March 31, 2020. The company does not have a history of significant losses recognized on performance bond collateral as posted by our clearing members, and management currently does not anticipate any future credit losses on its performance bond assets. Accordingly, the company has not provided an allowance for credit losses on these performance bond deposits, nor have we recorded any liabilities to reflect an allowance for credit losses related to our off-balance sheet credit exposures and guarantees.

5. Intangible Assets

Intangible assets consisted of the following at March 31, 2020 and December 31, 2019:

	March 31, 2020			December 31, 2019		
(in millions)	Assigned Value	Accumulated Amortization	Net Book Value	Assigned Value	Accumulated Amortization	Net Book Value
Amortizable Intangible Assets:						
Clearing firm, market data and other customer relationships	$ 5,756.6	$ (1,411.4)	$ 4,345.2	$ 5,797.1	$ (1,346.0)	$ 4,451.1
Technology-related intellectual property	170.1	(51.0)	119.1	174.3	(46.6)	127.7
Other	100.9	(17.3)	83.6	103.8	(14.9)	88.9
Total amortizable intangible assets	$ 6,027.6	$ (1,479.7)	4,547.9	$ 6,075.2	$ (1,407.5)	4,667.7
Indefinite-Lived Intangible Assets:						
Trade names			450.0			450.0
Total intangible assets – other, net			$ 4,997.9			$ 5,117.7
Trading products [(1)]			$ 17,175.3			$ 17,175.3

(1) Trading products represent futures and options products acquired in our business combinations with CBOT Holdings, Inc., NYMEX Holdings, Inc. and The Board of Trade of Kansas City, Missouri, Inc. Clearing and transaction fees are generated through the trading of these products. These trading products, most of which have traded for decades, require authorization from the Commodity Futures Trading Commission (CFTC). Product authorizations from the CFTC have no term limits.

Total amortization expense for intangible assets was $77.3 million and $80.7 million for the quarters ended March 31, 2020 and 2019, respectively.

As of March 31, 2020, the future estimated amortization expense related to amortizable intangible assets is expected to be as follows:

(in millions)	Amortization Expense
Remainder of 2020	$ 231.7
2021	308.9
2022	308.5
2023	307.2
2024	300.5
2025	300.3
Thereafter	2,790.8

6. Debt

Long-term debt consisted of the following at March 31, 2020 and December 31, 2019:

(in millions)	March 31, 2020	December 31, 2019
$750.0 million fixed rate notes due September 2022, stated rate of 3.00% (1)	$ 747.9	$ 747.7
€15.0 million fixed rate notes due May 2023, stated rate of 4.30%	16.2	16.4
$750.0 million fixed rate notes due March 2025, stated rate of 3.00% (2)	746.5	746.3
$500.0 million fixed rate notes due June 2028, stated rate of 3.75%	496.5	496.4
$750.0 million fixed rate notes due September 2043, stated rate of 5.30% (3)	742.8	742.8
$700.0 million fixed rate notes due June 2048, stated rate of 4.15%	689.9	689.8
Commercial paper (4)	100.0	303.8
Total long-term debt	$ 3,539.8	$ 3,743.2

(1) The company maintained a forward-starting interest rate swap agreement that modified the interest obligation associated with these notes so that the interest payable on the notes effectively became fixed at a rate of 3.32%.

(2) The company maintained a forward-starting interest rate swap agreement that modified the interest obligation associated with these notes so that the interest payable on the notes effectively became fixed at a rate of 3.11%.

(3) The company maintained a forward-starting interest rate swap agreement that modified the interest obligation associated with these notes so that the interest payable on the notes effectively became fixed at a rate of 4.73%.

(4) The commercial paper is backed by the five-year multi-currency revolving credit facility.

Commercial paper with an aggregate par value of $1.1 billion and maturities ranging from 1 to 18 days was issued during the first quarter of 2020. The weighted average discount rate of commercial paper outstanding at March 31, 2020 was 1.68%. The weighted average balance of commercial paper outstanding during the first quarter of 2020 was $178.0 million.

Long-term debt maturities, at par value (in U.S. dollar equivalent), were as follows at March 31, 2020:

(in millions)	Par Value
2021	$ —
2022	850.0
2023	16.6
2024	—
2025	750.0
Thereafter	1,950.0

Commercial paper is considered to mature in 2022 because it is backed by the five-year multi-currency revolving credit facility, which expires in 2022.

7. Contingencies

Legal and Regulatory Matters. In 2013, the CFTC filed suit against NYMEX and two former employees alleging disclosure of confidential customer information in violation of the Commodity Exchange Act. The case is set for trial in October 2020. Based on its investigation to date and advice from legal counsel, the company believes that it has strong factual and legal defenses to the claim.

In 2003, the U.S. Futures Exchange, L.L.C. (Eurex U.S.) and U.S. Exchange Holdings, Inc. filed suit in federal court alleging that CBOT and CME violated the antitrust laws and tortuously interfered with the business relationship and contract between Eurex U.S. and The Clearing Corporation. On October 31, 2018, the district court granted CBOT's and CME's motion for summary judgment and dismissed the case in its entirety. On March 23, 2020, the Seventh Circuit affirmed the decision of the district court.

In the normal course of business, the company discusses matters with its regulators raised during regulatory examinations or otherwise subject to their inquiry and oversight. These matters could result in censures, fines, penalties or other sanctions. Management believes the outcome of any resulting actions will not have a material impact on its consolidated financial position or results of operations. However, the company is 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.

In addition, the company is a defendant in, and has potential for, various other legal proceedings arising from its regular business activities. While the ultimate results of such proceedings against the company cannot be predicted with certainty, the company believes that the resolution of any of these matters on an individual or aggregate basis will not have a material impact on its consolidated financial position or results of operations.

No accrual was required for legal and regulatory matters as none were probable and estimable as of March 31, 2020 and December 31, 2019.

Intellectual Property Indemnifications. Certain agreements with customers and other third parties related to accessing the CME Group platforms, utilizing market data services and licensing CME SPAN software may contain indemnifications from intellectual property claims that may be made against them as a result of their use of the applicable products and/or services. The potential future claims relating to these indemnifications cannot be estimated and therefore no liability has been recorded.

8. Leases

The company has operating leases for datacenters, corporate offices, and certain information technology equipment. The operating leases have remaining lease terms of up to 18 years, some of which include options to extend or renew the leases for up to an additional five years, and some of which include options to early terminate the leases in less than 12 months. Management evaluates the exercisability of these options at least quarterly in order to determine whether the contract term must be reassessed. For a small number of the leases, primarily the international locations, management's approach is to enter into short-term leases for a lease term of 12 months or less in order to provide for greater flexibility in the local environment. For certain office spaces, the company has entered into arrangements to sublease excess space to third parties, while the original lease contract remains in effect with the landlord.

The company also has one finance lease, which is related to the sale of our datacenter in March 2016. In connection with the sale, the company leased back a portion of the property. The sale leaseback transaction was recognized under the financing method and not as a sale leaseback arrangement.

The right-of-use lease asset is recorded within other assets, and the present value of the lease liability is recorded within other liabilities (segregated between short term and long term) on the consolidated balance sheets. The discount rate applied to the lease payments represents the company's incremental borrowing rate.

The components of lease costs were as follows:

	Quarter Ended March 31,	
(in millions)	**2020**	**2019**
Operating lease expense:		
Operating lease cost	$ 14.9	$ 18.4
Short-term lease cost	0.2	3.4
Total operating lease expense included in other expense	$ 15.1	$ 21.8
Finance lease expense:		
Interest expense	$ 0.9	$ 0.9
Depreciation expense	2.2	2.2
Total finance lease expense	$ 3.1	$ 3.1
Sublease revenue included in other revenue	$ 3.6	$ 3.3

Supplemental cash flow information related to leases was as follows:

	Quarter Ended March 31,	
(in millions)	**2020**	**2019**
Cash outflows for operating leases	$ 15.9	$ 15.2
Cash outflows for finance leases	4.2	4.2

Supplemental balance sheet information related to leases was as follows:

Operating leases

(in millions)	March 31, 2020	December 31, 2019
Operating lease right-of-use assets	$ 406.7	$ 417.1
Operating lease liabilities:		
Other current liabilities	$ 41.6	$ 42.3
Other liabilities	496.3	514.8
Total operating lease liabilities	$ 537.9	$ 557.1
Weighted average remaining lease term (in months)	145	146
Weighted average discount rate	4.0%	4.0%

Finance leases

(in millions)	March 31, 2020	December 31, 2019
Finance lease right-of-use assets	$ 95.3	$ 97.5
Finance lease liabilities:		
Other current liabilities	$ 7.5	$ 7.4
Other liabilities	89.6	91.5
Total finance lease liabilities	$ 97.1	$ 98.9
Weighted average remaining lease term (in months)	132	135
Weighted average discount rate	3.5%	3.5%

Future minimum lease payments were as follows as of March 31, 2020 for operating and finance leases:

(in millions)	Operating Leases
Remainder of 2020	$ 47.9
2021	61.2
2022	64.2
2023	60.5
2024	55.1
2025	53.5
Thereafter	345.3
Total lease payments	687.7
Less: imputed interest	(149.8)
Present value of lease liability	$ 537.9

(in millions)	Finance Leases
Remainder of 2020	$ 12.7
2021	17.0
2022	17.1
2023	17.2
2024	17.4
2025	17.5
Thereafter	94.3
Total lease payments	193.2
Less: imputed interest	(96.1)
Present value of lease liability	$ 97.1

9. Guarantees

Mutual Offset Agreement. CME and Singapore Exchange Limited (SGX) maintain a mutual offset agreement with a current term through October 2020. This agreement enables market participants to open a futures position on one exchange and liquidate it on the other. The term of the agreement will automatically renew for a one-year period unless either party provides advance notice of their intent to terminate. CME can maintain collateral in the form of U.S. Treasury securities or irrevocable, standby letters of credit. At March 31, 2020, CME was contingently liable to SGX on letters of credit totaling $310.0 million. Regardless of the collateral, CME guarantees all cleared transactions submitted through SGX and would initiate procedures designed to satisfy these financial obligations in the event of a default, such as the use of performance bonds and guaranty fund contributions of the defaulting clearing firm. The company believes that its guarantee liability is immaterial and therefore has not recorded any liability at March 31, 2020.

Family Farmer and Rancher Protection Fund. In 2012, the company established the Family Farmer and Rancher Protection Fund (the Fund). The Fund is designed to provide payments, up to certain maximum levels, to family farmers, ranchers and other agricultural industry participants who use the company's agricultural commodity products and who suffer losses to their segregated account balances due to their CME clearing member becoming insolvent. Under the terms of the Fund, farmers and ranchers are eligible for up to $25,000 per participant. Farming and ranching cooperatives are eligible for up to $100,000 per cooperative. The Fund was established with a maximum of $100.0 million available for distribution to participants. Since its establishment, the Fund has made payments of approximately $2.0 million, which leaves $98.0 million available for future claims. If, at any time, payments due to participants were to exceed the amount remaining in the fund, payments would be pro-rated. Clearing members and customers must register with the company in advance and provide certain documentation in order to substantiate their eligibility. The company believes that its guarantee liability is immaterial and therefore has not recorded any liability at March 31, 2020.

10. Accumulated Other Comprehensive Income (Loss)

The following tables present changes in the accumulated balances for each component of other comprehensive income (loss), including current period other comprehensive income (loss) and reclassifications out of accumulated other comprehensive income (loss):

(in millions)	Investment Securities	Defined Benefit Plans	Derivative Investments	Foreign Currency Translation	Total
Balance at December 31, 2019	$ 0.8	$ (55.1)	$ 69.0	$ (11.3)	$ 3.4
Other comprehensive income (loss) before reclassifications and income tax benefit (expense)	(0.6)	(2.0)	—	(27.8)	(30.4)
Amounts reclassified from accumulated other comprehensive income (loss)	—	1.2	(1.8)	0.6	—
Income tax benefit (expense)	0.2	0.2	0.4	—	0.8
Net current period other comprehensive income (loss)	(0.4)	(0.6)	(1.4)	(27.2)	(29.6)
Balance at March 31, 2020	$ 0.4	$ (55.7)	$ 67.6	$ (38.5)	$ (26.2)

(in millions)	Investment Securities	Defined Benefit Plans	Derivative Investments	Foreign Currency Translation	Total
Balance at December 31, 2018	$ 0.1	$ (53.8)	$ 69.7	$ (10.7)	$ 5.3
Other comprehensive income (loss) before reclassifications and income tax benefit (expense)	0.8	(2.7)	0.3	(4.0)	(5.6)
Amounts reclassified from accumulated other comprehensive income (loss)	—	1.2	(0.3)	—	0.9
Income tax benefit (expense)	(0.2)	0.4	—	—	0.2
Net current period other comprehensive income (loss)	0.6	(1.1)	—	(4.0)	(4.5)
Balance at March 31, 2019	$ 0.7	$ (54.9)	$ 69.7	$ (14.7)	$ 0.8

11. Fair Value Measurements

The company uses a three-level classification hierarchy of fair value measurements for disclosure purposes:

- Level 1 inputs, which are considered the most reliable evidence of fair value, consist of quoted prices (unadjusted) for identical assets or liabilities in active markets.
- Level 2 inputs consist of observable market data, such as quoted prices for similar assets and liabilities in active markets, or inputs other than quoted prices that are directly observable.
- Level 3 inputs consist of unobservable inputs which are derived and cannot be corroborated by market data or other entity-specific inputs.

Level 1 assets generally include investments in publicly traded mutual funds, equity securities, corporate debt securities and U.S. government securities with quoted market prices. In general, the company uses quoted prices in active markets for identical assets to determine the fair value of marketable securities.

Level 2 assets and liabilities generally consist of asset-backed securities and long-term debt notes. Asset-backed securities were measured at fair value based on matrix pricing using prices of similar securities with similar inputs such as maturity dates, interest rates and credit ratings. The fair values of the long-term debt notes were based on quoted market prices in an inactive market.

Level 3 assets include certain fixed assets, intangible assets and investments that were impaired or written up in fair value.

Recurring Fair Value Measurements. Financial assets and liabilities recorded at fair value on the consolidated balance sheet as of March 31, 2020 were classified in their entirety based on the lowest level of input that was significant to each asset and liability's fair value measurement. The following table presents financial instruments measured at fair value on a recurring basis:

	March 31, 2020			
(in millions)	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets at Fair Value:				
Marketable securities:				
Corporate debt securities	$ 17.3	$ —	$ —	$ 17.3
Mutual funds	59.9	—	—	59.9
Equity securities	0.1	—	—	0.1
Asset-backed securities	—	0.2	—	0.2
Total Marketable Securities	77.3	0.2	—	77.5
Performance bonds and guaranty fund contributions (1):				
U.S. Treasury securities	1,369.9	—	—	1,369.9
U.S. government agency securities	1,838.4	—	—	1,838.4
Total Assets at Fair Value	$ 3,285.6	$ 0.2	$ —	$ 3,285.8

(1) Performance bonds and guaranty fund contributions on the consolidated balance sheet at March 31, 2020 include U.S. Treasury securities and U.S. government agency securities purchased with cash collateral.

Non-Recurring Fair Value Measurements. During the first quarter of 2020, the company recognized impairment charges of $23.1 million related to certain intangible assets and fixed assets of a subsidiary. The combined fair values of net assets were estimated to be zero at March 31, 2020. The company also recognized unrealized gains on certain investments of $2.9 million. The combined fair value of these investments were estimated to be $18.3 million at March 31, 2020. These assessments were based on quantitative and qualitative indications of impairment. The fair value measurements of the intangible assets, fixed assets and investments are considered level 3 and non-recurring.

Fair Values of Long-Term Debt Notes. The following presents the estimated fair values of long-term debt notes, which are carried at amortized cost on the consolidated balance sheets. The fair values below that are classified as level 2 under the fair value hierarchy were estimated using quoted market prices in inactive markets. The fair value of the debt facility that was classified as level 3 under the fair value hierarchy was estimated based on assumptions made by management regarding expectations of future settlement of the debt.

At March 31, 2020, the fair values (in U.S. dollar equivalent) were as follows:

(in millions)	**Fair Value**	**Level**
$750.0 million fixed rate notes due September 2022	$ 760.7	Level 2
€15.0 million fixed rate notes due May 2023	17.6	Level 2
$750.0 million fixed rate notes due March 2025	774.7	Level 2
$500.0 million fixed rate notes due June 2028	560.2	Level 2
$750.0 million fixed rate notes due September 2043	1,095.1	Level 2
$700.0 million fixed rate notes due June 2048	918.0	Level 2
Commercial paper	100.0	Level 3

12. Earnings Per Share

Basic earnings per share is computed by dividing net income by the weighted average number of shares of all classes of CME Group common stock outstanding for each reporting period. Diluted earnings per share reflects the increase in shares using the treasury stock method to reflect the impact of an equivalent number of shares of common stock if stock options were exercised and restricted stock awards were converted into common stock. Anti-dilutive stock awards were as follows for the periods presented:

	Quarter Ended March 31,	
(in thousands)	2020	2019
Stock awards	68	76
Total	68	76

The following table presents the earnings per share calculation for the periods presented:

	Quarter Ended March 31,	
	2020	2019
Net Income Attributable to CME Group (in millions)	$ 766.2	$ 496.9
Weighted Average Number of Common Shares (in thousands):		
Basic	357,524	356,886
Effect of stock options, restricted stock and performance shares	931	1,161
Diluted	358,455	358,047
Earnings per Common Share Attributable to CME Group:		
Basic	$ 2.14	$ 1.39
Diluted	2.14	1.39

13. Subsequent Events

The company has evaluated subsequent events through the date the financial statements were issued. The company has determined that there were no subsequent events.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion is provided as a supplement to, and should be read in conjunction with, the accompanying unaudited consolidated financial statements and notes in this Quarterly Report on Form 10-Q and our Annual Report on Form 10-K for the year ended December 31, 2019.

References in this discussion and analysis to "we" and "our" are to CME Group Inc. (CME Group) and its consolidated subsidiaries, collectively. References to "exchange" are to Chicago Mercantile Exchange Inc. (CME), the Board of Trade of the City of Chicago, Inc. (CBOT), New York Mercantile Exchange, Inc. (NYMEX), and Commodity Exchange, Inc. (COMEX), collectively, unless otherwise noted.

RESULTS OF OPERATIONS

Financial Highlights

The following summarizes significant changes in our financial performance for the periods presented.

	Quarter Ended March 31,		
(dollars in millions, except per share data)	2020	2019	Change
Total revenues	$ 1,522.1	$ 1,179.6	29%
Total expenses	562.2	548.6	2
Operating margin	63.1%	53.5%	
Non-operating income (expense)	$ 29.4	$ 9.2	n.m.
Effective tax rate	22.5%	22.5%	
Net income attributable to CME Group	$ 766.2	$ 496.9	54
Diluted earnings per common share attributable to CME Group	2.14	1.39	54
Cash flows from operating activities	757.1	669.2	13

n.m. not meaningful

Revenues

	Quarter Ended March 31,		
(dollars in millions)	2020	2019	Change
Clearing and transaction fees	$ 1,278.8	$ 952.6	34%
Market data and information services	131.5	130.1	1
Other	111.8	96.9	15
Total Revenues	$ 1,522.1	$ 1,179.6	29

Clearing and Transaction Fees

Futures and Options Contracts

The following table summarizes our total contract volume, revenue and average rate per contract for futures and options. Total contract volume includes contracts that are traded on our exchange and cleared through our clearing house and certain cleared-only contracts. Volume is measured in round turns, which is considered a completed transaction that involves a purchase and an offsetting sale of a contract. Average rate per contract is determined by dividing total clearing and transaction fees by total contract volume. Contract volume and average rate per contract disclosures exclude trading volume for the cash markets business and interest rate swaps volume.

	Quarter Ended March 31,		
	2020	2019	Change
Total contract volume (in millions)	1,674.8	1,136.6	47 %
Clearing and transaction fees (in millions)	$ 1,133.0	$ 810.9	40
Average rate per contract	$ 0.676	$ 0.713	(5)

We estimate the following net changes in clearing and transaction fees based on changes in total contract volume and changes in average rate per contract for futures and options during the first quarter of 2020 when compared with the same period in 2019.

(in millions)	Quarter Ended
Increase due to change in total contract volume	$ 364.1
Decrease due to change in average rate per contract	(42.0)
Net increase in clearing and transaction fees	$ 322.1

Average rate per contract is impacted by our rate structure, including volume-based incentives; product mix; trading venue, and the percentage of volume executed by customers who are members compared with non-member customers. Due to the relationship between average rate per contract and contract volume, the change in clearing and transaction fees attributable to changes in each is only an approximation.

Contract Volume

The following table summarizes average daily contract volume. Contract volume can be influenced by many factors, including political and economic conditions, the regulatory environment and market competition.

	Quarter Ended March 31,		
(amounts in thousands)	2020	2019	Change
Average Daily Volume by Product Line:			
Interest rates	13,813	10,314	34%
Equity indexes	6,498	3,161	106
Foreign exchange	1,079	885	22
Agricultural commodities	1,506	1,381	9
Energy	3,228	2,331	38
Metals	889	561	58
Aggregate average daily volume	27,013	18,633	45
Average Daily Volume by Venue:			
CME Globex	24,582	16,576	48
Open outcry	1,281	1,284	—
Privately negotiated	1,150	773	49
Aggregate average daily volume	27,013	18,633	45
Electronic Volume as a Percentage of Total Volume	91%	89%	

Overall market volatility increased significantly throughout the first quarter of 2020 as compared with the same period in 2019, which we believe resulted from economic uncertainty caused by governmental and business response to the COVID-19 pandemic, including social distancing and stay at home orders. During the first quarter, the Federal Reserve made the unexpected decision to lower the federal funds rate due to economic concerns from the pandemic, which resulted in significant volatility within the financial and equity markets. In addition, heightened producer price competition within the oil markets combined with lower energy demands during the COVID-19 pandemic resulted in significant market volatility within the energy market during the first quarter of 2020. We believe these factors contributed to the increase in volume during the quarter.

Interest Rate Products

The following table summarizes average daily contract volume for our key interest rate products. Eurodollar Front 8 futures include contracts expiring in two years or less. Eurodollar Back 32 futures include contracts with expirations after two years through ten years.

	Quarter Ended March 31,		
(amounts in thousands)	2020	2019	Change
Eurodollar futures and options:			
Front 8 futures	2,596	2,099	24%
Back 32 futures	892	720	24
Options	2,384	1,720	39
U.S. Treasury futures and options:			
10-Year	3,191	2,269	41
5-Year	1,699	1,373	24
2-Year	945	694	36
Treasury bond	638	459	39
Federal Funds futures and options	501	274	83

In the first quarter 2020 when compared with the same period in 2019, interest rate contract volume increased significantly due to an increase in volatility, which we believe was the result of financial instability caused by governmental and business response to the COVID-19 pandemic. In addition, there was heightened uncertainty surrounding the Federal Reserve's interest rate policy following the Federal Reserve's unexpected decision to make significant cuts to the Federal Funds interest rate during the quarter, which we believe contributed to an increase in contract volume.

Equity Index Products

The following table summarizes average daily contract volume for our key equity index products. Volumes below for the first quarter of 2020 include Micro E-mini contract volumes for each index beginning on May 6, 2019.

	Quarter Ended March 31,		
(amounts in thousands)	2020	2019	Change
E-mini S&P 500 futures and options	4,251	2,166	96%
E-mini NASDAQ 100 futures and options	1,293	491	163
E-mini Russell 2000 futures and options	310	150	107

In the first quarter of 2020, equity index contract volume increased significantly when compared with the same period in 2019, which we believe was attributable to significant volatility resulting from the economic impact of governmental and business actions to combat the COVID-19 pandemic. Average daily contract volume in the first quarter of 2020 also included approximately 1.4 million in Micro-E-mini equity index contracts, which have a notional size of one-tenth of the traditional E-mini contracts.

Foreign Exchange Products

The following table summarizes average daily contract volume for our key foreign exchange products.

	Quarter Ended March 31,		
(amounts in thousands)	2020	2019	Change
Euro	285	239	19 %
Japanese yen	198	133	48
British pound	133	140	(5)
Australian dollar	131	111	18

In the first quarter of 2020, overall foreign exchange contract volume increased when compared with the same period in 2019. We believe the increase in volume was driven by the economic impact of governmental and business actions to combat the COVID-19 pandemic, which resulted in significant market volatility. In addition, market participants looked towards safe haven currencies, specifically the Japanese Yen, as it is traditionally viewed as a more stable currency.

Agricultural Commodity Products

The following table summarizes average daily contract volume for our key agricultural commodity products.

	Quarter Ended March 31,		
(amounts in thousands)	**2020**	**2019**	**Change**
Corn	436	484	(10)%
Soybean	289	231	25
Wheat	251	234	8

Overall commodity contract volume increased in the first quarter of 2020 when compared with the same period in 2019. We believe the increase in soybean contract volume was due to market optimism surrounding future trade following the initial trade agreement between the United States and China. Corn contract volume decreased due to lower price volatility, which we believe was caused by large stock piles and lower demand.

Energy Products

The following table summarizes average daily contract volume for our key energy products.

	Quarter Ended March 31,		
(amounts in thousands)	**2020**	**2019**	**Change**
WTI crude oil	1,792	1,346	33%
Natural gas	742	485	53
Refined products	497	382	30

Overall energy contract volume increased in the first quarter of 2020 when compared with the same period in 2019, largely due to an increase in price volatility. We believe the increase in crude oil contract volume was due to volatility caused by the economic uncertainty due to governmental and business response to the COVID-19 pandemic and heightened producer price competition within the crude oil market. Overall demand for crude oil has declined, which contributed to a large scale decline in crude oil prices. The increase in natural gas contract volume is due to volatility caused by a decrease in global demand during periods of strong natural gas production.

Metal Products

The following table summarizes average daily volume for our key metal products.

	Quarter Ended March 31,		
(amounts in thousands)	**2020**	**2019**	**Change**
Gold	608	340	79%
Silver	125	85	47
Copper	121	105	15

Overall metal contract volume increased in the first quarter of 2020 when compared with the same period in 2019. This was due to investors using gold and other precious metals as safe-haven alternative investments due to high volatility within other markets because of economic uncertainty.

Average Rate per Contract

The average rate per contract decreased in the first quarter of 2020 when compared with the same period in 2019. The decrease was largely due to a higher proportion of equity index contract volume, relative to other product lines. Equity index products have a lower average rate per contract versus some of the other product lines. The decrease in average rate per contract was also due to the introduction of the micro-E-mini equity index contracts, which have a lower average rate per contract compared with a standard E-mini contract. Micro-E-mini equity index contracts have a notional size of one-tenth of the traditional E-mini contracts.

Cash Markets Business

Total clearing and transaction fees revenues in the first quarter of 2020 include $124.4 million of transaction fees attributable to the cash markets business acquired from NEX compared with $122.9 million in the first quarter of 2019. This revenue primarily includes BrokerTec Americas LLC's fixed income volume and EBS's foreign exchange volume.

(amounts in millions)	Quarter Ended March 31, 2020	Quarter Ended March 31, 2019
BrokerTec U.S.'s fixed income transaction fees	$ 50.3	$ 47.6
EBS's foreign exchange transaction fees	52.5	48.9

The related average daily notional value for the first quarter of 2020 were as follows:

(amounts in billions)	Quarter Ended March 31, 2020	Quarter Ended March 31, 2019	Change
U.S. Treasury	$ 192.8	$ 172.4	12 %
European Repo (in euros)	262.6	271.4	(3)
Spot FX	97.9	81.5	20

Overall average daily notional value for the cash markets business increased in the first quarter of 2020 when compared with the same period in 2019. The increases in U.S. Treasury and Spot FX trading is largely due to overall market volatility caused by economic uncertainty surrounding government and business responses to the COVID-19 pandemic.

Concentration of Revenue

We bill a substantial portion of our clearing and transaction fees directly to our clearing firms. The majority of clearing and transaction fees received from clearing firms represent charges for trades executed and cleared on behalf of their customers. One individual firm represented approximately 10% of our clearing and transaction fees in the first quarter of 2020. Should a clearing firm withdraw, we believe that the customer portion of the firm's trading activity would likely transfer to another clearing firm of the exchange. Therefore, we do not believe we are exposed to significant risk from the ongoing loss of revenue received from or through a particular clearing firm.

Other Sources of Revenue

During the first quarter of 2020 when compared with the same period in 2019, overall market data and information services revenue remained relatively flat. The increase in market data and information services revenue from additional market data distribution channels was partially offset by a modest decline in screen counts due to cost-cutting initiatives at customer firms.

The two largest resellers of our market data represented approximately 35% of our market data and information services revenue in the first quarter of 2020. Despite this concentration, we consider exposure to significant risk of revenue loss to be minimal. In the event that one of these vendors no longer subscribes to our market data, we believe the majority of that vendor's customers would likely subscribe to our market data through another reseller. Additionally, several of our largest institutional customers that utilize services from our two largest resellers report usage and remit payment of their fees directly to us.

In the first quarter of 2020 when compared with the same period in 2019, the increase in other revenues was largely due to an increase in custody fees in the first quarter of 2020.

Expenses

(dollars in millions)	Quarter Ended March 31, 2020	Quarter Ended March 31, 2019	Change
Compensation and benefits	$ 207.5	$ 230.3	(10)%
Technology	47.7	47.1	1
Professional fees and outside services	41.7	39.4	6
Amortization of purchased intangibles	77.3	80.7	(4)
Depreciation and amortization	35.3	32.9	8
Licensing and other fee agreements	73.9	40.5	83
Other	78.8	77.7	1
Total Expenses	$ 562.2	$ 548.6	2

Operating expenses increased by $13.6 million in the first quarter 2020 when compared with the same period in 2019. The following table shows the estimated impacts of key factors resulting in the change in operating expenses:

	Quarter Ended March 31, 2020	
(dollars in millions)	Amount of Change	Change as a Percentage of Total Expenses
Licensing and other fee agreements	$ 33.4	6 %
Intangible and fixed asset impairments	23.5	4
Salaries, benefits and employer taxes	(3.2)	(1)
Marketing	(4.9)	(1)
Foreign currency exchange rate fluctuation	(11.2)	(2)
Non-qualified deferred compensation plans	(14.7)	(3)
Other expenses, net	(9.3)	(1)
Total increase	$ 13.6	2 %

Increases in operating expenses in the first quarter of 2020 when compared with the same period in 2019 were as follows:

- Licensing and other fee agreements increased primarily due to stronger volume across equity products.
- In the first quarter of 2020, we recognized impairment charges on certain intangibles and fixed assets related to a subsidiary. These charges contributed to an increase in other expenses during the first quarter of 2020.

Decreases in operating expenses in the first quarter of 2020 when compared with the same period in 2019 were as follows:

- A decrease in our non-qualified deferred compensation liability, the impact of which does not affect net income because of an equal and offsetting change in investment income, contributed to a decrease in compensation and benefits expense.
- Compensation and benefits expense also decreased as a result of lower headcount throughout the first quarter of 2020 compared to the same period in 2019.
- In the first quarter of 2020, we recognized a net gain of $3.6 million primarily due to the decline in the British pound versus U.S. dollar exchange rate, compared with a net loss of $7.6 million in the first quarter of 2019 when the British pound appreciated versus the U.S dollar. Gains and losses from exchange rate fluctuations result when subsidiaries with a U.S. dollar functional currency hold cash as well as certain other monetary assets and liabilities denominated in foreign currencies.
- Marketing expense decreased in the first quarter of 2020 compared to the same period in 2019 due to the timing of planned advertising and media campaigns.

Non-Operating Income (Expense)

	Quarter Ended March 31,		
(dollars in millions)	2020	2019	Change
Investment income	$ 95.9	$ 178.7	(46)%
Interest and other borrowing costs	(40.9)	(48.1)	(15)
Equity in net earnings (losses) of unconsolidated subsidiaries	51.2	40.5	26
Other non-operating income (expense)	(76.8)	(161.9)	(53)
Total Non-Operating	$ 29.4	$ 9.2	n.m.

n.m. not meaningful

Investment income. Investment income decreased in the first quarter of 2020 when compared with the same period in 2019, largely due to a decrease in earnings from cash performance bond and guaranty fund contributions that are reinvested. This decrease in earnings resulted primarily from lower rates of interest earned in the cash account at the Federal Reserve Bank of Chicago following significant interest rate cuts during the quarter despite an increase in our average reinvestment amount.

Interest and other borrowing costs. Interest and other borrowing costs were lower in the first quarter of 2020 when compared with the same period in 2019, primarily due to interest expense recognized on the €350.0 million fixed rate notes and the ¥19.1

billion term loan assumed as part of the NEX acquisition in 2018 and subsequently paid down during the first quarter of 2019. Interest and borrowing costs on commercial paper issuances were lower in the first quarter of 2020, as there were higher average balances of commercial paper outstanding during the first quarter of 2019 when compared with the same period in 2020.

Equity in net earnings (losses) of unconsolidated subsidiaries. Higher income generated from our S&P/Dow Jones Indices LLC business venture contributed to an increase in equity in net earnings (losses) of unconsolidated subsidiaries in the first quarter of 2020 when compared with the same period in 2019.

Other income (expense). Other expenses decreased in the first quarter of 2020 when compared with the same period in 2019. We recognized lower expenses in the first quarter of 2020 related to the distribution of interest earned on performance bond collateral reinvestments to the clearing firms due to lower interest income earned on our reinvestment. In addition, a gain of $1.5 million was recognized on derivative contracts in the first quarter of 2020 compared to a net loss of $14.4 million during the first quarter of 2019.

Income Tax Provision

The following table summarizes the effective tax rates for the periods presented:

	2020	2019
Quarter ended March 31	22.5%	22.5%

The overall effective tax rate in the first quarter of 2020 remained flat compared with the same period in 2019. In the first quarter of 2020, we recognized an increased benefit from the IRC Section 250 deduction compared with the same period in 2019. In the first quarter of 2019, we recognized tax benefits related to the recognition of certain tax assets that were previously reserved.

Liquidity and Capital Resources

Sources and Uses of Cash. Net cash provided by operating activities increased in the first quarter of 2020 when compared with the same period in 2019 largely due to the increase in contract volume. Net cash used in investing activities remained relatively flat in the first quarter of 2020 when compared with the same period of 2019. Cash used in financing activities was higher in the first quarter of 2020 when compared with the same period in 2019 due to an increase in cash dividends.

Debt Instruments. The following table summarizes our debt outstanding at March 31, 2020:

(in millions)		Par Value
Fixed rate notes due September 2022, stated rate of 3.00% (1)	$	750.0
Fixed rate notes due May 2023, stated rate of 4.30%	€	15.0
Fixed rate notes due March 2025, stated rate of 3.00% (2)	$	750.0
Fixed rate notes due June 2028, stated rate of 3.75%	$	500.0
Fixed rate notes due September 2043, stated rate of 5.30% (3)	$	750.0
Fixed rate notes due June 2048, stated rate of 4.15%	$	700.0
Commercial Paper	$	100.0

(1) We maintained a forward-starting interest rate swap agreement that modified the interest obligation associated with these notes so that the interest payable on the notes effectively became fixed at a rate of 3.32%.

(2) We maintained a forward-starting interest rate swap agreement that modified the interest obligation associated with these notes so that the interest payable on the notes effectively became fixed at a rate of 3.11%.

(3) We maintained a forward-starting interest rate swap agreement that modified the interest obligation associated with these notes so that the interest payable effectively became fixed at a rate of 4.73%.

We maintain a $2.4 billion multi-currency revolving senior credit facility with various financial institutions, which matures in November 2022. The proceeds from this facility can be used for general corporate purposes, which includes providing liquidity for our clearing house in certain circumstances at CME Group's discretion and, if necessary, for maturities of commercial paper. As long as we are not in default under this facility, we have the option to increase it up to $3.0 billion with the consent of the agent and lenders providing the additional funds. This facility is voluntarily pre-payable from time to time without premium or penalty. Under this facility, we are required to remain in compliance with a consolidated net worth test, which is defined as our consolidated shareholders' equity at September 30, 2017, giving effect to share repurchases made and special dividends paid during the term of the agreements (and in no event greater than $2.0 billion in aggregate), multiplied by 0.65. We currently do not have any borrowings outstanding under this facility, but the outstanding commercial paper balance is backstopped against this facility.

We maintain a 364-day multi-currency revolving secured credit facility with a consortium of domestic and international banks to be used in certain situations by the clearing house. The facility provides for borrowings of up to $7.0 billion. We may use the proceeds to provide temporary liquidity in the unlikely event of a clearing firm default, in the event of a liquidity constraint or default by a depositary (custodian for our collateral), or in the event of a temporary disruption with the domestic payments system that would delay payment of settlement variation between us and our clearing firms. Clearing firm guaranty fund contributions received in the form of cash or U.S. Treasury securities as well as the performance bond assets deposited by defaulting clearing members can be used to collateralize the facility. At March 31, 2020, guaranty funds available to collateralize the facility totaled $8.9 billion. We have the option to request an increase in the line from $7.0 billion to $10.0 billion. Our 364-day facility contains a requirement that CME remain in compliance with a consolidated tangible net worth test, defined as CME consolidated shareholder's equity less intangible assets (as defined in the agreement), of not less than $800.0 million. We currently do not have any borrowings outstanding under this facility.

The indentures governing our fixed rate notes, our $2.4 billion multi-currency revolving senior credit facility and our 364-day multi-currency revolving secured credit facility for $7.0 billion do not contain specific covenants that restrict the ability to pay dividends. These documents, however, do contain other customary financial and operating covenants that place restrictions on the operations of the company that could indirectly affect the ability to pay dividends.

At March 31, 2020, we have excess borrowing capacity for general corporate purposes of approximately $2.3 billion under our multi-currency revolving senior credit facility.

At March 31, 2020, we were in compliance with the various financial covenant requirements of all our debt facilities.

CME Group, as a holding company, has no operations of its own. Instead, it relies on dividends declared and paid to it by its subsidiaries in order to provide the funds which it uses to pay dividends to its shareholders.

To satisfy our performance bond obligation with Singapore Exchange Limited, we may pledge CME-owned U.S. Treasury securities in lieu of, or in combination with, irrevocable standby letters of credit. At March 31, 2020, the letters of credit totaled $310.0 million.

The following table summarizes our credit ratings at March 31, 2020:

Rating Agency	Short-Term Debt Rating	Long-Term Debt Rating	Outlook
Standard & Poor’s	A1+	AA-	Stable
Moody’s Investors Service	P1	Aa3	Stable

Given our cash flow generation, our ability to pay down debt levels and our ability to refinance existing debt facilities if necessary, we expect to maintain an investment grade rating. If our ratings are downgraded below investment grade due to a change of control, we are required to make an offer to repurchase our fixed rate notes at a price equal to 101% of the principal amount, plus accrued and unpaid interest.

Liquidity and Cash Management. Cash and cash equivalents totaled $0.9 billion and $1.6 billion at March 31, 2020 and December 31, 2019, respectively. 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. A majority of our cash and cash equivalents balance is invested in money market mutual funds that invest only in U.S. Treasury securities, U.S. government agency securities and U.S. Treasury security reverse repurchase agreements. Our exposure to credit and liquidity risk is minimal given the nature of the investments. Cash that is not available for general corporate purposes because of regulatory requirements or other restrictions is classified as restricted cash and is included in other current assets or other assets in the consolidated balance sheets.

On May 5, 2020, CME Group's board of directors declared a regular quarterly dividend of $0.85 per share payable on June 25, 2020 to the shareholders of record as of June 10, 2020.

At March 31, 2020, the cash performance bonds and guaranty fund contributions on the consolidated balance sheet was $100.4 billion compared with $37.1 billion at December 31, 2019. The increase in the balance was due to an increase in margin requirements.

Regulatory Requirements. CME is regulated by the CFTC as a U.S. Derivatives Clearing Organization (DCO). DCOs are required to maintain capital, as defined by the CFTC, in an amount at least equal to one year of projected operating expenses as well as cash, liquid securities, or a line of credit at least equal to six months of projected operating expenses. CME was designated by the Financial Stability Oversight Council as a systemically important financial market utility under Title VIII of Dodd-Frank. As a result, CME must comply with CFTC regulations applicable to a systemically important DCO for financial resources and liquidity resources. CME is in compliance with all DCO financial requirements.

CME, CBOT, NYMEX and COMEX are regulated by the CFTC as Designated Contract Markets (DCM). DCMs are required to maintain capital, as defined by the CFTC, in an amount at least equal to one year of projected operating expenses as well as cash, liquid securities or a line of credit at least equal to six months of projected operating expenses. Our DCMs are in compliance with all DCM financial requirements.

BrokerTec Americas LLC is required to maintain sufficient net capital under Securities Exchange Act Rule 15c3-1 (the Net Capital Rule). The Net Capital Rule focuses on liquidity and is designed to protect securities customers, counterparties, and creditors by requiring that broker-dealers have sufficient liquid resources on hand at all times to satisfy claims promptly. Rule 15c3-3, or the customer protection rule, which complements rule 15c3-1, is designed to ensure that customer property (securities and funds) in the custody of broker-dealers is adequately safeguarded. By law, both of these rules apply to the activities of registered broker-dealers, but not to unregistered affiliates. The firm began operating as a (k)(2)(i) broker dealer in November 2017 following notification to the Financial Industry Regulatory Authority and the SEC. A company operating under the (k)(2)(i) exemption is not required to lock up customer funds as would otherwise be required under Rule 15c3-3 of the Securities Exchange Act.

Recent Accounting Pronouncements

Refer to Note 2. Accounting Policies in our notes to the consolidated financial statements for information on newly issued and recently adopted accounting pronouncements that are applicable to us.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are subject to various market risks, including those caused by changes in interest rates, credit, foreign currency exchange rates and equity prices. There have not been material changes in our exposure to market risk since December 31, 2019. Refer to Item 7A. of CME Group's Annual Report on Form 10-K for the year ended December 31, 2019 for additional information.

ITEM 4. CONTROLS AND PROCEDURES

(a) Disclosure Controls and Procedures. Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures (as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the Exchange Act)) as of the end of the period covered by this report. Based on such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as of the end of such period, our disclosure controls and procedures are effective.

(b) Changes in Internal Control Over Financial Reporting. As required by Rule 13a-15(d) under the Exchange Act, the company's management, including the company's Chief Executive Officer and Chief Financial Officer, have evaluated the company's internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) to determine whether any changes occurred during the quarter covered by this quarterly report that have materially affected, or are reasonably likely to materially affect, the company's internal control over financial reporting. There were no changes in the company's internal control over financial reporting which occurred during the fiscal quarter ended March 31, 2020, that have materially affected, or are reasonably likely to materially affect, the company's internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

See "Legal and Regulatory Matters" in Note 7. Contingencies to the Consolidated Financial Statements for updates to CME Group's existing legal proceedings disclosure which is incorporated herein by reference. Note 7. Contingencies includes updates to the legal proceedings disclosed in the company's Annual Report on Form 10-K, filed with the SEC on February 28, 2020.

ITEM 1A. RISK FACTORS

There have been no material changes in the company's risk factors from those disclosed in the company's Annual Report on Form 10-K for the year ended December 31, 2019, other than the following:

The outbreak of the novel coronavirus (COVID-19) has negatively affected the global economy, including the United States economy and the global financial markets, and may disrupt our operations and our clients' operations, which could have an adverse effect on our business, financial condition and results of operations.

The ongoing COVID-19 global and national health emergency has caused significant disruption in the international and United States economies and financial markets. Following the World Health Organization’s official declaration of the COVID-19 outbreak as a pandemic, CME Group formally triggered its pandemic plan. On March 13, 2020, CME Group closed its open outcry trading floors and all trading is now conducted through our electronic trading system. The spread of COVID-19 has caused illness, quarantines, cancellation of events and travel, business and school shutdowns, reduction in business activity and financial transactions, labor shortages, supply chain interruptions and overall economic and financial market instability in the United States. Similar impacts also have been experienced in every country in which we do business. Given the unique and unpredictable nature of this event, future impacts to our business are unknown and could be material. Those impacts may include, among others, the following:

- Interruptions to our business and operations;
- Key members of senior management or a significant number of our employees unable to work as a result of contracting COVID-19 or related illnesses;
- Reduced productivity and operating effectiveness as a result of our employees working remotely and impacts on our clients encountering similar circumstances;
- Impacts on our third-party suppliers and their ability to fulfill their obligations to us;
- Unprecedented volatility and market stresses in global financial markets;
- Reduced economic activity generally could cause businesses to have less need to hedge in our markets;
- Delays to our expansion, investment and strategic initiatives and system integrations;
- Impacts to our ability to expand our client base, grow our business and generate new revenue due to the inability to hold in person meetings, events and conferences and other impacts from social distancing;
- Impacts on our brand and reputation due to negative investor sentiment in the overall financial markets;
- Increased financial and operational stress experienced by our clearing firm members due to unprecedented volatility, including significant losses that may result in a reduction of business or a default;
- Market access or trading limitations imposed by governmental authorities; and
- Increased technology and cyber-security risks, social engineering and phishing campaigns.

These potential impacts may exist for a significant period of time and may adversely affect our business, results of operations and financial condition even after the COVID-19 outbreak has subsided.

The spread of COVID-19 has caused us to modify our business practices (including restricting employee travel and enacting work-from-home protocols), and we may take further actions as may be required by government authorities or as we determine to be in the best interests of our employees and customers. There is no certainty that such measures will be sufficient to mitigate the risks posed by the virus or will otherwise be satisfactory to government authorities.

The extent to which the coronavirus outbreak impacts our business, results of operations and financial condition will depend on future developments, which are highly uncertain and difficult to predict, but may include, among others, the duration and spread of the outbreak, its severity, the actions taken by governments and other third parties to contain the virus or treat its impact, and the pace at which, and the extent to which, normal economic and operating conditions can resume.

There are no comparable recent events that provide guidance as to the effect the spread of COVID-19 as a global pandemic may have on the international and United States economy or the functioning of financial markets like ours. As a result, the ultimate impact of the outbreak on our business and operations is highly uncertain and subject to change, and we do not yet know the full extent of such impacts. However, the effects could have a material impact on our results of operations, financial condition and liquidity and could heighten many of the known risks we face, as described in the "Risk Factors" section of our Annual Report on Form 10-K for the year ended December 31, 2019.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

Issuer Purchases of Equity Securities

Period	(a) Total Number of Class A Shares Purchased (1)	(b) Average Price Paid Per Share	(c) Total Number of Class A Shares Purchased as Part of Publicly Announced Plans or Programs	(d) Maximum Number (or Approximate Value) that May Yet Be Purchased Under the Plans or Programs (in millions)
January 1 to January 31	121	$ 204.86	—	$ —
February 1 to February 29	—	—	—	—
March 1 to March 31	104,922	182.01	—	—
Total	105,043		—	

(1) Shares purchased consist of an aggregate of 105,043 shares of Class A common stock surrendered in the first quarter of 2020 to satisfy employees' tax obligations upon the vesting of restricted stock.

ITEM 6. EXHIBITS

31.1	Section 302 Certification—Terrence A. Duffy
31.2	Section 302 Certification—John W. Pietrowicz
32.1	Section 906 Certification
101	The following materials from CME Group Inc.'s Quarterly Report on Form 10-Q for the quarter ended March 31, 2020, formatted in Inline XBRL (Extensible Business Reporting Language): (i) the Consolidated Balance Sheets, (ii) the Consolidated Statements of Income, (iii) the Consolidated Statements of Comprehensive Income, (iv) the Consolidated Statements of Equity, (v) Consolidated Statements of Cash Flows and (vi) Notes to Unaudited Consolidated Financial Statements, tagged as blocks of text.
104	The cover page from CME Group Inc.'s Quarterly Report on Form 10-Q for the quarter ended March 31, 2020, formatted in Inline XBRL.

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.

CME Group Inc.
(Registrant)

Dated: May 6, 2020	By:	/s/ John W. Pietrowicz
		Chief Financial Officer & Senior Managing Director Finance

Exhibit 31.1

CERTIFICATION

I, Terrence A. Duffy, certify that:

1. I have reviewed this report on Form 10-Q of CME Group 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 registrant’s board of directors (or persons performing the equivalent function):

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.

Dated: May 6, 2020	/s/ Terrence A. Duffy
	Name: Terrence A. Duffy
	Title: Chief Executive Officer

Exhibit 31.2

CERTIFICATION

I, John W. Pietrowicz, certify that:

1. I have reviewed this report on Form 10-Q of CME Group 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 registrant's board of directors (or persons performing the equivalent function):

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.

Dated: May 6, 2020	/s/ John W. Pietrowicz
	Name: John W. Pietrowicz
	Title: Chief Financial Officer

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 CME Group Inc. (the "Company") for the quarter ended March 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), Terrence A. Duffy, as Chief Executive Officer of the Company, and John W. Pietrowicz, as 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 his knowledge:

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

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

/s/ Terrence A. Duffy

Name: Terrence A. Duffy
Title: Chief Executive Officer

Dated: May 6, 2020

/s/ John W. Pietrowicz

Name: John W. Pietrowicz
Title: Chief Financial Officer

Dated: May 6, 2020

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.

A signed original of this written statement required by § 906 of the Sarbanes-Oxley Act of 2002 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.