

Cboe Global Markets Reports Results for First Quarter 2019

First Quarter 2019 Highlights*

- **Diluted EPS of \$0.85**
- **Adjusted Diluted EPS¹ of \$1.11, Down 20 Percent**
- **Net Revenue of \$280.5 Million, Down 15 Percent**
- **Operating Margin of 52.2 Percent; Adjusted Operating Margin¹ of 66.5 Percent**
- **Operating Expenses of \$134.0 Million, Down 17 Percent; Adjusted Operating Expenses¹ of \$94.1 Million, Down 14 Percent**
- **Returned Nearly \$70 Million to Shareholders Through Share Repurchases and Dividends**

CHICAGO, IL – May 3, 2019 - Cboe Global Markets, Inc. (Cboe: CBOE) today reported financial results for the first quarter of 2019.

“We faced challenging market conditions and difficult financial comparisons versus last year’s record first-quarter results,” said Edward T. Tilly, Cboe Global Markets Chairman, President and Chief Executive Officer. “As we’ve done historically, we used this less volatile period to seed potential future growth in our proprietary index products through increased customer outreach and education efforts. With these efforts, we are confident we are even better positioned to grow our business. We remain confident in the strength of our diversified portfolio of exchanges and the utility of our products, and are embracing the opportunities before us to continue to define markets globally to deliver value to our customers and shareholders,” Mr. Tilly added.

“Although revenue and earnings declined year-over-year this quarter, strong expense discipline helped us deliver solid margins, with an adjusted operating margin of 66.5 percent, unchanged compared with last year’s first quarter,” said Brian N. Schell, Cboe Global Markets Executive Vice President, Chief Financial Officer and Treasurer. “Additionally, we returned nearly \$70 million to shareholders through dividends and share repurchases in the first quarter. Our ability to return capital to our shareholders reflects the confidence we have in our business, its opportunities for growth and its ability to generate meaningful free cash flow,” Mr. Schell added.

**All comparisons are first quarter 2019 compared to the same period in 2018.*

⁽¹⁾A full reconciliation of our non-GAAP results to our GAAP results is included in the attached tables. See “Non-GAAP Information” in the accompanying financial tables.

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Consolidated First Quarter Results -Table 1

Table 1 below presents summary selected unaudited condensed consolidated financial information for the company as reported and on an adjusted basis for the three months ended March 31, 2019 and 2018.

Table 1						
Consolidated First Quarter Results (\$ in millions except per share)	1Q19	1Q18	Change	1Q19 Adjusted¹	1Q18 Adjusted¹	Change
Total Revenues Less Cost of Revenues	\$ 280.5	\$ 328.5	(15)%	\$ 280.5	\$ 328.5	(15)%
Total Operating Expenses	\$ 134.0	\$ 160.8	(17)%	\$ 94.1	\$ 109.9	(14)%
Operating Income	\$ 146.5	\$ 167.7	(13)%	\$ 186.4	\$ 218.6	(15)%
Operating Margin %	52.2 %	51.1 %	110 bps	66.5 %	66.5 %	-
Net Income Allocated to Common Stockholders	\$ 94.6	\$ 117.3	(19)%	\$ 124.5	\$ 155.2	(20)%
Diluted EPS	\$ 0.85	\$ 1.04	(18)%	\$ 1.11	\$ 1.38	(20)%
EBITDA ¹	\$ 184.3	\$ 222.4	(17)%	\$ 186.6	\$ 231.2	(19)%
EBITDA Margin % ¹	65.7 %	67.7 %	(200)bps	66.5 %	70.4 %	(390)bps

- Total revenues less cost of revenues (referred to as "net revenue") were \$280.5 million, down 15 percent from \$328.5 million in the prior-year period, primarily due to lower trading volume across all business segments.
- Total operating expenses were \$134.0 million versus \$160.8 million in the first quarter of 2018. Adjusted operating expenses¹ of \$94.1 million declined 14 percent compared with \$109.9 million in the first quarter of 2018, primarily reflecting a decrease in compensation and benefits as a result of lower incentive-based compensation.
- Operating income decreased by 13 percent to \$146.5 million and adjusted operating income¹ decreased by 15 percent to \$186.4 million.
- The operating margin for the first quarter was 52.2 percent. The adjusted operating margin¹ for the quarter was 66.5 percent, unchanged from 2018's first quarter, reflecting lower expenses.
- The effective tax rate for the first quarter of 2019 was 25.5 percent compared with 25.9 percent in the first quarter of 2018. The effective tax rate on adjusted earnings¹ in the first quarter of 2019 was 25.4 percent compared with 25.8 percent in last year's first quarter. The decrease in the tax rate was primarily due to excess tax benefits related to equity awards.
- Diluted EPS for the first quarter of 2019 was \$0.85. Adjusted diluted EPS¹ was \$1.11, down 20 percent compared to 2018's record first-quarter results. First quarter EPS also includes a charge of \$0.06 due to the SEC disapproval of the OCC capital plan, which resulted in the reversal of \$8.8 million in OCC dividend revenue recognized in the fourth quarter of 2018.

Business Segment Information:

Table 2			
Total Revenues Less Cost of Revenues by Business Segment (in millions)	1Q19	1Q18	Change
Options	\$ 138.5	\$ 167.1	(17)%
U.S. Equities	75.8	79.7	(5)%
Futures	29.5	42.3	(30)%
European Equities	22.8	24.6	(7)%
Global FX	13.9	14.6	(5)%
Corporate	-	0.2	(100)%
Total	\$ 280.5	\$ 328.5	(15)%

⁽¹⁾A full reconciliation of our non-GAAP results to our GAAP results is included in the attached tables. See "Non-GAAP Information" in the accompanying financial tables.

Discussion of Results by Business Segment:

Options:

- Options net revenue of \$138.5 million was down \$28.6 million or 17 percent from the first quarter of 2018, primarily due to lower net transaction fees resulting from lower trading volume in both index options and multiply-listed options.
- Net transaction fees¹ decreased \$39.9 million or 28 percent, as total options average daily volume (ADV) decreased 22 percent and revenue per contract (RPC) declined 7 percent compared to the first quarter 2018. While both index options and multiply-listed options reported higher RPC, a mix shift lowered the total options RPC, with index options accounting for a lower percentage of the overall volume. Index options RPC was up 3 percent, reflecting a shift in the mix of index products traded, with S&P 500 Index (SPX) options accounting for a higher percentage of volume in the first quarter 2019 versus the same period in 2018. The RPC for multiply-listed options increased 13 percent, primarily due to lower volume-based rebates versus the first quarter of 2018.
- Cboe's Options business had market share of 36.8 percent for the first quarter of 2019 compared to 40.6 percent in the first quarter of 2018.

U.S. Equities:

- U.S. Equities net revenue of \$75.8 million was down \$3.9 million or 5 percent, primarily due to lower net transaction fees as a result of lower market share.
- Cboe's U.S. Equities business had market share of 16.0 percent for the first quarter of 2019 compared to 19.4 percent in the first quarter of 2018.

Futures:

- Futures net revenue of \$29.5 million decreased \$12.8 million or 30 percent, primarily due to lower net transaction fees.
- Net transaction fees¹ decreased \$14.2 million or 37 percent, primarily due to a 37 percent decrease in VIX futures ADV.

European Equities:

- European Equities net revenue of \$22.8 million decreased by 7 percent, reflecting a decline in net transaction fees, offset by a slight increase in non-transaction revenue. Average daily notional value (ADNV) traded during the quarter was €9.2 billion, down 15 percent from last year's first quarter, with net capture up 11 percent.
- For the first quarter of 2019, Cboe Europe Equities retained its position as the largest Pan-European stock exchange with 22.1 percent market share, up from 21.2 percent in the first quarter of 2018.

Global FX:

- Global FX net revenue of \$13.9 million decreased \$0.7 million or 5 percent, primarily due to lower net transaction fees compared with the first quarter of 2018. ADNV traded on the Cboe FX platform was \$36.5 billion for the quarter, down 12 percent from last year's first quarter.
- Cboe FX market share increased to 15.8 percent in the first quarter, setting a new high and net capture increased \$0.16, or 7 percent, per one million shares traded to \$2.61 for first quarter 2019 compared to first quarter 2018.

⁽¹⁾A full reconciliation of our non-GAAP results to our GAAP results is included in the attached tables. See "Non-GAAP Information" in the accompanying financial tables.

2019 Fiscal Year Financial Guidance

The company updated or reaffirmed its financial guidance for the 2019 fiscal year as follows:

- Adjusted operating expenses are now expected to be in a range of \$415 to \$423 million, a \$5 million decrease from previous guidance of \$420 to \$428 million. The guidance excludes the amortization of acquired intangible assets of \$138 million, which the company plans to include in its non-GAAP reconciliation.¹
- Reaffirmed that depreciation and amortization expense, which is included in adjusted operating expenses above, are expected to be in the range of \$35 to \$40 million, excluding the amortization of acquired intangible assets of \$138 million.
- Reaffirmed that the effective tax rate¹ on adjusted earnings for the full year is expected to be in the range of 27 to 29 percent. Significant changes in trading volume, expenses, federal, state and local tax laws or rates and other items could materially impact this expectation.
- Reaffirmed that capital expenditures are expected to be in the range of \$50 to \$55 million.

⁽¹⁾Specific quantifications of the amounts that would be required to reconcile the company's adjusted operating expenses guidance and the effective tax rate on adjusted earnings guidance are not available. The company believes that there is uncertainty and unpredictability with respect to certain of its GAAP measures, primarily related to acquisition-related expenses that would be required to reconcile to GAAP operating expenses and GAAP effective tax rate, which preclude the company from providing accurate guidance on certain forward-looking GAAP to non-GAAP reconciliations. The company believes that providing estimates of the amounts that would be required to reconcile the range of the company's adjusted operating expenses and the effective tax rate on adjusted earnings would imply a degree of precision that would be confusing or misleading to investors for the reasons identified above.

Capital Management

The company paid cash dividends of \$34.8 million, or \$0.31 per share, during the first quarter of 2019 and utilized \$35.0 million to repurchase 0.4 million shares of its common stock under its share repurchase program at an average price of \$95.36 per share. As of March 31, 2019, the company had approximately \$171.1 million of availability remaining under its existing share repurchase authorizations.

At March 31, 2019, the company had adjusted cash and financial investments¹ of \$347.8 million. Total debt as of March 31, 2019 was \$1.2 billion.

Earnings Conference Call

Executives of Cboe Global Markets will host a conference call to review its first-quarter financial results today, May 3, 2019, at 8:30 a.m. ET/7:30 a.m. CT. The conference call and any accompanying slides will be publicly available via live webcast from the Investor Relations section of the company's website at www.cboe.com under Events & Presentations. Participants may also listen via telephone by dialing (877) 255-4313 from the United States, (866) 450-4696 from Canada or (412) 317-5466 for international callers. Telephone participants should place calls 10 minutes prior to the start of the call. The webcast will be archived on the company's website for replay. A telephone replay of the earnings call also will be available from approximately 11:00 a.m. CT, May 3, 2019, through 11:00 p.m. CT, May 10, 2019, by calling (877) 344-7529 from the U.S., (855) 669-9658 from Canada or (412) 317-0088 for international callers, using replay code 10129417.

⁽²⁾A full reconciliation of our non-GAAP results to our GAAP results is included in the attached tables. See "Non-GAAP Information" in the accompanying financial tables.

About Cboe Global Markets

Cboe Global Markets, Inc. (Cboe: CBOE) is one of the world's largest exchange holding companies, offering cutting-edge trading and investment solutions to investors around the world. The company is committed to relentless innovation, connecting global markets with world-class technology, and providing seamless solutions that enhance the customer experience.

Cboe offers trading across a diverse range of products in multiple asset classes and geographies, including options, futures, U.S. and European equities, exchange-traded products (ETPs), global foreign exchange (FX) and multi-asset volatility products based on the Cboe Volatility Index (VIX Index), the world's barometer for equity market volatility.

Cboe's trading venues include the largest options exchange in the U.S. and the largest stock exchange by value traded in Europe. In addition, the company is one of the largest stock exchange operators in the U.S. and a leading market globally for ETP trading.

The company is headquartered in Chicago with offices in Kansas City, New York, London, Amsterdam, San Francisco, Singapore, Hong Kong and Ecuador. For more information, visit www.cboe.com.

Cautionary Statements Regarding Forward-Looking Information

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 that involve a number of risks and uncertainties. You can identify these statements by forward-looking words such as “may,” “might,” “should,” “expect,” “plan,” “anticipate,” “believe,” “estimate,” “predict,” “potential” or “continue,” and the negative of these terms and other comparable terminology. All statements that reflect our expectations, assumptions or projections about the future other than statements of historical fact are forward-looking statements. These forward-looking statements, which are subject to known and unknown risks, uncertainties and assumptions about us, may include projections of our future financial performance based on our growth strategies and anticipated trends in our business. These statements are only predictions based on our current expectations and projections about future events. There are important factors that could cause our actual results, level of activity, performance or achievements to differ materially from those expressed or implied by the forward-looking statements.

We operate in a very competitive and rapidly changing environment. New risks and uncertainties emerge from time to time, and it is not possible to predict all risks and uncertainties, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

Some factors that could cause actual results to differ include: the loss of our right to exclusively list and trade certain index options and futures products; economic, political and market conditions; compliance with legal and regulatory obligations; price competition and consolidation in our industry; decreases in trading volumes, market data fees or a shift in the mix of products traded on our exchanges; legislative or regulatory changes; potential difficulties in our migration of trading platforms and our ability to retain employees as a result of the acquisition of Bats Global Markets, Inc.; our ability to protect our systems and communication networks from security risks, cybersecurity risks, insider threats and unauthorized disclosure of confidential information; increasing competition by foreign and domestic entities; our dependence on and exposure to risk from third parties; fluctuations to currency exchange rates; our index providers’ ability to maintain the quality and integrity of their indexes and to perform under our agreements; our ability to operate our business without violating the intellectual property rights of others and the costs associated with protecting our intellectual property rights; our ability to attract and retain skilled management and other personnel, including those experienced with post-acquisition integration; our ability to accommodate trading volume and transaction traffic, including significant increases, without failure or degradation of performance of our systems; misconduct by those who use our markets or our products; challenges to our use of open source software code; our ability to meet our compliance obligations, including managing potential conflicts between our regulatory responsibilities and our for-profit status; damage to our reputation; the ability of our compliance and risk management methods to effectively monitor and manage our risks; our ability to manage our growth and strategic acquisitions or alliances effectively; restrictions imposed by our debt obligations; our ability to maintain an investment grade credit rating; impairment of our goodwill, investments or intangible assets; and the accuracy of our estimates and expectations. More detailed information about factors that may affect our actual results to differ may be found in our filings with the SEC, including in our Annual Report on Form 10-K for the year ended December 31, 2018 and other filings made from time to time with the SEC.

We do not undertake, and we expressly disclaim, any duty to update any forward-looking statement whether as a result of new information, future events or otherwise, except as required by law. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof.

The condensed consolidated statements of income and balance sheets are unaudited and subject to reclassification.

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**Cboe Global Markets, Inc.
Key Performance Statistics by Business Segment**

	1Q 2019	4Q 2018	3Q 2018	2Q 2018	1Q 2018
Options (ADV in thousands)					
Total industry ADV	19,193	22,450	18,292	18,807	22,407
Total company Options ADV	7,063	8,610	6,733	7,095	9,092
Multiply-listed options	5,215	6,067	4,965	5,264	6,286
Index options	1,848	2,543	1,768	1,831	2,806
Total Options Market Share	36.8 %	38.4 %	36.8 %	37.7 %	40.6 %
Total Options RPC:	\$ 0.243	\$ 0.280	\$ 0.244	\$ 0.241	\$ 0.261
Multiply-listed options	\$ 0.069	\$ 0.083	\$ 0.068	\$ 0.063	\$ 0.061
Index options	\$ 0.733	\$ 0.750	\$ 0.737	\$ 0.753	\$ 0.710
U.S. Equities					
Total industry ADV (shares in billions)	7.5	8.5	6.3	6.9	7.6
Market share %	16.0 %	17.8 %	17.5 %	18.9 %	19.4 %
Net capture (per 100 touched shares)	\$ 0.029	\$ 0.027	\$ 0.026	\$ 0.023	\$ 0.023
Futures					
ADV (in thousands)	231	338	239	258	368
RPC	\$ 1.739	\$ 1.697	\$ 1.709	\$ 1.633	\$ 1.727
European Equities					
Total industry ADNV (Euros - in billions)	€ 41.7	€ 46.7	€ 41.4	€ 47.4	€ 50.8
Market share %	22.1 %	22.7 %	23.1 %	22.2 %	21.2 %
Net capture (bps)	0.210	0.200	0.195	0.183	0.190
Global FX					
Market share %	15.8 %	15.3 %	14.8 %	14.9 %	15.3 %
ADNV (\$ in billions)	\$ 36.5	\$ 35.1	\$ 34.6	\$ 38.4	\$ 41.6
Net capture (per one million shares traded)	\$ 2.61	\$ 2.63	\$ 2.63	\$ 2.56	\$ 2.45

ADV = average daily volume; ADNV = average daily notional value.

RPC, average revenue per contract, for options and futures represents total net transaction fees recognized for the period divided by total contracts traded during the period.

U.S. Equities, "net capture per 100 touched shares" refers to transaction fees less liquidity payments and routing and clearing costs divided by the product of one-hundredth ADV of touched shares on BZX, BYX, EDGX and EDGA and the number of trading days.

European Equities, "net capture per matched notional value" refers to transaction fees less liquidity payments in British pounds divided by the product of matched ADNV in British pounds and the number of trading days.

Global FX, "net capture per one million dollars traded" refers to net transaction fees divided by the product of one-millionth of ADNV traded on the Cboe FX market, the number of trading days, and two, which represents the buyer and seller that are both charged on the transaction. Market Share represents Cboe FX volume divided by the total volume of publicly reporting spot FX venues (Cboe FX, EBS, Refinitiv, and FastMatch).

Average transaction fees per contract can be affected by various factors, including exchange fee rates, volume-based discounts and transaction mix by contract type and product type.

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Cboe Global Markets, Inc. and Subsidiaries
Consolidated Statements of Income (Unaudited)
Three Months Ended March 31, 2019 and 2018

(in millions, except per share amounts)	Three Months Ended March 31,	
	2019	2018
Revenue:		
Transaction fees	\$ 430.4	\$ 547.1
Access and capacity fees	54.4	50.6
Market data fees	51.6	54.2
Regulatory fees	58.7	116.3
Other revenue	7.5	9.5
Total Revenues	602.6	777.7
Cost of Revenue		
Liquidity payments	243.7	302.9
Routing and clearing	9.2	10.3
Section 31 fees	48.2	108.8
Royalty fees	21.0	27.2
Total Cost of Revenue	322.1	449.2
Revenues Less Cost of Revenues	280.5	328.5
Operating Expenses:		
Compensation and benefits	48.1	58.9
Depreciation and amortization	47.2	54.2
Technology support services	11.9	12.1
Professional fees and outside services	16.2	18.0
Travel and promotional expenses	2.6	3.7
Facilities costs	2.1	2.4
Acquisition-related costs	2.3	8.8
Other expenses	3.6	2.7
Total Operating Expenses	134.0	160.8
Operating Income	146.5	167.7
Other Income/(Expense):		
Interest expense, net	(9.9)	(9.6)
Other (expense) income	(8.8)	1.3
Total Other Income/(Expense)	(18.7)	(8.3)
Income Before Income Taxes	127.8	159.4
Income tax provision	32.6	41.3
Net Income	95.2	118.1
Net loss attributable to redeemable noncontrolling interest	0.2	0.3
Net Income Excluding Redeemable Noncontrolling Interest	95.4	118.4
Change in redemption value of redeemable noncontrolling interest	(0.2)	(0.3)
Net income allocated to participating securities	(0.6)	(0.8)
Net Income Allocated to Common Stockholders	\$ 94.6	\$ 117.3
Net Income Per Share Allocated to Common Stockholders:		
Basic earnings per share	\$ 0.85	\$ 1.04
Diluted earnings per share	0.85	1.04
Weighted average shares used in computing income per share:		
Basic	111.5	112.4
Diluted	111.7	112.7

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Cboe Global Markets, Inc. and Subsidiaries
Condensed Consolidated Balance Sheets (Unaudited)
March 31, 2019 and December 31, 2018

(in millions)	March 31, 2019	December 31, 2018
Assets		
Current Assets:		
Cash and cash equivalents	\$ 346.2	\$ 275.1
Financial investments	30.2	35.7
Accounts receivable, net	251.0	287.3
Income taxes receivable	40.3	70.4
Other current assets	15.5	15.2
Total Current Assets	683.2	683.7
Investments	63.4	86.2
Land	4.9	4.9
Property and equipment, net	68.5	71.7
Operating lease right of use assets	56.5	—
Goodwill	2,697.5	2,691.4
Intangible assets, net	1,690.3	1,720.2
Other assets, net	66.1	62.9
Total	\$ 5,330.4	\$ 5,321.0
Liabilities, Redeemable Noncontrolling Interest and Stockholders' Equity		
Current Liabilities:		
Accounts payable and accrued liabilities	\$ 135.8	\$ 198.5
Section 31 fees payable	48.7	81.1
Current portion of long-term debt	299.9	299.8
Deferred revenue	18.2	8.5
Income taxes payable	4.1	4.1
Contingent consideration liabilities	4.7	3.9
Total Current Liabilities	511.4	595.9
Long-term debt	916.1	915.6
Income tax liability	121.2	114.9
Deferred income taxes	433.4	436.8
Non-current operating lease liabilities	50.1	—
Other non-current liabilities	3.4	7.4
Total Liabilities	2,035.6	2,070.6
Redeemable Noncontrolling Interest	9.4	9.4
Stockholders' Equity:		
Preferred stock	—	—
Common stock	1.2	1.2
Treasury stock at cost	(764.3)	(720.1)
Additional paid-in-capital	2,673.7	2,660.2
Retained earnings	1,348.6	1,288.2
Accumulated other comprehensive income (loss), net	26.2	11.5
Total Stockholders' Equity	3,285.4	3,241.0
Total	\$ 5,330.4	\$ 5,321.0

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Non-GAAP Information

In addition to disclosing results determined in accordance with GAAP, Cboe Global Markets has disclosed certain non-GAAP measures of operating performance. These measures are not in accordance with, or a substitute for, GAAP, and may be different from or inconsistent with non-GAAP financial measures used by other companies. The non-GAAP measures provided in this press release include net transaction fees, adjusted operating expenses, adjusted operating income, adjusted operating margin, adjusted net income allocated to common stockholders and adjusted diluted earnings per share, effective tax rate on adjusted earnings, adjusted cash and financial investments, EBITDA, EBITDA margin, adjusted EBITDA and adjusted EBITDA margin.

Management believes that the non-GAAP financial measures presented in this press release, including adjusted operating income and adjusted operating expenses, provide additional and comparative information to assess trends in our core operations and a means to evaluate period-to-period comparisons. Non-GAAP financial measures disclosed by management are provided as additional information to investors in order to provide them with an alternative method for assessing our financial condition and operating results.

Amortization expense of acquired intangible assets: We amortize intangible assets acquired in connection with various acquisitions. Amortization of intangible assets is inconsistent in amount and frequency and is significantly affected by the timing and size of our acquisitions. As such, if intangible asset amortization is included in performance measures, it is more difficult to assess the day-to-day operating performance of the businesses, the relative operating performance of the businesses between periods and the earnings power of the company. Therefore, we believe performance measures excluding intangible asset amortization expense provide investors with an additional basis for comparison across accounting periods.

Acquisition-related expenses: From time to time, we have pursued small bolt-on acquisitions and in 2017 completed a larger transformative acquisition, which have resulted in expenses which would not otherwise have been incurred in the normal course of the company's business operations. These expenses include integration costs, as well as legal, due diligence and other third party transaction costs. The frequency and the amount of such expenses vary significantly based on the size, timing and complexity of the transaction. Accordingly, we exclude these costs for purposes of calculating non-GAAP measures which provide an additional analysis of Cboe's ongoing operating performance or comparisons in Cboe's performance between periods.

The tables below show the reconciliation of each financial measure from GAAP to non-GAAP. The non-GAAP financial measures exclude the impact of those items detailed below and are referred to as adjusted financial measures.

Reconciliation of GAAP and non-GAAP Information

Table 4

(in millions, except per share amounts)

Reconciliation of Net Income Allocated to Common Stockholders to Non-GAAP (As shown on Table 1)

	Three Months Ended March 31,	
	2019	2018
Net income allocated to common stockholders	\$ 94.6	\$ 117.3
Non-GAAP adjustments		
Acquisition-related expenses (1)	2.3	8.8
Amortization of acquired intangible assets (2)	37.6	42.1
Change in redemption value of noncontrolling interests	0.2	0.3
Total Non-GAAP adjustments	40.1	51.2
Income tax expense related to the items above	(10.0)	(13.0)
Net income allocated to participating securities - effect on reconciling items	(0.2)	(0.3)
Adjusted net income allocated to common stockholders	\$ 124.5	\$ 155.2

Reconciliation of Diluted EPS to Non-GAAP

Diluted earnings per common share	\$ 0.85	\$ 1.04
Per share impact of non-GAAP adjustments noted above	0.26	0.34
Adjusted diluted earnings per common share	\$ 1.11	\$ 1.38

Reconciliation of Operating Margin to Non-GAAP

Revenue less cost of revenue	\$ 280.5	\$ 328.5
Non-GAAP adjustments noted above	—	—
Adjusted revenue less cost of revenue	\$ 280.5	\$ 328.5
Operating expenses	\$ 134.0	\$ 160.8
Non-GAAP adjustments noted above	39.9	50.9
Adjusted operating expenses	\$ 94.1	\$ 109.9
Operating income	\$ 146.5	\$ 167.7
Non-GAAP adjustments noted above	39.9	50.9
Adjusted operating income	\$ 186.4	\$ 218.6
Adjusted operating margin (3)	66.5 %	66.5 %

Reconciliation of Income Tax Rate to Non-GAAP

Income before income taxes	127.8	159.4
Non-GAAP adjustments noted above	40.1	51.2
Adjusted income before income taxes	\$ 167.9	\$ 210.6
Income tax expense	32.6	41.3
Non-GAAP adjustments noted above	10.0	13.0
Adjusted income tax expense	\$ 42.6	\$ 54.3
Adjusted income tax rate	25.4 %	25.8 %

(1) This amount includes professional fees and outside services, severance, and other costs related to the company's acquisition of Bats.

(2) This amount represents the amortization of acquired intangible assets for Bats.

(3) Adjusted operating margin represents adjusted operating income divided by adjusted revenue less cost of revenue.

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EBITDA Reconciliations

EBITDA (earnings before interest, income taxes, depreciation and amortization) is a widely used non-GAAP financial measure of operating performance. EBITDA margin represents EBITDA divided by revenues less cost of revenues (net revenue). It is presented as supplemental information that the company believes is useful to investors to evaluate its results because it excludes certain items that are not directly related to the company's core operating performance. EBITDA is calculated by adding back to net income interest expense, income tax expense, depreciation and amortization. EBITDA should not be considered as substitutes either for net income, as an indicator of the company's operating performance, or for cash flow, as a measure of the company's liquidity. In addition, because EBITDA may not be calculated identically by all companies, the presentation here may not be comparable to other similarly titled measures of other companies. EBITDA margin represents EBITDA divided by net revenue.

Table 5

(in millions)

Reconciliation of Net Income Allocated to Common Stockholders to EBITDA and Adjusted EBITDA (Per Table 1)

	Three Months Ended March 31,	
	2019	2018
Net income allocated to common stockholders	\$ 94.6	\$ 117.3
Interest expense, net	9.9	9.6
Income tax provision	32.6	41.3
Depreciation and amortization	47.2	54.2
EBITDA	\$ 184.3	\$ 222.4
EBITDA Margin¹	65.7 %	67.7 %
Non-GAAP adjustments not included in above line items		
Acquisition-related expenses	2.3	8.8
Adjusted EBITDA	\$ 186.6	\$ 231.2
Adjusted EBITDA Margin¹	66.5 %	70.4 %

Table 6

(in millions)

Reconciliation of Cash and cash equivalents to Adjusted Cash

	March 31,	December 31,
	2019	2018
Cash and cash equivalents	\$ 346.2	\$ 275.1
Financial investments	30.2	35.7
Less cash collected for Section 31 Fees	(28.6)	(53.1)
Adjusted Cash	\$ 347.8	\$ 257.7

(1) EBITDA margin represents the respective EBITDA divided by the respective net revenue as shown in the non-GAAP reconciliations provided.

Table 7

(in millions)

Reconciliation of Net Transaction Fees – Three Months Ended March 31, 2019 and 2018

	Consolidated		Options Segment		U.S. Equities Segment		Futures Segment		European Equities Segment		Global FX Segment	
	Three Months Ended		Three Months Ended		Three Months Ended		Three Months Ended		Three Months Ended		Three Months Ended	
	March 31,		March 31,		March 31,		March 31,		March 31,		March 31,	
	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018
Transaction fees	\$ 430.4	\$ 547.1	\$ 173.8	\$ 235.8	\$ 198.9	\$ 233.8	\$ 24.6	\$ 38.8	\$ 21.1	\$ 25.7	\$ 12.0	\$ 13.0
Liquidity payments	(243.7)	(302.9)	(65.5)	(87.6)	(170.7)	(205.5)	—	—	(7.5)	(9.8)	—	—
Routing and clearing	(9.2)	(10.3)	(3.5)	(3.5)	(5.7)	(6.8)	—	—	—	—	—	—
Net transaction fees	\$ 177.5	\$ 233.9	\$ 104.8	\$ 144.7	\$ 22.5	\$ 21.5	\$ 24.6	\$ 38.8	\$ 13.6	\$ 15.9	\$ 12.0	\$ 13.0

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