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Cboe Global Markets Reports Results for Second Quarter 2019

Second Quarter 2019 Highlights*

- Diluted EPS of \$0.78; Adjusted Diluted EPS¹ of \$1.13, Up 8 Percent
- Net Revenue of \$283.2 Million Relatively Flat with 2Q18 Net Revenue
- Operating Expenses of \$158.0 Million, Up 2 Percent; Adjusted Operating Expenses¹ of \$103.1 Million, Down 3 Percent
- EBITDA Margin¹ of 62.3 Percent; Adjusted EBITDA Margin¹ of 68.4 Percent, up 230 bps
- Raised Quarterly Dividend by 16 Percent to \$0.36 Per Share, Effective For Third Quarter of 2019
- Reduced Debt by \$300 Million

CHICAGO, IL – August 2, 2019 - Cboe Global Markets, Inc. (Cboe: CBOE) today reported financial results for the second quarter of 2019.

"Our second quarter results were primarily driven by higher trading volume in our suite of proprietary products compared to the second quarter of 2018, offset by flat to lower trading volumes industrywide in U.S. equities, European equities and FX," said Edward T. Tilly, Cboe Global Markets Chairman, President and Chief Executive Officer. "We remain focused on executing on our strategic initiatives to drive long-term growth and value to our customers and shareholders. We continue to make solid progress in bolstering our customer outreach programs and are on track to complete our final technology migration of Cboe Options on October 7," Mr. Tilly added.

"We are pleased to report solid results for the second quarter of 2019, reflecting our steadfast focus on strong expense discipline while continuing to invest in the growth of our business, resulting in an adjusted EBITDA margin of 68.4 percent, up 230 basis points compared with 2018's second quarter," said Brian N. Schell, Cboe Global Markets Executive Vice President, Chief Financial Officer and Treasurer. "Additionally, we raised our third quarter dividend by 16 percent and utilized existing cash to repay \$300 million in 1.950% Senior Notes that were due on June 28, 2019, reducing our leverage ratio to 1.2x from 1.5x at March 31, 2019," Mr. Schell added.

^{*}All comparisons are second 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.



Consolidated Second 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 June 30, 2019 and 2018.

Table 1	Table 1														
Consolidated First Quarter Results (\$ in millions except per share)		2Q19		2Q18	Change		2Q19 Adjusted¹		2Q18 Adjusted¹	Change					
Total Revenues Less Cost of Revenues	\$	283.2	\$	283.5	- %	\$	283.2	\$	283.5	- %					
Total Operating Expenses	\$	158.0	\$	154.4	2 %	\$	103.1	\$	106.1	(3)%					
Operating Income	\$	125.2	\$	129.1	(3)%	\$	180.1	\$	177.4	2 %					
Operating Margin %		44.2 %		45.5 %	(130)bps		63.6 %		62.6 %	100 bps					
Net Income Allocated to Common Stockholders	\$	87.6	\$	82.4	6 %	\$	125.7	\$	118.2	6 %					
Diluted EPS	\$	0.78	\$	0.73	8 %	\$	1.13	\$	1.05	8 %					
EBITDA ¹	\$	176.4	\$	178.9	(1)%	\$	193.6	\$	187.5	3 %					
EBITDA Margin % ¹		62.3 %		63.1 %	(80)bps		68.4 %		66.1 %	230 bps					

- Total revenues less cost of revenues (referred to as "net revenue") were \$283.2 million, compared to \$283.5 million in the prior-year period, primarily reflecting flat or lower trading volume across all business segments, with the exception of the Options segment, offset by an increase in access and capacity fees and regulatory fees, less Section 31 fees.
- Total operating expenses were \$158.0 million versus \$154.4 million in the second quarter of 2018. Adjusted operating expenses¹ of \$103.1 million declined 3 percent compared with \$106.1 million in the second quarter of 2018, primarily reflecting a decrease in compensation and benefits as a result of lower incentive-based compensation.
- Operating income decreased by 3 percent to \$125.2 million and adjusted operating income¹ increased by 2 percent to \$180.1 million.
- The operating margin for the second quarter was 44.2 percent. The adjusted operating margin¹ for the quarter was 63.6 percent, up 100 bps from 2018's second quarter, reflecting lower expenses.
- The effective tax rate for the second quarter of 2019 was 29.3 percent compared with 30.8 percent in the second quarter of 2018. The effective tax rate on adjusted earnings¹ in the second quarter of 2019 was 27.7 percent compared with 29.4 percent in last year's second quarter. The decrease in the tax rate was primarily due to excess tax benefits related to equity awards.
- Diluted EPS for the second quarter of 2019 was \$0.78. Adjusted diluted EPS¹ was \$1.13, up 8 percent compared to 2018's second-quarter results.

Business Segment Information:

Table 2				
Total Revenues Less Cost of Revenues by Business Segment (in millions)	2Q19		2Q18	Change
Options	\$ 140.8	\$	136.4	3 %
U.S. Equities	74.:	L	77.6	(5)%
Futures	32.	S .	31.4	4 %
European Equities	22.4	ŀ	23.4	(4)%
Global FX	13.	L	14.5	(10)%
Corporate	0.2	2	0.2	- %
Total	\$ 283.2	\$	283.5	- %

⁽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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Discussion of Results by Business Segment:

Options:

- Options net revenue of \$140.8 million was up \$4.4 million or 3 percent from the second quarter of 2018, primarily due to higher revenue from market data fees and access and capacity fees.
- Net transaction fees¹ decreased \$0.4 million, as total options average daily volume (ADV) increased 2 percent and revenue per contract (RPC) declined 1 percent compared to the second quarter 2018. Index options RPC was down 2 percent, reflecting a shift in the mix of index products traded, with mini-SPX options (XSP) accounting for a higher percentage of volume versus the same period in 2018. The RPC for multiply-listed options decreased 8 percent, primarily due to higher volume-based rebates versus the second quarter of 2018.
- Cboe's Options business had market share of 37.7 percent for the second quarter of 2019, which was unchanged compared to the second quarter of 2018.

U.S. Equities:

- U.S. Equities net revenue of \$74.1 million was down \$3.5 million or 5 percent, primarily due to lower market data revenue as a result of lower market share.
- Cboe's U.S. Equities business had market share of 15.7 percent for the second quarter of 2019 compared to 18.9 percent in the second quarter of 2018.

Futures:

- Futures net revenue of \$32.6 million increased \$1.2 million or 4 percent, primarily due to higher net transaction fees.
- Net transaction fees¹ increased \$1.4 million or 5 percent, primarily due to a 7 percent increase in RPC.

European Equities:

- European Equities net revenue of \$22.4 million decreased by 4 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 €8.3 billion, down 21 percent from last year's second quarter, with net capture up 22 percent.
- For the second quarter of 2019, Cboe Europe Equities retained its position as the largest Pan-European stock exchange with 20.3 percent market share, down from 22.2 percent in the second quarter of 2018.

Global FX:

- Global FX net revenue of \$13.1 million decreased \$1.4 million or 10 percent, primarily due to lower net transaction fees compared with the second quarter of 2018. ADNV traded on the Cboe FX platform was \$32.5 billion for the quarter, down 15 percent from last year's second quarter.
- Cboe FX market share increased to 15.2 percent in the second quarter, and net capture increased \$0.09, or 4 percent, per one million dollars traded to \$2.65 for second quarter 2019 compared to second 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.



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Acquisition-Related Costs

The company incurred additional acquisition-related costs related to the Bats acquisition as a result of the company classifying the Chicago headquarters location as property held for sale during the second quarter of 2019. The company performed an impairment assessment and as a result of the assessment, an impairment charge of \$6.1 million was recorded in acquisition-related costs. Depreciation on the headquarters location ceased effective May 1, 2019. Additionally, as a result of a valuation analysis performed on Vest, a 2016 acquisition, an impairment charge of \$10.5 million was also recorded in acquisition-related costs during the second quarter of 2019.

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 \$405 to \$413 million, down \$10 million from the previous range of \$415 to \$423 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.
- The company continues to expect the effective tax rate¹ on adjusted earnings for the full year to be in the range of 27 to 29 percent, but now expects the rate to be at the lower end of that range. Significant changes in trading volume, expenses, federal, state and local tax laws or rates and other items could materially impact this expectation.
- The company continues to expect capital expenditures to be in the range of \$50 to \$55 million, but now expects to be at the lower end of that range.

(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 second quarter of 2019. As of June 30, 2019, the company had approximately \$171.1 million of availability remaining under its existing share repurchase authorizations. The company repaid \$300 million in aggregate principal amount of its 1.950% Senior Notes, which matured on June 28, 2019, with cash on hand.

At June 30, 2019, the company had adjusted cash and financial investments² of \$135.9 million. Total debt as of June 30, 2019 was \$916.6 million.

Earnings Conference Call

Executives of Cboe Global Markets will host a conference call to review its second-quarter financial results today, August 2, 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, August 2, 2019, through 11:00 p.m. CT, August 9, 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 10132251.

(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.



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About Choe 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.



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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 postacquisition 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 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 on 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 abil

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

	2	Q 2019	1	Q 2019	4	4Q 2018	3	Q 2018	2Q 20			
Options (ADV in thousands)												
Total industry ADV		19,274		19,193		22,450		18,292		18,807		
Total company Options ADV		7,261		7,063		8,610		6,733		7,095		
Multiply-listed options		5,329		5,215		6,067		4,965		5,264		
Index options		1,932		1,848		2,543		1,768		1,831		
Total Options Market Share		37.7 %		36.8 %		38.4 %		36.8 %		37.7 %		
Total Options RPC:	\$	0.238	\$	0.240	\$	0.280	\$	0.244	\$	0.241		
Multiply-listed options	\$	0.058	\$	0.067	\$	0.083	\$	0.068	\$	0.063		
Index options	\$	0.736	\$	0.730	\$	0.750	\$	0.737	\$	0.753		
U.S. Equities												
Total industry ADV (shares in billions)		6.9		7.5		8.5		6.3		6.9		
Market share %		15.7 %		16.0 %		17.8 %		17.5 %		18.9 %		
Net capture (per 100 touched shares)	\$	0.028	\$	0.029	\$	0.027	\$	0.026	\$	0.023		
Futures												
ADV (in thousands)		257		231		338		239		258		
RPC	\$	1.748	\$	1.739	\$	1.697	\$	1.709	\$	1.633		
European Equities												
Total industry ADNV (Euros - in billions)	€	40.8	€	41.7	€	46.7	€	41.4	€	47.4		
Market share %		20.3 %		22.1 %		22.7 %		23.1 %		22.2 %		
Net capture (bps)		0.224		0.210		0.200		0.195		0.183		
Global FX												
Market share %		15.2 %		15.8 %		15.3 %		14.8 %		14.9 %		
ADNV (\$ in billions)	\$	32.5	\$	36.5	\$	35.1	\$	34.6	\$	38.4		
Net capture (per one million dollars traded)	\$	2.65	\$	2.61	\$	2.63	\$	2.63	\$	2.56		

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 Condensed Consolidated Statements of Income (Unaudited) Three Months and Six Months Ended June 30, 2019 and 2018

	_	Three Months	Ended J		Six Months Ended June 30,					
(in millions, except per share amounts)		2019		2018		2019		2018		
Revenue:										
Transaction fees	\$	426.9	\$	464.8	\$	856.2	\$	1,011.9		
Access and capacity fees		54.5		52.2		108.9		102.8		
Market data fees		51.8		52.5		103.4		106.7		
Regulatory fees		79.7		89.3		138.4		205.6		
Other revenue		7.7		8.7		15.2		18.2		
Total Revenues		620.6		667.5		1,222.1		1,445.2		
Cost of Revenues:										
Liquidity payments		235.8		271.1		479.5		574.0		
Routing and clearing		9.2		9.8		18.4		20.3		
Section 31 fees		70.3		81.1		118.5		189.9		
Royalty fees		21.9		22.0		42.9		49.2		
Other		0.2		-		0.2				
Total Cost of Revenues		337.4		384.0		659.5		833.2		
Revenues Less Cost of Revenues		283.2		283.5		562.6		612.0		
Operating Expenses:										
Compensation and benefits		52.2		57.4		100.3		116.3		
Depreciation and amortization		43.7		50.4		90.9		104.6		
Technology support services		11.8		11.8		23.7		23.9		
Professional fees and outside services		19.2		17.3		35.4		35.3		
Travel and promotional expenses		3.0		3.5		5.6		7.2		
Facilities costs		3.0		2.9		5.1		5.3		
Acquisition-related costs		20.8		8.6		23.1		17.4		
Other expenses		4.3		2.5		7.9		5.2		
Total Operating Expenses		158.0		154.4		292.0		315.2		
Operating Income		125.2		129.1		270.6		296.8		
Non-operating (Expense)/Income:				41						
Interest expense, net		(10.0)		(9.3)		(19.9)		(18.9		
Other (expense) income		4.4		-		(4.4)		1.3		
Total Non-operating (Expense)/Income		(5.6)		(9.3)		(24.3)		(17.6		
Income Before Income Tax Provision		119.6		119.8		246.3		279.2		
Income tax provision		35.1		36.8		67.7		78.:		
Net Income		84.5		83.0		178.6		201.1		
Net loss attributable to redeemable noncontrolling interest Net Income Excluding Redeemable Noncontrolling Interest		3.8 88.3		0.3 83.3		4.0 182.6		0.0 201.		
Change in redemption value of redeemable noncontrolling interest Net income allocated to participating securities		(0.2) (0.5)		(0.3) (0.6)		(0.4) (1.1)		(0.6		
Net Income Allocated to Common Stockholders	\$	87.6	\$	82.4	\$	181.1	\$	199.		
Net Income Per Share Allocated to Common Stockholders:	•		•	- *-	•	- **-	•			
Basic earnings per share	\$	0.79	\$	0.74	\$	1.62	\$	1.7		
Diluted earnings per share	,	0.78		0.73		1.62		1.7		
Weighted average shares used in computing income per share:										
Basic		111.5		112.0		111.5		112.		



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Cboe Global Markets, Inc. and Subsidiaries Condensed Consolidated Balance Sheets (Unaudited) June 30, 2019 and December 31, 2018

(in millions)		June 30, 2019	D	ecember 31, 2018
Assets		2013		2010
Current Assets:				
Cash and cash equivalents	\$	161.3	\$	275.1
Financial investments	·	82.9	•	35.7
Accounts receivable, net		245.9		287.3
Income taxes receivable		70.4		70.4
Other current assets		16.9		15.2
Total Current Assets		577.4		683.7
Investments		63.5		86.2
Land		_		4.9
Property and equipment, net		50.7		71.7
Property held for sale		21.0		_
Operating lease right of use assets		54.0		_
Goodwill		2,680.0		2,691.4
Intangible assets, net		1,646.5		1,720.2
Other assets, net		66.2		62.9
Total Assets	\$	5,159.3	\$	5,321.0
Liabilities, Redeemable Noncontrolling Interest and Stockholders' Equity Current Liabilities: Accounts payable and accrued liabilities Section 31 fees payable Deferred revenue Income taxes payable Current portion of long-term debt Contingent consideration liability Total Current Liabilities Long-term debt Income tax liability Deferred income taxes Non-current operating lease liabilities Total Liabilities Total Liabilities Redeemable Noncontrolling Interest	\$	144.7 119.2 13.2 3.2 — 5.5 285.8 916.6 127.3 426.7 46.9 23.2 1,826.5	\$	198.5 81.1 8.5 4.1 299.8 3.9 595.9 915.6 114.9 436.8 2,070.6
Redeemable Noncontrolling Interest		5.8		9.4
Stockholders' Equity: Preferred stock		_		
Preferred stock Common stock		1.2		1.2
Common stock in treasury, at cost		(764.6)		1.2 (720.1
Additional paid-in capital		2,680.4		2,660.2
Retained earnings		1,401.9		1,288.2
Accumulated other comprehensive income, net		8.1		11.5
Total Stockholders' Equity		3,327.0		3,241.0
		2,22.10		
Total Liabilities, Redeemable Noncontrolling Interest and Stockholders' Equity	\$	5,159.3	\$	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.



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Reconciliation of GAAP and non-GAAP Information

- · · ·		Three Mon		ed	Six Months Ended June 30,					
Table 4		June	•							
(in millions, except per share amounts)		2019		2018		2019		2018		
Reconciliation of Net Income Allocated to Common Stockholders to Non-GAAP										
(As shown on Table 1)										
Net income allocated to common stockholders	\$	87.6	\$	82.4	\$	181.1	\$	199.7		
Non-GAAP adjustments										
Acquisition-related expenses (1)		20.8		8.6		23.1		17.4		
Amortization of acquired intangible assets (2)		34.1		39.7		71.7		81.8		
Change in redemption value of noncontrolling interest		0.2		0.3		0.4		0.6		
Total Non-GAAP adjustments		55.1		48.6		95.2		99.8		
Income tax expense related to the items above		(13.2)		(12.6)		(23.2)		(25.6)		
Impairment charges attributed to noncontrolling interest		(3.6)		_		(3.6)		_		
Net income allocated to participating securities - effect on reconciling items		(0.2)		(0.2)		(0.4)		(0.5)		
Adjusted net income allocated to common stockholders	\$	125.7	\$	118.2	\$	249.1	\$	273.4		
Reconciliation of Diluted EPS to Non-GAAP										
Diluted earnings per common share	\$	0.78	\$	0.73	\$	1.62	\$	1.77		
Per share impact of non-GAAP adjustments noted above	•	0.35	•	0.32	•	0.61	•	0.65		
Adjusted diluted earnings per common share	\$	1.13	\$	1.05	\$	2.23	\$	2.43		
Reconciliation of Operating Margin to Non-GAAP										
Revenue less cost of revenue	\$	283.2	\$	283.5	\$	562.6	\$	612.0		
Non-GAAP adjustments noted above	Ÿ	_	Ÿ	203.5	Ÿ	502.0	Ÿ	012.0		
Adjusted revenue less cost of revenue	Ś	283.2	ċ	283.5	ċ	562.6	Ċ	612.0		
	\$	158.0	\$ \$	154.4	\$	292.0	\$ \$	315.2		
Operating expenses (3)	\$		\$		\$		\$			
Non-GAAP adjustments noted above	<u> </u>	54.9	÷	48.3	<u> </u>	94.8	<u> </u>	99.2		
Adjusted operating expenses	\$	103.1	\$	106.1	\$	197.2	\$ \$	216.0		
Operating income	\$	125.2	\$	129.1	\$	270.6	\$	296.8		
Non-GAAP adjustments noted above	-	54.9		48.3		94.8		99.2		
Adjusted operating income	\$	180.1	\$	177.4	\$	365.4	\$	396.0		
Adjusted operating margin (4)	-	63.6 %		62.6 %		64.9 %		64.7 9		
Reconciliation of Income Tax Rate to Non-GAAP										
Income before income taxes		119.6		119.8		246.3		279.2		
Non-GAAP adjustments noted above		55.1		48.6		95.2		99.8		
Adjusted income before income taxes	\$	174.7	\$	168.4	\$	341.5	\$	379.0		
Income tax expense		35.1		36.8		67.7		78.1		
Non-GAAP adjustments noted above		13.2		12.6		23.2		25.6		
Adjusted income tax expense	\$	48.3	\$	49.4	\$	90.9	\$	103.7		
Adjusted income tax rate		27.7 %	-	29.4 %		26.6 %	-	27.6 9		

⁽¹⁾ This amount includes professional fees and outside services, severance, facilities expenses, impairment charges and other costs related to the company's acquisitions.

⁽²⁾ This amount represents the amortization of acquired intangible assets related to the company's acquisitions.

⁽³⁾ The company sponsors deferred compensation plans held in a rabbi trust. The expenses related to the deferred compensation plans are included in "Compensation and benefits" (\$3.7 million in expense in the three and six months ended June 30, 2019), and are directly offset by deferred compensation income, expenses and dividends included within "Other income (expense)" (\$3.7 million in income, expense and dividends in the three and six months ended June 30, 2019), on the consolidated statements of income. The deferred compensation plans' expenses are not adjusted out of "adjusted operating expenses" and do not have an impact on "Income before income taxes."

⁽⁴⁾ 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)		Three Mo	Six Months Ended June 30,					
Reconciliation of Net Income Allocated to Common Stockholders to EBITDA and Adjusted								
EBITDA (Per Table 1)		2019		2018		2019		2018
Net income allocated to common stockholders	\$	87.6	\$	82.4	\$	181.1	\$	199.7
Interest expense, net		10.0		9.3		19.9		18.9
Income tax provision		35.1		36.8		67.7		78.1
Depreciation and amortization		43.7		50.4		90.9		104.6
EBITDA	\$	176.4	\$	178.9	\$	359.6	\$	401.3
EBITDA Margin ¹		62.3 %		63.1 %		63.9 %		65.6 %
Non-GAAP adjustments not included in above line items								
Acquisition-related expenses		20.8		8.6		23.1		17.4
Impairment charges attributed to noncontrolling interest		(3.6)		_		(3.6)		_
Adjusted EBITDA	\$	193.6	\$	187.5	\$	379.1	\$	418.7
Adjusted EBITDA Margin ¹		68.4 %		66.1 %	_	67.4 %		68.4 %
Table 6								
(in millions)		June 30,		December 31,				
Reconciliation of Cash and cash equivalents to Adjusted Cash		2019		2018				
Cash and cash equivalents	Ś	161 3	Ś	275 1				

(in millions)	Ju	ıne 30,	December 31,				
Reconciliation of Cash and cash equivalents to Adjusted Cash		2019					
Cash and cash equivalents	\$	161.3	\$	275.1			
Financial investments		82.9		35.7			
Less deferred compensation plan assets		(20.3)		_			
Less cash collected for Section 31 Fees		(88.0)		(53.1)			
Adjusted Cash	\$	135.9	\$	257.7			

Table 7 (in millions)

Reconciliation of N	let Transa	ction Fees	-Three Moi	nths Endec	June 30, 20)19 a	and 2018												
	Conso	lidated	Options	Segment	U.S. Equiti	ies S	egment	- 1	Futures Segment European Equities Segment					Segment	Global FX Segment				
	Three Mor	nths Ended	Three Mo	nths Ended	Three Mo	Ended	Tŀ	Three Months Ended				Three Months Ended				Three Months Ended			
	Jun	e 30,	Jun	e 30,	Jun	e 30	,		June	e 30,			Jun	e 30,			June		
	2019	2018	2019	2018	2019		2018	:	2019	:	2018	2	019		2018	2	019	:	2018
Transaction fees	\$ 426.9	\$ 464.8	\$ 185.9	\$ 189.0	\$ 182.0	\$	211.9	\$	28.3	\$	26.9	\$	19.5	\$	24.2	\$	11.2	\$	12.8
Liquidity payments	(235.8)	(271.1	.) (73.3)	(75.7) (156.2)		(185.9)		_		_		(6.3)		(9.5)		_		_
Routing and clearing	(9.2)	(9.8	(3.5)	(3.8)) (5.7)		(6.0)												
Net transaction fees	\$ 181.9	\$ 183.9	\$ 109.1	\$ 109.5	\$ 20.1	\$	20.0	\$	28.3	\$	26.9	\$	13.2	\$	14.7	\$	11.2	\$	12.8

 $^{(1) \,} EBITDA \, margin \, represents \, the \, respective \, EBITDA \, divided \, by \, the \, respective \, net \, revenue \, as \, shown \, in \, the \, non-GAAP \, reconciliations \, provided.$