# First Quarter 2018 Earnings Presentation

May 4, 2018

# Agenda

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|---|---|
| **Strategic Review** | **Edward Tilly**<br>*Chairman and Chief Executive Officer* |
| **Financial Review** | **Brian Schell**<br>*Executive Vice President, CFO and Treasurer* |
| **Questions and Answers** | **Edward Tilly**<br>**Brian Schell**<br>**Chris Concannon**<br>*President and Chief Operating Officer*<br>**John Deters**<br>*Chief Strategy Officer and Head of Multi-Asset Solutions* |

# Cautionary Statements Regarding Forward-Looking Information

*This presentation 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; increasing competition by foreign and domestic entities; our dependence on and exposure to risk from third parties; 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; our ability to protect our systems and communication networks from security risks, including cyber-attacks and unauthorized disclosure of confidential information; 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; unanticipated difficulties or expenditures relating to the acquisition of Bats Global Markets, Inc., including, without limitation, difficulties that result in the failure to realize expected synergies, accretion, efficiencies and cost savings from the acquisition within the expected time period (if at all), whether in connection with integration, migrating trading platforms, broadening distribution of product offerings or otherwise; restrictions imposed by our debt obligations; our ability to maintain an investment grade credit rating; potential difficulties in our migration of trading platforms and our ability to retain employees as a result of the acquisition; 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, 2017 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.*

# Strategic Review
# Edward Tilly
# Chairman and CEO

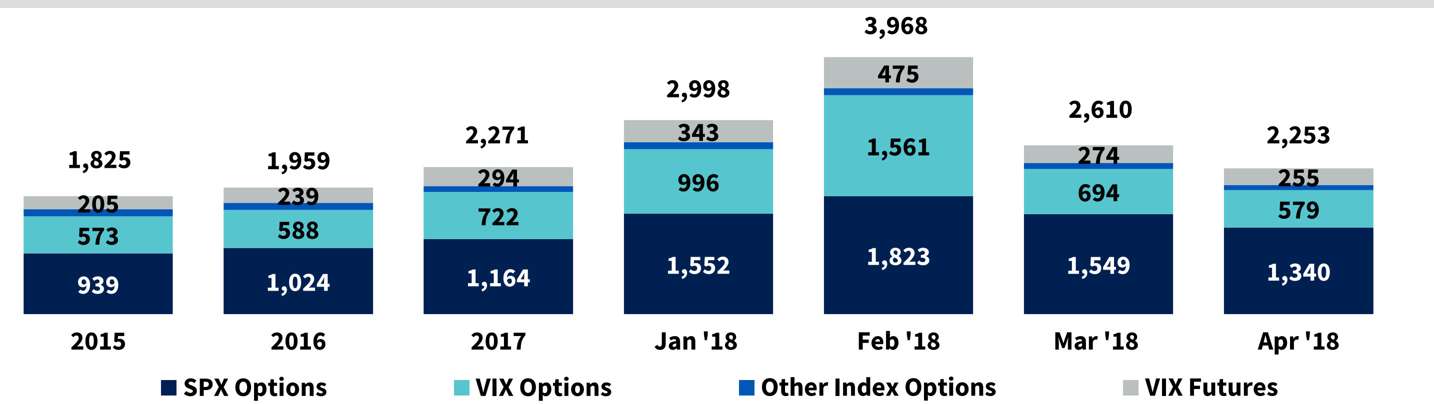
# Record Results Driven by Growth Across All Business Segments and Trading Highs in Proprietary Products

Cboe Global Markets

**Raised expected run-rate expense synergy target to $85 million at the end of 2020, up $20 million and a year ahead of initial projections**

- Record adjusted diluted EPS of $1.38[1] on net revenue of $329 million
  - Double-digit, year-over-year gains across each of our business lines
  - New record trading highs in our proprietary products; ADV up 44% versus 1Q17
- Return of volatility in 1Q18 resulted in new quarterly volume records in our index products and a lift to our equities and FX businesses

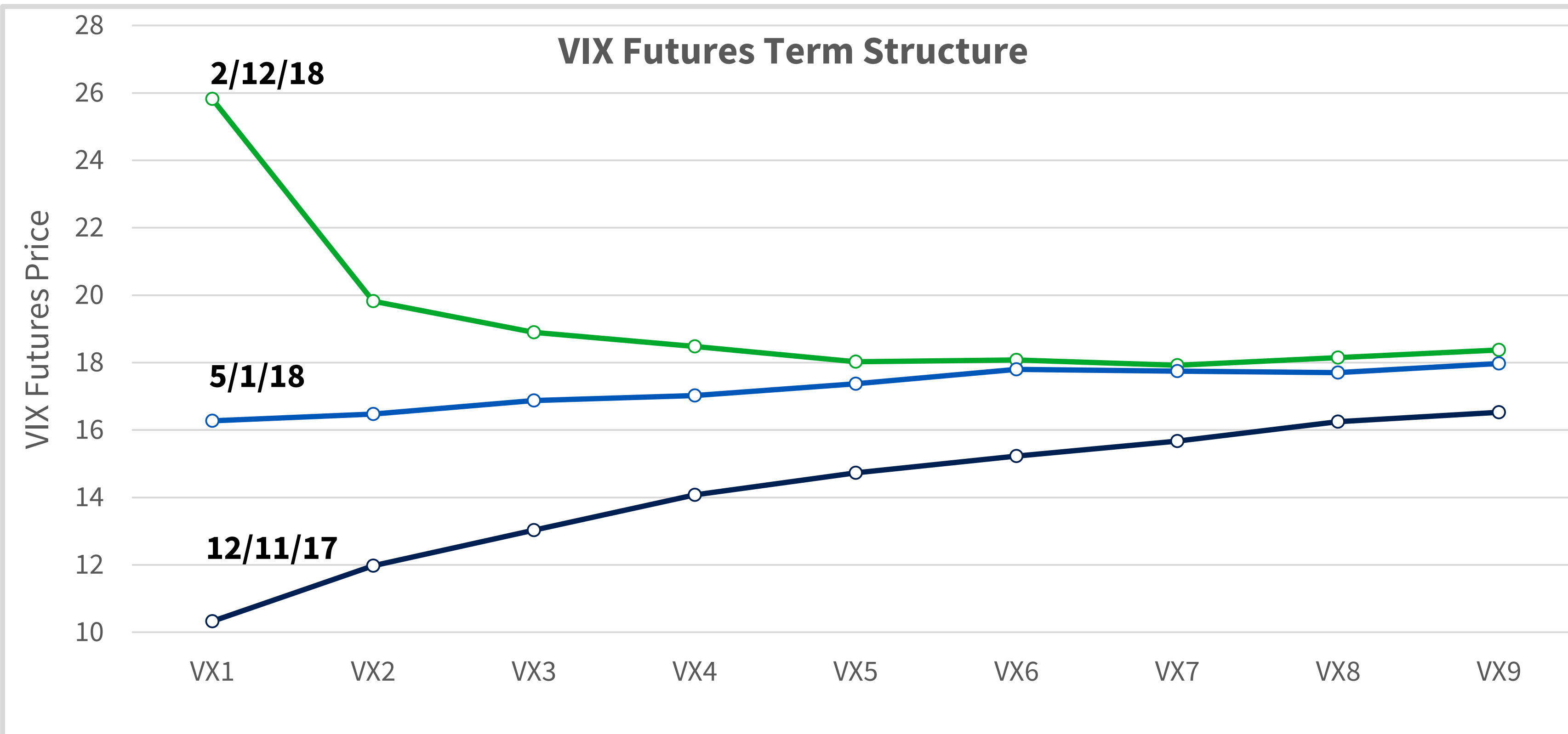
**Offer Toolbox of Volatility Products - ADV for Index Options and VIX Futures**
**(in thousands)**




[1]See Appendix for "Non-GAAP Information."

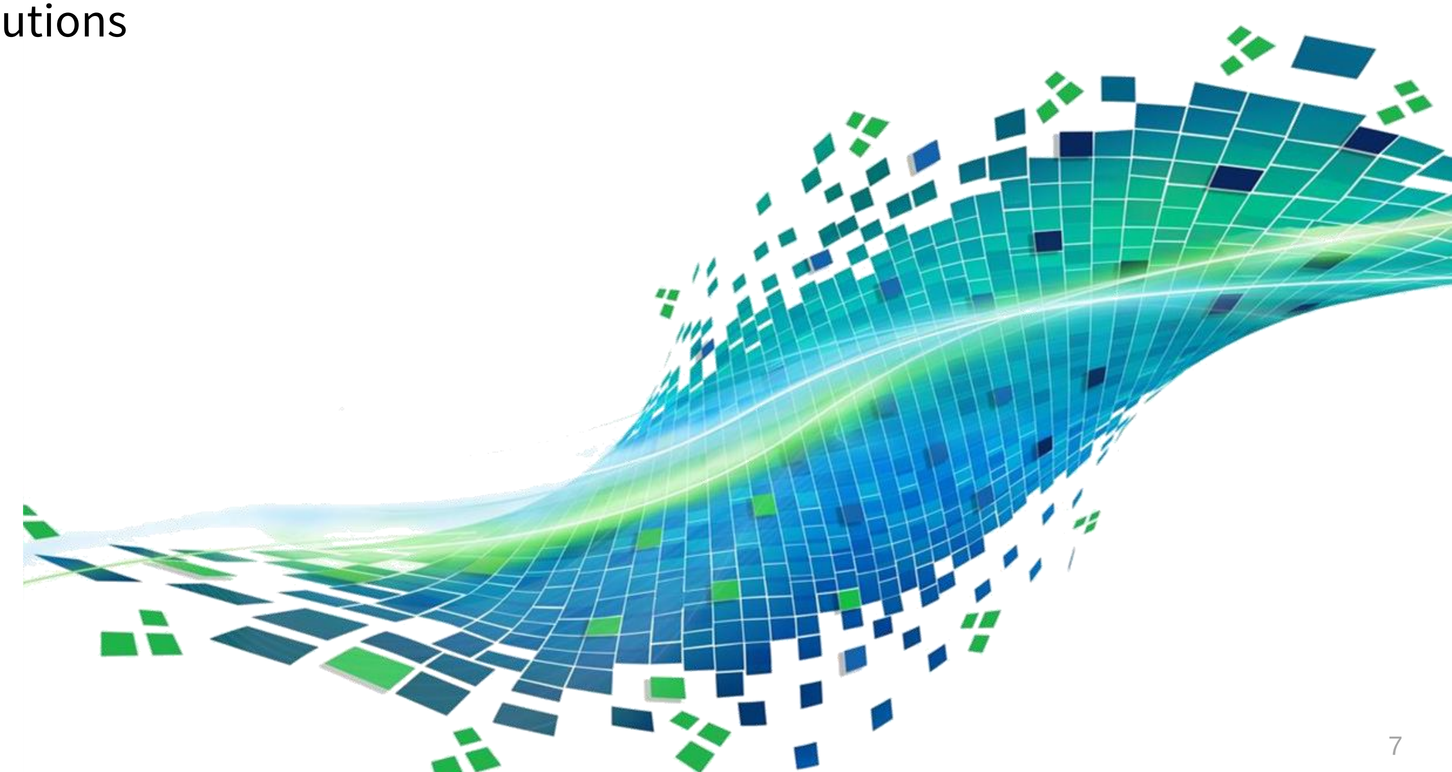
# VIX Futures Term Structure

- Since February, VIX futures term structure has been in downward-sloping or flat 55 out of 61 days, an unusually long period of time
- Recently trending toward more familiar upward-sloping shape, but with higher volatility base level



# Remain Focused on Executing Our Strategic Initiatives

- **Our mission: "to power your potential to stay ahead of an evolving market," is brought to life through three commitments:**
  - Relentless product innovation
  - Leading-edge technology
  - Seamless solutions



# Product Innovation - Celebrating 25 Years of VIX

- April 2018 marked the 25th anniversary of the introduction of the Cboe Volatility Index®
- Began disseminating the new Cboe One-Year Volatility Index (ticker: VIX1Y) in April 2018
  - Designed to monitor the market's expectations for longer-term volatility
  - Useful for investors with longer-duration liabilities
  - Exploring futures contract on the Index, subject to regulatory review

# Leading-edge Technology

Cboe Global Markets

## Migrating Cboe exchanges onto Bats technology to create a common world-class trading platform across our options, futures and equities markets

**Oct. 2017**

- Complex Order Book
- Down payment on C1 and C2

**Jan. 22, 2018**

- Launched new Index Calculation Platform

**Feb. 25, 2018**

- Migrated CFE to Bats technology

**Apr. 30, 2018**

- Migrated SPX to Hybrid trading

**May 14, 2018**

- Planned C2 migration to Bats technology[1]

**Oct. 7, 2019**

- Planned Cboe Options technology migration[1]

Technology migration progressing ahead of original plan

[1]The planned migrations of C2 Options Exchange and Cboe Options Exchange are subject to regulatory review.

# Providing Trading Solutions for the Post-MiFID II Landscape

**Diversifying our European business model post MiFID II**

- Rapid adoption of our Periodic Auctions book
  - Record volumes since MiFID II in effect
  - Lit order book provides pre-trade transparency, true price formation process
  - Not subject to the double volume caps
- Cboe Large in Scale (LIS) block trading platform
  - Continued to attract new customers and increase volume
- Continued to grow our Systematic Internaliser technology services business

# Excited About Opportunities Ahead

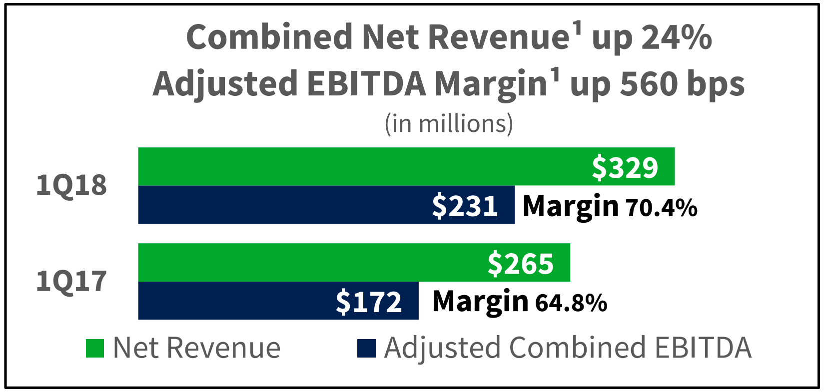
**Laying the Groundwork for Future Growth**

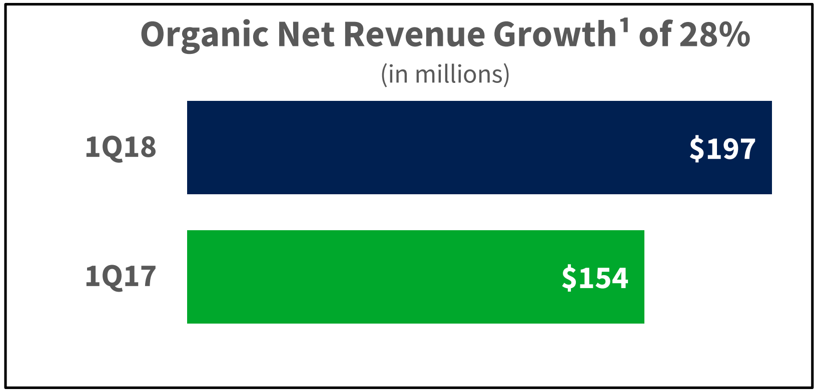
- Launching new products
- Expanding our global reach across asset classes
- Migrating exchanges to Bats technology
- Achieving our acquisition synergy targets

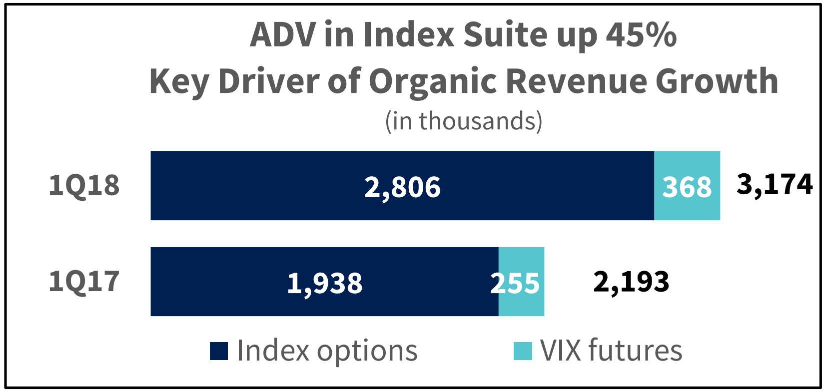
# Financial Overview and Guidance
Brian Schell
EVP, CFO and Treasurer

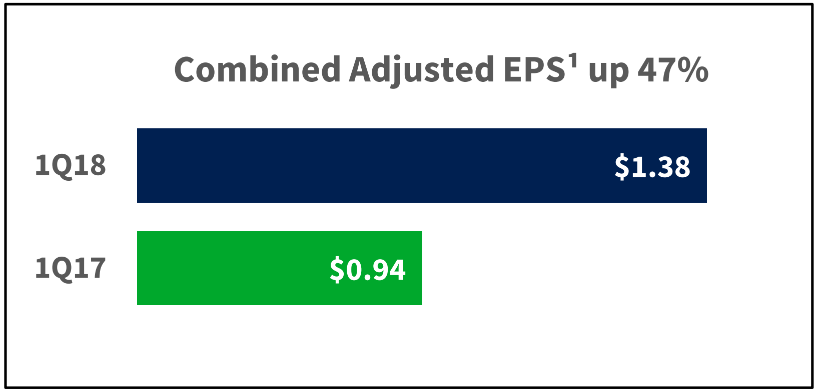
# Business Highlights – Key Growth Drivers

- Continued strength of proprietary index products
- Strong growth from both transaction and non-transaction fees
- Expense discipline and expense synergies
- Demonstrated strong operating leverage and earnings growth




[1]See Appendix for "Non-GAAP Information."

# 1Q18 Options Combined Net Revenue Up 24%

- Revenue increase driven by higher transaction fees, offset somewhat by lower regulatory fees and higher royalty payments

| **Options Combined Statistics** ($ in millions, except RPC) | **1Q18** | **1Q17** | **Change** |
|---|---|---|---|
| **Options Combined Net Revenue** | **$167.1** | **$135.1**[1] | **24%** |
| **Key Operating Statistics:** | | | |
| **Total market share** | **40.6%** | **41.4%** | **-0.8% pts** |
| **Total ADV** (in thousands) | **9,092** | **6,852** | **33%** |
| Index options | 2,806 | 1,938 | 45% |
| Multiply-listed options | 6,286 | 4,914 | 28% |
| **Total RPC** | **$0.261** | **$0.243** | **7%** |
| Index options | $0.710 | $0.708 | -- |
| Multiply-listed options | $0.061 | $0.059 | 3% |

[1]See Appendix for "Non-GAAP Information."

# 1Q18 Futures Net Revenue Up 47%; Driven by Record ADV for VIX Futures

- Revenue increase driven by transaction fees, reflecting record ADV, offset somewhat by a decrease in RPC
- RPC decrease primarily due to higher volume-based incentives

| Futures Statistics | 1Q18 | 1Q17 | Change |
|---|---|---|---|
| **Futures Net Revenue** (in millions) | **$42.3** | **$28.8** | **47%** |
| **Key Operating Statistics:** | | | |
| **Total ADV** (in thousands) | **368** | **255** | **44%** |
| **Total RPC** | **$1.727** | **$1.814** | **-5%** |

[1]See Appendix for "Non-GAAP Information."

# U.S. Equities
# Combined Net Revenue Up 10%

- Increase in volatility lifted trading volumes in 1Q18
- Increase in SIP market data revenue primarily driven by audit recoveries
- Proprietary market data increase primarily due to pricing changes
- Expect downward pressure on full-year SIP market data revenue due to industry consolidation

| U.S. Equities Combined Statistics | 1Q18 | 1Q17 | Change |
|---|---|---|---|
| **U.S. Equities Net Revenue** (in millions) | **$79.7** | **$72.7**[1] | **10%** |
| Market data – SIP | **29.6** | **25.9** | **14%** |
| Market data – Proprietary | **8.9** | **7.2** | **24%** |
| **Key Operating Statistics:** | | | |
| **Total market share** | **19.4%** | **19.2%** | **0.2% pts** |
| **Market ADV** (shares in billions) | **7.6** | **6.8** | **12%** |
| **ADV** (matched shares in billions) | **1.5** | **1.3** | **15%** |
| **Net revenue capture** (per 100 touched shares) | **$0.023** | **$0.023** | **--** |

[1]See Appendix for "Non-GAAP Information."

# European Equities
# Combined Net Revenue Up 37%

- Net revenue increase primarily due to growth in net transaction fees and a benefit from foreign currency translation
- Net revenue up a healthy 18% on local currency basis
- Net transaction fees reflect increase in net capture
  - Delay in implementation of dark pool volume caps
  - With caps now in place, expect net capture to moderate back to historical levels for the remainder of year

| European Equities Combined Statistics | 1Q18 | 1Q17 | Change |
|---|---|---|---|
| **European Equities Net Revenue** (in millions) | **$24.6** | **$17.9**[1] | **37%** |
| **Key Operating Statistics:** | | | |
| **Total market share** | **21.2%** | **21.5%** | **-0.3% pts** |
| **Market ADNV** (Euros, in billions) | **€50.8** | **€45.5** | **12%** |
| **Net capture** (per matched notional value, in basis points) | **0.190** | **0.169** | **12%** |

[1]See Appendix for “Non-GAAP Information.”

# Global FX
# Combined Net Revenue Up 35%

- First quarter marked a high point for both market share and ADNV traded
- Growth driven by increased volume on both New York and London matching engines, with London volume up threefold
- Favorable macro environmental factors contributed to growth, in addition to technology enhancements and more effective liquidity provisioning

| Global FX Combined Statistics | 1Q18 | 1Q17 | Change |
|---|---|---|---|
| **Global FX Net Revenue** (in millions) | $14.6 | $10.8[1] | 35% |
| **Key Operating Statistics:** | | | |
| **Market share** | 15.3% | 12.9% | 2.4% pts |
| **Average Daily Notional Value** ($ in billions) | $41.6 | $28.8 | 44% |
| **Net revenue** (per one million dollars traded) | $2.45 | $2.57 | -5% |

[1]See Appendix for "Non-GAAP Information."

# Adjusted Combined Operating Expenses Up 3%; Primarily Reflects Higher Performance-Based Expenses

**1Q18 vs 1Q17:**

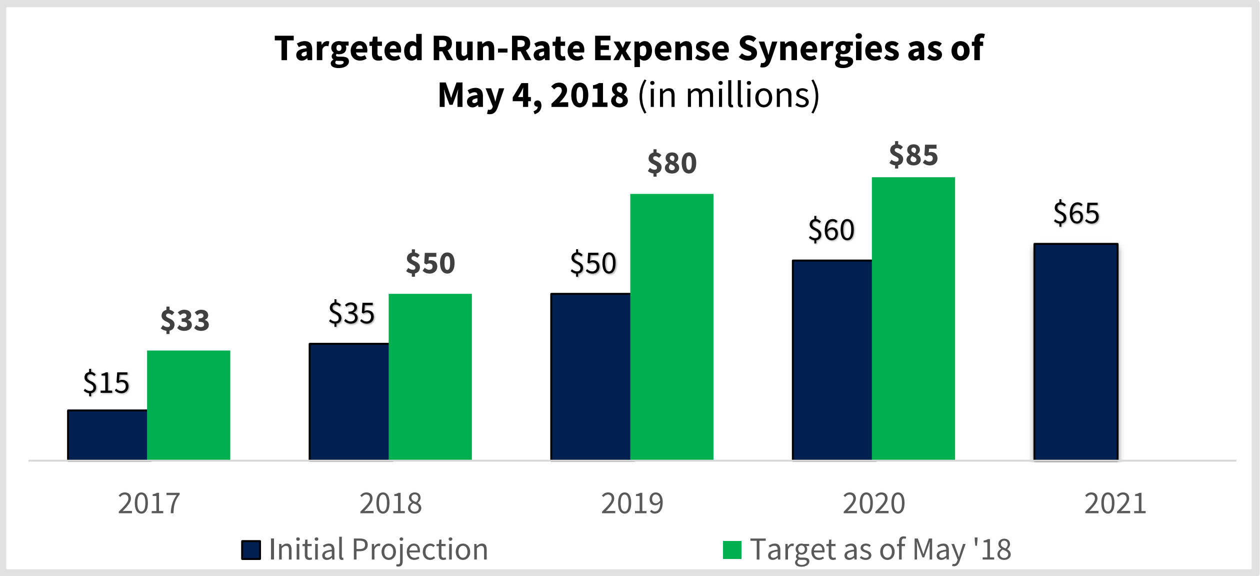
- Compensation and benefits up due to increase in incentive-based compensation
  - Incentive-based compensation driven by and aligned with financial and operational performance
  - Accelerated stock-based compensation up $2.5MM and bonus accrual up $4.0MM

| **Adjusted Combined Operating Expenses[1]** (in millions) | **1Q18** | **1Q17** | **% Chg** |
|---|---|---|---|
| Compensation and benefits | $58.9 | $54.8 | 7% |
| Depreciation and amortization[1] | 12.1 | 12.9 | -6% |
| Technology support services | 12.1 | 11.5 | 5% |
| Professional fees and outside services | 18.0 | 18.0 | -- |
| Travel and promotional | 3.7 | 3.9 | -5% |
| Facilities costs | 2.4 | 2.7 | -11% |
| Other expenses | 2.7 | 2.5 | 8% |
| **Total[1]** | **$109.9** | **$106.3** | **3%** |

[1]See Appendix for "Non-GAAP Information"

# Increased Run-Rate Expense Synergy Target to $85MM; Expect to Reach in 2020, A Year Ahead of Plan

- Realized $3 million of pre-tax expense synergies in 1Q18
- Raised run-rate expense synergy target to $85 million from $65 million
- Expect to reach run-rate expense synergies in 2020, one year ahead of initial projections



# 2018 Full-Year Guidance

| **2018 Full-Year Guidance** ($ in millions) | **Guidance as of May 4, 2018**[1] | **Previous Guidance** |
|---|---|---|
| **Adjusted combined operating expenses**[2] | $420 to $428 | $420 to $428 |
| **Depreciation and amortization (excluding amortization of acquired intangible assets)** | $53 to $58 | $53 to $58 |
| **Capital expenditures** | $45 to $50 | $50 to $55 |
| **Effective tax rate on adjusted earnings**[3] | 26.5% to 28.5% | 26.5% to 28.5% |

[1]See "Non-GAAP Information" in the appendix for reconciliations

[2]Adjusted operating expenses for 2018 exclude acquisition-related expenses and amortization of acquired intangible assets, which are expected to be $157 for 2018. Adjustments included in the non-GAAP reconciliation.

[3]The effective tax rate on adjusted earnings is expected to be slightly above the high end of the guidance range for the second quarter of 2018 and at the higher end, but within the guidance range, for the third and fourth quarters.

# Focused on Efficient Allocation of Capital to Create Long-Term Shareholder Value

Cboe Global Markets

**Preserving balance sheet flexibility is a priority**

- Invest in the growth of our business
- Return capital through dividends and share repurchases
  - Returned ~$31 million in dividends and ~$44 million in share repurchases in 1Q18
  - Through April 30, 2018, repurchased approximately 451,000 shares of Cboe common stock for about $51 million, or $112.38 per share
- Delever – reduced debt by $25 million in 1Q18

| **Debt Outstanding** ($ in millions) | **Mar. 31, 2018** | **Dec. 31, 2017** |
|---|---|---|
| **3.650% Senior Notes (10Y; Due 2027)** | $ 650 | $ 650 |
| **1.950% Senior Notes (2Y; Due 2019)** | 300 | 300 |
| **Term Loan Facility** | 275 | 300 |
| **Total Debt (Gross)** | **$ 1,225** | **$ 1,250** |
| | | |
| **Debt to EBITDA TTM[1]** | **1.6x** | **1.8x** |
| **Adjusted Cash & Financial Investments[1]** | **$166** | **$120** |

[1]See Appendix for "Non-GAAP Information."

# Delivering on Sources of Operating Leverage and Key Strategic Initiatives

| | |
|---|---|
| **Growth of Core Proprietary Products** | • Focused on growing proprietary products<br>• Generated strong organic revenue growth |
| **Diversification and Stabilization of Revenue Stream** | • Strong growth in diverse set of revenue streams |
| **Scale of Business Model** | • Disciplined expense management<br>• Provided higher operating margins |
| **Synergies Realization** | • Continued to realize expense synergies; increased and accelerated run-rate synergy target |
| **Capital Allocation** | • De-levered to enhance balance sheet flexibility<br>• Leverage ratio of 1.6x<br>• Returned capital through dividends and buybacks |

# Questions & Answers

# Appendix Materials

# 1Q18 Financial Overview

| **Adjusted Combined Financial Results**[1] ($ in millions, except per share) | **1Q18** | **1Q17** | **% Chg** |
|---|---|---|---|
| Net Revenue[1,2] | $328.5 | $265.3 | 24% |
| Adjusted Operating Expenses[1] | 109.9 | 106.3 | 3% |
| Adjusted Operating Income[1] | $218.6 | $159.0 | 37% |
| *Adjusted Operating Margin*[1] | *66.5%* | *59.9%* | *660 bps* |
| Adjusted Net Income Allocated to Common Stockholders[1] | $155.2 | $105.8 | 47% |
| Adjusted Diluted EPS[1] | $ 1.38 | $ 0.94 | 47% |
| Adjusted EBITDA[1] | $231.2 | $172.0 | 34% |
| *Adjusted EBITDA Margin*[1] | *70.4%* | *64.8%* | *560 bps* |

[1]Adjusted to reflect the impact of certain items. See Appendix for "Non-GAAP Information."

[2]Net revenue referenced in this presentation represents revenue less cost of revenue.

# Net Revenue Growth Supported by Both Transaction and Non-Transaction Revenue

## 1Q18 net transaction fees up 36%; non-transaction revenue up 7%

| **Adjusted Combined Net Revenue**[1] (in millions) | **1Q18** | **1Q17** | **% Chg** |
|---|---|---|---|
| Net transaction fees | $233.9 | $172.6 | 36% |
| Access fees | 28.6 | 29.7 | -4% |
| Exchange services and other fees | 22.0 | 20.4 | 8% |
| Market data fees | 54.2 | 48.2 | 12% |
| Regulatory fees | 7.5 | 8.8 | -15% |
| Royalty fees | (27.2) | (21.2) | 28% |
| Other revenue | 9.5 | 6.8 | 40% |
| **Total**[1] | **$328.5** | **$265.3** | **24%** |

[1]Adjusted to reflect the impact of certain items. See Appendix for "Non-GAAP Information."

# Supplemental Segment Information

| 1Q18 Supplemental Net Revenue by Segment (in millions) | Options | U.S. Equities | Futures | European Equities | Global FX | Total[1] |
|---|---|---|---|---|---|---|
| Net transaction fees[2] | $144.7 | $21.5 | $38.8 | $15.9 | $13.0 | $233.9 |
| Access fees | $13.5 | $11.7 | $0.3 | $2.2 | $0.9 | $28.6 |
| Exchange services and other fees | $10.1 | $6.4 | $3.4 | $1.5 | $0.6 | $22.0 |
| Market data fees | $10.8 | $38.5 | $1.4 | $3.4 | $0.1 | $54.2 |

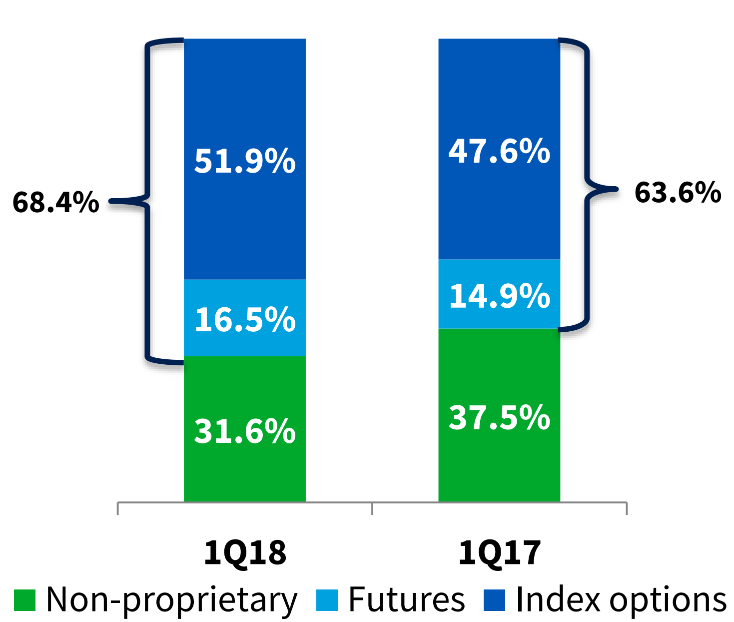
| 1Q17 Supplemental Combined Net Revenue by Segment (in millions) | Options | U.S. Equities | Futures | European Equities | Global FX | Total[1,2] |
|---|---|---|---|---|---|---|
| Net transaction fees[2] | $106.1 | $19.8 | $25.7 | $11.4 | $9.6 | $172.6 |
| Access fees | $13.9 | $12.8 | $0.4 | $1.9 | $0.7 | $29.7 |
| Exchange services and other fees | $10.6 | $5.9 | $2.3 | $1.2 | $0.4 | $20.4 |
| Market data fees | $11.4 | $33.1 | $0.8 | $2.8 | $0.1 | $48.2 |

[1]Totals may not foot due to rounding
[2]A full reconciliation of our non-GAAP and combined results to our GAAP results is included in the following tables. See "Non-GAAP Information” in the accompanying financial tables.

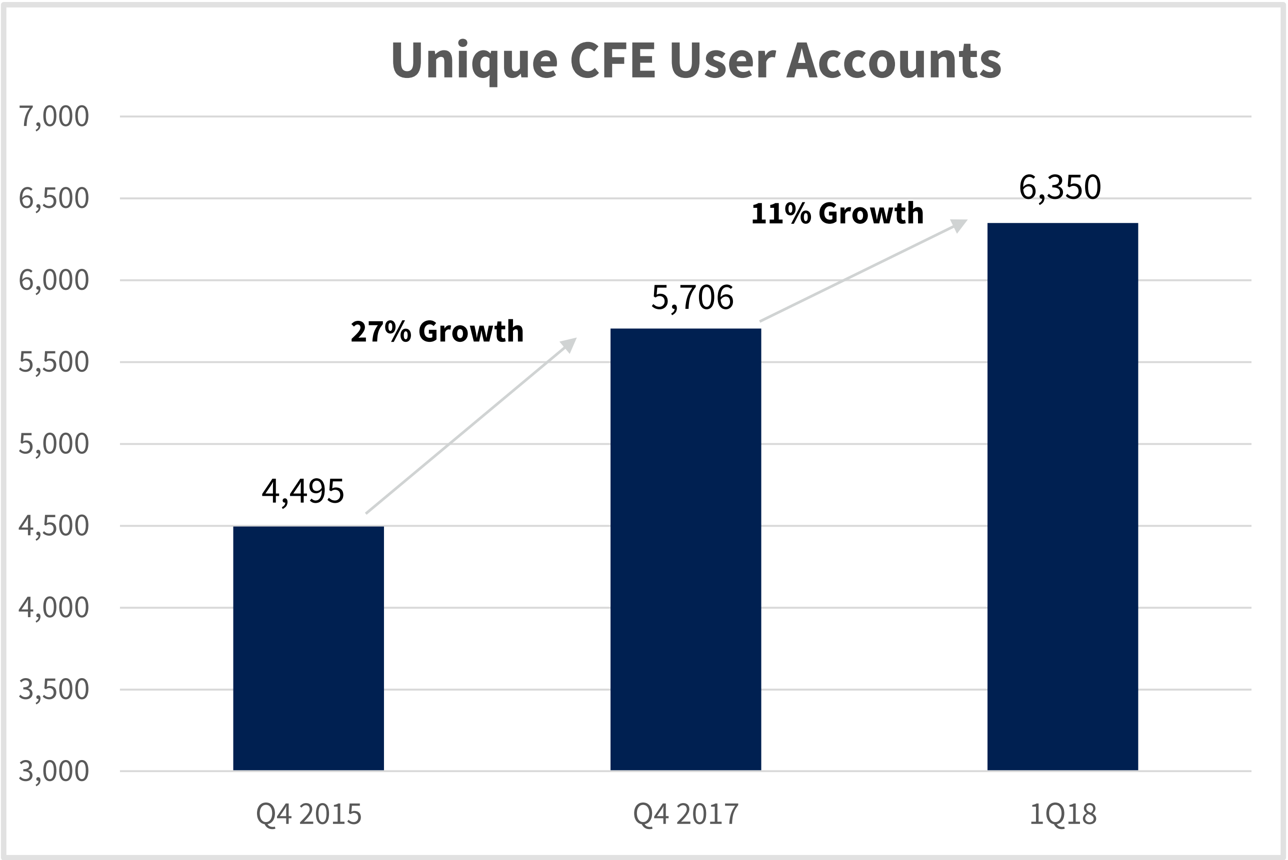
# Revenue Growth

## Proprietary Products - Key Driver of 1Q18 Revenue Growth

**Grew Mix of Proprietary Products as Percentage of Total Net Transaction Fees**



# Continued to Grow CFE User Accounts




Source: Cboe

# Non-GAAP Information

# 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 presentation include net transaction fees, adjusted operating expenses, adjusted operating income, organic net revenue, adjusted operating margin, adjusted net income allocated to common stockholders and adjusted diluted earnings per share, adjusted tax rate, EBITDA, EBITDA margin, adjusted EBITDA and adjusted EBITDA margin. The non-GAAP measures provided in this presentation also include combined company financial measures that are discussed in further detail below under the sub-section "Combined Reconciliations."

Management believes that the non-GAAP financial measures presented in this presentation, including adjusted net revenue, organic net revenue 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.

*Organic net revenue*: Is a non-GAAP financial measure that excludes or has otherwise been adjusted for the impact of our acquisition of Bats. Management believes the organic net revenue growth measure provides users with supplemental information regarding the company's ongoing revenue performance and trends by presenting revenue growth excluding the impact of the Bats acquisition.

*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.

*Other significant items:* We have excluded certain other charges that are the result of other non-comparable events to measure operating performance. For 2017, other significant items primarily included interest and other borrowing costs incurred prior to the close of the Bats transaction and accelerated stock-based compensation that was incurred due to a change in the vesting schedule for equity award grants. In addition to disclosing results determined in accordance with GAAP, Cboe Holdings has disclosed certain non-GAAP measures of operating performance.

**The tables that follow 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.**

# Non-GAAP Information

**Combined Reconciliations**

The non-GAAP unaudited combined financial measures have been prepared by recording combined adjustments to the historical consolidated financial statements of Cboe Global Markets. The combined financial measures for the three months ended March 31, 2017 have been prepared as if the Bats acquisition closed on January 1, 2017.

Due to the transformative nature of the Bats acquisition, the company believes that providing a discussion of its results and operations on a non-GAAP combined basis provides management and investors an additional perspective on the company's financial and operational performance and trends. We believe that the non-GAAP financial measures presented provide additional and comparative information to assess trends in our core operations and a means to evaluate period-to-period comparisons.

These combined financial measures are not necessarily indicative of the financial position or results of operations that would have occurred had the transactions been effected on the assumed dates. Additionally, future results may vary significantly from the results reflected in the combined financial measures.

**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.**

| (in millions) | 1Q17 | 2Q17 | 3Q17 | 4Q17 | 2017 | 1Q18 |
|---|---|---|---|---|---|---|
| **Reconciliation of Revenue Less Cost of Revenue to Organic Net Revenue** | | | | | | |
| Revenue less cost of revenue (net revenue) | $ 193.4 | $ 266.9 | $ 269.7 | $ 265.6 | $ 995.6 | $ 328.5 |
| Recent acquisitions: | | | | | | |
| Bats revenue less cost of revenue | (39.2) | (114.9) | (112.6) | (111.5) | (378.2) | (131.2) |
| Organic net revenue | $ 154.2 | $ 152.0 | $ 157.1 | $ 154.1 | $ 617.4 | $ 197.3 |

| (in millions) | 1Q17 | 2Q17 | 3Q17 | 4Q17 | 2017 | 1Q18 |
|---|---|---|---|---|---|---|
| **Reconciliation of Net Transaction Fees** | | | | | | |
| Transaction fees | $ 256.4 | $ 453.9 | $ 423.3 | $ 431.3 | $ 1,564.9 | $ 547.1 |
| Liquidity payments | (105.3) | (266.5) | (234.3) | (243.6) | (849.7) | (302.9) |
| Routing and clearing | (6.3) | (12.2) | (9.4) | (9.7) | (37.6) | (10.3) |
| Net transaction fees | $ 144.8 | $ 175.2 | $ 179.6 | $ 178.0 | $ 677.6 | $ 233.9 |
| **Non-GAAP Adjustments (1)** | | | | | | |
| Transaction fees | 186.4 | | | | | |
| Liquidity payments | (153.3) | | | | | |
| Routing and clearing | (5.3) | | | | | |
| Net transaction fees | 27.8 | | | | | |
| **Combined** | | | | | | |
| Transaction fees | 442.8 | | | | | |
| Liquidity payments | (258.6) | | | | | |
| Routing and clearing | (11.6) | | | | | |
| Net combined transaction fees | $ 172.6 | | | | | |

(1) Represents historical Bats activity for the period January 1, 2017 through February 28, 2017.

# Non-GAAP Information

## Reconciliation of Segment Net Revenues

| (in millions) | 1Q17 | 2Q17 | 3Q17 | 4Q17 | 2017 | 1Q18 |
|---|---|---|---|---|---|---|
| Options | $ 128.9 | $ 126.7 | $ 130.7 | $ 130.0 | $ 516.3 | $ 167.1 |
| U.S. Equities | 25.5 | 74.4 | 70.2 | 69.0 | 239.1 | 79.7 |
| Futures | 28.8 | 36.2 | 38.9 | 35.6 | 139.5 | 42.3 |
| European Equities | 6.1 | 18.5 | 18.4 | 18.8 | 61.8 | 24.6 |
| Global FX | 4.0 | 10.9 | 11.3 | 12.0 | 38.2 | 14.6 |
| Corporate | - | 0.2 | 0.2 | 0.2 | 0.6 | 0.2 |
| Total | $ 193.3 | $ 266.9 | $ 269.7 | $ 265.6 | $ 995.5 | $ 328.5 |
| **Non-GAAP Adjustments (1)** | | | | | | |
| Options | $ 6.2 | - | - | - | $ 6.2 | |
| U.S. Equities | 47.2 | - | - | - | 47.2 | |
| Futures | - | - | - | - | - | |
| European Equities | 11.8 | - | - | - | 11.8 | |
| Global FX | 6.8 | - | - | - | 6.8 | |
| Corporate | - | - | - | - | - | |
| Total | $ 72.0 | $ - | $ - | $ - | $ 72.0 | |
| **Combined** | | | | | | |
| Options | $ 135.1 | $ 126.7 | $ 130.7 | $ 130.0 | $ 522.5 | |
| U.S. Equities | 72.7 | 74.4 | 70.2 | 69.0 | 286.3 | |
| Futures | 28.8 | 36.2 | 38.9 | 35.6 | 139.5 | |
| European Equities | 17.9 | 18.5 | 18.4 | 18.8 | 73.6 | |
| Global FX | 10.8 | 10.9 | 11.3 | 12.0 | 45.0 | |
| Corporate | - | 0.2 | 0.2 | 0.2 | 0.6 | |
| Total | $ 265.3 | $ 266.9 | $ 269.7 | $ 265.6 | $ 1,067.5 | |

(1) Represents historical Bats activity for the period January 1, 2017 through February 28, 2017.

# Non-GAAP Information

**Reconciliation of Net Transaction Fees by Segment**

| For the Three Months Ended March 31, 2018 (in millions) | Options | U.S. Equities | Futures | European Equities | Global FX | Total |
|---|---|---|---|---|---|---|
| **Reconciliation of Net Transaction Fees by Segment** | | | | | | |
| Transaction fees | $ 235.8 | $ 233.8 | $ 38.8 | $ 25.7 | $ 13.0 | $ 547.1 |
| Liquidity payments | (87.6) | (205.5) | - | (9.8) | - | (302.9) |
| Routing and clearing | (3.5) | (6.8) | - | | | (10.3) |
| Net transaction fees | $ 144.7 | $ 21.5 | $ 38.8 | $ 15.9 | $ 13.0 | $ 233.9 |

| For the Three Months Ended March 31, 2017 (in millions) | Options[1] | U.S. Equities | Futures | European Equities | Global FX | Total |
|---|---|---|---|---|---|---|
| **Reconciliation of Combined Net Transaction Fees by Segment[1]** | | | | | | |
| Transaction fees | $ 179.9 | $ 208.0 | $ 25.7 | $ 19.6 | $ 9.6 | $ 442.8 |
| Liquidity payments | (72.6) | (177.8) | - | (8.2) | - | (258.6) |
| Routing and clearing | (1.2) | (10.4) | - | | | (11.6) |
| Net transaction fees | $ 106.1 | $ 19.8 | $ 25.7 | $ 11.4 | $ 9.6 | $ 172.6 |

[1]A full reconciliation of our non-GAAP and combined results to our GAAP results are available in this section.

# Non-GAAP Information

| Reconciliation of Net Transaction Fees (in millions) | Consolidated | | Options Segment | |
|---|---|---|---|---|
| | 1Q18 | 1Q17 | 1Q18 | 1Q17 |
| Transaction fees | $ 547.1 | $ 256.4 | $ 235.8 | $ 140.2 |
| Liquidity payments | (302.9) | (105.3) | (87.6) | (35.8) |
| Routing and clearing | (10.3) | (6.3) | (3.5) | (3.5) |
| Net transaction fees | $ 233.9 | $ 144.8 | $ 144.7 | $ 100.9 |
| **Non-GAAP Adjustments (1)** | | | | |
| Transaction fees | | 186.4 | | 39.7 |
| Liquidity payments | | (153.3) | | (36.8) |
| Routing and clearing | | (5.3) | | 2.3 |
| Net transaction fees | | 27.8 | | 5.2 |
| **Combined** | | | | |
| Transaction fees | | 442.8 | | 179.9 |
| Liquidity payments | | (258.6) | | (72.6) |
| Routing and clearing | | (11.6) | | (1.2) |
| Net combined transaction fees | | $ 172.6 | | $ 106.1 |

(1) Represents historical Bats activity for the period January 1, 2017 through February 28, 2017.

A full reconciliation of our non-GAAP and combined results to our GAAP results are available in this section.

# Non-GAAP Information

| (in millions, except per share amounts) | 1Q17 | 2Q17 | 3Q17 | 4Q17 | 2017 | 1Q18 |
|---|---|---|---|---|---|---|
| **Reconciliation of Net Income Allocated to Common Stockholders to Non-GAAP** | | | | | | |
| Net income allocated to common stockholders | $ 15.1 | $ 67.3 | $ 59.7 | $ 254.6 | $ 396.7 | $ 117.3 |
| Compensation and benefits (1) | 9.1 | — | — | — | 9.1 | — |
| Acquisition-related expenses (2) | 65.2 | 4.7 | 5.5 | 9.0 | 84.4 | 8.8 |
| Amortization of acquired intangible assets (3) | 14.4 | 42.6 | 42.6 | 43.0 | 142.6 | 42.1 |
| Change in contingent consideration | 0.2 | 0.5 | 0.4 | (0.1) | 1.2 | |
| **Total Non-GAAP operating expense adjustments** | 88.9 | 47.8 | 48.5 | 51.9 | 237.3 | 50.9 |
| Interest and other borrowing costs (4) | 4.3 | 0.9 | - | - | 5.2 | - |
| Provision for uncollectable convertible notes receivable | — | — | 3.8 | - | 3.8 | — |
| Change in redemption value of noncontrolling interest | 0.3 | 0.3 | 0.2 | 0.3 | 1.1 | 0.3 |
| **Total Non-GAAP adjustments - pretax** | 93.5 | 49.0 | 52.5 | 52.2 | 247.4 | 51.2 |
| Income tax expense related to the items above | (36.0) | (18.0) | (19.1) | (19.2) | (92.3) | (13.0) |
| Re-measurement of deferred tax assets and liabilities as a result of corporate rate increase in Illinois | - | - | 7.4 | - | 7.4 | - |
| Effect of tax reform law | - | - | - | (191.5) | (191.5) | - |
| Net income allocated to participating securities - effect on | (0.4) | (0.3) | (0.4) | 1.6 | 0.5 | (0.3) |
| **Adjusted net income allocated to common stockholders** | **$ 72.2** | **$ 98.0** | **$100.1** | **$ 97.7** | **$368.0** | **$ 155.2** |
| | | | | | | |
| **Reconciliation of Diluted EPS to Non-GAAP** | | | | | | |
| Diluted earnings per common share | $ 0.16 | $ 0.62 | $ 0.53 | $ 2.26 | $ 3.69 | $1.04 |
| Per share impact of non-GAAP adjustments noted above | 0.62 | (0.02) | 0.36 | (1.39) | (0.27) | 0.34 |
| **Adjusted diluted earnings per common share** | $ 0.78 | $ 0.60 | $ 0.89 | $ 0.87 | $ 3.42 | $1.38 |
| | | | | | | |
| **Reconciliation of Operating Margin to Non-GAAP** | | | | | | |
| Revenue less cost of revenue | $ 193.4 | $ 266.9 | $ 269.7 | $ 265.6 | $ 995.6 | $ 328.5 |
| Non-GAAP adjustments noted above | - | - | - | - | - | - |
| **Adjusted revenue less cost of revenue** | $ 193.4 | $ 266.9 | $ 269.7 | $ 265.6 | $ 995.6 | $ 328.5 |
| | | | | | | |
| **Operating expenses** | $ 167.3 | $ 149.1 | $ 150.4 | $ 156.9 | $ 623.7 | $ 160.8 |
| Non-GAAP expense adjustments noted above | (88.9) | (47.8) | (48.5) | (51.9) | (237.3) | (50.9) |
| **Adjusted operating expenses** | $ 78.4 | $ 101.3 | $ 101.9 | $ 105.0 | $ 386.4 | $ 109.9 |
| Operating income | $ 26.1 | $ 117.8 | $ 119.3 | $ 108.7 | $ 371.9 | $ 167.7 |
| Non-GAAP expense adjustments noted above | 88.9 | 47.8 | 48.5 | 51.9 | 237.3 | 50.9 |
| **Adjusted operating income** | $ 115.0 | $ 165.6 | $ 167.8 | $ 160.6 | $ 609.2 | $ 218.6 |
| **Adjusted operating margin (5)** | 59.5% | 62.0% | 62.2% | 60.5% | 61.2% | 66.5% |
| | | | | | | |
| **Reconciliation of Income Tax Rate to Non-GAAP** | | | | | | |
| Income before income taxes | $ 18.3 | $ 106.1 | $ 105.9 | $ 104.1 | $ 334.4 | $ 159.4 |
| Non-GAAP adjustments noted above | 93.5 | 49.0 | 52.5 | 52.2 | 247.4 | 51.2 |
| **Adjusted income before income taxes** | $ 111.8 | $ 155.1 | $ 158.4 | $ 156.3 | $ 581.8 | $ 210.6 |
| | | | | | | |
| Income tax (benefit) expense | $ (3.1) | $ 38.1 | $ 45.6 | $ (153.0) | $ (66.2) | $ 41.3 |
| Non-GAAP adjustments noted above | 36.0 | 18.0 | 19.1 | 210.7 | 276.4 | 13.0 |
| **Adjusted income tax (benefit) expense** | $ 32.9 | $ 56.1 | $ 64.7 | $ 57.7 | $ 210.2 | $ 54.3 |
| **Adjusted income tax rate** | 29.4% | 36.2% | 40.8% | 36.9% | 36.1% | 25.9% |

(1) For the three months ended March 31, 2017, this amount includes $9.1 million for accelerated stock-based compensation expense.
(2) This amount includes professional fees and outside services, severance, and other costs related to the company’s acquisition of Bats.
(3) This amount represents the amortization of acquired intangible assets for Bats.
(4) This amount represents interest and other borrowing costs incurred prior to the close of the Bats acquisition.
(5) Adjusted operating margin represents adjusted operating income divided by adjusted revenue less cost of revenue.

# Non-GAAP Information

## 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.

**Reconciliation of Net Income Allocated to Common Stockholders to EBITDA and Adjusted EBITDA**

| (in millions, except per share amounts) | 1Q17 | 2Q17 | 3Q17 | 4Q17 | 2017 | 1Q18 |
|---|---|---|---|---|---|---|
| **Net income allocated to common stockholders** | $ 15.1 | $ 67.3 | $ 59.7 | $ 254.6 | $ 396.7 | $ 117.3 |
| Interest | 7.9 | 12.5 | 10.5 | 10.4 | 41.3 | 9.6 |
| Income tax provision | 3.1 | 38.1 | 45.6 | (153.0) | (66.2) | 41.3 |
| Depreciation and amortization | 25.1 | 55.8 | 55.4 | 55.9 | 192.2 | 54.2 |
| **EBITDA** | $ 51.2 | $ 173.7 | $ 171.2 | $ 167.9 | $ 564.0 | $ 222.4 |
| **EBITDA Margin**[1] | 26.5% | 65.1% | 63.5% | 63.2% | 56.6% | 67.7% |
| | | | | | | |
| **Non-GAAP adjustments not included in above line items** | | | | | | |
| Compensation and benefits (accelerated stock-based compensation) | 9.1 | — | — | — | 9.1 | — |
| Acquisition-related expenses | 65.2 | 4.7 | 5.5 | 9.0 | 84.4 | 8.8 |
| Provision for uncollectable convertible notes receivable | - | - | 3.8 | - | 3.8 | - |
| Other | 0.2 | 0.5 | 0.4 | (0.1) | 1.2 | - |
| **Adjusted EBITDA** | $ 125.7 | $ 178.9 | $ 180.9 | $ 176.8 | $ 662.5 | $ 231.2 |
| **Adjusted EBITDA Margin**[1] | 65.0% | 67.0% | 67.1% | 66.6% | 66.5% | 70.4% |

**Reconciliation of Combined Net Income Allocated to Common Stockholders to EBITDA and Adjusted EBITDA**

| **Combined revenues less cost of revenues** | |
|---|---|
| | |
| **Combined net income allocated to common stockholders** | $ 73.0 |
| Interest | 12.0 |
| Income tax provision | 22.0 |
| Depreciation and amortization | 55.3 |
| **Combined EBITDA** | $ 162.3 |
| **Combined EBITDA Margin**[1] | 61.2% |
| | |
| **Non-GAAP adjustments not included in above line items** | |
| Compensation and benefits (accelerated stock-based compensation) | $ 9.1 |
| Other | 0.6 |
| **Adjusted Combined EBITDA** | $ 172.0 |
| **Adjusted Combined EBITDA Margin**[1] | 64.8% |

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

# **Non-GAAP Information** (see slide 40 for footnotes)

| (in millions, except per share amounts) | | Three Months Ended March 31, 2017 | |
|---|---|---|---|
| **Reconciliation of Non-transaction Revenue (1):** | | | |
| Access fees | $ | 17.8 | |
| Exchange services and other fees | | 15.4 | |
| Market data fees | | *22.5* | |
| Regulatory fees | | 8.3 | |
| Other revenue | | 5.8 | |
| Non-GAAP adjustments | | 44.1 | (2) |
| **Combined non-transaction revenue** | $ | 113.9 | |
| *Total non-transaction revenue as a percent of revenues less cost of revenues (3)* | | *42.9%* | |
| | | | |
| **Reconciliation of Revenues Less Cost of Revenues:** | | | |
| Revenue less cost of revenues | $ | 193.4 | |
| Non-GAAP adjustments | | 71.9 | (5) |
| **Combined revenue less cost of revenues** | $ | 265.3 | |
| | | | |
| **Reconciliation of Operating Expenses to Non-GAAP:** | | | |
| Operating expenses | $ | 167.3 | |
| Non-GAAP adjustments | | (8.9) | (6) |
| Non-GAAP adjustments as detailed below | | (52.1) | |
| **Adjusted combined operating expenses** | $ | 106.3 | |
| | | | |
| **Reconciliation of Operating Income to Non-GAAP:** | | | |
| Operating income | $ | 26.1 | |
| Non-GAAP revenue adjustments | | 80.8 | (7) |
| Non-GAAP expense adjustments as detailed below | | 52.1 | |
| **Adjusted combined operating income** | $ | 159.0 | |
| *Adjusted combined operating margin (4)* | | *59.9%* | |
| | | | |
| **Reconciliation of Net Income Allocated to Common Stockholders to Non-GAAP:** | | | |
| Net income allocated to common stockholders | $ | 15.2 | |
| Non-GAAP adjustments | | 57.8 | (8) |
| Non-GAAP expense adjustments as detailed below | | 32.8 | |
| **Adjusted combined net income allocated to common stockholders** | $ | 105.8 | |
| **Adjusted combined diluted EPS** | | $0.94 | |
| | | | |
| **Non-GAAP Operatiang Expense Adjustments to Non-GAAP:** | | | |
| Compensation and benefits | $ | 9.1 | |
| Amortization of acquired intangible assets | | 42.4 | |
| Other | | 0.6 | |
| Total non-GAAP operating expense adjustments | $ | 52.1 | |
| Income tax expense related to items above | | (19.3) | |
| **Total non-GAAP expense adjustments, net of tax** | $ | 32.8 | |

# **Non-GAAP Information** - Footnotes for table on slide 39

(1)Total non-transaction revenue represents the sum of access fees, exchange services and other fees, market data fees, regulatory fees (net of Section 31 fees) and other revenue.

(2) Reflects adjustment to include the activity of Bats for January 1, 2017 through February 28, 2017 of $11.9 million of access fees, $5.0 million of exchange services and other fees, $25.7 million of market data fees, $0.5 million of regulatory fees and $1.0 million of other revenue.

(3) The percentage of combined non-transaction revenue represents total combined non-transaction revenue divided by combined revenue less cost of revenue.

(4) Reflects adjustments to include the activity of Bats for January 1, 2017 through February 28, 2017 of $71.9 million of revenue less cost of revenues.

(5) Reflects adjustments to include the activity of Bats for January 1, 2017 through February 28, 2017 of $56.2 million and adjustments to reduce Bats historical amortization of acquired intangibles by $4.5 million and increase amortization of acquired intangibles by $28.0 million for the periods January and February 2017. Also reflects adjustments to reduce acquisition costs by $65.2 million for Cboe historical and reduce professional fees for Bats historical by $23.4 million which are costs associated with the Bats merger.

(6) Reflects adjustments to include the activity of Bats for January 1, 2017 through February 28, 2017 of $15.7 million and adjustments to reduce Bats historical amortization of acquired intangibles by $4.5 million and increase amortization of acquired intangibles by $28.0 million for the periods January and February 2017. Also reflects adjustments to reduce acquisition costs by $65.2 million for Cboe historical and reduce professional fees for Bats historical by $23.4 million which are costs associated with the Bats merger.

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

(8) Reflects adjustments to include the activity of Bats for January 1, 2017 through February 28, 2017 of ($0.2) million and adjustments to reduce Bats historical amortization of acquired intangibles by $4.5 million and increase amortization of acquired intangibles by $28.0 million for the periods January and February 2017. Also reflects adjustments to reduce acquisition costs by $65.2 million for Cboe historical, reduce professional fees for Bats historical by $23.4 million which are costs associated with the Bats merger and $13.6 million to adjust for the extinguishment of Bats historical debt as well as the income tax impact of the previous adjustments of $20.7 million

# Non-GAAP Information

| Adjusted Combined Debt to EBITDA - Trailing Twelve Months [1] | | | | | |
|---|---|---|---|---|---|
| (in millions) | 2Q17 | 3Q17 | 4Q17 | 1Q18 | LTM |
| Combined net income allocated to common stockholders | $ 67.3 | $ 59.7 | $ 254.6 | $ 117.3 | $ 498.9 |
| Interest | 12.5 | 10.5 | 10.4 | 9.6 | 43.0 |
| Income tax provision | 38.1 | 45.6 | (153.0) | 41.3 | (28.0) |
| Depreciation and amortization | 55.8 | 55.4 | 55.9 | 54.2 | 221.3 |
| Combined EBITDA | $ 173.7 | $ 171.2 | $ 167.9 | $ 222.4 | $ 735.2 |
| Non-GAAP adjustments not included in above line items: | | | | | |
| Acquisition-related expenses | 4.7 | 5.5 | 9.0 | 8.8 | 28.0 |
| Other | 0.5 | 4.2 | (0.1) | - | 4.6 |
| Adjusted combined EBITDA | $ 178.9 | $ 180.9 | $ 176.8 | $ 231.2 | $ 767.8 |
| Debt at end of period | | | | | $ 1,225.0 |
| **Debt to EBITDA** | | | | | **1.6x** |

[1]A full reconciliation of our non-GAAP and combined results to our GAAP results are available in this section.

## Adjusted Cash

Adjusted cash is a non-GAAP measure and represents cash and cash equivalents plus financial investments minus cash collected for Section 31 fees, which will need to be remitted in the near term. We have presented adjusted cash because we consider it an important supplemental measure of our liquidity and believe that it is frequently used by analysts, investors and other interested parties in the evaluation of companies.

| Adjusted Cash (in millions) | As of 3/31/17 | As of 6/30/17 | As of 9/30/17 | As of 12/31/17 | As of 3/31/18 |
|---|---|---|---|---|---|
| Cash and cash equivalents | $ 153.3 | $ 148.6 | $ 124.8 | $ 143.5 | $ 166.3 |
| Financial investments | 41.3 | 110.4 | 2.4 | 47.3 | 64.0 |
| Cash collected for Section 31 fees | (41.3) | (110.0) | - | (70.6) | (64.0) |
| **Adjusted Cash** | $ 153.3 | $ 149.0 | $ 127.2 | $ 120.2 | $ 166.3 |

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