Cboe

SECOND QUARTER 2023 EARNINGS PRESENTATION

August 4, 2023



Agenda

♦ Strategic Review

Edward Tilly

Chairman and Chief Executive Officer

♦ Financial Review

Jill Griebenow

Executive Vice President, Chief Financial Officer, Treasurer and Chief Accounting Officer

♦ Questions & Answers

Edward Tilly

Jill Griebenow

Chris Isaacson

Executive Vice President, Chief Operating Officer

Dave Howson

Executive Vice President, President

John Deters

Executive Vice President, Chief Strategy Officer



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 or clearing volumes, market data fees or a shift in the mix of products traded on our exchanges; legislative or regulatory changes or changes in tax regimes; our ability to protect our systems and communication networks from security vulnerabilities and breaches; our ability to attract and retain skilled management and other personnel, including compensation inflation; increasing competition by foreign and domestic entities; our dependence on and exposure to risk from third parties; global expansion of operations; factors that impact the quality and integrity of our indices; our ability to manage our growth and strategic acquisitions or alliances effectively; our ability to operate our business without violating the intellectual property rights; our ability to minimize the risks, including our credit and default risks, associated with operating a European clearinghouse; our ability to accommodate trading and clearing 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 or for whom we clear transactions; 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; our ability to maintain BIDS Trading as an independently managed and operated trading venue, separate from and not integrated with our registered national securities exchanges; damage to our reputation, the ability of our compliance and risk management methods to effectively monitor and manage our risks; restrictions imposed by our debt obligations and our abili

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.

This presentation includes market share, financials and industry data that we obtained from industry publications and surveys, reports of governmental agencies, third-parties and internal company surveys. Industry publications and surveys generally state that the information they contain has been obtained from sources believed to be reliable, but we cannot assure you that this information is accurate or complete. We have not independently verified any of the data and financials from third-party sources nor have we ascertained the underlying economic assumptions relied upon therein. Statements as to our market position are based on the most currently available market data. While we are not aware of any misstatements regarding industry data and financials presented herein, our estimates involve risks and uncertainties and are subject to change based on various factors.

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STRATEGIC REVIEW AND OUTLOOK

> Edward Tilly, Chairman and CEO

2Q23: Strong Net Revenue and Adjusted Earnings*

Net revenues grew 10% Y/Y, a product of strong transaction and non-transaction growth

21% increase in Derivatives Markets organic net revenue¹

> ADV up 38% in index options and 2% in multi-listed options

9% increase in Data and Access Solutions net revenue, 7% organic net revenue growth¹

- > Continued expansion in transaction capabilities drove increased access and capacity units
- > Comprehensive suite of data solutions across geographies and asset classes translated to strong user and unit growth

11% decrease in Cash and Spot Markets net revenue, 12% organic net revenue decrease¹

- > FX ADNV up 7% y/y and market share up 2.5% to a record 19.5%
- > Increased European cash equities market share by nearly 1% y/y



^{*} Unless otherwise noted, all comparisons are second quarter 2023 compared to the same period in 2022

¹See appendix for "Non-GAAP Information."

Cboe's Commitment to ESG Initiatives





Governance

- Scope 3 Emissions: Calculated and disclosed Scope 3 emissions in several categories for 2022, including purchased goods and services, capital goods and business travel. Continued to expand data coverage of other environmental metrics, including energy, water and waste
- Carbon Reduction: In 2022, addressed our carbon footprint by purchasing renewable energy certificates, and in 2023, supported carbon reduction projects to further address Scope 3 emissions
- ESG Exchange Traded Products: Trade ESGthemed ETPs on the BZX Equities Exchange and list options on the S&P 500 ESG Index
- Net Zero Financial Services Provider Alliance (NZFSPA): Joined NZFSPA to engage with peers and develop best practices for our industry as we work toward achieving net zero

- Cboe Empowers: Community engagement program that provides mentorship, scholarships and guidance to under-resourced students throughout their educational journey. In April 2022, provided five full-ride scholarships to Black and Latinx high school students from Chicago to attend the school of their choice. Program expanded to Kansas City area in 2023 providing scholarships for seven new scholars across Chicago and Kansas City
- Expanded DEI Strategy: Continued to expand our diversity, equity and inclusion (DEI) strategy which includes integrating DEI objectives into individual goal planning, expanding our university recruiting portfolio and aspiring to seek a diverse pool of interview candidates for all open roles
- Charity: Cboe made \$6.5mn in charitable contributions through a variety of programs in 2022. In 2023, announced Cboe's 50th Anniversary Charitable Giving Program, donating a total of \$500,000 to five different non-profit organizations that best represent Cboe's five guiding principles

- Independent Board: 11 of the 12 Directors are independent
- Accountability: Pay for performance philosophy, with a strong emphasis on strategy and risk oversight
- Fresh Perspectives: 9 years average tenure of Board
- Diverse Board: 50% of Directors represent gender and ethnic diversity: 25% of Directors women and 25% African American/Asian-American

Top Strategic Growth Priorities

	Key Trends	Market Opportunity	Sizing the Growth Potential	Cboe Progress
Derivatives	 Globalization Access to multi-asset trading capabilities Rise of retail Demand for data ESG 	 Targeting >150mn retail accounts with smaller & more flexible products² Pan-European equity and index options market is ~1/8 the size of U.S. market Expand expirations & trading hours for prop products toolkit 	◆ Derivatives initiatives expected to contribute 2- 4% of total organic net revenue growth over the medium term³	 Derivatives delivered 21% y/y organic net revenue growth⁵ in 2Q23 Record quarterly SPX ADV in 2Q23 ODTE SPX trading made up 44% of 2Q23 SPX activity Launched options on futures functionality on CFE
Data and Access Solutions	 Globalization Access to multi-asset trading capabilities Rise of retail Demand for data ESG 	 \$36bn annual spend on financial market data¹ \$5bn annual spend in indices¹ 	◆ Targeting organic net revenue growth of 7-10% annually over the medium term ³	 Delivered 9% net revenue growth and 7% organic net revenue growth⁵ in 2Q23 DnA organic net revenue growth target for 2023³ is 7-10%
Cboe Digital	 Globalization Access to multi-asset trading capabilities Rise of retail Demand for data 	 Demand for a trusted, transparent and regulated digital asset marketplace Increasing adoption and investment from traditional finance 	◆ Expecting strong market CAGR over next 3-5 years ⁴	 Continued onboarding of syndication partners and liquidity providers Quarterly volumes of >\$50mn/day in spot trading Active in crypto regulation discussion – focused on margin futures build

Medium-Term Organic Total Net Revenue Growth Rate of 5-7%³ Annually 2023 Targeted Organic Total Net Revenue Growth Rate of 7-9%³



Expanding the Toolkit

Solutions for every use case, from the smallest retail client to the most complicated financial institution

Any Day

Daily expirations for maximum precision in risk management:

- ODTE ADV grew 83% y/y in 2Q23, comprising 44% of SPX volume
- July 2023 ODTE as a percentage of overall SPX volume was 46%

Any Time

Prop products available 24 hours a day, 5 days a week:

- SPX GTH ADV up 81% y/y in 2Q23
- VIX GTH ADV up 16% y/y in 2Q23

Every Customer

Retail to institutional, the global leader in risk management:

 A product for every customer, paired with a comprehensive suite of pretrade, at-trade and post-trade services



Derivatives Product Innovation Builds on Strong Foundation



1-Day VIX

- Cboe 1-Day Volatility Index (VIX1D) seeks to measure the expected volatility of the S&P 500 Index over the current trading day
- The non-tradable 1-day volatility index is designed to provide real-time information about the expected volatility of the current trading day (today)

Writing XSP vs. Long SPY ETF Position¹

- XSP cash settlement means no disruption in long SPY position
- No early assignment with XSP
 Potential 60/40 tax treatment with XSP

European Single Stock Options on CEDX

- Europe derivatives activity on CEDX up more than 44% y/y in 2Q23
- Single stock options on leading European companies expected in November 2023²

What's Expected Over the Next Quarter²

- Dispersion Index
- XSP Covered Calls

- Options on Futures Functionality (Launched)
- 24x5 trading for IBHY and IBIG futures

¹ Subject to regulatory approval

² Certain potential initiatives are subject to regulatory approval and vendor/customer readiness

Data and Access Solutions: Driving Durable Growth

DnA growth trends have been strong:

- Averaged 16% year-over-year quarterly growth in total DnA gross revenues since 2Q21
- Anticipate new opportunities across the data and access solutions ecosystem will help drive future growth
 - Prop data feeds
 - Demand for Australian data and access post integration
 - Cboe Global Indices





Many Avenues of Potential Future Growth

Packaging our Global Content

Distribution as a Service

Distributing 3rd party data across the Cboe network Providing a cohesive, low-cost global data offering

- Strengthens Cboe's streaming data services, Cboe Global Indices Feed, of more than 400 real-time indices
- Leverages global footprint and extensive list of industry vendors and partners
- 24x7 distribution service with a quick to market contributor API, leading to the partnership with Morningstar

- Leverages Cboe's market-leading position in multiple asset classes around the globe
- Reduces friction through a consistent and uniform data feed, across geographies
- Ability to price competitively against incumbents
- Expanded Cboe One functionality
- Disseminating real-time cryptocurrency values sourced from the Cboe Digital Exchange spot market over the Cboe Global Indices feed

Expanding Global Data Distribution

Improving global access through technology

- Launched Cboe Global Cloud in Nov. 2021, added European data to Cboe Global Cloud
- Lower connectivity costs to obtain data in key locations globally
- Greater ability for regional data vendors to redistribute Cboe data
- Recent integration in Australia driving data sales



Building an Unrivaled Global Derivatives and Securities Network

North America

- Monthly high ADV of 3.9mn index options traded in June 2023
- Quarterly record for SPX ADV in 2Q23 of 2.8mn contracts
- ◆ SPX and VIX 2Q23 global trading hours ADV up 81% and 16% vs. 2Q22, respectively

Europe

- Grew year-over-year European equities market share by nearly one percentage point to 23.8% in 2Q23
- ♦ In 2Q23, Cboe BIDS Europe was the largest European block trading platform¹
- ◆ Cboe Clear Europe market share² grew to 33.8% in 2Q23 from 31.3% in 2Q22

Global FX

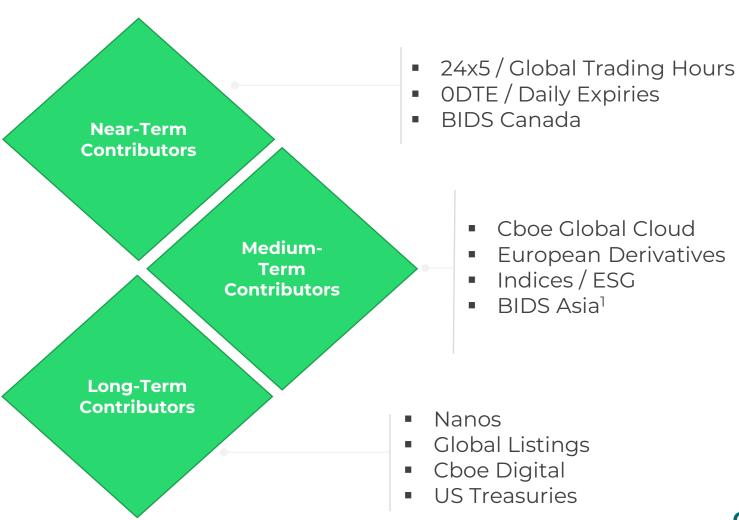
- Grew net revenues 7% y/y in 2Q23
- Expanded market share to a record 19.5% in 2Q23 from 17.0% in 2Q22

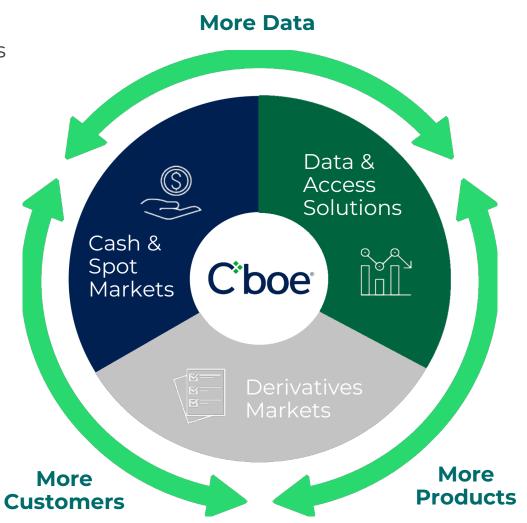
Asia Pacific

- Completed Cboe Australia tech migration and BIDS launch in March 2023
- On track for Cboe Japan tech migration completion and BIDS launch scheduled for Nov 2023³

Uniform Data, Access & Listings

Harvesting Investments Across Seasons to Drive Consistent Growth





FINANCIAL OVERVIEW AND GUIDANCE

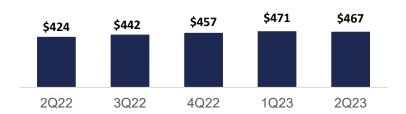
▶Jill Griebenow, EVP, CFO, CAO and Treasurer

2Q23 Financial Summary

\$467mn

Net Revenue +10% Y/Y

Net Revenue (in millions)



\$293mn

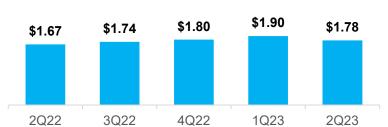
Adjusted EBITDA¹
+7% Y/Y
(Adjusted EBITDA margin¹ of 62.8%)

Adjusted EBITDA¹ (in millions)

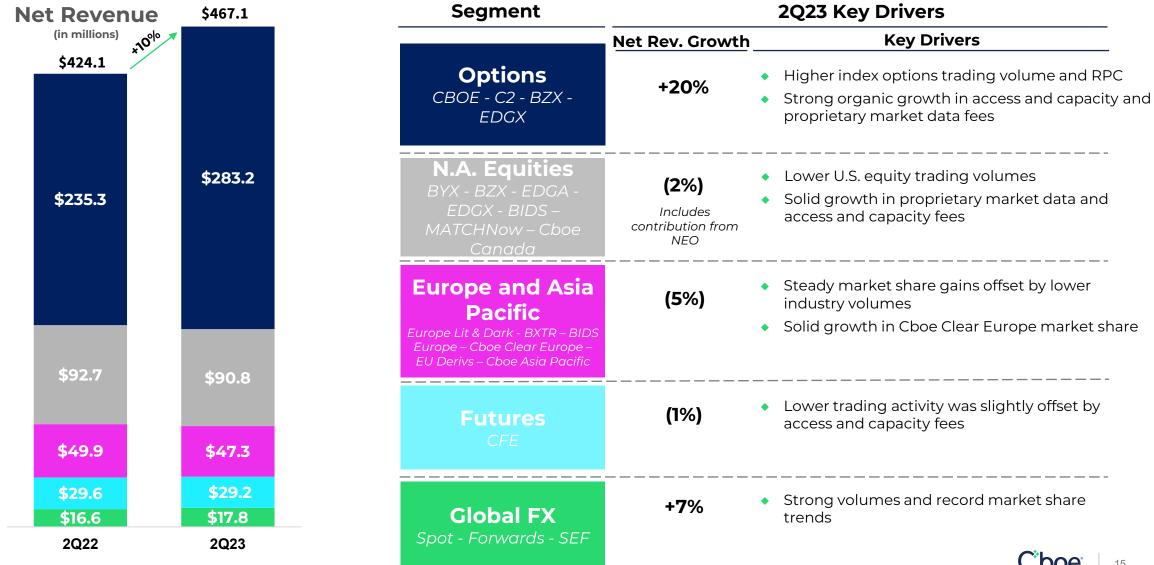


\$1.78
Adjusted Diluted EPS¹
+7% Y/Y





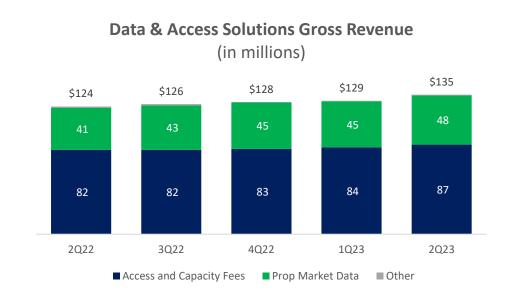
2Q23 Net Revenue by Segment¹ and Key Drivers



Grew Data and Access Solutions Net Revenue 9% YoY, Organic Growth of 7%1

Reaffirmed targeted 2023 organic net revenue growth rate¹ for Data and Access Solutions business of 7-10%, in line with our medium-term guidance²

- 2Q23 Data and Access Solutions net revenue of \$133 million up 9%; organic growth of 7% YoY¹
 - Organic growth excludes \$2.4 million of revenue from acquisitions¹
- 2023 outlook for Data and Access Solutions organic net revenue¹ within medium-term guided range
 - Reaffirmed 2023 annual organic net revenue growth target of 7-10%
- Anticipate new opportunities across the data and access solutions ecosystem will help drive future growth
 - ◆ Prop data feeds
 - Demand for Australian data and access post integration
 - ◆ Cboe Global Indices
- An estimated 77% of organic access and capacity fee revenue growth and 63% of organic market data growth in 2Q23 was driven by additional subscriptions or incremental units



2Q23 Adjusted Operating Expenses¹ Up 22%, Driven by Acquisitions and Compensation and Benefits

- 2Q23 expense increase driven by addition of Cboe Digital and NEO acquisition, as well as higher compensation and benefits
 - \$20 million increase in compensation-related expenses
 - \$10 million increase in technology support services, includes a \$5 million one-time true up recorded in June 2023
 - \$8 million increase in travel and promotional fees
- Excluding acquisitions, adjusted operating expenses were up \$30 million or 19%

Adjusted Operating Expenses ¹ (in millions)	2Q23	2Q22	\$ Chg	% Chg
Compensation and benefits	\$106.5	\$86.2	\$20.3	24%
Depreciation and amortization ¹	10.5	10.1	0.4	4%
Technology support services	28.3	18.1	10.2	56%
Professional fees and outside services	20.4	24.1	(3.7)	-15%
Travel and promotional	13.5	5.5	8.0	145%
Facilities costs	6.2	6.6	(0.4)	-6%
Other expenses	6.9	6.4	0.5	8%
Total ¹	\$192.3	\$157.0	\$35.3	22%

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

Adjusted Operating Expense Guidance for 20231



Updated 2023 Guidance

2023 Full-Year Guidance ^{1, 2} (\$ in millions)	2023 Guidance as of August 4, 2023	2023 Guidance as of May 5, 2023	2023 Guidance as of Feb. 3, 2023	2022 Actual ³
Data and Access Solutions⁴ organic net revenue growth rate	7 to 10%	7 to 10%	7 to 10%	12%
Net revenue growth from acquisitions held <12 months ⁵	0.4%	0.5%	0.5%	2%
Total organic net revenue growth rate	7 to 9%	7 to 9%	7 to 9%	16%
Adjusted operating expenses ⁶	\$766 to 774	\$769 to 779	\$769 to 779	\$652
Other income (expense) benefit from minority investments	\$34 to 40	\$27 to 33	\$27 to 33	\$7
Depreciation and amortization (excluding amortization of acquired intangible assets)	\$40 to 44	\$48 to 52	\$48 to 52	\$43
Effective tax rate on adjusted earnings	28.5 to 30.5%	28.5 to 30.5%	28.5 to 30.5%	28.4%
Capital expenditures	\$48 to 54	\$60 to 66	\$60 to 66	\$60

Specific quantifications of the amounts that would be required to reconcile the company's organic and inorganic growth guidance, 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 revenues and expenses that would be required to reconcile to GAAP revenues less costs of revenues, 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 organic growth, 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.

²Guidance includes acquisitions completed through August 4, 2023, and investment in launching pan-European trading and clearing.

⁶Adjusted operating expenses exclude acquisition-related expenses and amortization of acquired intangible assets. The amortization of acquired intangible assets was \$124 million for 2022 and is now expected to be \$116 million for 2023. Adjustments included in the non-GAAP reconciliation.



³See "Non-GAAP Information" in the appendix for reconciliations of 2022 actual.

⁴Represents Access and Capacity Fees, Proprietary Market Data and revenue generated from licensing and indices related revenue reported in "Other Revenue."

⁵ Based on Actuals through 1H23.

Efficient Allocation of Capital to Create Long-Term Shareholder Value

> Preserving balance sheet flexibility remains a priority

- Capital allocation priorities include:
 - Investing in the growth of our business
 - Inorganic opportunities to facilitate growth strategy
 - Consistent dividend payments and growth
 - Opportunistic share repurchases
- Returned \$53 million in capital through dividends, \$8 million in share repurchases; \$140mn of availability remaining under share repurchase authorizations at June 30, 2023

Debt Outstanding (\$ in millions)	June 30,	Sept. 30,	Dec. 31,	Mar. 31,	June 30,
Debt Outstalluling (\$ III IIIIIIIIII)	2022	2022	2022	2023	2023
3.650% Senior Notes (10Y; Due 2027)	\$650	\$650	\$650	\$650	\$650
3.000% Senior Notes (10Y; Due 2032)	300	300	300	300	300
1.625% Senior Notes (10Y; Due 2030)	500	500	500	500	500
Revolving Credit Agreement	-	-	-	-	-
Term Loan Facility	525	425	305	305	165
EuroCCP Credit Facility	-	-	-	-	-
Total Debt (Gross)	\$1,975	\$1,875	\$1,755	\$1,755	\$1,615
Debt to Adjusted EBITDA TTM ¹	1.9x	1.7x	1.5x	1.5x	1.4x
Adjusted Cash & Financial Investments ¹	\$349	\$355	\$403	\$435	\$403
Share Repurchases	\$15.6	\$0.0	\$15.3	\$70.0	\$8.1
Dividends Paid	51.2	53.4	53.4	53.3	53.2
Total Capital Returned to Shareholders	\$66.8	\$53.4	\$68.7	\$123.3	\$61.3

Positioned to Innovate, Integrate and Grow to Create Value







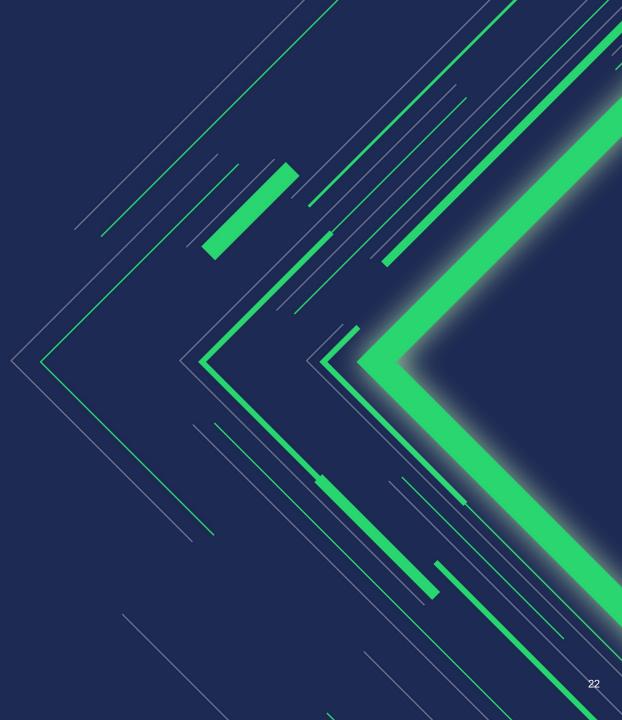
- > Innovate to capture growing demand for trading products and data services, globally
- Increase access to data products and trading solutions
- Unrivaled transaction capabilities
- Global presence in highest value markets
- Develop indices and products to meet growing ESG needs

- > Integrate across ecosystem to increase efficiency and better serve customers
- Industry-leading technology
- Non-siloed integrations expand ecosystem & fuels flywheel
- Strong cash flow generation and operating efficiency

- > Grow by accessing untapped addressable markets
- Proven organic investment and M&A track record
- Expands and diversifies revenue opportunity set



G&A



Appendix

Options 2Q23 Net Revenue Up 20%, Reflecting Y/Y Increase in ADV and Recurring Non-transaction Revenue

Options Selected Revenue Data (\$ in millions)	2Q23	2Q22	Chg
Net Revenue	\$283.2	\$235.3	20%
Net transaction and clearing fees ¹	\$240.4	\$188.7	27 %
Index options	200.2	146.5	37%
Multi-listed options	40.2	42.2	-5%
Access and capacity	\$40.3	\$38.3	5%
Market data	\$30.0	\$27.1	11%
Market data – proprietary	21.9	18.6	18%
Market data – industry	8.1	8.5	-5%
Options Key Operating Stats	2Q23	2Q22	Chg
Total market share	33.3%	33.2%	0.1pts
Multi-listed options	27.1%	28.3%	-1.2pts
Total ADV (in thousands)	14,306	13,054	10%
Index options	3,683	2,677	38%
Multi-listed options	10,622	10,378	2%
Total RPC	\$0.271	\$0.233	16%
Index options	\$0.877	\$0.883	-1%
Multi-listed options	\$0.061	\$0.066	-7%

- Higher transaction fees from index options given stronger volumes and RPC
- Access and capacity fees plus proprietary market data were up a combined 9%

North American (N.A.) Equities 2Q23 Net Revenue down 2%, Contribution from NEO Offset by N.A. Equities Industry Volumes and Market Share

N.A. Equities Selected Revenue Data	2Q23	2Q22	Chg
(\$ in millions) Net Revenue	\$90.8	\$92.7	-2%
Net transaction and clearing fees ¹	\$28.3	\$32.6	-2 <i>%</i> -13%
Market data	\$31.5	\$31.2	1%
Market data - proprietary	13.8	11.9	16%
Market data - SIP ²	17.7	19.3	-8%
Access and capacity fees	\$29.0	\$27.3	6%
N.A. Equities Key Operating Stats	2Q23	2Q22	Chg
U.S. Equities Exchange (shares in billions)			
Total Market Share	12.7%	13.6%	-0.9pts
Market ADV	10.7	12.6	-15%
ADV (matched shares)	1.4	1.7	-20%
Net capture (per 100 touched shares)	\$0.021	\$0.020	1%
U.S. Equities Off-Exchange (shares in millions)			
Off-Exchange ATS Block Market Share %3	21.2%	22.7%	-1.5pts
ADV (matched shares)	78.7	92.7	-15%
Net capture (per 100 touched shares)	\$0.122	\$0.108	13%
Canadian Equities (shares in millions) ⁴			
Total Market Share Percent	14.5%	6.4%	8.1pts
ADV (matched shares, in millions)	124.2	73.7	69%
Net capture (per 10,000 touched shares, in CAD)	CAD 4.055	CAD 5.668	-28%

- Net revenue reflects \$3.6 million inorganic contribution from NEO
- U.S. equities transaction and clearing fees were impacted by lower industry volumes and market share
- Access and capacity fee growth remained solid, up 6% as compared to 2Q22

¹See appendix for "Non-GAAP Information."

²Includes SIP audit recoveries of \$0.6 million in 2Q23 and \$0.8 million in 2Q22.

³Represents market share for 2Q22 through May 2023.

⁴Represents MATCHNow and partial quarter of NEO in 2Q22, NEO included with MATCHNow as of 2Q23.

Europe and APAC Net Revenue down 5% for 2Q23, Driven by Lower Industry Volumes

Europe and APAC Selected Revenue Data (\$ in millions)	2Q23	2Q22	Chg
Net Revenue	\$47.3	\$49.9	-5%
Net transaction and clearing fees ¹	\$23.1	\$27.2	-15%
Net transaction fees	16.5	19.3	-15%
Net clearing fees	6.6	7.9	-16%
Market data	\$9.6	\$8.1	19%
Access and capacity fees	\$9.2	\$8.7	6%
Other ³	\$5.4	\$5.9	-8%
Europe Key Operating Stats	2Q23	2Q22	Chg
European Equities:			
Total market share	23.8%	23.2%	0.6pts
Market ADNV (in billions)	€ 38.7	€ 46.9	-17%
Net capture (per matched notional value, in	0.230	0.238	-3%
Cboe Clear Europe			
Trades cleared (in millions)	275.5	357.9	-23%
Fee per trade cleared	€ 0.009	€ 0.009	5%
Net settlement volume (in millions)	2.4	2.5	-4%
Net fee per settlement	€ 0.887	€ 0.808	10%
European equities market share cleared	33.8%	31.3%	2.5pts
APAC Key Operating Stats	2Q23	2Q22	Chg
Australian Equities:			
Total market share	18.2%	17.0%	1.2pts
Market ADNV (AUD in billions)	\$0.7	\$0.8	-19%
Net capture (per matched notional value)	0.160	0.171	-7%
Japanese Equities:			
Total market share	4.1%	3.5%	0.6pts
Market ADNV (JYP in billions)	¥184.3	¥136.0	35%
Net capture (per matched notional value)	0.256	0.258	-1%

- Cboe Europe's overall equities market share was 23.8% in 2Q23 versus 23.2% in 2Q22
- In 2Q23, Cboe BIDS Europe was the largest block trading platform²

¹See appendix for "Non-GAAP Information."

²Source: big xyt

³ Primarily includes trade reporting and EuroCCP net interest income

Futures 2Q23 Net Revenue down 1%, Volume Declines offset by RPC and Access and Capacity Fees

Futures Selected Revenue Data (\$ in millions)	2Q23	2Q22	Chg
Net Revenue	\$29.2	\$29.6	-1%
Net transaction and clearing fees ¹	\$22.4	\$23.0	-3%
Access and capacity	\$5.5	\$5.2	6%
Market data	\$2.0	\$2.1	-5%
Futures Key Operating Stats	2Q23	2Q22	Chg
	2023	2022	CHG
(in thousands, except RPC)			
(in thousands, except RPC) Total ADV	197.4	221.7	-11%

- Lower volumes drove a decline in net transaction and clearing fees, partially offset by better RPC trends
- Access and capacity saw strong year-over-year improvement during the quarter

Global FX Net 2Q23 Revenue Up 7%

FX Selected Revenue Data (\$ in millions)	2Q23	2Q22	Chg
Net Revenue	\$17.8	\$16.6	7 %
Net transaction and clearing fees ¹	14.7	13.9	6 %
Non-transaction revenue	3.1	2.7	15%
FX Key Operating Stats	2Q23	2Q22	Chg
FX Key Operating Stats Market share ²	2Q23 19.5%	2Q22 17.0%	Chg 2.5pts
	, in the second second		, in the second

- Revenue increase driven by higher volumes and continued market share gains
- Market share hit a record at 19.5% for the quarter

¹See appendix for "Non-GAAP Information."

²Market share represents Cboe FX volume divided by the total volume of publicly reporting spot FX venues (Cboe FX, EBS, Refinitiv, and FastMatch).

Second Quarter 2023 Financial Overview

Adjusted Financial Results¹ (\$ in millions, except per share)	2Q23	2Q22	% Chg
Net Revenue ²	\$467.1	\$424.1	10%
Adjusted Operating Expenses ¹	\$192.3	\$157.0	22%
Adjusted Operating Income ¹	\$274.8	\$267.1	3%
Adjusted Operating Margin ¹	58.8%	63.0%	-4.2pts
Adjusted Net Income Allocated to Common Stockholders¹	\$188.7	\$177.3	6%
Adjusted Diluted EPS ¹	\$1.78	\$1.67	7%
Adjusted EBITDA ¹	\$293.3	\$274.2	7%
Adjusted EBITDA Margin¹	62.8%	64.7%	-1.9pts

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

²Net revenue represents revenue less cost of revenues.

Net Revenue Detail

- Derivatives Markets driven by strong transaction and clearing fees
- Data and Access Solutions benefited from strong new subscription / unit growth

Net Revenue ¹ (in millions)	2Q23	2Q22	% Chg
Cash and Spot Markets	\$90.3	\$101.2	-11%
Data and Access Solutions	133.0	121.6	9%
Derivatives Markets	243.8	201.3	21%
Total	\$467.1	\$424.1	10%

Expense Bridge Summary

Prioritizing investments to:

- Broaden geographic footprint (Cboe APAC, Euro Derivs)
- Leverage core capabilities (Derivatives toolkit) and
- Expand access (Derivatives, Cloud)

Adjusted Operating Expenses Bridge for 2021 to 2022							
(\$ in millions)							
					Contribution		
2021 Adjusted Operating Expenses ¹	\$	531	Act	tual	to y/y growth		
2021 Acquisitions				26	4.9%		
Core				37	7.0%		
Revenue Investments				24	4.5%		
Infrastructure Investments				10	1.9%		
ErisX and Neo				24	4.5%		
				121	22.8%		
Total				652			

Adjusted Operating Expenses Bridge for 2022 to 2023 (\$ in millions)											
Contribution											
2022 Adjusted Operating Expenses ¹	\$	652	*Guidan	ce Range	to y/y growth						
2022 Acquisitions			30	31	4.7%						
Core ²			59	64	9.4%						
Growth Investments			25	27	4.0%						
			114	122	18.1%						
2023 Guidance as of August 4, 2023			766	774							

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



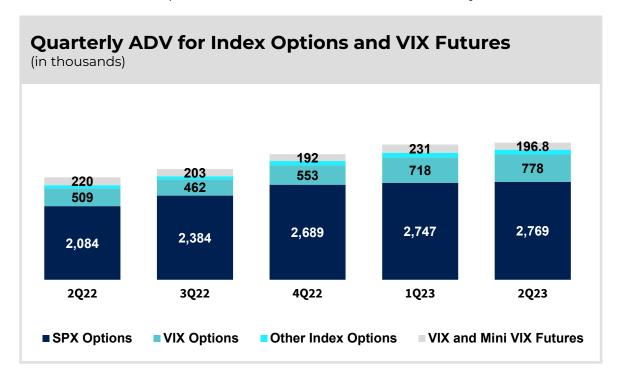
² Core includes CAT charges and Infrastructure Investments

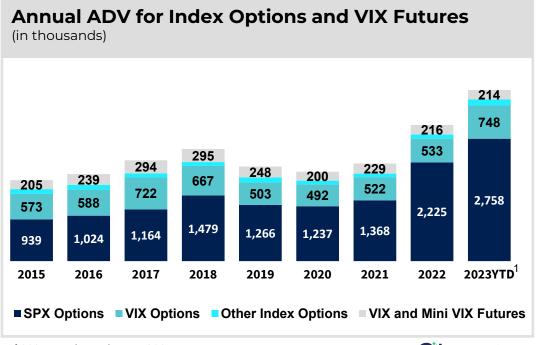
^{*}Totals may not foot due to rounding; % PT Contribution to y/y growth assumes midpoint for 2023

Focused on Growing the Proprietary Index Suite

Index customers at Cboe typically use the toolkit of Cboe proprietary products interchangeably or in tandem, depending on market conditions

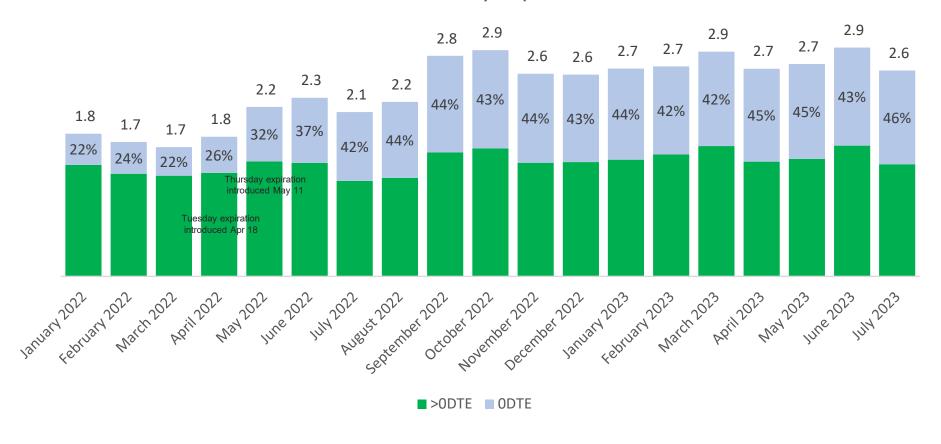
- Plan to further penetrate existing markets with an emphasis on education, targeting key market segments and geographies
 - Expanded global trading hours for SPX and VIX options in November 2021; XSP options in December 2022;
 - Launched Nanos by Cboe in March 2022
 - Launched Tuesday-expiring SPX Weeklys April 2022, Thursday expirations on May 2022.
 - Launched options on IBHY and IBIG futures in July 2023





ODTE Adding Stability to SPX Volumes

SPX Volume by Expiration



M&A Integration Translating to Long-Term Growth Opportunities

Transaction Strategic Rationale Integration Progress FT Options Enhanced Proprietary Products Foundation for risk Hanweck management and analytic **Trade Alert Touches:** ☐ Cash ✓ DnA ✓ Derivs services Asset Class Diversity Clearing Capability **EuroCCP Touches:** ✓ Cash ✓ DnA ✓ Derivs Geographic Diversity - Market data content and **MATCHNow** network **NEO Touches:** ✓ Cash ✓ DnA ☐ Derivs Geographic Diversity - Asset Class Diversity **BIDS** - Leverage Existing Network **Touches:** ✓ Cash ☐ DnA ☐ Derivs Geographic Diversity Market data content **Chi-X Asia Pacific** and network **Touches:** ✓ Cash ✓ DnA ☐ Derivs Asset Class Diversity Clearing Capability **ErisX Touches:** ✓ Cash ✓ DnA ✓ Derivs ¹ Certain potential initiatives are subject to regulatory approval.

Integration & Planned Organic Growth Focus¹

- Hanweck enhanced ticker plant infrastructure supporting distribution of data to our products
- Created Choe Theoretical Options pricing service
- Harmonize client front-ends into cohesive offering
- Reinforced clearinghouse
- Added derivatives clearing
- Launched Euro derivatives
- Extended clearing network
- Expand tradable products (Volatility, Index, ETFs, retail)
- Migrated MATCHNow to Choe technology
- Launched Cboe BIDS Canada
- Add new order types
- Integrate NEO and migrate to Cboe platform
- Expand global listings
- Consistently integrated across the U.S., Europe and Canada
- Expanded into Australia
- Expand into Japan
- Migrated to Choe tech and launched BIDS in Australia
- Migrate to Cboe tech and launch BIDS in Japan
- Cross-sell data and FX
- **Enhance AUS/Global Listings**
- Increase distribution and access of proprietary products
- Enhance flow through syndication
- Margined futures

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 and clearing fees, adjusted operating expenses, adjusted operating income, organic net revenue, inorganic net revenue, net revenues on a constant currency basis, and adjusted operating margin, adjusted net income allocated to common stockholders and adjusted diluted earnings per share, effective tax rate on adjusted earnings, net revenues on a constant currency basis, adjusted cash, EBITDA, EBITDA margin, adjusted EBITDA and adjusted EBITDA margin.

Management believes that the non-GAAP financial measures presented in this press release 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.

Guidance: Adjusted to reflect impact of certain items. See Appendix for "Non-GAAP information" including for disclosure on growth targets.

Organic net revenue, inorganic net revenue, organic non-transaction revenue and organic net revenue guidance: These are non-GAAP financial measures that exclude or have otherwise been adjusted for the impact of our acquisitions for the period or guidance, as applicable. Management believes the organic net revenue growth and guidance measures provide users with supplemental information regarding the company's ongoing and future potential revenue performances and trends by presenting revenue growth and guidance excluding the impact of the acquisitions. Revenues from acquisitions that have been owned for at least one year are considered organic and are no longer excluded from organic net revenue from either period for comparative purposes.

Guidance Reconciliation: Specific quantifications of the amounts that would be required to reconcile the company's organic and inorganic growth guidance, 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 revenues and expenses that would be required to reconcile to GAAP revenues less costs of revenues, 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 organic growth, 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.

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 acquisitions, 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, impairment charges, 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 Net Transaction and Clearing Fees by Segment

For the Three Months Ended	Opti	ions	N.A. E	quities	•	and Asia		ures	Glob	al FX	Dig	ıital	To	tal
Sept 30 (in millions)	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021
Transaction and clearing														
fees	\$ 377.7	\$ 308.4	\$ 264.6	\$ 253.2	\$ 35.9	\$ 36.2	\$ 22.3	\$ 23.2	\$ 14.9	\$ 11.9	\$ 0.1	\$ -	\$ 715.5	\$ 632.9
Liquidity payments	(160.3)	(152.7)	(223.5)	(216.9)	(8.4)	(5.7)	-	-	-	-	(0.1)	-	(392.3)	(375.3)
Routing and clearing	(7.3)	(5.2)	(8.6)	(9.0)	(4.0)	(4.7)	-	-	(0.3)	(0.1)	-	-	(20.2)	(19.0)
Net transaction and														
clearing fees	\$ 210.1	\$ 150.5	\$ 32.5	\$ 27.3	\$ 23.5	\$ 25.8	\$ 22.3	\$ 23.2	\$ 14.6	\$ 11.8	\$ -	\$ -	\$ 303.0	\$ 238.6

For the Three Months					Europe and Asia									
Ended	Opti	ions	N.A. E	quities	uities Pacific		Futures GI		Global FX		Digital		Total	
Dec 31 (in millions)	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021
Transaction and clearing														
fees	\$ 392.7	\$ 330.9	\$ 255.4	\$ 270.1	\$ 35.3	\$ 41.1	\$ 20.5	\$ 24.2	\$ 14.4	\$ 12.5	\$ 0.1	\$ -	\$ 718.4	\$ 678.8
Liquidity payments	(157.7)	(162.2)	(214.4)	(226.3)	(8.8)	(7.2)	-	-	-	-	(0.5)	-	(381.4)	(395.7)
Routing and clearing	(7.3)	(6.9)	(8.2)	(9.8)	(4.2)	(4.9)	-	-	(0.1)	(0.2)	-	-	(19.8)	(21.8)
Net transaction and														
clearing fees	\$ 227.7	\$ 161.8	\$ 32.8	\$ 34.0	\$ 22.3	\$ 29.0	\$ 20.5	\$ 24.2	\$ 14.3	\$ 12.3	\$ (0.4)	\$ -	\$ 317.2	\$ 261.3

For the Three Months					Europe a	and Asia								
Ended	Opti	ions	N.A. E	quities	Pac	ific	Fut	ures	Glob	al FX	Dig	jital	To	tal
March 31 (in millions)	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022
Transaction and clearing														
fees	\$ 395.8	\$ 348.3	\$ 255.0	\$ 330.8	\$ 42.1	\$ 50.1	\$ 24.8	\$ 25.8	\$ 15.8	\$ 14.6	\$ (1.0)	\$ -	\$ 732.5	\$ 769.6
Liquidity payments	(144.2)	(167.6)	(215.9)	(288.3)	(11.3)	(11.6)	-	-	-	-	(0.4)	-	(371.8)	(467.5)
Routing and clearing	(9.7)	(6.7)	(9.4)	(10.5)	(4.6)	(4.9)	-	-	(0.3)	(0.2)	-	-	(24.0)	(22.3)
Net transaction and														
clearing fees	\$ 241.9	\$ 174.0	\$ 29.7	\$ 32.0	\$ 26.2	\$ 33.6	\$ 24.8	\$ 25.8	\$ 15.5	\$ 14.4	\$ (1.4)	\$ -	\$ 336.7	\$ 279.8

For the Three Months Ended	Opti	ions	N.A. E	quities	•	and Asia :ific		ures	Glob	al FX	Dig	jital	To	tal
June 30 (in millions)	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022
Transaction and clearing														
fees	\$ 384.3	\$ 353.0	\$ 229.4	\$ 304.5	\$ 35.6	\$ 40.6	\$ 22.4	\$ 23.0	\$ 15.0	\$ 14.1	\$ (1.0)	\$ 0.1	\$ 685.7	\$ 735.3
Liquidity payments	(135.8)	(158.4)	(193.1)	(261.4)	(8.1)	(9.1)	-	-	-	-	(0.4)	(0.1)	(337.4)	(429.0)
Routing and clearing	(8.1)	(5.9)	(8.0)	(10.5)	(4.4)	(4.3)	-	-	(0.3)	(0.2)	-	-	(20.8)	(20.9)
Net transaction and														
clearing fees	\$240.4	\$ 188.7	\$ 28.3	\$ 32.6	\$ 23.1	\$ 27.2	\$ 22.4	\$ 23.0	\$ 14.7	\$ 13.9	\$ (1.4)	\$ -	\$ 327.5	\$ 285.4

Reconciliation of GAAP Net Revenues to Net Revenues in Constant Currency

	Three Months	Six Months
Net Revenue (in millions)	Ended,	Ended,
	June 30, 2023	June 30, 2023
Europe and Asia Pacific net revenues	\$47.3	\$96.6
Constant currency adjustment	0.5	3.9
Europe and Asia Pacific net revenue in constant currency	\$47.8	\$100.5

Reconciliation of Net Revenue by Revenue Caption

	Cash	n and	Data	and	Deriv	atives		
For the Three Months Ended	Spot M	larkets	Access S	Solutions	Mar	kets	То	tal
June 30 (in millions)	2023	2022	2023	2022	2023	2022	2023	2022
Transaction and clearing fees	\$ 279.0	\$ 359.2	\$ -	\$ -	\$ 406.7	\$ 376.1	\$ 685.7	\$ 735.3
Access and capacity fees	-	-	86.9	81.8	-	ı	86.9	81.8
Market data fees	17.7	19.3	47.7	41.0	8.1	8.5	73.5	68.8
Regulatory fees	28.7	68.7	-	-	15.7	18.1	44.4	86.8
Other revenue	15.9	11.3	0.7	1.1	0.7	0.7	17.3	13.1
Total revenues	341.3	458.5	135.3	123.9	431.2	403.4	907.8	985.8
Liquidity payments	201.0	270.0	-	-	136.4	159.0	337.4	429.0
Routing and clearing fees	12.7	15.0	-	-	8.1	5.9	20.8	20.9
Section 31 fees	28.7	68.2	-	-	5.8	11.4	34.5	79.6
Royalty fees and other cost of								
revenues	8.6	4.1	2.3	2.3	37.1	25.8	48.0	32.2
Total cost of revenues	251.0	357.3	2.3	2.3	187.4	202.1	440.7	561.7
Revenues less cost of revenues								
(net revenue)	90.3	101.2	133.0	121.6	243.8	201.3	467.1	424.1
Acquisition revenue less cost of								
revenues (inorganic net revenue)	(0.8)	-	(2.4)	-	-	-	(3.2)	-
Organic net revenue	89.5	101.2	130.6	121.6	243.8	201.3	463.9	424.1

(in millions, except per share amounts)	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23
Reconciliation of Net Income Allocated to Common Stockholders to Non-GAAP							
Net income allocated to common stockholders	\$ 109.2	\$ (184.5)	\$ 149.6	\$ 159.0	\$ 234.2	\$ 172.6	\$ 167.0
Acquisition-related expenses (1)	2.0	14.3	1.6	2.0	19.9	6.4	0.7
Investment establishment costs (2)	3.0	-	-	-	3.0	-	-
Gain on investments (3)		(7.5)	-	-	(7.5)	-	-
Loan forgiveness (4)		(1.3)	-	-	(1.3)	-	-
Amortization of acquired intangible assets (5)	30.6	30.1	30.4	33.2	124.3	30.9	29.3
Goodwill impairment (6)		460.1	0.8	-	460.9	=	-
Income from investment (7)							(2.1)
Total Non-GAAP adjustments	35.6	495.7	32.8	35.2	599.3	37.3	27.9
Impairment of Investment (8)	-	10.6	-	- (5.0)	10.6	-	-
Change in contingent consideration (9)	-	-	-	(5.2)	. ,	-	-
Total Non-GAAP adjustments - pretax	35.6	506.3	32.8	30.0	604.7	37.3	27.9
Income tax expense related to the items above	(8.7)	(143.2)	2.9	5.3	(143.7)	(9.5)	(6.8)
Deferred tax remeasurement	-	-	-	(2.0)	, ,	-	0.7
Tax reserves (10)	48.5			- (0.1)	48.5	1.5	
Net income allocated to participating securities - effect on reconciling items Adjusted net income allocated to common stockholders	(0.3) \$ 184.3	(1.3)	(0.1)	(0.1) \$ 192.2	(1.8)	(0.1)	(0.1)
Adjusted het income allocated to common stockholders	\$ 184.3	\$ 177.3	\$ 185.2	\$ 192.2	\$ 739.8	\$ 201.8	\$ 188.7
Reconciliation of Diluted EPS to Non-GAAP							
Diluted earnings per common share	\$ 1.02	\$ (1.74)	\$ 1.41	\$ 1.49	\$ 2.19	\$ 1.63	\$ 1.57
Per share impact of non-GAAP adjustments noted above	0.71	3.41	0.33	0.31	4.74	0.27	0.21
Adjusted diluted earnings per common share	\$ 1.73	\$ 1.67	\$ 1.74	\$ 1.80	\$ 6.93	\$ 1.90	\$ 1.78
Reconciliation of Operating Margin to Non-GAAP							
Revenue less cost of revenue	\$ 418.1	\$ 424.1	\$ 442.4	\$ 457.1	\$ 1,741.7	\$ 471.4	\$ 467.1
Non-GAAP adjustments noted above	-	-	-	-	-	-	-
Adjusted revenue less cost of revenue	\$ 418.1	\$ 424.1	\$ 442.4	\$ 457.1	\$1,741.7	\$ 471.4	\$ 467.1
Operating expenses (11)	\$ 178.4	\$ 661.5	\$ 205.6	\$ 206.6	\$ 1.252.1	\$ 223.5	\$ 222.3
Non-GAAP expense adjustments noted above	32.6	504.5	32.8	30.0	599.9	37.3	30.0
Adjusted operating expenses	\$ 145.8	\$ 157.0	\$ 172.8	\$ 176.6			\$ 192.3
							•
Non-GAAP expense adjustments to arrive at organic adjusted operating expenses	\$ (6.4)	\$ (13.7)	\$ (7.6)	\$ (10.8)	Ф (30.5)	\$ (12.2)	\$ (5.1)
Organic adjusted operating expenses	\$ 139.4	\$ 143.3	\$ 165.2	\$ 165.8	\$ 613.7	\$ 174.0	\$ 187.1
Operating income	\$ 239.7	\$ (237.4)	\$ 236.8	\$ 250.5	\$ 489.6	\$ 247.9	\$ 244.8
Non-GAAP expense adjustments noted above	32.6	504.5	32.8	30.0	599.9	37.3	30.0
Adjusted operating income	\$ 272.3	\$ 267.1	\$ 269.6	\$ 280.5	\$1,089.5	\$ 285.2	\$ 274.8
Adjusted operating margin (12)	65.1%		60.9%			60.5%	58.8%
Reconciliation of Income Tax Rate to Non-GAAP							
Income before income taxes	\$ 224.9	\$ (256.8)	\$ 229.0	\$ 235.8	\$ 432.9	\$ 248.2	\$ 241.8
Non-GAAP adjustments noted above	35.6	506.3	32.8	30.0	604.7	37.3	27.9
Adjusted income before income taxes	\$ 260.5	\$ 249.5	\$ 261.8	\$ 265.8	\$1,037.6	\$ 285.5	\$ 269.7
Income tax expense	\$ 115.3	\$ (72.3)		\$ 76.1	\$ 197.9	\$ 74.8	\$ 74.0
Non-GAAP adjustments noted above	\$ 115.3 (39.8)	\$ (72.3) 143.2	э /о.о (2.9)		\$ 197.9 97.2	\$ 74.6 8.0	\$ 74.0 6.1
Adjusted income tax expense	(39.8)	\$ 70.9	\$ 75.9	(3.3)		\$ 82.8	\$ 80.1
Adjusted income tax expense Adjusted income tax rate	\$ 75.5 29.0%	\$ 70.9 28.4%	э 75.9 29.0%			э oz.o 29.0%	29.7%
Adjusted modific tax rate	25.070	20.470	25.070	27.470	20.470	25.0%	23.170

- (1) This amount includes ongoing acquisition related costs primarily from the Company's Cboe Digital and Cboe Canada acquisitions.
- (2) This amount represents the investment establishment costs related to the company's investment in 7RIDGE Investments 3 LP, which acquired Trading Technologies, Inc.
- (3) This amount represents the gain on the Company's investment in Eris Innovations Holdings, LLC in connection with the full acquisition of Cboe Digital (formerly ErisX).
- (4) This amount represents the forgiveness of a PPP ("Paycheck Protection Program") loan previously held by Cboe Digital.
- (5) This amount represents the amortization of acquired intangible assets related to the company's acquisitions.
- (6) This amount represents the impairment of Cboe Digital goodwill.
- (7) This amount represents the dividend from the Company's minority ownership of Vest Group Inc.
- (8) This amount represents the impairment of investment related to the Company's minority investment in American Financial Exchange, LLC.
- (9) This amount represents the change in contingent consideration related to the adjustment recorded to MATCHNow's contingent consideration.
- (10) This amount represents the tax reserves related to Section 199 matters.
- (11) The company sponsors deferred compensation plans held in a trust. The expenses or income related to the deferred compensation plans are included in "Compensation and benefits" (\$2.0 million and \$1.9 million in expense for the three months ended June 30, 2023 and 2022, respectively, and \$5.2 million and \$2.5 million in expense for the six months ended June 30, 2023 and 2022, respectively), and are directly offset by deferred compensation income, expenses and dividends included within "Other income, net" (\$2.0 million and \$1.9 million in income, expense and dividends in the three months ended June 30, 2023 and 2022, respectively, and \$5.2 million and \$2.5 million in income, expense and dividends in the six months ended June 30, 2023 and 2022, respectively, and \$5.2 million in the condensed consolidated statements of income. The deferred compensation plans' expenses are not excluded from "adjusted operating expenses" and do not have an impact on "Income before income taxes.
- (12) Adjusted operating margin represents adjusted operating income divided by adjusted revenue less cost of revenue.
- Note: 2022 Net Income allocated to common shareholders and non-GAAP EPS may not sum due to ASC 260 treatment of 2Q22 loss.

EBITDA Reconciliations

EBITDA (earnings before interest, income taxes, depreciation and amortization) and Adjusted EBITDA are widely used non-GAAP financial measures 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. Adjusted EBITDA is calculated by adding back to EBITDA acquisition-related expenses, gain on investment, loan forgiveness, investment establishment costs, goodwill impairment, impairment of investment, and income from investment. EBITDA and Adjusted 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 and Adjusted EBITDA may not be calculated identically by all companies, the presentation here may not be comparable to other similarly titled measures of other companies. Adjusted EBITDA margin represents Adjusted EBITDA divided by net revenue.

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

(in millions, except per share amounts)	2Q22	3Q22	4Q22	2022	1Q23	2Q23
Net income allocated to common stockholders	\$ (184.5)	\$ 149.6	\$ 159.0	\$ 234.1	\$ 172.6	\$ 167.0
Interest expense	14.6	15.3	15.7	56.4	15.1	13.9
Income tax provision	(72.3)	78.8	76.1	197.9	74.8	74.0
Depreciation and amortization	40.2	41.0	44.7	166.8	41.4	39.8
EBITDA	\$ (202.0)	\$ 284.7	\$ 295.5	\$ 655.2	\$ 303.9	\$ 294.7
EBITDA Margin	-47.6%	64.4%	64.6%	37.6%	64.5%	63.1%
Non-GAAP adjustments not included in above						
Acquisition-related expenses	14.3	1.6	2.0	19.9	6.4	0.7
Change in contingent consideration	-	-	(5.2)	(5.2)	-	-
Gain on investment	(7.5)	-	-	(7.5)	-	-
Loan forgiveness	(1.3)	-	-	(1.3)	-	-
Goodwill impairment	460.1	0.8	-	460.9	-	-
Investment establishment costs	-	-	-	3.0	-	-
Impairment of investment	10.6	-	-	10.6	-	-
Income from investment		-	-	-		(2.1)
Adjusted EBITDA	\$ 274.2	\$ 287.1	\$ 292.3	\$ 1,135.6	\$ 310.3	\$ 293.3
Adjusted EBITDA Margin	64.7%	64.9%	63.9%	65.2%	65.8%	62.8%

Note: 2022 Net Income allocated to common stockholders and non-GAAP EPS may not sum due to ASC 260 treatment of 2Q22 loss.

Adjusted Debt to EBITDA - Trailing Twelve Months¹

(in millions)	7	3Q22	4	4Q22	,	1Q23	:	2Q23	LTM
Net income allocated to common stockholders	\$	149.6	\$	159.0	\$	172.6	\$	167.0	\$ 648.2
Interest expense, net		15.3		15.7		15.1		13.9	60.0
Income tax provision		78.8		76.1		74.8		74.0	303.7
Depreciation and amortization		41.0		44.7		41.4		39.8	166.9
EBITDA	\$	284.7	\$	295.5	\$	303.9	\$	294.7	\$ 1,178.8
Non-GAAP adjustments not included in above line ite	ms:								
Acquisition-related expenses		1.6		2.0		6.4		0.7	10.7
Gain on investment		-		-		-		-	-
Loan forgiveness		-		-		-		-	-
Change in contingent consideration		-		(5.2)		-		-	(5.2)
Goodwill impairment		0.8		-		-		-	0.8
Income from investment		-		-		-		(2.1)	(2.1)
Adjusted EBITDA	\$	287.1	\$	292.3	\$	310.3	\$	293.3	\$ 1,183.0
Debt at end of period		•		•		•		•	\$ 1,615.0
Debt to EBITDA									1.4x

¹A full reconciliation of our non-GAAP 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 deferred compensation plan assets and 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 6/30/22	As of 9/30/22	As of 12/31/22	As of 3/31/23	As of 6/30/23
Cash and cash equivalents	\$ 373.3	\$ 353.3	\$ 432.7	\$ 435.6	\$ 413.6
Financial investments	68.5	27.4	91.7	80.2	103.7
Less deferred compensation plan	(25.5)	(25.4)	(27.5)	(30.7)	(32.7)
Less cash collected for Section 31 fees	(67.2)	-	(93.7)	(50.0)	(81.6)
Adjusted Cash	\$ 349.1	\$ 355.3	\$ 403.2	\$ 435.1	\$ 403.0

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