



Third Quarter 2022 Earnings Presentation

November 4, 2022



◆ **Strategic Review**

Edward Tilly
Chairman and Chief Executive Officer

◆ **Financial Review**

Brian Schell
Executive Vice President, Chief Financial Officer and Treasurer

◆ **Questions & Answers**

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Brian Schell
Chris Isaacson
Executive Vice President, Chief Operating Officer
Dave Howson
Executive Vice President, President
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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.

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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 risks, cybersecurity risks, insider threats and unauthorized disclosure of confidential information; 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; fluctuations to currency exchange rates; factors that impact the quality and integrity of our indices; the impact of the novel coronavirus (“COVID-19”) pandemic; 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 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; our ability to manage our growth and strategic acquisitions or alliances effectively; restrictions imposed by our debt obligations and our ability to make payments on or refinance our debt obligations; our ability to maintain an investment grade credit rating; impairment of our goodwill, long-lived assets, investments or intangible assets; the accuracy of our estimates and expectations; litigation risks and other liabilities; and operating a digital asset business and clearinghouse, including the expected benefits of our ErisX acquisition, subsequently rebranded to Cboe Digital, cybercrime, changes in digital asset regulation, losses due to digital asset custody, and fluctuations in digital asset prices. 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, 2021 and other filings made from time to time with the SEC.

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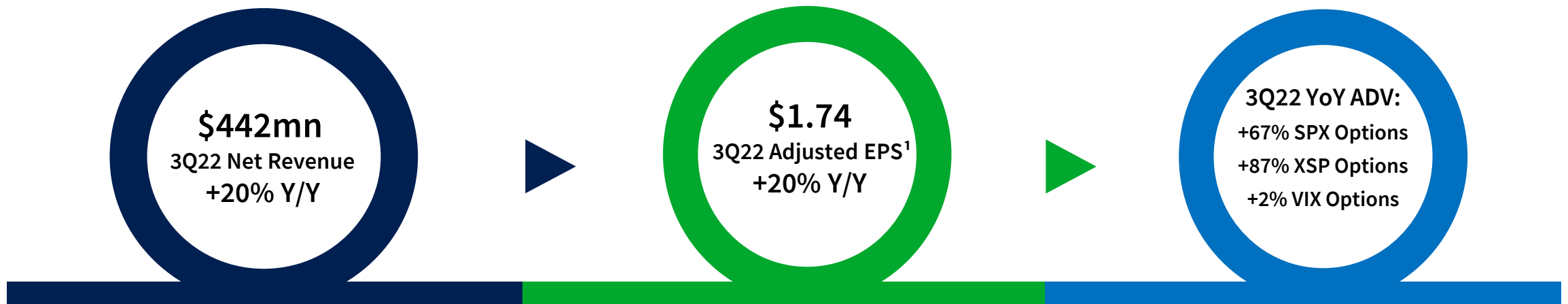
Strategic Review and Outlook

Edward Tilly
Chairman and CEO

3Q22: Record Levels of Net Revenue and Adjusted Earnings Generation Continue*

Net revenues grew 20% YoY, a product of strong transaction and non-transaction growth

- ❖ **5% increase in Cash and Spot Markets net revenue, 3% organic net revenue growth¹**
 - ❖ U.S. equities ADV up 6% YoY
- ❖ **15% increase in Data and Access Solutions net revenue, 12% organic net revenue growth¹**
 - ❖ Continued expansion in transaction capabilities driving increased access and capacity units
 - ❖ Comprehensive suite of data solutions across markets and asset classes is translating to strong user growth
- ❖ **31% increase in Derivatives Markets organic net revenue¹**
 - ❖ ADV up 49% in index options and 8% in multi-listed options



*All comparisons are third quarter 2022 compared to the same period in 2021

¹See appendix for “Non-GAAP Information.”

Top Strategic Growth Priorities



	Key Trends	Market Opportunity	Sizing the Growth Potential	Cboe Progress
Derivatives	<ul style="list-style-type: none"> ◆ Globalization ◆ Access to multi-asset trading capabilities ◆ Rise of retail ◆ Demand for data ◆ ESG 	<ul style="list-style-type: none"> ◆ Targeting >150mn retail accounts for Nanos² ◆ Pan-European equity and index options market is ~1/8 the size of U.S. market ◆ Expand expirations and trading hours for proprietary products 	<ul style="list-style-type: none"> ◆ Derivatives initiatives expected to contribute 2-4% of total organic net revenue growth over the medium term³ 	<ul style="list-style-type: none"> ◆ 24x5 trading extension on pace to more than double SPX global trading hour vol ◆ Tuesday / Thursday weekly expirations have produced strong early traction and accelerated zero days-to-expiration trading
Data and Access Solutions	<ul style="list-style-type: none"> ◆ Globalization ◆ Access to multi-asset trading capabilities ◆ Rise of retail ◆ Demand for data ◆ ESG 	<ul style="list-style-type: none"> ◆ > \$33bn annual spend on financial market data¹ ◆ >\$4bn annual spend in indices¹ 	<ul style="list-style-type: none"> ◆ Targeting organic net revenue growth of 7-10% annually over the medium term³ 	<ul style="list-style-type: none"> ◆ Delivered 12% organic net revenue growth⁵ in 3Q22 ◆ DnA organic net revenue growth target in 2022³ of 10-13%, above medium-term target of 7-10%
Cboe Digital	<ul style="list-style-type: none"> ◆ Globalization ◆ Access to multi-asset trading capabilities ◆ Rise of retail ◆ Demand for data 	<ul style="list-style-type: none"> ◆ Demand for a trusted, transparent and regulated digital asset marketplace 	<ul style="list-style-type: none"> ◆ Expecting >25% market CAGR over next 3-5 years⁴ 	<ul style="list-style-type: none"> ◆ Finalized material investment terms, anticipate closing syndication very soon ◆ Actively onboarding partners ◆ Active in crypto regulation discussion – focused on margin futures build / approval

Medium-Term Organic Total Net Revenue Growth Rate of 5-7%³ Annually
2022 Targeted Organic Total Net Revenue Growth Rate of 14-16%³

¹Based on Burton-Taylor research reports

²Estimate based on 2021 analysis of top 4 retail brokers' platforms

³See appendix for "Non-GAAP Information" for disclosures on growth targets; all medium-term guidance as of 2/4/22, all 2022 guidance as of 11/4/22

⁴Based on publicly available information and Cboe estimates

⁵See appendix for "Non-GAAP Information."

Global Derivatives: Extending the Market Potential



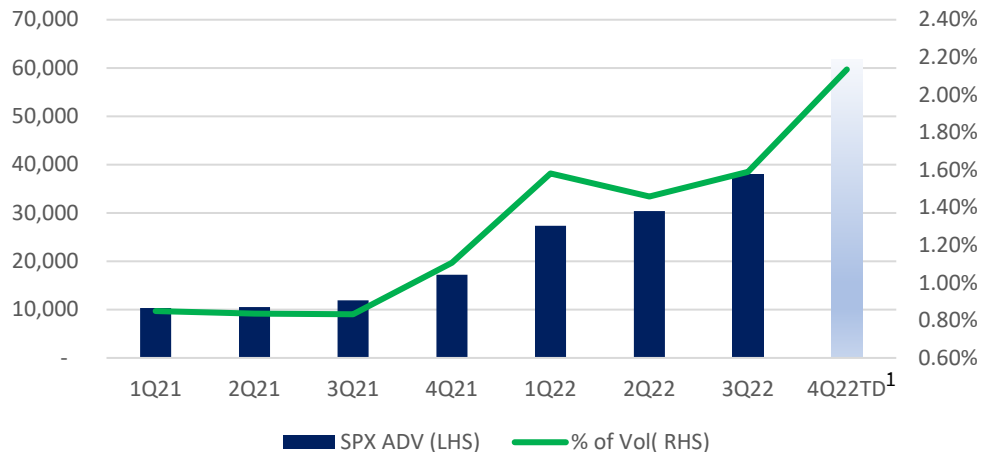
Increasing access for market participants and leveraging our core products

Any Time

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

- **Returns remained positive:** Since Global Trading Hours (GTH) were expanded on November 21st to nearly **24x5** for SPX and VIX options, adoption continued to accelerate
- **SPX GTH grew:** 24x5 SPX volumes set another record for volume traded and percentage of volume during GTH in 3Q22, October running nearly 5x 2021 levels
- **VIX on the rise:** Sept. GTH volumes were more than 90% higher than YTD levels, percentage traded GTH nearly doubled to 1.2% from 2022 monthly average

SPX GTH Volume and % of Total Volume



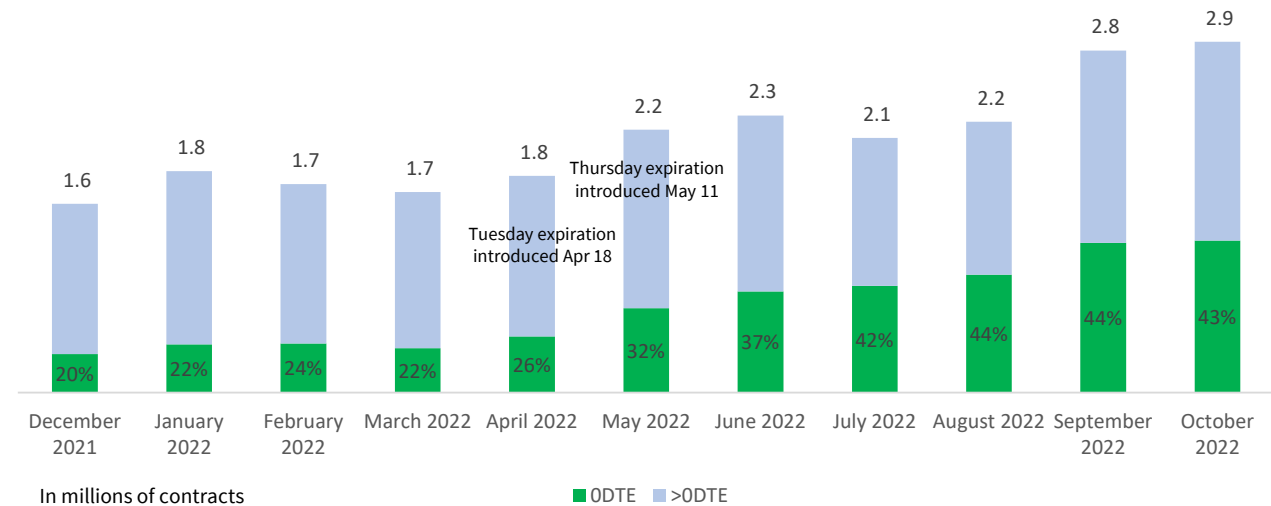
¹ Data through 10/31/22.

Any Day

SPX Weeklys Drive ODTE Trading Strategies

- **Tuesday / Thursday expirations added incremental volume:** With the additions of Tuesday / Thursday expirations in 2Q22, we estimate the contracts have added over 275k in incremental SPX ADV
- **Shift in trading behavior:** Tuesday / Thursday expirations, allowing for expirations every day of the week, helped increase trading of zero days-to-expiration (ODTE) options, with the percentage of ODTE trading more than doubling from the end of 2021

SPX Volume by Expiration
Shift to ODTE Driving Volume



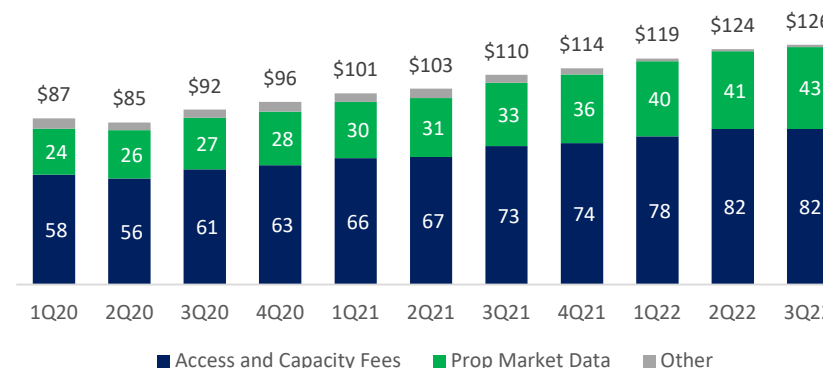
Data and Access Solutions: Driving Durable Growth



DnA growth has been strong:

- ◆ Averaged 18% year-over-year quarterly growth in total DnA gross revenues since 1Q21
- ◆ Continued to see strong growth trends across both proprietary market data and access and capacity fees
- ◆ Anticipate new opportunities across the data and access solutions ecosystem will help drive future growth

Data & Access Solutions Gross Revenue
(in millions)



Many Avenues of Potential Future Growth

Distribution as a Service

Distributing 3rd party data across the Cboe network

- ❖ 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 recently-announced partnership with Morningstar

Packaging our Global Content

Providing a cohesive, low-cost global data offering

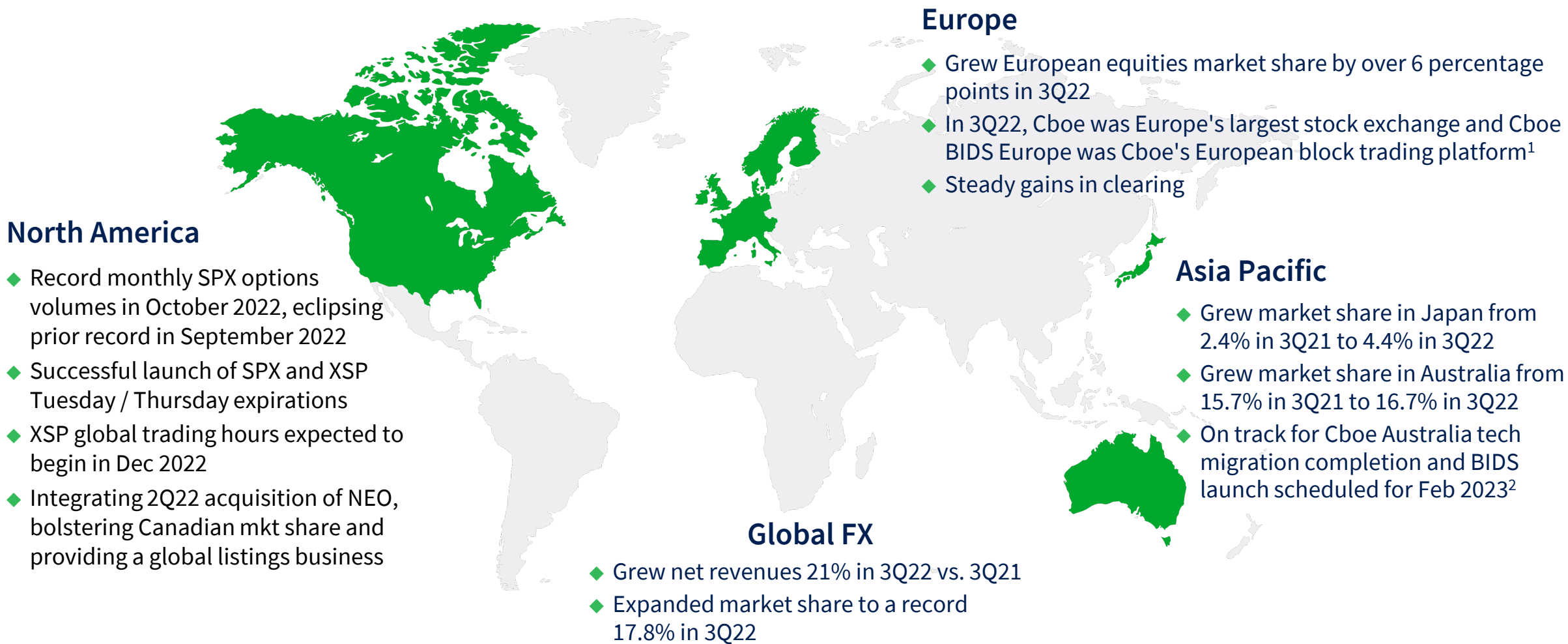
- ❖ Leverages Cboe's market-leading position in multiple asset classes around the globe
- ❖ Reduces friction through a consistent and uniform data feed, across geographies
- ❖ Ability to price competitively against incumbents
- ❖ Launched Cboe One Canada Feed on Sept 12, 2022

Expanding Global Data Distribution

Improving global access through technology

- ❖ Launched Cboe Global Cloud in Nov. 2021, recently 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

Building an Unrivaled Global Derivatives and Securities Network






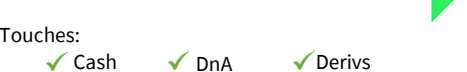


Uniform Data & Access

¹Source: big xyt
²Subject to regulatory approval.

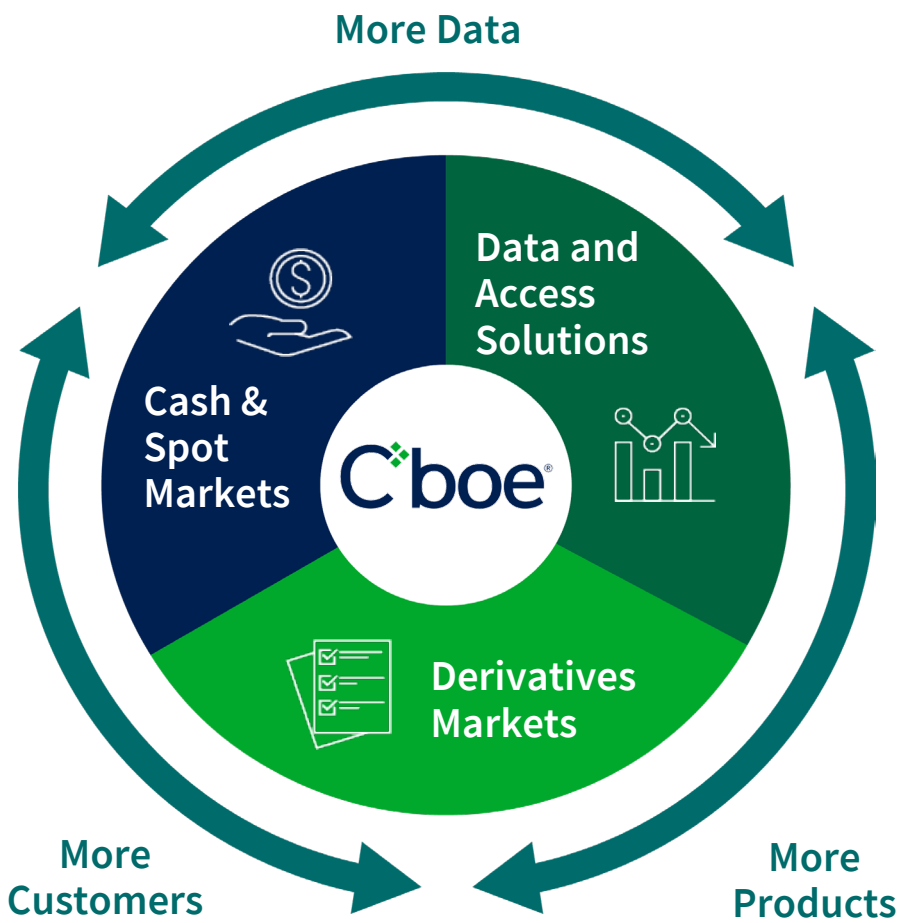
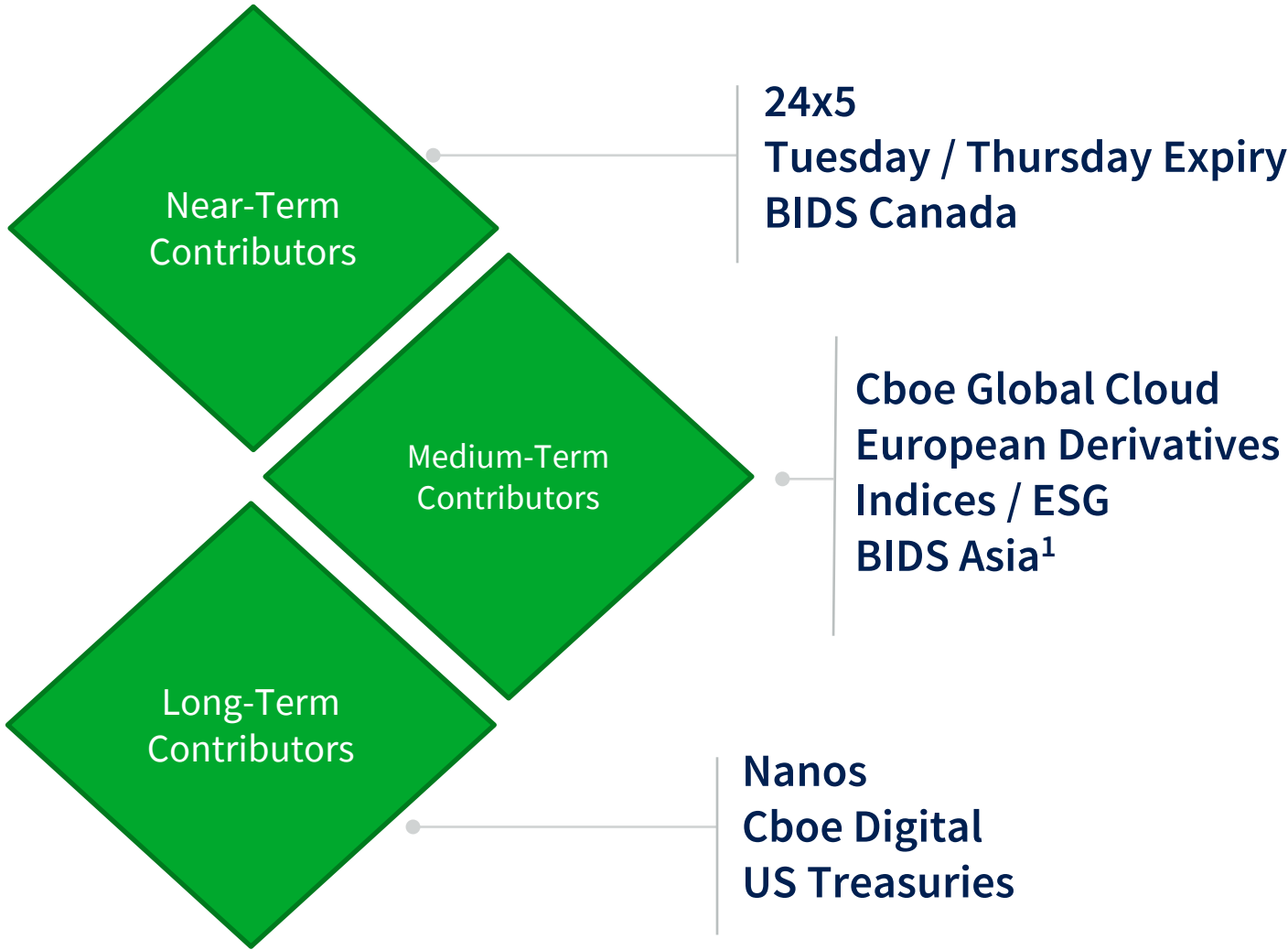
Focus on Integration: Strategic M&A is a Core Competency of Cboe



Transaction	Strategic Rational Highlights	Integration Progress	Integration & Planned Organic Growth Focus ¹
FT Options Hanweck Trade Alert	<ul style="list-style-type: none"> - Enhanced Proprietary Products - Foundation for risk management and analytic services 	<p style="text-align: center;">Less More</p>  <p>Touches: <input type="checkbox"/> Cash <input checked="" type="checkbox"/> DnA <input checked="" type="checkbox"/> Derivs</p>	<ul style="list-style-type: none"> - Hanweck enhanced ticker plant infrastructure supporting distribution of data to our products - Created Cboe Theoretical Options pricing service - Harmonize client front-ends into cohesive offering
EuroCCP	<ul style="list-style-type: none"> - Asset Class Diversity - Clearing Capability 	 <p>Touches: <input checked="" type="checkbox"/> Cash <input checked="" type="checkbox"/> DnA <input checked="" type="checkbox"/> Derivs</p>	<ul style="list-style-type: none"> - Reinforced clearinghouse - Added derivatives clearing - Launched Euro derivatives - Extend clearing network - Expand tradable products (Volatility, Index, ETFs, retail)
MATCHNow NEO	<ul style="list-style-type: none"> - Geographic Diversity - Market data content and network 	 <p>Touches: <input checked="" type="checkbox"/> Cash <input checked="" type="checkbox"/> DnA <input type="checkbox"/> Derivs</p>	<ul style="list-style-type: none"> - Migrated MATCHNow to Cboe technology - Launched Cboe BIDS Canada - Add new order types - Integrate NEO and migrate to Cboe platform - Expand global listings
BIDS	<ul style="list-style-type: none"> - Geographic Diversity - Asset Class Diversity - Leverage Existing Network 	 <p>Touches: <input checked="" type="checkbox"/> Cash <input type="checkbox"/> DnA <input type="checkbox"/> Derivs</p>	<ul style="list-style-type: none"> - Consistently integrated across the U.S., Europe and Canada - Expand into Australia and Japan
Chi-X Asia Pacific	<ul style="list-style-type: none"> - Geographic Diversity - Market data content and network 	 <p>Touches: <input checked="" type="checkbox"/> Cash <input checked="" type="checkbox"/> DnA <input type="checkbox"/> Derivs</p>	<ul style="list-style-type: none"> - Migrate to Cboe technology - Launch Cboe BIDS in Australia and Japan - Cross-sell data and FX - Enhance AUS/Global Listings - Increase distribution and access of proprietary products
ErisX	<ul style="list-style-type: none"> - Asset Class Diversity - Clearing Capability 	 <p>Touches: <input checked="" type="checkbox"/> Cash <input checked="" type="checkbox"/> DnA <input checked="" type="checkbox"/> Derivs</p>	<ul style="list-style-type: none"> - Enhance flow through syndication - Margined futures

¹ Certain potential initiatives are subject to regulatory approval.

Harvesting Investments Across Seasons to Drive Consistent Growth



¹ Subject to regulatory approvals.

Financial Overview and Guidance

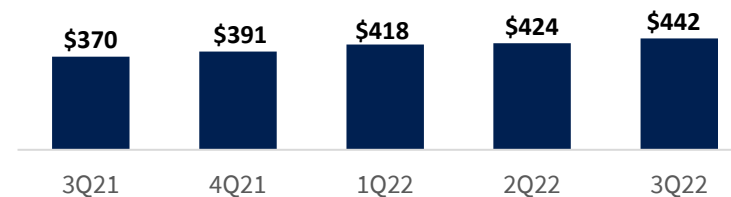
Brian Schell
EVP, CFO and Treasurer

3Q22 Financial Summary



\$442mn
Net Revenue
+20% Y/Y

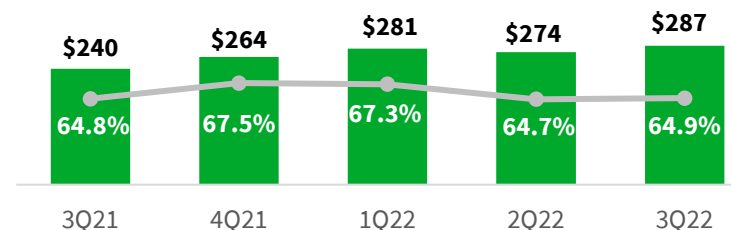
Net Revenue (in millions)



\$287mn
Adjusted EBITDA¹
+20% Y/Y

(Adjusted EBITDA margin of 64.9%)

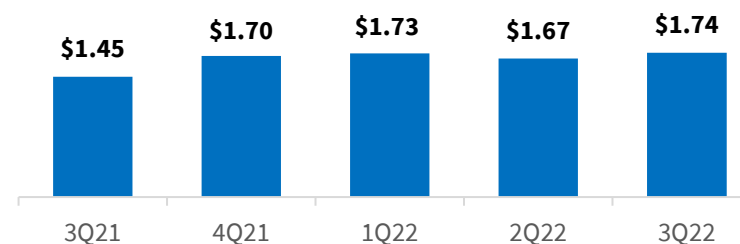
Adjusted EBITDA¹ (in millions)



\$1.74

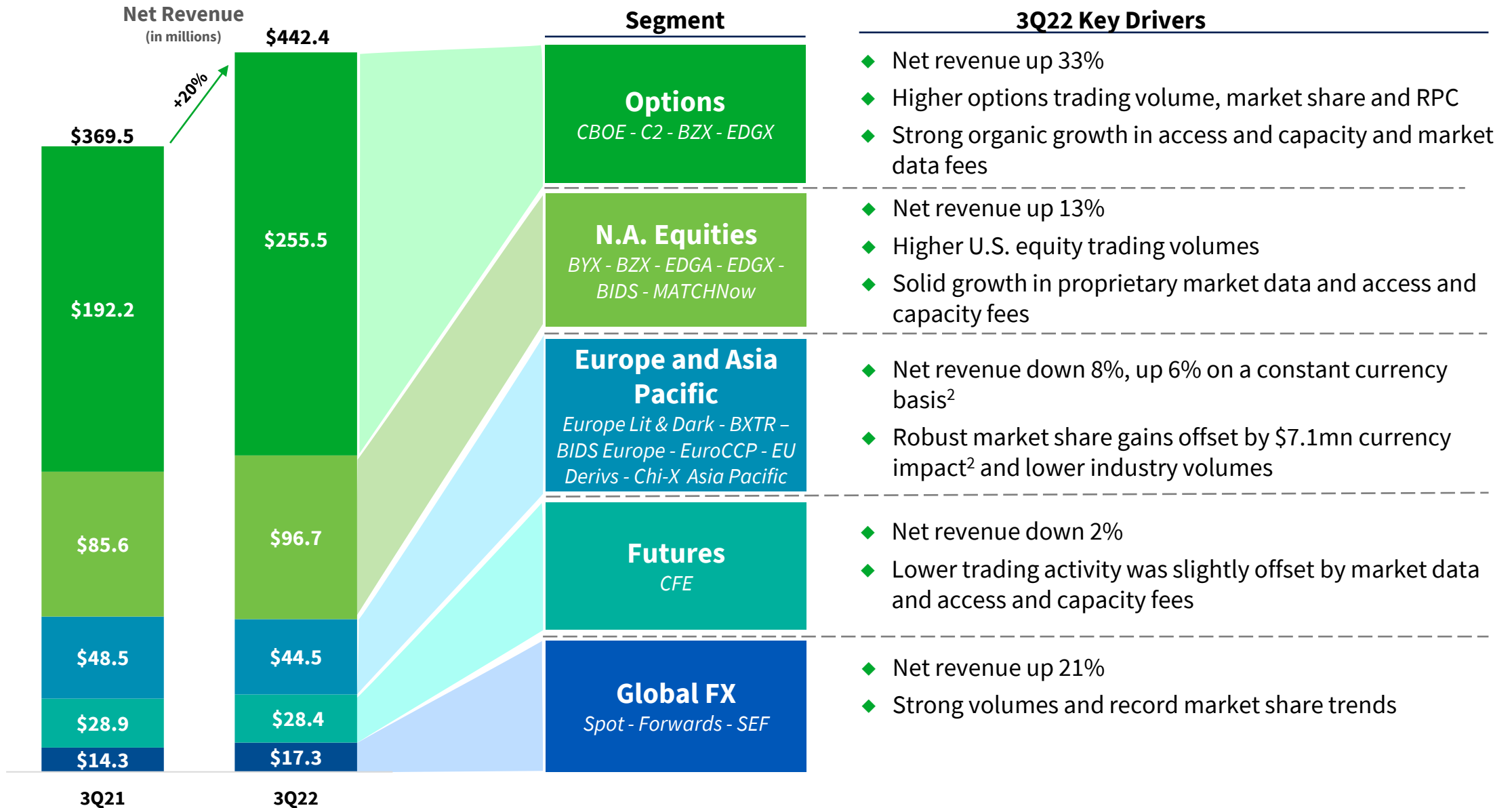
Adjusted Diluted EPS¹
+20% Y/Y

Adjusted EPS¹



¹See appendix for "Non-GAAP Information."

3Q22 Net Revenue by Segment and Key Drivers¹



¹ The Digital segment is not further discussed as results were not material given its establishment during the second quarter of 2022 as a result of the ErisX acquisition on May 2, 2022. ²See appendix for “Non-GAAP Information.”

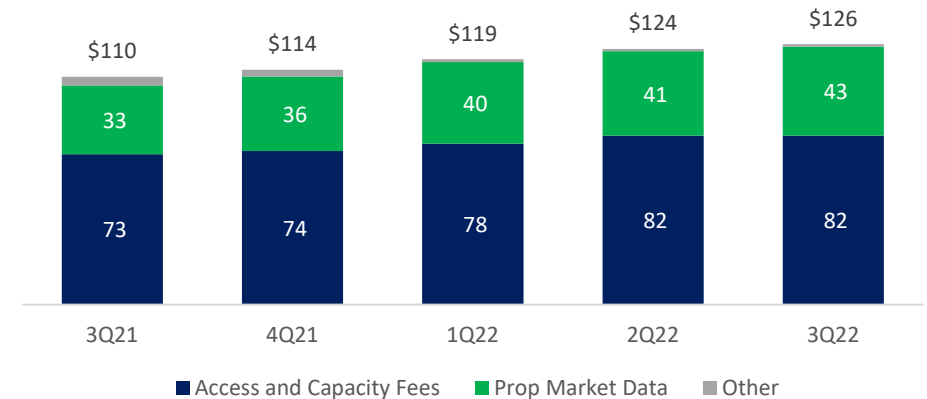
Grew Data and Access Solutions Net Revenue 15% YoY, Organic Growth of 12%¹



Reaffirmed targeted 2022 organic growth rate for Data and Access Solutions business of 10-13%, ahead of our medium-term guidance²

- ❖ 3Q22 Data and Access Solutions net revenue of \$123.9 million up 15%; organic growth of 12% YoY¹
 - ◆ Organic growth excludes \$3 million of revenue from acquisitions¹
- ❖ 3Q22 growth of Data and Access Solutions revenue within guided range
 - ◆ Reaffirmed targeted 2022 annual organic net revenue growth of 10-13%
 - ◆ Additional units or subscribers expected to remain a key driver of organic DnA revenue growth
- ❖ Over 60% of organic market data revenue growth and over 95% of organic access and capacity fee revenue growth in 3Q22 driven by additional subscriptions or incremental units

Data & Access Solutions Gross Revenue
(in millions)



¹ See appendix for “Non-GAAP Information.”

² 2022 Guidance is as of Nov 4, 2022, medium-term guidance as of Feb 4, 2022.

3Q22 Adjusted Operating Expenses Up 23%, Driven by Acquisitions and Compensation and Benefits

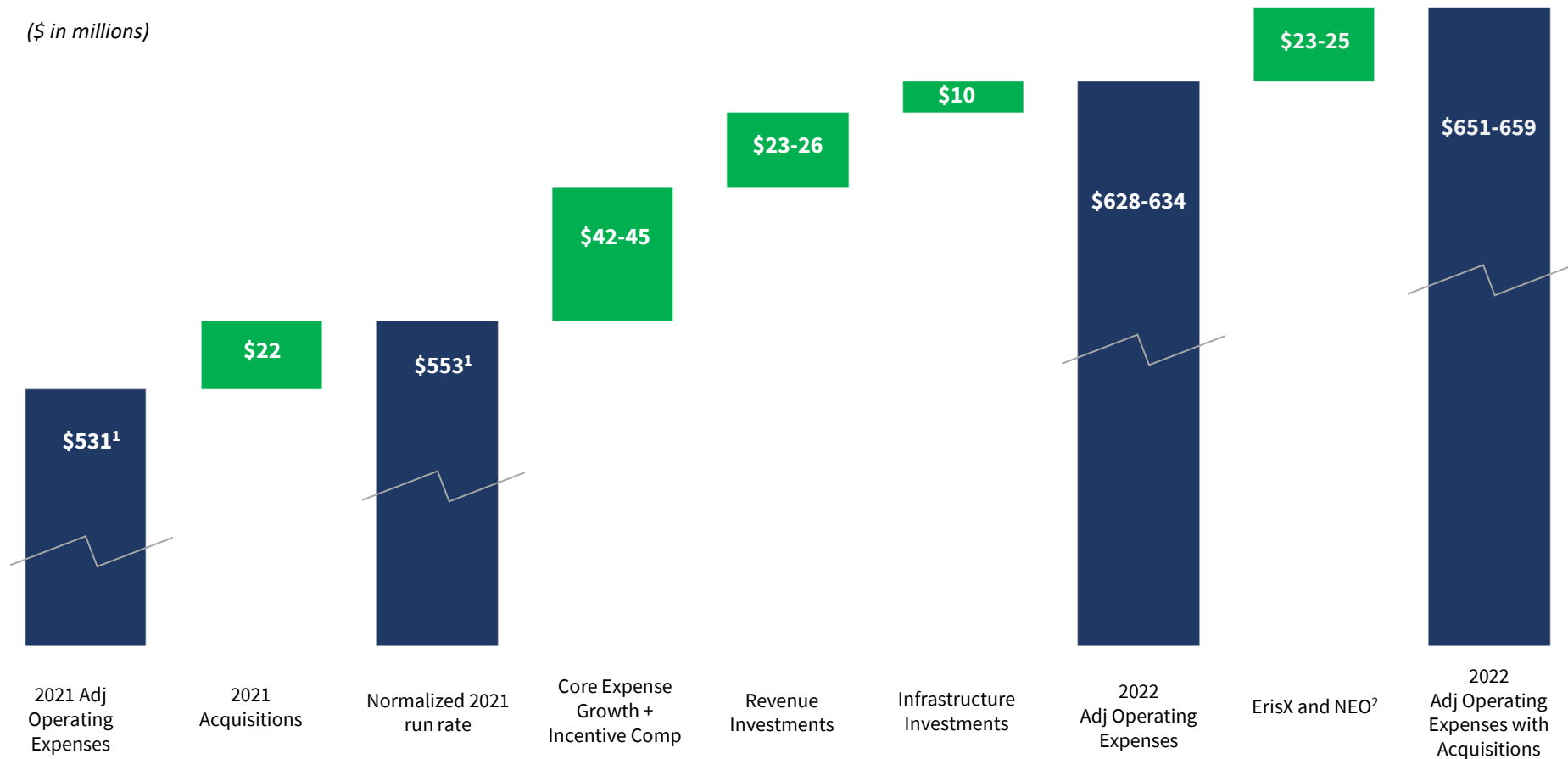


- ❖ 3Q22 expense increase driven by addition of ErisX and NEO, as well as higher compensation and benefits
 - ❖ \$28 million increase in compensation-related expenses
 - ❖ \$4 million increase in travel and promotional fees
- ❖ Excluding acquisitions, adjusted operating expenses¹ were up \$25 million or 18%

Adjusted Operating Expenses¹ (in millions)	3Q22	3Q21	\$ Chg	% Chg
Compensation and benefits	\$102.0	\$74.0	\$28.0	38%
Depreciation and amortization ¹	10.6	11.0	(0.4)	-4%
Technology support services	19.1	16.7	2.4	14%
Professional fees and outside services	20.4	24.0	(3.6)	-15%
Travel and promotional	6.1	2.3	3.8	165%
Facilities costs	6.2	5.8	0.4	7%
Other expenses	8.4	6.5	1.9	29%
Total¹	\$172.8	\$140.3	\$32.5	23%

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

Adjusted Operating Expense Guidance for 2022¹



¹Adjusted to reflect impact of certain items. See Appendix for “Non-GAAP information”

²ErisX is expected to close in the second quarter of this year, subject to customary closing conditions, and NEO is expected to close in the second or third quarter of the year, subject to regulatory review and other customary closing conditions. Guidance as of April 29, 2022

Updated 2022 Guidance



2022 Full-Year Guidance ^{1,2} (\$ in millions)	2022 Guidance as of November 4, 2022	2022 Guidance as of July 29, 2022	2022 Guidance as of Apr. 29, 2022	2022 Guidance as of Feb. 4, 2022	2021 Actual ³
Data and Access Solutions ⁴ organic revenue growth rate	10 to 13%	10 to 13%	8 to 11%	7 to 10%	15%
Net revenue growth from acquisitions held <12 months	2 to 3%	2 to 3%	2 to 3%	1 to 3%	7%
Total organic net revenue growth rate	14 to 16%	9 to 11%	5 to 7%	5 to 7%	11%
Adjusted operating expenses ⁵	\$651 to \$659	\$659 to \$667	\$617 to \$625	\$617 to \$625	\$531
Depreciation and amortization (excluding amortization of acquired intangible assets)	\$40 to \$44	\$40 to \$44	\$40 to \$44	\$40 to \$44	\$41
Effective tax rate on adjusted earnings	27.5 to 29.5%	27.5 to 29.5%	27.5 to 29.5%	27.5 to 29.5%	27.7%
Capital expenditures	\$43 to \$48	\$47 to \$52	\$47 to \$52	\$47 to \$52	\$51

¹Specific 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 July 29, 2022, and investment in launching pan-European trading and clearing.

³See "Non-GAAP Information" in the appendix for reconciliations of 2021 actual.

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

⁵Adjusted operating expenses exclude acquisition-related expenses and amortization of acquired intangible assets. The amortization of acquired intangible assets was \$127 million for 2021 and is now expected to be \$123 million for 2022. Adjustments included in the non-GAAP reconciliation.

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 in 3Q22 and repaid \$100mn of debt during 3Q22; \$233mn of availability remaining under share repurchase authorizations

Debt Outstanding (\$ in millions)	Sept. 30, 2021	Dec. 31, 2021	Mar. 31, 2022	June 30, 2022	Sept. 30, 2022
3.650% Senior Notes (10Y; Due 2027)	\$650	\$650	\$650	\$650	\$650
3.000% Senior Notes (10Y; Due 2032)	-	-	300	300	300
1.625% Senior Notes (10Y; Due 2030)	500	500	500	500	500
Revolving Credit Agreement	-	-	-	-	-
Term Loan Facility	160	160	160	525	425
EuroCCP Credit Facility	-	-	-	-	-
Total Debt (Gross)	\$1,310	\$1,310	\$1,610	\$1,975	\$1,875
Debt to EBITDA TTM ¹	1.4x	1.3x	1.6x	1.9x	1.7x
Adjusted Cash & Financial Investments ¹	\$393	\$325	\$660	\$349	\$355
Share Repurchases	\$0.0	\$0.0	\$70.0	\$15.6	\$0.0
Dividends Paid	51.5	51.5	51.4	51.2	53.4
Total Capital Returned to Shareholders	\$51.5	\$51.5	\$121.4	\$66.8	\$53.4

¹See Appendix for "Non-GAAP Information."

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

Q&A

Appendix

Options 3Q22 Net Revenue Up 33%, Reflecting Y/Y Increase in ADV and Recurring Non-transaction Revenue



- ◆ Higher transaction fees from index and multi-listed options given stronger volumes, market share and RPC
- ◆ Access and capacity fees plus proprietary market data were up a combined 28%

Options Selected Revenue Data (\$ in millions)	3Q22	3Q21	Chg
Net Revenue	\$255.5	\$192.2	33%
Net transaction and clearing fees¹	\$210.1	\$150.5	40%
Index options	168.0	107.2	57%
Multi-listed options	42.1	43.3	-3%
Access and capacity	\$38.6	\$31.0	25%
Market data	\$26.4	\$20.9	26%
Market data – proprietary	18.4	13.4	37%
Market data – industry	8.0	7.5	7%
Options Key Operating Stats	3Q22	3Q21	Chg
Total market share	33.8%	31.3%	2.5pts
Multi-listed options	28.6%	27.6%	1.0pts
Total ADV (in thousands)	13,521	11,764	15%
Index options	2,929	1,970	49%
Multi-listed options	10,592	9,794	8%
Total RPC	\$0.242	\$0.200	21%
Index options	\$0.896	\$0.850	5%
Multi-listed options	\$0.061	\$0.069	-11%

¹See appendix for “Non-GAAP Information.”

North American (N.A.) Equities 3Q22 Net Revenue Up 13%, Driven by Solid Industry Volumes



- ◆ Net revenue increase reflects \$5.4 million contribution from NEO
- ◆ U.S. equities transaction and clearing fees were helped by higher year-over-year industry volumes
- ◆ Access and capacity fee growth remained strong, up 10% as compared to 3Q21

N.A. Equities Selected Revenue Data (\$ in millions)	3Q22	3Q21	Chg
Net Revenue	\$96.7	\$85.6	13%
Net transaction and clearing fees ¹	\$32.5	\$27.3	19%
Market data	\$34.0	\$31.8	7%
Market data - proprietary	14.1	10.7	32%
Market data - SIP ²	19.9	21.1	-6%
Access and capacity fees	\$27.8	\$25.2	10%
N.A. Equities Key Operating Stats	3Q22	3Q21	Chg
U.S. Equities Exchange (shares in billions)			
Total Market Share	13.3%	14.0%	-0.7pts
Market ADV	10.9	9.8	12%
ADV (matched shares)	1.5	1.4	6%
Net capture (per 100 touched shares)	\$0.023	\$0.020	18%
U.S. Equities Off-Exchange (shares in millions)			
Off-Exchange ATS Block Market Share % ³	19.7%	22.9%	-3.2pts
ADV (matched shares)	80.1	73.0	10%
Net capture (per 100 touched shares)	\$0.114	\$0.122	-7%
Canadian Equities (shares in millions) ⁴			
Total Market Share Percent	12.2%	3.4%	8.8pts
ADV (matched shares, in millions)	113.2	37.8	199%
Net capture (per 10,000 touched shares, in CAD)	CAD 4.478	CAD 8.342	-46%

¹See appendix for "Non-GAAP Information."

²Includes SIP audit recoveries of \$1.0 million in 3Q22 and \$0.1 million in 3Q21.

³Represents market share for 3Q22 through Aug 2022.

⁴Represents only MATCHNow in 3Q21, NEO included with MATCHNow as of 3Q22.

Europe and APAC Net Revenue down 8% for 3Q22, Driven by Currency Headwinds



- ◆ Net revenue decrease reflects \$7.1 million impact from stronger USD in 3Q22 vs. 3Q21¹
- ◆ Cboe Europe's overall equities market share was 24.6% in 3Q22 versus 18.2% in 3Q21
- ◆ In 3Q22, Cboe was Europe's largest stock exchange and Cboe BIDS Europe was Cboe's European block trading platform²

Europe and APAC Selected Revenue Data (\$ in millions)	3Q22	3Q21	Chg
Net Revenue	\$44.5	\$48.5	-8%
Net transaction and clearing fees¹	\$23.5	\$25.8	-9%
Net transaction fees	16.6	17.4	-5%
Net clearing fees	6.9	8.4	-18%
Market data ³	\$8.4	\$7.3	15%
Access and capacity fees ³	\$8.1	\$9.4	-14%
Other ⁴	\$4.5	\$6.0	-25%
Europe Key Operating Stats	3Q22	3Q21	Chg
European Equities:			
Total market share	24.6%	18.2%	6.4pts
Market ADV (in billions)	€ 39.2	€ 39.6	-1%
Net capture (per matched notional value, in bps)	0.229	0.264	-13%
EuroCCP:			
Trades cleared (in millions)	341.5	306.1	12%
Fee per trade cleared	€ 0.008	€ 0.010	-17%
Net settlement volume (in millions)	2.5	2.5	3%
Net fee per settlement	€ 0.902	€ 0.869	4%
APAC Key Operating Stats	3Q22	3Q21	Chg
Australian Equities:			
Total market share	16.7%	15.7%	1.0pts
Market ADV (AUD in billions)	\$0.7	\$0.8	-13%
Net capture (per matched notional value)	\$0.168	\$0.173	-3%
Japanese Equities:			
Total market share	4.4%	2.4%	2.0pts
Market ADV (JYP in billions)	¥160.6	¥88.7	81%
Net capture (per matched notional value)	¥0.259	¥0.364	-29%

¹See appendix for "Non-GAAP Information." ²Source: big xyt ³Includes a \$0.9mn reclass from access and capacity fees to market data ⁴Primarily includes trade reporting and EuroCCP net interest income

Futures 3Q22 Net Revenue Down 2%, Reflecting Volume Declines



- ◆ Revenue decrease driven by lower transaction revenues as compared to 3Q21
- ◆ Access and capacity and market data saw modest year-over-year improvement during the quarter

Futures Selected Revenue Data (\$ in millions)	3Q22	3Q21	Chg
Net Revenue	\$28.4	\$28.9	-2%
Net transaction and clearing fees ¹	\$22.3	\$23.2	-4%
Access and capacity	\$5.0	\$4.9	2%
Market data	\$1.9	\$1.7	12%
Futures Key Operating Stats (in thousands, except RPC)	3Q22	3Q21	Chg
Total ADV	205	223	-8%
Total RPC	\$1.700	\$1.626	5%

¹See appendix for “Non-GAAP Information.”

Global FX Net 3Q22 Revenue Up 21%

- ◆ Revenue increase driven by higher volumes and continued market share gains
- ◆ Market share hit a record at 17.8% for the quarter

FX Selected Revenue Data (\$ in millions)	3Q22	3Q21	Chg
Net Revenue	\$17.3	\$14.3	21%
Net transaction and clearing fees ¹	14.6	11.8	24%
Non-transaction revenue	2.7	2.5	8%
FX Key Operating Stats	3Q22	3Q21	Chg
Market share ²	17.8%	17.0%	0.8pts
Average Daily Notional Value (\$ in billions)	\$41.3	\$32.4	27%
Net capture (per one million dollars traded)	\$2.68	\$2.77	-3%

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).

Third Quarter Financial Overview



Adjusted Financial Results¹ (\$ in millions, except per share)	3Q22	3Q21	% Chg
Net Revenue ²	\$442.4	\$369.5	20%
Adjusted Operating Expenses ¹	\$172.8	\$140.3	23%
Adjusted Operating Income ¹	\$269.6	\$229.2	18%
<i>Adjusted Operating Margin¹</i>	60.9%	62.0%	-1.1pts
Adjusted Net Income Allocated to Common Stockholders ¹	\$185.2	\$154.9	20%
Adjusted Diluted EPS ¹	\$1.74	\$1.45	20%
Adjusted EBITDA ¹	\$287.1	\$239.6	20%
<i>Adjusted EBITDA Margin¹</i>	64.9%	64.8%	0.1pts

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 Revenue¹ (in millions)	3Q22	3Q21	% Chg
Cash and Spot Markets	\$98.1	\$93.1	5%
Data and Access Solutions	123.9	108.2	15%
Derivatives Markets	220.4	168.2	31%
Total	\$442.4	\$369.5	20%

¹Net revenue represents revenue less cost of revenues

Expense Bridge Summary

Adjusted Operating Expenses Bridge for 2020 to 2021	
<i>(\$ in millions)</i>	
2020 adjusted operating expenses¹	\$ 416
Acquisitions	49
Non-recurring savings	12
Core	17
Facilities overlap	5
Investments	12
EU derivatives buildout	8
Chi-X 2H21 investment	12
	\$ 115
2021 adjusted operating expenses¹	\$ 531

Prioritizing investments to:

- Broaden geographic footprint (Cboe APAC, Euro derivs)
- Leverage core capabilities (24x5, BIDS and Nanos) and
- Expanding our access (Derivatives, Cloud)

Adjusted Operating Expenses Bridge for 2021 to 2022			
<i>(\$ in millions)</i>			
2021 adjusted operating expenses¹	\$ 531	*Guidance Range	
2021 Acquisitions		22	22
Core ²		42	45
Revenue Investments		23	26
Infrastructure Investments		10	10
ErisX and Neo		23	25
		120	128
2022 Guidance as of November 4, 2022		651	659

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

² Core now combines legacy core and incentive compensation, prior quarter amounts were \$31mn core and \$12mn incentive

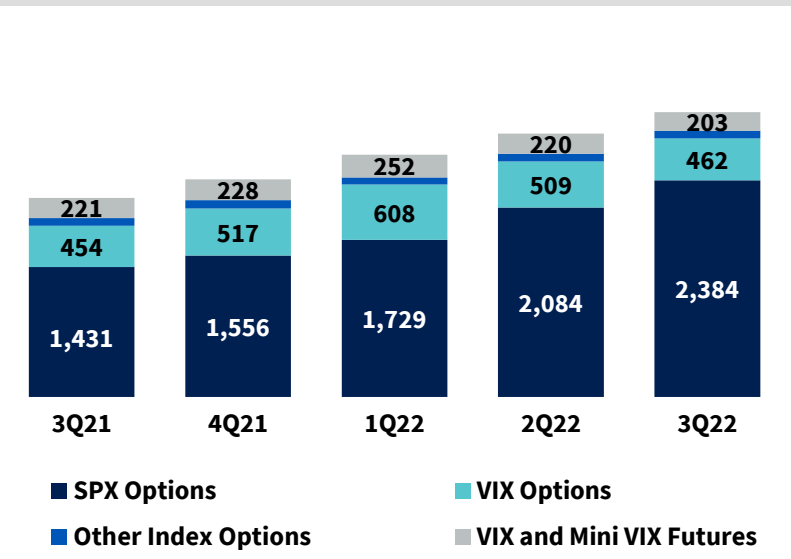
*Totals may not foot due to rounding

Focused on Growing the Proprietary Index Suite

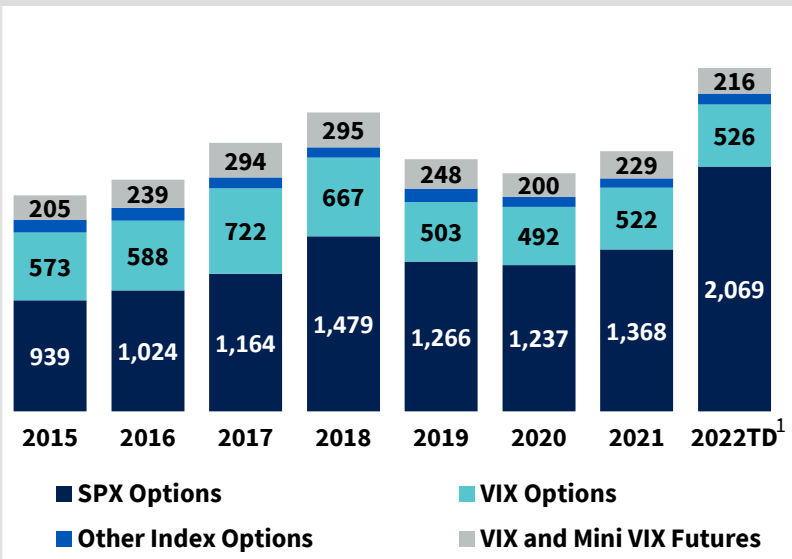
Index customers at Cboe typically use SPX and VIX options and futures interchangeably or in tandem, depending on market conditions

- ◆ 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
 - ◆ Launched Nanos by Cboe in March 2022
 - ◆ Launched Tuesday-expiring SPX weeklys April 18, 2022, Thursday expirations on May 11, 2022
 - ◆ Hosted Risk Management Conference (RMC) in October 2022
 - ◆ Planned expanded global trading hours for XSP options in December

Quarterly ADV for Index Options and VIX Futures (in thousands)



Annual ADV for Index Options and VIX Futures (in thousands)



¹2022TD is through 3Q22.

Cboe's Commitment to ESG Initiatives



Environmental

- ◆ **Committing to Net Zero:** Cboe is committing to reaching net zero emissions across our operations and material scope 3 emissions by 2050
- ◆ **Reducing our impact:** Implemented business recycling, repurposing, and waste management reduction programs and provide pre-tax public transportation and bike sharing passes
- ◆ **ESG Exchange Traded Products:** Trade ESG-themed ETPs (as defined by issuers) on the BZX Equities Exchange and list options on the S&P 500 ESG Index
- ◆ **SSE member:** Named a founding member of the SSE derivatives network



Social

- ◆ **Cboe Empowers:** Community engagement program that provides mentorship, scholarships and guidance to under-resourced students throughout their educational journey. In April, provided five full-ride scholarships to Black and Latinx high school students from the South and West sides of Chicago to attend the school of their choice
- ◆ **Diversity:** Cboe sees diversity as an integral part of every step in human capital management. As a result, we have recently outlined several social impact goals for the coming years
- ◆ **Charity:** Cboe made over \$3.7mn in charitable contributions through a variety of giving programs in 2021



Governance

- ◆ **Independent Board:** 12 of the 13 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:** 43% of Directors represent gender and ethnic diversity: 21% of Directors women and 21% African American/Asian-American*

* May not foot due to rounding.

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 and clearing fees, adjusted operating expenses, adjusted operating income, organic net revenue, inorganic net revenue, adjusted operating margin, adjusted net income allocated to common stockholders and adjusted diluted earnings per share, adjusted income before income taxes, adjusted revenue less cost of revenue, effective tax rate on adjusted earnings, adjusted cash, EBITDA, EBITDA margin, adjusted EBITDA and adjusted EBITDA margin.

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

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 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.

Non-GAAP Information



Reconciliation of Net Transaction and Clearing Fees by Segment

For the Three Months Ended December 31 (in millions)	Options		N.A. Equities		Europe and Asia Pacific		Futures		Global FX		Total	
	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020
Transaction and clearing fees	\$ 330.9	\$ 269.9	\$ 270.1	\$ 265.1	\$ 41.1	\$ 30.0	\$ 24.2	\$ 16.0	\$ 12.5	\$ 11.7	\$ 678.8	\$ 592.7
Liquidity payments	(162.2)	(145.0)	(226.3)	(237.0)	(7.2)	(4.7)	-	-	-	-	(395.7)	(386.7)
Routing and clearing	(6.9)	(4.6)	(9.8)	(10.4)	(4.9)	(6.8)	-	-	(0.2)	-	(21.8)	(21.8)
Net transaction and clearing fees	\$ 161.8	\$ 120.3	\$ 34.0	\$ 17.7	\$ 29.0	\$ 18.5	\$ 24.2	\$ 16.0	\$ 12.3	\$ 11.7	\$ 261.3	\$ 184.2

For the Three Months Ended March 31 (in millions)	Options		N.A. Equities		Europe and Asia Pacific		Futures		Global FX		Total	
	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021
Transaction and clearing fees	\$ 348.3	\$ 308.7	\$ 330.8	\$ 381.8	\$ 50.1	\$ 34.7	\$ 25.8	\$ 25.6	\$ 14.6	\$ 12.4	\$ 769.6	\$ 763.2
Liquidity payments	(167.6)	(166.0)	(288.3)	(330.5)	(11.6)	(5.3)	-	-	-	-	(467.5)	(501.8)
Routing and clearing	(6.7)	(5.5)	(10.5)	(17.3)	(4.9)	(4.3)	-	-	(0.2)	-	(22.3)	(27.1)
Net transaction and clearing fees	\$ 174.0	\$ 137.2	\$ 32.0	\$ 34.0	\$ 33.6	\$ 25.1	\$ 25.8	\$ 25.6	\$ 14.4	\$ 12.4	\$ 279.8	\$ 234.3

For the Three Months Ended June 30 (in millions)	Options		N.A. Equities		Europe and Asia Pacific		Futures		Global FX		Digital		Total	
	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021
Transaction and clearing fees	\$ 353.0	\$ 283.2	\$ 304.5	\$ 268.0	\$ 40.6	\$ 33.3	\$ 23.0	\$ 22.2	\$ 14.1	\$ 11.5	\$ 0.1	\$ -	\$ 735.3	\$ 618.2
Liquidity payments	(158.4)	(144.1)	(261.4)	(228.4)	(9.1)	(5.4)	-	-	-	-	(0.1)	-	(429.0)	(377.9)
Routing and clearing	(5.9)	(5.0)	(10.5)	(10.0)	(4.3)	(4.9)	-	-	(0.2)	-	-	-	(20.9)	(19.9)
Net transaction and clearing fees	\$ 188.7	\$ 134.1	\$ 32.6	\$ 29.6	\$ 27.2	\$ 23.0	\$ 23.0	\$ 22.2	\$ 13.9	\$ 11.5	\$ -	\$ -	\$ 285.4	\$ 220.4

For the Three Months Ended Sept 30 (in millions)	Options		N.A. Equities		Europe and Asia Pacific		Futures		Global FX		Digital		Total	
	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

Non-GAAP Information



Reconciliation of GAAP Net Revenues to Net Revenues in Constant Currency - Three Months Ended September 30, 2022

Net Revenue (in millions)	Three Months Ended, September 30, 2022
Europe and Asia Pacific net revenues	\$44.5
Constant currency adjustment	7.1
Europe and Asia Pacific net revenue in constant currency	\$51.6

Non-GAAP Information



Reconciliation of Net Revenue by Revenue Caption –

For the Three Months Ended Sept. 30 (in millions)	Cash and Spot Markets		Data and Access Solutions		Derivatives Markets		Total	
	2022	2021	2022	2021	2022	2021	2022	2021
Transaction and clearing fees	\$ 315.5	\$ 301.2	\$ -	\$ -	\$ 400.0	\$ 331.7	\$ 715.5	\$ 632.9
Access and capacity fees	-	-	81.8	72.8	-	-	81.8	72.8
Market data fees	19.9	21.1	43.1	33.4	8.0	7.5	71.0	62.0
Regulatory fees	90.4	25.3	-	-	24.5	9.3	114.9	34.6
Other revenue	8.4	9.7	1.2	4.1	0.7	0.7	10.3	14.5
Total revenues	434.2	357.3	126.1	110.3	433.2	349.2	993.5	816.8
Liquidity payments	231.3	222.5	-	-	161.0	152.8	392.3	375.3
Routing and clearing fees	12.9	13.8	-	-	7.3	5.2	20.2	19.0
Section 31 fees	89.9	24.8	-	-	15.5	3.1	105.4	27.9
Royalty fees and other cost of revenues	2.0	3.1	2.2	2.1	29.0	19.9	33.2	25.1
Total cost of revenues	336.1	264.2	2.2	2.1	212.8	181.0	551.1	447.3
Revenues less cost of revenues (net revenue)	98.1	93.1	123.9	108.2	220.4	168.2	442.4	369.5
Acquisition revenue less cost of revenues (inorganic net revenue)	(2.2)	-	(3.1)	-	-	-	(5.3)	-
Organic net revenue	95.9	93.1	120.8	108.2	220.4	168.2	437.1	369.5

Non-GAAP Information

(in millions, except per share amounts)	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22
Reconciliation of Net Income Allocated to Common Stockholders to Non-GAAP								
Net income allocated to common stockholders	\$ 136.8	\$ 105.2	\$ 120.0	\$ 165.3	\$ 527.3	\$ 109.2	\$ (184.5)	\$ 149.6
Acquisition-related expenses (1)	3.4	1.8	6.7	3.7	15.6	2.0	14.3	1.6
Investment establishment costs (2)	-	-	-	-	-	3.0	-	-
Gain on investments (3)	-	-	-	-	-	-	(7.5)	-
Loan Forgiveness (4)	-	-	-	-	-	-	(1.3)	-
Amortization of acquired intangible assets (5)	32.9	30.5	31.8	31.4	126.6	30.6	30.1	30.4
Goodwill impairment (6)	-	-	-	-	-	-	460.1	0.8
Impairment of Investment (7)	-	-	5.0	-	5.0	-	10.6	-
Change in contingent consideration (8)	-	-	-	(2.7)	(2.7)	-	-	-
Total Non-GAAP adjustments - pretax	36.3	32.3	43.5	32.4	144.5	35.6	506.3	32.8
Income tax expense related to the items above	(8.2)	(7.7)	(8.5)	(7.4)	(31.8)	(8.7)	(143.2)	2.9
Release of tax reserves	-	-	-	(5.4)	(5.4)	-	-	-
Deferred tax remeasurement	-	17.7	-	(3.1)	14.6	-	-	-
Tax reserves (9)	-	-	-	-	-	48.5	-	-
Net income allocated to participating securities - effect on reconciling items	(0.1)	(0.1)	(0.1)	(0.1)	(0.4)	(0.3)	(1.3)	(0.1)
Adjusted net income allocated to common stockholders	\$ 164.8	\$ 147.4	\$ 154.9	\$ 181.7	\$ 648.8	\$ 184.3	\$ 177.3	\$ 185.2
Reconciliation of Diluted EPS to Non-GAAP								
Diluted earnings per common share	\$ 1.27	\$ 0.98	\$ 1.12	\$ 1.54	\$ 4.92	\$ 1.02	\$ (1.74)	\$ 1.41
Per share impact of non-GAAP adjustments noted above	0.26	0.40	0.33	0.16	1.13	0.71	3.41	0.33
Adjusted diluted earnings per common share	\$ 1.53	\$ 1.38	\$ 1.45	\$ 1.70	\$ 6.05	\$ 1.73	\$ 1.67	\$ 1.74
Reconciliation of Operating Margin to Non-GAAP								
Revenue less cost of revenue	\$ 365.5	\$ 350.6	\$ 369.5	\$ 390.5	\$ 1,476.1	\$ 418.1	\$ 424.1	\$ 442.4
Non-GAAP adjustments noted above	-	-	-	-	-	-	-	-
Adjusted revenue less cost of revenue	\$ 365.5	\$ 350.6	\$ 369.5	\$ 390.5	\$ 1,476.1	\$ 418.1	\$ 424.1	\$ 442.4
Operating expenses (10)	\$ 160.9	\$ 160.6	\$ 178.8	\$ 169.9	\$ 670.2	\$ 178.4	\$ 661.5	\$ 205.6
Non-GAAP expense adjustments noted above	(36.3)	(32.3)	(38.5)	(32.4)	(139.5)	(32.6)	504.5	32.8
Adjusted operating expenses	\$ 124.6	\$ 128.3	\$ 140.3	\$ 137.5	\$ 530.7	\$ 145.8	\$ 157.0	\$ 172.8
Non-GAAP expense adjustments to arrive at organic adjusted operating expenses	(18.4)	(17.0)	(12.6)	(10.7)	(58.7)	(6.4)	(13.7)	(7.6)
Organic adjusted operating expenses	\$ 106.2	\$ 111.3	\$ 127.7	\$ 126.8	\$ 472.0	\$ 139.4	\$ 143.3	\$ 165.2
Operating income	\$ 204.6	\$ 190.0	\$ 190.7	\$ 220.6	\$ 805.9	\$ 239.7	\$ (237.4)	\$ 236.8
Non-GAAP expense adjustments noted above	36.3	32.3	38.5	32.4	139.5	32.6	504.5	32.8
Adjusted operating income	\$ 240.9	\$ 222.3	\$ 229.2	\$ 253.0	\$ 945.4	\$ 272.3	\$ 267.1	\$ 269.6
Adjusted operating margin (11)	65.9%	63.4%	62.0%	64.8%	64.0%	65.1%	63.0%	60.9%
Reconciliation of Income Tax Rate to Non-GAAP								
Income before income taxes	\$ 192.9	\$ 179.2	\$ 173.8	\$ 210.2	\$ 756.1	\$ 224.9	\$ (256.8)	\$ 229.0
Non-GAAP adjustments noted above	36.3	32.3	43.5	32.4	144.5	35.6	506.3	32.8
Adjusted income before income taxes	\$ 229.2	\$ 211.5	\$ 217.3	\$ 242.6	\$ 900.6	\$ 260.5	\$ 249.5	\$ 261.8
Income tax expense	\$ 55.7	\$ 73.7	\$ 53.4	\$ 44.3	\$ 227.1	\$ 115.3	\$ (72.3)	\$ 78.8
Non-GAAP adjustments noted above	8.2	(10.0)	8.5	15.9	22.6	(39.8)	143.2	(2.9)
Adjusted income tax expense	\$ 63.9	\$ 63.7	\$ 61.9	\$ 60.2	\$ 249.7	\$ 75.5	\$ 70.9	\$ 75.9
Adjusted income tax rate	27.9%	30.1%	28.5%	24.8%	27.7%	29.0%	28.4%	29.0%

(1) This amount includes professional fees (which includes fees associated with the valuation of the Cboe Digital goodwill impairment) and outside services.

(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) In 3Q21 this amount represents the impairment of investment related to the write down of the company's investment in CurveGlobal. In 2Q22 this amount represents the impairment of investment related to the Company's minority investment in American Financial Exchange, LLC.

(8) This amount represents the change in contingent consideration related to the adjustment recorded to MATCHNow's contingent consideration.

(9) This amount represents the tax reserves related to Section 199 matters.

(10) 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" (\$0.1 million and \$0.3 million in expense for the three months ended September 30, 2022 and 2021, respectively, and \$2.6 million and \$1.7 million in expense for the nine months ended September 30, 2022 and 2021, respectively), and are directly offset by deferred compensation income, expenses and dividends included within "Other income, net" (\$0.1 million and \$0.3 million in income, expense and dividends in the three months ended September 30, 2022 and 2021, respectively, and \$2.6 million and \$1.7 million in income, expense and dividends in the nine months ended September 30, 2022 and 2021, respectively), on 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."

(11) 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) 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, and impairment of 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)	3Q21	4Q21	2021	1Q22	2Q22	3Q22
Net income allocated to common stockholders	\$ 120.0	\$ 165.3	\$ 527.3	\$ 109.2	\$ (184.5)	\$ 149.6
Interest expense	11.7	11.1	47.4	10.8	14.6	15.3
Income tax provision	53.4	44.3	227.1	115.3	(72.3)	78.8
Depreciation and amortization	42.8	42.0	167.4	40.9	40.2	41.0
EBITDA	\$ 227.9	\$ 262.7	\$ 969.2	\$ 276.2	\$ (202.0)	\$ 284.7
EBITDA Margin	61.7%	67.3%	65.7%	66.1%	-47.6%	64.4%
Non-GAAP adjustments not included in above line items						
Acquisition-related expenses	6.7	3.7	15.6	2.0	14.3	1.6
Change in contingent consideration	-	(2.7)	(2.7)	-	-	-
Gain on investment					(7.5)	-
Loan forgiveness					(1.3)	-
Goodwill impairment					460.1	0.8
Investment establishment costs				3.0	-	-
Impairment of investment	5.0	-	5.0	-	10.6	-
Adjusted EBITDA	\$ 239.6	\$ 263.7	\$ 987.1	\$ 281.2	\$ 274.2	\$ 287.1
Adjusted EBITDA Margin	64.8%	67.5%	66.9%	67.3%	64.7%	64.9%

Non-GAAP Information

Adjusted Debt to EBITDA - Trailing Twelve Months¹

(in millions)	4Q21	1Q22	2Q22	3Q22	LTM
Net income allocated to common stockholders	\$ 165.3	\$ 109.2	\$ (184.5)	\$ 149.6	\$ 239.6
Interest expense, net	11.1	10.8	14.6	15.3	51.8
Income tax provision	44.3	115.3	(72.3)	78.8	166.1
Depreciation and amortization	42.0	40.9	40.2	41.0	164.1
EBITDA	\$ 262.7	\$ 276.2	\$ (202.0)	\$ 284.7	\$ 621.6
Non-GAAP adjustments not included in above line items:					
Acquisition-related expenses	3.7	2.0	14.3	1.6	21.6
Gain on investment	-	-	(7.5)	-	(7.5)
Loan forgiveness	-	-	(1.3)	-	(1.3)
Change in contingent consideration	(2.7)	-	-	-	(2.7)
Goowill impairment	-	-	460.1	0.8	460.9
Investment establishment costs	-	3.0	-	-	3.0
Impairment of investment	-	-	10.6	-	10.6
Adjusted EBITDA	\$ 263.7	\$ 281.2	\$ 274.2	\$ 287.1	\$ 1,106.2
Debt at end of period					\$ 1,875.0
Debt to EBITDA					1.7x

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	As of	As of	As of	As of
	9/30/21	12/31/21	3/31/22	6/30/22	9/30/22
Cash and cash equivalents	\$ 392.4	\$ 341.9	\$ 659.4	\$ 373.3	\$ 353.3
Financial investments	26.7	37.1	48.7	68.5	27.4
Less deferred compensation plan assets	(26.2)	(28.0)	(27.4)	(25.5)	(25.4)
Less cash collected for Section 31 fees	-	(25.9)	(20.7)	(67.2)	-
Adjusted Cash	\$ 392.9	\$ 325.1	\$ 660.0	\$ 349.1	\$ 355.3



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