



# Fourth Quarter 2021 Earnings Presentation

February 4, 2022



# Agenda



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## ◆ Strategic Review

**Edward Tilly**

*Chairman, President and Chief Executive Officer*

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## ◆ Financial Review

**Brian Schell**

*Executive Vice President, Chief Financial Officer and Treasurer*

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## ◆ Questions & Answers

**Edward Tilly**

**Brian Schell**

**Chris Isaacson**

*Executive Vice President, Chief Operating Officer*

**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 impact of the novel coronavirus (“COVID-19”) pandemic, including changes to trading behavior broadly in the market; 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; 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; our ability to operate our business without violating the intellectual property rights of others and the costs associated with protecting our intellectual property rights; our ability to attract and retain skilled management and other personnel; 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; and the accuracy of our estimates and expectations. More detailed information about factors that may affect our actual results to differ may be found in our filings with the SEC, including in our Annual Report on Form 10-K for the year ended December 31, 2020 and other filings made from time to time with the SEC.*

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# Strategic Review and Outlook

Edward Tilly  
Chairman, President and CEO

# 4Q21: Capping a Record Year with Another Quarter of Revenue Growth Across All Business Segments

Net revenues grew 27% YoY, backed by strong transaction and non-transaction growth

- ❖ 42% increase in net transaction fees<sup>1</sup>
  - ❖ ADV up 36% in index options and 21% in multi-listed options
  - ❖ ADNV traded on Cboe European Equities up 33%
- ❖ 21% increase in recurring non-transaction revenue
  - ❖ 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

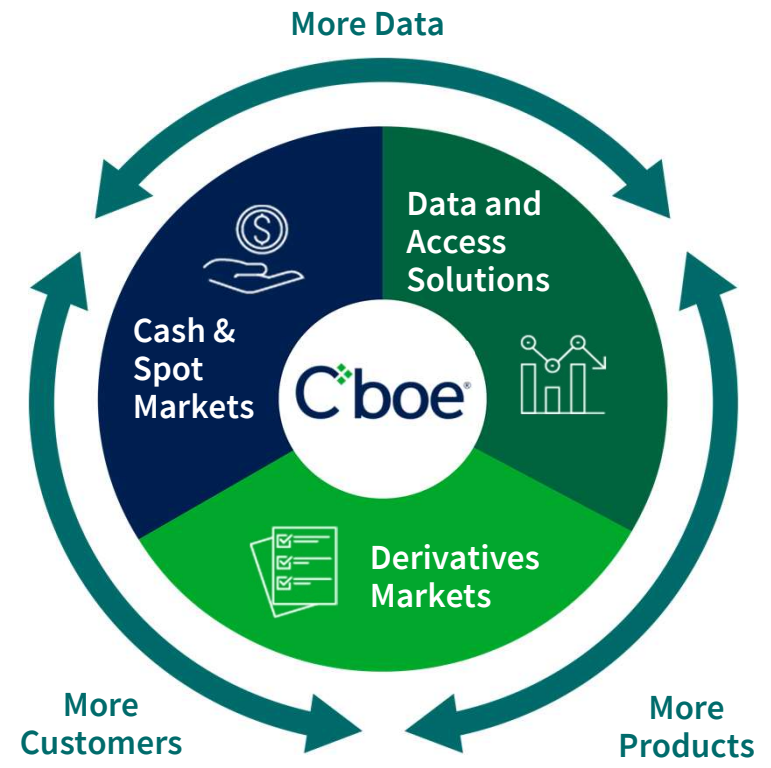
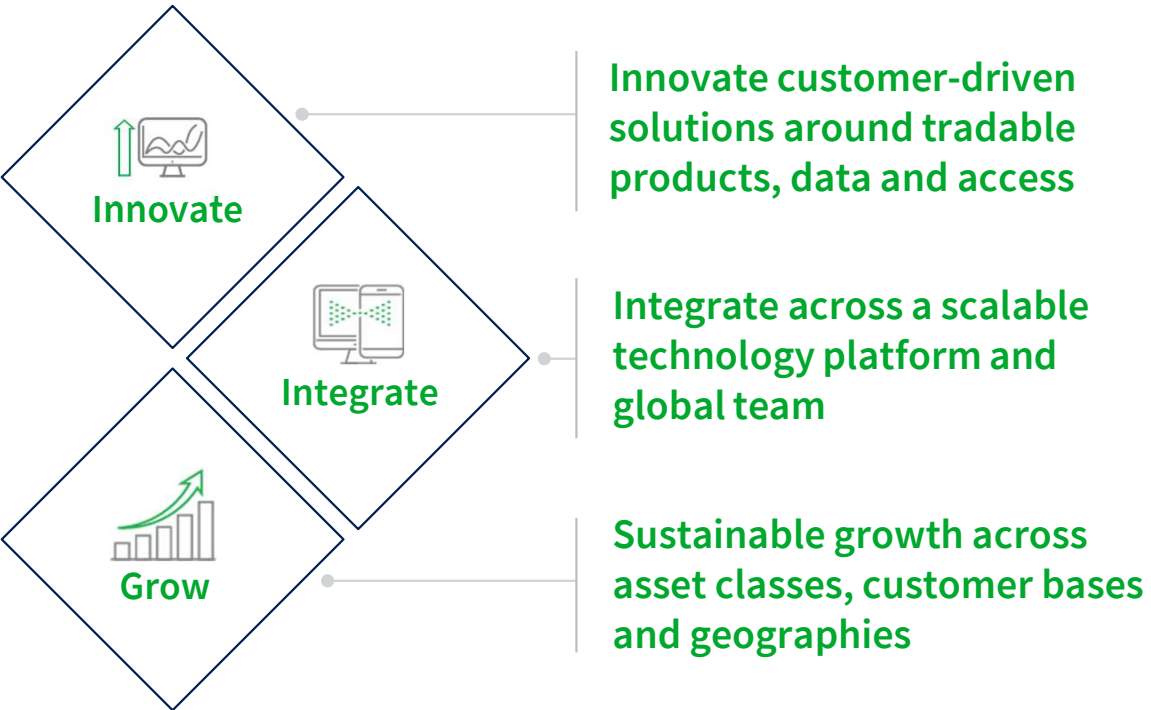


<sup>1</sup>See appendix for "Non-GAAP Information."

# 2022 and Beyond: Continued Growth and Investment



- Targeting medium-term organic net revenue growth of 5 to 7 percentage points annually
- Continuing to invest in organic growth initiatives in 2022
- Recent expansions into Asia-Pacific and Canada, as well as planned expansion into Digital Assets enhance global ecosystem helping propel virtuous cycle of innovation and growth



# Top Strategic Growth Priorities



	Key Trends	Market Opportunity	Sizing the Growth Potential	Cboe Progress
<b>Data and Access Solutions</b>	<ul style="list-style-type: none"> <li>◆ Globalization</li> <li>◆ Access to multi-asset trading capabilities</li> <li>◆ Rise of retail</li> <li>◆ Demand for data</li> <li>◆ ESG</li> </ul>	<ul style="list-style-type: none"> <li>◆ &gt; \$33bn annual spend on financial market data<sup>1</sup></li> <li>◆ &gt;\$4bn annual spend in indices<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>◆ Targeting organic net revenue growth of 7-10% annually over the medium term<sup>4</sup></li> </ul>	<ul style="list-style-type: none"> <li>◆ Delivered 21% recurring non-transaction revenue growth in 4Q21 and 20% for 2021</li> <li>◆ Anticipate 7-10% organic DnA revenue growth in 2022<sup>4</sup></li> <li>◆ Sales investment expected to drive growth</li> <li>◆ Made recent Index senior hires</li> </ul>
<b>Derivatives</b>	<ul style="list-style-type: none"> <li>◆ Globalization</li> <li>◆ Access to multi-asset trading capabilities</li> <li>◆ Rise of retail</li> <li>◆ Demand for data</li> <li>◆ ESG</li> </ul>	<ul style="list-style-type: none"> <li>◆ Targeting &gt;150mn retail accounts for Nanos<sup>2</sup></li> <li>◆ Pan-European equity and index options market is ~1/8 the size of the U.S. market</li> </ul>	<ul style="list-style-type: none"> <li>◆ Derivatives initiatives expected to contribute 2-4% of total organic net revenue growth over the medium term<sup>4</sup></li> </ul>	<ul style="list-style-type: none"> <li>◆ Nanos go live March 14<sup>6</sup></li> <li>◆ 24x5 trading delivering early returns</li> <li>◆ Jan22 Euro derivs volumes and OI grew nearly 3x from Dec21 levels</li> <li>◆ Tue/Thurs scheduled for 2Q/3Q22 launch<sup>6</sup></li> </ul>
<b>Cboe Digital<sup>3</sup></b>	<ul style="list-style-type: none"> <li>◆ Globalization</li> <li>◆ Access to multi-asset trading capabilities</li> <li>◆ Rise of retail</li> <li>◆ Demand for data</li> </ul>	<ul style="list-style-type: none"> <li>◆ Demand for a trusted, transparent and regulated digital asset marketplace</li> </ul>	<ul style="list-style-type: none"> <li>◆ Expecting &gt;25% market CAGR over next 3-5 years<sup>5</sup></li> </ul>	<ul style="list-style-type: none"> <li>◆ Making great progress ahead of closing transaction in 1H22</li> <li>◆ Strong early customer engagement</li> </ul>

**Targeting Medium-Term Organic Total Net Revenue Growth Rate of 5-7%<sup>4</sup> Annually**

<sup>1</sup>Based on Burton-Taylor research reports

<sup>2</sup>Estimate based on top 4 retail brokers' platforms; Nanos planned to launch in 1Q22

<sup>3</sup>ErisX acquisition expected to close in first half of 2022, subject to regulatory approvals and other customary closing conditions

<sup>4</sup>See appendix for "Non-GAAP Information" for disclosures on growth targets; all guidance as of February 4, 2021

<sup>5</sup>Based on publicly available information and Cboe estimates

<sup>6</sup>Subject to regulatory review

# Global Derivatives: Positioned To Drive Growth



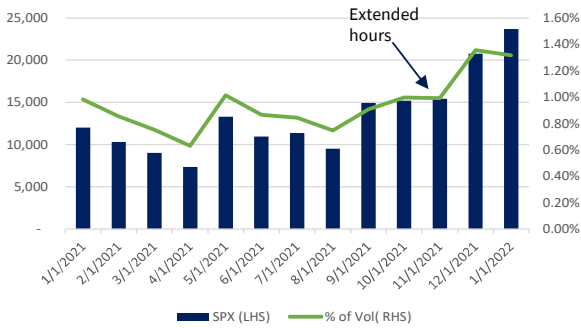
Increasing access for market participants and leveraging our core products

## 24x5 and Tuesday / Thursday Expiry Leveraging Cboe's Core Strength

## nanos by Cboe Launching March 14 (Interactive Brokers, TradeStation, Tradier, Webull)

## European Derivatives Gaining Traction, More Innovation Coming

- On November 21<sup>st</sup> Global Trading Hours were expanded to nearly **24x5** for SPX and VIX options



- Tuesday / Thursday expirations<sup>1</sup>** leverage success we have seen in weekly options contracts, a material driver of volume in the SPX complex in recent years.

**SIMPLE** - nanos provides a **simpler, more accessible** alternative to today's options.

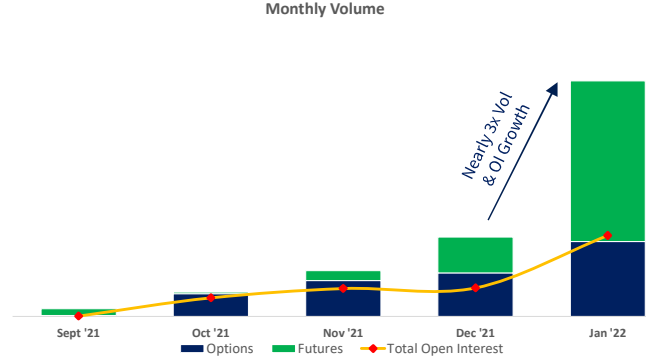
**EASY** - nanos will provide hesitant traders **a place to get started** to turn indecision into action

**AFFORDABLE** - nanos will allow traders to experiment with options while putting **much less money at risk.**

**\*71%** want less choice

**"Lack of Confidence" is the #1 barrier to learning options**

**\*\*75%** want lower price point



- New Countries:** Offering six products currently, growing to ten in April with addition of Italy, Spain, Sweden and Norway<sup>1</sup>
- Adding Weeklies:** Working towards a 2Q or 3Q launch of Weekly Options on Phase 1 Index Products<sup>1</sup> and longer-term plans include a third phase of product expansion to include pan-European single stock options<sup>1</sup>

<sup>1</sup>Subject to regulatory approval

\*Cboe Research - Survey of current retail options traders conducted by The Marketing Store  
\*\*Cboe Research - Survey of retail traders who are familiar with options conducted by The Marketing Store



# Cboe Answering Customer Demand for a Trusted, Transparent and Regulated Digital Asset Marketplace



- Cboe to enter digital asset space through planned acquisition of ErisX<sup>1</sup>
- ErisX operates a U.S. based digital asset spot market, a regulated futures exchange and a regulated clearing house

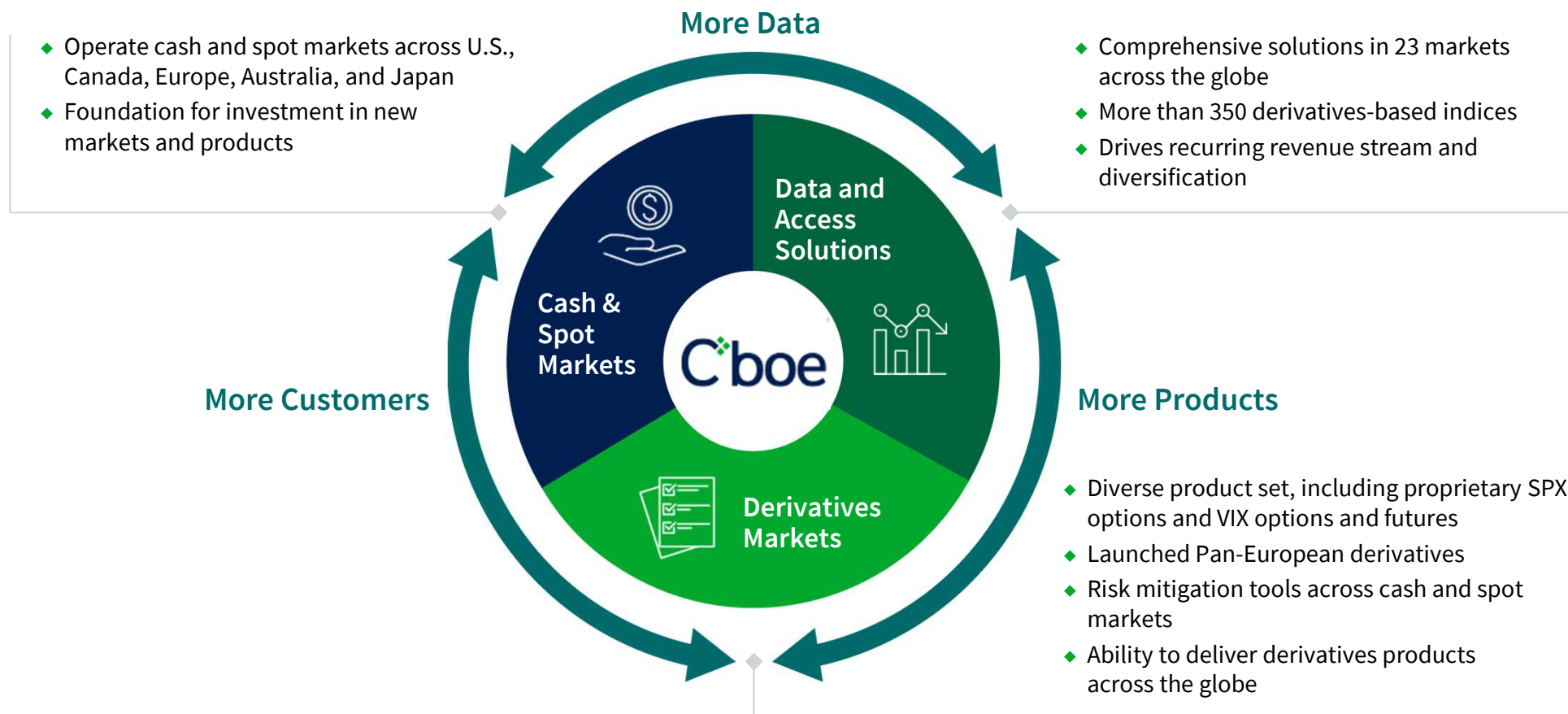
## Digital Advisory Committee

- Expected to include:
  - ❖ DRW
  - ❖ Fidelity Digital Assets
  - ❖ Galaxy Digital
  - ❖ Interactive Brokers
  - ❖ NYDIG
  - ❖ Paxos
  - ❖ Robinhood
  - ❖ Virtu Financial
  - ❖ Webull

Spot Trading	Data Solutions	Derivatives Trading	Clearing
Key Features			
Marketplace	Data	Clearing & Settlement	
<ul style="list-style-type: none"> <li>◆ Proprietary matching engine</li> <li>◆ 24 x 7 capabilities</li> <li>◆ Central limit order book</li> <li>◆ Block Trading facility</li> <li>◆ Accessible contract sizes</li> <li>◆ Single platform for spot &amp; futures</li> </ul>	<ul style="list-style-type: none"> <li>◆ Transparent price discovery</li> <li>◆ Bid/ask info included</li> <li>◆ Broad base of liquidity for efficient price discovery</li> <li>◆ Reliable and resilient</li> </ul>	<ul style="list-style-type: none"> <li>◆ Cloud based, real-time clearing</li> <li>◆ Physical delivery for futures</li> <li>◆ Hot and cold wallet storage</li> <li>◆ Margin (application pending)</li> <li>◆ Sophisticated risk management</li> </ul>	

<sup>1</sup>Expected to close in the first half of 2022, subject to regulatory approvals and other customary closing conditions.

# Cboe Ecosystem Enables Virtuous Cycle of Innovation and Growth



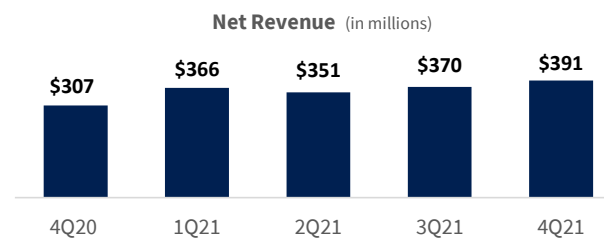
# Financial Overview and Guidance

Brian Schell  
EVP, CFO and Treasurer

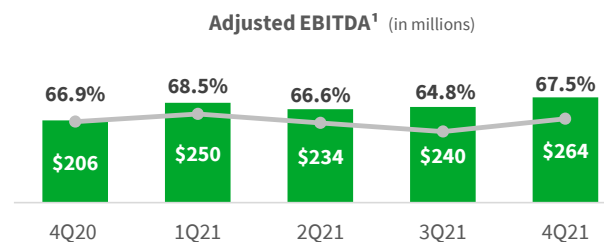
# 4Q21 Financial Summary



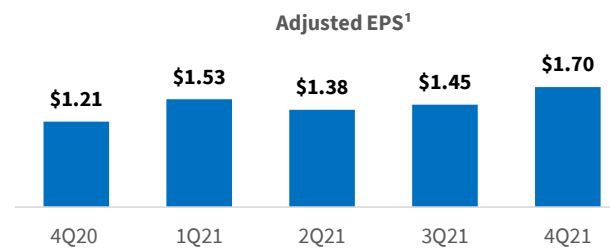
**\$391MM**  
Net Revenue  
**+27% Y/Y**



**\$264MM**  
Adjusted EBITDA<sup>1</sup>  
**+28% Y/Y**  
(Adjusted EBITDA margin of 67.5%)

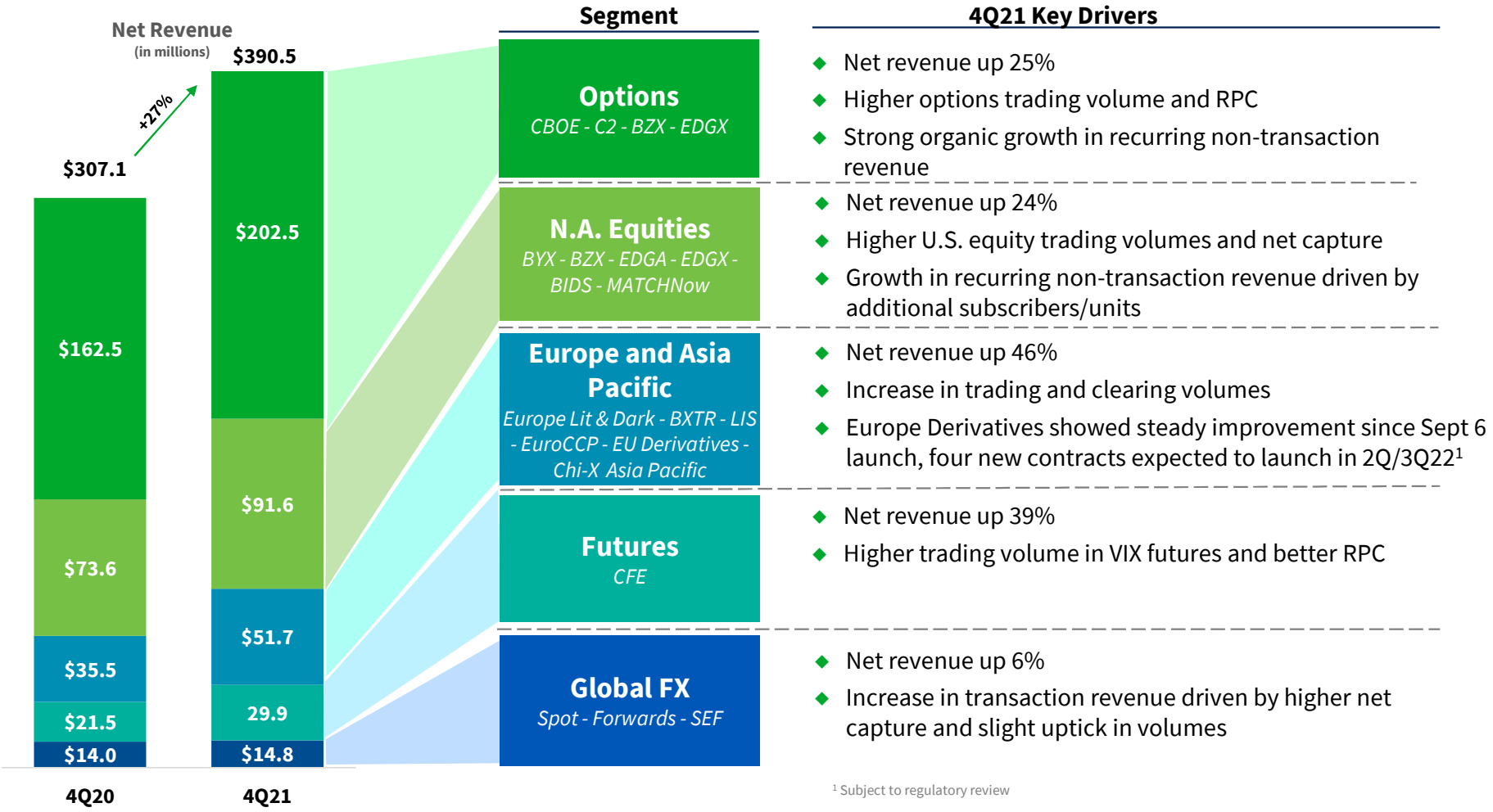


**\$1.70**  
Adjusted EPS<sup>1</sup>  
**+41% Y/Y**



<sup>1</sup>See appendix for "Non-GAAP Information."

# 4Q21 Net Revenue by Segment and Key Drivers

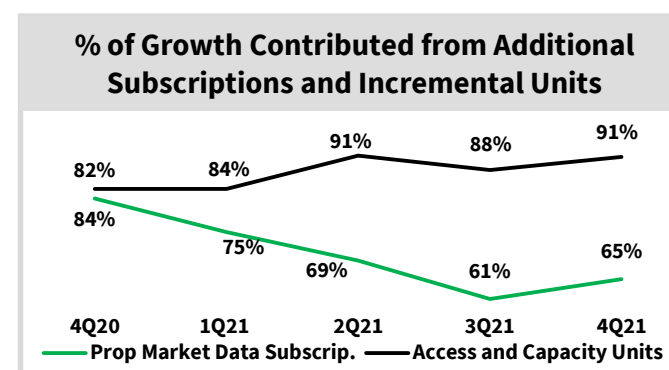
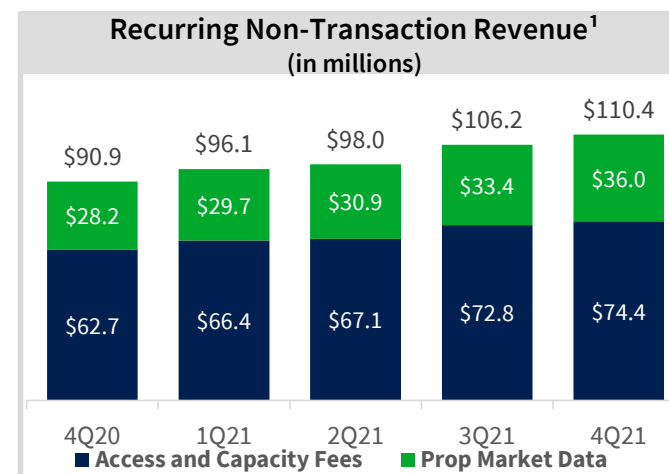


# Grew Recurring Non-Transaction Revenue 21% YoY, Organic Growth of 15%<sup>2</sup>, Exceeded Targeted Growth Rate



**Affirmed targeted 2022 organic growth rate for Data and Access Solutions business of 7-10%, in line with our medium-term guidance<sup>3</sup>**

- ❖ 4Q21 recurring non-transaction revenue of \$110.4 million<sup>1</sup> up 21%; organic growth of 15% YoY<sup>2</sup>
  - ◆ Excludes \$6mn of revenue from acquisitions<sup>2</sup>
  - ◆ 17% organic growth in access and capacity fees<sup>2</sup>
  - ◆ 10% organic growth in proprietary market data fees<sup>2</sup>
- ❖ 4Q21 growth of recurring non-transaction revenue exceeded target
  - ◆ Reaffirmed target for 2022 annual organic DnA growth of 7-10%, consistent with 2021 Investor Day commentary
  - ◆ Additional units or subscribers expected to remain a key driver of organic DnA revenue growth
- ❖ About 65% of organic market data revenue growth in 4Q21 driven by additional subscriptions
- ❖ About 91% of organic access and capacity fees in 4Q21 were attributable to incremental units



<sup>1</sup>Recurring non-transaction revenue defined as proprietary market data plus access and capacity fees

<sup>2</sup>See appendix for "Non-GAAP Information."

<sup>3</sup>Guidance is as of February 4, 2022

## 4Q21 Adjusted Operating Expenses Up 23%, Primarily Driven by Acquisitions



- ❖ 4Q21 expense increase primarily driven by addition of BIDS Trading and Chi-X Asia Pacific
- ❖ \$17 million increase in compensation-related expenses
- ❖ \$4 million increase in professional fees and outside services primarily due to higher legal fees and regulatory costs
- ❖ Excluding acquisitions, adjusted operating expenses<sup>1</sup> were up \$15 million or 13%

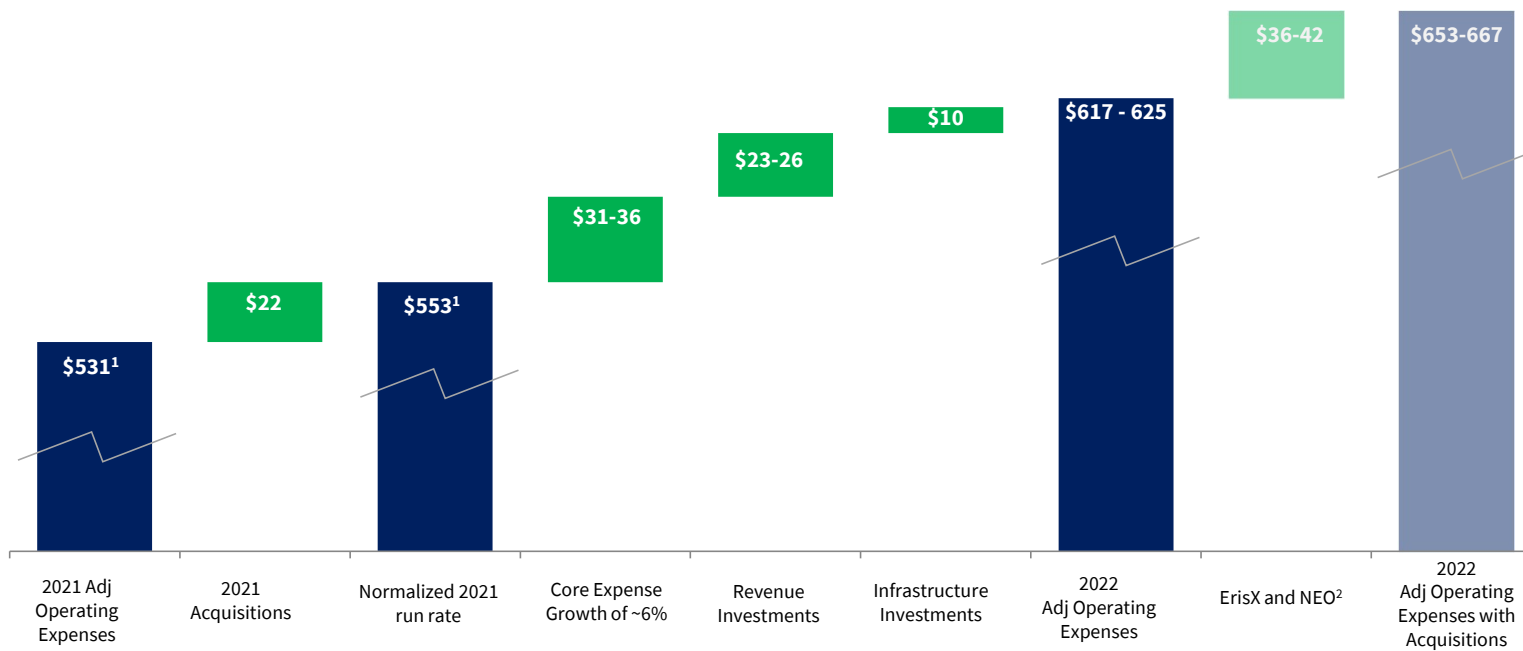
<b>Adjusted Operating Expenses<sup>1</sup></b> <b>(in millions)</b>	<b>4Q21</b>	<b>4Q20</b>	<b>% Chg</b>	<b>2021</b>	<b>2020</b>	<b>% Chg</b>
Compensation and benefits	\$74.5	\$57.5	30%	\$288.5	\$224.9	28%
Depreciation and amortization <sup>1</sup>	10.6	9.2	15%	40.8	33.8	21%
Technology support services	16.6	15.0	11%	66.7	54.5	22%
Professional fees and outside services	21.7	17.6	23%	83.7	60.6	38%
Travel and promotional	3.9	2.4	63%	9.7	6.6	47%
Facilities costs	5.7	4.9	16%	22.2	17.6	26%
Other expenses	4.5	5.6	-20%	19.1	17.5	9%
<b>Total<sup>1</sup></b>	<b>\$137.5</b>	<b>\$112.2</b>	<b>23%</b>	<b>\$530.7</b>	<b>\$415.5</b>	<b>28%</b>

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

# Adjusted Operating Expenses with ErisX<sup>2</sup> and NEO<sup>2</sup>



(\$ in millions)



<sup>1</sup>Adjusted to reflect impact of certain items. See Appendix for "Non-GAAP information"

<sup>2</sup>Subject to regulatory approval. Expected close 1H22. Guidance as of Feb 4, 2022



# Updated Guidance Reaffirms Confidence in Medium-Term Targets



<b>2022 Full-Year Guidance</b> <sup>1,2</sup> (\$ in millions)	<b>2022 Guidance as of Feb. 4, 2022</b>	<b>2021 Actual</b> <sup>3</sup>
<b>Data and Access Solutions</b> <sup>4</sup> organic revenue growth rate	7 to 10%	15%
<b>Net revenue growth from acquisitions held &lt;12 months</b>	1 to 3%	7%
<b>Total organic net revenue growth rate</b>	5 to 7 %	11%
<b>Adjusted operating expenses</b> <sup>5</sup>	617-625	\$531
<b>Depreciation and amortization</b> (excluding amortization of acquired intangible assets)	\$40 to \$44	\$41
<b>Effective tax rate on adjusted earnings</b>	27.5 to 29.5%	27.7%
<b>Capital expenditures</b>	\$47 to \$52	\$52

<sup>1</sup>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.

<sup>2</sup>Guidance includes acquisitions completed through February 4, 2022, and investment in launching pan-European trading and clearing.

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

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

<sup>5</sup>Adjusted 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 \$116 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 \$52 million in capital in 4Q21; \$319mn of availability remaining under share repurchase authorizations

Debt Outstanding (\$ in millions)	Dec. 31, 2020	Mar. 31, 2021	June 30, 2021	Sept. 30, 2021	Dec. 31, 2021
3.650% Senior Notes (10Y; Due 2027)	\$650	\$650	\$650	\$650	\$650
1.625% Senior Notes (10Y; Due 2030)	500	500	500	500	500
Revolving Credit Agreement	-	-	-	-	-
Term Loan Facility	70	50	160	160	160
EuroCCP Credit Facility	-	-	-	-	0
<b>Total Debt (Gross)</b>	<b>\$1,220</b>	<b>\$1,200</b>	<b>\$1,310</b>	<b>\$1,310</b>	<b>\$1,310</b>
Debt to EBITDA TTM <sup>1</sup>	1.4x	1.4x	1.5x	1.4x	1.3x
Adjusted Cash & Financial Investments <sup>1</sup>	\$210	\$264	\$443	\$393	\$325
Share Repurchases	\$88.0	\$47.6	\$33.7	\$0.0	\$0.0
Dividends Paid	45.4	45.3	45.0	51.5	51.5
<b>Total Capital Returned to Shareholders</b>	<b>\$133.4</b>	<b>\$92.9</b>	<b>\$78.7</b>	<b>\$51.5</b>	<b>\$51.5</b>

<sup>1</sup>See 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

A graphic consisting of three overlapping diamond shapes (squares rotated 45 degrees) outlined in a light blue color. The largest diamond is on the left, with two smaller diamonds to its right, one above and one below the center. The text "Q&A" is centered within the largest diamond.

**Q&A**

# Appendix

## Options 4Q21 Net Revenue Up 25%, Reflecting Y/Y Increase in ADV and Recurring Non-transaction Revenue



- ◆ Higher transaction fees from index and multi-listed options
- ◆ Recurring non-transaction fees, access and capacity fees plus proprietary market data, up 17% or \$6.9mn organic

Options Selected Revenue Data (\$ in millions)	4Q21	4Q20	Chg	2021	2020	Chg
<b>Net Revenue</b>	<b>\$202.5</b>	<b>\$162.5</b>	<b>25%</b>	<b>\$755.0</b>	<b>\$649.7</b>	<b>16%</b>
<b>Net transaction and clearing fees<sup>1</sup></b>	<b>\$161.8</b>	<b>\$120.3</b>	<b>34%</b>	<b>\$583.6</b>	<b>\$495.6</b>	<b>18%</b>
Index options	117.2	82.6	42%	412.9	375.9	10%
Multi-listed options	44.6	37.7	18%	170.7	119.7	43%
Access and capacity	\$34.0	\$28.4	20%	\$124.0	\$107.0	16%
<b>Market data</b>	<b>\$21.9</b>	<b>\$19.4</b>	<b>13%</b>	<b>\$84.3</b>	<b>\$74.2</b>	<b>14%</b>
Market data – proprietary	14.1	12.8	11%	53.8	45.8	17%
Market data – industry	7.8	6.6	17%	30.5	28.4	7%
Options Key Operating Stats	4Q21	4Q20	Chg	2021	2020	Chg
<b>Total market share</b>	<b>31.1%</b>	<b>32.0%</b>	<b>-0.9pts</b>	<b>30.8%</b>	<b>34.3%</b>	<b>-3.5pts</b>
Index options	98.6%	99.3%	-0.7pts	98.7%	99.2%	-0.5pts
Multi-listed options	27.3%	28.5%	-1.2pts	27.1%	30.0%	-2.9pts
<b>Total ADV (in thousands)</b>	<b>12,694</b>	<b>10,299</b>	<b>23%</b>	<b>12,054</b>	<b>10,132</b>	<b>19%</b>
Index options	2,167	1,595	36%	1,971	1,814	9%
Multi-listed options	10,527	8,705	21%	10,084	8,318	21%
<b>Total RPC</b>	<b>\$0.199</b>	<b>\$0.182</b>	<b>9%</b>	<b>\$0.192</b>	<b>\$0.193</b>	<b>0%</b>
Index options	\$0.846	\$0.809	5%	\$0.832	\$0.819	2%
Multi-listed options	\$0.066	\$0.068	-3%	\$0.067	\$0.057	18%

<sup>1</sup>See appendix for “Non-GAAP Information.”

## North American (N.A.) Equities 4Q21 Net Revenue Up 24%, Driven by Addition of BIDS Trading and Higher Capture and Industry Volumes



- ◆ 4Q21 results include BIDS Trading, which contributed \$8.5 million of net revenue
- ◆ U.S. equities benefited from higher industry volumes and higher net capture given year-over-year pricing changes
- ◆ Growth in recurring non-transaction revenue of 13% or \$4.1 million, primarily due to an increase in access and capacity fees

N.A. Equities Selected Revenue Data (\$ in millions)	4Q21	4Q20	Chg	2021	2020	Chg
<b>Net Revenue</b>	<b>\$91.6</b>	<b>\$73.6</b>	<b>24%</b>	<b>\$362.5</b>	<b>\$326.6</b>	<b>11%</b>
Net transaction and clearing fees <sup>1</sup>	\$34.0	\$17.7	92%	\$124.9	\$100.0	25%
<b>Market data</b>	<b>\$30.5</b>	<b>\$32.9</b>	<b>-7%</b>	<b>\$134.6</b>	<b>\$137.0</b>	<b>-2%</b>
Market data - SIP <sup>2</sup>	19.7	22.8	-14%	91.6	98.6	-7%
Market data - proprietary	10.8	10.1	7%	43.0	38.4	12%
Access and capacity fees	\$25.6	\$22.1	16%	\$98.0	\$84.2	16%
N.A. Equities Key Operating Stats	4Q21	4Q20	Chg	2021	2020	Chg
<b>U.S. Equities Exchange</b> (shares in billions)						
Total Market Share	13.3%	15.1%	-1.8pts	14.2%	15.8%	-1.6pts
Market ADV	10.8	10.5	3%	10.1	10.9	-7%
ADV (matched shares)	1.4	1.6	-9%	1.6	1.7	-5%
Net capture (per 100 touched shares)	\$0.025	\$0.015	67%	\$0.020	\$0.021	-7%
<b>U.S. Equities Off-Exchange</b> (shares in millions)						
Off-Exchange ATS Block Market Share % <sup>3</sup>	23.6%	--		22.4%	--	
ADV (matched shares)	84.2	--		83.0	--	
Net capture (per 100 touched shares)	\$0.115	--		\$0.120	--	
<b>Canadian Equities</b> (shares in millions)						
Market Share Percent - TSX Listed	4.7%	4.7%	0.0pts	4.7%	4.7%	0.0pts
ADV (matched shares, in millions)	41.3	45.2	-9%	49.4	43.1	15%
Net capture (per 10,000 touched shares, in CAD)	CAD 8.475	CAD 8.300	2%	CAD 7.822	CAD 8.260	-5%

<sup>1</sup>See appendix for "Non-GAAP Information."

<sup>2</sup>Includes SIP audit recoveries of \$0.7 million in 4Q20 and \$0.1 million in 4Q21.

<sup>3</sup>Represents market share for 4Q and FY through Nov 2021.

## Europe and APAC Net Revenue Up 46% for 4Q21, Helped by Higher Volumes and Inclusion of Chi-X Asia Pacific

- ◆ Net revenue increase reflects \$8.5 million contribution from Chi-X Asia Pacific and higher activity levels
- ◆ Increase in net transaction fees, driven by healthy increases in trading volumes
- ◆ Cboe Europe's overall equities market share was 19.8% in 4Q21 versus 18.2% in 3Q21, the highest since 3Q19
- ◆ Cboe saw significant improvements in lit and Cboe LIS market share over the year, as well as solid performance from Cboe Europe Periodic Auctions

Europe and APAC Selected Revenue Data (\$ in millions)	4Q21	4Q20	Chg (\$)	2021	2020	Chg (\$)
<b>Net Revenue</b>	<b>\$51.7</b>	<b>\$35.5</b>	<b>46%</b>	<b>\$183.9</b>	<b>\$114.4</b>	<b>61%</b>
<b>Net transaction and clearing fees<sup>1</sup></b>	<b>\$29.0</b>	<b>\$18.5</b>	<b>57%</b>	<b>\$102.9</b>	<b>\$64.3</b>	<b>60%</b>
Net transaction fees	19.3	13.2	46%	67.6	50.3	34%
Net clearing fees	9.7	5.3	83%	35.3	14.0	NM
Market data	\$9.2	\$3.5	163%	\$25.6	\$13.4	91%
Access and capacity fees	\$7.5	\$5.6	34%	\$31.2	\$20.6	51%
Other <sup>2</sup>	\$6.0	\$7.9	-24%	\$24.2	\$16.1	50%
Europe Key Operating Stats	4Q21	4Q20	Chg	2021	2020	Chg
<b>European Equities:</b>						
Total market share	19.8%	17.5%	2.3pts	18.1%	17.2%	0.9pts
Market ADNV (in billions)	€ 44.0	€ 37.5	17%	€ 42.6	€ 40.1	6%
Net capture (per matched notional value, in bps)	0.256	0.259	-1%	0.267	0.249	7%
<b>EuroCCP:</b>						
Trades cleared (in millions)	345.1	290.2	19%	1,244.2	545.5	NM
Fee per trade cleared	€ 0.011	€ 0.011	2%	€ 0.011	€ 0.011	0%
Net settlement volume (in millions)	2.7	2.1	25%	9.9	4.2	NM
Net fee per settlement	€ 0.860	€ 0.803	7%	€ 0.871	€ 0.794	10%

<sup>1</sup>See appendix for "Non-GAAP Information."

<sup>2</sup>Primarily includes trade reporting and EuroCCP net interest income

NM = not meaningful



## Futures 4Q21 Net Revenue Up 39%, Reflecting Y/Y Increase in VIX Futures ADV and Capture



- ◆ Revenue increase driven by net transaction fees resulting from higher trading volumes, particularly in VIX futures
- ◆ RPC increase primarily reflects a mix shift, with Mini VIX futures accounting for a lower percentage of total ADV

<b>Futures Selected Revenue Data</b> (\$ in millions)	<b>4Q21</b>	<b>4Q20</b>	<b>Chg</b>	<b>2021</b>	<b>2020</b>	<b>Chg</b>
<b>Net Revenue</b>	<b>\$29.9</b>	<b>\$21.5</b>	<b>39%</b>	<b>\$116.8</b>	<b>\$105.8</b>	<b>10%</b>
Net transaction and clearing fees <sup>1</sup>	\$24.2	\$16.0	51%	\$95.2	\$84.5	13%
Access and capacity	\$5.1	\$4.5	13%	\$18.7	\$17.0	10%
Market data	\$1.6	\$1.6	0%	\$6.6	\$6.6	0%
<b>Futures Key Operating Stats</b> (in thousands, except RPC)	<b>4Q21</b>	<b>4Q20</b>	<b>Chg</b>	<b>2021</b>	<b>2020</b>	<b>Chg</b>
Total ADV	230	159	44%	230	201	15%
Total RPC	\$1.651	\$1.575	5%	\$1.641	\$1.665	-1%

<sup>1</sup>See appendix for "Non-GAAP Information."

## Global FX Net 4Q21 Revenue Up 6%

- ◆ Revenue increase driven by higher net capture and slightly higher volumes within transaction revenue
- ◆ Market share was steady at 16.8%
- ◆ Cboe SEF recorded its sixth consecutive record ADV quarter at 725 million contracts vs. 135 million in fourth quarter 2020

<b>FX Selected Revenue Data</b> (\$ in millions)	<b>4Q21</b>	<b>4Q20</b>	<b>Chg</b>	<b>2021</b>	<b>2020</b>	<b>Chg</b>
<b>Net Revenue</b>	<b>\$14.8</b>	<b>\$14.0</b>	<b>6%</b>	<b>\$57.6</b>	<b>\$57.8</b>	<b>0%</b>
Net transaction and clearing fees	12.3	11.7	5%	48.0	49.1	-2%
Non-transaction revenue	2.5	2.3	9%	9.6	8.7	10%
<b>FX Key Operating Stats</b>	<b>4Q21</b>	<b>4Q20</b>	<b>Chg</b>	<b>2021</b>	<b>2020</b>	<b>Chg</b>
Market share <sup>1</sup>	16.8%	16.7%	0.1pts	16.6%	16.1%	0.5pts
Average Daily Notional Value (\$ in billions)	\$33.7	\$33.7	0%	\$33.9	\$34.7	-2%
Net capture (per one million dollars traded)	\$2.77	\$2.67	4%	\$2.73	\$2.70	1%

<sup>1</sup>Market share represents Cboe FX volume divided by the total volume of publicly reporting spot FX venues (Cboe FX, EBS, Refinitiv, and FastMatch).

## Fourth Quarter and Full Year Financial Overview



<b>Adjusted Financial Results<sup>1</sup></b> (\$ in millions, except per share)	<b>4Q21</b>	<b>4Q20</b>	<b>% Chg</b>	<b>2021</b>	<b>2020</b>	<b>% Chg</b>
Net Revenue <sup>2</sup>	\$390.5	\$307.1	27%	\$1,476.1	\$1,254.3	18%
Adjusted Operating Expenses <sup>1</sup>	137.5	112.2	23%	530.7	415.5	28%
Adjusted Operating Income <sup>1</sup>	\$253.0	\$194.9	30%	\$945.4	\$838.8	13%
<i>Adjusted Operating Margin<sup>1</sup></i>	<i>64.8%</i>	<i>63.5%</i>	<i>1.3pts</i>	<i>64.0%</i>	<i>66.9%</i>	<i>-2.8pts</i>
Adjusted Net Income Allocated to Common Stockholders <sup>1</sup>	\$181.7	\$130.4	39%	\$648.8	\$576.5	13%
Adjusted Diluted EPS <sup>1</sup>	\$ 1.70	\$ 1.21	41%	\$ 6.05	\$ 5.27	15%
Adjusted EBITDA <sup>1</sup>	\$263.7	\$205.5	28%	\$987.1	\$874.6	13%
<i>Adjusted EBITDA Margin<sup>1</sup></i>	<i>67.5%</i>	<i>66.9%</i>	<i>0.6pts</i>	<i>66.9%</i>	<i>69.7%</i>	<i>-2.9pts</i>

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

<sup>2</sup>Net revenue referenced in this presentation represents revenue less cost of revenues.

## Net Revenue Detail

- ◆ 4Q21 net transaction and clearing fees up 42%
- ◆ Recurring non-transaction revenue up 21%

Net Revenue (in millions)	4Q21	4Q20	% Chg	2021	2020	% Chg
Net transaction and clearing fees <sup>1</sup>	\$261.3	\$184.2	42%	\$954.6	\$793.5	20%
Access and capacity fees	74.4	62.7	19%	280.7	236.7	19%
Market data fees	63.5	57.6	10%	252.1	232.0	9%
Regulatory fees	4.3	7.7	-44%	28.7	35.2	-18%
Royalty fees	-23.7	-19.0	25%	-86.3	-83.4	3%
Other revenue	10.7	13.9	-23%	46.3	40.3	15%
<b>Total</b>	<b>\$390.5</b>	<b>\$307.1</b>	<b>27%</b>	<b>\$1,476.1</b>	<b>\$1,254.3</b>	<b>18%</b>

<sup>1</sup>See Appendix for "Non-GAAP Information."

## Supplemental Segment Information – 4Q21 & 4Q20

4Q21 Supplemental Net Revenue by Segment (in millions)	Options	N.A. Equities	Europe and Asia Pacific	Futures	Global FX	Total <sup>1</sup>
Net transaction and clearing fees <sup>2</sup>	\$161.8	\$34.0	\$29.0	\$24.2	\$12.3	\$261.3
Proprietary net transaction fees included above	\$117.2	\$0.0	(\$0.3)	\$24.2	\$0.0	\$141.1
Access and capacity fees	\$34.0	\$25.6	\$7.5	\$5.1	\$2.2	\$74.4
Market data fees	\$21.9	\$30.5	\$9.2	\$1.6	\$0.3	\$63.5
Proprietary market data fees included above	\$14.1	\$10.8 <sup>3</sup>	\$9.2	\$1.6	\$0.3	\$36.0
<b>Note:</b> Recurring non-transaction revenue (Access and capacity fees + Prop market data)	\$48.1	\$36.4	\$16.7	\$6.7	\$2.5	\$110.4

4Q20 Supplemental Net Revenue by Segment (in millions)	Options	N.A. Equities	Europe and Asia Pacific	Futures	Global FX	Total <sup>1</sup>
Net transaction and clearing fees <sup>2</sup>	\$120.3	\$17.7	\$18.5	\$16.0	\$11.7	\$184.2
Proprietary net transaction fees included above	\$82.6	\$0.0	\$0.0	\$16.0	\$0.0	\$98.6
Access and capacity fees	\$28.4	\$22.1	\$5.6	\$4.5	\$2.1	\$62.7
Market data fees	\$19.4	\$32.9	\$3.5	\$1.6	\$0.2	\$57.6
Proprietary market data fees included above	\$12.8	\$10.1 <sup>3</sup>	\$3.5	\$1.6	\$0.2	\$28.2
<b>Note:</b> Recurring non-transaction revenue (Access and capacity fees + Prop market data)	\$41.2	\$32.2	\$9.1	\$6.1	\$2.3	\$90.9

<sup>1</sup>Totals may not foot due to rounding.

<sup>2</sup>A full reconciliation of our non-GAAP results to our GAAP results is included in the following tables. See "Non-GAAP Information" in the accompanying financial tables.

<sup>3</sup>Includes SIP audit recoveries of \$0.1 million for 4Q21 and \$0.7 million for 4Q20.

## Supplemental Segment Information – 2021 & 2020



2021 Supplemental Net Revenue by Segment (in millions)	Options	N.A. Equities	Europe and Asia Pacific	Futures	Global FX	Total <sup>1</sup>
Net transaction and clearing fees <sup>2</sup>	\$583.6	\$124.9	\$102.9	\$95.2	\$48.0	\$954.6
Proprietary net transaction fees included above	\$412.9	\$0.0	(\$0.3)	\$95.2	\$0.0	\$507.8
Access and capacity fees	\$124.0	\$98.0	\$31.2	\$18.7	\$8.8	\$280.7
Market data fees	\$84.3	\$134.6	\$25.6	\$6.6	\$1.0	\$252.1
Proprietary market data fees included above	\$53.8	\$43.0 <sup>3</sup>	\$25.6	\$6.6	\$1.0	\$130.0
<b>Note:</b> Recurring non-transaction revenue (Access and capacity fees + Prop market data)	\$177.8	\$141.0	\$56.8	\$25.3	\$9.8	\$410.7

2020 Supplemental Net Revenue by Segment (in millions)	Options	N.A. Equities	Europe and Asia Pacific	Futures	Global FX	Total <sup>1</sup>
Net transaction and clearing fees <sup>2</sup>	\$495.6	\$100.0	\$64.3	\$84.5	\$49.1	\$793.5
Proprietary net transaction fees included above	\$375.9	\$0.0	\$0.0	\$84.5	\$0.0	\$460.4
Access and capacity fees	\$107.0	\$84.0	\$20.6	\$17.0	\$7.9	\$236.7
Market data fees	\$74.2	\$137.0	\$13.4	\$6.6	\$0.8	\$232.0
Proprietary market data fees included above	\$45.8	\$38.4 <sup>3</sup>	\$13.4	\$6.6	\$0.8	\$105.0
<b>Note:</b> Recurring non-transaction revenue (Access and capacity fees + Prop market data)	\$152.8	\$122.4	\$34.0	\$23.6	\$8.7	\$341.7

<sup>1</sup>Totals may not foot due to rounding.

<sup>2</sup>A full reconciliation of our non-GAAP results to our GAAP results is included in the following tables. See "Non-GAAP Information" in the accompanying financial tables.

<sup>3</sup>Includes SIP audit recoveries of \$3.8 million for 2021 and \$2.8 million for 2020.

## Expense Bridge Summary

Adjusted Operating Expenses Bridge for 2020 to 2021	
(\$ in millions)	
<b>2020 adjusted operating expenses<sup>1</sup></b>	<b>\$ 416</b>
Acquisitions	49
Non-recurring savings	12
Core	17
Facilities overlap	5
Investments	12
EU derivatives buildout	8
Chi-X 2H21 investment	12
	\$ 115
<b>2021 adjusted operating expenses<sup>1</sup></b>	<b>\$ 531</b>

### Prioritizing investments to:

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

Adjusted Operating Expenses Bridge for 2021 to 2022			
2022 Guidance of \$617 to \$625 million <sup>1</sup>			
(\$ in millions)			
<b>2021 adjusted operating expenses<sup>1</sup></b>	<b>\$ 531</b>	<b>*Guidance Range</b>	
Acquisitions		22	22
Core		31	36
Revenue Investments		23	26
Infrastructure Investments		10	10
		\$ 86	\$ 94
<b>2022 Guidance as of February 4, 2022</b>		<b>\$ 617</b>	<b>\$ 625</b>
<i>ErisX<sup>2</sup> and Neo<sup>2</sup></i>		36	42
<b>2022 Guidance plus Pending Acquisitions</b>		<b>\$ 653</b>	<b>\$ 667</b>

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

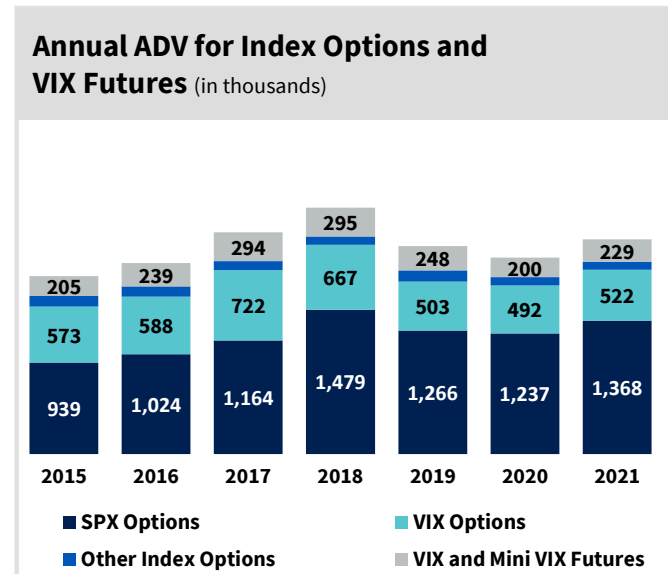
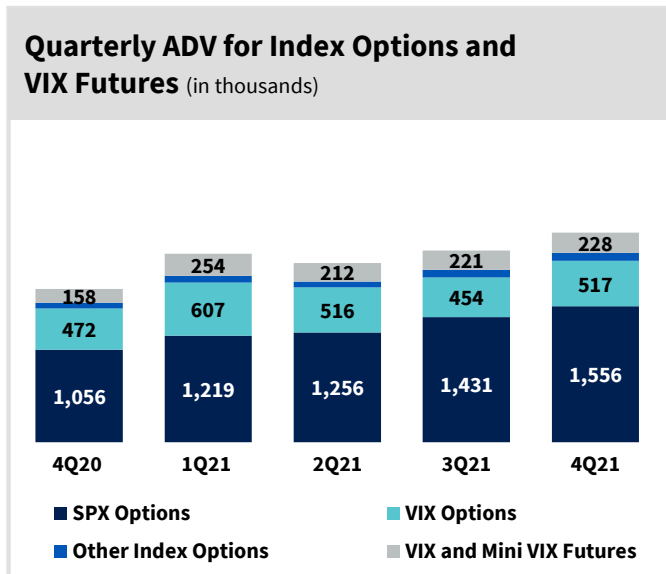
<sup>2</sup> Subject to regulatory approval. Expected close 1H22. Guidance as of Feb 4, 2022

\*Totals may not foot due to rounding

# Focused on Growing Highest-Margin 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
  - ◆ Plan to launch Nanos by Cboe in 1Q22, small and simple options designed for retail traders; available on Mini-S&P 500 index option
- ◆ Engaging institutional and retail investors through derivatives education forums
- ◆ Product innovation and collaboration with strategic partners enhances growth prospects





# Cboe's Commitment to ESG Initiatives



## Environmental



## Social



## Governance

- ◆ **Carbon credits:** Offset our Scope 1 and 2 emissions from 2020 and our Scope 3 emissions from our 2020 business air travel through the purchase of carbon offsets
- ◆ **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 clean energy, diversity and inclusion, emerging markets, and water ETPs 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

- ◆ **Cboe Empowers:** Community engagement program that provides mentorship, scholarships and guidance to under-resourced students throughout their educational journey
- ◆ **Diversity:** Developed the Cboe Diversity Leadership Council (DLC) to drive a results-driven Diversity and Inclusion (D&I) program
- ◆ **Charity:** Allocates \$10,000 per year per associate to be matched 1:1 and donated to nonprofit organizations; in 2020 matched at 1.5x for COVID-19 relief efforts and diversity-focused charities

- ◆ **Independent Board:** 13 of the 14 Directors are independent
- ◆ **Accountability:** Pay for performance philosophy, with a strong emphasis on strategy and risk oversight
- ◆ **Fresh perspectives:** 7 years average tenure of Board
- ◆ **Diverse Board:** 50% of Directors represent gender and ethnic diversity: 29% of Directors women and 21% African American/Asian-American

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

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

# Non-GAAP Information



## Reconciliation of Net Transaction and Clearing Fees by Segment

For the Three Months Ended	Options		N.A. Equities		Futures		European Equities		Global FX		Total	
	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021
<b>March 31 (in millions)</b>												
Transaction fees	\$ 284.2	\$ 308.7	\$ 304.0	\$ 381.8	\$ 35.9	\$ 25.6	\$ 22.3	\$ 34.7	\$ 15.1	\$ 12.4	\$ 661.5	\$ 763.2
Liquidity payments	(124.3)	(166.0)	(261.4)	(330.5)	-	-	(6.7)	(5.3)	-	-	(392.4)	(501.8)
Routing and clearing	(4.5)	(5.5)	(11.5)	(17.3)	-	-	-	(4.3)	-	-	(16.0)	(27.1)
<b>Net transaction and clearing fees</b>	<b>\$ 155.4</b>	<b>\$ 137.2</b>	<b>\$ 31.1</b>	<b>\$ 34.0</b>	<b>\$ 35.9</b>	<b>\$ 25.6</b>	<b>\$ 15.6</b>	<b>\$ 25.1</b>	<b>\$ 15.1</b>	<b>\$ 12.4</b>	<b>\$ 253.1</b>	<b>\$ 234.3</b>
<b>June 30 (in millions)</b>												
Transaction fees	\$ 250.8	\$ 283.2	\$ 325.1	\$ 268.0	\$ 15.8	\$ 22.2	\$ 15.2	\$ 33.3	\$ 11.4	\$ 11.5	\$ 618.3	\$ 618.2
Liquidity payments	(132.0)	(144.1)	(279.4)	(228.4)	-	-	(4.2)	(5.4)	-	-	(415.6)	(377.9)
Routing and clearing	(5.0)	(5.0)	(12.7)	(10.0)	-	-	-	(4.9)	-	-	(17.7)	(19.9)
<b>Net transaction and clearing fees</b>	<b>\$ 113.8</b>	<b>\$ 134.1</b>	<b>\$ 33.0</b>	<b>\$ 29.6</b>	<b>\$ 15.8</b>	<b>\$ 22.2</b>	<b>\$ 11.0</b>	<b>\$ 23.0</b>	<b>\$ 11.4</b>	<b>\$ 11.5</b>	<b>\$ 185.0</b>	<b>\$ 220.4</b>
<b>September 30 (in millions)</b>												
Transaction fees	\$ 241.4	\$ 308.4	\$ 253.0	\$ 253.2	\$ 16.8	\$ 23.2	\$ 23.4	\$ 36.2	\$ 10.9	\$ 11.9	\$ 545.5	\$ 632.9
Liquidity payments	(130.1)	(152.7)	(225.1)	(216.9)	-	-	(4.2)	(5.7)	-	-	(359.4)	(375.3)
Routing and clearing	(5.2)	(5.2)	(9.7)	(9.0)	-	-	-	(4.7)	-	(0.1)	(14.9)	(19.0)
<b>Net transaction and clearing fees</b>	<b>\$ 106.1</b>	<b>\$ 150.5</b>	<b>\$ 18.2</b>	<b>\$ 27.3</b>	<b>\$ 16.8</b>	<b>\$ 23.2</b>	<b>\$ 19.2</b>	<b>\$ 25.8</b>	<b>\$ 10.9</b>	<b>\$ 11.8</b>	<b>\$ 171.2</b>	<b>\$ 238.6</b>
<b>December 31 (in millions)</b>												
Transaction fees	\$ 269.9	\$ 330.9	\$ 265.1	\$ 270.1	\$ 16.0	\$ 24.2	\$ 30.0	\$ 41.1	\$ 11.7	\$ 12.5	\$ 592.7	\$ 678.8
Liquidity payments	(145.0)	(162.2)	(237.0)	(226.3)	-	-	(4.7)	(7.2)	-	-	(386.7)	(395.7)
Routing and clearing	(4.6)	(6.9)	(10.4)	(9.8)	-	-	(6.8)	(4.9)	-	(0.2)	(21.8)	(21.8)
<b>Net transaction and clearing fees</b>	<b>\$ 120.3</b>	<b>\$ 161.8</b>	<b>\$ 17.7</b>	<b>\$ 34.0</b>	<b>\$ 16.0</b>	<b>\$ 24.2</b>	<b>\$ 18.5</b>	<b>\$ 29.0</b>	<b>\$ 11.7</b>	<b>\$ 12.3</b>	<b>\$ 184.2</b>	<b>\$ 261.3</b>
<b>December 31 (in millions)</b>												
Transaction fees	\$ 1,046.3	\$ 1,231.2	\$ 1,147.2	\$ 1,173.1	\$ 84.5	\$ 95.2	\$ 90.9	\$ 145.3	\$ 49.1	\$ 48.3	\$ 2,418.0	\$ 2,693.1
Liquidity payments	(531.4)	(625.0)	(1,002.9)	(1,002.1)	-	-	(19.8)	(23.6)	-	-	(1,554.1)	(1,650.7)
Routing and clearing	(19.3)	(22.6)	(44.3)	(46.1)	-	-	(6.8)	(18.8)	-	(0.3)	(70.4)	(87.8)
<b>Net transaction and clearing fees</b>	<b>\$ 495.6</b>	<b>\$ 583.6</b>	<b>\$ 100.0</b>	<b>\$ 124.9</b>	<b>\$ 84.5</b>	<b>\$ 95.2</b>	<b>\$ 64.3</b>	<b>\$ 102.9</b>	<b>\$ 49.1</b>	<b>\$ 48.0</b>	<b>\$ 793.5</b>	<b>\$ 954.6</b>

## Non-GAAP Information

(in millions, except per share amounts)	1Q20	2Q20	3Q20	4Q20	2020	1Q21	2Q21	3Q21	4Q21	2021
<b>Reconciliation of Net Income Allocated to Common Stockholders to Non-GAAP</b>										
Net income allocated to common stockholders	\$ 157.0	\$ 113.3	\$ 109.6	\$ 87.1	\$ 467.0	\$ 136.8	\$ 105.2	\$ 120.0	\$ 165.3	\$ 527.3
Acquisition-related expenses (1)	0.8	9.4	6.2	28.8	45.2	3.4	1.8	6.7	3.7	15.6
Amortization of acquired intangible assets (2)	32.5	30.0	30.9	31.3	124.7	32.9	30.5	31.8	31.4	126.6
Provision for notes receivable (3)	-	-	6.7	-	6.7	-	-	-	-	-
<b>Total Non-GAAP operating expense adjustments</b>	<b>33.3</b>	<b>39.4</b>	<b>43.8</b>	<b>60.1</b>	<b>176.6</b>	<b>36.3</b>	<b>32.3</b>	<b>38.5</b>	<b>35.1</b>	<b>142.2</b>
Bargain purchase gain (4)	-	-	(32.6)	-	(32.6)	-	-	-	-	-
Impairment of Investment (5)	-	-	-	-	-	-	-	5.0	-	5.0
Change in contingent consideration (6)	-	-	-	-	-	-	-	-	(2.7)	(2.7)
<b>Total Non-GAAP adjustments - pretax</b>	<b>33.3</b>	<b>39.4</b>	<b>11.2</b>	<b>60.1</b>	<b>144.0</b>	<b>36.3</b>	<b>32.3</b>	<b>43.5</b>	<b>32.4</b>	<b>144.5</b>
Income tax expense related to the items above	(7.6)	(9.3)	(8.0)	(13.1)	(38.0)	(8.2)	(7.7)	(8.5)	(7.4)	(31.8)
Release of tax reserves	-	-	-	-	-	-	-	-	(5.4)	(5.4)
Deferred tax remeasurement	-	-	7.7	(3.6)	4.1	-	17.7	-	(3.1)	14.6
Net income allocated to participating securities - effect on reconciling items	(0.4)	(0.1)	-	(0.1)	(0.6)	(0.1)	(0.1)	(0.1)	(0.1)	(0.4)
<b>Adjusted net income allocated to common stockholders</b>	<b>\$ 182.3</b>	<b>\$ 143.3</b>	<b>\$ 120.5</b>	<b>\$ 130.4</b>	<b>\$ 576.5</b>	<b>\$ 164.8</b>	<b>\$ 147.4</b>	<b>\$ 154.9</b>	<b>\$ 181.7</b>	<b>\$ 648.8</b>
<b>Reconciliation of Diluted EPS to Non-GAAP</b>										
Diluted earnings per common share	\$ 1.42	\$ 1.03	\$ 1.01	\$ 0.81	\$ 4.27	\$ 1.27	\$ 0.98	\$ 1.12	\$ 1.54	\$ 4.92
Per share impact of non-GAAP adjustments noted above	0.23	0.28	0.10	0.40	1.00	0.26	0.40	0.33	0.16	1.13
<b>Adjusted diluted earnings per common share</b>	<b>\$ 1.65</b>	<b>\$ 1.31</b>	<b>\$ 1.11</b>	<b>\$ 1.21</b>	<b>\$ 5.27</b>	<b>\$ 1.53</b>	<b>\$ 1.38</b>	<b>\$ 1.45</b>	<b>\$ 1.70</b>	<b>\$ 6.05</b>
<b>Reconciliation of Operating Margin to Non-GAAP</b>										
Revenue less cost of revenue	\$ 358.3	\$ 296.9	\$ 292.0	\$ 307.1	\$ 1,254.3	\$ 365.5	\$ 350.6	\$ 369.5	\$ 390.5	\$ 1,476.1
Non-GAAP adjustments noted above	-	-	-	-	-	-	-	-	-	-
<b>Adjusted revenue less cost of revenue</b>	<b>\$ 358.3</b>	<b>\$ 296.9</b>	<b>\$ 292.0</b>	<b>\$ 307.1</b>	<b>\$ 1,254.3</b>	<b>\$ 365.5</b>	<b>\$ 350.6</b>	<b>\$ 369.5</b>	<b>\$ 390.5</b>	<b>\$ 1,476.1</b>
Operating expenses (6)	\$ 131.9	\$ 135.2	\$ 152.7	\$ 172.3	\$ 592.1	\$ 160.9	\$ 160.6	\$ 178.8	\$ 169.9	\$ 670.2
Non-GAAP expense adjustments noted above	(33.3)	(39.4)	(43.8)	(60.1)	(176.6)	(36.3)	(32.3)	(38.5)	(32.4)	(139.5)
<b>Adjusted operating expenses</b>	<b>\$ 98.6</b>	<b>\$ 95.8</b>	<b>\$ 108.9</b>	<b>\$ 112.2</b>	<b>\$ 415.5</b>	<b>\$ 124.6</b>	<b>\$ 128.3</b>	<b>\$ 140.3</b>	<b>\$ 137.5</b>	<b>\$ 530.7</b>
Non-GAAP expense adjustments to arrive at organic adjusted operating expenses	-	-	-	-	-	(18.4)	(17.0)	(12.6)	(10.7)	(58.7)
<b>Organic adjusted operating expenses</b>	<b>\$ 117.0</b>	<b>\$ 114.8</b>	<b>\$ 121.7</b>	<b>\$ 122.2</b>	<b>\$ 415.5</b>	<b>\$ 106.2</b>	<b>\$ 111.3</b>	<b>\$ 127.7</b>	<b>\$ 126.8</b>	<b>\$ 472.0</b>
Operating income	\$ 226.4	\$ 161.7	\$ 139.3	\$ 134.8	\$ 662.2	\$ 204.6	\$ 190.0	\$ 190.7	\$ 220.6	\$ 805.9
Non-GAAP expense adjustments noted above	33.3	39.4	43.8	60.1	176.6	36.3	32.3	38.5	32.4	139.5
<b>Adjusted operating income</b>	<b>\$ 259.7</b>	<b>\$ 201.1</b>	<b>\$ 183.1</b>	<b>\$ 194.9</b>	<b>\$ 838.8</b>	<b>\$ 240.9</b>	<b>\$ 222.3</b>	<b>\$ 229.2</b>	<b>\$ 253.0</b>	<b>\$ 945.4</b>
<b>Adjusted operating margin (7)</b>	<b>72.5%</b>	<b>67.7%</b>	<b>62.7%</b>	<b>63.5%</b>	<b>66.9%</b>	<b>65.9%</b>	<b>63.4%</b>	<b>62.0%</b>	<b>64.8%</b>	<b>64.0%</b>
<b>Reconciliation of Income Tax Rate to Non-GAAP</b>										
Income before income taxes	\$ 217.5	\$ 156.6	\$ 163.4	\$ 122.9	\$ 660.4	\$ 192.9	\$ 179.2	\$ 173.8	\$ 210.2	\$ 756.1
Non-GAAP adjustments noted above	33.3	39.4	11.2	60.1	144.0	36.3	32.3	43.5	32.4	144.5
<b>Adjusted income before income taxes</b>	<b>\$ 250.8</b>	<b>\$ 196.0</b>	<b>\$ 174.6</b>	<b>\$ 183.0</b>	<b>\$ 804.4</b>	<b>\$ 229.2</b>	<b>\$ 211.5</b>	<b>\$ 217.3</b>	<b>\$ 242.6</b>	<b>\$ 900.6</b>
Income tax expense	\$ 60.1	\$ 43.0	\$ 53.5	\$ 35.6	\$ 192.2	\$ 55.7	\$ 73.7	\$ 53.4	\$ 44.3	\$ 227.1
Non-GAAP adjustments noted above	7.6	9.3	0.3	13.1	30.3	8.2	(10.0)	8.5	15.9	22.6
<b>Adjusted income tax expense</b>	<b>\$ 67.7</b>	<b>\$ 52.3</b>	<b>\$ 53.8</b>	<b>\$ 48.7</b>	<b>\$ 222.5</b>	<b>\$ 63.9</b>	<b>\$ 63.7</b>	<b>\$ 61.9</b>	<b>\$ 60.2</b>	<b>\$ 249.7</b>
<b>Adjusted income tax rate</b>	<b>27.0%</b>	<b>26.7%</b>	<b>30.8%</b>	<b>26.6%</b>	<b>27.7%</b>	<b>27.9%</b>	<b>30.1%</b>	<b>28.5%</b>	<b>24.8%</b>	<b>27.7%</b>

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

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

(3) This amount represents the provision for notes receivable, recorded in other expenses on the consolidated statements of income, associated with the funding for the development of the consolidated audit trail ("CAT").

(4) This amount represents the bargain purchase gain related to the acquisition of EuroCCP on July 1, 2020.

(5) This amount represents the impairment of investment related to the write down of the company's investment in CurveGlobal.

(6) 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" (\$1.8 million and \$1.5 million in expense for the three months ended December 31, 2021 and 2020, respectively, and \$3.5 million and \$2.5 million in the year ended December 31, 2021 and 2020, respectively), and are directly offset by deferred compensation income, expenses and dividends included within "Other income, net" (\$1.8 million and \$1.5 million in income, expense and dividends in the three months ended December 31, 2021 and 2020, respectively, and \$3.5 million and \$2.5 million in the year ended December 31, 2021 and 2020, respectively), on the 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."

(7) 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, provision for notes receivable, bargain purchase gain, change in contingent consideration, 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)	1Q20	2Q20	3Q20	4Q20	2020	1Q21	2Q21	3Q21	4Q21	2021
<b>Net income allocated to common stockholders</b>	\$ 157.0	\$ 113.3	\$ 109.6	\$ 87.1	\$ 467.0	\$ 136.8	\$ 105.2	\$ 120.0	\$ 165.3	\$ 527.3
Interest expense	7.3	7.3	9.5	13.5	37.6	12.3	12.3	11.7	11.1	47.4
Income tax provision	60.1	43.0	53.5	35.6	192.2	55.7	73.7	53.4	44.3	227.1
Depreciation and amortization	40.5	38.0	39.5	40.5	158.5	42.0	40.6	42.8	42.0	167.4
<b>EBITDA</b>	<b>\$ 264.9</b>	<b>\$ 201.6</b>	<b>\$ 212.1</b>	<b>\$ 176.7</b>	<b>\$ 855.3</b>	<b>\$ 246.8</b>	<b>\$ 231.8</b>	<b>\$ 227.9</b>	<b>\$ 262.7</b>	<b>\$ 969.2</b>
<b>EBITDA Margin</b>	<b>73.9%</b>	<b>67.9%</b>	<b>72.6%</b>	<b>57.5%</b>	<b>68.2%</b>	<b>67.5%</b>	<b>66.1%</b>	<b>61.7%</b>	<b>67.3%</b>	<b>65.7%</b>
<b>Non-GAAP adjustments not included in above line items</b>										
Acquisition-related expenses	0.8	9.4	6.2	28.8	45.2	3.4	1.8	6.7	3.7	15.6
Provision for notes receivable	-	-	6.7	-	6.7	-	-	-	-	-
Bargain purchase gain	-	-	(32.6)	-	(32.6)	-	-	-	-	-
Change in contingent consideration	-	-	-	-	-	-	-	-	(2.7)	(2.7)
Impairment of investment	-	-	-	-	-	-	-	5.0	-	5.0
<b>Adjusted EBITDA</b>	<b>\$ 265.7</b>	<b>\$ 211.0</b>	<b>\$ 192.4</b>	<b>\$ 205.5</b>	<b>\$ 874.6</b>	<b>\$ 250.2</b>	<b>\$ 233.6</b>	<b>\$ 239.6</b>	<b>\$ 263.7</b>	<b>\$ 987.1</b>
<b>Adjusted EBITDA Margin</b>	<b>74.2%</b>	<b>71.1%</b>	<b>65.9%</b>	<b>66.9%</b>	<b>69.7%</b>	<b>68.5%</b>	<b>66.6%</b>	<b>64.8%</b>	<b>67.5%</b>	<b>66.9%</b>

## Non-GAAP Information

### Adjusted Debt to EBITDA - Trailing Twelve Months<sup>1</sup>

(in millions)	1Q21	2Q21	3Q21	4Q21	LTM
Net income allocated to common stockholders	\$ 136.8	\$ 105.2	\$ 120.0	\$ 165.3	\$ 527.3
Interest expense, net	12.3	12.3	11.7	11.1	47.4
Income tax provision	55.7	73.7	53.4	44.3	227.1
Depreciation and amortization	42.0	40.6	42.8	42.0	167.4
<b>EBITDA</b>	<b>\$ 246.8</b>	<b>\$ 231.8</b>	<b>\$ 227.9</b>	<b>\$ 262.7</b>	<b>\$ 969.2</b>
Non-GAAP adjustments not included in above line items:					
Acquisition-related expenses	3.4	1.8	6.7	3.7	15.6
Provision for notes receivable	-	-	-	-	-
Bargain purchase gain	-	-	-	-	-
Change in contingent consideration				(2.7)	(2.7)
Impairment of investment			5.0	-	5.0
<b>Adjusted EBITDA</b>	<b>\$ 250.2</b>	<b>\$ 233.6</b>	<b>\$ 239.6</b>	<b>\$ 263.7</b>	<b>\$ 987.1</b>
Debt at end of period					\$ 1,310.0
<b>Debt to EBITDA</b>					<b>1.3x</b>

<sup>1</sup>A 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	As of	As of	As of	As of
	3/31/20	6/30/20	9/30/20	12/31/20	3/31/21	6/30/21	9/30/21	12/31/21	12/31/21
Cash and cash equivalents	\$ 165.2	\$ 210.1	\$ 212.7	\$ 245.4	\$ 263.3	\$ 450.9	\$ 392.4	\$ 341.9	\$ 341.9
Financial investments	43.6	176.5	22.8	92.4	95.5	118.7	26.7	37.1	37.1
Less deferred compensation plan assets	(18.4)	(20.9)	(22.3)	(24.5)	(24.0)	(25.6)	(26.2)	(28.0)	(28.0)
Less cash collected for Section 31 fees	(53.1)	(189.4)	-	(103.0)	(70.9)	(101.4)	-	(25.9)	(25.9)
<b>Adjusted Cash</b>	<b>\$ 137.3</b>	<b>\$ 176.3</b>	<b>\$ 213.2</b>	<b>\$ 210.3</b>	<b>\$ 263.9</b>	<b>\$ 442.6</b>	<b>\$ 392.9</b>	<b>\$ 325.1</b>	<b>\$ 325.1</b>

## Non-GAAP Information



### Reconciliation of Revenue Less Cost of Revenue to Organic Net Revenue

Net Revenue (in millions)	4Q21	4Q20	% Chg	12 mos 2021	12 mos 2020	% Chg
Revenue less cost of revenue (net revenue)	\$390.5	\$307.1	27%	\$1,476.1	\$1,254.3	18%
Acquisition revenue less cost of revenue	(17.0)	-		(82.8)	-	7%
<b>Organic net revenue</b>	<b>\$373.5</b>	<b>\$307.1</b>	<b>22%</b>	<b>\$1,393.3</b>	<b>\$1,254.3</b>	<b>11%</b>

### Reconciliation of Organic Growth for Recurring Non-transaction Net Revenue

(in millions)	4Q21	4Q20	% Chg
Access and capacity fees	\$74.4	\$62.7	19%
Proprietary market data	36.0	28.2	28%
<b>Total reported</b>	<b>\$110.4</b>	<b>\$90.9</b>	<b>21%</b>
Less: acquisitions - access and capacity fees	(0.9)	-	
Less: acquisitions - market data	(5.1)	-	
<b>Organic growth</b>	<b>\$104.4</b>	<b>\$90.9</b>	<b>15%</b>





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