

# Cboe Global Markets, Inc.

**Recommendation** **HOLD** ★ ★ ★ ★ ★

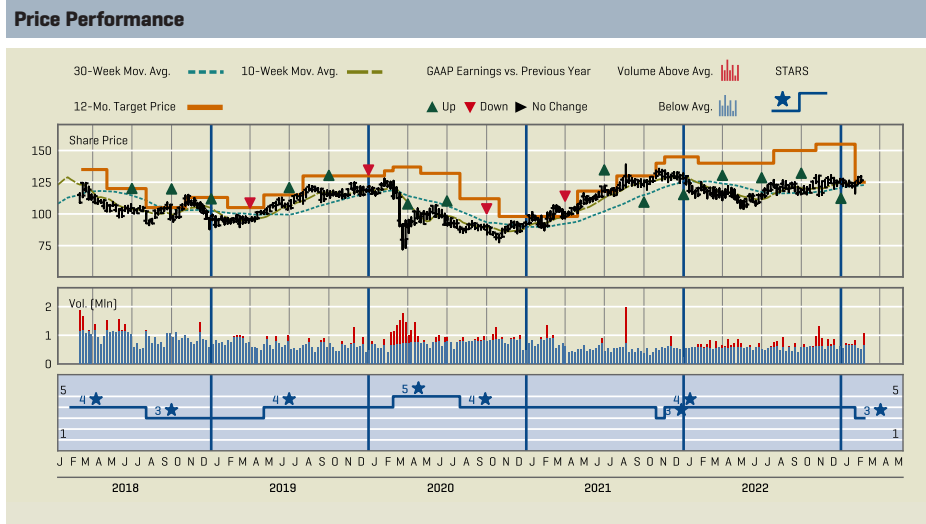
**Price** USD 126.41 (as of market close Mar 03, 2023) **12-Mo. Target Price** USD 125.00 **Report Currency** USD **Investment Style** Mid-Cap Growth

**Equity Analyst** Alexander Yokum

**GICS Sector** Financials  
**Sub-Industry** Financial Exchanges and Data

**Summary** Cboe Global Markets, Inc. offers trading in options and futures on equities, indexes, and exchange-traded funds.

Key Stock Statistics (Source: CFRA, S&P Global Market Intelligence (SPGMI), Company Reports)							
52-Wk Range	<b>USD 132.01 - 103.82</b>	Oper.EPS2023E	<b>USD 6.91</b>	Market Capitalization[B]	<b>USD 13.34</b>	Beta	<b>0.53</b>
Trailing 12-Month EPS	<b>USD 6.94</b>	Oper.EPS2024E	<b>USD 7.17</b>	Yield [%]	<b>1.59</b>	3-yr Proj. EPS CAGR[%]	<b>2</b>
Trailing 12-Month P/E	<b>18.21</b>	P/E on Oper.EPS2023E	<b>18.29</b>	Dividend Rate/Share	<b>USD 2.0</b>	SPGMI's Quality Ranking	<b>B+</b>
USD 10K Invested 5 Yrs Ago	<b>12,185.0</b>	Common Shares Outstg.[M]	<b>106.00</b>	Trailing 12-Month Dividend	<b>USD 1.98</b>	Institutional Ownership [%]	<b>84.0</b>



Source: CFRA, S&P Global Market Intelligence

Past performance is not an indication of future performance and should not be relied upon as such.

Analysis prepared by Alexander Yokum on Feb 03, 2023 12:43 PM ET, when the stock traded at USD 123.34.

## Highlights

- Following strong revenue growth of 18% in 2022, we see growth slowing to 6%-8% in 2023 as volatility begins to moderate. We are encouraged by CBOE's focus on recurring revenue [28% of revenue vs. under 27% in 2019] and expect recurring revenue growth to outpace transaction revenue in the long-term. In Q4, revenue growth of 17% was driven by the options segment [56% of revenue] with 35% revenue growth. Options market share improved to 34.1% from 31.1% a year ago, and the rate per contract jumped 25% to \$0.248.
- North American Equities [22% of revenue] rose 5% on elevated trading activity, while Europe and Asia Pacific [10% of revenue] fell 15% on negative FX and lower industry volumes. CBOE's adj. operating margin deteriorated 340 bps to 61.4%, as expense growth continued its rapid ascent. With expense pressures expected to continue into '23, we expect margins to continue to contract in upcoming quarters.
- On the capital front, CBOE's Debt to EBITDA ratio fell sequentially to 1.5x from 1.7x in 3Q. We view this ratio as reasonable and note that CBOE has historically averaged a Debt to EBITDA ratio of 1.2x-1.5x. Shares recently yielded 1.6%.

## Investment Rationale/Risk

- Our Hold opinion reflects our view that expense pressures will slow EPS growth in upcoming quarters. Additionally, we don't expect the benefits of extreme volatility from 2022 to continue. We note that '22 was in the top 20% of volatile years from a VIX perspective and therefore comps could become more difficult in 2023. This negative view is partly offset by expectations for market share gains as CBOE continues to provide market participants with greater product flexibility and market accessibility. Furthermore, we continue to see CBOE as a strong defensive play and note that during the panic of 1Q20 [stocks fell at the quickest pace in U.S. history], CBOE saw its earnings explode 49% higher as the firm's countercyclicality was on full display.
- Risks to our opinion and target price include increased competition, slower than expected growth abroad, increasing regulation, lower-than-expected volume in options, and/or investigations regarding CBOE's products.
- On February 3, we decreased our 12-month target price by \$30 to \$125 on a P/E of 18.1x our '23 estimate, a thinner risk premium than the peer average of 28.1x, given less recurring revenue and slower growth expectations.

## Analyst's Risk Assessment

LOW MEDIUM HIGH

Our risk assessment reflects potential volatility in results due to changes in options pricing or trading volumes. Other fundamental risks are tied to proposed changes that may jeopardize derivative products. This is offset by CBOE's strong market share of over 30% for the options market and nearly 15% market share of U.S. equities trading with the Bats acquisition.

## Revenue/Earnings Data

Revenue (Million USD)					
	1Q	2Q	3Q	4Q	Year
2024	E 469	E 473	E 476	E 480	E 1,898
2023	E 472	E 459	E 461	E 464	E 1,856
2022	418	424	442	457	1,742
2021	1,011	801	817	866	3,495
2020	922	869	793	844	3,427
2019	602	621	675	599	2,496

## Earnings Per Share (USD)

	1Q	2Q	3Q	4Q	Year
2024	E 1.77	E 1.78	E 1.80	E 1.82	E 7.17
2023	E 1.75	E 1.70	E 1.72	E 1.74	E 6.91
2022	1.73	1.67	1.74	1.80	6.93
2021	1.53	1.38	1.45	1.70	6.05
2020	1.65	1.31	1.11	1.21	5.27
2019	1.11	1.13	1.29	1.21	4.73

Fiscal Year ended Dec 31. EPS Estimates based on CFRA's Operating Earnings; historical earnings are adjusted. In periods where a different currency has been reported, this has been adjusted to match the current quoted currency.

## Dividend Data

Amount [ USD ]	Date Decl.	Ex-Div. Date	Stk. of Record	Payment Date
0.5000	--	Feb 27	Feb 28	Mar 15 '23
0.5000	--	Nov 29	Nov 30	Dec 15 '22
0.5000	Aug 18	Aug 30	Aug 31	Sep 15 '22
0.4800	--	May 27	May 31	Jun 15 '22

Dividends have been paid since 2010. Source: Company reports

**Past performance is not an indication of future performance and should not be relied as such.**

Forecasts are not a reliable indicator of future performance. Dividends paid in currencies other than the Trading currency have been accordingly converted for display purposes.

# Cboe Global Markets, Inc.

## Business Summary Mar 24, 2022

**CORPORATE OVERVIEW.** Cboe Global Markets (CBOE) is one of the world’s largest exchange holding companies and is the largest options exchange in the U.S., with over 30% market share, as well as the third-largest stock exchange operator by volume. CBOE provides trading solutions and products in multiple asset classes, including equities, derivatives, and FX, across North America, Europe, and Asia Pacific.

CBOE [formerly the Chicago Board of Options Exchange] was founded in 1973 and became the first marketplace for trading listed options. On June 18, 2010, the Chicago Board Options Exchange converted from a non-stock corporation owned by its members into a stock corporation that is a wholly owned subsidiary of CBOE Holdings.

**BUSINESS SEGMENTS.** CBOE’s business is organized into five segments: 1) Options includes the options exchange business, which includes trading of options on market indexes (including the VIX Index), options on non-exclusive options such as stocks, and options on ETPs; 2) North American Equities includes listed cash equities and ETP transaction services; 3) Futures includes trading of futures on the VIX Index; 4) Europe and Asia Pacific; and 5) Global FX.

CBOE’s revenue is primarily derived from transaction fees on the contracts or shares traded on its various exchanges. Approximately 72% of operating revenues were generated by transaction fees in 2021. These fees are a product of both the volume traded as well as the rate per contract. However, it should be noted that CBOE is diversifying its product mix. CBOE is moving away from its reliance on its VIX & SPX products with approximately one-third of its revenues coming from these products in 2021 versus 60% in 2016.

**COMPETITIVE LANDSCAPE.** CBOE is the largest options exchange in the U.S. based on notional value of contracts traded but second in terms of total contract volume. Its market share for all options traded on U.S. exchanges is 31%. It competes with options exchanges operated by Nasdaq [approximately 32% market share] as well as the NYSE [owned by ICE], which has approximately 19% market share, as well as smaller players such as the Miami Exchange [13% market share] and BOX Options [6%]. CBOE is number three in U.S. equities market share [with 13% following NYSE and NASDAQ at 18% and 17%, respectively].

CBOE’s competitive advantage lies in its proprietary products. Its most popular proprietary products are the SPX options [options on the S&P 500 Index] and VIX options and futures. The VIX was created in 1993 and has become one of the most watched barometers of market volatility, often known as the “fear index.” VIX futures began trading in 2004 and VIX options were launched in 2006. CBOE has exclusive right to offer options contracts on the S&P 500 Index, the S&P 100 Index and the S&P Select Sector Indexes as a result of its licensing arrangement with S&P Dow Jones Indices. This exclusive license with S&P is through the end of 2032. CBOE also has exclusive licenses with various FTSE Russell indices, MSCI indices, and the Dow Jones Industrial Average Index.

**IMPACT OF MAJOR DEVELOPMENTS.** On March 24, 2021, CBOE announced an agreement to acquire Chi-X Asia Pacific [terms not disclosed]. The acquisition moves CBOE into the Asia Pacific and cements CBOE as a global player. Chi-X is an alternative market operator and gives CBOE an Australian and Japanese presence. Chi-X Australia [CXA], the country’s second-largest securities exchange, has an 18.6% total market share, while Chi-X Japan [CXJ], a leading proprietary trading system for Japanese equities and third-largest equities venue in the country, has a 2.5% lit market share. The acquisition helps diversify CBOE’s geographic exposure and increases CBOE’s recurring revenue as 67% of its revenue is non transactional.

On February 6, 2019, shares of CBOE plunged more than 10% in one day due to the implosion of various VIX-related ETPs. While the forced liquidation and nearly total loss of these products were due to their poor structuring and not the VIX contracts themselves, this nevertheless caused investors to re-evaluate the growth prospects for VIX contracts and related products. While CBOE does not always disclose the exact amount of its revenue directly tied to its VIX products, it did note that in 2018 nearly 65% of its net transaction fees were generated by futures and index options, of which the “overwhelming majority” were generated by exclusively licensed products and products based on the VIX methodology, such as the S&P 500 Index options and VIX Index options and futures.

On September 26, 2016, CBOE announced an agreement to acquire Bats in a cash and stock transaction valued at approximately \$32.50 per Bats share, or a total of approximately \$3.2 billion, consisting of 31% cash and 69% CBOE Holdings stock, based on CBOE Holdings’ closing stock price of \$70.30 per share on September 23, 2016. The acquisition closed on February 28, 2017. Not only has Bats given CBOE the number three position in equity trading in the U.S., but CBOE also acquired Bats’ leading proprietary technology, which features very low latency, higher speed, and greater scalability.

**FINANCIAL TRENDS.** CBOE has ample liquidity, in our view, to meet its product development programs. Previous to the Bats acquisition, CBOE had no debt, but then secured \$1.65 billion in debt to finance the cash portion of the acquisition. Since then, CBOE has kept debt on its balance sheet and as of Q4 2021 had total debt of approximately \$1.4 billion. We think CBOE’s balance sheet is reasonable at 1.1x net debt-to-EBITDA compared to the peer average of 2.2x. We think CBOE will continue to generate ample cash flow to either reduce debt, return capital return to shareholders, or both.

## Corporate information

### Investor contact

K. W. Hill [312 786 5600]

### Office

433 West Van Buren Street, Chicago, Illinois, 60607

### Telephone

312 786 5600

### Fax

N/A

### Website

www.cboe.com

### Officers

#### Chairman & CEO

E. T. Tilly

#### Senior VP & Chief Accounting Officer

J. M. Griebenow

#### Executive VP, CFO, Treasurer & Interim Chief Human Resources Officer

B. N. Schell

#### Senior VP & CTO

T. Lipscomb

#### Chairman & CEO

E. T. Tilly

#### Executive VP & COO

C. A. Isaacson

#### Executive VP, General Counsel & Corporate Secretary

J. P. Sexton

#### Executive VP & Global President

D. Howson

### Board Members

A. J. Matturri

E. J. Fitzpatrick

E. S. Sunshine

E. T. Tilly

F. J. Tomczyk

I. K. Fong

J. E. Parisi

J. J. McPeck

J. P. Froetscher

J. P. Ratterman

J. R. Goodman

R. A. Palmore

W. M. Farrow

### Domicile

Delaware

### Founded

1973

### Employees

1,543

### Stockholders

124

### Auditor

KPMG LLP - Klynveld Peat Marwick Goerdeler

## Cboe Global Markets, Inc.

Quantitative Evaluations						Expanded Ratio Analysis												
Fair Value Rank	NR	1	2	3	4	5	2022	2021	2020	2019								
		LOWEST				HIGHEST		Price/Sales	3.38	4.00	2.97	5.37						
Based on CFRA's proprietary quantitative model, stocks are ranked from most overvalued [1] to most undervalued [5].						Price/EBITDA					11.90	14.28	11.76	17.37				
						Price/Pretax Income					30.93	18.49	15.41	26.76				
						P/E Ratio					18.11	21.55	17.67	25.37				
						Avg. Diluted Shares Outstg. (M)					106.70	107.20	109.30	111.80				
Fair Value Calculation						N/A					Figures based on fiscal year-end price							
Volatility						LOW	AVERAGE	HIGH				Key Growth Rates and Averages						
Technical Evaluation						BULLISH					Since February, 2023, the technical indicators for CBOE have been BULLISH"							
Insider Activity						UNFAVORABLE	NEUTRAL	FAVORABLE				Past Growth Rate [%]						
											1 Year				3 Years	5 Years		
											Net Income				NM	NM	NM	
											Sales				13.27	16.62	12.17	
											Ratio Analysis [Annual Avg.]							
											Net Margin [%]				5.94	11.58	13.03	
											% LT Debt to Capitalization				26.84	25.58	23.50	
											Return on Equity [%]				6.65	11.94	12.08	

Company Financials Fiscal year ending Dec 31										
Per Share Data [USD]	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Tangible Book Value	-12.97	-10.57	-12.23	-8.55	-10.80	-13.66	2.70	2.35	2.31	2.75
Free Cash Flow	5.56	5.10	12.94	5.37	4.46	3.14	2.28	2.48	2.49	2.24
Earnings	2.19	4.92	4.27	3.34	3.76	3.69	2.27	2.46	2.21	1.99
Earnings [Normalized]	6.93	6.05	5.27	4.73	5.02	3.42	2.42	2.40	2.28	2.03
Dividends	1.96	1.80	1.56	1.34	1.16	1.04	0.96	0.88	0.78	0.66
Payout Ratio [%]	89.11	36.54	36.44	40.01	30.55	29.40	42.02	35.80	35.32	33.16
Prices: High	130.87	139.00	127.93	124.88	138.54	128.32	77.29	72.53	65.39	54.79
Prices: Low	103.82	87.00	72.01	89.53	87.87	72.54	58.43	55.04	46.52	29.29
P/E Ratio: High	18.90	23.00	24.30	26.40	27.60	37.50	31.90	30.20	28.70	27.00
P/E Ratio: Low	15.00	14.40	13.70	18.90	17.50	21.20	24.10	22.90	20.40	14.40
Income Statement Analysis [Million USD]										
Revenue	3,958	3,495	3,427	2,496	2,769	2,229	703.00	664.00	617.00	572.00
Operating Income	965.00	819.00	714.00	609.00	629.00	456.00	312.00	320.00	314.00	288.00
Depreciation + Amortization	160.00	160.00	152.00	163.00	185.00	174.00	26.00	46.00	40.00	35.00
Interest Expense	60.00	48.00	39.00	38.00	40.00	43.00	6.00	N/A	N/A	N/A
Pretax Income	433.00	756.00	660.00	501.00	571.00	334.00	307.00	324.00	310.00	284.00
Effective Tax Rate	45.70	30.00	29.10	26.00	25.60	-19.80	39.40	36.70	38.70	38.00
Net Income	235.00	529.00	468.00	375.00	426.00	402.00	187.00	205.00	190.00	176.00
Net Income [Normalized]	573.60	483.80	424.60	361.60	376.20	262.60	201.20	202.50	196.20	180.20
Balance Sheet and Other Financial Data [Million USD]										
Cash	524.00	379.00	338.00	300.00	311.00	191.00	97.00	102.00	148.00	221.00
Current Assets	1,556	1,531	1,567	608.00	684.00	435.00	235.00	204.00	244.00	309.00
Total Assets	6,999	6,815	6,517	5,114	5,321	5,266	476.70	384.80	383.90	441.60
Current Liabilities	1,477	1,169	1,313	282.00	596.00	334.00	90.00	74.00	74.00	107.00
Long Term Debt	1,437	1,299	1,135	868.00	916.00	1,238	N/A	N/A	N/A	N/A
Total Capital	5,355	5,049	4,697	4,279	4,466	4,358	330.00	260.00	250.00	285.00
Capital Expenditures	60.00	51.00	47.00	35.00	36.00	38.00	44.00	39.00	50.00	29.00
Cash from Operations	651.00	597.00	1,459	633.00	535.00	374.00	230.00	245.00	263.00	224.00
Current Ratio	1.05	1.31	1.19	2.16	1.15	1.30	2.62	2.76	3.31	2.87
% Long Term Debt of Capitalization	26.80	25.70	24.20	20.30	20.50	28.40	N/A	N/A	N/A	N/A
% Net Income of Revenue	5.90	15.10	13.70	15.00	15.40	18.00	26.60	30.90	30.70	30.80
% Return on Assets	8.73	7.68	7.67	7.30	7.43	9.93	45.24	52.02	47.52	46.18
% Return on Equity	6.60	15.20	14.00	11.20	13.30	23.20	62.90	80.40	71.00	67.20

Source: S&P Global Market Intelligence. Data may be preliminary or restated; before results of discontinued operations/special items. Per share data adjusted for stock dividends; EPS diluted. E-Estimated. NA-Not Available. NM-Not Meaningful. NR-Not Ranked. UR-Under Review.

# Cboe Global Markets, Inc.

## Sub-Industry Outlook

We have a positive fundamental outlook on the Financial Exchanges & Data sub-industry for the next 12 months.

We see exchanges continuing to seek to diversify their revenue sources with non-transaction, recurring data subscriptions rather than be subject to market volume fluctuations. We believe the companies that succeed in this area will see multiple expansion with higher client retention rates and reduced exposure to swings in trading volume.

As a group, the major U.S. exchanges have grown EPS at nearly double the speed of the S&P 500 over last decade and impressively, were able to grow before, during, and after the pandemic. With rapid innovation in the exchange space, we expect most exchanges to continue to grow EPS at a quick pace as they continue to judiciously meet client needs with new products and services.

Following elevated trading volume in the first three quarters of 2022, we expect financial markets to remain choppy in upcoming quarters, but we see slowing growth as Y/Y comparisons become difficult.

We expect a falling rate per contract (RPC) to pressure exchanges that heavily rely on trading volumes. For years, heavy competition in the exchange space has led to a decline in the average RPC across trading products. As a result, increases in revenue from higher trading volume is continually hindered by a falling RPC. Our expectation is that this trend will largely continue across all exchanges and relying on non-proprietary trading products will lead to underperformance in the long-term.

Regulation could increase equity trading volumes at stock exchanges given 40%+ of trading occurs off exchange. For years, exchanges have seen volumes move off-exchange to dark pools in a trend that, until recently, seemed inevitable to continue. In fact, since 2011, off-exchange volumes have increased from 30% to 42% of total equity trading volume. However, the SEC has begun talks about reforming equity markets as it

looks to focus on transparency around best execution, disclosure of execution quality, and a general levelling of the playing field between exchanges and dark pools.

Data providers, largely the rating agencies, struggled in 2022 as geopolitical uncertainty, slowing economic growth, and a hawkish Fed severely impacted debt issuance volumes. Many corporations were coming from a position of power as they pulled forward debt issuance in 2020 to take advantage of historically low interest rates. As a result, corporations have sat on the sidelines when possible, resulting in corporate debt-to-GDP levels to fall from a high of 57% in Q2 2020 to under 50% as of Q3 2022. However, we see 2022 as a low watermark for debt issuance and expect issuance levels to rise throughout 2023 as the extreme uncertainty of 2022 moderates. We see issuance momentum continuing through 2025 as a growing level of corporate rated debt matures and needs to be replaced. As a result, we expect credit rating agencies to see improving performance as cost cutting measures are met with improving debt issuance conditions. An added benefit should come from the analytics businesses, which help smooth out transaction-related revenues, given the acyclical nature of analytics revenue.

In 2022, the Financial Exchanges & Data sub-industry was down 25.2%, compared to the Financials sector down 12.1% and the S&P Composite 1500 down 18.1%. For the full-year 2021, the sub-industry rose 30.2%, compared to the Financials sector up 32.0% and the S&P 1500 up 26.7%.

**/ Alexander Yokum**

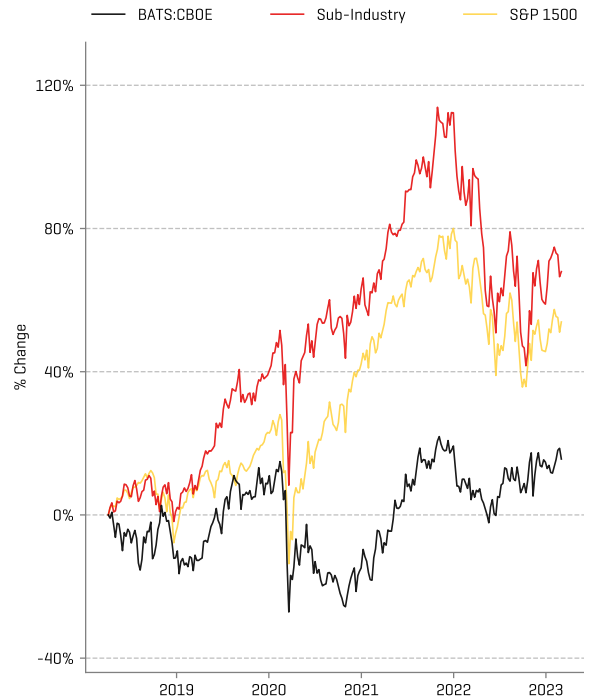
## Industry Performance

### GICS Sector: Financials

### Sub-Industry: Financial Exchanges and Data

Based on S&P 1500 Indexes

Five-Year market price performance through Mar 04, 2023



NOTE: A sector chart appears when the sub-industry does not have sufficient historical index data.

All Sector & Sub-Industry information is based on the Global Industry Classification Standard (GICS).

Past performance is not an indication of future performance and should not be relied upon as such.

**Source: CFRA, S&P Global Market Intelligence**

## Sub-Industry: Financial Exchanges and Data Peer Group\*: Financial Exchanges and Data

Peer Group	Stock Symbol	Exchange	Currency	Recent Stock Price	Stk. Mkt. Cap. [M]	30-Day Price Chg. [%]	1-Year Price Chg. [%]	P/E Ratio	Fair Value Calc.	Yield [%]	Return on Equity [%]	LTD to Cap [%]
<b>Cboe Global Markets, Inc.</b>	<b>CBOE</b>	<b>BATS</b>	<b>USD</b>	<b>126.18</b>	<b>13,343.0</b>	<b>2.7</b>	<b>6.4</b>	<b>18.0</b>	<b>N/A</b>	<b>1.6</b>	<b>6.6</b>	<b>26.8</b>
Bakkt Holdings, Inc.	BKKT	NYSE	USD	1.36	107.0	-13.4	-75.3	NM	N/A	N/A	-391.7	N/A
Coinbase Global, Inc.	COIN	NasdaqGS	USD	63.70	14,745.0	8.9	-67.2	NM	N/A	N/A	-44.4	37.3
Donnelley Financial Solutions, Inc.	DFIN	NYSE	USD	41.31	1,194.0	-9.4	28.5	13.0	N/A	N/A	29.0	30.8
FactSet Research Systems Inc.	FDS	NYSE	USD	414.64	15,861.0	-2.0	-0.8	29.0	313.27	0.9	33.1	52.2
MarketAxess Holdings Inc.	MKTX	NasdaqGS	USD	354.78	13,343.0	-2.5	-6.3	53.0	200.74	0.8	23.6	N/A
Morningstar, Inc.	MORN	NasdaqGS	USD	207.00	8,793.0	-14.8	-23.6	126.0	N/A	0.7	5.4	42.6
Open Lending Corporation	LPRO	NasdaqGM	USD	6.86	848.0	-21.8	-67.0	13.0	N/A	N/A	35.8	39.4
TMX Group Limited	TMXX.F	OTCPK	USD	99.44	7,529.0	1.1	-1.3	14.0	N/A	2.5	14.7	14.1
Tradeweb Markets Inc.	TW	NasdaqGS	USD	72.50	15,092.0	-2.7	-15.5	38.0	56.02	0.5	6.6	N/A
Value Line, Inc.	VALU	NasdaqQM	USD	51.89	490.0	0.4	-14.3	27.0	N/A	1.9	23.2	N/A

\*For Peer Groups with more than 10 companies or stocks, selection of issues is based on market capitalization.

NA-Not Available; NM-Not Meaningful.

Note: Peers are selected based on Global Industry Classification Standards and market capitalization. The peer group list includes companies with similar characteristics, but may not include all the companies within the same industry and/or that engage in the same line of business.

**Cboe Global Markets, Inc.****Analyst Research Notes and other Company News****February 03, 2023**

10:58 AM ET... CFRA Lowers Opinion on Shares of Cboe Global Markets, Inc. to Hold from Buy [CBOE 121.40\*\*\*]:

We decrease our 12-month target price by \$30 to \$125 on a P/E of 18.1x our '23 estimate, a thinner risk premium than the peer average of 28.1x, given less recurring revenue and slower growth expectations. We decrease our '23 EPS estimate by \$0.17 to \$6.91 and start '24's at \$7.17. CBOE posts Q4 adj. EPS of \$1.80 vs. \$1.70 a year ago, \$0.04 above consensus on revenue that was up 17% Y/Y. It was a record quarter for CBOE as both revenue and adj. EPS hit record highs as results benefited from 35% growth in the options segment [56% of revenue]. Strong options activity was driven by momentum in the index business and a strong rate per contract. However, we have become concerned with CBOE's elevated expense spend, which led to its adj. operating margin contracting 340 bps to 61.4%. With expenses likely to stay elevated throughout '23, we see fewer reasons for shares to outperform as we don't see the extreme volatility of the last twelve months as likely to repeat [the VIX has already fallen 20% in '23]. / Alexander Yokum, CFA

**November 04, 2022**

10:46 AM ET... CFRA Reiterates Buy Opinion on Shares of Cboe Global Markets, Inc. [CBOE 128.39\*\*\*\*]:

We increase our target price by \$5 to \$155 on a P/E of 21.9x our '23 estimate, a thinner risk premium than peer average of 24.7x, given less recurring revenue. We increase our '22 EPS estimate by \$0.24 to \$6.81 and '23's by \$0.42 to \$7.08. CBOE posts Q3 adj. EPS of \$1.74 vs. \$1.45 a year ago, \$0.09 above consensus on revenue that was up 20% Y/Y. Strong Q3 results were driven by 33% growth in the options segment [54% of revenue] as results benefited from a trifecta of higher options volume, higher market share, and higher rate per contract. On the flip side, Europe and Asia Pacific [11% of revenue] fell 8% as negative FX more than offset market share gains. Recurring revenue [28% of revenue] continued its march higher with 12% organic growth on momentum in new subscribers. With excellent adoption of CBOE's Mini SPX contacts, and added Tuesday/Thursday expirations for SPX, we expect shares to outperform as market participants are attracted to the increased accessibility and flexibility of CBOE's products. / Alexander Yokum, CFA

**July 29, 2022**

10:05 AM ET... CFRA Reiterates Buy Opinion on Shares of Cboe Global Markets, Inc. [CBOE 122.26\*\*\*\*]:

With inflation and geopolitical uncertainty creating extreme market volatility across the globe, we view CBOE favorably as businesses seek out risk management solutions. We increase our target by \$10 to \$150 on a P/E of 22.5x our '23 estimate, a thinner risk premium than peer average of 25.9x, given more reliance on transaction related revenues. We increase our '22 EPS estimate by \$0.32 to \$6.57 and raise '23's by \$0.05 to \$6.66. CBOE posts Q2 adj. EPS of \$1.67 vs. \$1.38 a year ago, \$0.02 below consensus on record revenue that was up 21% Y/Y. The options segment [55% of revenue] led the way with 32% revenue growth as results benefited from higher volumes, market share gains, and an elevated revenue per contract. Europe and Asia Pacific [12% of revenue] also impressed as European Equities increased its market share by 5.8% to 23.2%. However, clouding the excellent results was a \$460 million goodwill impairment on ErisX as management acknowledged a dramatic decline in the digital asset market environment. / Alexander Yokum, CFA

**April 29, 2022**

12:54 PM ET... CFRA Reiterates Buy Opinion on Shares of Cboe Global Markets, Inc. [CBOE 115.27\*\*\*\*]:

We maintain our 12-month target price of \$140 on a P/E of 21.2x our '23 estimate, a thinner risk premium than peer average of 25.2x, given more reliance on transaction related revenues. We increase our '22 EPS estimate by \$0.09 to \$6.25 and raise '23's by \$0.11 to \$6.61. CBOE posts Q1 adj. EPS of \$1.73 vs. \$1.53 a year ago, \$0.05 above consensus on record revenue that was up 14% Y/Y. Revenue growth in the quarter was driven by derivatives markets [+18% organic growth] as index options saw 27% growth in ADV. Recurring revenue continues to show momentum with Data and Access Solution revenue growing 12% organically on new subscription and unit growth. Despite the strong results, CBOE's adj. operating margin fell 80 bps to 65.1% which we view as reasonable as the decline was driven by the Cboe Asia Pacific acquisition. We are encouraged by market share gains in Japan [3.8% share in 1Q22 vs. 2.9% in 4Q21] and continue to think geographic expansion is an attractive source of growth for CBOE. / Alexander Yokum, CFA

**February 04, 2022**

12:17 PM ET... CFRA Reiterates Buy Opinion on Shares of Cboe Global Markets, Inc. [CBOE 116.77\*\*\*\*]:

We lower our 12-month target by \$5 to \$140 on a P/E of 21.6x our '23 estimate, a thinner risk premium than peer average of 27.7x, given CBOE's trading products with higher volatility. We increase our '22 EPS estimate by \$0.12 to \$6.16 and start '23's at \$6.50. CBOE posts Q4 adj. EPS of \$1.70 vs. \$1.21 a year ago, \$0.16 above consensus on revenue that was up 27% Y/Y and in line with consensus. Revenue growth was driven by a 25% increase in options on higher volumes and rates. North American equities increased 24% on higher equity trading volumes and growth in subscribers. Adj. expenses increased 23% driven by acquisitions and higher compensation. We are encouraged by CBOE's focus on recurring revenue [39% of revenue in '21 vs. 37% in '20] and see 9%-10% organic growth in '22 on robust subscriber growth. With less reliance on trading volumes, we expect CBOE's current 35% discount to peers to shrink as earnings become more consistent and growth prospects remain highly attractive. / Alexander Yokum, CFA

**November 18, 2021**

01:45 PM ET... CFRA Upgrades Opinion on Shares of CBOE Global Markets, Inc. to Buy from Hold [CBOE 128.52\*\*\*\*]:

We raise our 12-month target by \$5 to \$145 on a P/E of 24.0x our '22 estimate, below larger peers, given CBOE's trading products with higher volatility. We raise '21 and '22 EPS estimates by \$0.05 and \$0.13 to \$5.79 and \$6.04, respectively. In the medium term, we believe CBOE will see low double-digit growth internationally. Year-to-date [YTD] in 2021, CBOE has entered the Japanese and Australian markets, and pending regulatory approval on NEO [Canadian exchange], will have one sixth of Canadian market share. We expect CBOE to continue to gain market share abroad through its superior technology and the planned introduction of its BIDS block-trading platform in Asia. We believe CBOE has an attractive opportunity with its new nano contracts, expected to launch in early '22. The contracts will target retail investors and Webull [electronic trading platform] has already committed to using the contracts. We see other larger players quickly adopting the nano product, resulting in a new revenue growth opportunity. / Alexander Yokum, CFA

**October 29, 2021**

02:27 PM ET... CFRA Reduces Opinion on Shares CBOE Global Markets, Inc. to Hold from Buy [CBOE 130.36\*\*\*\*]:

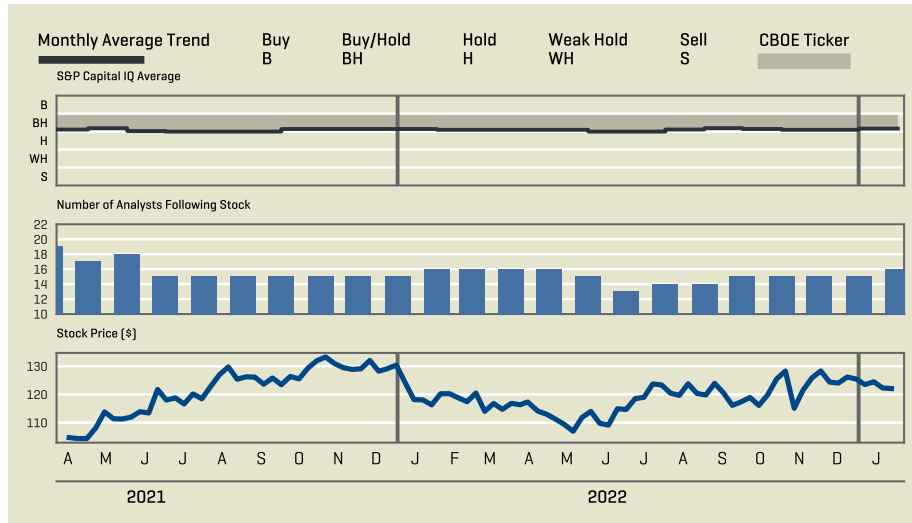
We raise our 12-month target price by \$10 to \$140 on P/E of 23.7x our '22 estimate, slightly below its larger peers, noting a 1.5% dividend yield. We raise '21 and '22 EPS estimates by \$0.26 and \$0.25 to \$5.74 and \$5.91. CBOE reported mostly in-line Q3 results with adjusted EPS of \$1.45 vs. year-ago \$1.11, \$0.01 above the consensus estimate. Revenue benefited from options [+30% Y/Y] on higher volume and rates, although we note market share declined to 31.3% [vs. year-ago 32.4%]. Also, we see revenue gains at North American equities [+13% Y/Y], futures [+24%] and global FX [+8%] mostly benefiting from higher fees on volume gains, and Europe and Asia Pacific [+53% Y/Y] reflected the addition of Chi-X Asia Pacific in July. Expenses were up 29% Y/Y, largely due to the acquisitions, which we do not find worrisome as CBOE continues to invest; expenses ex-acquisitions were up 17%. CBOE now sees its '22 recurring non-transaction revenue growth at 18% [vs. prior 15%-16%], with organic growth of 14% [vs. 12%-13%]. / Tuna N. Amobi, CFA, CPA

Note: Research notes reflect CFRA's published opinions and analysis on the stock at the time the note was published. The note reflects the views of the equity analyst as of the date and time indicated in the note, and may not reflect CFRA's current view on the company.



# Cboe Global Markets, Inc.

## Analysts Recommendations



	No. of Recommendations	% of Total	1 Mo.Prior	3 Mos.Prior
Buy	4	25	4	4
Buy/Hold	3	19	3	2
Hold	7	44	7	8
Weak hold	1	6	1	1
Sell	0	0	0	0
No Opinion	1	6	1	0
Total	16	100	16	15

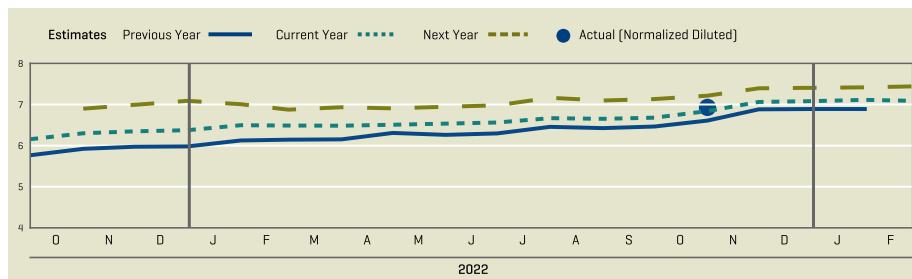
## Wall Street Consensus Opinion

**Buy/Hold**

### Wall Street Consensus vs. Performance

For fiscal year 2023, analysts estimate that CBOE will earn USD 7.09. For fiscal year 2024, analysts estimate that CBOE's earnings per share will grow by 4.95% to USD 7.44.

## Wall Street Consensus Estimates



Fiscal Year	Avg Est.	High Est.	Low Est.	# of Est.	Est. P/E
2024	7.44	7.99	6.92	15	16.96
2023	7.09	7.38	6.81	15	17.80
<b>2024 vs. 2023</b>	<b>▲ 5%</b>	<b>▲ 8%</b>	<b>▲ 2%</b>	<b>N/A%</b>	<b>▼ -5%</b>
Q1'24	1.88	1.97	1.80	5	67.12
Q1'23	1.78	1.88	1.64	13	70.98
<b>Q1'24 vs. Q1'23</b>	<b>▲ 6%</b>	<b>▲ 5%</b>	<b>▲ 10%</b>	<b>▼ -62%</b>	<b>▼ -5%</b>

Forecasts are not reliable indicator of future performance.

Note: A company's earnings outlook plays a major part in any investment decision. S&P Global Market Intelligence organizes the earnings estimates of over 2,300 Wall Street analysts, and provides their consensus of earnings over the next two years, as well as how those earnings estimates have changed over time. Note that the information provided in relation to consensus estimates is not intended to predict actual results and should not be taken as a reliable indicator of future performance.

**Note: For all tables, graphs and charts in this report that do not cite any reference or source, the source is S&P Global Market Intelligence.**

# Choe Global Markets, Inc.

## Glossary

### STARS

Since January 1, 1987, CFRA Equity and Fund Research Services, and its predecessor S&P Capital IQ Equity Research has ranked a universe of U.S. common stocks, ADRs [American Depositary Receipts], and ADSs [American Depositary Shares] based on a given equity's potential for future performance. Similarly, we have ranked Asian and European equities since June 30, 2002. Under proprietary STARS (Stock Appreciation Ranking System), equity analysts rank equities according to their individual forecast of an equity's future total return potential versus the expected total return of a relevant benchmark [e.g., a regional index (MSCI AC Asia Pacific Index, MSCI AC Europe Index or S&P 500® Index)], based on a 12-month time horizon. STARS was designed to help investors looking to put their investment decisions in perspective. Data used to assist in determining the STARS ranking may be the result of the analyst's own models as well as internal proprietary models resulting from dynamic data inputs.

### S&P Global Market Intelligence's Quality Ranking

[also known as **S&P Capital IQ Earnings & Dividend Rankings**] - Growth and S&P Capital IQ Earnings & Dividend Rankings stability of earnings and dividends are deemed key elements in establishing S&P Global Market Intelligence's earnings and dividend rankings for common stocks, which are designed to capsize the nature of this record in a single symbol. It should be noted, however, that the process also takes into consideration certain adjustments and modifications deemed desirable in establishing such rankings. The final score for each stock is measured against a scoring matrix determined by analysis of the scores of a large and representative sample of stocks. The range of scores in the array of this sample has been aligned with the following ladder of rankings:

A+	Highest	B	Below Average
A	High	B-	Lower
A	Above	C	Lowest
B+	Average	D	In Reorganization
NC	Not Ranked		

### EPS Estimates

CFRA's earnings per share (EPS) estimates reflect analyst projections of future EPS from continuing operations, and generally exclude various items that are viewed as special, non-recurring, or extraordinary. Also, EPS estimates reflect either forecasts of equity analysts; or, the consensus [average] EPS estimate, which are independently compiled by S&P Global Market Intelligence, a data provider to CFRA. Among the items typically excluded from EPS estimates are asset sale gains; impairment, restructuring or merger-related charges; legal and insurance settlements; in process research and development expenses; gains or losses on the extinguishment of debt; the cumulative effect of accounting changes; and earnings related to operations that have been classified by the company as discontinued. The inclusion of some items, such as stock option expense and recurring types of other charges, may vary, and depend on such factors as industry practice, analyst judgment, and the extent to which some types of data is disclosed by companies.

### 12-Month Target Price

The equity analyst's projection of the market price a given security will command 12 months hence, based on a combination of intrinsic, relative, and private market valuation metrics, including Fair Value.

### Abbreviations Used in Equity Research Reports

CAGR	- Compound Annual Growth Rate
CAPEX	- Capital Expenditures
CY	- Calendar Year
DCF	- Discounted Cash Flow
DDM	- Dividend Discount Model
EBIT	- Earnings Before Interest and Taxes
EBITDA	- Earnings Before Interest, Taxes, Depreciation & Amortization
EPS	- Earnings Per Share
EV	- Enterprise Value
FCF	- Free Cash Flow
FFO	- Funds From Operations
FY	- Fiscal Year
P/E	- Price/Earnings
P/NAV	- Price to Net Asset Value
PEG Ratio	- P/E-to-Growth Ratio
PV	- Present Value
R&D	- Research & Development
ROCE	- Return on Capital Employed
ROE	- Return on Equity
ROI	- Return on Investment
ROIC	- Return on Invested Capital
ROA	- Return on Assets
SG&A	- Selling, General & Administrative Expenses
SOTP	- Sum-of-The-Parts
WACC	- Weighted Average Cost of Capital

**Dividends on American Depositary Receipts (ADRs) and American Depositary Shares (ADSs) are net of taxes (paid in the country of origin).**

### Qualitative Risk Assessment

Reflects an equity analyst's view of a given company's operational risk, or the risk of a firm's ability to continue as an ongoing concern. The Qualitative Risk Assessment is a relative ranking to the U.S. STARS universe, and should be reflective of risk factors related to a company's operations, as opposed to risk and volatility measures associated with share prices. For an ETF this reflects on a capitalization-weighted basis, the average qualitative risk assessment assigned to holdings of the fund.

### STARS Ranking system and definition:

#### ★★★★★ 5-STARS (Strong Buy):

Total return is expected to outperform the total return of a relevant benchmark, by a notable margin over the coming 12 months, with shares rising in price on an absolute basis.

#### ★★★★ 4-STARS (Buy):

Total return is expected to outperform the total return of a relevant benchmark over the coming 12 months.

#### ★★★ 3-STARS (Hold):

Total return is expected to closely approximate the total return of a relevant benchmark over the coming 12 months.

#### ★★★ 2-STARS (Sell):

Total return is expected to underperform the total return of a relevant benchmark over the coming 12 months.

#### ★★★ 1-STAR (Strong Sell):

Total return is expected to underperform the total return of a relevant benchmark by a notable margin over the coming 12 months, with shares falling in price on an absolute basis.

### Relevant benchmarks:

In North America, the relevant benchmark is the S&P 500 Index, in Europe and in Asia, the relevant benchmarks are the MSCI AC Europe Index and the MSCI AC Asia Pacific Index, respectively.

# Cboe Global Markets, Inc.

## Disclosures

Stocks are ranked in accordance with the following ranking methodologies:

### STARS Stock Reports:

Qualitative STARS rankings are determined and assigned by equity analysts. For reports containing STARS rankings refer to the Glossary section of the report for detailed methodology and the definition of STARS rankings.

### Quantitative Stock Reports:

Quantitative rankings are determined by ranking a universe of common stocks based on 5 measures or model categories: Valuation, Quality, Growth, Street Sentiment, and Price Momentum. In the U.S., a sixth sub-category for Financial Health will also be displayed. Percentile scores are used to compare each company to all other companies in the same universe for each model category. The five (six) model category scores are then weighted and rolled up into a single percentile ranking for that company. For reports containing quantitative rankings refer to the Glossary section of the report for detailed methodology and the definition of Quantitative rankings.

### STARS Stock Reports and Quantitative Stock Reports:

The methodologies used in STARS Stock Reports and Quantitative Stock Reports [collectively, the "Research Reports"] reflect different criteria, assumptions and analytical methods and may have differing rankings. The methodologies and data used to generate the different types of Research Reports are believed by the author and distributor reasonable and appropriate. Generally, CFRA does not generate reports with different ranking methodologies for the same issuer. However, in the event that different methodologies or data are used on the analysis of an issuer, the methodologies may lead to different views on the issuer, which may at times result in contradicting assessments of an issuer. CFRA reserves the right to alter, replace or vary models, methodologies or assumptions from time to time and without notice to clients.

### STARS Stock Reports:

Global STARS Distribution as of December 31, 2022

Ranking	North America	Europe	Asia	Global
Buy	37.3%	36.2%	52.6%	40.1%
Hold	54.3%	55.7%	38.6%	51.5%
Sell	8.4%	8.0%	8.8%	8.4%
Total	100.0%	100.0%	100.0%	100.0%

### Analyst Certification:

**STARS Stock Reports are prepared by the equity research analysts of CFRA and its affiliates and subsidiaries. Quantitative Stock Reports are prepared by CFRA. All of the views expressed in STARS Stock Reports accurately reflect the research analyst's personal views regarding any and all of the subject securities or issuers; all of the views expressed in the Quantitative Stock Reports accurately reflect the output of CFRA's algorithms and programs. Analysts generally update STARS Stock Reports at least four times each year. Quantitative Stock Reports are generally updated weekly. No part of analysts' or CFRA's compensation was, is, or will be directly or indirectly related to the specific rankings or views expressed in any Stock Report.**

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