

Cboe Global Markets, Inc.

Recommendation **BUY** ★ ★ ★ ★ ★

Price USD 129.08 (as of market close Dec 03, 2021) **12-Mo. Target Price** USD 145.00 **Report Currency** USD **Investment Style** Mid-Cap Blend

Equity Analyst Alexander Yokum

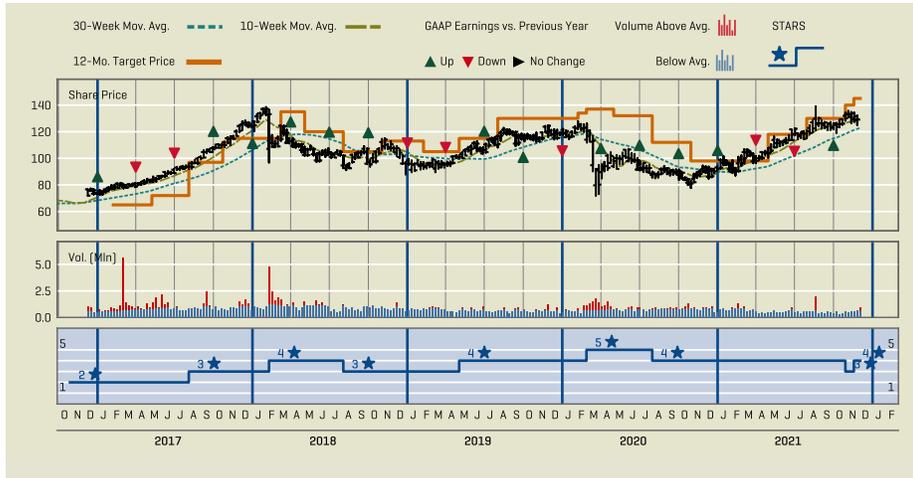
GICS Sector Financials
Sub-Industry Financial Exchanges and Data

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	USD 135.07 - 85.97	Oper.EPS2021E	USD 5.79	Market Capitalization[B]	USD 13.84	Beta	0.64
Trailing 12-Month EPS	USD 4.18	Oper.EPS2022E	USD 6.04	Yield [%]	1.48	3-yr Proj. EPS CAGR[%]	7
Trailing 12-Month P/E	30.85	P/E on Oper.EPS2021E	22.29	Dividend Rate/Share	USD 1.92	SPGMI's Quality Ranking	A-
USD 10K Invested 5 Yrs Ago	19,128.0	Common Shares Outstg.[M]	107.00	Institutional Ownership [%]	82.0		

Price Performance



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 Nov 21, 2021 11:40 PM ET, when the stock traded at USD 129.48.

Highlights

- ▶ We see net revenue increasing 15%-18% in 2021 given a rise in trading and recurring revenues, as well as acquisitions, moderating to 5%-7% organic growth in 2022. Options revenue [52% of revenue] grew 30% Y/Y in Q3 as average daily volume [ADV] increased 23% and the rate per contract [RPC] increased 16%. However, options market share declined to 31% from 32% a year ago. Futures revenue [8% of revenue] was up 24% on higher VIX futures volumes. We continue to believe VIX and SPX options remain important hedging vehicles and will continue to be a strong source of growth when volatility returns.
- ▶ Equities revenue [23% of revenue] in North America rose 24% in Q3 2021 on net transaction and clearing fees from certain recent acquisitions versus a 1% dip in trading volumes compared to the volatile period a year ago. However, we note market share also declined to 14% from the 15% level a year ago.
- ▶ CBOE has realized the majority of the synergies with the Bats acquisition, but operating expenses have ramped back up with the BIDS, EuroCCP, and MATCHNow acquisitions [adjusted operating margins down 70 basis points Y/Y to 62.0% in Q3 2021]. However, we see margins expanding again as the acquisitions are digested.

Investment Rationale/Risk

- ▶ Our Buy recommendation is based on our view that CBOE will benefit from global expansion, its new nano product, and its increased recurring revenues. We think expectations for growth abroad are too low as we believe CBOE will quickly gain market share through its superior technology and the planned introduction of its BIDS block-trading platform in Asia. CFRA sees CBOE's push to recurring revenue as a positive and we see recurring revenue growth to outpace transaction revenue growth by low single digits in 2022 and beyond.
- ▶ Risks to our opinion and target price include increased competition, increasing regulation, lower-than-expected volume in options, and/or investigations regarding CBOE's products.
- ▶ On November 18, we raised our 12-month target by \$5 to \$145, applying forward P/E of 24.0x our 2022 earnings estimate, in line with the 5-year historic average of 23.8x, but below the larger peer average of 27.7x, given CBOE's trading products with higher volatility. We raised our '21 and '22 EPS estimates by \$0.05 and \$0.13 to \$5.79 and \$6.04, respectively. The stock recently offered a 1.5% dividend yield.

Analyst's Risk Assessment

LOW	MEDIUM	HIGH
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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
2022	E 381	E 379	E 385	E 390	E 1,535
2021	1,011	801	817	E 372	E 1,457
2020	922	869	793	844	3,427
2019	602	621	675	599	2,496
2018	778	668	576	748	2,769
2017	356	641	611	621	2,229

Earnings Per Share (USD)

	1Q	2Q	3Q	4Q	Year
2022	E 1.48	E 1.49	E 1.52	E 1.55	E 6.04
2021	1.27	0.98	1.12	E 1.43	E 5.79
2020	1.42	1.31	1.01	0.80	4.27
2019	0.84	0.78	0.94	0.78	3.34
2018	1.04	0.73	0.76	1.23	3.76
2017	0.16	0.60	0.53	2.26	3.69

Fiscal Year ended Dec 31. EPS Estimates based on CFRA's Operating Earnings; historical GAAP earnings are as reported in Company reports.

Dividend Data

Amount [USD]	Date Decl.	Ex-Div. Date	Stk. of Record	Payment Date
0.4800	--	Nov 29	Nov 30	Dec 15 '21
0.4800	--	Aug 30	Aug 31	Sep 15 '21
0.4200	--	May 27	May 28	Jun 15 '21
0.4200	--	Feb 25	Feb 26	Mar 15 '21

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 Nov 21, 2021

CORPORATE OVERVIEW. Cboe Global Markets (CBOE) is one of the world's largest exchange holding companies and is the second-largest options exchange in the U.S., with over 30% market share, as well as the third-largest stock exchange operator by volume. CBOE offers trading across a diverse range of products, including options, futures, U.S. and European equities, exchange-traded products (ETPs), global FX, and multi-asset volatility products based on the CBOE Volatility Index (VIX Index).

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) European Equities; and 5) Global FX.

CBOE's revenue is primarily derived from transaction fees on the contracts or shares traded on its various exchanges. Approximately 70% of operating revenues were generated by transaction fees. 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 just 33% of its revenues coming from these products in Q3 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 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 Q3 2021 had debt of approximately \$1.3 billion. We think CBOE's balance sheet is reasonable at 1.0x net debt-to-EBITDA compared to the peer average of 2.3x. We think CBOE will continue to generate ample cash flow to either reduce debt, return capital return to shareholders, or both.

Corporate information

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Fax

N/A

Website

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Officers

Executive VP, General Counsel & Corporate Secretary

J. P. Sexton

Executive VP & COO

C. A. Isaacson

Executive VP & Chief Technology Officer

E. S. Crampton

Chairman, President & CEO

E. T. Tilly

Chairman, President & CEO

E. T. Tilly

Chairman, President & CEO

E. T. Tilly

Executive VP, CFO & Treasurer

B. N. Schell

Senior VP & Chief Accounting Officer

J. M. Griebenow

Board Members

A. J. Matturri

E. J. Fitzpatrick

E. S. Sunshine

E. T. Tilly

F. J. Tomczyk

I. K. Fong

J. E. Parisi

J. E. Sommers

J. J. McPeck

J. P. Froetscher

J. P. Ratterman

J. R. Goodman

R. A. Palmore

W. M. Farrow

Domicile

Delaware

Founded

1973

Employees

1,010

Stockholders

136

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	2020	2019	2018	2017				
		LOWEST				HIGHEST		Price/Sales	2.97	5.37	3.96	6.01		
Based on CFRA's proprietary quantitative model, stocks are ranked from most overvalued [1] to most undervalued [5].						Price/EBITDA					11.76	17.37	13.48	21.24
						Price/Pretax Income					15.41	26.76	19.22	40.05
						P/E Ratio					21.81	35.93	26.02	33.76
						Avg. Diluted Shares Outstg. [M]					109.30	111.80	112.20	107.50
						Figures based on fiscal year-end price								
Fair Value Calculation	N/A													
Volatility	LOW		AVERAGE		HIGH									
Technical Evaluation	BULLISH Since December, 2021, the technical indicators for CBOE have been BULLISH"													
Insider Activity	UNFAVORABLE		NEUTRAL		FAVORABLE									
Key Growth Rates and Averages														
Past Growth Rate [%]							1 Year	3 Years	5 Years					
Net Income							24.89	5.24	17.96					
Sales							37.30	15.42	38.86					
Ratio Analysis [Annual Avg.]														
Net Margin [%]							13.66	14.69	17.73					
% LT Debt to Capitalization							26.98	22.95	19.45					
Return on Equity [%]							13.97	12.85	24.94					

Company Financials Fiscal year ending Dec 31										
Per Share Data [USD]	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Tangible Book Value	-12.23	-8.55	-10.80	-13.66	2.70	2.35	2.31	2.75	2.25	2.19
Free Cash Flow	12.94	5.37	4.46	3.14	2.28	2.48	2.49	2.24	1.95	1.93
Earnings	4.27	3.34	3.76	3.69	2.27	2.46	2.21	1.99	1.78	1.52
Earnings [Normalized]	3.88	3.28	3.35	2.44	2.47	2.44	2.30	2.06	1.77	1.70
Dividends	1.56	1.34	1.16	1.04	0.96	0.88	0.78	0.66	0.54	0.44
Payout Ratio [%]	36.00	40.00	31.00	29.00	42.00	36.00	35.00	33.00	30.00	29.00
Prices: High	127.93	124.88	138.54	128.32	77.29	72.53	65.39	54.79	30.95	29.77
Prices: Low	72.01	89.53	87.87	72.54	58.43	55.04	46.52	29.29	24.44	21.55
P/E Ratio: High	30.00	37.40	36.80	34.80	34.00	29.50	29.60	27.50	17.40	19.60
P/E Ratio: Low	16.90	26.80	23.40	19.70	25.70	22.40	21.10	14.70	13.80	14.20
Income Statement Analysis [Million USD]										
Revenue	3,427	2,496	2,769	2,229	703.00	664.00	617.00	572.00	512.00	508.00
Operating Income	714.00	609.00	629.00	456.00	312.00	320.00	314.00	288.00	249.00	246.00
Depreciation + Amortization	152.00	163.00	185.00	174.00	26.00	46.00	40.00	35.00	32.00	34.00
Interest Expense	39.00	38.00	40.00	43.00	6.00	N/A	N/A	N/A	N/A	1.00
Pretax Income	660.00	501.00	571.00	334.00	307.00	324.00	310.00	284.00	243.00	240.00
Effective Tax Rate	29.10	26.00	25.60	-19.80	39.40	36.70	38.70	38.00	35.10	41.90
Net Income	468.00	375.00	426.00	402.00	187.00	205.00	190.00	176.00	157.00	139.00
Net Income [Normalized]	424.60	367.10	376.20	262.60	201.20	202.50	196.20	180.20	154.90	152.70
Balance Sheet and Other Financial Data [Million USD]										
Cash	338.00	300.00	311.00	191.00	97.00	102.00	148.00	221.00	136.00	135.00
Current Assets	1,567	608.00	684.00	435.00	235.00	204.00	244.00	309.00	203.00	190.00
Total Assets	6,517	5,114	5,321	5,266	476.70	384.80	383.90	441.60	338.90	327.90
Current Liabilities	1,313	282.00	596.00	334.00	90.00	74.00	74.00	107.00	52.00	52.00
Long Term Debt	1,135	868.00	916.00	1,238	N/A	N/A	N/A	N/A	N/A	N/A
Total Capital	4,697	4,279	4,466	4,358	330.00	260.00	250.00	285.00	239.00	236.00
Capital Expenditures	47.00	35.00	36.00	38.00	44.00	39.00	50.00	29.00	30.00	29.00
Cash from Operations	1,459	633.00	535.00	374.00	230.00	245.00	263.00	224.00	201.00	203.00
Current Ratio	1.19	2.16	1.15	1.30	2.62	2.76	3.31	2.87	3.89	3.63
% Long Term Debt of Capitalization	27.00	21.40	20.50	28.40	N/A	N/A	N/A	N/A	N/A	N/A
% Net Income of Revenue	13.70	15.00	15.40	18.00	26.60	30.90	30.70	30.80	30.70	27.40
% Return on Assets	7.67	7.30	7.43	9.93	45.24	52.02	47.52	46.18	46.76	52.80
% Return on Equity	14.00	11.20	13.30	23.20	62.90	80.40	71.00	67.20	66.20	67.60

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 neutral fundamental outlook on the financial exchanges & data sub-industry for the next 12 months. Our outlook for the exchanges is positive, but is offset by a negative outlook for data providers, largely driven by a negative fundamental view of the credit rating agencies.

Trading activity is likely to still grow in 2021 for the big exchanges, but be moderately lower after a robust year in 2020. We previously moved our outlook to positive as we forecasted volatility would return, which it did with the outbreak of Covid-19. We maintain a positive view for 2021 as we see continued growth in trading of equities and derivatives. While markets make new highs and exchanges benefit from record IPO issuance, we also see a chance for volatility to return in 2021 as investors reassess what we see as elevated valuations against a still recovering economy.

Exchanges with more exposure to cash equity products may fare better with the rise in volatility. We note that exchanges with significant exposure to interest rate products previously benefited from the uncertainty regarding the Federal Reserve interest rate moves. But with the Fed now indicating rates will stay low for the next year or longer, there has been a severe decline in demand for these hedging products. However, this could change as the Fed has most recently started to raise expectations of a rate hike earlier than previously anticipated.

Another industry disrupter is dark pool providers, which are grabbing market share from the NYSE and NASDAQ. The share of trading done in dark pools, or off-exchange markets, has gone from 27% in 2008 to approximately 40% today.

We see some exchanges seeking to diversify their revenue sources with non-transaction, recurring data subscriptions rather than be subject to market volume fluctuations. However, there is a growing resistance and even lawsuits against exchanges pertaining to data sold to high-frequency traders and their seemingly excessive high cost.

We continue to monitor the rise of cryptocurrency

futures and whether they will bring a new source of trading revenue for exchanges. While CBOE abandoned Bitcoin futures, ICE has now successfully launched new futures and is the first to offer custody and physical settlement in Bitcoin. CME has added Bitcoin options on its existing futures and recently introduced micro-bitcoin futures contracts as well as ether futures.

Data providers, largely the rating agencies, have fared well given the record amount of debt issuance as corporations and governments took advantage of record low interest rates. Debt issuance surged in the wake of Covid-19 as companies scrambled to raise cash and build up as much liquidity as possible to combat the economic downturn. However, we think debt issuance will start to slow as many companies likely pulled forward their debt issuance. We note corporate debt-to-GDP is off its high of 57% in Q2 2020 but still elevated at 51% as of Q1 2021, which is much higher than the past two credit cycle peaks of 45%. Therefore, we think debt issuance levels will slow even further, which is the largest driver of revenue for credit rating agencies.

The Financial Exchanges & Data sub-industry was up 15.88% year-to-date as of June 30, 2021, compared to the Financials sector up 24.0% and the S&P Composite 1500 up 14.8%. For the full-year 2020, the sub-industry rose 17.9%, compared to the Financials sector down 4.4% and the S&P 1500 up 15.8%.

/ Chris Kuiper, CFA

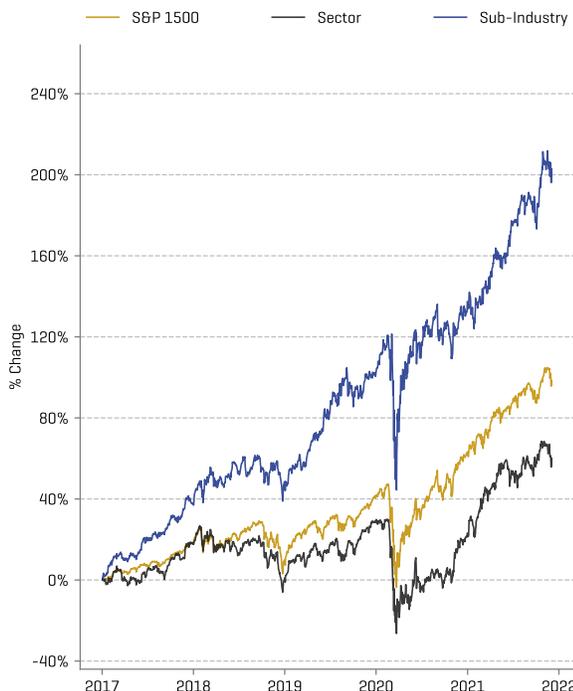
Industry Performance

GICS Sector: Financials

Sub-Industry: Financial Exchanges and Data

Based on S&P 1500 Indexes

Five-Year market price performance through Dec 04, 2021



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 [%]
Cboe Global Markets, Inc.	CBOE	BATS	USD	129.78	13,840.0	-3.9	38.5	30.0	N/A	1.5	14.0	27.0
ASX Limited	ASXFY	OTCPK	USD	63.80	12,412.0	-1.5	11.9	36.0	N/A	N/A	12.9	1.6
B3 S.A. - Brasil, Bolsa, Balcão	BOLS.Y	OTCPK	USD	6.18	11,771.0	-4.9	N/A	52.0	N/A	N/A	16.6	21.6
Euronext N.V.	EUXT.F	OTCPK	USD	95.50	10,453.0	-14.8	-7.6	19.0	N/A	N/A	31.7	54.0
FactSet Research Systems Inc.	FDS	NYSE	USD	470.44	17,708.0	7.9	40.0	45.0	315.51	0.7	41.8	44.3
Japan Exchange Group, Inc.	JPXGY	OTCPK	USD	10.43	11,182.0	-8.5	-17.0	12.0	N/A	N/A	16.4	5.2
MarketAxess Holdings Inc.	MKTIX	NasdaqGS	USD	351.07	13,350.0	-13.8	-35.1	45.0	175.61	0.8	34.7	7.8
Morningstar, Inc.	MORN	NasdaqGS	USD	320.97	13,832.0	3.0	58.9	62.0	N/A	0.4	19.0	30.9
Singapore Exchange Limited	SPXCY	OTCPK	USD	97.73	7,051.0	-9.9	-3.4	326.0	N/A	N/A	33.8	26.9
TMX Group Limited	TMXX.F	OTCPK	USD	98.16	5,504.0	-9.9	-0.4	26.0	N/A	2.4	7.9	18.1
Tradeweb Markets Inc.	TW	NasdaqGS	USD	98.16	19,834.0	7.3	66.6	112.0	68.18	0.3	4.5	0.5

*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****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

July 30, 2021

11:44 AM ET... CFRA Reiterates Buy Opinion on Shares of Cboe Global Markets, Inc. [CBOE 118.86****]:

CBOE reported second quarter results that came in slightly above expectations with Q2 EPS of \$1.38 vs. \$1.31, \$0.02 above consensus on revenue that was up 18% Y/Y and 1% above consensus. Revenue was driven by a 19% increase in options on higher volume and rates, although we note market share declined to 30.4% in Q2 vs. the 35.2% share a year ago. North American equities were down 2% but futures were up 31% on higher volumes in VIX futures. Expenses were up 34% Y/Y largely due to the acquisitions, which we do not find worrisome as CBOE continues to invest; expenses ex-acquisitions were up 16%. We still see the expectations of low single-digit top-line growth and very moderate margin expansion embedded in CBOE's share price as something CBOE could exceed, particularly if or when we see a return of volatility in the markets. We raise our target price by \$12 to \$130, equal to 23.0x our 2022 EPS estimate that we raise by \$0.20 to \$5.66; we raise 2021 by \$0.18 to \$5.48. / Chris Kuiper, CFA

April 30, 2021

03:37 PM ET... CFRA Reiterates Buy Opinion on Shares of Cboe Global Markets, Inc. [CBOE 106.02****]:

We raise our target price by \$20 to \$118 per share based on our DCF analysis assuming mid-single-digit top-line growth and moderately expanding margins. We raise our 2021 EPS estimate by \$0.17 to \$5.30 and by \$0.10 to \$5.46 for 2022. CBOE reported Q1 adjusted EPS of \$1.53 vs. \$1.65, \$0.13 above consensus on revenue that was up 2% Y/Y and 4% above expectations. Option revenue was down 4% as average daily trading volume was up 18%, offset by rates per contract down 24%. Futures revenue was down 24% as volume and rates were lower while American Equities revenue was the bright spot, up 11%, while Europe contributed 61% growth due to the EuroCCP acquisition. While volumes looked lackluster on a Y/Y basis, we note this was against strong Q1 2020 volumes; Q/Q volumes were much higher and more indicative of future growth ahead in our opinion. We think expectations for shares are low and see CBOE exceeding them with higher top line growth given expansion and higher trading as well as expanding margins. / Chris Kuiper, CFA

February 05, 2021

02:13 PM ET... CFRA Reiterates Buy Opinion on Shares of Cboe Global Markets, Inc. [CBOE 89.99****]:

We maintain our target price of \$98 per share based on our DCF analysis assuming mid-single-digit top-line growth and stable margins. We raise our 2021 EPS estimate by \$0.15 to \$5.13 and by \$0.30 to \$5.36 for 2022. CBOE reported Q4 adjusted EPS of \$1.21 vs. \$1.21, \$0.02 below consensus on revenue that was up 10% Y/Y and in-line with consensus. Option revenue was up 17% as average daily trading volume was up 41% but offset by rates per contract down 19%. Futures revenue was down 30% as volume and rates were lower while American Equities revenue shrank 2%. We were disappointed with the continued market share decline in both options and equities, but think shares have now declined to the point where expectations are low and think CBOE could surpass them, especially if volatility rises in 2021 or institutional buying comes back in. We note in January volume has already increased markedly in VIX futures and options. / Chris Kuiper, CFA

October 30, 2020

02:08 PM ET... CFRA Reiterates Buy Opinion on Shares of Cboe Global Markets, Inc. [CBOE 79.22****]:

We trim our target price by \$14 to \$98, equal to 19.7x our 2021 EPS estimate. We maintain our 2020 EPS estimate of \$5.22, trim our 2021 estimate by \$0.02 to \$4.98, and start 2022 at \$5.06. CBOE reported Q3 adjusted EPS of \$1.11 vs. \$1.29, \$0.04 above consensus. Option revenue was up 1% as average daily volume [ADV] increases of 24% were offset by a 27% decline in rate per contract (RPC); market share was 32% vs. 39% a year ago. Futures revenue declined 39% as ADV tumbled 38% and was compounded by a 13% drop in RPC due to the launch of mini VIX futures. Equity revenue grew 1% but market share is now at 15% vs. 17% a year ago. CBOE has adjusted prices to try to maintain market share but faces competition from three exchanges that launched in September. CBOE has benefitted from the influx in retail trading, but this has been offset by a decline in institutional trading. However, we find shares attractive as expectations appear to be low with the potential for institutional volume to return along with volatility. / Chris Kuiper, CFA

October 16, 2020

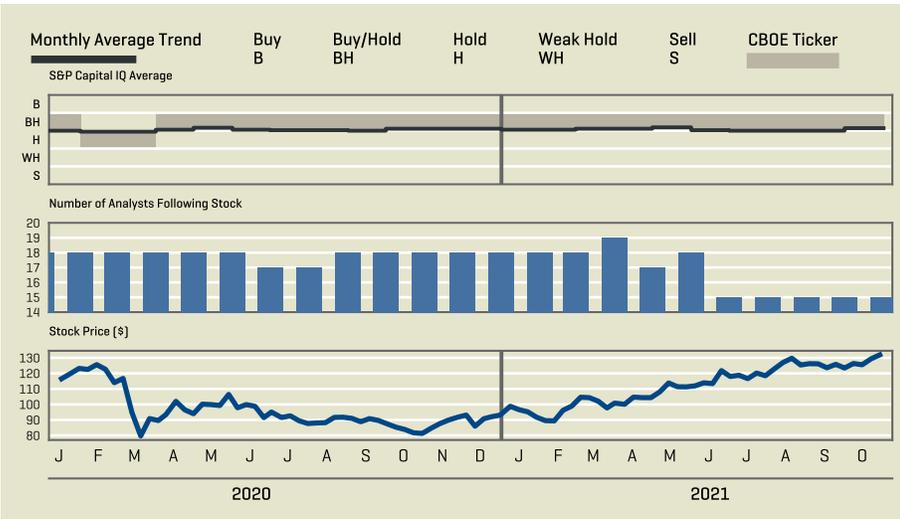
03:59 PM ET... CFRA Reiterates Buy Opinion on Shares of Cboe Global Markets, Inc. [CBOE 83.75****]:

Today CBOE announced it has agreed to acquire BIDS Trading, an alternative trading system (ATS) or "dark-pool" operator. BIDS is the 9th largest ATS by total number of shares traded but is number one in large block trading. With CBOE's market share in U.S. equities trading slowing being eroded, we are not surprised to see it make the acquisition [over 40% of all equity trading volume is now done off-exchange]. We therefore view the move as more defensive, but given CBOE's previous partnership with BIDS [they launched a large block trading platform in Europe in 2016], it could also spur more international growth. CBOE may also be feeling the pressure of three new competing equity exchanges going live last month. Terms were not disclosed, except that the deal is expected to be immediately accretive to earnings [contributing \$0.05 to \$0.06 in adj. EPS in 2021], and will be funded with debt. BIDS will operate as an independently managed venue, and is expected to close early 2021, subject to regulatory review. / Chris Kuiper, CFA

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	6	40	6	5
Buy/Hold	1	7	1	1
Hold	4	27	4	5
Weak hold	2	13	2	2
Sell	1	7	1	1
No Opinion	1	7	1	1
Total	15	100	15	15

Wall Street Consensus Opinion

Buy/Hold

Wall Street Consensus vs. Performance

For fiscal year 2021, analysts estimate that CBOE will earn USD 5.78. For fiscal year 2022, analysts estimate that CBOE's earnings per share will grow by 3.32% to USD 5.97.

Wall Street Consensus Estimates



Fiscal Year	Avg Est.	High Est.	Low Est.	# of Est.	Est. P/E
2022	5.97	6.23	5.51	14	21.73
2021	5.78	5.86	5.70	14	22.45
2022 vs. 2021	▲ 3%	▲ 6%	▼ -3%	N/A%	▼ -3%
Q4'22	1.50	1.61	1.37	9	86.26
Q4'21	1.42	1.50	1.34	13	91.26
Q4'22 vs. Q4'21	▲ 6%	▲ 7%	▲ 3%	▼ -31%	▼ -5%

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.

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STARS Stock Reports:

Global STARS Distribution as of March 05, 2021

Ranking	North America	Europe	Asia	Global
Buy	40.3%	32.5%	40.0%	38.7%
Hold	49.6%	57.1%	53.1%	51.7%
Sell	10.1%	10.3%	6.9%	9.6%
Total	100.0%	100.0%	100.0%	100.0%

Analyst Certification:

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