

Stock Selection Guide

Company	Cboe Global Markets		Date	11/29/22	
Prepared by	Maskey		Data taken from	BI Stock Data	
Where traded	BATS	Industry	Financial Data & Stock Exchanges		
Capitalization ---	Outstanding Amounts	Reference			
Preferred (\$M)	0.0	% Insiders	% Institution		
Common (M Shares)	106.4	1.8	83.1		
Debt (\$M)	1,991.6	% to Tot Cap	37.7	% Pot Dil	0.2

Symbol: CBOE

1 VISUAL ANALYSIS of Sales, Earnings, and Price



- | | | | |
|-----------------------------------|-------|--|-------|
| (1) Historical Sales Growth | 29.3% | (3) Historical Earnings Per Share Growth | 11.7% |
| (2) Estimated Future Sales Growth | 6.0% | (4) Estimated Future Earnings Per Share Growth | 7.5% |

2 EVALUATING Management

Cboe Global Markets

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Last 5 Year Avg.
% Pre-tax Profit on Sales	47.3%	49.6%	50.2%	51.1%	46.7%	15.0%	20.6%	20.1%	19.3%	21.6%	19.3%
% Earned on Equity	65.0%	53.1%	75.8%	77.7%	63.7%	14.5%	13.3%	11.1%	13.7%	15.0%	13.5%
% Debt To Capital	0.0%	0.0%	0.0%	0.0%	0.0%	28.5%	27.3%	21.4%	28.5%	28.4%	26.8%

3 PRICE-EARNINGS HISTORY as an indicator of the future

This shows how stock prices have fluctuated with earnings and dividends. It is building block for translating earnings into future stock prices.

CLOSING PRICE 123.25 (11/29/22) **52-WEEK HIGH** 133.02 **52-WEEK LOW** 103.82

	A	B	C	D	E	F	G	H
Year	Price		Earnings	Price Earnings Ratio		Dividend	% Payout	% High Yield
	High	Low	Per Share	High A / C	Low B / C	Per Share	F / C * 100	F / B * 100
2017	128.3	72.5	3.69	34.8	19.7	1.04	28.2	1.4
2018	138.5	87.9	3.76	36.8	23.4	1.16	30.9	1.3
2019	124.9	89.5	3.34	37.4	26.8	1.34	40.1	1.5
2020	127.9	72.0	4.27	30.0	16.9	1.56	36.5	2.2
2021	139.0	87.0	4.92	28.3	17.7	1.80	36.6	2.1
AVERAGE		81.8		33.4	20.9		34.5	
CURRENT/TTM			2.23	59.7	46.6	2.00	89.7	
AVERAGE PRICE EARNINGS RATIO: 27.2					CURRENT PRICE EARNINGS RATIO: 55.3			

4 EVALUATING RISK and REWARD over the next 5 years

Assuming one recession and one business boom every 5 years, calculations are made of how high and how low the stock might sell. The upside-downside ratio is the key to evaluating risk and reward.

A HIGH PRICE - NEXT 5 YEARS

Avg. High P/E 30.0 X Estimate High Earnings/Share 6.87 = Forecasted High Price \$ 206.1

B LOW PRICE - NEXT 5 YEARS

(a) Avg. Low P/E 16.0 X Estimate Low Earnings/Share 5.35 = Forecasted Low Price \$ 85.6

(b) Avg. Low Price of Last 5 Years 81.8

(c) Recent Market Low Price 72.0

(d) Price Dividend Will Support $\frac{\text{Indicated Dividend}}{\text{High Yield}} = \frac{2.00}{2.17\%} = 92.3$

Selected Forecasted Low Price \$ 85.6

C ZONING using 25%-50%-25%

Forecasted High Price 206.1 Minus Forecasted Low Price 85.6 = 120.5 Range. 25% of Range 30.1

Buy Zone 85.6 to 115.7

Hold Zone 115.7 to 176.0

Sell Zone 176.0 to 206.1

Present Market Price of 123.25 is in the **HOLD** Zone

D UPSIDE DOWNSIDE RATIO (POTENTIAL GAIN VS. RISK OR LOSS)

$\frac{\text{High Price} - \text{Present Price}}{\text{Present Price}} = \frac{206.1 - 123.25}{123.25} = 0.6720$ $\frac{\text{Present Price} - \text{Low Price}}{\text{Present Price}} = \frac{123.25 - 85.6}{123.25} = 0.3180$ Ratio = 2.2 To 1

E PRICE TARGET (Note: This shows the potential market price appreciation over the next five years in simple interest terms.)

$\frac{\text{High Price} - \text{Closing Price}}{\text{Closing Price}} = \frac{206.1 - 123.25}{123.25} = 0.6720$ X 100 = 67.20 - 100 = 67.2 % Appreciation

5 5-YEAR POTENTIAL

This combines price appreciation with dividend yield to get an estimate of total return. It provides a standard for comparing income and growth stocks.

A $\frac{\text{Indicated Annual Dividend}}{\text{Closing Price}} = \frac{1.80}{123.25} = 0.0162 = 1.6\% \text{ Current Yield}$

B AVERAGE YIELD - USING FORECAST HIGH P/E

$\frac{\text{Avg. \% Payout}}{\text{Forecast High PE}} = \frac{32.0\%}{30.00} = 1.1\%$

AVERAGE YIELD - USING FORECAST AVERAGE P/E

$\frac{\text{Avg. \% Payout}}{\text{Forecast Average PE}} = \frac{32.0\%}{23.00} = 1.4\%$

C COMPOUND ANNUAL RETURN - USING FORECAST HIGH P/E

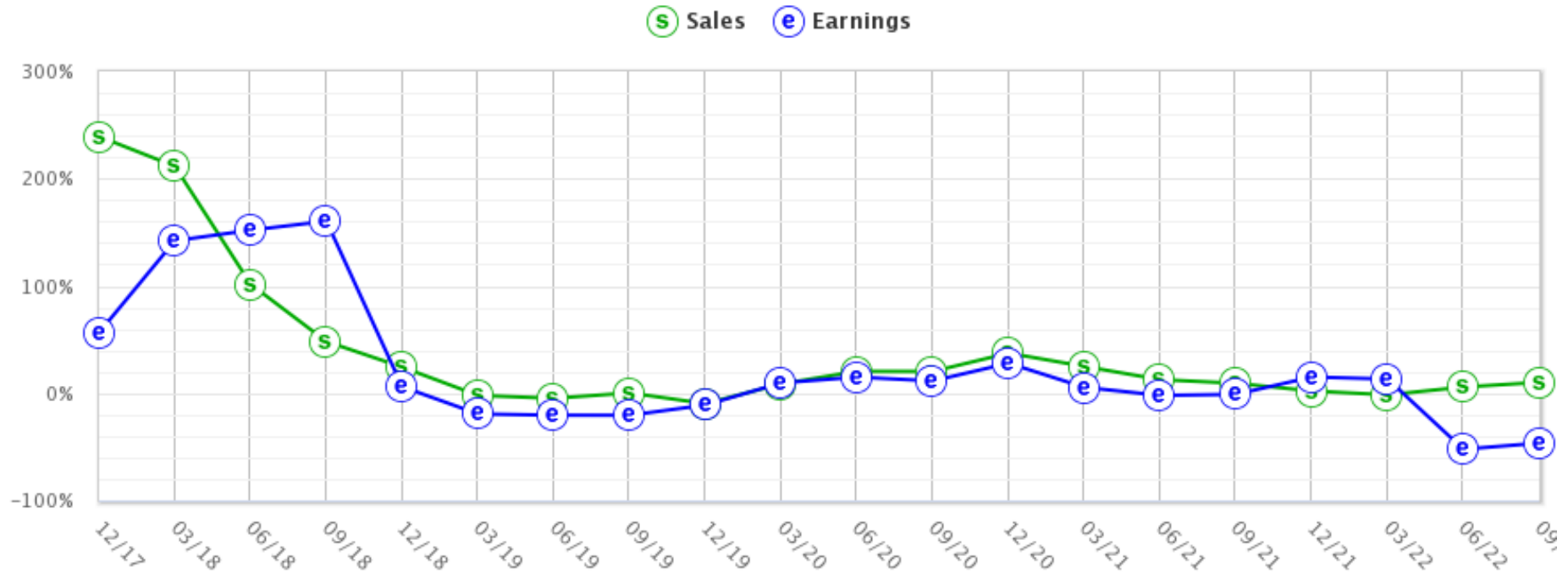
Annualized Appreciation 10.8 %
Average Yield 1.1 %
Annualized Rate of Return 11.9 %

COMPOUND ANNUAL RETURN - USING FORECAST AVG P/E

Annualized Appreciation 5.1 %
Average Yield 1.4 %
Annualized Rate of Return 6.5 %

Quarterly Growth Trend Data

Graph: Trailing 4 Quarters, Last 5 Years of Data



Quarterly Data									Last 12 Months Data								
Period	EPS		Pre-Tax Profit			Sales		Income Tax Rate	EPS	Pre-Tax Profit		Sales	Income Tax		%Change		
	\$	%Change	\$ Mil	%Sales	%Change	\$ Mil	%Change	\$		\$ Mil	%Sales	\$ Mil	%Rate	EPS	Pre-Tax Profit	Sales	
09/22	1.41	25.9	229.0	23.0	31.8	993.5	21.6	34.4	2.23	407.3	10.7	3,820.2	137.4	33.7	-46.7	-39.1	10.0
06/22	-1.74	-277.6	-256.8	-26.0	-243.3	985.8	23.1	28.2	1.94	352.1	9.7	3,643.5	115.5	32.8	-52.3	-46.5	5.7
03/22	1.02	-19.7	224.9	23.1	16.6	974.5	-3.6	51.3	4.66	788.1	22.8	3,458.5	284.1	36.1	13.1	24.0	-1.6
12/21	1.54	90.1	210.2	24.3	71.0	866.4	2.6	21.1	4.91	756.1	21.6	3,494.8	230.3	30.5	15.0	14.5	2.0
09/21	1.12	10.9	173.8	21.3	6.4	816.8	3.0	30.7	4.18	668.8	19.3	3,472.6	216.9	32.4	-1.2	2.6	9.1
06/21	0.98	-4.9	179.2	22.4	14.4	800.8	-7.8	41.1	4.07	658.4	19.1	3,448.5	216.8	32.9	-2.2	4.6	12.5
03/21	1.27	-10.6	192.9	19.1	-11.3	1,010.8	9.7	28.9	4.12	635.8	18.1	3,516.4	187.6	29.5	5.4	7.4	24.9

Quarterly Growth Trend Data

Graph: Trailing 4 Quarters, Last 5 Years of Data

Quarterly Data									Last 12 Months Data									
Period	EPS		Pre-Tax Profit			Sales		Income Tax Rate	EPS	Pre-Tax Profit			Sales	Income Tax		%Change		
	\$	%Change	\$ Mil	%Sales	%Change	\$ Mil	%Change			\$	\$ Mil	%Sales		\$ Mil	%Rate	EPS	Pre-Tax Profit	Sales
12/20	0.81	5.2	122.9	14.6	7.6	844.2	41.0	29.0	4.27	660.4	19.3	3,427.1	192.8	29.2	27.8	31.4	37.2	
09/20	1.01	7.4	163.4	20.6	16.0	792.7	17.4	32.7	4.23	651.7	20.5	3,181.5	182.9	28.1	11.3	15.5	20.2	
06/20	1.03	32.1	156.6	18.0	30.9	868.7	40.0	27.5	4.16	629.2	20.5	3,064.2	164.2	26.1	14.9	16.6	20.3	
03/20	1.42	67.1	217.5	23.6	70.2	921.5	52.9	27.6	3.91	592.2	21.0	2,816.1	157.3	26.6	9.5	9.7	8.6	
12/19	0.77	-37.4	114.2	19.1	-35.0	598.6	-19.9	24.4	3.34	502.5	20.1	2,497.2	130.8	26.0	-11.2	-12.0	-9.8	
09/19	0.94	23.7	140.9	20.9	21.2	675.4	17.3	24.8	3.80	564.0	21.3	2,646.3	142.3	25.2	-20.7	12.9	0.2	
06/19	0.78	6.8	119.6	19.3	-0.2	620.6	-7.0	29.4	3.62	539.4	21.2	2,546.8	138.1	25.6	-20.6	10.3	-4.9	
03/19	0.85	-18.3	127.8	21.2	-19.8	602.6	-22.5	25.5	3.57	539.6	20.8	2,593.7	140.0	25.9	-19.4	13.5	-2.1	
12/18	1.23	-45.6	175.7	23.5	68.8	747.7	20.5	21.2	3.76	571.2	20.6	2,768.8	148.8	26.0	5.9	70.8	24.2	
09/18	0.76	43.4	116.3	20.2	9.8	575.9	-5.8	26.3	4.79	499.6	18.9	2,641.8	-80.0	-16.0	160.3	63.6	48.1	
06/18	0.73	21.7	119.8	17.9	12.9	667.5	4.2	30.7	4.56	489.2	18.3	2,677.3	-57.8	-11.8	151.9	83.4	101.6	
03/18	1.04	550.0	159.4	20.5	771.0	777.7	118.3	25.9	4.43	475.5	17.9	2,650.6	-50.0	-10.5	142.1	94.5	211.5	
12/17	2.26	310.9	104.1	16.8	38.8	620.7	254.5	-147.0	3.55	334.4	15.0	2,229.1	-42.7	-12.8	56.4	9.1	239.3	
09/17	0.53	6.0	105.9	17.3	57.3	611.4	291.4	43.1	1.84	305.3	17.1	1,783.5	103.6	33.9	-21.0	-1.9	179.6	
06/17	0.60	-3.2	106.1	16.6	26.6	640.8	292.3	35.9	1.81	266.7	20.1	1,328.3	88.4	33.1	-31.4	-22.8	98.7	
03/17	0.16	-73.3	18.3	5.1	-77.3	356.2	119.4	16.9	1.83	244.4	28.7	850.8	83.0	34.0	-28.5	-27.1	30.1	
12/16	0.55	-9.8	75.0	42.8	-5.9	175.1	12.3	39.8	2.27	306.6	46.7	656.9	121.0	39.5	-7.7	-5.4	3.5	
09/16	0.50	-38.3	67.3	43.1	-33.6	156.2	-16.5	39.9	2.33	311.3	48.8	637.8	120.5	38.7	-4.1	-5.2	-1.1	
06/16	0.62	14.8	83.8	51.3	13.8	163.3	9.8	39.2	2.64	345.4	51.7	668.6	128.1	37.1	20.5	14.5	10.2	
03/16	0.60	20.0	80.5	49.6	16.2	162.3	13.6	38.9	2.56	335.2	51.3	654.0	124.2	37.0	19.1	12.7	8.6	
12/15	0.61	5.2	79.7	51.1	-5.1	155.9	-6.3	36.7	2.46	324.0	51.1	634.5	120.1	37.1	11.3	4.6	2.8	
09/15	0.81	42.1	101.5	54.2	35.6	187.0	25.6	33.5	2.43	328.3	50.9	645.1	125.4	38.2	13.0	10.2	8.9	
06/15	0.54	8.0	73.6	49.5	6.1	148.7	3.3	39.1	2.19	301.7	49.7	607.0	116.6	38.7	6.8	3.7	4.6	
03/15	0.50	-10.7	69.3	48.5	-15.0	142.8	-9.5	39.0	2.15	297.4	49.4	602.2	114.2	38.4	3.9	0.3	2.5	
12/14	0.58	11.5	83.9	50.4	16.3	166.5	17.4	41.2	2.21	309.7	50.2	617.2	119.6	38.6	11.1	9.2	7.9	
09/14	0.57	21.3	74.8	50.2	10.2	148.9	8.9	35.4	2.15	297.9	50.3	592.6	111.3	37.3	12.0	10.0	5.8	
06/14	0.50	-3.8	69.4	48.2	-7.3	143.9	-4.5	38.1	2.05	291.0	50.1	580.4	111.4	38.3	4.1	10.4	5.2	
03/14	0.56	16.7	81.5	51.6	18.7	157.9	10.6	39.9	2.07	296.5	50.5	587.2	113.7	38.4	9.5	16.6	10.0	
12/13	0.52	15.6	72.2	50.9	21.5	141.8	9.0	36.1	1.99	283.7	49.6	572.1	107.7	38.0	11.8	16.9	11.7	
09/13	0.47	-9.6	67.9	49.7	12.2	136.7	6.6	39.1	1.92	270.9	48.3	560.3	100.9	37.2				
06/13	0.52	18.2	74.9	49.7	14.1	150.8	13.7	38.4	1.97	263.5	47.8	551.9	88.4	33.6				

Quarterly Growth Trend Data

Graph: Trailing 4 Quarters, Last 5 Years of Data

Quarterly Data									Last 12 Months Data									
Period	EPS		Pre-Tax Profit			Sales		Income Tax Rate	EPS	Pre-Tax Profit			Sales	Income Tax		%Change		
	\$	%Change	\$ Mil	%Sales	%Change	\$ Mil	%Change	\$		\$ Mil	%Sales	\$ Mil		%Rate	EPS	Pre-Tax Profit	Sales	
03/13	0.48	29.7	68.7	48.1	20.6	142.7	17.6	38.3	1.89	254.3	47.7	533.7	87.2	34.3				
12/12	0.45		59.4	45.7		130.1		33.1										
09/12	0.52		60.5	47.2		128.3		24.4										
06/12	0.44		65.7	49.5		132.5		41.4										
03/12	0.37		57.0	46.9		121.4		41.3										