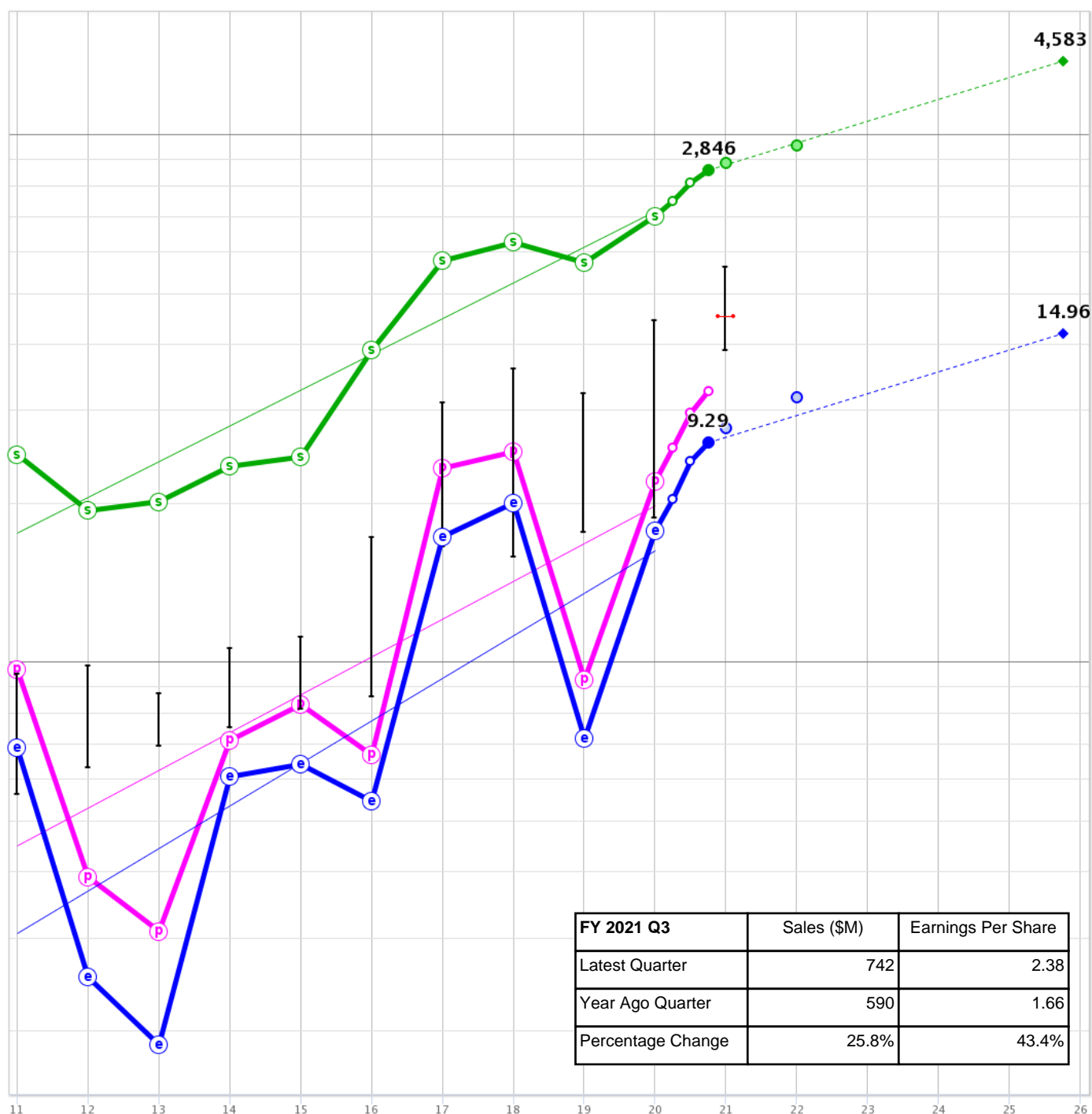


## Stock Selection Guide

Company	MKS Instruments		Date	12/09/21	
Prepared by	HENRIKSON		Data taken from	BI Stock Data	
Where traded	NAS	Industry	Scientific & Technical Instruments		
Capitalization --- Outstanding Amounts	Reference				
Preferred (\$M)	0.0	% Insiders	% Institution		
Common (M Shares)	55.7		1.1	91.5	
Debt (\$M)	1,029.0	% to Tot Cap	27.4	% Pot Dil	0.4

Symbol: MKSI

### 1 VISUAL ANALYSIS of Sales, Earnings, and Price



FY 2021 Q3	Sales (\$M)	Earnings Per Share
Latest Quarter	742	2.38
Year Ago Quarter	590	1.66
Percentage Change	25.8%	43.4%

- |                                   |       |  |       |
|-----------------------------------|-------|--|-------|
| (1) Historical Sales Growth       | 16.9% | (3) Historical Earnings Per Share Growth       | 20.4% |
| (2) Estimated Future Sales Growth | 10.0% | (4) Estimated Future Earnings Per Share Growth | 10.0% |

## 2 EVALUATING Management

MKS Instruments

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Last 5 Year Avg.
Pre-tax Profit on Sales	22.6%	11.7%	8.9%	17.5%	19.6%	9.9%	23.4%	23.2%	9.4%	18.2%	16.8%
% Earned on Equity	13.2%	4.7%	3.6%	10.9%	10.6%	8.6%	22.2%	21.3%	7.1%	15.7%	15.0%
% Debt To Capital	0.2%	0.0%	0.0%	0.0%	0.0%	33.0%	19.8%	15.7%	31.9%	30.4%	26.2%

## 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** 161.10 (12/09/21)

**HIGH THIS YEAR** 199.44

**LOW THIS YEAR** 138.70

	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
2016	61.3	30.7	1.94	31.6	15.8	0.68	35.1	2.2
2017	110.6	59.0	6.16	18.0	9.6	0.71	11.4	1.2
2018	128.3	56.4	7.14	18.0	7.9	0.78	10.9	1.4
2019	115.1	62.7	2.55	45.1	24.6	0.80	31.4	1.3
2020	158.1	66.9	6.33	25.0	10.6	0.80	12.6	1.2
AVERAGE		55.1		20.3	11.0		20.3	
CURRENT/TTM			9.29			0.88	9.5	
AVERAGE PRICE EARNINGS RATIO: 15.6				CURRENT PRICE EARNINGS RATIO: 17.3				

## 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 19.0 X Estimate High Earnings/Share 14.96 = Forecasted High Price \$ 284.3

### B LOW PRICE - NEXT 5 YEARS

(a) Avg. Low P/E 11.0 X Estimate Low Earnings/Share 6.33 = Forecasted Low Price \$ 69.6

(b) Avg. Low Price of Last 5 Years 55.1

(c) Recent Market Low Price 62.7

(d) Price Dividend Will Support  $\frac{\text{Indicated Dividend}}{\text{High Yield}} = \frac{0.88}{2.22\%} = 39.7$

Selected Forecasted Low Price \$ 125.0

### C ZONING using 25%-50%-25%

Forecasted High Price 284.3 Minus Forecasted Low Price 125.0 = 159.3 Range. 25% of Range 39.8

Buy Zone 125.0 to 164.8

Hold Zone 164.8 to 244.5

Sell Zone 244.5 to 284.3

Present Market Price of 161.10 is in the **BUY** Zone

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

$\frac{\text{High Price} - \text{Present Price}}{\text{Present Price} - \text{Low Price}} = \frac{284.3 - 161.10}{161.10 - 125.0} = \frac{123.17}{36.10} = 3.4$  To 1

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

$\frac{\text{High Price} - \text{Closing Price}}{\text{Closing Price}} = \frac{284.3 - 161.10}{161.10} = 1.7646$  X 100 = 176.46 - 100 = 76.5 % 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**  $\frac{\text{Indicated Annual Dividend}}{\text{Closing Price}} = \frac{0.80}{161.10} = 0.0055 = 0.5\%$  Current Yield

### B AVERAGE YIELD - USING FORECAST HIGH P/E

$\frac{\text{Avg. \% Payout}}{\text{Forecast High PE}} = \frac{20.3\%}{19.00} = 1.1\%$

### AVERAGE YIELD - USING FORECAST AVERAGE P/E

$\frac{\text{Avg. \% Payout}}{\text{Forecast Average PE}} = \frac{20.3\%}{15.00} = 1.4\%$

### C COMPOUND ANNUAL RETURN - USING FORECAST HIGH P/E

Annualized Appreciation 12.0 %  
Average Yield 1.1 %  
Annualized Rate of Return 13.1 %

### COMPOUND ANNUAL RETURN - USING FORECAST AVG P/E

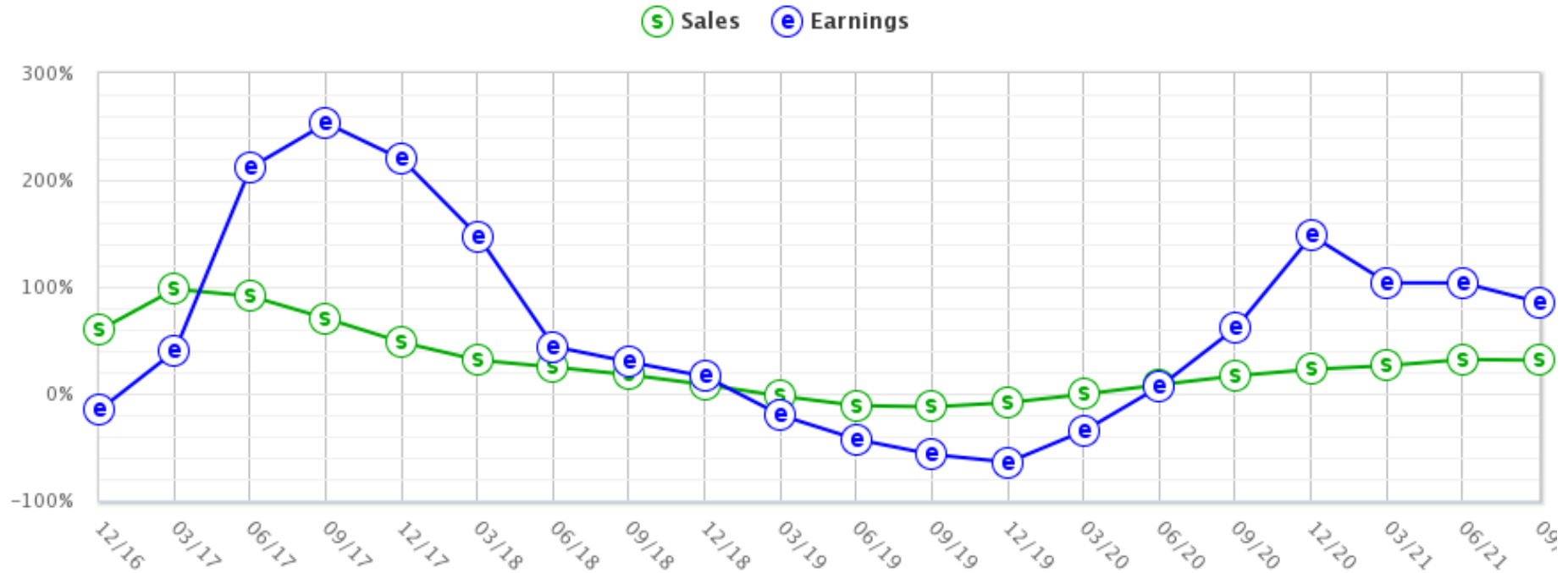
Annualized Appreciation 6.9 %  
Average Yield 1.4 %  
Annualized Rate of Return 8.2 %

**Notes: MKSI 12/10/2021**

<b>Date</b>	<b>Subject</b>	<b>Description</b>	<b>Type</b>
12/12/21	MKSI Study Judgements 12/10/21	Revenue and EPS: 10%; a bit lower than analysts' consensus and BI member sentiment (because of cyclicality in semiconductor business) Hi PE = 19 (slightly lower than high average PE after removing high outlier PEs) Low price = \$125, somewhat lower than the lowest price of 2021	Community
11/10/21	Ticker Talk Sept 2021	Ken Kavula presented this stock in the 5 in 5 section of Ticker Talk.	Community
09/21/21	Presented by Cy in 09-21 Round table	Was Presented by Cy in 09-21 Round table	Community

**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
09/21	2.38	43.4	166.2	22.4	52.8	741.9	25.8	20.3	9.29	627.4	22.0	2,845.9	110.8	17.7	85.4	85.8	31.2
06/21	2.63	97.7	172.5	23.0	86.7	749.9	37.8	15.1	8.57	570.0	21.2	2,693.8	94.0	16.5	103.6	100.5	31.9
03/21	2.20	76.0	148.2	21.4	82.3	693.9	29.5	17.5	7.27	489.9	19.7	2,488.2	87.2	17.8	103.6	100.9	26.2
12/20	2.08	170.1	140.5	21.3	154.5	660.2	32.1	17.7	6.32	423.0	18.2	2,330.0	72.6	17.2	147.8	137.9	22.6
09/20	1.66	93.0	108.8	18.4	96.3	589.8	27.5	15.7	5.01	337.7	15.6	2,169.5	62.1	18.4	61.6	58.0	16.6
06/20	1.33	92.8	92.4	17.0	78.2	544.3	14.8	20.2	4.21	284.3	13.9	2,042.1	51.3	18.1	6.9	4.2	8.3
03/20	1.25	443.5	81.3	15.2	430.1	535.7	15.6	15.0	3.57	243.8	12.4	1,971.9	48.3	19.8	-34.7	-34.0	-0.6

### 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
12/19	0.77	-41.7	55.2	11.1	-39.4	499.7	8.5	22.6	2.55	177.8	9.4	1,899.8	36.9	20.7	-64.3	-63.0	-8.4	
09/19	0.86	-49.4	55.4	12.0	-51.6	462.5	-5.1	14.4	3.10	213.8	11.5	1,860.7	43.7	20.5	-57.1	-57.3	-12.5	
06/19	0.69	-68.9	51.9	10.9	-65.1	474.1	-17.3	27.2	3.94	272.9	14.5	1,885.4	58.7	21.5	-43.0	-44.0	-11.3	
03/19	0.23	-87.9	15.3	3.3	-87.9	463.6	-16.4	18.8	5.47	369.5	18.6	1,984.4	70.3	19.0	-20.5	-25.7	-2.4	
12/18	1.32	-6.4	91.1	19.8	-17.9	460.5	-10.0	21.4	7.14	481.0	23.2	2,075.1	89.3	18.6	15.9	7.4	8.3	
09/18	1.70	23.2	114.5	23.5	13.0	487.2	0.2	18.6	7.23	500.8	23.6	2,126.4	103.9	20.7	29.6	29.7	17.5	
06/18	2.22	1.4	148.5	25.9	-6.0	573.1	19.2	17.3	6.91	487.7	22.9	2,125.5	109.0	22.4	44.0	49.1	24.8	
03/18	1.90	61.0	126.7	22.9	64.0	554.3	26.8	17.1	6.88	497.1	24.4	2,033.1	119.2	24.0	147.5	173.9	31.3	
12/17	1.41	69.9	111.0	21.7	124.0	511.8	26.3	30.1	6.16	447.6	23.4	1,916.0	105.9	23.7	219.2	249.8	47.9	
09/17	1.38	130.0	101.4	20.8	139.9	486.3	27.7	25.0	5.58	386.2	21.3	1,809.3	70.3	18.2	253.2	280.6	70.3	
06/17	2.19	1,188.2	158.0	32.9	1,177.3	480.8	47.5	23.8	4.80	327.1	19.2	1,703.7	57.8	17.7	211.7	222.9	91.2	
03/17	1.18	257.6	77.3	17.7	224.7	437.2	138.0	15.8	2.78	181.5	11.7	1,548.8	32.9	18.1	39.7	33.7	97.7	
12/16	0.83	72.9	49.6	12.2	115.0	405.1	135.0	8.2	1.93	128.0	9.9	1,295.3	26.5	20.7	-15.7	-19.7	59.2	
09/16	0.60	7.1	42.2	11.1	0.4	380.7	81.8	23.0	1.58	101.5	9.5	1,062.6	16.2	16.0	-35.5	-42.1	25.9	
06/16	0.17	-72.6	12.4	3.8	-73.6	325.9	49.5	25.5	1.54	101.3	11.4	891.3	17.8	17.6	-36.9	-37.4	8.5	
03/16	0.33	-47.6	23.8	13.0	-49.9	183.7	-14.1	26.2	1.99	135.8	17.3	783.4	25.0	18.4	-10.4	-6.9	-0.6	
12/15	0.48	-25.0	23.0	13.4	-40.8	172.4	-15.1	-10.7	2.29	159.5	19.6	813.5	30.5	19.1	5.5	16.9	4.2	
09/15	0.56	1.8	42.1	20.1	47.4	209.3	12.1	29.3	2.45	175.4	20.8	844.2	43.6	24.9	28.3	36.4	7.9	
06/15	0.62	55.0	46.8	21.5	51.6	218.0	18.0	29.1	2.44	161.8	19.7	821.6	27.6	17.0	73.0	43.7	7.8	
03/15	0.63	8.6	47.5	22.2	25.0	213.8	3.6	28.9	2.22	145.9	18.5	788.4	25.7	17.6	93.0	58.0	7.4	
12/14	0.64	68.4	38.9	19.2	25.0	203.0	-0.7	12.2	2.17	136.4	17.5	780.9	20.2	14.8	219.1	130.0	16.6	
09/14	0.55	1,000.0	28.5	15.3	127.6	186.8	12.2	-2.0	1.91	128.6	16.4	782.2	26.4	20.5	402.6	267.4	30.6	
06/14	0.40	185.7	30.9	16.7	190.4	184.7	17.7	31.3	1.41	112.6	14.8	761.9	46.3	41.1	271.1	286.6	32.8	
03/14	0.58	427.3	38.0	18.4	665.3	206.4	45.7	17.8	1.15	92.3	12.6	734.1	38.0	41.1	94.9	98.7	23.5	
12/13	0.38	375.0	31.2	15.2	354.2	204.4	52.8	35.1	0.68	59.3	8.9	669.4	19.4	32.7	-25.3	-21.1	4.0	
09/13	0.05	0.0	12.5	7.5	88.3	166.5	17.7	80.4	0.38	35.0	5.8	598.8	11.9	33.9	-69.6	-64.5	-12.1	
06/13	0.14	-60.0	10.6	6.8	-62.0	156.9	-11.5	31.2	0.38	29.1	5.1	573.8	8.5	29.1	-78.5	-78.1	-21.9	
03/13	0.11	-74.4	5.0	3.5	-85.2	141.6	-25.8	-16.0	0.59	46.5	7.8	594.3	13.8	29.8	-72.6	-71.5	-24.0	
12/12	0.08	-81.0	6.9	5.1	-77.3	133.8	-22.1	40.1	0.91	75.1	11.7	643.5	31.4	41.8	-62.9	-59.6	-21.8	
09/12	0.05	-91.2	6.7	4.7	-83.9	141.4	-27.3	61.3	1.25	98.6	14.5	681.4	37.5	38.0				
06/12	0.35	-52.1	28.0	15.8	-51.4	177.4	-21.0	33.7	1.77	133.3	18.1	734.4	39.2	29.4				

**Quarterly Growth Trend Data**

Graph: Trailing 4 Quarters, Last 5 Years of Data

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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	
03/12	0.43	-41.1	33.6	17.6	-40.8	190.9	-17.7	32.3	2.15	162.9	20.8	781.5	47.6	29.2				
12/11	0.42		30.3	17.6		171.7		25.0										
09/11	0.57		41.4	21.3		194.5		26.6										
06/11	0.73		57.6	25.7		224.5		33.0										
03/11	0.73		56.8	24.5		231.9		33.0										