

MKS Instruments (MKS)

\$126.02 (As of 11/05/20)

Price Target (6-12 Months): **\$132.00**

Long Term: 6-12 Months

Zacks Recommendation:

Neutral

(Since: 09/29/20)

Prior Recommendation: Outperform

Short Term: 1-3 Months

Zacks Rank: (1-5)

2-Buy

Zacks Style Scores:

VGM:B

Value: D

Growth: B

Momentum: C

Summary

MKS Instruments' third-quarter 2020 results benefited from strong growth in the semiconductor market owing to increased demand, particularly for Power Solutions. It also witnessed strong demand for plasma and reactive gas solutions. MKS Instruments is also benefiting from a lean cost structure. Moreover, the Electro Scientific Industries acquisition strengthened the company's offerings in optics, photonics and laser markets, apart from saving costs. However, shares of MKS Instruments have underperformed the industry year to date. The company's results were affected by headwinds in the advanced market segment. Top line was negatively impacted by a seasonal decline in PCB drilling applications. However, reopening of research labs is positive. The company also gains traction from stable Vacuum & Analysis segment.

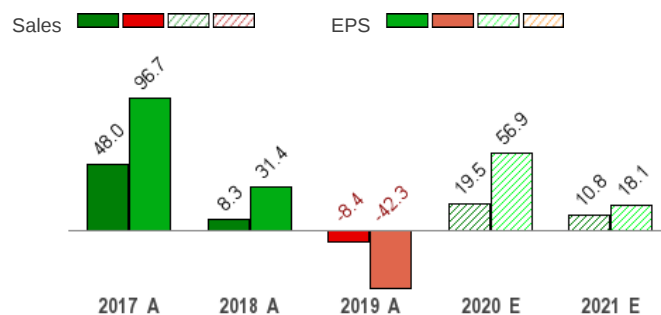
Price, Consensus & Surprise



Data Overview

52-Week High-Low	\$129.97 - \$66.87
20-Day Average Volume (Shares)	302,632
Market Cap	\$6.9 B
Year-To-Date Price Change	14.6%
Beta	1.51
Dividend / Dividend Yield	\$0.80 / 0.6%
Industry	Electronics - Manufacturing Machinery
Zacks Industry Rank	Top 10% (26 out of 250)

Sales and EPS Growth Rates (Y/Y %)



Last EPS Surprise	9.7%
Last Sales Surprise	5.4%
EPS F1 Estimate 4-Week Change	7.9%
Expected Report Date	01/26/2021
Earnings ESP	0.0%
P/E TTM	20.0
P/E F1	17.8
PEG F1	1.5
P/S TTM	3.2

Sales Estimates (millions of \$)

	Q1	Q2	Q3	Q4	Annual*
2021	598 E	638 E	639 E	641 E	2,516 E
2020	536 A	544 A	590 A	600 E	2,270 E
2019	464 A	474 A	462 A	500 A	1,900 A

EPS Estimates

	Q1	Q2	Q3	Q4	Annual*
2021	\$1.89 E	\$2.19 E	\$2.21 E	\$2.22 E	\$8.37 E
2020	\$1.54 A	\$1.62 A	\$1.93 A	\$2.01 E	\$7.09 E
2019	\$1.12 A	\$1.09 A	\$1.12 A	\$1.20 A	\$4.52 A

*Quarterly figures may not add up to annual.

The data in the charts and tables, including the Zacks Consensus EPS and Sales estimates, is as of 11/05/2020. The reports text is as of 11/06/2020.

Overview

MKS Instruments, Inc. is a global provider of instruments, subsystems and process control solutions that measure, monitor, deliver, analyze, power and control critical parameters of advanced manufacturing processes.

MKS solutions are used in pressure measurement and control, flow measurement and control, gas and vapor delivery, gas composition analysis, residual gas analysis, leak detection, control technology, ozone generation and delivery, RF & DC power, reactive gas generation, vacuum technology, lasers, photonics, sub-micron positioning, vibration control, and optics.

Total revenues in 2019 were \$1.9 billion. The Massachusetts-based company has six product groups: Analytical and Controls Solutions; Power, Plasma and Reactive Gas Solutions; Vacuum Solutions; Photonics; Optics; and Laser Products.

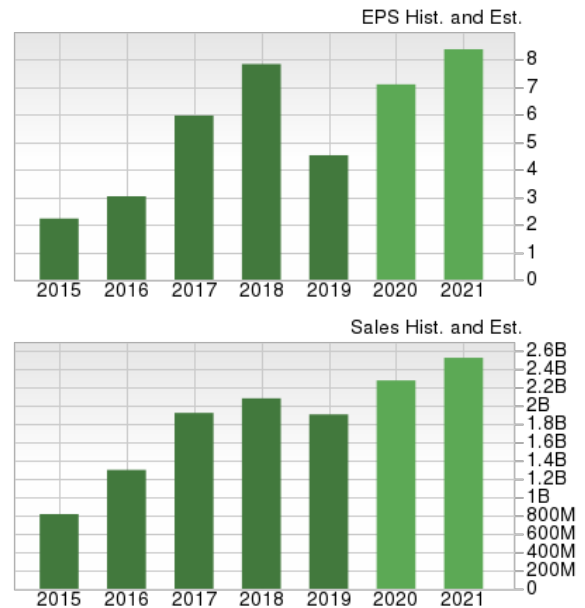
Since the acquisition of Electro Scientific Industries (ESI) in February 2019, MKS Instruments has been reporting results via three business segments as discussed below:

The Vacuum and Analysis segment (56% of 2019 revenues) provides a wide range of components, instruments, software and subsystems. The Analytical and Controls Solutions, the Power, Plasma and Reactive Gas Solutions and the Vacuum Solutions are included under this segment.

The Light and Motion (35.3% of 2019 revenues) offers several components, instruments and subsystems. The Photonics, Optics and Laser product groups are included under this segment.

Equipment & Solutions segment (8.7% of 2019 revenues) includes a portfolio of industrial laser-based component and micromanufacturing test systems used for processing materials.

Markedly, top 10 customers contributed 33% to the company's top line in 2019.



Source: Zacks Investment Research

Reasons To Buy:

- ▲ MKS Instruments' has witnessed strong demand for its solutions that are being used to fight coronavirus. The company's valves and pressure measurement solutions are currently used in the sterilization of personal protective equipment. While its optical filters are deployed in diagnostic systems for coronavirus, gradings are incorporated in blood analyzers. The company gains from solid demand for laser-based solutions for advanced industrial manufacturing, including solar market applications and flexible PCB.
- ▲ MKS Instruments' has solid growth prospects in the semiconductor market due to increasing demand for advanced memory and logic chips. Moreover, strong demand for power solutions has been a major growth driver in the semiconductor end-market. Adoption of Ozone Solutions for Atomic Layer Deposition, which serves both logic and memory manufacturing, bodes well for MKS Instruments. The company continues to see strong order rates in the second quarter. Moreover, broad exposure to almost 85% of WFE spending including deposition, etch, lithography, metrology and inspection presents significant growth opportunity over the long term.
- ▲ Moreover, rapid adoption of 5G technology presents significant growth opportunity for MKS Instruments over the next few years. This is due to the fact that implementation of 5G will require upgraded wireless infrastructure and new mobile devices. This will require increased data processing and storage capabilities, which is positive for the company's semiconductor and laser diode testing businesses.
- ▲ The acquisition of Electro Scientific Industries (ESI) expands MKS Instruments' total addressable market by nearly \$2.2 billion. The deal also strengthens its lasers, photonics and optic product portfolio. Moreover, the company reached its previously announced annualized cost synergies target of \$15 million within 14 months of the acquisition, well ahead of its original estimation of 18-36 months post acquisition.
- ▲ MKS Instruments' liquidity position is strong. As of Sep 30, 2020, MKS Instruments had cash and short-term investments of \$715.7 million compared with \$607 million as of Jun 30, 2020. Secured term-loan principal outstanding as of Sep 30 was \$836 million. The company also had \$100 million of incremental borrowing capacity under an asset-based line of credit, subject to certain borrowing base requirements. Its strong cash position is expected to support dividend payouts in the near term. Its strong cash position is expected to support dividend payouts in the near term.

Robust semiconductor portfolio, increasing demand for solutions related 5G and the Electro Scientific Industries (ESI) buyout are key catalysts.

Reasons To Sell:

- ▼ MKS Instruments generates a significant portion of sales from Asia (especially South Korea, Japan, Israel, China and Taiwan) post ESI acquisition. Hence, the uncertainty regarding the final resolution of the ongoing U.S.-China trade war doesn't bode well for the company. Moreover, coronavirus outbreak in MKS Instruments' top five operating markets (United States, South Korea, China, Japan and Germany) is expected to hurt top-line in near term.
- ▼ Moreover, coronavirus outbreak negatively impacted MKS Instrument's research end-market. As university and research laboratories globally remain closed due to lockdowns and physical distancing, demand for instruments sees a sudden collapse. This along with supply-chain issues in the semiconductor space is expected to hurt MKS Instruments' top-line growth at least in the near term.
- ▼ Since, the company conducts businesses in major foreign currencies, unfavorable movement in foreign currency exchange rates often adversely impact sales. The company generated more than 56% of first-quarter revenues from markets outside the United States.
- ▼ A significant portion of MKS Instruments revenue comes from a handful of customers. Top 10 customers contributed 33% to the company's top line in 2019. Loss of any of these top customers can significantly hurt revenues.

Adverse impact of Coronavirus, forex volatility, customer concentration and higher level of goodwill in balance sheet are major concerns.

Last Earnings Report

MKS Instruments' Q3 Earnings Beat, Revenues Up Y/Y

MKS Instruments reported third-quarter 2020 adjusted earnings of \$1.93 per share, which beat the Zacks Consensus Estimate by 9.7% and jumped 72.3% year over year.

Revenues of \$589.8 million surpassed the consensus mark by 5.4% and improved 27.5% year over year, driven by buoyant demand for the company's solutions in the semiconductor market.

Products revenues (85.9% of total revenues) were \$506.8 million, up 31.2% from the year-ago quarter. Services revenues (14.1%) increased 8.8% year over year to \$83 million.

Quarter Ending 09/2020

Report Date	Oct 27, 2020
Sales Surprise	5.41%
EPS Surprise	9.66%
Quarterly EPS	1.93
Annual EPS (TTM)	6.29

Quarterly Update

Revenues from the semiconductor market (60.9% of total revenues) jumped 61% year over year to \$359 million owing to increased demand, particularly for the Power Solutions business.

Revenues from advanced markets (39.1% of total revenues) were \$230.8 million, down 3.7% from the year-ago quarter.

Segment-wise, Vacuum and Analysis (61.3% of total revenues) revenues surged 50.1% year over year to \$361.3 million.

Equipment & Solutions segment revenues (8.9% of total revenues) were \$52.6 million, up 6.7% year over year.

Light and Motion division revenues (29.8% of total revenues) increased 2% year over year to \$175.9 million.

Operating Details

In the third quarter, MKS Instruments' adjusted gross margin expanded 10 basis points (bps) on a year-over-year basis to 44.4%.

Adjusted EBITDA increased 56.5% year over year to \$153.5 million. Adjusted EBITDA margin expanded 480 bps on a year-over-year basis to 26%.

Research & development and sales, general & administrative expenses, as a percentage of revenues, declined 180 bps and 300 bps on a year-to-date basis, respectively.

MKS Instruments reported non-GAAP operating income of \$136.4 million, up 68% year over year. Adjusted operating margin expanded 560 bps on a year-over-year basis to 23.1%.

Balance Sheet

As of Sep 30, 2020, MKS Instruments had cash and short-term investments of \$715.7 million compared with \$607 million as of Jun 30, 2020.

Secured term-loan principal outstanding as of Sep 30 was \$836 million. The company also had \$100 million of incremental borrowing capacity under an asset-based line of credit, subject to certain borrowing base requirements.

Cash flow from operations surged 150.6% year over year to \$152.1 million. Free cash flow jumped 178.5% year over year to \$123.1 million.

MKS Instruments paid out dividends worth \$11 million during the reported quarter.

Q4 Guidance

For the fourth quarter of 2020, MKS Instruments anticipates revenues to be \$600 million (+/- \$25 million). Non-GAAP earnings are expected to be \$2 per share (+/- 20 cents).

Recent News

On Oct 27, MKS Instruments announced a quarterly cash dividend of 20 cents per share. The dividend will be paid out on Dec 4 to shareholders of record as of Nov 23, 2020.

On Sep 22, MKS Instruments announced that it had received two technology innovation awards in China for the MKS Spectra-Physics IceFyre 50-Watt ultraviolet (UV) picosecond laser. MKS received the Ringier Technology Innovation Award and the OFweek Ultrafast Laser Technology Innovation Award, in recognition of the IceFyre laser's unique capability and versatility for picosecond precision micromachining.

On Sep 2, MKS Instruments announced that Japan-based Meiko Electronics has purchased multiple ESI Geode systems to enhance its high-volume HDI PCB-manufacturing capability. The latest CO2-laser-based systems will be deployed at Meiko's high-end manufacturing facility in Vietnam.

Valuation

MKS Instruments shares are up 14.5% in the year-to-date period and 12.4% over the trailing 12-month period. Stocks in the Zacks sub-industry and the Zacks Computer & Technology sector are up 32% and 31.5%, in the year-to-date period, respectively. Over the past year, the Zacks sub-industry and the sector are up 32.4% and 38.3%, respectively.

The S&P 500 index is up 9.5% in the year-to-date period and 14.4% in the past year.

The stock is currently trading at 15.41X forward 12-month earnings, which compares to 19.73X for the Zacks sub-industry, 26.71X for the Zacks sector and 21.88X for the S&P 500 index.

Over the past five years, the stock has traded as high as 25.58X and as low as 7.14X, with a 5-year median of 15.38X. Our Neutral recommendation indicates that the stock will perform in-line with the market. Our \$132 price target reflects 16.18X forward 12-month earnings.

The table below shows summary valuation data for MKSI

Valuation Multiples - MKSI					
		Stock	Sub-Industry	Sector	S&P 500
P/E F12M	Current	15.41	19.73	26.71	21.88
	5-Year High	25.58	23.52	27.99	23.47
	5-Year Low	7.14	10.44	16.95	15.27
	5-Year Median	15.38	19.28	19.94	17.7
P/S F12M	Current	2.8	2.73	4.18	4.06
	5-Year High	3.29	3.08	4.48	4.3
	5-Year Low	1.46	1.5	2.77	3.17
	5-Year Median	2.33	2.17	3.44	3.67
EV/EBITDA TTM	Current	12.79	15.2	15.16	14.49
	5-Year High	16.89	16.5	15.78	15.63
	5-Year Low	4.32	5.51	8.25	9.52
	5-Year Median	11.16	11.07	11.9	13.11

As of 11/05/2020

Source: Zacks Investment Research

Industry Analysis Zacks Industry Rank: Top 10% (26 out of 250)



Source: Zacks Investment Research

Top Peers

Company (Ticker)	Rec	Rank
Advanced Energy Industries, Inc. (AEIS)	Outperform	1
Applied Materials, Inc. (AMAT)	Neutral	3
AMETEK, Inc. (AME)	Neutral	3
Coherent, Inc. (COHR)	Neutral	3
Entegris, Inc. (ENTG)	Neutral	3
KLA Corporation (KLAC)	Neutral	2
Lam Research Corporation (LRCX)	Neutral	2
Teradyne, Inc. (TER)	Neutral	2

The positions listed should not be deemed a recommendation to buy, hold or sell.

Industry Comparison Industry: Electronics - Manufacturing Machinery				Industry Peers		
	MKSI	X Industry	S&P 500	AEIS	AME	COHR
Zacks Recommendation (Long Term)	Neutral	-	-	Outperform	Neutral	Neutral
Zacks Rank (Short Term)	2	-	-	1	3	3
VGM Score	B	-	-	F	C	B
Market Cap	6.95 B	1.39 B	24.11 B	3.22 B	25.09 B	3.21 B
# of Analysts	5	3	13	5	8	2
Dividend Yield	0.63%	0.00%	1.57%	0.00%	0.66%	0.00%
Value Score	D	-	-	F	D	C
Cash/Price	0.12	0.23	0.07	0.15	0.06	0.14
EV/EBITDA	20.33	20.33	13.73	33.70	18.73	15.90
PEG F1	1.49	1.18	2.75	NA	3.91	NA
P/B	3.12	2.02	3.35	4.19	4.40	3.59
P/CF	18.38	27.97	13.19	28.15	20.84	13.22
P/E F1	17.83	23.13	21.16	19.36	28.09	19.24
P/S TTM	3.20	1.80	2.64	2.33	5.40	2.57
Earnings Yield	5.63%	4.07%	4.53%	5.17%	3.56%	5.20%
Debt/Equity	0.37	0.28	0.70	0.40	0.40	0.44
Cash Flow (\$/share)	6.86	1.20	6.92	2.98	5.23	10.00
Growth Score	B	-	-	C	B	A
Historical EPS Growth (3-5 Years)	24.90%	20.79%	10.07%	8.99%	15.18%	-0.82%
Projected EPS Growth (F1/F0)	56.95%	68.75%	0.26%	77.87%	-7.34%	142.93%
Current Cash Flow Growth	-27.42%	-30.38%	5.29%	-35.66%	23.89%	-46.32%
Historical Cash Flow Growth (3-5 Years)	24.72%	18.65%	8.38%	8.19%	10.17%	18.56%
Current Ratio	4.58	4.24	1.38	2.91	1.88	4.40
Debt/Capital	26.84%	21.51%	41.97%	28.66%	28.70%	30.78%
Net Margin	12.78%	6.12%	10.44%	7.45%	18.77%	-33.76%
Return on Equity	16.49%	6.67%	14.96%	23.64%	16.29%	3.25%
Sales/Assets	0.61	0.61	0.50	0.88	0.45	0.64
Projected Sales Growth (F1/F0)	19.49%	10.15%	0.00%	71.28%	-12.17%	19.48%
Momentum Score	C	-	-	F	B	C
Daily Price Change	6.53%	2.75%	1.91%	10.39%	3.47%	3.92%
1-Week Price Change	-4.26%	-4.23%	-5.63%	-6.93%	-8.87%	-0.64%
4-Week Price Change	7.99%	7.11%	0.43%	23.54%	2.39%	16.29%
12-Week Price Change	0.17%	0.08%	3.34%	4.92%	8.01%	6.75%
52-Week Price Change	12.37%	12.01%	1.98%	31.49%	13.36%	-20.81%
20-Day Average Volume (Shares)	302,632	235,857	1,955,785	224,004	963,477	138,944
EPS F1 Estimate 1-Week Change	0.00%	0.00%	0.00%	0.00%	1.07%	0.00%
EPS F1 Estimate 4-Week Change	7.91%	13.24%	1.27%	0.34%	4.02%	0.00%
EPS F1 Estimate 12-Week Change	7.91%	7.91%	3.13%	8.47%	4.40%	0.00%
EPS Q1 Estimate Monthly Change	21.82%	31.66%	0.51%	1.30%	9.36%	0.00%

Source: Zacks Investment Research

Zacks Stock Rating System

We offer two rating systems that take into account investors' holding horizons: Zacks Rank and Zacks Recommendation. Each provides valuable insights into the future profitability of the stock and can be used separately or in combination with each other depending on your investment style.

Zacks Recommendation

The Zacks Recommendation aims to predict performance over the next 6 to 12 months. The foundation for the quantitatively determined Zacks Recommendation is trends in the company's estimate revisions and earnings outlook. The Zacks Recommendation is broken down into 3 Levels; Outperform, Neutral and Underperform. Unlike many Wall Street firms, we maintain a balance between the number of Outperform and Neutral recommendations. Our team of 70 analysts are fully versed in the benefits of earnings estimate revisions and how that is harnessed through the Zacks quantitative rating system. But we have given our analysts the ability to override the Zacks Recommendation for the 1200 stocks that they follow. The reason for the analyst over-rides is that there are often factors such as valuation, industry conditions and management effectiveness that a trained investment professional can spot better than a quantitative model.

Zacks Rank

The Zacks Rank is our short-term rating system that is most effective over the one- to three-month holding horizon. The underlying driver for the quantitatively-determined Zacks Rank is the same as the Zacks Recommendation, and reflects trends in earnings estimate revisions.

Zacks Style Scores

The Zacks Style Score is as a complementary indicator to the Zacks rating system, giving investors a way to focus on the highest rated stocks that best fit their own stock picking preferences.

Academic research has proven that stocks with the best Value, Growth and Momentum characteristics outperform the market. The Zacks Style Scores rate stocks on each of these individual styles and assigns a rating of A, B, C, D and F. We also produce the VGM Score (V for Value, G for Growth and M for Momentum), which combines the weighted average of the individual Style Scores into one score. This is perfectly suited for those who want their stocks to have the best scores across the board.

Value Score	D
Growth Score	B
Momentum Score	C
VGM Score	B

As an investor, you want to buy stocks with the highest probability of success. That means buying stocks with a Zacks Recommendation of Outperform, which also has a Style Score of an A or a B.

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Returns quoted represent past performance which is no guarantee of future results. Investment returns and principal value will fluctuate so that when shares are redeemed, they may be worth more or less than their original cost. Current performance may be higher or lower than the performance shown.

Investing involves risk; principal loss is possible. There is no guarantee that companies that can issue dividends will declare, continue to pay or increase dividends.

Glossary of Terms and Definitions

52-Week High-Low: The range of the highest and lowest prices at which a stock has traded during the past year. This range is determined based on the stock's daily closing price which may differ from the intra-day high or low. Many investors use it as a technical indicator to determine a stock's current value and future price movement. The idea here is that if price breaks out from the 52-week range, in either direction, the momentum may continue in the same direction.

20-Day Average Volume (Shares): The average number of shares of a company traded in a day over the last 20 days. It is a direct indication of a security's overall liquidity. The higher the average daily trading volume, the easier it is to enter or exit the stock at a desired price with more buyers and sellers being available.

Daily Price Change: This is the percentage difference between a trading day's closing price and the prior trading day's closing price. This item is updated at 9 p.m. EST each day.

1-Week Price Change: This is the percentage change in a stock's closing price over the last 5 trading days. This change reflects the collective buying and selling sentiment over the 1-week period.

A strong weekly price increase for the stock, especially when accompanied by increased volume, is an indication of it gaining momentum.

4-Week Price Change: This is the percentage change in a stock's closing price over the last 20 trading days or past 4 weeks. This is a medium-term price change metric and an indication of the stock gaining momentum.

12-Week Price Change: This is the percentage change of a stock's closing price over the last 60 trading days or past 12 weeks. Similar to 4-week price change, this is a medium-term price change metric. It shows whether a stock has been enjoying strong investor demand, or if it has been in consolidation, or distress over this period.

52-Week Price Change: This is the percentage change in a stock's closing price over the last 260 trading days or past 52 weeks. This long-term price change metric is a good reference point for investors. Some investors seek stocks with the best percentage price change over the last 52 weeks, expecting the momentum to continue.

Market Cap: The number of outstanding common shares of a company times its latest price per share. This figure represents a company's size, which indicates various characteristics, including price stability and risk, in which investors could be interested.

Year-To-Date Price Change: Change in a stock's daily closing price in the period of time beginning the first day of the current calendar year through to the previous trading day.

of Analysts: Number of EPS estimates used in calculating the current-quarter consensus. These estimates come from the brokerage analysts tracking this stock. However, the number of such analysts tracking this stock may not match the number of estimates, as all brokerage analysts may not come up with an estimate or provide it to us.

Beta: A measure of risk commonly used to compare the volatility of a stock to the overall market. The S&P 500 Index is the base for calculating beta and carries a value of 1. A stock with beta below 1 is less risky than the market as a whole. And a stock with beta above 1 is riskier.

Dividend: The portion of earnings a company is expected to distribute to its common shareholders in the next 12 months for each share they own. Dividends are usually paid quarterly. Dividend payments reflect positively on a company and help maintain investors' trust. Investors typically find dividend-paying stocks appealing because the dividend adds to any market price appreciation to result in higher return on investment (ROI). Moreover, a steady or increasing dividend payment provides investors a cushion in a down market.

Dividend Yield: The ratio of a company's annual dividend to its share price. The annual dividend used in the ratio is calculated based on the most recent dividend paid by the company. Dividend yield is an estimate of the dividend-only return from a stock in the next 12 months. Since dividend itself doesn't change frequently, dividend yield usually changes with a stock's price movement. As a result, often an unusually high dividend yield is a result of weak stock price.

S&P 500 Index: The Standard & Poor's 500 (S&P 500) Index is an unmanaged group of securities considered to be representative of the stock market in general. It is a market-capitalization-weighted index of stocks of the 500 largest U.S. companies. Each stock's weight in the index is proportionate to its market value.

Industry: One of the 250+ groups that Zacks classifies all stocks into based on the nature of business. These groups are termed as expanded (aka "X") industries and map to their respective (economic) sectors; Zacks has 16 sectors.

Zacks Industry Rank: The Zacks Industry Rank is determined by calculating the average Zacks Rank for all stocks in the industry and then assigning an ordinal rank to it. For example, an industry with an average Zacks Rank of 1.6 is better than an industry with an average Zacks Rank of 2.3. So, the industry with the better average Zacks Rank would get a better Zacks Industry Rank. If an industry has the best average Zacks Rank, it would be considered the top industry (1 out of 250+), which would place it at the top 1% of Zacks-ranked industries. Studies have shown that roughly half of a stock's price movement can be attributed to the industry group it belongs to. In fact, the top 50% of Zacks-ranked industries outperforms the bottom 50% by a factor of more than 2 to 1.

Last EPS Surprise: The percentage deviation of a company's last reported earnings per share from the Zacks Consensus Estimate. Companies with a positive earnings surprise are more likely to surprise again in the future (or miss again if they recently missed).

Last Sales Surprise: The percentage deviation of a company's last reported sales from the Zacks Consensus Estimate.

Expected Report Date: This is an estimated date of a company's next earnings release. The information originated or gathered by Zacks Investment Research from its information providers or publicly available sources is the basis of this estimate.

Earnings ESP: The Zacks Earnings ESP compares the Most Accurate Estimate to the Zacks Consensus Estimate for the yet-to-be reported quarter. The Most Accurate Estimate is the most recent version of the Zacks Consensus EPS Estimate. The idea here is that analysts revising their estimates closer to an earnings release have the latest information, which could potentially be more accurate than what they and others contributing to the consensus had predicted earlier. Thus, a positive or negative Earnings ESP reading theoretically indicates the likely deviation of the actual earnings from the consensus estimate. However, the model's predictive power is significant for positive ESP readings only. A positive Earnings ESP is a strong predictor of an earnings beat, particularly when combined with a Zacks Rank #1 (Strong Buy), #2 (Buy) or #3 (Hold). Our research shows that stocks with this combination produce a positive surprise nearly 70% of the time.

Periods:

TTM: Trailing 12 months. Using TTM figures is an effective way of analyzing the most-recent financial data in an annualized format that helps neutralize the effects of seasonality and other quarter-to-quarter variation.

F1: Current fiscal year. This period is used to analyze the estimates for the ongoing full fiscal year.

F2: Next fiscal year. This period is used to analyze the estimates for the next full fiscal year.

F12M: Forward 12 months. Using F12M figures is an effective way of analyzing the near-term (the following four unreported quarters) estimates in an annualized manner. Instead of typically representing estimates for the full fiscal year, which may not represent the nitty-gritty of each quarter, F12M figures suggest an all-inclusive annualized estimate for the following four quarters. The annualization helps neutralize the potential effects of seasonality and other quarter-to-quarter variations.

P/E Ratio: The price-to-earnings ratio measures a company's current market price per share relative to its earnings per share (EPS). Usually, the trailing-12-month (TTM) EPS, current-fiscal-year (F1) EPS estimate, or forward-12-month (F12M) EPS estimate is used as the denominator. In essence, this ratio shows what the market is willing to pay today for each dollar of EPS. In other words, this ratio gives a sense of what the relative value of the company is at the already reported level of earnings or at a future level of earnings.

It is one of the most widely-used multiples for determining the value of a company and helps comparing its valuation with that of a competitor, the industry group or a benchmark.

PEG Ratio: The price/earnings to growth ratio is a stock's P/E ratio using current fiscal year (F1) EPS estimate divided by its expected EPS growth rate over the coming 3 to 5 years. This ratio essentially determines a stock's value by factoring in the company's expected earnings growth and is thus believed to provide a more complete picture than just the P/E ratio, particularly for faster-growing companies.

P/S Ratio: The price-to-sales ratio is calculated as a company's current price per share divided by trailing 12 months (TTM) sales or revenues per share. This ratio shows what the market is willing to pay today for each dollar of TTM sales per share. The P/S ratio is at times the only valuation metric when the company has yet to become profitable.

Cash/Price Ratio: The cash-to-price ratio or Cash Yield is calculated as cash and marketable securities per share divided by the company's current share price. Like the earnings yield, which shows the anticipated yield (or return) on a stock from earnings for each dollar invested, the cash yield does the same, with cash being the source of return instead of earnings. For example, a cash/price ratio of 0.08 suggests a return of 8% or 8 cents for every \$1 investment.

EV/EBITDA Ratio: The EV/EBITDA ratio, also known as Enterprise Multiple, is calculated as a company's enterprise value (market capitalization + value of total long-term debt + book value of preferred shares - cash and marketable securities) divided by EBITDA (earnings before interest, taxes, depreciation and amortization). Usually, trailing-12-month (TTM) or forward-12-month (F12M) EBITDA is used as the denominator.

EV/Sales Ratio: The enterprise value-to-sales ratio is calculated as a company's enterprise value (market capitalization + value of total long-term debt + book value of preferred shares - cash and marketable securities) divided by annual sales. It is an expansion of the P/S valuation, which uses market value instead of enterprise value. The EV/Sales ratio is perceived as more accurate than P/S, in part, because the market capitalization does not take a company's debt into account when valuing it.

EV/CF Ratio: The enterprise value-to-cash flow ratio is calculated as a company's enterprise value (market capitalization + value of total long-term debt + book value of preferred shares - cash and marketable securities) divided by the trailing-12-month (TTM) operating cash flow. It's a measure of how long it would take to buy the entire business if you were able to use all the company's operating cash flow.

The EV/CF ratio is perceived as more accurate than the P/CF ratio, in part, because the market price does not take a company's debt into account when valuing it.

EV/FCF Ratio: The enterprise value-to-free cash flow metric compares a company's enterprise value to its trailing-12-month (TTM) free cash flow (FCF). This metric is very similar to the EV/CF ratio, but is considered a more exact measure owing to the fact that it uses free cash flow, which subtracts capital expenditures (CAPEX) from a company's total operating cash flow, thereby reflecting the actual cash flow available for funding growth activities and payments to shareholders.

P/EBITDA Ratio: The P/EBITDA ratio is calculated as a company's per share market value divided by EBITDA (earnings before interest, taxes, depreciation, and amortization). This metric is very similar to the EV/EBITDA ratio, but is considered a little less exact measure as it uses market price, which does not take a company's debt into account. However, since EBITDA is often considered a proxy for cash income, the metric is used as a measure of what the market is willing to pay today for each dollar of the company's cash profitability in the trailing 12 months (TTM) or forward 12 months (F12M).

P/B Ratio: The price-to-book ratio is calculated as a company's current price per share divided by its book value (total assets – liabilities – preferred stocks) per share. In short, the book value is how much a company is worth. In other words, it reflects the total value of a company's assets that its common shareholders would receive if it were to be liquidated. So, the P/B ratio indicates whether you're paying higher or lower than what would remain if the company went bankrupt immediately. Investors typically use this metric to determine how a company's stock price stacks up to its intrinsic value.

P/TB Ratio: The price-to-tangible-book value ratio is calculated as the per share market value of a company divided by the value of its tangible assets (total assets – liabilities – preferred stocks – intangible assets) per share. Tangible book value is the same thing as book value except it excludes the value of intangible assets to get a step closer to the baseline value of the company.

P/CF Ratio: The price-to-cash flow ratio measures a company's per share market price relative to its trailing-12-month (TTM) operating cash flow per share. This metric is used to determine whether a company is undervalued or overvalued relative to another stock, industry or sector. And like the P/E ratio, a lower number is typically considered better from the value perspective.

One of the reasons why P/CF ratio is often preferred over P/E ratio is the fact that operating cash flow adds back non-cash expenses such as depreciation and amortization to net income. This feature helps valuing stocks that have positive cash flow but are not profitable because of large noncash charges.

P/FCF Ratio: The price-to-free cash flow ratio is an extension of P/CF ratio, which uses trailing-12-month (TTM) free cash flow per share instead of operating cash flow per share. This metric is considered a more exact measure than P/CF ratio, as free cash flow subtracts capital expenditures (CAPEX) from a company's total operating cash flow, thereby reflecting the actual cash flow available for funding activities that generate additional revenues.

Earnings Yield: The earnings yield is calculated as current fiscal year (F1) EPS estimate divided by the company's current share price. The ratio, which is the inverse of the P/E ratio, measures the anticipated yield (or return) from earnings for each dollar invested in a stock today.

For example, earnings yield for a stock, which is trading at \$35 and expected to earn \$3 per share in the current fiscal year (F1), would be 0.0857 ($3/35 = 0.0857$) or 8.57%. In other words, for \$1 invested in the stock today, the yield from earnings is anticipated to be 8.57 cents.

Investors most commonly compare the earnings yield of a stock to that of a broad market index (such as the S&P 500) and prevailing interest rates, such as the current 10-year Treasury yield. Since bonds and stocks compete for investors' dollars, stock investors typically demand a higher yield for the extra risk they assume compared to investors of U.S. Treasury-backed securities that offer virtually risk-free returns. This additional return is referred to as the risk premium.

Debt/Equity Ratio: The debt-to-equity ratio is calculated as a company's total liabilities divided by its shareholder equity. This metric is used to gauge a company's financial leverage. In other words, it is a measure of the degree to which a company is financing its operations through debt versus its own funds. The higher the ratio, the higher the risk for shareholders.

However, this ratio is difficult to compare across industry groups where ideal amounts of debt vary. Some businesses are more capital intensive than others and typically require higher debt to finance their operations. So, a company's debt-to-equity ratio should be compared with other companies in the same industry.

Cash Flow (\$/share): Cash flow per share is calculated as operating cash flow (after-tax earnings + depreciation + other non-cash charges) divided by common shares outstanding. It is used by many investors as a measure of a company's financial strength. Since cash flow per share takes into consideration a company's ability to generate cash by adding back non-cash expenses, it is regarded by some as a more accurate measure of a company's financial situation than earnings per share, which could be artificially deflated.

Current Ratio: The current ratio or liquidity ratio is a company's current assets divided by its current liabilities. It measures a company's ability to pay short-term obligations. A current ratio that is in line with the industry average or slightly higher is generally considered acceptable. A current ratio that is lower than the industry average would indicate a higher risk of distress or default. A higher number is usually better. However, a very high current ratio compared to the industry average could be an indication of inefficient use of assets by management.

Debt/Capital Ratio: Debt-to-capital ratio is a company's total debt (interest-bearing debt + both short- and long-term liabilities) divided its total capital (interest-bearing debt + shareholders' equity). It is a measure of a company's financial leverage. All else being equal, the higher the debt-to-capital ratio, the riskier the stock.

However, this ratio can vary widely from industry to industry, the ideal amount of required debt being different. Some businesses are more capital intensive than others and typically require higher debt to finance their operations. So, a company's debt-to-capital ratio should be compared with the same for its industry.

Net Margin: Net margin is calculated as net income divided by sales. It shows how much of each dollar in sales generated by a company translates into profit. For example, if a company's net margin is 15%, its net income is 15 cents for every \$1 of sales it makes.

A change in margin can reflect either a change in business conditions, or a company's cost controls, or both. If a company's expenses are growing faster than sales, its net margin will decline. However, different net margin rates are considered good for different industries, so it's better to compare net margin rates of companies in the same industry group.

Return on Equity: Return on equity (ROE) is calculated as trailing-12-month net income divided by trailing-12-month average shareholder equity (including reinvested earnings). This metric is considered a measure of how effectively management is using a company's assets to generate profits. For example, if a company's ROE is 10%, it creates 10 cents profits for every \$1 shareholder equity, which is basically the company's assets minus debt. A company's ROE deemed good or bad depends on what's normal for its peers or industry group.

Sales/Assets Ratio: The sales-to-assets ratio or asset utilization ratio or asset turnover ratio is calculated as a company's annual sales divided by average assets (average of assets at the beginning of the year and at the year's end). This metric helps investors understand how effectively a company is using its assets to generate sales. For example, a sales-to-assets ratio of 2.5 indicates that the company generated \$2.50 in sales for every \$1 of assets on its books.

The higher the sales-to-assets ratio, the better the company is performing. However, similar to many other ratios, the asset turnover ratio tends to be higher for companies in certain industries/sectors than in others. So, a company's sales-to-assets ratio should be compared with the same for its industry/sector.

Historical EPS Growth (3-5 Years): This is the average annual (trailing-12-month) EPS growth rate over the last 3-5 years. This metric helps investors see how a company's EPS has grown from a long-term perspective.

Note: There are many factors that can influence short-term numbers — a recession will reduce this number, while a recovery will inflate it. The longterm perspective helps smooth out short-term events.

Projected EPS Growth (F1/F0): This is the estimated EPS growth rate for the current financial year. It is calculated as the consensus estimate for the current fiscal year (F1) divided by the reported EPS for the last completed fiscal year (F0).

Current Cash Flow Growth: It measures the latest year-over-year change in operating cash flow. Cash flow growth tells an investor how quickly a company is generating inflows of cash from operations. A positive change in the cash flow is desired and shows that more 'cash' is coming in than going out.

Historical Cash Flow Growth (3-5 Years): This is the annualized change in cash flow over the last 3-5 years. The change in a longer period helps put the current reading into proper perspective. By looking at the rate, rather than the actual dollar value, the comparison across the industry and peers becomes easier.

Projected Sales Growth (F1/F0): This metric looks at the estimated sales growth for the current year. It is calculated as sales estimate for the current fiscal year (F1) divided by the reported sales for the last completed fiscal year (F0).

Like EPS growth, a higher rate is better for sales growth. A look at a company's projected sales growth instantly tells you what the outlook is for their products and services. However, different sales growth rates are considered good for different industries, so it's better to compare sales growth rates of companies in the same industry group.

EPS F1 Estimate 1-Week Change: The percentage change in the Zacks Consensus EPS estimate for the current fiscal year over the past week. The change in a company's consensus EPS estimate (or earnings estimate revision) has proven to be strongly correlated with the near-term price movement of its shares. It is an integral part of the Zacks Rank.

If a stock's consensus EPS estimate is \$1.10 now versus \$1.00 a week ago, that will be reflected as a 10% upward revision. If, on the other hand, it went from \$1.00 to 90 cents, that would be a 10% downward revision.

EPS F1 Estimate 4-Week Change: The percentage change in the Zacks Consensus EPS estimate for the current fiscal year over the past four weeks.

A stock's earnings estimate revision in a 1-week period is important. But it's more meaningful to look at the longer-term revision. And, of course, the 4-week change helps put the 1-week change into proper perspective.

EPS F1 Estimate 12-Week Change: The percentage change in the Zacks Consensus EPS estimate for the current fiscal year over the past 12 weeks.

This metric essentially shows how the consensus EPS estimate has changed over a period longer than 1 week or 4 weeks.

EPS Q1 Estimate Monthly Change: The percentage change in the Zacks Consensus EPS estimate for the current fiscal quarter over the past four weeks.

While the revision in consensus EPS estimate for the current fiscal year is strongly correlated with the near-term price movement of its shares, the estimate revision for the current fiscal quarter is an important metric as well, especially over the short term, and particularly as a stock approaches its earnings date. If a stock's Q1 EPS estimate decreases ahead of its earnings release, it's usually a negative sign, whereas an increase is a positive sign.