

Lam Research (LRCX)

\$572.21 (As of 02/11/21)

Price Target (6-12 Months): **\$601.00**

Long Term: 6-12 Months

Zacks Recommendation:

Neutral

(Since: 09/28/20)

Prior Recommendation: Outperform

Short Term: 1-3 Months

Zacks Rank: (1-5)

2-Buy

Zacks Style Scores:

VGM:D

Value: D

Growth: D

Momentum: C

Summary

Lam Research reported stronger-than-expected fiscal second-quarter results driven by broad-based secular growth across data transport, analysis and storage. The company saw an increase in NAND demand related to 5G migration, video, and new game consoles. It witnessed persistent Foundry strength in the quarter. Encouragingly, advanced packaging technology inflections remain a tailwind. Also, both etch and deposition technologies are expected to expand the company's addressable market. Lam Research has been benefiting from its transition to new data-enabled economy, wherein DRAM and NAND continue to gain from density growth. Its shares have underperformed the industry it belongs to in the past year. However, uncertainty due to the coronavirus outbreak, the ongoing U.S.-China trade war and foreign currency fluctuations remain concerns.

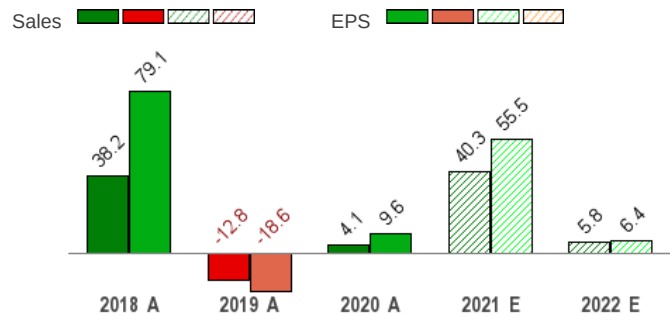
Price, Consensus & Surprise



Data Overview

52-Week High-Low	\$585.42 - \$181.38
20-Day Average Volume (Shares)	1,608,728
Market Cap	\$81.8 B
Year-To-Date Price Change	21.2%
Beta	1.30
Dividend / Dividend Yield	\$5.20 / 0.9%
Industry	Semiconductor Equipment - Wafer Fabrication
Zacks Industry Rank	Top 11% (29 out of 253)

Sales and EPS Growth Rates (Y/Y %)



Last EPS Surprise	6.9%
Last Sales Surprise	3.9%
EPS F1 Estimate 4-Week Change	10.7%
Expected Report Date	04/28/2021
Earnings ESP	0.0%
P/E TTM	28.0
P/E F1	23.1
PEG F1	1.9
P/S TTM	6.9

Sales Estimates (millions of \$)

	Q1	Q2	Q3	Q4	Annual*
2022	3,545 E	3,557 E	3,796 E	3,946 E	14,912 E
2021	3,177 A	3,456 A	3,699 E	3,750 E	14,094 E
2020	2,166 A	2,584 A	2,504 A	2,792 A	10,045 A

EPS Estimates

	Q1	Q2	Q3	Q4	Annual*
2022	\$6.41 E	\$6.48 E	\$7.03 E	\$7.45 E	\$26.40 E
2021	\$5.67 A	\$6.03 A	\$6.56 E	\$6.80 E	\$24.81 E
2020	\$3.18 A	\$4.01 A	\$3.98 A	\$4.78 A	\$15.95 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 02/11/2021. The report's text and the analyst-provided price target are as of 02/12/2021.

Overview

Established in 1980 and headquartered in Fremont, CA, Lam Research Corporation supplies wafer fabrication equipment and services to the semiconductor industry. Its products are used by semiconductor manufacturers in front-end and WLP processes, creating memory, microprocessors, and other logic integrated circuits for a broad range of electronic devices.

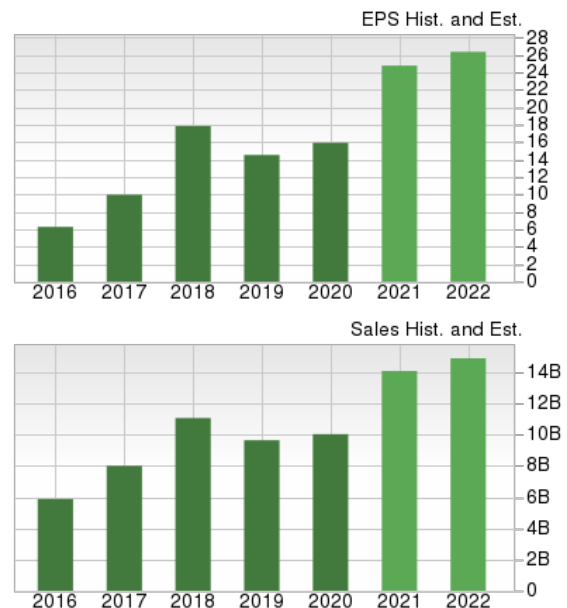
The MOS process of making integrated circuits involve the deposition of many layers of materials on a semiconductor wafer. Each layer is prepared using a pattern on a photomask, cleaning off the excess material and then exposing to light sources to change the chemical composition of the layer. The final wafer is then planarized, cut into individual die, electrical leads attached and packaged.

Lam's product offerings in deposition and etch address numerous critical steps in the fabrication process with the goal of reducing defect rates, improving yields, lowering costs and reducing the processing time.

In fiscal 2020, Lam served three market segments—Memory, Foundry and Logic/Integrated device manufacturing which generated 61% (down from 78% in 2019), 29% (up from 14% in 2019) and 10% (up from 8% in 2019), of its revenues, respectively.

The revenue distribution by geography in fiscal 2020 was as follows —Korea 32% (up from 14% in 2019), Taiwan 11% (down from 13% in 2019), Japan 8% (down from 17% in 2019), China 34% (up from 16% in 2019), U.S accounted for 7% (down from 7% in 2019), Europe 3% (down from 5% in 2019) and South East Asia accounted for 5% (down from 7% in 2019).

Being a leading producer of specialized equipment, most of the competition comes from other large equipment makers, such as KLA-Tencor Corporation and Applied Materials, Inc.



Source: Zacks Investment Research

Reasons To Buy:

- ▲ Traditionally, Lam Research has high exposure to the memory segment, which is likely to see tremendous growth over the next few years. The strength is driven by cloud computing, big data, mobile devices and IoT. These phenomena have greatly increased the volume of data on information networks that can be stored, processed and analysed to increase efficiency or drive additional sales depending on the circumstances and the business model of companies. Since storage is the starting point of this digital economy, there is a huge demand for memory chips, particularly the more efficient variety.
- ▲ Technological advancements in the areas of multi-patterning, 3D device architecture and advanced packaging technologies are playing to Lam's strengths. Technology transitions help to increase the efficiency of semiconductor manufacturing processes. Since new manufacturing techniques necessitate spending on new equipment, these changes usually lead to increased investment in manufacturing equipment. For the providers of equipment such as Lam, the challenge is to stay abreast of these changes and have the equipment on offer when customers are ready to purchase. Lam's R&D efforts have enabled it to capitalize on these trends, so it should remain a prime beneficiary, particularly since these technological inflections will be more etch and deposition intensive, which are Lam's strong points. Consequently, the company may be able to capture a larger share of total WFE spending over the next few years.
- ▲ Management expects logic and foundry demand to pick up in the second half of the year. There are twin positives in this business with not just the leading edge but also the trailing edge contributing. Management has said that IoT, auto, wearables, low-end phones, and so forth are leading to a resurgence of 28-nanometer demand. At the same time, the company has a huge installed base of more than 35K process modules and a lot of these are being upgraded. While not as strong as 3D NAND, there are technology inflections in this segment too. The transition of the DRAM market to 10nm and FinFET is resulting in a sizeable increase in multi-patterning steps. Lam has the necessary next generation products that can facilitate this transition.
- ▲ Lam Research has a strong balance sheet, with cash and short term investments of approximately \$6.3 billion at the end of fiscal second quarter versus \$6.6 billion in the prior quarter. Additionally, management returned \$187.9 million through dividend. The company regularly repurchases shares to ensure a steady share count after dilution from stock option vesting. The shareholder friendly strategy makes the stock more attractive.

Lam's exposure to memory and opportunity in logic & foundry are positives. Also, etch and deposition portfolio should gain momentum.

Reasons To Sell:

- ▼ The semiconductor equipment industry has historically been very cyclical. It fluctuates highly with respect to timing and length of the cycles. During the down cycle, there could be decreased demand from consumers. The company has a high fixed cost structure, so margins suffer substantially when sales decline. At the same time, it is mandatory for the structure to generate sales to support increases in customer demand. Additionally, Lam Research has to spend a significant amount of money on R&D to maintain its lead in innovation and generate margins that are high enough to continue this expenditure. Lam Research makes significant R&D investments focused on leading-edge deposition, plasma etch, single-wafer clean and other semiconductor manufacturing requirements.
- ▼ On the memory front, there are concerns related to oversupply and overcapacity of memory chips in the upcoming years. Yield and output seems to be improving over time as cutting-edge technologies mature, potentially leading to an oversupply situation in two years time. This could depress prices and curb equipment spending, impacting Lam's growth.
- ▼ The semiconductor capital equipment industry experiences rapid changes and is highly competitive globally. It faces significant competition from the likes of Applied Materials, Hitachi, Tokyo Electron and many more in this space. To compete effectively, considerable financial resources are required to strengthen and augment product and services portfolio as well as maintain customer service and support locations worldwide. Semiconductor manufacturers assess capital equipment suppliers, and the ability to do well in the marketplace depends upon how well the existing products are maintained and enhanced while new ones are launched to meet customer requirements on a timely basis. Also, once a semiconductor manufacturer has selected a particular supplier's equipment and qualified it for production, the manufacturer generally maintains it as long as the supplier's products perform according to specifications at the installed base. So the companies find it difficult to sell to a given customer that has qualified a competitor's equipment. At the same time, the companies have to continue to meet the expectations of their existing customers via the delivery of high-quality and cost-efficient spare parts amid competition from third-party spare parts providers. Lam Research faces significant competition in all its product and service categories.
- ▼ Lam Research derives a major portion of its revenues from outside the U.S. This is natural because a lot of the semiconductor facilities using its manufacturing equipment are located in Asian countries. However, this exposes the company to foreign currency translation impacts and poses a threat to its growth. The company also faces other risks like local legislation, monetary devaluation, exchange control restrictions and unstable political conditions, which may hamper revenue growth and impact its financial position.

The cyclical nature of the semiconductor industry, the high fixed cost structure, weakness in DRAM spending because of the prevalent decline in PCs and product concentration are negatives.

Last Earnings Report

Lam Research Q2 Earnings & Revenues Beat Estimates

Lam Research Corporation reported second-quarter fiscal 2021 non-GAAP earnings of \$6.03 per share, which surpassed the Zacks Consensus Estimate of \$5.64. Also, the figure increased 6.3% sequentially.

Adjusted revenues increased 9% sequentially and 33.7% year over year to \$3.46 billion. The reported revenues also outpaced the Zacks Consensus Estimate by 3.9%.

The increase was driven by increased investments across varied sectors such as data centers, smartphones, personal computer gaming consoles, IoT and automotive.

During the quarter, the company witnessed strong demand in key electronic categories, including PCs, storage and networking. Also, Lam Research saw broad-based strength in Foundry-Logic spending, including leading-edge nodes. In addition, it saw an increase in NAND demand related to 5G migration, video and new game consoles. It also witnessed persistent Foundry strength in the quarter.

WFE spending for 2020 is estimated in the high-\$50 billion range. Moreover, management expects growth across all segments of the market, driven by a recovery in NAND, Foundry/Logic expansion and slight increase in DRAM in 2020.

For 2021, WFE spending is estimated in high \$60-\$70 billion range, driven by migration to higher layer counts in NAND, strong spending in DRAM and solid momentum in Foundry/Logic.

Top Line in Detail

China, Korea and Taiwan accounted for 35%, 21% and 17% of the company's total fiscal second-quarter revenues, respectively. On the contrary, Japan, Southeast Asia, the United States and Europe accounted for 10%, 10%, 4% and 3%, respectively.

Operating Details

Non-GAAP gross margin came in at 46.6%, which contracted 90 basis points (bps) sequentially.

Non-GAAP operating expenses were \$563 million, reflecting an increase of 7.6% sequentially. However, as a percentage of revenues, the figure contracted 20 bps sequentially to 16.3%.

Adjusted operating margin was 30.3%, down 80 bps sequentially.

Balance Sheet & Cash Flow

At fiscal second quarter-end, cash and cash equivalents, as well as short-term investments decreased to \$6.3 billion from \$6.6 billion in fiscal first-quarter 2021.

Cash flow from operating activities was \$344.6 million, down from \$642.5 million in the fiscal first quarter. Capital expenditures were \$92.1 million, up from \$62.8 million in the fiscal first quarter.

During the quarter, Lam Research paid dividends of \$187.9 million.

Guidance

For third-quarter fiscal 2021, Lam Research projects revenues to be \$3.7 billion (+/- \$200 million).

Non-GAAP gross margin is projected at 46% (+/-1%) and non-GAAP operating margin is expected to be 30.5% (+/-1%).

Non-GAAP earnings are projected at \$6.55 (+/- 40 cents) per share on a share count of 145 million.

Quarter Ending	12/2020
Report Date	Jan 27, 2021
Sales Surprise	3.85%
EPS Surprise	6.91%
Quarterly EPS	6.03
Annual EPS (TTM)	20.46

Recent News

On **Nov 05, 2020**, Lam Research announced that its Board of Directors has approved a \$5 billion share repurchase authorization. In addition, the company also announced a quarterly dividend of \$1.30 per share.

On **Aug 4, 2020**, Lam Research and digital manufacturing innovator VELO3D announced a joint development agreement. Per the deal, both the companies will collaborate on novel materials and designs or 3D printing applications for the semiconductor industry.

Valuation

Lam Research shares are up 26.9% in the six-month period and 56.9% over the trailing 12-month period. Stocks in the Zacks sub-industry and the Zacks Computer & Technology sector are up 42.4% and 19.4% in the six-month period, respectively. Over the past year, the Zacks sub-industry is up 73.6% and the sector is up 34.5%

The S&P 500 index is up 14% in the six-month period and 16.1% in the past year.

The stock is currently trading at 18.77X forward 12-month earnings, which compares to 27.71X for the Zacks sub-industry, 27.45X for the Zacks sector and 22.02X for the S&P 500 index.

Over the past five years, the stock has traded as high as 24.46X and as low as 7.86X, with a 5-year median of 13.38X. Our Neutral recommendation indicates that the stock will perform inline with the market. Our \$601 price target reflects 24.74X forward 12-month earnings.

The table below shows summary valuation data for LRCX

Valuation Multiples - LRCX					
		Stock	Sub-Industry	Sector	S&P 500
P/E F12M	Current	18.77	27.71	27.45	22.02
	5-Year High	24.46	27.71	28.29	23.8
	5-Year Low	7.86	12.36	16.94	15.3
	5-Year Median	13.38	17.61	19.94	17.83
P/S F12M	Current	4.78	9.23	4.71	4.34
	5-Year High	6.16	9.23	4.71	4.34
	5-Year Low	1.6	3.64	2.77	3.2
	5-Year Median	2.83	5.16	3.48	3.68
EV/EBITDA TTM	Current	18.48	39.03	16.69	16.86
	5-Year High	22.16	42.85	17.4	17.45
	5-Year Low	4.04	9.4	8.25	9.53
	5-Year Median	8.33	20.71	12.15	13.24

As of 02/11/2021

Source: Zacks Investment Research

Industry Analysis Zacks Industry Rank: Top 11% (29 out of 253)



Source: Zacks Investment Research

Top Peers

Company (Ticker)	Rec	Rank
ASML Holding N.V. (ASML)	Outperform	2
MKS Instruments, Inc. (MKS)	Outperform	2
Advanced Energy Industries, Inc. (AEIS)	Neutral	3
Applied Materials, Inc. (AMAT)	Neutral	3
AMETEK, Inc. (AME)	Neutral	3
Bruker Corporation (BRKR)	Neutral	3
KLA Corporation (KLAC)	Neutral	2
Teradyne, Inc. (TER)	Neutral	3

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

Industry Comparison Industry: Semiconductor Equipment - Wafer Fabrication				Industry Peers		
	LRCX	X Industry	S&P 500	AEIS	AMAT	ASML
Zacks Recommendation (Long Term)	Neutral	-	-	Neutral	Neutral	Outperform
Zacks Rank (Short Term)	2	-	-	3	3	2
VGM Score	D	-	-	B	C	C
Market Cap	81.77 B	92.73 B	27.73 B	4.14 B	103.70 B	248.32 B
# of Analysts	9	7	13	5	10	3
Dividend Yield	0.91%	0.59%	1.43%	0.00%	0.78%	0.40%
Value Score	D	-	-	C	C	F
Cash/Price	0.08	0.07	0.06	0.10	0.06	0.04
EV/EBITDA	28.33	35.64	14.86	42.94	21.62	47.27
PEG F1	1.92	2.24	2.36	NA	2.24	2.75
P/B	14.85	12.31	3.88	5.07	9.76	15.68
P/CF	31.31	27.88	15.06	17.25	24.45	53.75
P/E F1	23.06	22.82	20.72	19.15	22.56	47.07
P/S TTM	6.86	6.45	3.05	2.92	6.03	15.47
Earnings Yield	4.34%	4.38%	4.73%	5.22%	4.43%	2.13%
Debt/Equity	0.91	0.44	0.68	0.37	0.52	0.34
Cash Flow (\$/share)	18.28	8.63	6.76	6.27	4.62	11.00
Growth Score	D	-	-	B	B	A
Historical EPS Growth (3-5 Years)	25.80%	24.85%	9.27%	8.58%	24.76%	24.95%
Projected EPS Growth (F1/F0)	55.54%	28.76%	14.04%	7.88%	20.10%	29.69%
Current Cash Flow Growth	0.36%	33.00%	3.29%	109.65%	30.36%	35.63%
Historical Cash Flow Growth (3-5 Years)	15.52%	16.87%	7.74%	8.19%	18.22%	19.92%
Current Ratio	3.19	3.10	1.38	3.30	3.00	2.41
Debt/Capital	47.54%	30.59%	41.33%	27.19%	33.99%	25.17%
Net Margin	24.85%	22.95%	10.58%	9.51%	21.04%	25.60%
Return on Equity	58.26%	34.09%	14.86%	25.70%	40.65%	27.53%
Sales/Assets	0.82	0.82	0.51	0.88	0.81	0.57
Projected Sales Growth (F1/F0)	40.31%	18.92%	6.33%	6.78%	14.88%	22.96%
Momentum Score	C	-	-	A	D	D
Daily Price Change	7.46%	5.53%	-0.09%	2.52%	6.72%	4.34%
1-Week Price Change	5.33%	4.75%	4.58%	10.31%	4.17%	3.49%
4-Week Price Change	2.59%	4.70%	0.84%	-8.20%	6.81%	8.60%
12-Week Price Change	30.74%	35.23%	8.82%	20.12%	46.28%	39.72%
52-Week Price Change	67.52%	67.62%	8.85%	38.63%	67.73%	86.45%
20-Day Average Volume (Shares)	1,608,728	1,222,494	2,105,275	306,809	7,160,694	836,259
EPS F1 Estimate 1-Week Change	0.00%	0.00%	0.00%	0.56%	0.00%	0.00%
EPS F1 Estimate 4-Week Change	10.69%	5.70%	0.62%	0.56%	0.70%	11.64%
EPS F1 Estimate 12-Week Change	11.21%	7.06%	1.93%	2.84%	2.92%	12.98%
EPS Q1 Estimate Monthly Change	18.07%	7.65%	0.30%	-0.39%	0.55%	14.76%

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	D
Momentum Score	C
VGM Score	D

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.

Disclosures

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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 a 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.