

Packaging Corp. (PKG)

\$133.81 (As of 06/17/21)

Price Target (6-12 Months): **\$141.00**

Long Term: 6-12 Months

Zacks Recommendation:

Neutral

(Since: 01/04/21)

Prior Recommendation: Outperform

Short Term: 1-3 Months

Zacks Rank: (1-5)

3-Hold

Zacks Style Scores:

VGM:A

Value: B

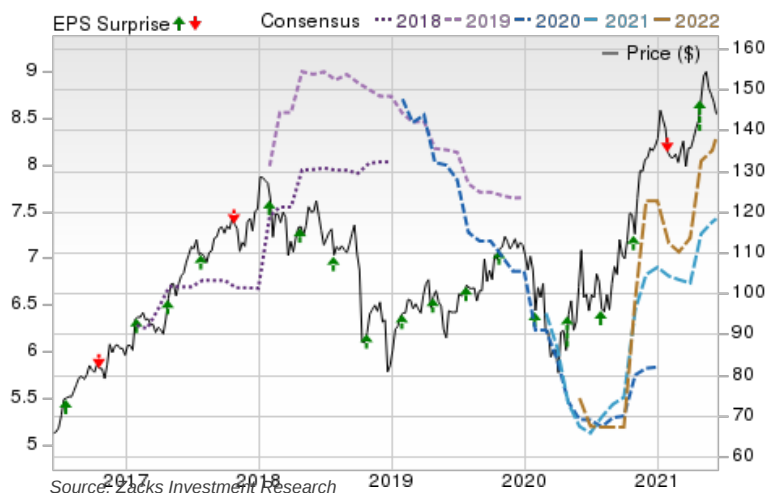
Growth: A

Momentum: A

Summary

Packaging Corporation is witnessing robust demand in the packaging segment backed by e-commerce and rising requirement for meat, fruit and vegetables, processed food, beverages, medicine, and other products triggered by the COVID-19 pandemic. Earnings estimates for the current quarter and year have undergone positive revisions lately. The paper segment, which was already bearing the brunt of weak demand thanks to increased digitization, was dealt a further blow by the pandemic with schools and offices being shut. The company's recently implemented price hikes will help offset the impact of higher freight, logistics, operating and converting costs. Annual maintenance outages at its mills will also impact earnings in 2021. Nevertheless, a solid balance sheet positions the company well to navigate through the troubled times.

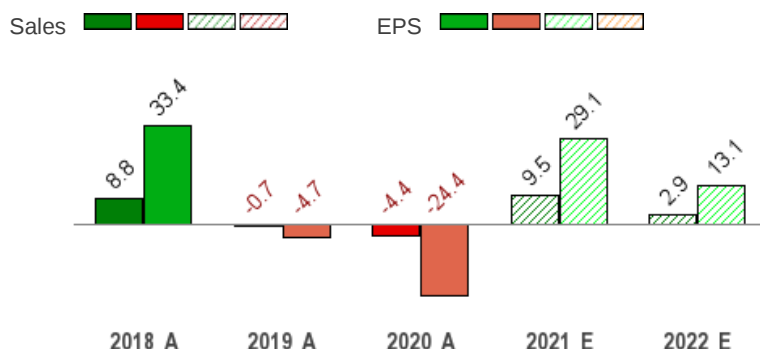
Price, Consensus & Surprise



Data Overview

52-Week High-Low	\$156.54 - \$92.02
20-Day Average Volume (Shares)	695,994
Market Cap	\$12.7 B
Year-To-Date Price Change	-3.0%
Beta	0.90
Dividend / Dividend Yield	\$4.00 / 3.0%
Industry	Containers - Paper and Packaging
Zacks Industry Rank	Top 23% (59 out of 252)

Sales and EPS Growth Rates (Y/Y %)



Last EPS Surprise	20.4%
Last Sales Surprise	4.0%
EPS F1 Estimate 4-Week Change	0.6%
Expected Report Date	07/27/2021
Earnings ESP	0.0%

Sales Estimates (millions of \$)

	Q1	Q2	Q3	Q4	Annual*
2022	1,914 E	1,784 E	1,861 E	1,859 E	7,503 E
2021	1,807 A	1,786 E	1,836 E	1,843 E	7,289 E
2020	1,709 A	1,542 A	1,694 A	1,714 A	6,658 A

EPS Estimates

	Q1	Q2	Q3	Q4	Annual*
2022	\$2.45 E	\$2.05 E	\$2.33 E	\$1.85 E	\$8.44 E
2021	\$1.77 A	\$1.73 E	\$2.08 E	\$1.88 E	\$7.46 E
2020	\$1.50 A	\$1.38 A	\$1.57 A	\$1.33 A	\$5.78 A

*Quarterly figures may not add up to annual.

P/E TTM	22.1
P/E F1	17.9
PEG F1	3.6
P/S TTM	1.9

The data in the charts and tables, including the Zacks Consensus EPS and sales estimates, is as of 06/17/2021. The report's text and the

analyst-provided price target are as of 06/18/2021.

Overview

Headquartered at Lake Forest, IL, Packaging Corporation of America is the third largest producer of containerboard products and the third largest producer of uncoated freesheet paper in North America. The company operates eight mills and 92 corrugated products manufacturing plants.

Packaging Corporation operates in three segments:

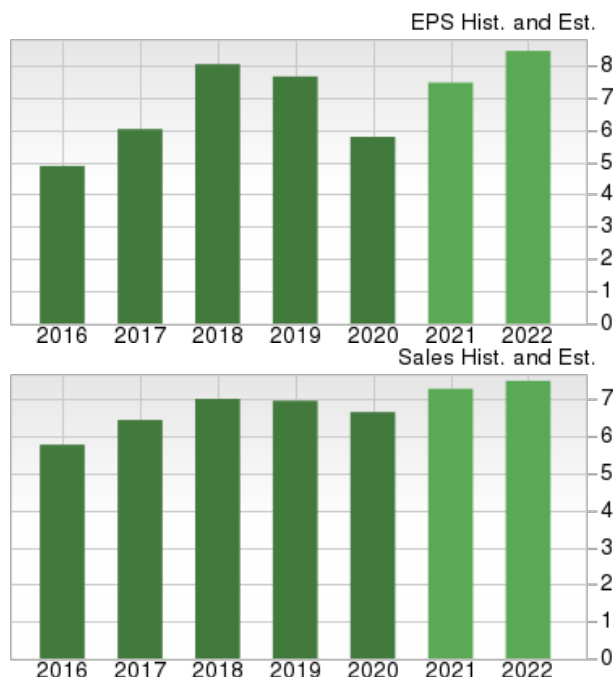
Packaging segment (89% of 2020 revenues) - From its containerboard mills, the segment produces linerboard and semi-chemical corrugating medium, which are mainly utilized in the production of corrugated products. The corrugated products manufacturing plants produce a wide variety of corrugated packaging products, including conventional shipping containers used to protect and transport manufactured goods, multi-color boxes and displays with visual appeal that aid in merchandising the packaged product in retail locations, and honeycomb protective packaging. The segment also produces packaging for meat, fresh fruit and vegetables, processed food, beverages, and other industrial and consumer products.

The segment sells containerboard and corrugated products to approximately 18,000 customers in over 36,000 locations.

Paper segment (10%) is the third largest manufacturer of uncoated freesheet in North America. The company manufactures and sells white paper, including commodity and specialty paper, which may have custom or specialized features such as colors, coatings, high brightness, and recycled content. White papers consist of communication papers, including cut-size office papers and printing and converting papers.

The segment serves over 150 customers in approximately 450 locations. These customers include office products distributors and retailers, paper merchants, and envelope and other converters.

Corporate and Other segment includes corporate support staff services, and related assets and liabilities. This segment also includes transportation assets, which are utilized to transport products to and from manufacturing sites and assets related to a 50%-owned variable interest entity — Louisiana Timber Procurement Company, L.L.C.



Reasons To Buy:

▲ Demand in the Packaging segment, which accounts for around 89% of the company's revenues, continues to be robust. Packaging products are essential for the distribution of food, beverage and pharmaceutical products. Hence, the Packaging segment continues to benefit from the elevated demand for meat, fruit and vegetables, processed food, beverages, medicine, and other consumer products owing to the coronavirus crisis. The company set a new all-time quarterly record for containerboard volume and matched its all-time quarterly total box shipments record in first-quarter 2021. Given the strong demand, the segment ended the quarter with record low inventories. The company has recently implemented prices increases. It also expects average export prices to move higher.

Packaging Corporation is poised to gain from e-commerce and strong demand for packaging for food, beverage and pharmaceutical products in the wake of the coronavirus crisis.

▲ Over 2016-2020, Packaging Corporation's debt has declined at a CAGR of 1% while its cash flow has witnessed a CAGR of 46% over the same time frame. Packaging Corporation ended the first quarter of 2021 with \$983 million of cash on hand or \$1.1 billion, including marketable securities. The company's liquidity as of Mar 31, 2021 was close to \$1.5 billion. This positions the company well to navigate through the turbulent times. The company maintains a balanced approach toward capital allocation in order to boost growth as well as maximize returns for shareholders. For 2021, the company projects total capital expenditures between \$650 million and \$675 million.

▲ Packaging Corporation discontinued the production of uncoated free sheet and coated one-side grades at the Wallula, WA mill and converted the No. 3 machine to a virgin kraft linerboard machine with an annual capacity of 400,000 tons. The conversion resulted in production of lighter weight high performance linerboard grades. This will assist the company in optimizing the entire containerboard system platform and reduce its logistics and freight costs. According to the company, there are opportunities to increase capacity of the mill. This move will help the company continues improve profitability and margins in the paper segment.

In February, Packaging Corporation announced that it has discontinued production of uncoated freesheet ("UFS") grades on the No. 3 paper machine at its Jackson, AL mill and will begin preparing for the permanent conversion of the machine to linerboard. In order to meet strong packaging demand and maintain appropriate inventory levels, the machine temporarily began producing linerboard in the fourth quarter of 2020 and continued producing linerboard in the first quarter of 2021. The mill has now begun preparations to permanently convert the 365,000 ton-per-year No. 3 UFS paper machine to a 700,000 ton-per-year high-performance, virgin kraft linerboard machine, in a phased approach, over the next 36 months.

▲ Packaging Corporation will benefit from the e-commerce boom that has led to increase in demand in boxes. These days, customers find a lot of different channels to sell-through, including e-commerce. The company has a wide base of customers and expects the business to grow in the current year. Also, growing demand for corrugated products due to increased demand for food, beverage and pharmaceutical products during the coronavirus induced crisis bodes well for the company.

Reasons To Sell:

- ▼ The coronavirus outbreak has affected paper consumption in schools, offices and businesses, straining paper demand. Paper business continues to face turbulent market condition in response to control the spread of the COVID-19 virus, which will significantly decrease paper demand, especially for cut size office paper products in the near term. Also, the paper segment competes with electronic data transmission, e-readers and electronic document storage alternatives. Increasing preference for these alternatives will continue to have an adverse effect on traditional print media and paper usage and lower demand for communication papers. This will impact the Paper segment's performance in the upcoming period.
- ▼ The company might have to shut down or suspend operations as per government mandates, or if there are any COVID-19 cases reported in its facilities. Its supply chain might also be impacted. In these cases, it will have a bearing on Packaging Corporation's results. High demand for trucks due to low inventories, driver shortages and rail rate increases led to higher freight expenses in the past few quarters and is expected to continue in the ongoing quarter as well. Labor costs will be higher with annual wage inflation and timing-related increases to fringes and benefits. However, energy costs are likely to be favorable due to seasonally milder weather. These factors, along with operating and converting costs will weigh on the company's margins in second-quarter 2021.
- ▼ The company anticipates increased annual maintenance outages at its mills in 2021 to impact containerboard production. The earnings impact of these outages, including lost volume, direct costs and amortized repair costs, in 2021 is expected to be around 97 cents per share compared with 65 cents in 2020. The actual impact in the first quarter of 2021 was 10 cents per share. The anticipated impact is 30 cents in the second quarter, 16 cents in the third quarter and 41 cents per share in the fourth quarter.

Packaging Corporation's results are likely to be impacted by lower paper consumption due to the impact of the pandemic. Further, higher costs will weigh on its margins in the near term.

Last Earnings Report

Packaging Corp Q1 Earnings & Sales Top Estimates, Up Y/Y

Packaging Corporation reported adjusted earnings per share of \$1.77 in first-quarter 2021, beating the Zacks Consensus Estimate of \$1.47. The reported figure also increased 18% year over year. This upside was driven by higher volume, price and mix in packaging segment and lower annual outage costs. These were, however, partly offset by dismal volume and price and mix in the Paper segment, coupled with higher operating as well as higher freight and logistics expenses.

Including one-time items, earnings in the reported quarter came in at \$1.75 per share compared with the prior-year quarter's \$1.49 per share.

Operational Update

Sales in the first quarter climbed 5.7% year over year to \$1,807 million. The reported figure also surpassed the Zacks Consensus Estimate of \$1,738 million.

Cost of products sold was up 4.5% year over year to \$1,404 million in the first quarter. Gross profit increased 10.7% year over year to \$404 million. Selling, general and administrative expenses came in at \$145 million compared with \$146 million in the prior-year quarter. Adjusted total segment operating income grew 15.2% year over year to \$242 million.

Segmental Performance

Packaging: Sales in the segment increased to \$1,624 million from the \$1,468 million recorded in the year-earlier period. Segmental income, excluding special items, came in at \$260 million in the quarter compared with the \$201 million witnessed in the prior-year quarter.

Printing Papers: This segment's revenues fell 24% year over year to \$165 million in the January–March quarter. The segment reported adjusted operating profit of \$9.8 million compared with the year-ago quarter's \$32.6 million.

Cash Position

The company had a cash balance of \$1,133 million at the end of first-quarter 2021, up from the \$913 million witnessed in the comparable period last year.

Outlook

Packaging Corporation expects the demand in its packaging segment to be strong in the second quarter. The company will continue to implement its proposed price-rise actions across the segment in response to cost inflation. It also sees an increase in the average export prices during the current quarter. Packaging Corporation anticipates flat volumes with higher average price and mix in its paper segment this quarter.

Management projects higher planned outage expenses in the June-end quarter compared with the March-end quarter level. Also, it expects escalating freight, logistics, operating and converting costs. However, energy costs are likely to improve owing to a seasonally milder weather.

Quarter Ending	03/2021
Report Date	Apr 26, 2021
Sales Surprise	3.97%
EPS Surprise	20.41%
Quarterly EPS	1.77
Annual EPS (TTM)	6.05

Valuation

Packaging Corporation's shares are up 1% in the trailing six-months period and 34.1% over the trailing 12-month period. Stocks in the Zacks Containers – Paper and Packaging industry and the Zacks Industrial Products sector are up 9.6% and 9.4% in the six months period, respectively. Over the past year, the Zacks sub-industry and sector are up 35.5% and 47.3%, respectively.

The S&P 500 index is up 14.6% in the six months period and 38.4% in the past year.

The stock is currently trading at 17.10X forward 12-month earnings, which compares with 16.10X for the Zacks sub-industry, 21.15X for the Zacks sector and 21.69X for the S&P 500 index.

Over the past five years, the stock has traded as high as 21.63X and as low as 8.94X, with a 5-year median of 15.57X.

Our Neutral recommendation indicates that the stock will perform in-line with the market. Our \$141 price target reflects 18.02X forward 12-month earnings.

The table below shows summary valuation data for PKG.

Valuation Multiples - PKG					
		Stock	Sub-Industry	Sector	S&P 500
P/E F12M	Current	17.10	16.10	21.15	21.69
	5-Year High	21.63	18.98	23.56	23.83
	5-Year Low	8.94	7.20	12.65	15.31
	5-Year Median	15.57	16.04	18.28	18.05
P/S F12M	Current	1.72	2.97	3.48	4.70
	5-Year High	2.01	5.08	3.58	4.74
	5-Year Low	1.01	1.49	1.61	3.21
	5-Year Median	1.47	2.02	2.11	3.72
EV/EBITDA TTM	Current	10.75	23.02	22.96	17.34
	5-Year High	12.30	28.59	27.92	17.74
	5-Year Low	5.97	13.28	11.10	9.63
	5-Year Median	9.15	16.30	15.53	13.47

As of 06/17/2021

Source: Zacks Investment Research

Industry Analysis Zacks Industry Rank: Top 23% (59 out of 252)



Top Peers

Company (Ticker)	Rec	Rank
Berry Global Group, Inc. (BERY)	Neutral	2
Ball Corporation (BLL)	Neutral	3
Crown Holdings, Inc. (CCK)	Neutral	3
Graphic Packaging Holding Company (GPK)	Neutral	3
Sealed Air Corporation (SEE)	Neutral	2
Sonoco Products Company (SON)	Neutral	3
Domtar Corporation (UFS)	Neutral	3
WestRock Company (WRK)	Neutral	3

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

Industry Comparison Industry: Containers - Paper And Packaging				Industry Peers		
	PKG	X Industry	S&P 500	IP	UFS	WRK
Zacks Recommendation (Long Term)	Neutral	-	-	Outperform	Neutral	Neutral
Zacks Rank (Short Term)	3	-	-	1	3	3
VGM Score	A	-	-	C	A	B
Market Cap	12.71 B	6.58 B	29.66 B	23.59 B	2.71 B	14.05 B
# of Analysts	7	3	12	7	3	7
Dividend Yield	2.99%	1.80%	1.35%	3.40%	0.00%	1.82%
Value Score	B	-	-	C	A	A
Cash/Price	0.08	0.04	0.05	0.03	0.25	0.02
EV/EBITDA	11.83	12.10	16.95	12.92	20.69	8.21
PEG F1	3.55	1.97	2.09	NA	NA	0.64
P/B	3.82	3.64	4.06	3.04	1.30	1.27
P/CF	12.47	10.97	17.27	9.89	10.49	3.87
P/E F1	17.77	17.93	20.99	12.42	11.46	15.29
P/S TTM	1.88	1.35	3.39	1.15	0.68	0.80
Earnings Yield	5.58%	5.58%	4.65%	8.05%	8.72%	6.54%
Debt/Equity	0.75	1.38	0.66	1.02	0.24	0.76
Cash Flow (\$/share)	10.73	4.15	6.83	6.09	5.15	13.62
Growth Score	A	-	-	D	A	D
Historical EPS Growth (3-5 Years)	7.84%	9.06%	9.44%	1.38%	-17.00%	4.70%
Projected EPS Growth (F1/F0)	29.09%	27.55%	21.49%	73.21%	23,466.50%	25.11%
Current Cash Flow Growth	-10.45%	1.62%	0.99%	-22.12%	-40.46%	39.12%
Historical Cash Flow Growth (3-5 Years)	4.75%	9.59%	7.28%	-3.29%	-15.18%	20.84%
Current Ratio	3.55	1.45	1.39	1.45	2.16	1.52
Debt/Capital	42.81%	58.00%	41.51%	50.58%	19.39%	43.13%
Net Margin	7.19%	6.48%	11.95%	4.72%	-4.03%	-4.06%
Return on Equity	17.85%	16.78%	16.48%	15.84%	2.81%	6.27%
Sales/Assets	0.91	0.85	0.51	0.65	0.86	0.60
Projected Sales Growth (F1/F0)	9.48%	7.96%	9.41%	8.83%	-5.86%	3.76%
Momentum Score	A	-	-	B	F	A
Daily Price Change	-3.47%	-1.66%	-0.04%	-3.21%	-0.11%	-4.49%
1-Week Price Change	-1.98%	0.37%	-0.41%	-1.55%	-0.87%	-2.76%
4-Week Price Change	-10.43%	-2.90%	1.51%	-4.20%	-0.55%	-8.75%
12-Week Price Change	0.01%	4.15%	7.99%	10.84%	50.50%	1.77%
52-Week Price Change	37.07%	47.21%	35.52%	71.69%	143.68%	86.17%
20-Day Average Volume (Shares)	695,994	168,110	1,771,802	2,662,779	899,953	1,608,709
EPS F1 Estimate 1-Week Change	0.58%	0.00%	0.00%	0.30%	0.00%	0.08%
EPS F1 Estimate 4-Week Change	0.58%	0.14%	0.03%	3.22%	-2.82%	0.08%
EPS F1 Estimate 12-Week Change	11.15%	3.98%	3.37%	24.95%	63.47%	-1.63%

Past performance is no guarantee of future results. Please see important disclosures and definitions at the end of this report.

EPS Q1 Estimate Monthly Change	0.00%	:	0.00%	:	0.00%	:	0.00%	:	0.00%	:	0.00%
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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	B
Growth Score	A
Momentum Score	A
VGM Score	A

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.