

## Tyler Technologies (TYL)

**\$325.33** (As of 09/11/20)

Price Target (6-12 Months): **\$342.00**

Long Term: 6-12 Months

**Zacks Recommendation:**

**Neutral**

(Since: 04/02/20)

Prior Recommendation: Underperform

Short Term: 1-3 Months

**Zacks Rank: (1-5)**

**4-Sell**

Zacks Style Scores:

VGM:D

Value: D

Growth: C

Momentum: C

### Summary

Tyler gains on public sector's ongoing transition from on-premise and outdated systems to scalable cloud-based systems. Coronavirus-led remote-working trend is also driving demand for its connectivity and cloud services. Moreover, stable revenue base, along with solid recurring revenues makes it an attractive stock for investors. Strong liquidity position will also help it pursue acquisitions. Shares have outperformed the industry year to date. However, the coronavirus outbreak has negatively impacted Tyler's prospects. The company expects the pandemic to have significant negative impact on second and third quarters. It continues to see delays in procurement processes and lengthening sales cycles, as public entities focus on issues related to the pandemic. Also, many of its customers are likely to face budget pressures in the near term.

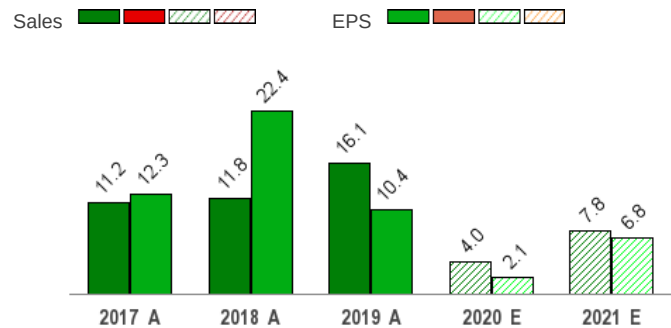
### Price, Consensus & Surprise



### Data Overview

|                                |                              |
|--------------------------------|------------------------------|
| 52-Week High-Low               | \$382.92 - \$245.00          |
| 20-Day Average Volume (Shares) | 260,151                      |
| Market Cap                     | \$13.1 B                     |
| Year-To-Date Price Change      | 8.4%                         |
| Beta                           | 0.72                         |
| Dividend / Dividend Yield      | \$0.00 / 0.0%                |
| Industry                       | Business - Software Services |
| Zacks Industry Rank            | Top 35% (87 out of 251)      |

### Sales and EPS Growth Rates (Y/Y %)



|                               |            |
|-------------------------------|------------|
| Last EPS Surprise             | 19.0%      |
| Last Sales Surprise           | -3.2%      |
| EPS F1 Estimate 4-Week Change | 0.0%       |
| Expected Report Date          | 11/04/2020 |
| Earnings ESP                  | 0.0%       |
| P/E TTM                       | 60.1       |
| P/E F1                        | 60.1       |
| PEG F1                        | 4.0        |
| P/S TTM                       | 11.8       |

### Sales Estimates (millions of \$)

|      | Q1    | Q2    | Q3    | Q4    | Annual* |
|------|-------|-------|-------|-------|---------|
| 2021 | 293 E | 297 E | 308 E | 322 E | 1,224 E |
| 2020 | 277 A | 271 A | 286 E | 301 E | 1,135 E |
| 2019 | 249 A | 278 A | 277 A | 287 A | 1,091 A |

### EPS Estimates

|      | Q1       | Q2       | Q3       | Q4       | Annual*  |
|------|----------|----------|----------|----------|----------|
| 2021 | \$1.31 E | \$1.41 E | \$1.46 E | \$1.58 E | \$5.78 E |
| 2020 | \$1.25 A | \$1.38 A | \$1.32 E | \$1.46 E | \$5.41 E |
| 2019 | \$1.22 A | \$1.30 A | \$1.35 A | \$1.43 A | \$5.30 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 09/11/2020. The reports text is as of 09/14/2020.

## Overview

Tyler Technologies is a leading provider of integrated information-management solutions and services for the public sector.

Clients consist primarily of federal, state, county and municipal agencies, school districts, and other local government offices. In counties, clients include the auditor, treasurer, tax assessor/collector, county clerk, district clerk, county and district court judges, probation officers, sheriff, and county appraiser. At municipal government sites, clients include directors of various departments, including administration, finance, utilities, public works, code enforcement, personnel, purchasing, taxation, municipal court, and police.

The company's software solutions and services are generally grouped into the following areas: (1) Financial Management and Education, (2) Courts and Justice, (3) Public Safety, (4) Property Appraisal and Tax, (5) Planning, Regulatory and Maintenance, (6) Land and Vital Records Management, (7) Data and Insights, and (8) Case Management and Business Process Management.

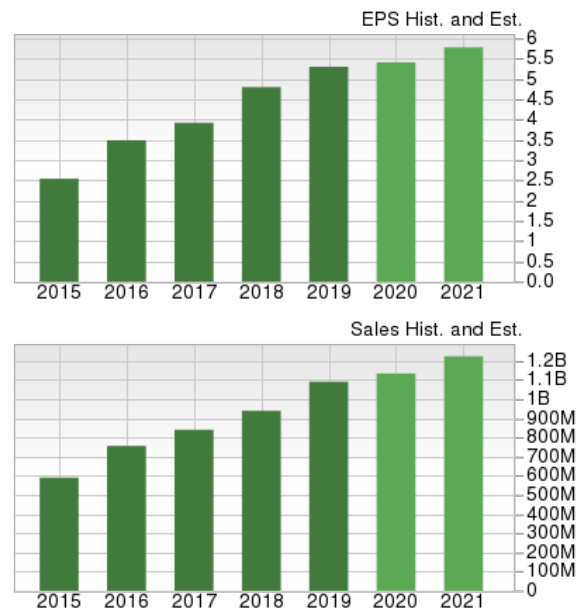
Tyler serves its customers both on-premise and in cloud. By leveraging Tyler private cloud, the company delivers its applications through Software-as-a-Service ("SaaS") model. In October 2019, the company entered into a partnership agreement with Amazon Web Services for cloud-hosting services.

Tyler reported revenues of \$1.09 billion in 2019. The Plano, TX-based company derives revenues from five sources: (i) Sales of software licenses and royalties, (ii) Subscription-based arrangements, (iii) Software services, (iv) Maintenance and support, and (v) Appraisal services.

Subscription-based revenues are primarily derived from Tyler's SaaS arrangements, as well as transaction-based offerings such as e-filing solutions, online dispute resolution solutions, and online payment services.

Moreover, client-support services comprise a significant base of recurring maintenance revenues. During 2019, approximately 40% of Tyler's revenues were attributable to ongoing support and maintenance agreements.

Tyler faces competition from Oracle, Infor, SAP AG, Workday, CentralSquare, Thomson Reuters, Motorola Solutions, Axon Enterprise and Constellati



Source: Zacks Investment Research

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## Reasons To Buy:

- ▲ Public sector's ongoing software transition from on-premise and outdated systems to scalable cloud-based systems benefits Tyler. The multi-year transition is expected to boost the company's recurring revenues that currently accounts for more than 70% of top line. Further, strong adoption of cloud-based systems is expected to drive subscription revenues, Tyler's fastest-growing revenue category over the past five years. Notably, subscription revenues increased from \$111.9 million in 2015 to \$296.4 million in 2019. In first-quarter 2020, Tyler added 131 new subscription-based arrangements and converted 19 existing on-premises clients, representing roughly \$101 million in total contract value.
- ▲ Tyler is a pure play government software provider. Property taxes are the primary source of revenues for local government entities, and are fairly stable in nature. This makes Tyler's revenue base less volatile, particularly amid the coronavirus pandemic. Moreover, once a project is approved by a government entity, budget gets locked in, which reduces its flexibility to cancel the project. Although coronavirus-led disruptions have delayed projects, lower chances of cancellation bode well for Tyler. Notably, backlog at the end of the first quarter reached \$1.5 billion, up 19.2%. Additionally, Tyler has conventionally focused on small and mid-sized governments, but is now targeting larger clients that are expected to expand its revenue source.
- ▲ Tyler offers mission-critical software to public sectors that handle essential services like 911, dispatch, court, permits, licenses, land records, utilities and property taxes. The company's agile cloud-based system not only improves efficiency but also lowers cost. These factors are expected to drive up demand for Tyler's solutions. Moreover, the remote-working wave has also demonstrated limitations of current on-premise solutions that bode well for Tyler's cloud-based solutions. Notably, the company has been using web- and video-conferencing extensively for collaboration, conducting sales demos, providing client support and delivering professional services such as training remotely. It has also helped clients go live virtually. Growing need for connectivity and cloud services amid coronavirus benefits Tyler.
- ▲ Tyler's growth trajectory in recent years has been driven by acquisitions. In 2019, the company acquired certain assets of Courthouse Technologies, MicroPact and Civic. The buyouts expanded the company's footprint into SaaS-based jury-management system, case management and business-process management. MicroPact contributed \$63 million to revenues in 2019. The company is expected to pursue acquisitions that will be strategically fit to its current offerings. Along with investments on research & development (R&D), strategic acquisitions are expected to strengthen product offerings and clientele in the long run.
- ▲ Tyler has a strong balance sheet with ample liquidity position and less debt obligations that provide it flexibility to pursue growth initiatives including acquisitions. As of Jun 30, 2020, cash and cash equivalents were \$351 million compared with \$302 million as of Mar 31, 2020. Moreover, the company has \$400 million available under its credit facility. Further, cash flow from operations was \$39.8 million, up 62.5% year over year in second-quarter 2020. Markedly, the company has been able to regularly increase its cash flow from operations in the last five years.

Public sector's ongoing transition to cloud-based solutions from on-premise and outdated systems bodes well for Tyler. Stable revenue base, strategic acquisitions and strong balance sheet are key positives.

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## Reasons To Sell:

- ▼ The coronavirus outbreak has negatively impacted Tyler's prospects. The company expects the pandemic to have significant negative impact on second and third quarters. It continues to see delays in procurement processes and lengthening sales cycles, as public sector entities focus on issues related to the pandemic. Further, roughly \$6 million of revenues under hardware and other revenues will be also eliminated in the second quarter as a result of the cancellation of Tyler's Connect conference. Additionally, many of its customers are expected to face budget pressures in the near term due to coronavirus.
- ▼ Tyler faces tough competition from the likes of Oracle, SAP and Workday that keeps pricing under pressure and negatively impacts gross margin. Notably, non-GAAP gross margin contracted 40 basis points (bps) to 51.2% in first-quarter 2020. Moreover, both Oracle and SAP have well-established cloud businesses that make it harder for Tyler to gain market share. Further, Workday dominates Human Capital Management and Financial Management software-solution markets.
- ▼ Tyler is spending significantly on R&D to improve its software offerings. However, R&D growth on a year-over-year basis has been much faster compared with revenues. For instance, in 2018 and 2019 revenues grew 11.2% and 16.2% respectively, compared with R&D's growth of 33.7% and 28.6%. As a result, operating margin contracted 190 bps and 310 bps year over year respectively in 2018 and 2019. The trend continued in first-half of 2020 with R&D expense growth of 13.5% being much higher than revenue growth of 4.9%. Given the fact that coronavirus pandemic will hit Tyler's top line at least in the near term, higher R&D expense will keep operating margin under pressure.
- ▼ Tyler faces significant integration risks due to frequent acquisitions. Notably, asset quality is not good due to high level of goodwill and net intangible assets, which totaled \$1.3 billion or 54.4% of total assets, as of Jun 30, 2020.

Coronavirus outbreak has negatively impacted Tyler's prospects. Stiff competition, increasing R&D expenses and significant integration risks are major headwinds.

## Last Earnings Report

### Tyler's Q2 Earnings Beat, Revenues Miss Estimates

Tyler Technologies reported second-quarter 2020 non-GAAP earnings of \$1.38 per share, which surpassed the Zacks Consensus Estimate of \$1.16. Moreover, the bottom line increased 6.2% from the year-ago quarter.

Revenues on a non-GAAP basis declined 2.4% year over year to \$271.3 million, missing the consensus mark of \$280.2 million. Tyler recorded a 1.9% year-over-year decline in organic revenues.

Recurring revenues increased 12.3% year over year to \$202.4 million and accounted for 74.7% of total revenues.

### Q2 Results in Detail

Segment wise, Maintenance revenues (43.1% of total revenues) were \$116.8 million, up 9.4% year over year.

Subscription revenues (31.6% of total revenues) climbed 16.6% year over year to \$85.6 million.

Software subscription arrangements comprised roughly 43% of the total new software contract value in the reported quarter compared with the year-ago quarter's 80%.

Software licenses and royalties (6.3% of total revenues) of \$17 million slid 17.7% on a year-over-year basis.

Software Services revenues (16.1% of total revenues) of \$43.7 million dropped 23.9% from the year-ago quarter.

Appraisal services revenues (1.7% of total revenues) slipped 24.7% to \$4.7 million.

Hardware and other revenues (1.2% of total revenues) plummeted 68.8% to \$3.3 million.

Backlog at the end of the quarter was \$1.54 billion, up 7.4% year over year. Of this, software-related backlog increased 8% to \$1.51 billion.

Bookings plunged 31.6% year over year to \$309 million. Subscription bookings added \$9.2 million in annual recurring revenues.

### Operating Details

Tyler's non-GAAP gross profit increased to \$143.8 million from the year-earlier quarter's \$142.5 million. Non-GAAP gross margin also expanded 180 basis points (bps) to 53%.

Adjusted EBITDA was \$80.7 million, up 8.2% year over year.

Selling, general and administrative (SG&A) expenses, as percentage of revenues, shrunk 80 bps year over year to 23.1%. However, research and development (R&D) expenses, as percentage of revenues, expanded 80 bps to 8.1%.

The company's non-GAAP operating income increased 9.1% year over year to \$74.6 million. Its operating margin expanded 290 bps to 27.5%.

### Balance Sheet and Cash Flow

As of Mar 31, 2020, cash and cash equivalents were \$351.3 million compared with \$302 million as of Mar 31, 2019.

Cash flow from operations was \$39.8 million, up 62.5% year over year.

### Guidance

Tyler expects the pandemic to adversely impact its business during second-half of 2020. The company continues to see delays in procurement processes and lengthening sales cycles, as public sector entities focus on issues related to the pandemic.

For 2020, the company projects revenues between \$1.125 billion and \$1.145 billion. The company anticipates non-GAAP earnings in the range of \$5.30-\$5.50 per share.

| Quarter Ending   | 06/2020      |
|------------------|--------------|
| Report Date      | Jul 29, 2020 |
| Sales Surprise   | -3.18%       |
| EPS Surprise     | 18.97%       |
| Quarterly EPS    | 1.38         |
| Annual EPS (TTM) | 5.41         |

## Recent News

On Sep 8, Tyler revealed that it has been named as a 2020 Amazon Web Services (AWS) Public Sector Partner Award winner for "Best Remote Work Solution" for its Tyler Virtual Court product.

On Aug 25, Tyler launched Assessment Connect, a solution that provides county, municipal, and state assessing offices with data access and analysis tools to help ensure fair and equitable property valuations throughout their jurisdictions.

On Aug 11, Tyler revealed that the West Valley Water District (WVWD) in Rialto, California, has successfully implemented its Incode and Tyler Content Manager solutions.

On Jul 21, Tyler announced that it has signed a five-year agreement with the South Carolina Department of Education Administration for its Traversa transportation management solution including Telematic GPS units and Drive tablets for school bus drivers.

On Jul 7, Tyler announced that the city of El Cajon, CA, has successfully gone live with its EnerGov citizen self-service (CSS) and MyCivic citizen engagement solution.

On Jun 30, Tyler announced that the Jefferson City Police Department in Missouri has successfully gone live with its New World Enterprise CAD, a computer-aided dispatch solution.

On Jun 9, Tyler announced that the city of Buffalo, NY, successfully launched its Socrata solution for the public as part of its response strategy for the coronavirus pandemic.

On Jun 2, Tyler announced that Forsyth County, GA, has successfully gone live with Tyler's EnerGov civic services solution.

On May 26, Tyler announced new agreements and successful go-lives with courts in three states for its Modria online dispute resolution solution.

On May 13, Tyler announced that the New York State Division of Veterans Services has added capabilities to its Entellitrak-based Veterans' Benefits solution to be able to continue to provide benefits and services to veterans remotely amid coronavirus outbreak

On May 5, Tyler announced that it has inked an agreement with the Hamilton County School District in Tennessee for its Munis enterprise resource planning , ExecuTime time and attendance, Content Manager, and Socrata Connected Government Cloud. Munis will manage financials, HR, procurement and revenues, helping the district automate and streamline processes and procedures.

On Apr 23, Tyler announced that its Virtual Court product has gained significant traction as 60 courts have selected the solution to help them conduct court sessions entirely online amid coronavirus outbreak.

On Apr 2, Tyler announced that it has signed a software-as-a-service agreement with Jefferson County, TX, for Odyssey Case Manager, Odyssey Attorney Manager, Tyler Corrections, and SoftCode civil process solutions. With this agreement, Tyler's Odyssey solution will now serve all of the 20 largest counties in Texas by population and 86 Texas counties in total.

## Valuation

Tyler shares are up 8.4% in the year-to-date period and 26.2% over the trailing 12-month period. Stocks in the Zacks sub-industry and the Zacks Computer & Technology sector are up 16.6% and 19.8% in the year-to-date period, respectively. Over the past year, the Zacks sub-industry and the sector are up 31.4% and 21.8%, respectively.

The S&P 500 index is up 3.8% in the year-to-date period and 12% in the past year.

The stock is currently trading at 57.37X forward 12-month earnings, which compares to 25.79X for the Zacks sub-industry, 25.68X for the Zacks sector and 22.15X for the S&P 500 index.

Over the past five years, the stock has traded as high as 86.22X and as low as 38.37X, with a 5-year median of 50.02X. Our Neutral recommendation indicates that the stock will perform in-line with the market. Our \$342 price target reflects 60.24X forward 12-month earnings.

The table below shows summary valuation data for TYL

| Valuation Multiples - TYL |               |       |              |        |         |
|---------------------------|---------------|-------|--------------|--------|---------|
|                           |               | Stock | Sub-Industry | Sector | S&P 500 |
| P/E F12M                  | Current       | 57.37 | 25.79        | 25.68  | 22.15   |
|                           | 5-Year High   | 86.22 | 26.97        | 27.95  | 23.44   |
|                           | 5-Year Low    | 38.37 | 7.29         | 16.75  | 15.26   |
|                           | 5-Year Median | 50.02 | 21.69        | 19.93  | 17.63   |
| P/S F12M                  | Current       | 10.93 | 10.70        | 4.17   | 4.08    |
|                           | 5-Year High   | 12.65 | 11.32        | 4.49   | 4.29    |
|                           | 5-Year Low    | 5.30  | 6.88         | 2.70   | 3.11    |
|                           | 5-Year Median | 7.41  | 8.72         | 3.43   | 3.66    |
| EV/Sales TTM              | Current       | 11.41 | 10.33        | 4.70   | 3.80    |
|                           | 5-Year High   | 13.33 | 10.94        | 5.23   | 4.14    |
|                           | 5-Year Low    | 6.82  | 6.69         | 2.84   | 2.60    |
|                           | 5-Year Median | 8.82  | 8.74         | 3.81   | 3.55    |



## Industry Analysis Zacks Industry Rank: Top 35% (87 out of 251)



Source: Zacks Investment Research

## Top Peers

| Company (Ticker)                     | Rec          | Rank |
|--------------------------------------|--------------|------|
| Zoom Video Communications, Inc. (ZM) | Outperform   | 1    |
| Avaya Holdings Corp. (AVYA)          | Neutral      | 2    |
| Cisco Systems, Inc. (CSCO)           | Neutral      | 3    |
| Guidewire Software, Inc. (GWRE)      | Neutral      | 4    |
| MSCI Inc (MSCI)                      | Neutral      | 3    |
| Microsoft Corporation (MSFT)         | Neutral      | 3    |
| RealPage, Inc. (RP)                  | Neutral      | 3    |
| Ringcentral, Inc. (RNG)              | Underperform | 4    |

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

| Industry Comparison Industry: Business - Software Services |         |            |           | Industry Peers |          |         |
|------------------------------------------------------------|---------|------------|-----------|----------------|----------|---------|
|                                                            | TYL     | X Industry | S&P 500   | GWRE           | MSCI     | RP      |
| Zacks Recommendation (Long Term)                           | Neutral | -          | -         | Neutral        | Neutral  | Neutral |
| Zacks Rank (Short Term)                                    | 4       | -          | -         | 4              | 3        | 3       |
| VGM Score                                                  | D       | -          | -         | D              | C        | B       |
| Market Cap                                                 | 13.09 B | 6.39 B     | 23.09 B   | 8.79 B         | 28.37 B  | 5.68 B  |
| # of Analysts                                              | 5       | 4          | 14        | 6              | 4        | 5       |
| Dividend Yield                                             | 0.00%   | 0.00%      | 1.65%     | 0.00%          | 0.92%    | 0.00%   |
| Value Score                                                | D       | -          | -         | F              | D        | C       |
| Cash/Price                                                 | 0.03    | 0.14       | 0.07      | 0.11           | 0.05     | 0.15    |
| EV/EBITDA                                                  | 53.65   | 10.75      | 13.07     | 109.97         | 36.36    | 24.71   |
| PEG F1                                                     | 4.10    | 3.11       | 2.93      | 68.54          | NA       | NA      |
| P/B                                                        | 7.16    | 4.35       | 3.19      | 5.54           | NA       | 3.64    |
| P/CF                                                       | 52.05   | 21.03      | 12.63     | 89.88          | 45.31    | 20.39   |
| P/E F1                                                     | 61.54   | 30.87      | 21.25     | 960.27         | 46.65    | 30.87   |
| P/S TTM                                                    | 11.77   | 2.89       | 2.44      | 11.84          | 17.44    | 5.29    |
| Earnings Yield                                             | 1.66%   | 3.23%      | 4.52%     | 0.10%          | 2.14%    | 3.23%   |
| Debt/Equity                                                | 0.00    | 0.26       | 0.70      | 0.27           | -10.82   | 0.62    |
| Cash Flow (\$/share)                                       | 6.25    | 1.73       | 6.93      | 1.18           | 7.49     | 2.73    |
| Growth Score                                               | C       | -          | -         | B              | B        | B       |
| Historical EPS Growth (3-5 Years)                          | 15.42%  | 13.57%     | 10.41%    | -0.16%         | 29.04%   | 49.47%  |
| Projected EPS Growth (F1/F0)                               | 2.08%   | -10.29%    | -4.75%    | -91.27%        | 12.93%   | 2.50%   |
| Current Cash Flow Growth                                   | 15.08%  | 11.37%     | 5.26%     | 99.80%         | 11.37%   | 23.00%  |
| Historical Cash Flow Growth (3-5 Years)                    | 25.59%  | 14.18%     | 8.49%     | 29.98%         | 14.85%   | 40.36%  |
| Current Ratio                                              | 1.77    | 1.55       | 1.35      | 6.93           | 2.26     | 1.25    |
| Debt/Capital                                               | 0.00%   | 20.78%     | 42.95%    | 21.17%         | NA       | 38.33%  |
| Net Margin                                                 | 16.96%  | 4.53%      | 10.25%    | -3.66%         | 32.14%   | 4.55%   |
| Return on Equity                                           | 10.05%  | 9.86%      | 14.59%    | 1.08%          | -268.97% | 9.66%   |
| Sales/Assets                                               | 0.50    | 0.87       | 0.50      | 0.34           | 0.41     | 0.37    |
| Projected Sales Growth (F1/F0)                             | 3.96%   | 0.00%      | -1.42%    | -1.33%         | 7.85%    | 16.24%  |
| Momentum Score                                             | C       | -          | -         | F              | C        | B       |
| Daily Price Change                                         | -0.33%  | -0.16%     | 0.39%     | -3.00%         | -0.96%   | -2.30%  |
| 1-Week Price Change                                        | -2.32%  | -3.26%     | -1.28%    | 3.14%          | -6.82%   | -6.35%  |
| 4-Week Price Change                                        | -3.83%  | -3.69%     | -1.42%    | -2.82%         | -5.73%   | -9.11%  |
| 12-Week Price Change                                       | -5.03%  | 4.07%      | 4.86%     | -1.34%         | 2.78%    | -17.42% |
| 52-Week Price Change                                       | 25.91%  | 5.14%      | -1.17%    | -1.73%         | 45.98%   | -11.48% |
| 20-Day Average Volume (Shares)                             | 260,151 | 315,743    | 1,834,261 | 609,462        | 371,334  | 766,195 |
| EPS F1 Estimate 1-Week Change                              | 0.00%   | 0.00%      | 0.00%     | 0.00%          | 0.00%    | 0.00%   |
| EPS F1 Estimate 4-Week Change                              | 0.00%   | 0.00%      | 0.00%     | -885.97%       | 0.00%    | 0.56%   |
| EPS F1 Estimate 12-Week Change                             | -2.53%  | 6.34%      | 4.05%     | -885.97%       | 3.08%    | 9.33%   |
| EPS Q1 Estimate Monthly Change                             | 0.00%   | 0.00%      | 0.00%     | -172.92%       | 0.00%    | 0.00%   |

Source: Zacks Investment Research



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## 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.

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### 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   | C |
| 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.

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## Disclosures

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## Additional Disclosure

This material represents an assessment of the market and economic environment at a specific point in time and is not intended to be a forecast of future events, or a guarantee of future results. Forward-looking statements are subject to certain risks and uncertainties. Any statements that refer to expectations, projections or characterizations of future events or circumstances, including any underlying assumptions, are forward-looking statements. Actual results, performance, or achievements may differ materially from those expressed or implied.

**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.

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**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.

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**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.

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**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.