

bluebird bio, Inc.(BLUE)

\$56.38 (As of 09/08/20)

Price Target (6-12 Months): **\$59.00**

Long Term: 6-12 Months

Zacks Recommendation:
Neutral

(Since: 02/18/19)

Prior Recommendation: Underperform

Short Term: 1-3 Months

Zacks Rank: (1-5)

3-Hold

Zacks Style Scores:

VGM:D

Value: F

Growth: B

Momentum: D

Summary

bluebird reported narrower than expected loss and sales beat estimates in the second quarter of 2020. bluebird has an impressive pipeline of gene therapies for genetic diseases and cancers. The conditional approval of Zynteglo for patients aged 12 years or above with transfusion-dependent β -thalassemia in Europe is a significant step for the company. The European launch of Zynteglo continues to progress, well. Additionally, the multiple myeloma program-idecabtagene vicleucel, partnered with Bristol Myers, continues to advance with the submission of the BLA to the FDA and BMS' validated MAA submission in Europe. The successful development of the candidates will benefit it in the long run. However, competition is stiffening in this space. Shares of the company have underperformed the industry in the past year.

Price, Consensus & Surprise

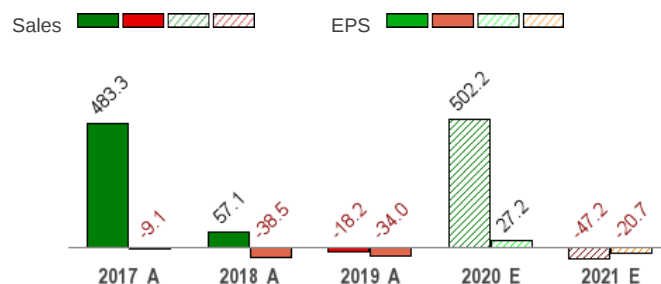


Source: Zacks Investment Research

Data Overview

52-Week High-Low	\$109.58 - \$38.95
20-Day Average Volume (Shares)	639,613
Market Cap	\$3.7 B
Year-To-Date Price Change	-35.8%
Beta	2.20
Dividend / Dividend Yield	\$0.00 / 0.0%
Industry	Medical - Biomedical and Genetics
Zacks Industry Rank	Bottom 25% (187 out of 251)

Sales and EPS Growth Rates (Y/Y %)



Last EPS Surprise	81.2%
Last Sales Surprise	95.5%
EPS F1 Estimate 4-Week Change	0.0%
Expected Report Date	10/29/2020
Earnings ESP	0.0%
P/E TTM	NA
P/E F1	NA
PEG F1	NA
P/S TTM	15.6

Sales Estimates (millions of \$)

	Q1	Q2	Q3	Q4	Annual*
2021	12 E	23 E	30 E	47 E	143 E
2020	22 A	199 A	26 E	14 E	271 E
2019	12 A	13 A	9 A	10 A	45 A

EPS Estimates

	Q1	Q2	Q3	Q4	Annual*
2021	-\$3.30 E	-\$3.26 E	-\$3.18 E	-\$2.41 E	-\$12.58 E
2020	-\$3.64 A	-\$0.36 A	-\$3.07 E	-\$3.35 E	-\$10.42 E
2019	-\$2.99 A	-\$3.55 A	-\$3.73 A	-\$4.04 A	-\$14.31 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 09/08/2020. The reports text is as of 09/09/2020.

Overview

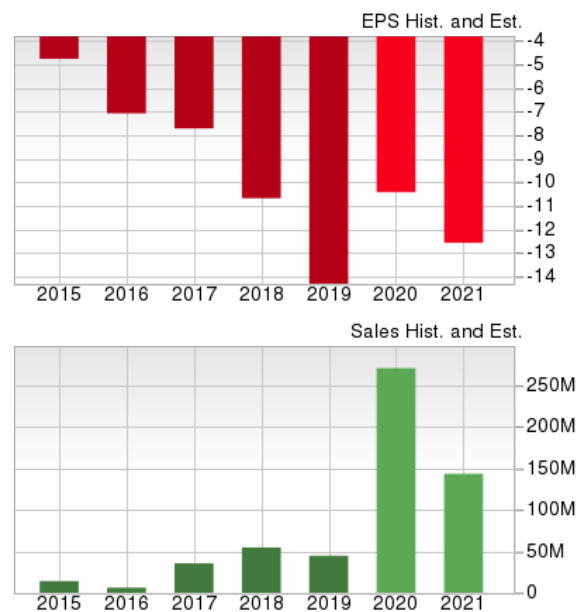
Cambridge, MA based bluebird bio, Inc. is a clinical-stage biotechnology, which is focused on developing gene therapies for severe genetic diseases and cancer. The company has developed a deep pipeline using its lentiviral-based gene therapies, T cell immunotherapy expertise and gene editing capabilities to treat severe genetic diseases and cancer as well.

The pipeline for severe genetic diseases, include Zynteglo product candidate for the treatment of transfusion-dependent β -thalassemia (TDT) and severe sickle cell disease (SCD), and Lenti-D product candidate for the treatment of cerebral adrenoleukodystrophy (CALD). Zynteglo (formerly LentiGlobin) was recently approved in Europe for TDT, making it the first gene therapy approved for this indication. The gene therapy has gained a lot of attention of late. The objective of the therapy is to correct the underlying genetic defect, which is the cause of the disease, rather than offering treatments that only address the symptoms. The gene therapy has a huge advantage over other therapies, especially for diseases like SCD and cancer, which have no cure.

The oncology programs are focused on developing novel T cell-based immunotherapies, including chimeric antigen receptor (CAR) and T cell receptor (TCR) T cell therapies. The oncology pipeline includes CAR T cell product candidates — bb2121 and bb21217 — for the treatment of multiple myeloma. The company is co-developing and co-promoting bb2121 in the United States with Celgene which is now acquired by Bristol Myers. Bristol Myers also owns the development and commercialization rights for bb2121 product candidate in the United States, while bluebird has an option to elect to co-develop and co-promote bb21217 within the United States.

With no approved products in its kitty, the company does not generate any revenues from the sale of products. However, the company derived revenues from collaboration arrangements, out-licensing arrangements including royalties on net sales of products to licensees or sublicensees, research fees, and grant revenues.

Revenues in 2019 came in at \$44.7 million, down 18.2% year over year.



Source: Zacks Investment Research

Reasons To Buy:

- ▲ **Potential of Gene Therapy:** The gene therapy has gained a lot of attention of late. The objective of the therapy is to correct the underlying genetic defect, which is the cause of the disease, rather than offering treatments that only address the symptoms. The gene therapy has a huge advantage over other therapies, especially for diseases like SCD and cancer, which have no cure.
- ▲ **Zynteglo Products Hold Promise:** In June 2019, the European Commission (EC) granted conditional marketing authorization to Zynteglo (autologous CD34+ cells encoding β -A-T87Q-globin gene) in patients aged 12 years or older with transfusion-dependent β -thalassemia (TDT), who do not have a β^0/β^0 genotype and for whom hematopoietic stem cell (HSC) transplantation is appropriate but a human leukocyte antigen (HLA)-matched related HSC donor is not available. The candidate is expected to treat the first commercial patient in second half of 2020. In January 2020, the company launched Zynteglo in Germany.

bluebird's efforts to develop its pipeline is impressive. The collaboration with Bristol-Myers is a big positive for the company.

bluebird's efforts to develop its pipeline is impressive. The company is developing its Zynteglo product candidate for different genotypes of TDT, and SCD. The company is currently conducting five clinical studies for its Zynteglo product candidate: first, a phase I/II study (Northstar Study (HGB-204)) in the United States, Australia, and Thailand for the treatment of subjects with TDT; second, a multi-site, international, phase III study (Northstar-2 Study (HGB-207)) for the treatment of patients with TDT and non- β^0/β^0 genotypes; third, a multi-site, international, phase III study (Northstar 3 Study (HGB-212)) for the treatment of subjects with TDT and a β^0/β^0 genotype; fourth, a single-center phase I/II study in France for the treatment of subjects with TDT or severe SCD (HGB-205); and finally, a multi-site phase I study in the United States for the treatment of subjects with severe SCD (HGB-206). The company presented positive new data from Northstar (HGB-204) and Northstar-2 (HGB-207) studies.

bluebird initiated its rolling Biologics License Application (BLA) submission of LentiGlobin for β -thalassemia for approval in the United States. The company is currently planning to complete the BLA submission in second-half 2020.

The company is also developing its elivaldogeneautotemcel (eli-cel, Lenti-D gene therapy) product candidate for cerebral adrenoleukodystrophy (CALD), a rare, hereditary neurological disorder, which can be often fatal. A multi-site, international phase II/III study, Starbeam Study (ALD-102), is ongoing for the same, with updated date expected by 2020-end. An observational study of subjects with CALD, treated by allogeneic hematopoietic stem-cell transplant referred to as the ALD-103 study, is also being conducted. The company expects to submit a Biologics License Application (BLA) to the FDA for Lenti-D in patients with cerebral adrenoleukodystrophy by the end of 2020. In July 2020, the Committee for Medicinal Products for Human Use (CHMP) of the European Medicines Agency (EMA) granted an accelerated assessment to elivaldogeneautotemcel for the treatment of CALD. The company plans to submit a marketing authorization application (MAA) to the EMA for eli-cel in 2020.

The company continues to plan to submit the BLA for SCD to the FDA in the second half of 2021.

The FDA granted Breakthrough Therapy designation to Lenti-D for the treatment of patients with CALD which should expedite the development and review of the therapy. Lenti-D also enjoys orphan drug status in the United States and Europe. It was also granted Rare Pediatric Disease designation by the FDA for the treatment of adrenoleukodystrophy (ALD).

- ▲ **Collaboration With Bristol-Myers Squibb a Big Positive:** bluebird's collaboration agreement with Bristol Myers is a big positive for the company, given the latter's expertise in the biotech space. Most importantly, the agreement provides bluebird with funds as upfront payments. In 2013, both the companies entered into a collaboration agreement, whereby Bristol Myers will discover, develop and commercialize potentially disease-altering gene therapies in oncology. The collaboration is primarily focused on applying gene therapy technology to genetically modify a patient's own T cells, known as chimeric antigen receptor or CAR T cells, to target and destroy cancer cells. Both the companies also entered into a licensing deal, whereby bluebird obtained a sublicense to certain intellectual property from Bristol Myers, originating under Bristol Myers' license from Baylor College of Medicine, for use in the collaboration. Per the terms, bluebird obtained an upfront payment of \$75.0 million.

The collaboration agreement was amended in June 2015. Per the amended terms, both the companies have narrowed the focus of the collaboration exclusively to anti-B-cell maturation antigen (BCMA) product candidates for a new three-year term ending in June 2018. bluebird received an upfront, one-time, non-refundable, non-creditable payment of \$25.0 million upon the amendment.

Bristol Myers is responsible for development and related funding of idecabtagenevicleucel (ide-cel; bb2121), after the substantial completion of the on-going trial. Thereafter, in March 2018, bluebird elected to co-develop and co-promote bb2121 within the United States. bluebird will have an equal share in all profits and losses, relating to developing, commercializing and manufacturing bb2121 within the country. The company may receive up to \$70.0 million in development milestone payments for the first approved indication along with tiered royalty payments.

bluebird amended its existing co-promotion/co-development agreement with Bristol-Myers Squibb to enable the companies to focus their efforts on efficient commercialization of ide cel in the United States. The companies will continue to share profits and losses equally in the United States. Under the terms of the amended agreement, Bristol-Myers will buy out its obligations to pay bluebird future ex-U.S. milestone and royalty payments for ide-cel and bb2121, the companies' second BCMA-directed CAR T immunotherapy, for a one-time upfront payment of \$200 million.

- ▲ **Anti - BCMA Candidates Hold Potential:** The two anti-BCMA candidates, idecabtagenevicleucel (ide-cel; bb2121), and bb21217, hold promise. bb2121 is the lead candidate in this program. The company is conducting a multi-site phase I study in the United States on bb2121, for the treatment of subjects with relapsed/refractory multiple myeloma (CRB-401). The FDA has granted Breakthrough Therapy designation and the EMA has granted PRIME eligibility to bb2121 for relapsed/refractory multiple myeloma.

On July 29, 2020, bluebird bio and BMS submitted the biologics license application (BLA) to the FDA for idecabtagene vicleuce (ide-cel; bb2121), the companies' investigational B-cell maturation antigen (BCMA)-directed chimeric antigen receptor (CAR) T cell immunotherapy. The submission is based on results from the pivotal phase II KarMMa study evaluating the efficacy and safety of ide-cel in relapsed and refractory multiple myeloma patients exposed to an immunomodulatory (IMiD) agent, a proteasome inhibitor (PI) and an anti-CD38 antibody.



Collaborations With Other Big Pharma Companies Bode Well: Apart from Bristol-Myers, bluebird has collaborations with other big companies as well, which provide it with funds as upfront payments. Regeneron made a \$100 million investment in the company's common stock at a price of \$238.10 per share. Both companies have collaborated on applying their respective technology platforms to the discovery, development and commercialization of novel immune cell therapies for cancer. Regeneron will leverage its VelociSuite platform technologies for the discovery and characterization of fully human antibodies as well as T cell receptors (TCRs) directed against tumor-specific proteins and peptides while bluebird bio will contribute its field-leading expertise in gene transfer and cell therapy. Regeneron and bluebird have jointly selected six initial targets and will equally share the costs of research and development up to the point of submitting an Investigational New Drug (IND) application. Both companies might select additional targets over the five-year research collaboration term. When an IND is submitted for a potential cell therapy product, Regeneron will have the right to opt-in to a co-development/co-commercialization arrangement for certain collaboration targets, with 50/50 cost and profit sharing. If Regeneron decides not to opt-in, it will be entitled to receive payments and royalties from bluebird bio on any potential resulting products.

In November 2019, bluebird bio and Forty Seven entered into a research collaboration to pursue clinical proof-of-concept for Forty Seven's novel antibody-based conditioning regimen, FSI-174 (anti-ckIT antibody) plus magrolimab (anti-CD47 antibody), with bluebird's ex vivo lentiviral vector hematopoietic stem cell (LVV HSC) gene therapy platform. Per the agreement, bluebird bio will provide its ex vivo LVV HSC gene therapy platform and Forty Seven will contribute its innovative antibody-based conditioning regimen for the collaboration.

In October 2019, bluebird bio and Novo Nordisk announced a research collaboration to jointly develop next-generation vivo genome editing treatments for genetic diseases, including hemophilia. During the three-year research collaboration, bluebird and Novo Nordisk will focus on identifying a development gene therapy candidate with the ambition of offering people with hemophilia A a lifetime free of factor replacement therapy.

Reasons To Sell:

▼ **Share Price Performance:** bluebird's shares have underperformed the industry in the past year.

▼ **Intense Competition:** The company faces potential competition from many larger and better-funded pharmaceutical and biotechnology companies. Chronic blood transfusions are the current standard of care in the β -thalassemia market but iron chelation therapy is often required by these patients. Novartis and ApoPharma Inc. provide the leading iron chelation therapy and are striving to further innovate the existing therapies. Moreover, Acceleron Pharma, Inc., in collaboration with Bristol Myers, has developed Reblozyl (luspatercept-aamt) which received approval by the FDA in November 2019, for the treatment of anemia (lack of red blood cells) in adult patients with beta thalassemia who require regular red blood cell (RBC) transfusions. For sickle cell disease, Emmaus Life Sciences, Inc. recently received FDA approval for Endari (L-glutamine) and has launched the same. In November 2019, Novartis received approval for Adakveo (crizanlizumab) to reduce the frequency of vaso-occlusive crises (VOCs), or pain crises, in adult and pediatric patients aged 16 years and older with SCD. In the relapsed/refractory multiple myeloma space, an anti-BCMA CAR T cell therapy is currently in a single-center phase I study by the University of Pennsylvania, in collaboration with Novartis. Gilead Sciences and Bristol Myers also have such candidates in their pipeline.

bluebird is highly dependent on its partners for funding requirements. R&D spend is expected to increase significantly.

▼ **Dependence on Partners and Funding Requirement:** The company is highly dependent on Bristol Myers for the development of its candidates. Termination of the agreement with Bristol Myers will have a negative impact on the company's growth prospects. Moreover, R&D spend is expected to increase significantly as it advances its pipeline candidates to late-stage studies.

▼ **Pipeline Candidates Still Far from Commercialization:** Although the company is progressing well with its pipeline, there is still a lot of time for most of the candidates to get regulatory approval. Unfavorable outcome from any of the development programs could adversely affect the company's prospects as well as the stock.

Last Earnings Report

bluebird Q2 Earnings and Revenues Beat

bluebird reported a loss of 36 cents per share in second-quarter 2020, narrower than the Zacks Consensus Estimate of a loss of \$1.91 and the year-ago quarter's loss of \$3.55.

Revenues of \$198.9 million easily beat the Zacks Consensus Estimate of \$102 million. The figure was up from \$13.3 million in the year-ago quarter.

Quarter in Detail

R&D expenses increased to \$156.3 million from \$146.5 million a year ago due to costs incurred by the company to advance and expand the pipeline.

Selling, general and administrative (SG&A) expenses of \$68.6 million were almost flat from the year-ago quarter to support its operations, overall growth of the pipeline, and commercial-readiness activities.

Pipeline Development

On July 29, 2020, bluebird bio and Bristol Myers Squibb announced the submission of their biologics license application (BLA) to FDA for idecabtagene vicleucel (ide-cel; bb2121), the companies' investigational B-cell maturation antigen (BCMA)-directed chimeric antigen receptor (CAR) T cell immunotherapy. This submission provides further details on the Chemistry, Manufacturing and Controls (CMC) module to address the outstanding regulatory requests from the FDA in May 2020 following the original BLA submission.

On May 22, 2020, Bristol Myers announced that the European Medicines Agency (EMA) validated its marketing authorization applications (MAA) for ide-cel. Validation of the application confirms the submission is complete and begins the EMA's centralized review process.

Quarter Ending	06/2020
Report Date	Aug 05, 2020
Sales Surprise	95.50%
EPS Surprise	81.15%
Quarterly EPS	-0.36
Annual EPS (TTM)	-11.77

Recent News

Presents New Data from Development Program of Elivaldogene Autotemcel-Aug 29

bluebird announced updated results from the clinical development program for its investigational elivaldogene autotemcel (eli-cel, Lenti-D) gene therapy in patients with cerebral adrenoleukodystrophy (CALD), including long-term results from the phase II/III Starbeam study (ALD-102/LTF-304) and data from the Phase III ALD-104 study.

The ALD-102 study has completed enrollment. Of the 32 patients who have received eli-cel as of January 2020, 20 completed ALD-102 and enrolled in a long-term follow-up study (LTF-304). Nine additional patients continued to be followed in ALD-102 and did not reach 24 months post-treatment.

The primary efficacy endpoint in the study was the proportion of patients who are alive and free of MFDs at Month 24. Of those patients who had or would have reached month 24, 87% met the primary endpoint and continued to be alive and MFD-free at more than two years of follow-up. Fourteen patients had at least four years of follow-up, including 10 patients who reached at least their year 5 follow-up visit. The nine patients from ALD-102 that did not reach month 24 showed no evidence of MFDs.

bluebird bio is currently enrolling patients for ALD-104, a phase III study designed to assess the efficacy and safety of eli-cel in patients with CALD after myeloablative conditioning using busulfan and fludarabine, a different chemotherapy conditioning regimen than what is used in ALD-102 (busulfan and cyclophosphamide). The primary efficacy endpoint is the proportion of patients who are alive and free of MFDs at month 24, and the primary safety endpoint is the proportion of patients with neutrophil engraftment after eli-cel infusion.

As of February 2020, in ALD-104, the 13 patients currently on study have a median of 6.1 months of follow-up to date. All 13 patients achieved neutrophil engraftment and 12/13 evaluable patients had platelet engraftment (platelet engraftment pending in one patient as of data cut date).

Reports New Data on Betibeglogene Autotemcel for TDT-June 12

bluebird announced new data from ongoing phase III studies on its investigational betibeglogene autotemcel (formerly LentiGlobin for β -thalassemia gene therapy). The data showed that pediatric, adolescent and adult patients with a range of genotypes of transfusion-dependent β -thalassemia (TDT) achieved and maintained transfusion independence with hemoglobin (Hb) levels that are nearnormal.

TDT is a severe genetic disease caused by mutations in the β -globin gene that results in significantly reduced or absent adult hemoglobin (HbA).

A total of 60 pediatric, adolescent and adult patients across genotypes of TDT were treated with betibeglogene in the phase I/II Northstar (HGB-204) and HGB-205 studies, and the phase III Northstar-2 (HGB-207) and Northstar-3 (HGB-212) studies as of Mar 3, 2020.

The results showed that 89% of the evaluable patients (17/19) with transfusion-dependent β -thalassemia did not have a β^0/β^0 genotype achieved transfusion independence with 11.9 g/dL median weighted average total hemoglobin (Hb) level in HGB-207.

Data from exploratory analyses of HGB-207 showed improved markers of blood cell production and bone marrow function in patients who achieved transfusion independence.

Reports New Data on lentiGlobin for Sickle Cell Disease-June 12

bluebird announced new data from its ongoing phase I/II HGB-206 study of lentiGlobin gene therapy for adult and adolescent patients with sickle cell disease (SCD). The study showed a near-complete reduction of serious vaso-occlusive crises (VOCs) and acute chest syndrome (ACS).

In Group C of HGB-206, 25 patients were treated with LentiGlobin for SCD and had up to 24.8 months of follow-up.

The data showed 99.5% reduction in annualized rate of VOC and ACS in Group C patients with a history of VOCs and ACS (n=14) who had at least six months follow-up. At up to 24 months, there were no reports of serious VOC or ACS in Group C patients (n=18) with at least six months follow-up.

Group C patients with at least six months follow-up continued to produce consistent levels of gene therapy-derived anti-sickling hemoglobin (HbAT87Q) at up to 24 months, reducing levels of abnormal sickle hemoglobin (HbS).

Key markers of hemolysis approached near-normal levels in Group C patients, supporting the potential of LentiGlobin for SCD to modify the underlying pathophysiology of the disease.

Valuation

bluebird's shares are down 35.8% in the year-to-date period and down 44.6% over the trailing 12-month period. Stocks in the Zacks sub-industry are down 3.5% and stocks in the Zacks Medical sector are down 2.6% in the year-to-date period. Over the past year, the Zacks sub-industry is up 9.8% and the sector is up 6.0%.

The S&P 500 index is up 3.6% in the year-to-date period and up 12.5% in the past year.

The stock is currently trading at 1.87X trailing 12-month book per share, which compares to 2.96X for the Zacks sub-industry, 3.79X for the Zacks sector and 5.73X for the S&P 500 index.

Over the past five years, the stock has traded as high as 8.06X and as low as 1.66X, with a 5-year median of 3.59X. Our Neutral

recommendation indicates that the stock will perform in-line with the market. Our \$59.00 price target reflects 1.96X trailing 12-month book per share.

Industry Analysis Zacks Industry Rank: Bottom 25% (187 out of 251)



Source: Zacks Investment Research

Top Peers

Company (Ticker)	Rec	Rank
Amgen Inc. (AMGN)	Neutral	3
Bellicum Pharmaceuticals, Inc. (BLCM)	Neutral	3
Bristol Myers Squibb Company (BMY)	Neutral	3
CRISPR Therapeutics AG (CRSP)	Neutral	4
Gilead Sciences, Inc. (GILD)	Neutral	3
Novartis AG (NVS)	Neutral	3
Sangamo Therapeutics, Inc. (SGMO)	Neutral	4
Accelaron Pharma Inc. (XLRN)	Neutral	3

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

Industry Comparison Industry: Medical - Biomedical And Genetics				Industry Peers		
	BLUE	X Industry	S&P 500	AMGN	NVS	SGMO
Zacks Recommendation (Long Term)	Neutral	-	-	Neutral	Neutral	Neutral
Zacks Rank (Short Term)	3	-	-	3	3	4
VGM Score	D	-	-	B	B	C
Market Cap	3.73 B	274.42 M	22.91 B	141.26 B	199.87 B	1.44 B
# of Analysts	11	3	14	12	5	6
Dividend Yield	0.00%	0.00%	1.66%	2.65%	2.30%	0.00%
Value Score	F	-	-	B	B	F
Cash/Price	0.42	0.25	0.07	0.08	0.03	0.47
EV/EBITDA	-3.05	-3.49	12.82	12.98	14.07	-8.97
PEG F1	NA	1.69	2.90	2.05	1.87	NA
P/B	1.87	3.77	3.15	13.25	3.71	2.81
P/CF	NA	16.45	12.45	12.76	11.06	NA
P/E F1	NA	23.24	21.08	15.42	15.26	NA
P/S TTM	15.58	14.60	2.43	5.81	4.15	12.90
Earnings Yield	-18.48%	-13.57%	4.52%	6.48%	6.55%	-11.29%
Debt/Equity	0.10	0.02	0.70	3.20	0.48	0.08
Cash Flow (\$/share)	-13.96	-1.08	6.93	18.91	7.90	-0.78
Growth Score	B	-	-	B	B	A
Historical EPS Growth (3-5 Years)	NA%	19.03%	10.41%	9.69%	2.64%	NA
Projected EPS Growth (F1/F0)	27.17%	15.73%	-4.73%	5.55%	9.20%	-35.68%
Current Cash Flow Growth	43.40%	12.13%	5.22%	-2.47%	4.27%	25.74%
Historical Cash Flow Growth (3-5 Years)	NA%	7.73%	8.49%	5.06%	7.11%	NA
Current Ratio	8.18	6.07	1.35	2.18	0.81	7.23
Debt/Capital	9.40%	3.34%	42.95%	76.20%	32.25%	7.13%
Net Margin	-272.66%	-205.02%	10.25%	30.04%	14.96%	-91.17%
Return on Equity	-47.02%	-58.99%	14.59%	91.98%	24.14%	-23.12%
Sales/Assets	0.13	0.19	0.50	0.40	0.40	0.16
Projected Sales Growth (F1/F0)	505.91%	0.00%	-1.42%	8.78%	5.28%	-7.06%
Momentum Score	D	-	-	C	D	F
Daily Price Change	0.14%	0.00%	-1.95%	-2.91%	0.75%	1.65%
1-Week Price Change	-0.79%	-4.93%	-1.28%	-1.86%	0.09%	-7.56%
4-Week Price Change	-9.78%	-6.18%	-1.93%	2.78%	5.94%	-16.02%
12-Week Price Change	-10.65%	-8.15%	3.73%	6.31%	0.66%	-10.18%
52-Week Price Change	-44.61%	3.79%	-0.29%	22.51%	-1.37%	-4.99%
20-Day Average Volume (Shares)	639,613	265,535	1,798,028	2,990,958	1,634,289	1,614,312
EPS F1 Estimate 1-Week Change	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%
EPS F1 Estimate 4-Week Change	0.00%	0.00%	0.00%	0.00%	0.85%	0.00%
EPS F1 Estimate 12-Week Change	14.45%	1.41%	3.98%	0.53%	1.53%	-609.74%
EPS Q1 Estimate Monthly Change	0.00%	0.00%	0.00%	0.00%	0.00%	-0.60%

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	F
Growth Score	B
Momentum Score	D
VGM Score	D

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

Disclosures

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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.