NVIDIA Corporation (NVDA)

$486.58 (As of 09/11/20)

Price Target (6-12 Months): **$511.00**

|	
Long Term: 6-12 Months	**Zacks Recommendation:** **Neutral**
	(Since: 02/12/20)
	Prior Recommendation: Outperform
Short Term: 1-3 Months	**Zacks Rank:** (1-5) **4-Sell**
	Zacks Style Scores: VGM:C
	Value: F	Growth: A	Momentum: B

Summary

NVIDIA is benefiting from the coronavirus-induced work-from-home and learn-at-home wave. It is also benefiting from strong growth in GeForce desktop and notebook GPUs, which is boosting gaming revenues. Moreover, a surge in Hyperscale demand remains a tailwind for the company's Data Center business. Expansion of NVIDIA GeForce NOW is expected to drive user base. Further, solid uptake of AI-based smart cockpit infotainment solutions is a boon. Additionally, collaboration with Daimler-owned Mercedes-Benz is expected to further strengthen NVIDIA's presence in the autonomous vehicles and other automotive electronics space. The stock has outperformed industry over the past year. However, management expects COVID-19 pandemic to negatively impact near-term revenues by $100 million. Moreover, the U.S.-China trade war remains a key concern.
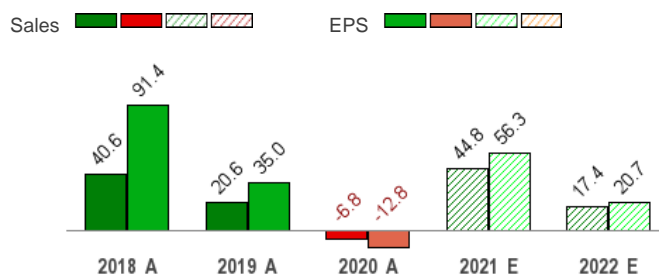
Price, Consensus & Surprise

Source: Zacks Investment Research
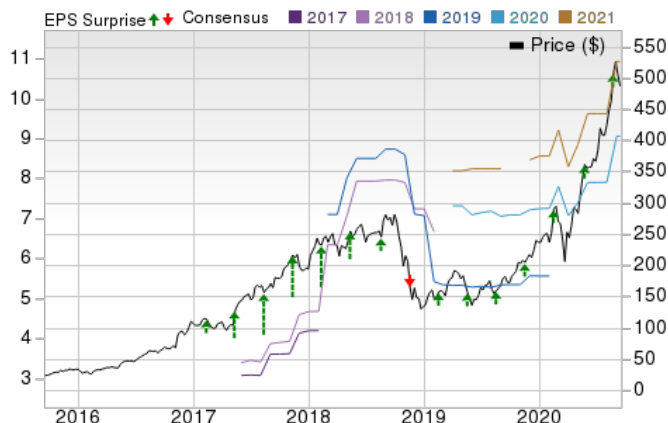
Data Overview

52-Week High-Low	**$589.07 - $169.32**
20-Day Average Volume (Shares)	**15,646,419**
Market Cap	**$300.2 B**
Year-To-Date Price Change	**106.8%**
Beta	**1.53**
Dividend / Dividend Yield	**$0.64 / 0.1%**
Industry	**Semiconductor - General**
Zacks Industry Rank	**Bottom 16% (211 out of 251)**
Last EPS Surprise	**12.4%**
Last Sales Surprise	**5.8%**
EPS F1 Estimate 4-Week Change	**4.1%**
Expected Report Date	**NA**
Earnings ESP	**0.0%**
P/E TTM	**63.6**
P/E F1	**53.8**
PEG F1	**5.7**
P/S TTM	**23.0**

Sales and EPS Growth Rates (Y/Y %)

Sales Estimates (millions of $)

	Q1	Q2	Q3	Q4	Annual*
2022	4,161 E	4,488 E	4,874 E	4,884 E	18,565 E
2021	3,080 A	3,866 A	4,411 E	4,437 E	15,809 E
2020	2,220 A	2,579 A	3,014 A	3,105 A	10,918 A

EPS Estimates

	Q1	Q2	Q3	Q4	Annual*
2022	$2.34 E	$2.61 E	$2.92 E	$2.88 E	$10.92 E
2021	$1.80 A	$2.18 A	$2.56 E	$2.56 E	$9.05 E
2020	$0.88 A	$1.24 A	$1.78 A	$1.89 A	$5.79 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.

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

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Overview

NVIDIA Corporation is the worldwide leader in visual computing technologies and the inventor of the graphic processing unit, or GPU. Over the years, the company's focus has evolved from PC graphics to artificial intelligence (AI) based solutions that now support high performance computing (HPC), gaming and virtual reality (VR) platforms.

NVIDIA's GPU success can be attributed to its parallel processing capabilities supported by thousands of computing cores, which are necessary to run deep learning algorithms. The company's GPU platforms are playing a major role in developing multi-billion-dollar end-markets like robotics and self-driving vehicles.

NVIDIA is a dominant name in the Data Center, professional visualization and gaming markets where Intel and Advanced Micro Devices are playing a catch-up role. The company's partnership with almost all major cloud service providers (CSPs) and server vendors is a key catalyst.

NVIDIA's GPUs are also getting rapid adoption in diverse fields ranging from radiology to precision agriculture. The company's GPUs power the top two supercomputers in the world, located at Oak Ridge and Lawrence Livermore National Laboratories in the United States, as well as the top supercomputers in Europe and Japan. In all, NVIDIA powers 136 of the TOP500 supercomputers.

EPS Hist. and Est.

Sales Hist. and Est.

Santa Clara, CA-based, NVIDIA reported revenues of $10.92 billion in fiscal 2020, down approximately 7% from fiscal 2019.

Beginning first-quarter, NVIDIA started reporting revenues under two segments – Graphics and Compute & Networking.

Graphics includes GeForce GPUs for gaming and PCs, the GeForce NOW game streaming service and related infrastructure, and solutions for gaming platforms; Quadro GPUs for enterprise design; GRID software for cloud-based visual and virtual computing; and automotive platforms for infotainment systems.

Compute & Networking comprises Data Center platforms and systems for AI, HPC, and accelerated computing; DRIVE for autonomous vehicles; and Jetson for robotics and other embedded platforms. Mellanox revenues will also be included in this segment beginning second-quarter fiscal 2021.

Graphics and Compute & Networking accounted for 61.9% and 38.1% of first-quarter fiscal 2021 adjusted revenues, respectively.
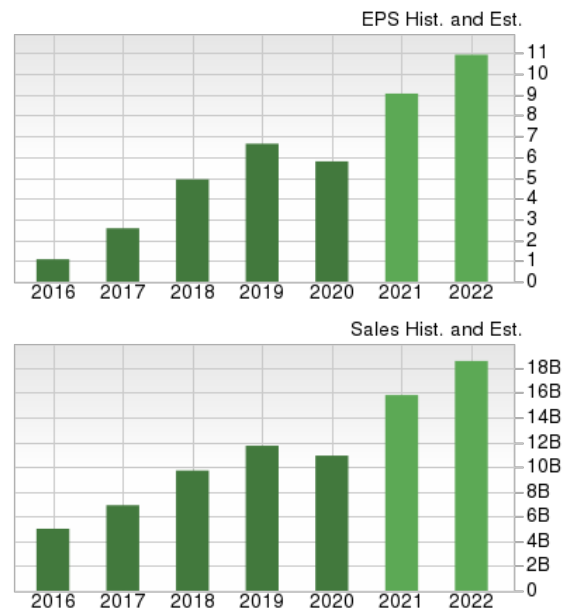
Source: Zacks Investment Research

Reasons To Buy:

▲ NVIDIA is gaining a decent market share among the gaming service providers. The strong line-up of advanced graphics cards has made it a favorite graphics card provider among the PC makers. A strong uptick in PC gamers, esports players and higher spending on the gaming GPUs are key catalysts. Further, NVIDIA's Turing GPU and its real-time ray tracing technology are witnessing a massive adoption. To propel wider embracement, NVIDIA is enabling ray tracing backup to several GeForce GTX GPUs, which is likely to lend developers a massive installed base of gamers. Moreover, the launch of GeForce RTX SUPER GPUs is expected to strengthen its leadership in the high end of the market. The company announced that the increasing number of blockbuster AAA titles have pledged support for NVIDIA RTX ray tracing technology. Notably, Microsoft teamed up with NVIDIA to add real-time ray tracing technology to *Minecraft*. Moreover, Activision Blizzard's *Call of Duty: Modern Warfare*, Ubisoft Toronto's *Watch Dogs: Legion* and Tencent NExT Studios' *Synced: Off Planet* have also adopted RTX.

> Growth opportunities in ray-traced gaming, rendering, high-performance computing, AI and self-driving cars are encouraging.

▲ Datacenter presents a solid growth opportunity for the company. As more and more businesses are shifting toward cloud, the need for datacenters is increasing. To cater to this huge demand, datacenter operators like Amazon, Microsoft and Alphabet are expanding their operations across the world, which is driving demand for the GPUs. This bodes well for NVIDIA's uptrend as well. Further, the company intends to focus on new growth boosters for its data center business, such as inference, data science and machine learning techniques to consolidate its presence in this niche market. NVIDIA anticipates datacenter TAM to more than double to $50 billion by 2023. Considered most preferred by the datacenter operators, NVIDIA's GPUs are likely to help the company grab a larger market space. The company's recently announced acquisition of Mellanox is a key catalyst in this regard.

▲ NVIDIA's GPUs are rapidly benefiting from the proliferation of AI. By applying its GPUs in AI models, the company is expanding its base in the other untapped markets like automotive, healthcare and manufacturing, which will support its earnings and revenues. The company is engaged with a number of organizations including the top cloud server companies like Amazon, Baidu and Facebook, which are infusing AI in various applications. NVIDIA has also partnered with the industry biggies — IBM, Microsoft and SAP in order to bring AI to the enterprise users' table. The company recently collaborated with the top-ranked OEMs including Dell, HP and Lenovo to deliver powerful workstations inclusive of Quadro RTX GPUs and its new CUDAX AI accelerated software. Moreover, a steady ramp-up of the new products is enabling the company to gain a competitive edge over the likes of AMD and Intel, and also widen its market share.

▲ NVIDIA's foray into the autonomous vehicles and other automotive electronics space is a positive. The company currently is on a firmer footing in the autonomous vehicle market. It is working with more than 320 automakers, tier-one suppliers, automotive research institutions, HD mapping companies and start-ups to develop and deploy AI systems for self-driving vehicles. Notably, NVIDIA's focus on incorporating AI into the cockpit for infotainment systems is allowing it to grow its autonomous driving revenues. The company expects its automotive TAM to be $30 billion by 2025, which comprises $25 billion for driving, $3 billion for training/development of deep neural networks and $2 billion for validation and testing.

▲ NVIDIA is a cash rich company with a strong balance sheet. As of Jul 26, 2020, the company had cash and cash equivalents of nearly $10.98 billion, which is significantly higher than its total debt of $6.96 billion. Since it has net cash available on its balance sheet, the existing cash can be used for pursuing strategic acquisitions, investment in growth initiatives and distribution to shareholders.

▲ NVIDIA boasts a sturdy cash-flow generating ability. The company's accelerated revenue growth along with improving operating efficiency is bringing in higher cash flows. The higher cash flow generating ability lends NVIDIA flexibility to invest in the long-term growth prospects and return money to its shareholders. Notably, NVIDIA returned approximately $6 billion to shareholders through dividend payments and share buybacks in the last five fiscals. In 2019, the company committed to return $3 billion to shareholders. In the first half of fiscal 2021, NVIDIA paid dividends of $197 million. Moreover, NVIDIA is evaluating the timing of resuming share repurchases. The company is currently authorized to repurchase up to $7.24 billion in shares through December 2022.

Reasons To Sell:

▼ Although datacenter has a tremendous growth scope in the long run, the near-term headwinds make us anxious, due to a temporary pause in spending by data center customers. Increasingly watchful behavior of customers across the broad-based vertical markets and geographies due to coronavirus-led economic volatility poses a threat to NVIDIA, at least in the near term..

▼ Recent developments like the suspension of test drives for all its driverless vehicles and the absence of demand from cryptocurrency miners make us slightly alert about the company's short-term functions. The discontinuation of mid-range Pascal GPU shipments for stabilizing the channel-inventory levels is a major headwind to its gaming revenues. Moreover, coronavirus outbreak has negatively impacted demand for automobile infotainment system. Autonomous development infrastructure builds have also declined and the negative impact is expected to continue for the next several quarters, which is a concern..

▼ The competition between NVIDIA and AMD has taken a meaningful turn. Previously, NVIDIA and ATI made graphics chips for the PC market. Later AMD acquired ATI and combined the CPU and parallel graphics chip into a single component. AMD is now making an effort to strengthen its position in the commodity graphics segment and CPUs for console gaming systems. AMD chips have made an entry into Sony Corp.'s PS4. Nintendo's Wii U and Microsoft's Xbox One will also be going with AMD. NVIDIA also has limited scope for growth in the apps processor market as it is dominated by Apple, Samsung and Qualcomm. We believe that competitive pressure from two CPU vendors, Intel and AMD, who are planning to integrate graphics cores into their chips can negatively impact NVIDIA's revenues in the long haul.

▼ Further, a substantial portion of the company's sales is derived from outside the United States. Notably, sales revenues to customers outside the United States accounted for 87% of the total revenue for each of the last three fiscal years. Hence, we believe that any unfavorable currency fluctuation and an uncertain macroeconomic environment may moderate the company's growth.

Adverse impact of coronavirus outbreak on economy, bleak demand for automobile infotainment system, forex headwinds and stiff competition from AMD are major headwinds.

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Last Earnings Report

NVIDIA delivered second-quarter fiscal 2021 non-GAAP earnings of $2.18 per share, beating the Zacks Consensus Estimate by 12.4%. The reported figure also surged 76% year over year. Moreover, the bottom line increased 21% sequentially.

Revenues of $3.87 billion beat the consensus mark by 6% and jumped 50% year over year as well. The top line also climbed 26% sequentially.

The COVID-19 pandemic negatively impacted the company's professional visualization and automotive businesses. Nevertheless, strong data-center and gaming performances offset these negatives to a large extent.

Quarter Ending	07/2020
Report Date	**Aug 19, 2020**
Sales Surprise	**5.79%**
EPS Surprise	**12.37%**
Quarterly EPS	**2.18**
Annual EPS (TTM)	**7.65**

Segment Details

Beginning first-quarter fiscal 2021, NVIDIA started reporting revenues under two segments – Graphics and Compute & Networking.

Graphics include GeForce GPUs for gaming and PCs, the GeForce NOW game streaming service and related infrastructure, and solutions for gaming platforms; Quadro GPUs for enterprise design; GRID software for cloud-based visual and virtual computing; and automotive platforms for infotainment systems.

Graphics accounted for 54% of revenues. The segment top-line figure grew 16% year over year and 9% sequentially.

Compute & Networking represented 46% of second-quarter fiscal 2021 revenues. The segment comprises Data-Center platforms and systems for AI, HPC, and accelerated computing; DRIVE for autonomous vehicles; and Jetson for robotics and other embedded platforms.

Compute & Networking revenues soared 130% from the year-ago quarter and 52% sequentially.

Market Platform Top-Line Details

Based on the market platform, Gaming revenues (43% of revenues) were up 26% year over year and 24% quarter on quarter to $1.65 billion driven by higher sales across the company's major gaming products. During the fiscal second quarter, the firm ramped up more than 100 new GeForce laptops for students, creators and gamers across different price points.

Revenues from Data Center (45% of revenues) soared 167% year over year and 54% sequentially to $1.75 billion. This upswing was driven by solid demand from hyperscale and vertical industry end customers. Mellanox contributed 30% to data-center revenues and 14% to the company's overall revenues.

Professional Visualization revenues (5% of revenues) plunged 30% year over year and 34% sequentially to $203 million.

Automotive revenues (3% of revenues) in the reported quarter totaled $111 million, down 47% on a year-over-year basis and 28% sequentially.

OEM and Other revenues were up 32% year over year and 6% sequentially to $146 million (4% of revenues). This year-over-year growth primarily resulted from higher demand for entry-level laptop GPUs from PC OEMs.

Operating Details

NVIDIA's non-GAAP gross margin expanded 590 basis points (bps) from the year-ago quarter to 66%, reflecting higher data-center products and a favorable GeForce GPU product mix.

Non-GAAP operating expenses flared up 38% year over year and 26% sequentially to $1.04 billion on increased headcount and the Mellanox acquisition-related costs.

Non-GAAP operating income soared 89% year over year and 26% sequentially to $1.52 billion.

Balance Sheet and Cash Flow

As of Jul 26, 2020, NVIDIA's cash, cash equivalents and marketable securities were $10.98 billion, down from $16.35 billion as of Apr 26.

As of Jul 26, total long-term debt $6.96 billion, flat with the fiscal first quarter.

Cash flow from operating activities increased 67.3% year over year and 72.2% sequentially to $1.57 billion. Free cash flow was $1.35 billion, up 63.9% year over year and 78.9% sequentially. In the first half of fiscal 2021, the company generated operating and free cash flows of $2.48 billion and $2.1 billion, respectively.

In the second quarter, NVIDIA paid dividends of $99 million. The company remains committed to paying its quarterly dividend. During the first half of fiscal 2021, the company returned $197 million in dividend to shareholders.

Guidance

For the third quarter of fiscal 2021, NVIDIA anticipates revenues of $4.4 billion (+/-2%).

Non-GAAP gross margin is projected to be 65.5% (+/-50 bps). Non-GAAP operating expenses are expected to be $1.54 billion.

Capital expenditures are expected to be approximately $225-$250 million.

Recent News

On Sep 13, NVIDIA announced entering into a definitive agreement to buy Arm Holdings from its existing owner Softbank Group for $40 billion.

On Sep 1, NVIDIA introduces its GeForce RTX 30 Series GPUs, powered by the NVIDIA Ampere architecture, which delivers the greatest-ever generational leap in GeForce history.

On Sep 1, NVIDIA revealed that its real-time ray tracing, AI-powered NVIDIA DLSS and other groundbreaking technologies have been added to Epic Games' Fortnite.

On Jun 23, NVIDIA announced collaborating with Daimler-owned Mercedes-Benz to develop an in-vehicle computing system and AI-computing infrastructure. The partnership is expected to boost NVIDIA's presence in the self-driving vehicle market.

On Jun 22, NVIDIA introduced NVIDIA Mellanox UFM Cyber-AI platform. The platform minimizes downtime in InfiniBand data centers by harnessing AI-powered analytics to detect security threats and operational issues, as well as predict network failures.

On the same day, NVIDIA revealed that world's top server makers including HPE, Cisco, Dell, Lenovo, and Asus are expected to launch over 50 NVIDIA A100-powered systems.

On May 22, NVIDIA announced that it will pay out a quarterly cash dividend of 16 cents per share on Jun 26 to its shareholders of record Jun 5.

On May 14, NVIDIA announced major expansion to its NVIDIA Clara healthcare platform, aimed at providing new capabilities to the medical community to better track, test and treat coronavirus.

NVIDIA also announced that BMW Group has selected the new NVIDIA Isaac robotics platform to enhance its automotive factories.

Moreover, NVIDIA announced two powerful products for its EGX Edge AI platform, the EGX A100 for larger commercial off-the-shelf servers and the tiny EGX Jetson Xavier NX for micro-edge servers.

Additionally, the company announced the release of NVIDIA Jarvis, a GPU-accelerated application framework that allows companies to use video and speech data to build advanced conversational AI services customized for their own industry, products and customers.

On Apr 27, NVIDIA announced the completion of its previously announced acquisition of Mellanox Technologies for a transaction value of $7 billion.

On Apr 2, 2020, NVIDIA launched notebook versions of its high-end RTX 2080 Super and RTX 2070 Super GPUs, based on the Turing architecture, which leverages hardware RT Cores to process ray tracing and AI in real time, enhancing visual fidelity. The company also revealed that PC OEMs are deploying more than 100 new laptop models featuring its GeForce GPUs, including the RTX 2080 Super or RTX 2070 Super.

On Mar 26, 2020, NVIDIA announced that coronavirus researchers would get a 90-day free access to its GPU-accelerated genome analysis toolkit — Parabricks.

Valuation

NVIDIA shares are up 106.8% in the year-to-date period and 170% over the trailing 12-month period. Stocks in the Zacks sub-industry and the Zacks Technology sector increased 22.3% and 19.8% in the year-to-date period, respectively. Over the past year, the Zacks sub-industry and the sector gained 41.8% and 31.4%, respectively.

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

The stock is currently trading at 47.63X forward 12-month earnings, which compares to 21.13X 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 77.58X and as low as 18.78X, with a 5-year median of 36.11X. Our Neutral recommendation indicates that the stock will perform in-line with the market. Our $511 price target reflects 50.01X forward 12-months earnings.

The table below shows summary valuation data for NVDA

Valuation Multiples - NVDA					
		Stock	Sub-Industry	Sector	S&P 500
P/E F 12M	Current	47.63	21.13	25.68	22.15
	5-Year High	77.58	22.55	27.95	23.44
	5-Year Low	18.78	12.86	16.75	15.26
	5-Year Median	36.11	16.40	19.93	17.63
P/S F12M	Current	17.13	5.67	4.17	4.08
	5-Year High	20.31	6.04	4.49	4.29
	5-Year Low	2.51	2.42	2.70	3.11
	5-Year Median	9.19	4.08	3.43	3.66
P/B TTM	Current	21.58	5.36	7.43	5.75
	5-Year High	25.45	6.00	8.27	6.17
	5-Year Low	2.92	2.26	4.10	3.75
	5-Year Median	11.36	3.90	5.55	4.84

As of 09/11/2020   Source: Zacks Investment Research

Industry Analysis Zacks Industry Rank: Bottom 16% (211 out of 251)

Source: Zacks Investment Research

Top Peers

Company (Ticker)	Rec	Rank
Texas Instruments Incorporated **(TXN)**	Outperform	1
Ambarella, Inc. **(AMBA)**	Neutral	3
Advanced Micro Devices, Inc. **(AMD)**	Neutral	3
Broadcom Inc. **(AVGO)**	Neutral	3
Intel Corporation **(INTC)**	Neutral	3
Marvell Technology Group Ltd. **(MRVL)**	Neutral	3
QUALCOMM Incorporated **(QCOM)**	Neutral	2
Xilinx, Inc. **(XLNX)**	Neutral	3

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

Industry Comparison Industry: Semiconductor - General | Industry Peers

	NVDA	X Industry	S&P 500	AMD	INTC	TXN
Zacks Recommendation (Long Term)	Neutral	-	-	Neutral	Neutral	Outperform
Zacks Rank (Short Term)	4	-	-	3	3	1
VGM Score	C	-	-	B	A	F
Market Cap	300.22 B	15.53 B	23.09 B	89.63 B	209.59 B	124.91 B
# of Analysts	13	3	14	12	13	12
Dividend Yield	0.13%	0.48%	1.65%	0.00%	2.68%	2.64%
Value Score	F	-	-	F	A	F
Cash/Price	0.04	0.12	0.07	0.02	0.12	0.04
EV/EBITDA	87.04	8.03	13.07	117.17	6.30	18.16
PEG F1	6.10	2.94	2.93	1.51	1.35	2.89
P/B	21.58	2.56	3.19	27.12	2.56	16.37
P/CF	92.63	12.93	12.63	100.37	6.48	21.01
P/E F1	57.17	26.99	21.25	69.24	10.14	26.99
P/S TTM	22.98	2.65	2.44	11.72	2.65	9.12
Earnings Yield	1.86%	3.28%	4.52%	1.44%	9.86%	3.70%
Debt/Equity	0.50	0.31	0.70	0.15	0.44	0.82
Cash Flow ($/share)	5.25	4.89	6.93	0.76	7.60	6.49
Growth Score	A	-	-	A	A	C
Historical EPS Growth (3-5 Years)	37.24%	22.01%	10.41%	80.17%	22.01%	18.71%
Projected EPS Growth (F1/F0)	56.37%	-5.25%	-4.75%	72.27%	-0.21%	-3.58%
Current Cash Flow Growth	-20.70%	-14.35%	5.26%	44.79%	6.53%	-4.66%
Historical Cash Flow Growth (3-5 Years)	28.68%	12.14%	8.49%	27.24%	9.99%	8.82%
Current Ratio	6.09	3.52	1.35	2.10	1.97	3.92
Debt/Capital	33.34%	23.47%	42.95%	12.91%	30.56%	44.96%
Net Margin	25.93%	10.14%	10.25%	7.96%	29.97%	36.83%
Return on Equity	30.41%	13.98%	14.59%	28.66%	31.55%	60.61%
Sales/Assets	0.64	0.62	0.50	1.29	0.55	0.77
Projected Sales Growth (F1/F0)	44.80%	-1.98%	-1.42%	32.03%	4.34%	-7.80%
Momentum Score	B	-	-	C	D	F
Daily Price Change	-1.20%	0.33%	0.39%	-3.34%	0.65%	-0.60%
1-Week Price Change	-3.99%	-1.40%	-1.28%	-4.14%	-0.69%	-2.10%
4-Week Price Change	6.31%	0.88%	-1.42%	-6.72%	1.48%	-0.57%
12-Week Price Change	31.96%	2.47%	4.86%	41.27%	-17.98%	8.25%
52-Week Price Change	164.06%	0.31%	-1.17%	152.70%	-7.04%	4.72%
20-Day Average Volume (Shares)	15,646,419	1,133,625	1,834,261	48,918,324	33,402,202	3,569,875
EPS F1 Estimate 1-Week Change	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
EPS F1 Estimate 4-Week Change	4.08%	0.00%	0.00%	0.00%	0.13%	0.00%
EPS F1 Estimate 12-Week Change	4.16%	0.55%	4.05%	10.51%	1.10%	26.52%
EPS Q1 Estimate Monthly Change	10.36%	0.00%	0.00%	0.00%	0.21%	0.00%

Source: Zacks Investment Research

Zacks Stock Rating System

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

Zacks Recommendation

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

Zacks Rank

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

Zacks Style Scores

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

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

Value Score	F
Growth Score	A
Momentum Score	B
VGM Score	C

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

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

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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 forwardlooking 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 mediumterm 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 mostrecent 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.

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.

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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.