

Western Digital (WDC)

\$39.31 (As of 11/12/20)

Price Target (6-12 Months): **\$42.00**

Long Term: 6-12 Months

Zacks Recommendation:

Neutral

(Since: 10/06/20)

Prior Recommendation: Underperform

Short Term: 1-3 Months

Zacks Rank: (1-5)

3-Hold

Zacks Style Scores:

VGM:B

Value: B

Growth: B

Momentum: F

Summary

Western Digital reported better-than-expected fiscal first quarter 2021 results. However, on a year over year basis, revenues deteriorated as weakness in enterprise market offset higher demand of flash solutions in the gaming vertical. Sluggish enterprise IT spending amid the coronavirus pandemic remains a headwind, at least in the near term. Increasing expenses on product enhancements, a highly leveraged balance sheet and suspension of dividends remain other concerns. Shares of Western Digital have underperformed the industry on a year-to-date basis. Nevertheless, Western Digital is well poised to benefit from momentum seen in the solid state drive (SSD) market as these storage solutions find increasing applications in connected cars and data centers. Improving PC shipment trends are expected to support the company's hard disk drive (HDD) unit.

Data Overview

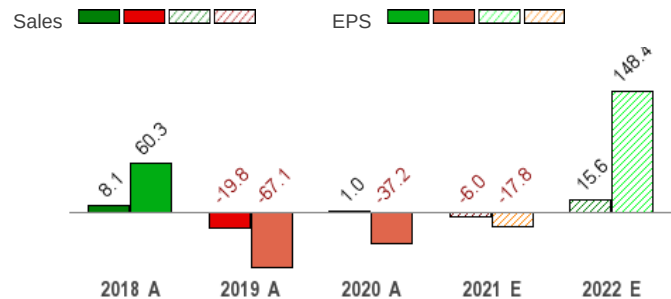
52-Week High-Low	\$72.00 - \$27.40
20-Day Average Volume (Shares)	6,341,745
Market Cap	\$12.0 B
Year-To-Date Price Change	-38.1%
Beta	1.65
Dividend / Dividend Yield	\$0.00 / 0.0%
Industry	Computer- Storage Devices
Zacks Industry Rank	Bottom 48% (128 out of 248)

Last EPS Surprise	20.4%
Last Sales Surprise	2.3%
EPS F1 Estimate 4-Week Change	-4.4%
Expected Report Date	02/04/2021
Earnings ESP	0.0%
P/E TTM	11.7
P/E F1	15.8
PEG F1	7.9
P/S TTM	0.7

Price, Consensus & Surprise



Sales and EPS Growth Rates (Y/Y %)



Sales Estimates (millions of \$)

	Q1	Q2	Q3	Q4	Annual*
2022	4,240 E	4,493 E	4,277 E	4,385 E	18,186 E
2021	3,922 A	3,865 E	3,801 E	4,051 E	15,733 E
2020	4,040 A	4,234 A	4,175 A	4,287 A	16,736 A

EPS Estimates

	Q1	Q2	Q3	Q4	Annual*
2022	\$1.26 E	\$1.71 E	\$1.66 E	\$1.79 E	\$6.21 E
2021	\$0.65 A	\$0.49 E	\$0.50 E	\$0.82 E	\$2.50 E
2020	\$0.34 A	\$0.62 A	\$0.85 A	\$1.23 A	\$3.04 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 11/12/2020. The reports text is as of 11/13/2020.

Overview

Western Digital Corporation, headquartered in Irvine, CA, is one of the largest hard disk drive (HDD) producers in the U.S. The company designs, develops, manufactures and markets a broad range of HDDs used in desktop PCs, servers, network-attached storage devices, video game consoles, digital video recorders and a host of other consumer electronic devices.

The acquisition of SanDisk enabled the company to venture into the flash drive storage technology space.

Western Digital sells hard drives of 3.5-inch and 2.5-inch form factors with storage capacities ranging from 30 gigabytes (GB) to 6 terabytes (TB).

The company's solid-state drives (SSDs) include 2.5-inch, mSATA, MO-297 and CompactFlash form factors, with storage capacities ranging from 128 megabytes (MB) to 400 GB.

The company also provides WD software applications, such as WD Photos and WD 2GO to the mobile computing market. The company's solutions are compatible with Apple's iOS, Google's Android and Microsoft's Windows Platforms.

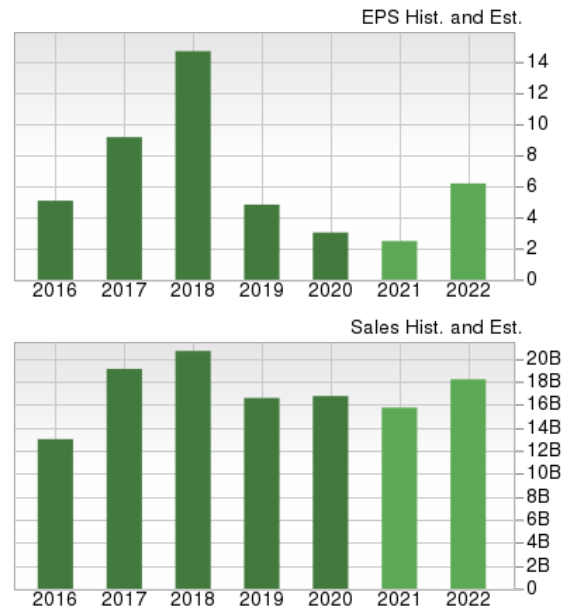
The company markets its products and solutions through original equipment manufacturers (OEMs), distributors and retailers.

On Sep 19, 2019, Western Digital inked a deal with DDN, a supplier of big data storage worldwide, to divest its IntelliFlash business in a bid to optimize Data Center Systems portfolio. Per the deal, both the companies have agreed on a multi-year strategic partnership wherein DDN will buy Western Digital's HDD and SSD storage devices.

Western Digital reported revenues of \$16.73 billion in the fiscal 2020.

Western Digital mainly competes with companies like Intel, Micron, Samsung Electronics Co. Ltd., Seagate Technology and Toshiba Corporation.

The company competes with other hard drive manufacturers with offerings in the desktop, notebook, enterprise computer, consumer electronic devices and external storage markets.



Source: Zacks Investment Research

Reasons To Buy:

- ▲ Western Digital has been active on the acquisition front. The Amplidata, sTec, Velobit, Arkeia Software Solutions and Virident Systems acquisitions have not only strengthened its small-to-medium sized business solutions but also expanded its SSD product portfolio. These strategic takeovers are expected to provide the company with a competitive edge. The acquisition of SanDisk has opened new avenues of growth for Western Digital and will help it boost market traction in the newer storage technology – SSD. The merger will lead to economies of scale, lower costs, greater market reach and acquisitions of new technologies, among other synergies. The company will also be able to offer competitive solutions in cloud-based computing, which has taken over digital storage solution space over the past couple of years.
- ▲ With the acquisition of SanDisk, Western Digital has forayed into NAND or Not And (electronic logic gate) products. NAND flash chips are critical for portable electronic devices. The improving prices for NAND chips make us optimistic about the company's near-term performance. Per various sources, NAND prices have improved primarily due to a better product mix optimization and stronger-than-expected demand for PCs, servers and mobiles. Also, coronavirus crisis led shortage in supply will push prices up, thereby boosting Western Digital's near-term results. Furthermore, the company is expected to benefit from strong demand for NAND flash memory chips, which is used in smartphones and tablets. Driven by new tablet products and greater adoption of solid state drive (SSD), total demand in the NAND flash memory industry could surpass manufacturing capacity, leading to a periodic shortage and higher pricing in the near term.
- ▲ Prominent storage players, like Western Digital have been expanding into the SSD storage market due to the decline in the PC market. SSDs are faster and more energy efficient than traditional hard drives. They also occupy less space making them more suitable for mobile computing devices. The emergence of thinner laptops and tablets over the past few years has created an ideal market for SSDs, which are therefore entering the higher end of the market. SSDs are also being used in servers due to the reduction in latency, which in turn facilitates faster response to real-time applications. E-Commerce and financial enterprises need quicker response time and thus data centers serving these clients are opting for SSDs. The secular growth of digital data, modest growth in the TAM and higher demand for storage will remain the growth catalysts for storage in general and especially for SSDs. This is what led Global Market Insights to project SSD market witnessing a CAGR of 15% during 2020-2026. The SSD segment's growth potential is a major positive for Western Digital because this could offset the losses stemming from the secular decline in the PC market, which does not necessarily use SSDs.
- ▲ The company is expected to get good mileage from its cloud-based business. Cloud-based storage has become the order of the day. Consumers are increasingly using software like Google Drive, Microsoft Skydrive, Dropbox and iCloud, which provide the convenience of accessing content through different gadgets such as smartphones, tablets and personal computers. The access to content on multiple devices is possible because the data is stored in the cloud. This in turn is pressuring the cloud servers, resulting in a growing need to make them more efficient. For this purpose, Western Digital is developing drives filled with helium that consume 23% less power while increasing the storage capacity by 40%. The company has expanded its My Cloud solutions with My Cloud EX4, a broader portfolio of network attached storage (NAS) hard drives. My Cloud EX4 enables users to manage huge volumes of digital data, which in turn helps them to store, organize and secure photos, videos, music and important documents from computers and mobile devices. My Cloud EX4 will help the company meet growing business needs with improved flexibility and security, and can be accessed through iOS and Android operating systems allowing users to access their files via smartphones or tablets. The company also recently started shipping 20TB HDDs that will improve data center capacity and increase scalability to meet increasing demands of cloud storage. Given the massive increase in cloud activity, the company is expected to find a number of takers for these products.
- ▲ PCs continue to be the biggest users of HDDs, and Western Digital still derives the bulk of its revenues from these devices. Per Gartner's preliminary data, PC shipments in third-quarter 2020 improved 3.6% year over year to 71.4 million units. Going by the IDC report, shipments were up 14.6% on a year-over-year basis to 81.3 million in the quarter. An improving trend in PC shipments is likely to positively impact the business prospects of Western Digital, which continues to depend substantially on PC sales.

The shift toward non-PC applications, secular growth of digital data and growing exposure to the SMBs space are expected to aid Western Digital in improving financial performance.

Reasons To Sell:

- ▼ Customer concentration is a major risk for Western Digital. The high level of customer concentration in a market with a few buyers and very low switching costs means that it is relatively easy to lose a customer. Moreover, the loss of a single order or customer affects the operating performance significantly. Therefore, the company is always under pressure to improve and maintain customer relations.
- ▼ Western Digital faces stiff competition from Seagate, Hitachi, Samsung and Intel in the storage market and from SSD pureplays such as SanDisk and Micron. The competition has resulted in a decline in the average selling price (ASP). Any decline in ASP will impact the results if shipments do not improve considerably. The disk drive market is highly competitive and has experienced drastic pricing pressure due to supply/demand volatility. In the near future, hard disk companies might be exposed to pressures as customers such as tablet PC makers choose flash cards for storage purposes instead of the customary hard disks. The situation may compel companies to cut hard disk prices, which may in turn hurt margins.
- ▼ Western Digital has a leveraged balance sheet. As of Oct 2, 2020, net debt amounted to \$6.09 billion. Moreover, total debt to total capital ratio stands at 48.7%, which indicates a higher liability in repaying the debt. Also, the high debt level jeopardizes its ability to pursue accretive acquisitions and other growth endeavors. Further, the company is required to constantly generate adequate cash flows to meet debt requirements. On Apr 30, Western Digital suspended its dividend policy to strengthen reinvestment in innovation and growth as well as to facilitate ongoing deleveraging efforts and the company has not provided any recent updates about the same.

Customer concentration, leveraged balance sheet and stiff competition from other major storage players remain major concerns limiting the growth prospects of Western Digital.

Last Earnings Report

Western Digital's Q1 Earnings & Revenues Top Estimates

Western Digital Corporation reported first-quarter fiscal 2021 non-GAAP earnings of 65 cents per share, which surpassed the Zacks Consensus Estimate by 20.4%. Further, the bottom line surged 91.2% year over year.

Revenues of \$3.922 billion beat the Zacks Consensus Estimate by 2.32%. However, the top line declined 3% year over year. Deterioration in the Data Center Devices and Solutions' and Client Solutions segments' revenues offset growth in the Client Devices segment.

Quarter Ending **09/2020**

Report Date	Oct 28, 2020
Sales Surprise	2.32%
EPS Surprise	20.37%
Quarterly EPS	0.65
Annual EPS (TTM)	3.35

Quarter in Detail

Client devices' revenues (49.6% of total revenues) increased 20% year over year and 2% sequentially to \$1.946 billion, driven by solid revenues from gaming SSDs and increased demand for SSDs in smart video and mobile flash solutions.

In gaming domain, the company benefitted from shipping of flash solutions for the forthcoming console launches.

Moreover, the company witnessed increased demand for notebook SSD solutions due to growing work-from home and web-based learning trends on account of the coronavirus pandemic. However, softened demand for hard drive revenues pertaining to desktop and notebooks hard drives limited segment growth.

Client solutions' revenues (21.6%) declined 5% year over year to \$847 million. However, the figure increased 23% sequentially as retail demand continued to pick up at brick-and-mortar stores along with higher curbside pickup facilities cushioned the online demand.

Data center devices and solutions' revenues (28.8%) declined 26% year over year to \$1.129 million and 33% sequentially owing to weak demand for Enterprise SSDs and capacity enterprise hard drives.

Considering revenues by product group, **HDD** revenues (47% of total revenues) declined 23% from the year-ago quarter's level and 10% on a sequential basis to \$1.844 billion, owing to ongoing transition to SSDs. **Flash** revenues (53%) improved 27% from the year-ago quarter's figure to \$2.078 billion, driven by an uptrend in gaming flash solutions and mobile flash solutions. Sequentially, flash revenues declined 7%. Gaming segment represented 10% of total flash revenues in the quarter under review.

Going ahead, robust demand for its high capacity drives and ramping production of 16 and 18-terabyte energy assisted drives are expected to drive the top line. Notably, the company achieved its goal of producing 1-million energy assisted drives in the fiscal first quarter of 2021. The company announced that it has started shipping 20 terabyte products to its customers in the fiscal first quarter.

The company is also optimistic about its gaming SSDs including the recently introduced WD Black SN850.

Key Metrics

The company shipped 23 million HDDs at an average selling price (ASP) of \$79. The reported shipments were lower than the year-ago quarter's figure by 21.5%.

On a quarter-over-quarter basis, HDD Exabytes sales declined 7%. Flash exabytes sales increased 1%. Total exabytes sales (excluding non-memory products) were down 6% sequentially.

ASP/Gigabytes (excluding non-memory products) declined 9% sequentially.

Margins

Non-GAAP gross margin of 26.3% expanded 150 basis points (bps) on a year-over-year basis.

Notably, non-GAAP flash gross margin was 26.4%, up 710 bps from the year-ago quarter figure, driven by cost reduction measures. Meanwhile, non-GAAP HDD gross margin contracted 230 bps year over year to 26.2% due to increases in costs associated with the ramping up of next generation energy assisted hard drives and higher COVID-19 related costs.

Non-GAAP operating expenses declined 7.7% from the year-ago quarter to \$708 million. Management remains focused on undertaking strict spending measures.

Non-GAAP operating income came in at \$323 million, which soared 37.4% year over year. As a percentage of revenues, non-GAAP operating margin of 8.2% expanded 240 bps on a year-over-year basis.

Balance Sheet & Cash Flow

As of Oct 2, 2020, cash and cash equivalents were \$2.995 billion, compared with \$3.048 billion reported as of Jul 3, 2020.

Long-term debt (including current portion) was \$9.372 billion as of Oct 2, 2020, compared with \$9.575 billion as of Jul 3, 2020. The company paid down debt of \$213 million in the fiscal first quarter.

Western Digital generated \$363 million in cash from operations compared with \$172 million reported in the previous quarter.

Free cash flow came in at \$196 million compared with \$261 million in the prior quarter.

During the quarter, the company did not pay any dividends. On Apr 30, Western Digital suspended its dividend policy to strengthen reinvestment in innovation and growth as well as to facilitate ongoing deleveraging efforts.

Guidance

For second-quarter fiscal 2021, revenues are expected in the range of \$3.75-\$3.95 billion. Management projects non-GAAP earnings between 40 cents and 60 cents per share.

For second-quarter fiscal 2021, non-GAAP gross margin is anticipated in the range of 24-26%.

Non-GAAP operating expenses are expected between \$680 million and \$700 million. Interest and other expenses are estimated between \$70 million and \$75 million.

Recent News

On Nov 13, Western Digital, Twist Bioscience and Illumina, announced alliance with Microsoft in a bid to advance research in the field of DNA data storage, at Flash Memory Summit.

On Nov 9, Western Digital rolled out three new SSDs namely Ultrastar DC ZN540 ZNS NVMe SSD, Western Digital IX SN530 Industrial SSD and the 2TB WD Blue SN550. The latest SSDs can be deployed in next-generation, data center architectures to augment efficiency for supporting latest Internet of Things (IoT), automotive and industrial applications, among others.

On Oct 29, Western Digital announced the appointment of Ashley Gorakhpurwalla as the executive vice president and general manager of HDD business unit. In September 2020, Western Digital had announced the splitting of its flash and HDD business in two separate segments as a part of its diversification strategy to streamline operations and unlock shareholders' value. The company had named Rob Soderbery as executive vice president and general manager of the Flash business unit.

On Oct 26, Western Digital announced that Dropbox will be one of the first enterprises that have qualified for Ultrastar DC HC650 20TB SMR HDD. The latest 20TB HDD will enable Dropbox to improve customer experience while lowering costs.

On Oct 22, Western Digital introduced the SanDisk Ixpond Wireless Charger Sync and SanDisk Ixpond Wireless Charger 15W for Qi-compatible devices for fast battery charging.

On Oct 8, Western Digital introduced three new SSD storage solutions for its WD_BLACK portfolio to boost gaming experience for users. These storage solutions meet high performance needs of next-generation gaming.

On Sep 30, Western Digital launched two new portable SSDs pertaining to its SanDisk portfolio — SanDisk Extreme and SanDisk Extreme PRO to enable users to manage and ensure faster data transfer.

On Nov 9, Western Digital rolled out three new SSDs namely Ultrastar DC ZN540 ZNS NVMe SSD, Western Digital IX SN530 Industrial SSD and the 2TB WD Blue SN550. The latest SSDs can be deployed in next-generation, data center architectures to augment efficiency for supporting latest Internet of Things (IoT), automotive and industrial applications, among others.

On Sep 23, Western Digital stated that it was splitting its flash and HDD business in two separate segments as a part of its diversification strategy for its storage portfolio, valued at \$16.7 billion. It also introduced two new storage solutions — 18TB surveillance HDD and 1 TB SC QD101 microSD card — under its WD Purple storage solutions banner.

Valuation

Western Digital's shares are down 38.1% in the year-to-date period and 22% in the trailing 12-month period. While stocks in the Zacks sub-industry are down 22.7%, the same in the Zacks Computer & Technology sector are up 29.4% in the year-to-date period. In the past year, the Zacks sub-industry is down 17.6%, while the sector is up 35.4%.

The S&P 500 index is up 10.2% in the year-to-date period and 14.7% in the past year.

The stock is currently trading at 10.13X forward 12-month earnings compared with 15.63X for the Zacks sub-industry, 26.9X for the Zacks sector and 22.5X for the S&P 500 index.

In the past five years, the stock has traded as high as 30.07X and as low as 3.89X, with a five-year median of 9.47X. Our Neutral recommendation indicates that the stock will perform in line with the market. Our \$42 price target reflects 10.82X forward 12-month earnings.

The table below shows summary valuation data for WDC

Valuation Multiples - WDC					
		Stock	Sub-Industry	Sector	S&P 500
P/E F12M	Current	10.13	15.63	26.9	22.5
	5-Year High	30.07	18.49	27.99	23.47
	5-Year Low	3.89	9.94	16.95	15.27
	5-Year Median	9.47	12.67	19.94	17.72
P/S F12M	Current	0.72	1.02	4.24	4.19
	5-Year High	1.52	1.41	4.48	4.3
	5-Year Low	0.47	0.8	2.77	3.17
	5-Year Median	0.94	1.11	3.44	3.67
EV/EBITDA TTM	Current	6.39	7.45	14.94	15.8
	5-Year High	12.98	13.17	15.79	15.8
	5-Year Low	1.8	2.78	8.25	9.52
	5-Year Median	5.18	5.76	11.89	13.1

As of 11/12/2020

Source: Zacks Investment Research

Industry Analysis Zacks Industry Rank: Bottom 48% (128 out of 248)



Top Peers

Company (Ticker)	Rec	Rank
Intel Corporation (INTC)	Neutral	3
Netlist, Inc. (NLST)	Neutral	4
NetApp, Inc. (NTAP)	Neutral	3
Pure Storage, Inc. (PSTG)	Neutral	2
Quantum Corporation (QMCO)	Neutral	4
Seagate Technology PLC (STX)	Neutral	3
Teradata Corporation (TDC)	Neutral	3
Micron Technology, Inc. (MU)	Underperform	4

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

Industry Comparison Industry: Computer- Storage Devices				Industry Peers		
	WDC	X Industry	S&P 500	MU	NTAP	STX
Zacks Recommendation (Long Term)	Neutral	-	-	Underperform	Neutral	Neutral
Zacks Rank (Short Term)	3	-	-	4	3	3
VGM Score	B	-	-	B	B	C
Market Cap	11.96 B	845.93 M	24.08 B	62.62 B	10.54 B	13.67 B
# of Analysts	8	5	14	9	10	8
Dividend Yield	0.00%	0.00%	1.54%	0.00%	4.04%	4.89%
Value Score	B	-	-	B	B	B
Cash/Price	0.25	0.22	0.07	0.13	0.36	0.12
EV/EBITDA	9.15	8.71	14.16	6.87	8.27	10.01
PEG F1	8.26	3.89	2.70	1.50	1.17	9.17
P/B	1.25	5.53	3.46	1.60	37.12	7.50
P/CF	5.17	9.72	13.42	7.28	10.34	8.59
P/E F1	16.51	14.85	21.54	20.97	13.94	11.10
P/S TTM	0.72	1.33	2.75	2.92	1.92	1.33
Earnings Yield	6.33%	5.97%	4.48%	4.76%	7.16%	9.01%
Debt/Equity	0.95	0.29	0.70	0.16	9.26	2.27
Cash Flow (\$/share)	7.60	0.08	6.92	7.73	4.59	6.19
Growth Score	B	-	-	B	C	C
Historical EPS Growth (3-5 Years)	-29.18%	-7.79%	9.77%	69.88%	26.58%	13.60%
Projected EPS Growth (F1/F0)	-17.93%	-16.63%	0.37%	-5.22%	-15.93%	-3.21%
Current Cash Flow Growth	-23.42%	-28.62%	5.23%	-31.58%	-17.99%	-17.09%
Historical Cash Flow Growth (3-5 Years)	-5.08%	1.84%	8.33%	7.44%	1.04%	-7.56%
Current Ratio	2.03	1.83	1.38	2.71	1.62	1.51
Debt/Capital	48.69%	42.59%	42.01%	14.05%	90.25%	69.44%
Net Margin	-0.20%	-2.16%	10.40%	12.54%	14.47%	10.02%
Return on Equity	7.73%	7.73%	15.07%	7.73%	240.01%	65.10%
Sales/Assets	0.65	0.89	0.50	0.42	0.71	1.15
Projected Sales Growth (F1/F0)	-5.99%	-0.15%	0.23%	4.03%	-0.15%	-1.46%
Momentum Score	F	-	-	D	C	C
Daily Price Change	-3.18%	0.00%	-1.50%	-0.20%	-3.63%	-2.64%
1-Week Price Change	5.51%	10.34%	5.72%	9.57%	7.11%	11.86%
4-Week Price Change	3.45%	2.07%	3.14%	8.30%	0.91%	3.58%
12-Week Price Change	15.28%	7.49%	7.32%	30.86%	14.63%	18.09%
52-Week Price Change	-21.97%	-9.97%	4.15%	20.19%	-23.40%	-8.62%
20-Day Average Volume (Shares)	6,341,745	235,035	2,164,670	14,828,864	1,981,030	3,420,591
EPS F1 Estimate 1-Week Change	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
EPS F1 Estimate 4-Week Change	-4.44%	0.00%	2.00%	-4.38%	1.18%	1.42%
EPS F1 Estimate 12-Week Change	-4.44%	-0.23%	3.94%	-32.77%	-0.23%	0.76%
EPS Q1 Estimate Monthly Change	0.00%	-0.17%	0.68%	0.42%	1.65%	-0.34%

Source: Zacks Investment Research

Zacks Stock Rating System

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

Zacks Recommendation

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

Zacks Rank

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

Zacks Style Scores

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

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

Value Score	B
Growth Score	B
Momentum Score	F
VGM Score	B

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

This report contains independent commentary to be used for informational purposes only. The analysts contributing to this report do not hold any shares of this stock. The analysts contributing to this report do not serve on the board of the company that issued this stock. The EPS and revenue forecasts are the Zacks Consensus estimates, unless indicated otherwise on the reports first page. Additionally, the analysts contributing to this report certify that the views expressed herein accurately reflect the analysts personal views as to the subject securities and issuers. ZIR certifies that no part of the analysts compensation was, is, or will be, directly or indirectly, related to the specific recommendation or views expressed by the analyst in the report.

Additional information on the securities mentioned in this report is available upon request. This report is based on data obtained from sources we believe to be reliable, but is not guaranteed as to accuracy and does not purport to be complete. Any opinions expressed herein are subject to change.

ZIR is not an investment advisor and the report should not be construed as advice designed to meet the particular investment needs of any investor. Prior to making any investment decision, you are advised to consult with your broker, investment advisor, or other appropriate tax or financial professional to determine the suitability of any investment. This report and others like it are published regularly and not in response to episodic market activity or events affecting the securities industry.

This report is not to be construed as an offer or the solicitation of an offer to buy or sell the securities herein mentioned. ZIR or its officers, employees or customers may have a position long or short in the securities mentioned and buy or sell the securities from time to time. ZIR is not a broker-dealer. ZIR may enter into arms-length agreements with broker-dealers to provide this research to their clients. Zacks and its staff are not involved in investment banking activities for the stock issuer covered in this report.

ZIR uses the following rating system for the securities it covers. **Outperform-** ZIR expects that the subject company will outperform the broader U.S. equities markets over the next six to twelve months. **Neutral-** ZIR expects that the company will perform in line with the broader U.S. equities markets over the next six to twelve months. **Underperform-** ZIR expects the company will underperform the broader U.S. equities markets over the next six to twelve months.

No part of this report can be reprinted, republished or transmitted electronically without the prior written authorization of ZIR.

Additional Disclosure

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

Returns quoted represent past performance which is no guarantee of future results. Investment returns and principal value will fluctuate so that when shares are redeemed, they may be worth more or less than their original cost. Current performance may be higher or lower than the performance shown.

Investing involves risk; principal loss is possible. There is no guarantee that companies that can issue dividends will declare, continue to pay or increase dividends.

Glossary of Terms and Definitions

52-Week High-Low: The range of the highest and lowest prices at which a stock has traded during the past year. This range is determined based on the stock's daily closing price which may differ from the intra-day high or low. Many investors use it as a technical indicator to determine a stock's current value and future price movement. The idea here is that if price breaks out from the 52-week range, in either direction, the momentum may continue in the same direction.

20-Day Average Volume (Shares): The average number of shares of a company traded in a day over the last 20 days. It is a direct indication of a security's overall liquidity. The higher the average daily trading volume, the easier it is to enter or exit the stock at a desired price with more buyers and sellers being available.

Daily Price Change: This is the percentage difference between a trading day's closing price and the prior trading day's closing price. This item is updated at 9 p.m. EST each day.

1-Week Price Change: This is the percentage change in a stock's closing price over the last 5 trading days. This change reflects the collective buying and selling sentiment over the 1-week period.

A strong weekly price increase for the stock, especially when accompanied by increased volume, is an indication of it gaining momentum.

4-Week Price Change: This is the percentage change in a stock's closing price over the last 20 trading days or past 4 weeks. This is a medium-term price change metric and an indication of the stock gaining momentum.

12-Week Price Change: This is the percentage change of a stock's closing price over the last 60 trading days or past 12 weeks. Similar to 4-week price change, this is a medium-term price change metric. It shows whether a stock has been enjoying strong investor demand, or if it has been in consolidation, or distress over this period.

52-Week Price Change: This is the percentage change in a stock's closing price over the last 260 trading days or past 52 weeks. This long-term price change metric is a good reference point for investors. Some investors seek stocks with the best percentage price change over the last 52 weeks, expecting the momentum to continue.

Market Cap: The number of outstanding common shares of a company times its latest price per share. This figure represents a company's size, which indicates various characteristics, including price stability and risk, in which investors could be interested.

Year-To-Date Price Change: Change in a stock's daily closing price in the period of time beginning the first day of the current calendar year through to the previous trading day.

of Analysts: Number of EPS estimates used in calculating the current-quarter consensus. These estimates come from the brokerage analysts tracking this stock. However, the number of such analysts tracking this stock may not match the number of estimates, as all brokerage analysts may not come up with an estimate or provide it to us.

Beta: A measure of risk commonly used to compare the volatility of a stock to the overall market. The S&P 500 Index is the base for calculating beta and carries a value of 1. A stock with beta below 1 is less risky than the market as a whole. And a stock with beta above 1 is riskier.

Dividend: The portion of earnings a company is expected to distribute to its common shareholders in the next 12 months for each share they own. Dividends are usually paid quarterly. Dividend payments reflect positively on a company and help maintain investors' trust. Investors typically find dividend-paying stocks appealing because the dividend adds to any market price appreciation to result in higher return on investment (ROI). Moreover, a steady or increasing dividend payment provides investors a cushion in a down market.

Dividend Yield: The ratio of a company's annual dividend to its share price. The annual dividend used in the ratio is calculated based on the most recent dividend paid by the company. Dividend yield is an estimate of the dividend-only return from a stock in the next 12 months. Since dividend itself doesn't change frequently, dividend yield usually changes with a stock's price movement. As a result, often an unusually high dividend yield is a result of weak stock price.

S&P 500 Index: The Standard & Poor's 500 (S&P 500) Index is an unmanaged group of securities considered to be representative of the stock market in general. It is a market-capitalization-weighted index of stocks of the 500 largest U.S. companies. Each stock's weight in the index is proportionate to its market value.

Industry: One of the 250+ groups that Zacks classifies all stocks into based on the nature of business. These groups are termed as expanded (aka "X") industries and map to their respective (economic) sectors; Zacks has 16 sectors.

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.