

## Micron Technology (MU)

**\$46.37** (As of 04/06/20)

Price Target (6-12 Months): **\$49.00**

Long Term: 6-12 Months

**Zacks Recommendation:**
**Neutral**

(Since: 03/23/20)

Prior Recommendation: Outperform

Short Term: 1-3 Months

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

**3-Hold**

Zacks Style Scores:

VGM:C

Value: B

Growth: D

Momentum: D

### Summary

Micron's second-quarter fiscal 2020 results benefited from solid memory-chip demand from PC manufacturers and data-center operators as more and more workers and students work and learn from home amid coronavirus-led global lockdown. Furthermore, the company is well poised to benefit from the resurgence in DRAM demand, backed by a progress in customer inventory adjustments in the cloud, graphics and the PC markets. Increasing mix of high-value solutions, enhancement in customer engagement and improvement in cost structure are positives. Growing demand from cloud-computing providers and acceleration in 5G adoption are an upside. Deceleration in DRAM price declines and improvements in NAND pricing are a tailwind. However, higher mix of low-margin NAND products and a slow decline in manufacturing costs might strain margins.

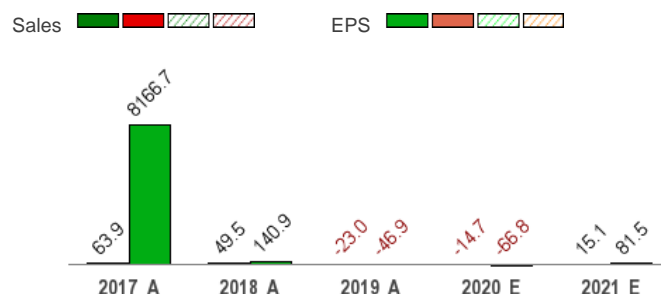
### Price, Consensus & Surprise



### Data Overview

52 Week High-Low	\$61.19 - \$31.13
20 Day Average Volume (sh)	38,782,188
Market Cap	\$51.6 B
YTD Price Change	-13.8%
Beta	1.74
Dividend / Div Yld	\$0.00 / 0.0%
Industry	<a href="#">Semiconductor Memory</a>
Zacks Industry Rank	Top 34% (86 out of 253)

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



Last EPS Surprise	18.4%
Last Sales Surprise	3.0%
EPS F1 Est- 4 week change	-11.7%
Expected Report Date	06/23/2020
Earnings ESP	0.3%
P/E TTM	18.3
P/E F1	22.0
PEG F1	2.1
P/S TTM	2.6

### Sales Estimates (millions of \$)

	Q1	Q2	Q3	Q4	Annual*
2021	5,599 E	5,576 E	5,857 E	6,452 E	22,972 E
2020	5,144 A	4,797 A	4,913 E	5,127 E	19,957 E
2019	7,913 A	5,835 A	4,788 A	4,870 A	23,406 A

### EPS Estimates

	Q1	Q2	Q3	Q4	Annual*
2021	\$0.80 E	\$0.82 E	\$0.97 E	\$1.21 E	\$3.83 E
2020	\$0.48 A	\$0.45 A	\$0.56 E	\$0.63 E	\$2.11 E
2019	\$2.97 A	\$1.71 A	\$1.05 A	\$0.56 A	\$6.35 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 04/06/2020. The reports text is as of 04/07/2020.

## Overview

Idaho-based Micron Technology has established itself as one of the leading worldwide providers of semiconductor memory solutions.

Through global brands, namely Micron, Crucial and Ballistix, Micron manufactures and markets high-performance memory and storage technologies including Dynamic Random Access Memory (DRAM), NAND flash memory, NOR Flash, 3D XPoint memory and other technologies. Its solutions are used in leading-edge computing, consumer, networking and mobile products.

A major portion of the revenues is derived from DRAM sales. The company's mission is to be the most efficient and innovative global provider of semiconductor memory solutions.

Micron reported revenues of \$23.4 billion in fiscal 2019. The company has four reportable segments:

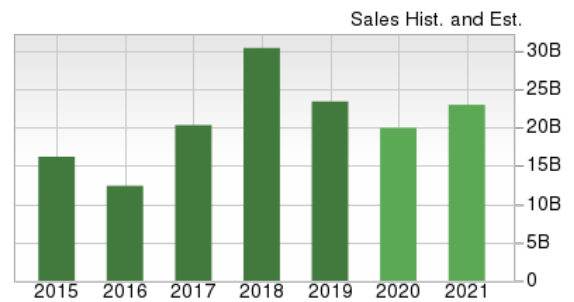
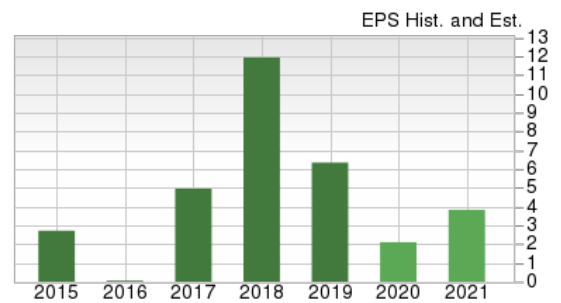
**Compute and Networking Business Unit (CNBU):** The unit comprises of DRAM and NOR Flash products that are sold to the computer, networking, graphics, and cloud server markets, and NAND Flash products which are sold into the networking market. CNBU delivered revenues of \$10 billion (43% of total revenues) in fiscal 2019.

**Mobile Business Unit (MBU):** The unit comprises Micron's discrete DRAM, discrete NAND and managed NAND (including eMMC and universal flash storage (UFS) solutions) products that are sold to smartphone and other mobile-device markets. MBU generated revenues of \$6.4 billion (28%) in fiscal 2019.

**Storage Business Unit (SBU):** The unit accounts for solid state drives (SSDs) and component-level solutions sold into enterprise and cloud, client and consumer storage markets as well as other discrete storage products sold in component and wafer forms to the removable storage markets. SBU's revenues grossed \$3.8 billion (16%) in fiscal 2019.

**Embedded Business Unit (EBU):** The unit includes Micron's discrete DRAM, discrete NAND, managed NAND and NOR products, which are sold to the automotive, industrial and consumer markets. EBU's revenues logged \$3.1 billion (13%) in fiscal 2019.

The company struggles with intense competition from Intel, Samsung Electronics, SK Hynix, Toshiba Memory and Western Digital Corporation.



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## Reasons To Buy:

- ▲ Micron's second-quarter fiscal 2020 results reflect that the company stood resilient to the coronavirus impact on global economic and business activities. During the quarterly conference call, the memory chip maker revealed that coronavirus had minimal impact on its financials. Micron has been witnessing stronger memory-chip demand from PC manufacturers and data-center operators. Notably, the coronavirus-led global lockdown is spurring demand for PCs and notebooks as more and more workers and students work and learn from home. The work-and-learn-from home necessity is also driving demand for cloud storage. Furthermore, the lockdown has enhanced the usage of online services globally. Therefore, data-center operators are enhancing their cloud-storage capacities to accommodate the need of growing demand for cloud services. In addition, the company noted that it has ample inventory to counter the near-term supply-chain disruption caused by the pandemic and support the spike in memory-chip demand from PC manufacturers and data-center operators.
- ▲ Micron offers both DRAM and NAND products. While DRAM chips are key components of PCs and servers, NAND flash chips are crucial to smartphones and solid-state hard drives. Micron believes rapid 5G adoption, advent of foldable phones and upcoming innovations in AR/VR will shore up sustained content growth and augment smartphone unit sales this year. Further, 5G adoption beyond mobile is likely to foster demand for memory and storage, particularly in IoT devices, wireless infrastructure and data centers. Moreover, steep demand from PC, server and smartphone makers and any supply shortage will push prices up, thereby bolstering Micron's top- and bottom-line results.
- ▲ Micron is expanding its foothold in the SSD storage market. The emergence of thinner laptops and tablets over the past few years has created ideal market conditions for SSDs, which are now entering the higher end of the market. Furthermore, secular growth of digital data, modest growth in TAM and higher demand for storage will drive growth in general, and especially for SSDs. Per MarketInsightsReports, the SSD market is expected to witness a CAGR of 5.5% between 2020 and 2025 and reach \$16.98 billion by 2025. The SSD segment's growth potential is a major positive for Micron as this could offset the losses incurred from the sluggishness in the PC market, which does not necessarily use SSDs.
- ▲ Micron's focus on improving its cost structure and increasing the mix of high-value solutions in its portfolio is likely to boost margins. A strong execution of this strategy has improved the company's annualized profitability by more than \$6 billion from fiscal 2016 to fiscal 2019. Further, it has bettered Micron's EBITDA margin by more than 15 basis points (bps) relative to the company's peers over the same period, per management.
- ▲ Over the years, Micron has made several significant acquisitions to enhance its capabilities. Over the last two decades the company has acquired 13 businesses. A few notable among them were Elpida, Inotera, Numonyx, and Lexar Media. These buyouts have helped Micron in expanding its wafer manufacturing capacity, DRAM offerings and wafer testing and probe services.
- ▲ Micron has a strong cash-flow generating ability, which enables it to make strategic acquisitions and invest in new products. The company exited the fiscal first quarter with cash and short-term investments of \$7.588 billion. It generated operating cash flow of \$2.01 billion and free cash flow of \$80 million in the period. In fiscal 2019, the company repurchased shares worth \$2.7 billion (representing 65% of free cash flow) under the authorized buyback program and remains committed to allocating at least 50% of free cash flow toward repurchases. Although the company has a significant amount of debt on its balance sheet, the robust cash flow has enabled it to service its debt efficiently.

Micron banks on revival in DRAM demand and increasing mix of high-value solutions in its portfolio.

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## Reasons To Sell:

- ▼ Micron's fate is highly tied to DRAM and NAND flash pricing. Oversupply and lower-than-expected growth in end-market demand has been a dampener. Higher level of customer inventory in the cloud, graphics and enterprise market is a key threat. Moreover, soft server demand from several enterprise OEM customers is a concern. Additionally, Intel's CPU shortages coupled with macroeconomic uncertainties are likely to pose key challenges to the company.
- ▼ The United States and China's tit-for-tat trade war is a major threat to the company. This is because the United States is the largest semiconductor manufacturing country with China being its biggest importer. Micron's heavy dependence on China is anticipated to keep the company under pressure, at least in the near term. Further, last May, the company suspended chip shipments to Huawei, in response to the export ban imposed by the U.S. government. The company fears a worsening decline in sales to Huawei over the coming quarters in case it fails to secure the license to ship additional products to Huawei or if the trade ban is not removed.
- ▼ Micron faces competition from Samsung Electronics Co., Ltd., SK Hynix Inc., Spansion Inc. and Toshiba Corporation in the semiconductor memory market. Notably, wafer capacity increases from its competitors could disrupt DRAM and NAND supply dynamics affecting prices and the company's results. Moreover, heightening trade tension might compel many Chinese companies to buy chips from Samsung and other non-American chipmakers, consequently dumping Micron.
- ▼ Ramped-up production of domestic memory chips in China can also seriously jeopardize Micron's prospects going forward. Changxin Memory Technologies has recently unveiled China's first domestically designed DRAM chip. Moreover, Yangtze Memory Technologies is likely to start manufacturing NAND flash memory to challenge Samsung, Toshiba, Western Digital and Micron, per Nikkei.
- ▼ The merger between Western Digital and SanDisk has made it more challenging for Micron to capture share in the newer storage technology space – SSD. The companies will also be able to offer competitive solutions in cloud-based computing, which has overtaken digital storage solution space over the past couple of years. Therefore, it will be difficult for Micron to remain competitive in the storage business.
- ▼ Micron continues to acquire a large number of companies. While this improves revenue opportunities, business mix and profitability, it also adds to integration risks. Moreover, frequent acquisitions are a distraction for management, which could impact organic growth, going forward. Additionally, higher mix of NAND, which has lower gross margin, coupled with falling memory prices and minimal decline in manufacturing cost is likely to keep margins under pressure.

Product mix, falling memory prices and minimal decline in manufacturing cost are key headwinds.

## Last Earnings Report

### Micron Reports Q2 Results

Micron reported stronger-than-anticipated results for second-quarter fiscal 2020. The company's fiscal second-quarter non-GAAP earnings per share of 45 cents beat the Zacks Consensus Estimate by 18.4% and surpassed its guided range of 35 cents (+/- 6 cents) as well.

Moreover, quarterly revenues of \$4.8 billion outpaced the consensus mark of \$4.6 billion. The memory chip maker's revenues also came in line with the higher-end of management's guided range of \$4.5-\$4.8 billion.

Nonetheless, top and bottom lines both declined on a year-over-year basis. While revenues fell 17.8%, non-GAAP earnings slumped 73.7%.

### Revenue Details

DRAM revenues of \$3.1 billion, accounting for 64% of total revenues in the fiscal second quarter, slid 26% year over year and 11% sequentially. Bit shipments rose more than 20%, year on year, but were down nearly 10% sequentially. On a sequential basis, ASP was flat.

NAND revenues of \$1.5 billion, representing 32% of the total top line, were up 9% on a year-over-year basis and 6% quarter on quarter. While NAND ASP increased in the upper single-digit's percentage band, shipment quantities declined in low-single-digit percent range sequentially. Shipments grew approximately 20% year over year.

Business-unit wise, revenues of the computing and networking business (CNBU) unit deteriorated 17% from the year-ago quarter and 1% sequentially to \$2 billion. The CNBU segment includes revenues from 3D XPoint. Excluding revenues from 3D XPoint, CNBU revenues declined 7% sequentially due to softer sales in the PC market.

Revenues of \$1.3 billion from the Mobile Business Unit (MBU) dropped 22% on a year-over-year basis and 14% sequentially.

The Embedded Business Unit revenues logged \$696 million, down 13% from the year-ago quarter and 5% from the previous quarter.

Revenues from the Storage Business Unit (SBU) comprising SSD NAND components and 3D XPoint totaled \$870 million, down 15% year over year and 10% sequentially. Excluding 3D XPoint sales, SBU revenues increased 9% sequentially.

### Margins

Micron's non-GAAP gross profit of \$1.4 billion slumped 52.3% from the prior-year period. Non-GAAP gross margin slipped from 50.2% in the year-ago quarter to 29.1%. Underutilization charges at the Lehi Lab had a negative impact of nearly 295 basis points.

Micron's non-GAAP operating income of \$542 million declined from the year-ago quarter's \$2.1 billion. Non-GAAP operating margin contracted from 36.2% to 11.3%.

### Balance Sheet and Cash Flow

The company exited the reported quarter with cash and short-term investments of \$7.5 billion compared with the \$7.6 billion recorded at the end of the prior quarter.

Micron's long-term debt of \$5.2 billion remained flat quarter on quarter.

The company generated operating cash flow of \$4 billion during the first half of fiscal 2020. Adjusted free cash flow during the first six months of fiscal 2020 is \$149 million.

The company repurchased shares worth \$159 million in the first half of fiscal 2020.

### Guidance for Q3

Buoyed by better-than-expected quarterly results, Micron provided an upbeat guidance for the fiscal third quarter. The company anticipates revenues of \$4.6-\$5.2 billion (mid-point \$4.9 billion) for the quarter.

For the fiscal third quarter, Micron expects non-GAAP gross margin of 31% (+/- 150 bps). Higher underutilization charges due to contracted production volumes are likely to be a dampener.

Operating expenses on a non-GAAP basis are likely to be \$825 million (+/- \$25 million).

Earnings per share are anticipated to be 55 cents (+/- 15 cents).

Quarter Ending **02/2020**

Report Date	Mar 25, 2020
Sales Surprise	3.04%
EPS Surprise	18.42%
Quarterly EPS	0.45
Annual EPS (TTM)	2.54

## Recent News

On Feb 6, 2020, Micron announced that it has delivered low-power DDR5 DRAM in mass production to be used in the upcoming Xiaomi Mi 10 smartphone.

On Jan 7, 2020, Micron Technology announced that in collaboration with ultra-high-speed in-vehicle connectivity provider, Valens, the company is introducing the automotive industry's first 1TB remote, centralized storage solution at CES 2020.

On Oct 25, 2019, Micron introduced the world's fastest SSD, the Micron X100 SSD, targeting storage- and memory-intensive applications for the data center. The company unveiled Micron 7300 NVMe series and Micron 5300 SATA series of SSDs designed to enable enterprises to modernize, economize and maximize return on their data center investments.

On the same day, Micron launched Authentia Key Management Service (KMS) platform, a silicon-based security-as-a-service platform, for IoT edge devices.

On Oct 17, 2019, Micron Technology announced that Paul Marosvari is appointed as Micron's vice president and chief accounting officer.

## Valuation

Micron shares are down 13.8% in the year so far while has gained 8.1% over the trailing 12-month period. Stocks in the Zacks sub-industry and the Zacks Computer & Technology sector are down 23.3% and 17.9%, respectively, year-to-date (YTD). Over the past year, while the Zacks sub-industry decreased 3.9%, the sector declined 9.2%.

The S&P 500 Index is down 22.6% YTD and 14.2% in the past year.

The stock is currently trading at 2.24X forward 12-month sales, which compares to 2.11X for the Zacks sub-industry, 2.89X for the Zacks sector and 2.72X for the S&P 500 index.

Over the past five years, the stock has traded as high as 3.01X and as low as 0.69X with a 5-year median of 1.61X. Our Neutral recommendation indicates that the stock will perform in-line with the market. Our \$49.00 price target reflects 2.35X forward 12-month sales.

The table below shows summary valuation data for MU

Valuation Multiples - MU					
		Stock	Sub-Industry	Sector	S&P 500
P/S F12M	Current	2.24	2.11	2.89	2.72
	5-Year High	3.01	2.76	3.58	3.44
	5-Year Low	0.69	0.76	2.32	2.54
	5-Year Median	1.61	1.63	3.03	3.00
EV/Sales TTM	Current	2.54	2.25	3.31	2.47
	5-Year High	3.13	3.13	4.44	3.46
	5-Year Low	0.88	0.82	2.57	2.16
	5-Year Median	1.85	1.85	3.55	2.83
EV/EBITDA TTM	Current	5.98	5.30	9.62	9.10
	5-Year High	8.60	8.60	12.82	12.87
	5-Year Low	1.48	1.48	7.55	8.27
	5-Year Median	3.84	3.84	10.58	10.78

As of 04/06/2020

## Industry Analysis Zacks Industry Rank: Top 34% (86 out of 253)



## Top Peers

Intel Corporation (INTC)	Outperform
Advanced Micro Devices, Inc. (AMD)	Neutral
Microchip Technology Incorporated (MCHP)	Neutral
NVIDIA Corporation (NVDA)	Neutral
Samsung Electronics Co. (SSNLF)	Neutral
Seagate Technology PLC (STX)	Neutral
Taiwan Semiconductor Manufacturing Company Ltd. (TSM)	Neutral
Western Digital Corporation (WDC)	Neutral

Industry Comparison Industry: Semiconductor Memory				Industry Peers		
	MU Neutral	X Industry	S&P 500	INTC Outperform	SSNLF Neutral	WDC Neutral
<b>VGM Score</b>	<b>C</b>	-	-	<b>A</b>	<b>F</b>	<b>C</b>
Market Cap	51.57 B	51.57 B	18.06 B	250.11 B	13,193.22 B	12.95 B
# of Analysts	9	8	13	14	1	7
Dividend Yield	0.00%	0.00%	2.34%	2.26%	0.00%	4.62%
<b>Value Score</b>	<b>B</b>	-	-	<b>C</b>	<b>F</b>	<b>B</b>
Cash/Price	0.16	0.16	0.06	0.06	NA	0.27
EV/EBITDA	3.94	3.94	11.15	7.52	NA	9.53
PEG Ratio	2.20	2.14	1.87	1.61	NA	NA
Price/Book (P/B)	1.39	1.39	2.46	3.23	NA	1.37
Price/Cash Flow (P/CF)	4.08	4.08	9.59	7.69	NA	4.27
P/E (F1)	22.62	21.97	15.66	12.08	543.00	13.86
Price/Sales (P/S)	2.63	2.63	1.92	3.48	66.01	0.83
Earnings Yield	4.55%	4.55%	6.30%	8.28%	0.18%	7.23%
Debt/Equity	0.15	0.15	0.70	0.33	NA	1.02
Cash Flow (\$/share)	11.36	11.36	7.01	7.60	NA	10.15
<b>Growth Score</b>	<b>D</b>	-	-	<b>B</b>	<b>F</b>	<b>D</b>
Hist. EPS Growth (3-5 yrs)	69.73%	69.73%	10.92%	20.24%	10.59%	-19.53%
Proj. EPS Growth (F1/F0)	-66.75%	-69.23%	0.33%	-0.66%	49.63%	-35.42%
Curr. Cash Flow Growth	-35.35%	-35.35%	5.93%	6.53%	NA	-53.72%
Hist. Cash Flow Growth (3-5 yrs)	15.84%	15.84%	8.55%	9.99%	NA	-1.49%
Current Ratio	2.74	2.74	1.24	1.40	NA	1.92
Debt/Capital	13.61%	13.61%	42.36%	24.62%	NA	50.44%
Net Margin	11.72%	11.72%	11.64%	29.25%	9.34%	-7.66%
Return on Equity	7.16%	7.16%	16.74%	29.01%	NA	1.01%
Sales/Assets	0.40	0.40	0.54	0.54	NA	0.59
Proj. Sales Growth (F1/F0)	-14.73%	-14.73%	1.00%	0.58%	7.33%	1.16%
<b>Momentum Score</b>	<b>D</b>	-	-	<b>B</b>	<b>C</b>	<b>C</b>
Daily Price Chg	12.49%	-38.75%	7.93%	7.94%	0.00%	13.35%
1 Week Price Chg	-5.20%	-5.20%	-4.40%	3.36%	0.00%	-9.56%
4 Week Price Chg	0.87%	0.87%	-6.89%	14.91%	4,900.00%	-8.63%
12 Week Price Chg	-19.29%	-19.29%	-24.81%	-1.95%	4,900.00%	-37.35%
52 Week Price Chg	8.09%	8.09%	-17.63%	4.94%	0.00%	-16.05%
20 Day Average Volume	38,782,188	38,782,188	4,147,873	41,551,736	420	7,865,873
(F1) EPS Est 1 week change	0.00%	0.00%	0.00%	-0.15%	0.00%	0.00%
(F1) EPS Est 4 week change	-11.71%	-11.71%	-4.97%	-2.97%	0.00%	-7.07%
(F1) EPS Est 12 week change	-10.28%	-10.28%	-6.79%	2.47%	3.04%	36.18%
(Q1) EPS Est Mthly Chg	-2.34%	-2.34%	-7.32%	-1.12%	0.00%	-11.48%

## 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>B</b>
Growth Score	<b>D</b>
Momentum Score	<b>D</b>
VGM Score	<b>C</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.

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