

March, 16, 2017

Micron Technology, Inc: MU

Michael Capozzi

Sector: Technology

Industry: Semi-Conductor Memory Chips

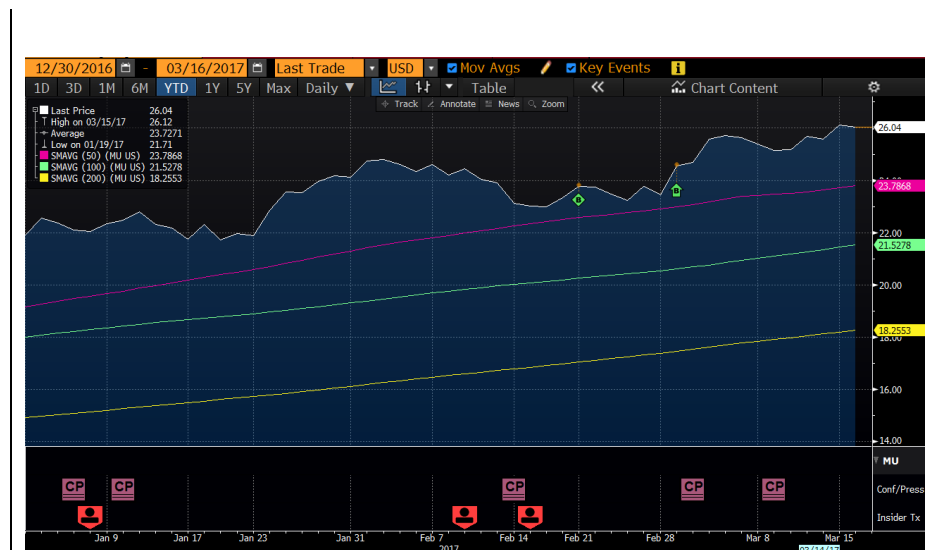
Current Price: 26.04

Target Price: 31.10

Company Description: Based out of Boise, ID, Micron Technology Inc. provides semiconductors systems worldwide. The company operates in four segments: Compute and Networking Business Unit, Storage Business Unit, Mobile Business Unit, and Embedded Business Unit. Their products offered are DDR3 and DDR4 DRAM products, mobile low-power DRAM products, DDR2 and DDR DRAM products, GDDR5 and GDDR5X DRAM products, SDRAM products, and RDRAM products.

BUY

Current Price: \$26.12
 Target Price: \$31.10
 Market Cap: 28.715B
 Beta: 2.11
 WACC: 9.2%



Thesis:

Micron (MU) is ready to release its Q2 2017 earnings report on March 23rd. After a strong Q1, forecasters expect another successful quarter. Micron has benefited from favorable prices, and it shows through their recent increase in margins and earnings. DRAM and NAND prices have significantly improved because of an undersupply of the products in the market. When prices were favorable MU traded in the 30s. With prices starting to go back to that point, MU seems poised to head back to that range. The industry itself has been growing at a consistent rate and the future is bright for semiconductors. With new technology hitting the market every day, Micron will be able to capitalize on these new breakthroughs for years to come.

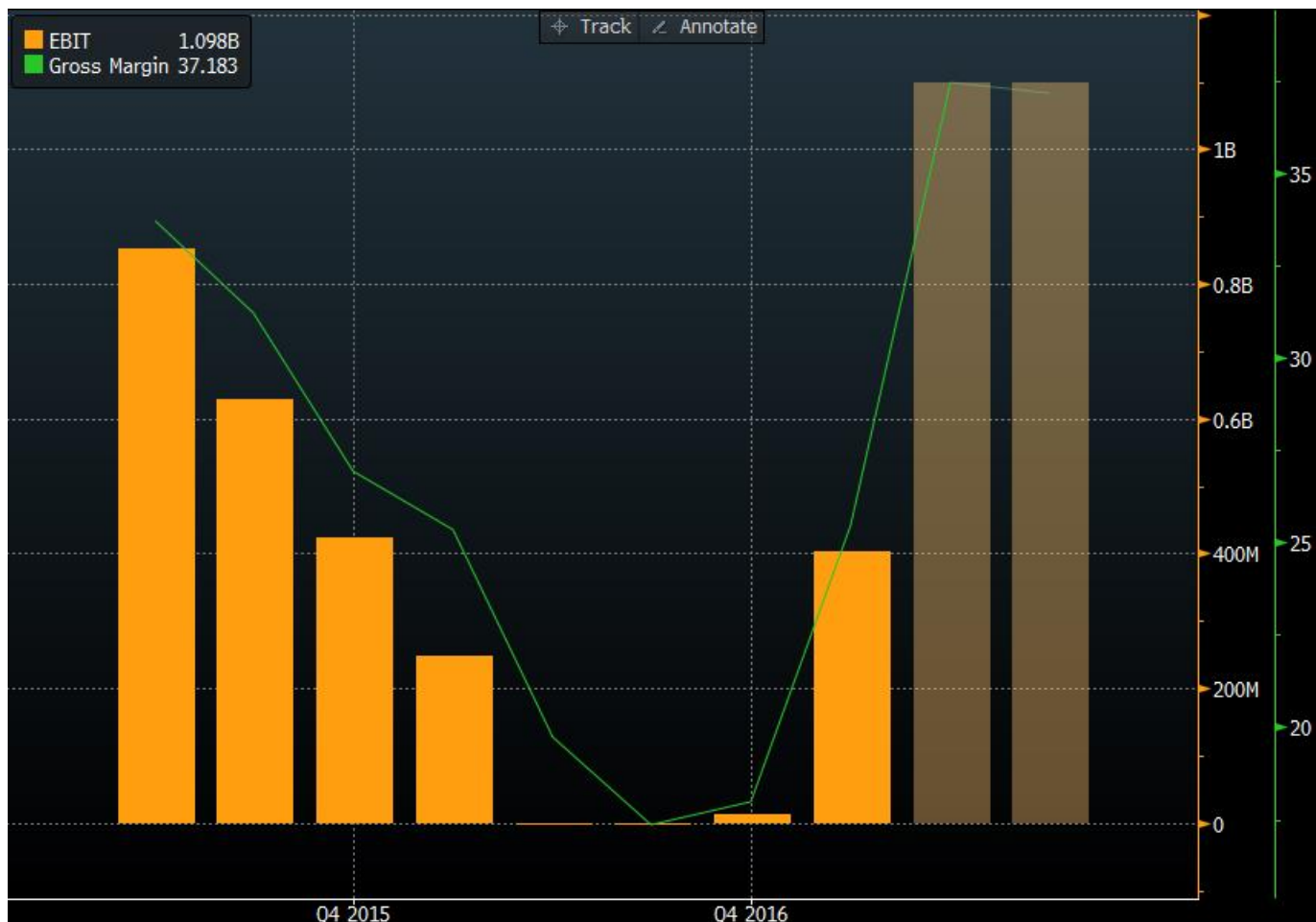
Catalysts:

- Short Term(within the year): Q2 Earnings Report expects a bright outlook for MU
- Mid Term(1-2 years): Improving prices for DRAM and NAND chips will increase margins and growth
- Long Term(3+): The industry is expected to grow at around 30% during the period of 2017-2021

Micron's Q2 Earnings Report:

Since 2014, Revenues, Operating Income, and EBITA, amongst other things, have all decrease significantly for Micron. Revenues have decreased from \$16,358M to 13,019M. Gross margins have also decreased from 33.24% to 20.52% during this time. The earning troubles were due to an oversupply of memory chips in the market. Although Micron has experienced successful earning calls for the last four quarters, because of this analysis expect the future to be bright for Micron. On March 23rd, Micron will release its Q2 earning results. Analysts and investors expect positive results for the company once again. The driver behind Micron's recent success has been rising prices and demands for NAND and DRAM chips. DRAM chip prices were up 30% in the fourth quarter of 2016 and saw a similar spike going into the first quarter of 2017. Overall revenues are forecasted to increase to \$18,117.4M in 2017, while the EBITDA margin is expected to increase from 26.12% to 43.05%. The company is also expected to once again experience a positive profit margin of \$17.92M in 2017. DRAMeXchange, a site that provides current and forecasted prices of memory chips, forecasts DRAM supply to increase 19%, while demand is forecasted to increase 22%. This difference will cause DRAM prices to increase further into 2017. Exhibit A shows the forecasted increase in EBIT and gross margin. The factors discussed will drive both up in 2017 and 2018.

Exhibit A:



DRAM Prices:

DRAM prices are forecasted to increase 30% in 2017. This increase will have a direct benefit on Micron's margins and earnings. In 2015 and 2016, DRAM prices have decreased because a large supply in the market. A decrease in supply and increase in demand in 2017 will ensure higher price tags. Samsung, SK Hynix, and Micron all saw increased revenues in the 3Q of 2016 because of these price shifts.

Table: Global Revenue Ranking of Branded DRAM Manufacturers, 3Q16 (Unit: Million USD)

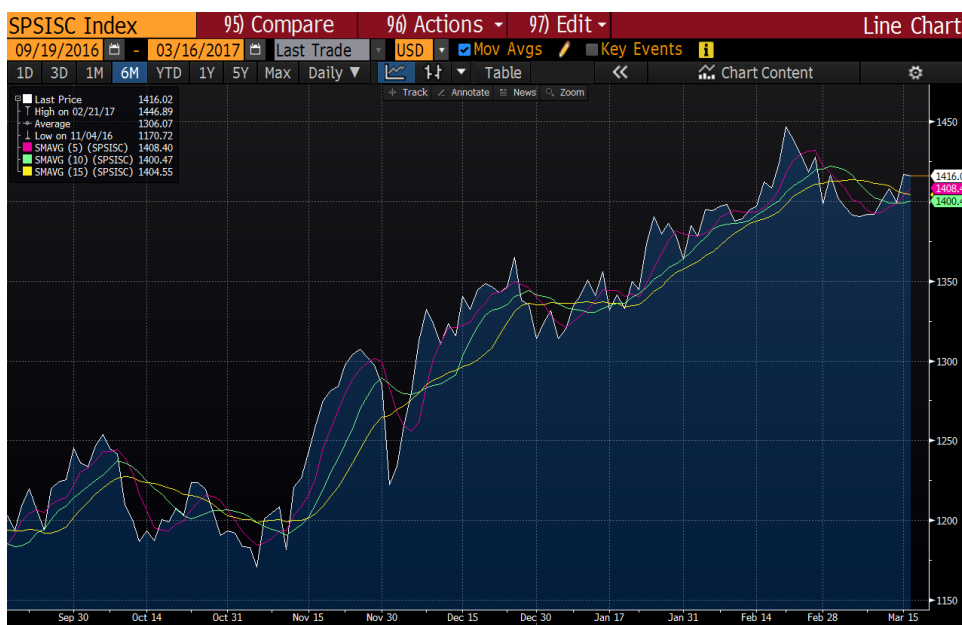
Ranking	Company	Revenue			Market Share	
		3Q16	2Q16	QoQ	3Q16	2Q16
1	Samsung	5,286	4,318	22.4%	50.2%	47.4%
2	SK Hynix	2,617	2,409	8.6%	24.8%	26.5%
3	Micron Group	1,946	1,728	12.6%	18.5%	19.0%
4	Nanya	322	276	16.7%	3.1%	3.0%
5	Winbond	174	163	7.0%	1.7%	1.8%
6	Powerchip	64	93	-31.1%	0.6%	1.0%
	Others	127	114	11.1%	1.2%	1.3%
	Total	10,536	9,101	15.8%	100.0%	100.0%

Note 1: 2Q16 USD\$1:KRW\$1,162; US\$1:TWDS\$32.39

Note 2: 3Q16 USD\$1:KRW\$1,119; US\$1:TWDS\$31.69

Source: DRAMeXchange, Nov., 2016

Industry Outlook: Micron is a part of the semiconductor memory chip industry within the technology sector. The industry has seen better returns than the S&P 500 benchmark and analysts predict further growth into 2017. Due to favorable supply and demand trends going into 2017, the industry is predicted to grow. The competitive environment is favorable for Micron. The only main rivals for Micron in the industry are Samsung (OTCMKTS:SSNLF) and SK Hynix Inc. (OTCMKTS:HXSC). Analysts believe there is plenty of room in the market for Micron to grow despite these competitors. In the last 6 months, the S&P Semiconductor Select Industry index has shown significant growth for the

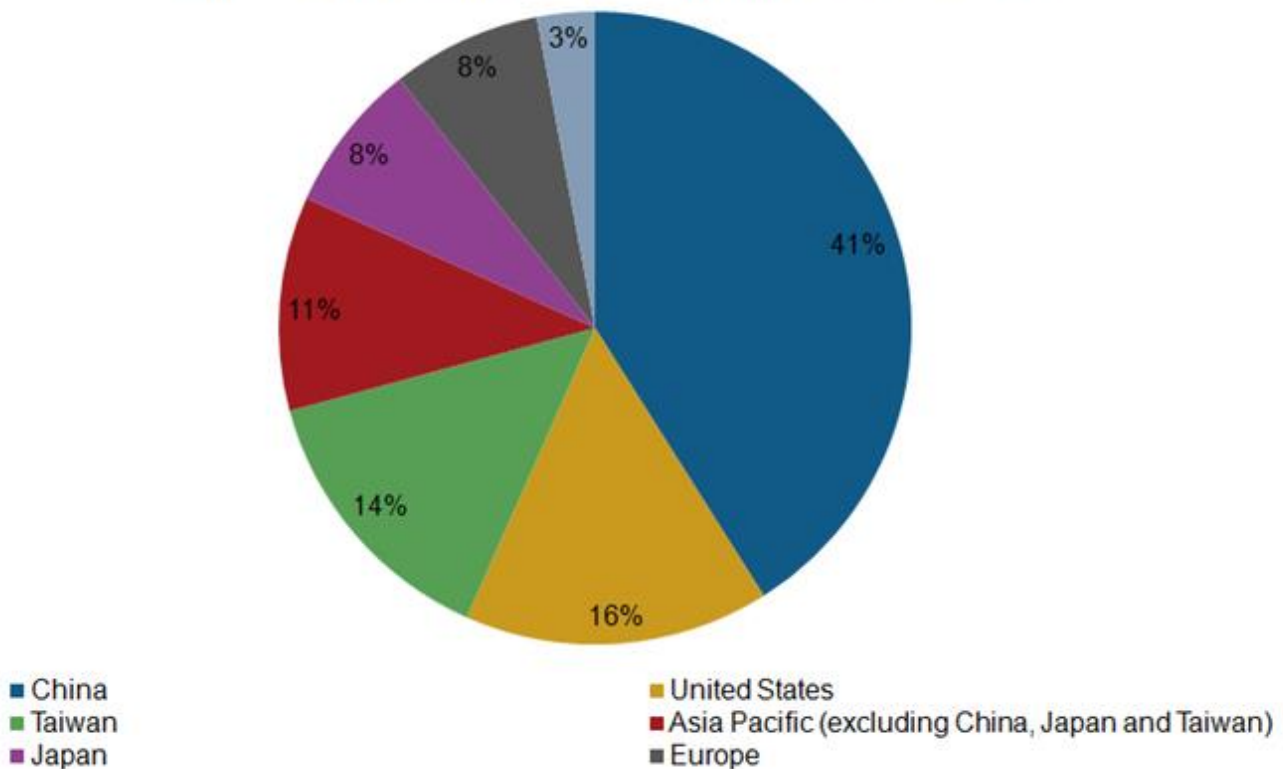


semiconductor industry. These are also due to the recent favorable pricing trends and demand in the market.

Acquisition:

In 2016, Micron acquired Inotera, a semiconductor company based out of Taiwan. The transaction value was approximately \$4B. Micron paid for the acquisition with approximately \$2.5B of debt, \$1B of Micron’s equity to Nanya Technology, and remaining on cash from Micron’s balance sheet. The acquisition is predicted to increase gross margins, EBITDA, EPS, and free cash flow. The acquisition will also help Micron increase their market share in Asia. 74% of Micron’s revenues are out of Asia. In addition, Asia is a rapidly growing market, so this acquisition should be beneficial for Micron in the foreseeable future.

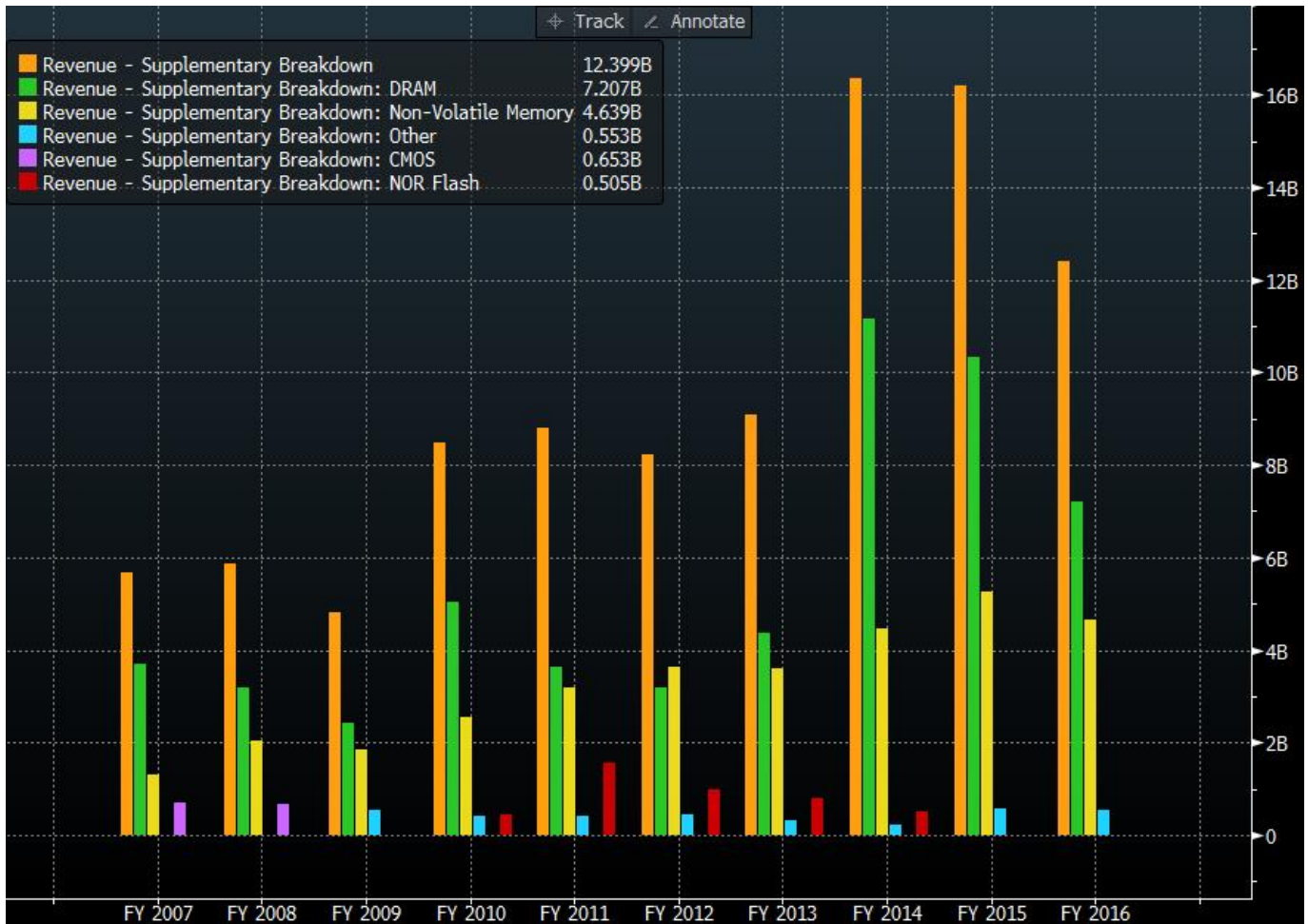
Micron’s Key Markets by Geography for Fiscal FY14



Source: Micron's SEC Filings

Products:

Micron sells mostly DRAM products, which stands for dynamic random-access memory, and non-volatile memory products. They are essentially memory chips that are used in phones, desktops, laptops, and various other devices. DRAM products make up 58.1% of revenues, while non-volatile memory products make up 37.4% of revenues. This is why an increase in DRAM prices is so crucial to the success of Micron. In regards to what type of product the memory chips are made for, majority of revenues are from computer & networking business units, storage business units, and mobile business units. Micron's largest customers are Hewlett Packard Corporation (HPQ), Intel Corporation (INTC), and Kingston. Together they make up around 30% of Micron’s sales. In recent years, Micron has focused more on mobile phone storage. In 2014, Micron acquired Elpida, which scored a huge contract with Apple’s iPhone 5.



Profitability:

The entire semiconductor industry was hurt by an oversupply of DRAM products in the market. Micron’s margins and earnings were significantly affected, to the point that Micron had a net loss of \$276M in 2016. Although forecasters are aware of that DRAM producers have been decreasing inventories, thus increasing the overall price of the product. Forecasters predict a \$2,661.6M net income for Micron in 2017. Margins are also on the rise, as displayed in Exhibit B. After disappoint margin results in Q4 2016, margins saw a significant spike in Q1 2017. Forecasters expect strong numbers from the Q2 2017 earnings report.

Exhibit B:



Conclusion:

MU has incredible potential to return to trading in the \$30 range. Favorable prices for Micron will help them meet earnings for Q2 2017. Their Q1 results exceeded expectations and forecasters see the same for Q2. The company has the necessary market share to grow in a promising environment. They are poised to expand in a rapidly growing Asian market with their newly acquired companies, Elpida and Nanya. The company is mainly driven on revenues, so these factors discussed should encourage the growth of the stock price.

Current Price: \$26.12

Intrinsic Value: \$24.91

Target Price: \$31.10

Target Year 1 Return: 19.06%

Micron Technology, Inc.
(MU)

CENTER FOR GLOBAL FINANCIAL STUDIES

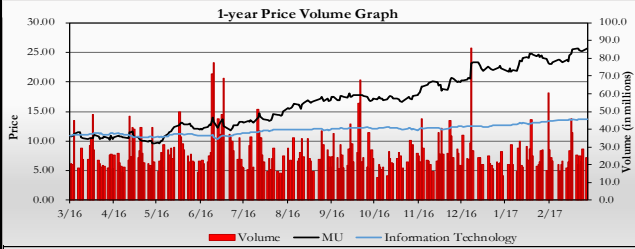
NEUTRAL

Analysis by Michael Capozzi
3/16/2017

Current Price: **\$26.12**
Divident Yield: **0.0%**

Intrinsic Value: **\$24.91**
Target Price: **\$31.10**

Target 1 year Return: 19.06%
Probability of Price Increase: 100%



Description	
Micron Technology, Inc. provides semiconductor systems worldwide.	
General Information	
Sector	Information Technology
Industry	Semiconductors and Semiconductor Equipment
Last Guidance	November 3, 2015
Next earnings date	March 23, 2017
Estimated Country Risk Premium	9.52%
Effective Tax rate	22%
Effective Operating Tax rate	19%

Market Data	
Market Capitalization	\$28,796.14
Daily volume (mil)	29.71
Shares outstanding (mil)	1102.46
Diluted shares outstanding (mil)	1037.25
% shares held by institutions	74%
% shares held by investments Managers	68%
% shares held by hedge funds	7%
% shares held by insiders	0.39%
Short interest	4.16%
Days to cover short interest	1.78
52 week high	\$26.15
52-week low	\$9.35
Levered Beta	1.97
Volatility	42.99%

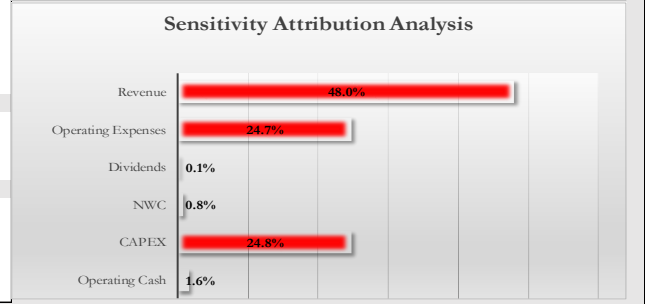
Past Earning Surprises	
Quarter ending	Revenue
12/3/2015	-5.42%
3/3/2016	-6.20%
6/2/2016	-7.41%
9/1/2016	-2.96%
12/1/2016	-0.48%
Mean	-4.49%
Standard error	1.2%

EBITDA	
12/3/2015	-14.21%
3/3/2016	-0.90%
6/2/2016	-13.38%
9/1/2016	-25.68%
12/1/2016	-17.10%
Mean	-14.25%
Standard error	4.0%



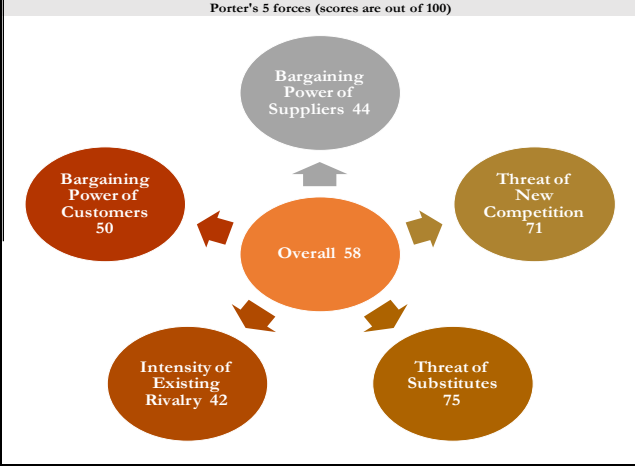
Management	
Durcan, D.	Chief Executive Officer and
Maddock, Ernest	Chief Financial Officer and
Thorsen, Steven	Vice President of Worldwide
Shirley, Brian	Vice President of Memory Tec
DeBoer, Scott	Vice President of Technology
Schultz, Trevor	Chief Information Officer an

Total compensations growth	
4.64% per annum over 6y	4.51% per annum over 6y
19.96% per annum over 2y	5.54% per annum over 2y
-8.41% per annum over 3y	-18.89% per annum over 3y
7.39% per annum over 6y	4.51% per annum over 6y
-1.71% per annum over 2y	5.54% per annum over 2y
N/M	N/M



Profitability	
ROIC	6.3%
NOPAT Margin	12%
Revenue/Invested Capital	0.54
ROE	7.2%
Adjusted net margin	9%
Revenue/Adjusted Book Value	0.82

MU (LTM)	
10.28%	12.80%
12.63%	21.3%
0.81	0.60
13.47%	14.08%
10.59%	19.9%
1.27	0.71



Revenue growth	
Base Year	-13.0%
12/1/2017	24.1%
12/1/2018	2.0%
12/1/2019	2.2%
12/1/2020	2.5%
12/1/2021	2.7%
12/1/2022	2.9%
12/1/2023	3.2%
12/1/2024	3.4%
12/1/2025	3.6%
12/1/2026	3.8%
Continuing Period	4.1%

Valuation	
NOPAT margin	11.7%
ROIC/WACC	0.40
	1.04
	2.02
	1.77
	1.59
	1.43
	1.33
	1.24
	1.16
	1.10
	1.04
	0.98

Invested Capital	
Base Year	\$12,121.44
12/1/2017	\$14,282.54
12/1/2018	\$17,388.17
12/1/2019	\$18,796.45
12/1/2020	\$23,995.36
12/1/2021	\$26,151.32
12/1/2022	\$18,375.24
12/1/2023	\$20,139.67
12/1/2024	\$21,641.32
12/1/2025	\$22,997.32
12/1/2026	\$24,200.94
Continuing Period	

Net Claims	
Base Year	\$8,859.14
12/1/2017	-\$4,750.23
12/1/2018	-\$10,131.02
12/1/2019	-\$15,289.30
12/1/2020	-\$20,128.28
12/1/2021	-\$24,663.64
12/1/2022	-\$29,001.44
12/1/2023	-\$33,108.95
12/1/2024	-\$37,005.95
12/1/2025	-\$40,740.38
12/1/2026	-\$44,311.30
Continuing Period	

Price per share	
Base Year	\$23.26
12/1/2017	\$29.78
12/1/2018	\$34.98
12/1/2019	\$39.93
12/1/2020	\$44.65
12/1/2021	\$49.14
12/1/2022	\$53.53
12/1/2023	\$57.82
12/1/2024	\$62.05
12/1/2025	\$66.31
12/1/2026	\$70.63
Continuing Period	