

MU F2Q Exceeds on NAND Volume and DRAM Margin Upside Near-term Softness, Long-term Strength: Trimming Estimates, Reiterate Buy

Diluted Shares(mil):	1,201.0	Closing Price 4/3/14	FYE August	FY13 act	FY14	FY15
Market Cap(\$mil):	\$28,824	\$24.00	Revenue(\$mil)	\$9,073	\$15,852	\$16,006
Avg Volume(,000):	32,039		pro forma EPS	\$0.11	\$2.83	\$2.87
Net Cash/Share:	(\$1.70)	Recommendation/Target	Price/Sales	3.2	1.8	1.8
Tangible Book/Share	\$7.42	Buy/\$40	Price/EPS	218.2	8.5	8.4

Micron Technology is a leading supplier of DRAM, NAND and NOR semiconductor memory products.

Summary: MU exceeded revenue and EPS expectations for its February-ended F2Q due to greater-than-expected NAND production and DRAM profitability as it converted Fab 7 production to NAND from DRAM, and DRAM cost savings benefited from stable market pricing. Revenue of \$4.1B grew by +2%, GAAP EPS was \$0.61, and pro forma EPS totaled \$0.85. I continue to believe MU is extremely well positioned to benefit from a favorable market environment for DRAM and NAND suppliers. I am trimming my estimates but maintaining my 12-month target price of \$40 based on less than 15-times FY14 earnings, and reiterate my Buy recommendation on the shares.

F2Q Review: F2Q14 revenue of \$4.1B exceeded expectations and grew by +2% sequentially on NAND sales growth of +9% associated with a manufacturing shift to NAND from DRAM at Fab 7 in Singapore. DRAM sales were flat as capacity gains from technology shrinks offset lower output. Gross margin expanded by 250 basis points to 34.2% on a 500 basis point gain in DRAMs due to manufacturing cost reductions amid a benign pricing environment. GAAP EPS of \$0.61 included a series of charges that adjusted to \$0.85 as noted below. Minority interest gains include DRAM joint-venture Inotera cost savings that, when combined with the \$42M COGS inventory step-up from Elpida, would have added another six percentage points to DRAM gross margins.

FYE August	2QF14			Guidance	Consensus	Range
	Estimate	Actual	EPS Impact			
DRAM Bits Shipped	0.0%	0.0%		flat		
DRAM ASP change	0.0%	-1.0%				
DRAM Cost/bit change	-8.0%	-8.0%		- hi 1-digit%		
NAND Bits Shipped	18.0%	35.0%		+ high teens%		
NAND ASP Change	-18.0%	-18.0%				
NAND Cost/bit change	-15.0%	-12.0%		- mid teens%		
Revenue (\$ mil)	3,999	4,107	\$0.10		3,990	3,460-4,650
Revenue Growth	-1.1%	1.6%			-1.3%	-14.4%+15.0%
Gross Margin	38.4%	35.2%	(\$0.18)			
Opn Expenses (\$ mil)	575	522	\$0.05	540-560		
Restructuring/other	25	12		25		
Interest Income	(80)	(33)	\$0.04	(75-85)		
Minority Interest/non-opn	0	129	\$0.12			
Taxes (\$ mil)	75	30	\$0.03	70-80		
Diluted Shares (mil)	1,146.0	1,159.0	(\$0.01)			
Diluted EPS		\$0.61			\$0.76	\$0.57-\$0.97
pro forma EPS	\$0.70	\$0.85	\$0.15			

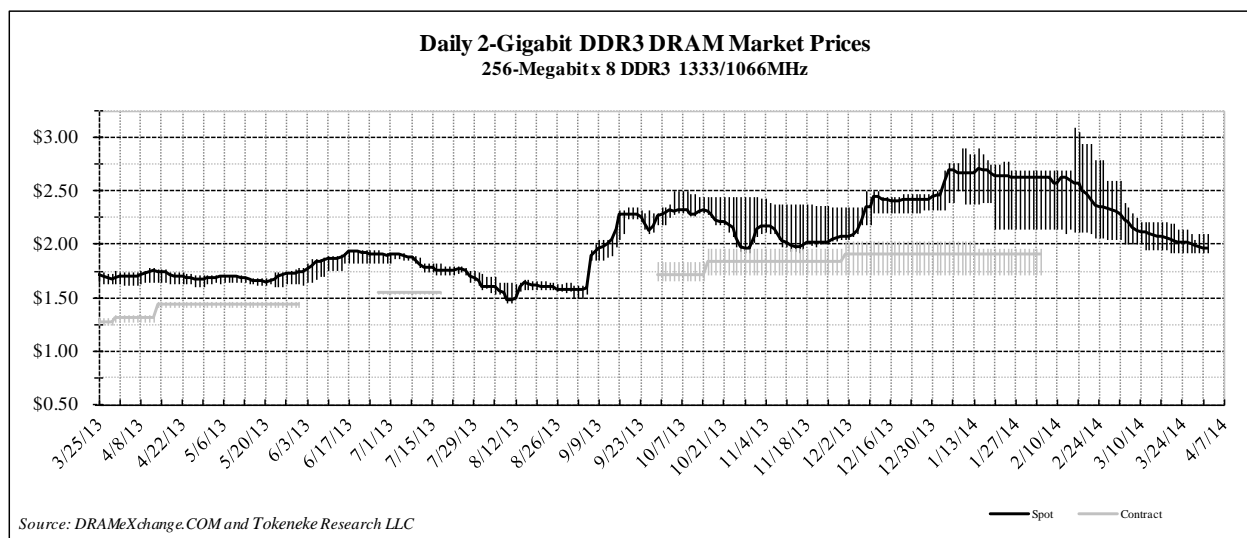
Cash from operations totaled \$1,390M; capital expenditures were \$565M; depreciation and amortization at \$561M; and cash increased by \$648M to \$5,056B which includes \$552M in long-term marketable investments and over \$2B offshore at Elpida that is not available for general corporate purposes. An agreement was reached to sell its 200mm wafer fab in Avezzano, Italy resulting in an impairment loss of \$62M; the company reorganized operations to better serve application market segments and customer-specific requirements; and a litigation matter in Germany involving Inotera shares and the old Qimonda bankruptcy appear to be inconsequential. Micron has engaged in a series of financial transactions to reduce the potential dilution associated with its convertible notes that are expected to result in the following this quarter: a net debt increase of \$40M; an equity reduction of \$1.1B; a \$1.3B use of cash; and a reduction of 68M in diluted share count which adds to the 40M share count saving associated with its capped calls.

Pro Forma Adjustments: Were extensive once again, and included the following: \$42M in COGS to step-up the last of Elpida inventory; \$12M in restructuring; \$33M adjustment to the accounting gain on the Elpida acquisition; \$80M loss associated with debt restructuring; \$44M amortization of debt discounts; \$14M loss on currency; \$22M tax adjustment associated with these items; and \$55M of non-cash deferred tax assets related to Elpida. In addition, the diluted share count was reduced by 42M due to the anti-dilutive effects of a capped-call transaction. Adjusting for these items yields a net pro forma EPS of \$0.85, rather than the reported GAAP EPS of \$0.61.

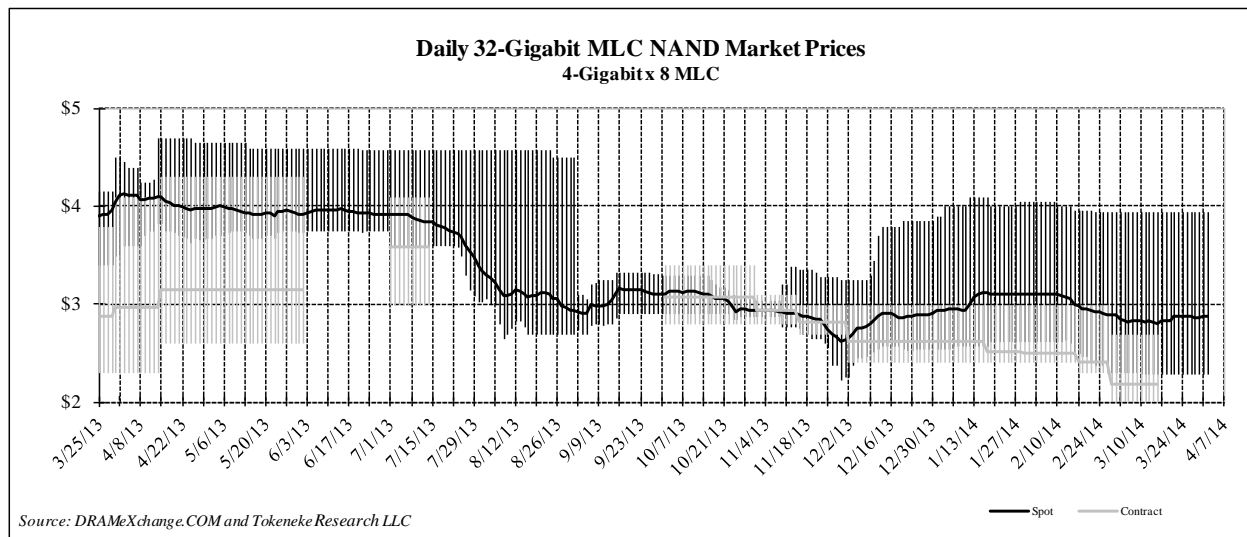
Dynamic RAMs: DRAM sales were flat at \$2.8B or 68% of total sales on zero bit growth and relatively flat ASPs that declined by -1%. Bit production growth related to technology shrinks was offset by decreasing output of DRAM from Fab 7 in Singapore as it converted to NAND production, as well as a brief interruption of production at the former Elpida fab in Hiroshima after an earthquake. The slight decrease in ASP was due to a richer mix of wafer-based sales to mobile applications that offer higher margin, albeit at lower ASP and cost. DRAM market prices were stable and appear to have normalized after competitor Hynix resumed production following a fire at its plant in China last September. DRAM gross margin improved by five percentage points to the high-30% range compliments of an 8% cost reduction, and would have been another six percentage points higher adjusting for a \$42M COGS inventory step-up charge from the Elpida acquisition as well as lower cost from its Inotera DRAM joint-venture whose benefits flowed through the income statement on the minority interest line.

Specialty markets achieved record sales to server, consumer and graphics segments. PC DRAM bits grew by +11% and prices increased as well amid lean channel inventory levels. The company continues to ramp DRAMs to 25nm technology at both Elpida and Rexchip and expand applications to servers from PC and mobile, will introduce 20nm at the end of CY14, and its Hybrid Memory Cube (HMC) stacking technology is gaining traction. The conversion of Fab 7 in Singapore to NAND from DRAM is largely complete, with only a small volume of legacy products lingering. DRAM industry supply is expected to grow in the low-20% range this year down from previous estimates in the mid-20% range, although MU will only grow in the mid-teens. Beyond 2014 the five-year CAGR for bit growth is expected in the mid-20% to 30% range characterized by stable wafer output and slowing technology migrations leading to less volatility.

Micron completed its acquisition of bankrupt DRAM competitor Elpida at the end of July last year. It paid \$750M in yen at the close of the deal (actually \$615M after currency fluctuations) for all of Elpida and \$334M in NT\$ for a total of 89% of Elpida's Rexchip joint-venture in Taiwan, now called Micron Memory Taiwan (MMT). Last quarter it purchased all but a remaining 0.5% of Rexchip equity on the open market for \$145M. Micron will pay Elpida bondholders \$1.75B in yen over the next six years beginning at the end of 2014 with annual installments of \$250M, \$250M, \$250M, \$250M, \$375M and the last \$375M in late-2019. Micron got Elpida's market leadership in the high-growth mobile DRAM segment by way of a 300mm wafer fab in Hiroshima, assembly and test operations in Akita, and the 300mm Rexchip/MMT fab in Taiwan. The good news is that MU benefits from DRAM industry consolidation under very attractive terms, but the bad news is that it came with financial complexities that include a series of debt transactions, a large currency hedge, and accounting for Elpida deferred tax assets.



NAND Flash: NAND product sales grew by +9% to \$1.15B or 28% of total revenue as trade bit shipments grew by a much greater than expected +35%, ASPs declined by -18%, and costs decreased by -12%. Bit shipment growth was due to Singapore Fab 7 conversion to NAND from DRAM, and market price pressure was due to seasonality as well as MU's increased output. Trade NAND gross margins dropped by five points to the high-20% range on price weakness. MU offers a mix of NAND at 25nm, 20nm and 16nm technologies; and SLC, MLC, TLC and 3D architectures; into eMMC, SSD and embedded applications. 20nm product accounted for 60% of output and continues to grow as it gets qualified into SSD applications that will begin shipping 3QCY14. 16nm TLC is being introduced into the consumer channel for memory cards, USB storage and embedded applications by 4QCY14. 3D NAND has been developed, although MU is tailoring it for applications before releasing it to market for volume during FY2015. MU expects to slightly exceed CY14 expected industry supply growth in the low 40% range due to its manufacturing capacity transition from DRAM to NAND at Fab 7 that is now largely complete. 2015 industry bit growth is similarly expected in the low 40% range, although the CAGR over the next five years is expected to fall to the high-30% to low-40% range due to 3D NAND technology manufacturing complexity.



NOR Cash Flow: NOR flash revenue declined by -15% and accounted 3% of total sales, or \$120M. It is expected to decline to \$100-110M this quarter as wireless markets transition to low-density NAND product. However, MU expects longer-term revenue stability primarily in embedded markets and has already begun to qualify 45nm product on 300mm wafers in Virginia to improve margins. NOR is viewed as a 'cash-flow generation' business opportunity.

Management Guidance: F3Q DRAM bit production is expected to decline by a low single-digit percentage due to the earthquake interruption, ASPs QTD are down in the low single-digits, and cost per bit is expected to decline in the low single-digit percentage range as well. NAND bit production is expected to decline in the high single-digit range as the conversion in Fab 7 is complete and a richer mix of SSDs prolongs manufacturing cycle times, ASPs QTD are down in the low single-digits as market declines are partially offset by a richer mix of SSDs, and cost per bit is expected to be flat as a richer mix of higher-cost SSDs offset expected manufacturing cost reductions. NOR sales are expected at \$100-110M. SG&A is expected at \$170-180M, R&D at \$345-355M, interest expense of \$70-80M, and stock compensation of \$30-35M. Pro forma adjustments are expected to include: amortization of debt discounts at \$40M; a loss of \$8M associated with last quarter's debt refinancing; and a \$5-10M tax adjustment associated with these items. Non-cash taxes associated with the Elpida acquisition are expected at \$60-70M. The share count is dropping by 68M due to the debt conversion, and the diluted share count spread will fall to 40M assuming the average share price remains around \$24 thanks to the capped call financial transaction. FY14 capital expenditures remain at an expected \$2.6-3.2B with depreciation and amortization down by \$100M to \$2.3B.

Trimming Estimates: There are a number of moving parts, but the overview is that my numbers are coming down slightly over the next two years primarily due to trickle-through effects from both the just-reported quarter and current quarter outlook. Bigger factors include a lower expected revenue base this quarter due to declining bit production and tempering of my previous gross margin expectations, partially offset by a lower share count due to the company's debt restructuring.

My earnings model incorporates management guidance for operating costs, and then breaks down revenue and COGS by DRAM, NAND, NOR and other products. For DRAM and NAND I make assumptions for bit growth, ASP changes, and manufacturing cost per bit changes on a quarterly basis consistent with management's expected skew to industry norms expected over the next few quarters. For NOR I assume a recovery in margin over the next several quarters, while I expect 'other' products to stay flat (and unprofitable). My assumptions are specified by quarter on Page 8 of this report.

FYE August \$ in millions	3QF14		FY14		FY15	
	Previous	Update	Previous	Update	Previous	Update
Total Revenue	4,083	3,816	16,224	15,852	16,614	16,006
Revenue Growth	2.1%	-7.1%	78.8%	74.7%	2.4%	1.0%
Gross Margin	39.4%	33.4%	37.8%	34.5%	37.9%	36.2%
Operating Expenses	575	557	2,225	2,136	2,300	2,228
Non-Operating Items	(80)	(75)	(210)	(137)	(320)	(300)
Taxes	75	75	266	221	300	300
Diluted Shares (mil)	1,146.0	1,032.0	1,145.0	1,091.3	1,146.0	1,032.0
pro forma EPS	\$0.77	\$0.55	\$3.00	\$2.83	\$2.95	\$2.87

Reiterate Buy: I am maintaining my Buy recommendation and 12-month target price of \$40 based on under 15-times FY14 EPS consistent with the lower average of its two peer groups as noted on Page 9. Recall that I converted to pro forma EPS from GAAP EPS last quarter consistent with management reporting, which I consider to be appropriate given the number and magnitude of business factors either one-time or non-operating in nature. Also that I shifted to a price-earnings valuation ratio from price-sales three earnings reports ago as the company converted to an 'earnings leverage' story from a 'revenue recovery' story.

MU shares continue to trade well below the average price-earnings ratios of its peers and slightly below the average price-sales ratio of its peers, although it is now trading consistent with its own average historical trailing price-sales ratio and slightly above its historical trailing price-book ratio—all as noted in the tables on Page 9. I continue to believe upside potential significantly exceeds that of downside risk for MU at current price levels, and reiterate my Buy Recommendation.

<i>Diluted EPS</i>	3QF14	FY14	FY15	<i>Revenue, 20 estimates</i>	2QF14	FY14	FY15
Tokeneke-revised	\$0.55	\$2.83	\$2.87	Tokeneke-revised	3,816	15,852	16,006
Tokeneke-previous	\$0.77	\$3.00	\$2.95	Tokeneke-previous	4,083	16,224	16,614
Consensus-previous	\$0.70	\$2.96	\$2.98	Consensus-previous	3,970	16,030	16,620
High Estimate-previous	\$0.89	\$3.44	\$3.88	High Estimate-previous	4,380	17,170	20,260
Low Estimate-previous	\$0.30	\$2.20	\$1.40	Low Estimate-previous	3,240	14,140	13,190

—Dan K. Scovel
Semiconductor Analyst

Micron Technology

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Income Statement

www.micron.com

dollars in millions, except per share data, * restated
fiscal year ends August

	FY2013 act					FY2014 est					FY2015							
	FY09	FY10	FY12	Q1*	Q2*	Q3	Q4	FY13	Q1A	Q2A	Q3	Q4	FY14	Q1	Q2	Q3	Q4	FY15
Total Revenue	4,803	8,482	8,234	1,834	2,078	2,318	2,843	9,073	4,042	4,107	3,816	3,887	15,852	3,932	3,968	4,027	4,079	16,006
COGS	5,243	5,768	7,266	1,617	1,712	1,762	2,135	7,226	2,761	2,704	2,540	2,526	10,531	2,536	2,539	2,562	2,579	10,216
Gross Profit	(440)	2,714	968	217	366	556	708	1,847	1,281	1,403	1,276	1,361	5,321	1,396	1,429	1,465	1,500	5,790
SG&A	354	528	620	119	123	127	193	562	176	177	175	175	703	175	175	175	175	700
R&D	647	624	918	224	214	226	267	931	320	344	350	350	1,364	350	350	350	350	1,400
Restructuring	70	(10)	5	-	60	55	32	147	(3)	12	-	-	9	-	-	-	-	-
Other	165	(17)	39	(29)	(8)	(1)	9	(29)	237	1	32	32	302	32	32	32	32	128
Operating Expenses	1,236	1,125	1,582	314	389	407	501	1,611	730	534	557	557	2,378	557	557	557	557	2,228
Operating Income	(1,676)	1,589	(614)	(97)	(23)	149	207	236	551	869	719	804	2,943	839	872	908	943	3,562
Interest Income	(160)	(160)	(171)	(54)	(53)	(52)	(58)	(217)	(96)	(77)	(75)	(75)	(323)	(75)	(75)	(75)	(75)	(300)
Other Non-Opn Inc.	(16)	491	31	(59)	(159)	(45)	1,529	1,266	(80)	(122)	-	-	(202)	-	-	-	-	-
Tax Expense	1	(19)	(17)	13	(9)	(1)	5	8	80	63	75	75	293	75	75	75	75	300
Minority Interest	(29)	(89)	(295)	(52)	(60)	(10)	35	(87)	63	124	-	-	187	-	-	-	-	-
Net Income	(1,882)	1,850	(1,032)	(275)	(286)	43	1,708	1,190	358	731	569	654	2,312	689	722	758	793	2,962
EPS-basic	(\$2.35)	\$2.08	(\$1.04)	(\$0.27)	(\$0.28)	\$0.04	\$1.65	\$1.16	\$0.34	\$0.69	\$0.57	\$0.66	\$2.26	\$0.69	\$0.73	\$0.76	\$0.80	\$2.99
Shares-basic	800.7	887.5	991.2	1,013.7	1,016.0	1,024.0	1,033.2	1,021.7	1,046.0	1,060.0	992.0	992.0	1,022.5	992.0	992.0	992.0	992.0	992.0
EPS-diluted	(\$2.35)	\$1.85	(\$1.04)	(\$0.27)	(\$0.28)	\$0.04	\$1.51	\$1.13	\$0.30	\$0.61	\$0.55	\$0.63	\$2.07	\$0.67	\$0.70	\$0.73	\$0.77	\$2.87
Shares-diluted	800.7	1,050.7	991.2	1,013.7	1,016.0	1,046.6	1,129.4	1,056.3	1,196.0	1,201.0	1,032.0	1,032.0	1,115.3	1,032.0	1,032.0	1,032.0	1,032.0	1,032.0
EPS-pro forma	(\$2.20)	\$1.35			(\$0.06)	\$0.15	\$0.29	\$0.11	\$0.77	\$0.85	\$0.55	\$0.63	\$2.83	\$0.67	\$0.70	\$0.73	\$0.77	\$2.87
Margin Analysis																		
Gross Margin	-9.2%	32.0%	11.8%	11.8%	17.6%	24.0%	24.9%	20.4%	31.7%	34.2%	33.4%	35.0%	33.6%	35.5%	36.0%	36.4%	36.8%	36.2%
SG&A	7.4%	6.2%	7.5%	6.5%	5.9%	5.5%	6.8%	6.2%	4.4%	4.3%	4.6%	4.5%	4.4%	4.5%	4.4%	4.3%	4.3%	4.4%
R&D	13.5%	7.4%	11.1%	12.2%	10.3%	9.7%	9.4%	10.3%	7.9%	8.4%	9.2%	9.0%	8.6%	8.9%	8.8%	8.7%	8.6%	8.7%
Operating Expense	25.7%	13.3%	19.2%	17.1%	18.7%	17.6%	17.6%	17.8%	18.1%	13.0%	14.6%	14.3%	15.0%	14.2%	14.0%	13.8%	13.7%	13.9%
Operating Income	-34.9%	18.7%	-7.5%	-5.3%	-1.1%	6.4%	7.3%	2.6%	13.6%	21.2%	18.8%	20.7%	18.6%	21.3%	22.0%	22.6%	23.1%	22.3%
Interest/Other Income	-3.7%	3.9%	-1.7%	-6.2%	-10.2%	-4.2%	51.7%	11.6%	-4.4%	-4.8%	-2.0%	-1.9%	-3.3%	-1.9%	-1.9%	-1.9%	-1.8%	-1.9%
Tax Rate	-0.1%	-1.0%	2.3%	-6.2%	3.8%	-1.9%	0.3%	0.6%	21.3%	9.4%	11.6%	10.3%	12.1%	9.8%	9.4%	9.0%	8.6%	9.2%
Net Income	-39.2%	21.8%	-12.5%	-15.0%	-13.8%	1.9%	60.1%	13.1%	8.9%	17.8%	14.9%	16.8%	14.6%	17.5%	18.2%	18.8%	19.5%	18.5%
Qtr-to-Qtr Growth																		
Revenue				-6.6%	13.3%	11.5%	22.6%		42.2%	1.6%	-7.1%	1.8%		1.2%	0.9%	1.5%	1.3%	
Operating Expenses				-12.5%	23.9%	4.6%	23.1%		45.7%	-26.8%	4.3%	0.0%		0.0%	0.0%	0.0%	0.0%	
Operating Income				-30.7%	-76.3%	-748%	38.9%		166%	57.7%	-17.3%	11.8%		4.3%	4.0%	4.2%	3.9%	
Net Income				13.2%	4.0%	-115%	3872%		-79.0%	104%	-22.2%	14.9%		5.3%	4.8%	5.0%	4.6%	
EPS				13.1%	3.8%	-115%	3581%		-80.2%	103%	-9.4%	14.9%		5.3%	4.8%	5.0%	4.6%	
Year-to-Year Growth																		
Revenue	-17.8%	76.6%	-6.3%	-12.2%	3%	6.7%	44.8%	10.2%	120%	98%	64.6%	36.7%	74.7%	-2.7%	-3.4%	5.5%	5.0%	1.0%
Operating Expenses	-19.7%	-9.0%	57.7%	-18.9%	-6.0%	-3.6%	39.6%	1.8%	132%	37.3%	36.9%	11.2%	47.6%	-23.7%	4.3%	0.0%	0.0%	-6.3%
Operating Income	5.1%	-195%	-181%	-30.7%	-88.7%	-179%	-248%	-138%	-668%	-3878%	383%	288%	1147%	52.2%	0.3%	26.3%	17.4%	21.0%
Net Income	16.2%	-198%	-718%	47.1%	1.4%	-113%	-803%	-215%	-230%	-356%	1223%	-61.7%	94%	92%	-1.3%	33.3%	21.3%	28.1%
EPS	12.2%	-179%	-728%	42.4%	-1.9%	-113%	-731%	-208%	-210%	-316%	1242%	-58.1%	84%	123%	14.9%	33.3%	21.3%	38.5%

Micron Technology**Financial Summary**

dollars in millions

Fiscal year ends August

	FY10	FY11	FY12	FY13	2QF13	3QF13	4QF13	1QF14	2QF14
Assets									
Cash and equivalents	2,913	2,160	2,559	3,101	2,228	2,552	3,101	3,870	4,504
Net accounts receivable	<u>1,531</u>	<u>1,497</u>	<u>1,289</u>	<u>2,329</u>	<u>1,226</u>	<u>1,503</u>	<u>2,329</u>	<u>2,833</u>	<u>2,826</u>
Quick Assets	4,444	3,657	3,848	5,430	3,454	4,055	5,430	6,703	7,330
Inventory	1,770	2,080	1,812	2,649	1,721	1,732	2,649	2,459	2,462
Other	<u>119</u>	<u>95</u>	<u>98</u>	<u>832</u>	<u>189</u>	<u>99</u>	<u>832</u>	<u>207</u>	<u>199</u>
Current Assets	6,333	5,832	5,758	8,911	5,364	5,886	8,911	9,369	9,991
Property, plant and eqt, net	6,601	7,555	7,103	7,626	6,973	6,830	7,626	7,733	7,859
Goodwill and intangibles	323	414	371	386	346	331	386	368	368
Long-term mkt securities	335	535	374	499	546	347	499	538	552
Other	<u>1,101</u>	<u>416</u>	<u>722</u>	<u>1,696</u>	<u>683</u>	<u>661</u>	<u>1,696</u>	<u>1,786</u>	<u>1,845</u>
Total Assets	14,693	14,752	14,328	19,118	13,912	14,055	19,118	19,794	20,615
Liabilities and Shareholders Equity									
Current portion L-T debt	712	140	224	1,585	350	357	1,585	1,543	2,230
Accounts payable	1,509	1,830	1,641	2,115	1,498	1,590	2,115	2,630	2,679
Deferred Income	298	443	248	243	207	223	243	236	236
Other/Eqt Purchase Contract	<u>183</u>	<u>67</u>	<u>130</u>	<u>182</u>	<u>62</u>	<u>172</u>	<u>182</u>	<u>104</u>	<u>160</u>
Current Liabilities	2,702	2,480	2,243	4,125	2,117	2,342	4,125	4,513	5,305
Long-term debt	1,648	1,861	3,038	4,452	3,301	3,267	4,452	4,260	4,317
Other	<u>527</u>	<u>559</u>	<u>630</u>	<u>535</u>	<u>534</u>	<u>420</u>	<u>535</u>	<u>875</u>	<u>74</u>
Total Liabilities	4,877	4,900	5,911	9,112	5,952	6,029	9,112	9,648	9,696
Minority Interest	1,796	1,382	717	864	729	698	864	927	760
Common stock	8,446	8,610	8,920	9,291	9,115	9,179	9,291	9,025	9,284
Retained earnings	(536)	(370)	(1,402)	(212)	(1,963)	(1,920)	(212)	126	
Other	<u>110</u>	<u>230</u>	<u>182</u>	<u>63</u>	<u>79</u>	<u>69</u>	<u>63</u>	<u>68</u>	
Total MU Shareholders Equity	<u>8,020</u>	<u>8,470</u>	<u>7,700</u>	<u>9,142</u>	<u>7,231</u>	<u>7,328</u>	<u>9,142</u>	<u>9,219</u>	<u>9,284</u>
Total Liabilities and Equity	14,693	14,752	14,328	19,118	13,912	14,055	19,118	19,794	19,740
Sales and Income									
Revenue	8,482	8,788	8,234	9,073	2,078	2,318	2,843	4,042	4,107
COGS	5,768	7,030	7,266	7,226	1,712	1,762	2,135	2,761	2,704
Net income	1,850	167	(1,032)	1,190	(286)	43	1,708	358	731
Other									
Capital Expenditures	1,036	2,878	1,871	1,458	353	235	332	669	565
Depreciation and Amortization	2,005	2,162	2,222	1,926	485	384	572	541	561
Shares (weighted average diluted)	1,050.7	1,007.5	991.2	1,056.3	1,016.0	1,046.6	1,129.4	1,196.0	1,201.0
Employees (units)	25,900	26,100	27,400	30,900			30,900		
Cash Flow from Operations	3,096	2,484	2,114	1,811	234	624	717	1,507	1,390
Ratios									
Liquidity									
Quick Ratio	1.64	1.47	1.72	1.32	1.63	1.73	1.32	1.49	1.38
Current Ratio	2.34	2.35	2.57	2.16	2.53	2.51	2.16	2.08	1.88
Leverage									
Debt Ratio	0.33	0.33	0.41	0.48	0.43	0.43	0.48	0.49	0.47
Long-term Debt/Capital	0.15	0.16	0.26	0.26	0.28	0.26	0.26	0.26	0.22
Asset Management									
Fixed Asset Turnover	1.2	1.2	1.1	1.2	1.17	1.34	1.57	2.11	2.11
Total Asset Turnover	0.6	0.6	0.6	0.5	0.59	0.66	0.69	0.83	0.81
Receivables DSO	65	61	56	92	53	58	74	63	62
Inventory Days	110	107	90	132	90	88	112	80	82
Inventory Turnover	4.2	3.7	3.7	3.2	3.86	4.08	3.90	4.32	4.40
Annual Revenue/Employee									
Profitability									
Gross Margin	32.0%	20.0%	11.8%	20.4%	17.6%	24.0%	24.9%	31.7%	34.2%
Net Margin	21.8%	1.9%	-12.5%	13.1%	-13.8%	1.9%	60.1%	8.9%	17.8%
Return on Assets	14.1%	1.1%	-7.1%	7.1%	-8.2%	1.2%	41.2%	7.4%	14.5%
Return on Equity	28.5%	2.0%	-12.8%	14.1%	-15.6%	2.4%	83.0%	15.6%	31.6%
Per Share Data									
Book Value/Share	\$7.63	\$8.41	\$7.77	\$8.65	\$7.12	\$7.00	\$8.09	\$7.71	\$7.73
Tangible Book Value/Share	\$7.33	\$8.00	\$7.39	\$8.29	\$6.78	\$6.69	\$7.75	\$7.40	\$7.42
Cash/Share (gross)	\$3.09	\$2.67	\$2.96	\$3.41	\$2.73	\$2.77	\$3.19	\$3.69	\$4.21
Cash/Share (net)	\$0.85	\$0.69	(\$0.33)	(\$2.31)	(\$0.86)	(\$0.69)	(\$2.16)	(\$1.17)	(\$1.24)
Earnings/Share	\$1.76	\$0.17	(\$1.04)	\$1.13	(\$0.28)	\$0.04	\$1.51	\$0.30	\$0.61

Micron Technology

Sales Analysis

Product Type	FY09	FY10	FY11	FY12	FY13	FY2011				FY2012				FY2013				FY2014	
						1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
Revenue						1,009	950	883	778	778	729	875	796	720	891	1,098	1,652	2,794	2,793
DRAM	2,422	5,052	3,620	3,178	4,361	1,009	950	883	778	778	729	875	796	720	891	1,098	1,652	2,794	2,793
NAND	1,857	2,555	3,193	3,627	3,589	753	812	770	858	909	934	948	836	803	870	936	980	1,058	1,150
NOR	0	451	1,547	977	792	422	392	360	373	287	228	228	234	228	197	194	173	145	123
Other	524	424	428	452	331	68	103	126	131	116	118	121	97	83	120	90	38	45	41
Total	4,803	8,482	8,788	8,234	9,073	2,252	2,257	2,139	2,140	2,090	2,009	2,172	1,963	1,834	2,078	2,318	2,843	4,042	4,107
Revenue Percent						44.8%	42.1%	41.3%	36.4%	37.2%	36.3%	40.3%	40.6%	39.3%	42.9%	47.4%	58.1%	69.1%	68.0%
DRAM	50.4%	59.6%	41.2%	38.6%	48.1%	44.8%	42.1%	41.3%	36.4%	37.2%	36.3%	40.3%	40.6%	39.3%	42.9%	47.4%	58.1%	69.1%	68.0%
NAND	38.7%	30.1%	36.3%	44.0%	39.6%	33.4%	36.0%	36.0%	40.1%	43.5%	46.5%	43.6%	42.6%	43.8%	41.9%	40.4%	34.5%	26.2%	28.0%
NOR	0.0%	5.3%	17.6%	11.9%	8.7%	18.7%	17.4%	16.8%	17.4%	13.7%	11.3%	10.5%	11.9%	12.4%	9.5%	8.4%	6.1%	3.6%	3.0%
Other	10.9%	5.0%	4.9%	5.5%	3.6%	3.0%	4.6%	5.9%	6.1%	5.6%	5.9%	5.6%	4.9%	4.5%	5.8%	3.9%	1.3%	1.1%	1.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Growth						-18.5%	-5.8%	-7.1%	-11.9%	0.0%	-6.3%	20.0%	-9.0%	-9.5%	23.8%	23.2%	50.5%	69.1%	0.0%
DRAM	108.6%	-28.3%	-12.2%	37.2%	-18.5%	-5.8%	-7.1%	-11.9%	0.0%	-6.3%	20.0%	-9.0%	-9.5%	23.8%	23.2%	50.5%	69.1%	0.0%	
NAND	37.6%	25.0%	13.6%	-1.0%	-2.4%	7.8%	-5.2%	11.4%	5.9%	2.8%	1.5%	-11.8%	-3.9%	8.3%	7.6%	4.7%	8.0%	8.7%	
NOR	243.0%	-36.8%	-18.9%	13.7%	-7.1%	-8.2%	3.6%	-23.1%	-20.6%	0.0%	2.6%	-2.6%	-13.6%	-1.5%	-10.8%	-16.2%	-15.0%		
Other	-19.1%	0.9%	5.6%	-26.8%	-39.8%	51.5%	22.3%	4.0%	-11.5%	1.7%	2.5%	-19.8%	-14.4%	44.6%	-25.0%	-57.8%	18.4%	-8.7%	
Total	76.6%	3.6%	-6.3%	10.2%	-9.7%	0.2%	-5.2%	0.0%	-2.3%	-3.9%	8.1%	-9.6%	-6.6%	13.3%	11.5%	22.6%	42.2%	1.6%	
DRAM						5.0%	23.0%	-1.0%	6.0%	14.0%	21.0%	12.0%	-9.0%	2.0%	38.0%	6.0%	42.0%	69.0%	0.0%
bit sales growth		69.0%	19.0%	59.0%	55.0%	5.0%	23.0%	-1.0%	6.0%	14.0%	21.0%	12.0%	-9.0%	2.0%	38.0%	6.0%	42.0%	69.0%	0.0%
ASP change	-52.0%	28.0%	-39.0%	-45.0%	-11.0%	-23.0%	-23.0%	1.0%	-28.0%	-12.0%	-16.0%	7.0%	0.0%	-11.0%	-10.0%	16.0%	5.0%	0.0%	-1.0%
cost/bit change	-35.0%	-23.0%	-32.0%	-25.0%	-10.0%	-10.0%	-4.0%	-12.0%	-10.0%	-14.0%	-4.0%	-1.0%	-5.0%	-18.0%	-5.0%	4.0%	-11.0%	-8.0%	
NAND (trade)						20.0%	20.0%	5.0%	47.0%	21.0%	36.0%	68.0%	6.0%	-10.0%	13.0%	0.0%	13.0%	17.0%	35.0%
bit sales growth		44.0%	50.0%	164.0%	40.0%	20.0%	20.0%	5.0%	47.0%	21.0%	36.0%	68.0%	6.0%	-10.0%	13.0%	0.0%	13.0%	17.0%	35.0%
ASP change	-52.0%	26.0%	-12.0%	-55.0%	-18.0%	-20.0%	-12.0%	15.0%	-26.0%	-11.0%	-23.0%	-39.0%	-5.0%	8.0%	-1.0%	8.0%	-8.0%	-6.0%	-18.0%
cost/bit change	-31.0%	2.0%	-54.0%	-22.0%	-12.0%	-13.0%	12.0%	-28.0%	-16.0%	-18.0%	-29.0%	-5.0%	2.0%	-5.0%	1.0%	-10.0%	-7.0%	-12.0%	
Product Lines																			
DSG (DRAM)						903	841	774	637	656	608	750	677	600	756	730	1,239	1,785	1,888
Revenue	2,100	4,638	3,155	2,691	3,519	903	841	774	637	656	608	750	677	600	756	730	1,239	1,785	1,888
Operating Profit	(902)	1,269	457	(442)	143	225	51	109	72	(139)	(109)	(76)	(118)	-112	(46)	58	183	432	520
Operating Margin	-43.0%	27.4%	14.5%	-16.4%	4.1%	24.9%	6.1%	14.1%	11.3%	-21.2%	-17.9%	-10.1%	-17.4%	-18.7%	-6.1%	7.9%	14.8%	24.2%	27.5%
NSG (NAND)						502	552	505	685	683	734	760	676	617	713	924	781	806	902
Revenue	1,747	2,113	2,244	2,853	2,841	502	552	505	685	683	734	760	676	617	713	924	781	806	902
Operating Profit	(573)	240	102	198	201	57	72	68	(95)	94	97	(1)	8	13	64	118	66	95	77
Operating Margin	-32.8%	11.4%	4.5%	6.9%	7.1%	11.4%	13.0%	13.5%	-13.9%	13.8%	13.2%	-0.1%	1.2%	2.1%	9.0%	12.8%	8.5%	11.8%	8.5%
WSG (Wireless)						511	510	493	445	373	307	276	228	263	213	276	469	1,054	910
Revenue	247	778	1,959	1,184	1,221	511	510	493	445	373	307	276	228	263	213	276	469	1,054	910
Operating Profit	(63)	(23)	20	(370)	(263)	56	10	10	(56)	(58)	(129)	(103)	(80)	-64	(87)	(62)	(50)	176	185
Operating Margin	-25.5%	-3.0%	1.0%	-31.3%	-21.5%	11.0%	2.0%	2.0%	-12.6%	-15.5%	-42.0%	-37.3%	-35.1%	-24.3%	-40.8%	-22.5%	-10.7%	16.7%	20.3%
ESG (Embedded)						266	252	241	243	262	242	265	285	278	282	305	329	366	365
Revenue	178	521	1,002	1,054	1,194	266	252	241	243	262	242	265	285	278	282	305	329	366	365
Operating Profit	37	152	237	156	271	78	58	55	46	38	15	32	71	78	65	65	63	66	59
Operating Margin	20.8%	29.2%	23.7%	14.8%	22.7%	29.3%	23.0%	22.8%	18.9%	14.5%	6.2%	12.1%	24.9%	28.1%	23.0%	21.3%	19.1%	18.0%	16.2%
Other						70	102	126	130	116	118	121	97	76	114	83	25	31	42
Revenue	531	432	428	452	298	70	102	126	130	116	118	121	97	76	114	83	25	31	42
Operating Profit	(49)	(61)	(103)	(116)	(26)	(12)	(5)	(18)	(17)	(22)	(43)	(21)	(12)	(19)	(30)	(65)	15	15	
Operating Margin	-11.3%	-14.3%	-22.8%	-25.9%	-37.1%	-11.8%	-4.0%	-13.8%	-14.7%	-18.6%	-35.5%	-21.6%	-15.8%	-16.7%	-36.1%	-260.0%	48.4%	0.0%	
Total						2,252	2,257	2,139	2,140	2,090	2,009	2,172	1,963	1,834	2,078	2,318	2,843	4,042	4,107
Revenue	4,803	8,482	8,788	8,234	9,073	2,252	2,257	2,139	2,140	2,090	2,009	2,172	1,963	1,834	2,078	2,318	2,843	4,042	4,107
Operating Profit	(1,501)	1,589	755	(561)	236	390	179	237	(51)	(82)	(148)	(191)	(140)	(97)	(23)	149	197	784	841
End Market																			
Computer		45%	30%	25%	30%	30.0%	30.0%	30.0%					20.0%					35.0%	
Consumer			15%	20%	15%									20.0%				10.0%	
Mobile			25%	15%	15%	25.0%	25.0%	25.0%					15.0%				25.0%		
Networking/Storage			15%	10%	10%									10.0%				10.0%	
SSD			5%	10%	15%									10.0%				10.0%	
Territory																			
China	1,242	3,294	2,983	2,936	3,783														
US	928	1,403	1,363	1,262	1,512													13%	
Asia-Pacific	990	1,090	1,518	1,241	1,342														
Taiwan	447	711	744	1,022	980														
Europe	470	777	924	827	820														
Malaysia	542	817	737	546	193														
ROW	184	390	519	400	443														
Total	4,803	8,482	8,788	8,234	9,073														
Other																			
Customer																			
Intel (NAND)	20%	9%	10%	12%	10%	209	202	218	250	261	255	300	168	148	160	258			
HP (DRAM)		13%	9%	8%	10%														
Apple																		13.0%	
Image Sensors																			
Aptina Revenue	70	372	349	372	182	59	82	104	104	94	99	99	80	61	48	61	12		
Aptina COGS	60	385	358	395	219	67	90	102	99	94	99	99	103	81	57	70	11		
DRAM																			
DDR-3 DRAM Rev %		37%	51%			25.0%	35.0%	35.0%	37.0%	43%	45%	48%	47%	49%	55%				
DDR-2 DRAM Rev %		40%	25%																

Micron Technology

Financial Model

dollars in millions
fiscal year ends August

	FY2012 act				FY2013 act				FY2014 est				FY2015			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1QA	2QA	3Q	4Q	1Q	2Q	3Q	4Q
DRAM																
Bits Sold	14.0%	21.0%	12.0%	-9.0%	2.0%	38.4%	6.0%	44.0%	69.0%	0.0%	-2.0%	4.0%	4.0%	4.0%	4.0%	4.0%
ASP change	-12.0%	-21.5%	7.0%	0.0%	-11.9%	-9.7%	15.0%	6.0%	-0.8%	-1.0%	-3.0%	-3.0%	-4.0%	-4.0%	-4.0%	-4.0%
Revenue	778	729	875	796	715.3	893.9	1,089.7	1,663.4	2,788.6	2,760.7	2,624.3	2,647.4	2,643.2	2,638.9	2,634.7	2,630.5
Royalties (included)																
Revenue growth					-10.1%	25.0%	21.9%	52.6%								
Cost/bit change	-10.0%	-14.0%	-4.0%	-1.0%	-5.0%	-20.5%	-5.0%	4.0%	-11.0%	-6.0%	-3.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%
Gross Margin	-1.3%	-11.6%	-1.7%	-0.7%	-8.1%	0.0%	20.7%	22.8%	35.2%	41.9%	41.8%	44.4%	45.6%	46.7%	47.9%	49.1%
Gross Profit																
COGS	787.8	813.9	889.6	801.5	773.5	894.3	864.1	1,283.7	1,805.7	1,603.2	1,527.3	1,471.3	1,438.4	1,405.4	1,372.2	1,338.9
NAND																
Bits Sold	21.0%	33.0%	66.0%	-7.0%	-10.6%	9.8%	0.0%	20.0%	15.0%	35.0%	-8.0%	10.0%	10.0%	10.0%	10.0%	10.0%
ASP change	-11.0%	-23.0%	-39.0%	-5.0%	8.0%	-1.5%	6.2%	-11.0%	-7.0%	-18.0%	-3.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%
Revenue	909.0	934.0	948.0	836.0	807.2	873.0	927.1	990.2	1,059.0	1,172.3	1,046.1	1,093.2	1,142.4	1,193.8	1,247.5	1,303.7
Revenue growth					-3.4%	8.2%	6.2%									
Cost/bit change	-16.0%	-18.0%	-29.0%	-5.0%	2.0%	-10.0%	5.4%	-10.0%	-7.0%	-12.0%	0.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%
Gross Margin	26.0%	14.4%	-9.9%	17.0%	23.8%	34.2%	34.8%	32.0%	31.3%	20.6%	17.0%	16.7%	16.4%	16.1%	15.8%	15.5%
gm est	26.0%	14.4%	-9.9%	17.0%												
Gross Profit	235.9	134.9	(94.3)	142.1	614.8	574.7	604.5	673.6	727.3	930.7	868.4	910.7	955.0	1,001.5	1,050.2	1,101.2
COGS	673.1	799.1	1,042.3	693.9												
DRAM, NAND Subtotal																
Revenue	1,687.0	1,663.0	1,823.0	1,632.0	1,522.5	1,766.9	2,016.8	2,653.5	3,847.5	3,933.0	3,670.5	3,740.6	3,785.6	3,832.8	3,882.3	3,934.2
Gross Profit																
Gross Margin																
Adjusted Gross Profit																
Adjusted Gross Margin																
COGS	1460.9	1613.0	1931.9	1495.4	1388.3	1469.0	1468.6	1957.3	2533.0	2533.9	2395.8	2382.1	2393.5	2406.9	2422.4	2440.1
NOR																
Revenue	287	228	228	234	220	187.0	185.0	171.0	145.0	123.0	105.0	105.0	105.0	94.5	104.0	104.0
Gross Margin	35.0%	35.0%	35.0%	35.0%	37.0%	37.0%	20.0%	9.0%	10.0%	10.0%	11.0%	12.0%	13.0%	14.0%	15.0%	16.0%
COGS	186.6	148.2	148.2	152.1	138.7	117.8	148.0	155.6	130.5	110.7	93.5	92.4	91.4	81.3	88.4	87.3
Other																
Revenue	116	118	121	97	91.7	125.0	116.0	28.0	45.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0
Gross Margin	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-25.0%	-25.0%	-25.0%	-25.0%	-25.0%	-25.0%	-25.0%	-25.0%	-25.0%	-25.0%
COGS	116.0	118.0	121.0	97.0	91.7	125.0	145.0	35.0	56.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3
TOTAL																
Revenue	2,090.0	2,009.0	2,172.0	1,963.0	1,834.3	2,078.9	2,317.8	2,852.5	4,037.5	4,097.0	3,816.5	3,886.6	3,931.6	3,968.3	4,027.2	4,079.1
Royalty																
COGS	1,763.5	1,879.2	2,201.1	1,744.5	1,618.6	1,711.8	1,761.6	2,147.9	2,719.7	2,695.9	2,540.5	2,525.7	2,536.1	2,539.4	2,562.0	2,578.7
Gross Profit	326.5	129.8	(29.1)	218.5	215.6	367.2	556.2	704.6	1,317.8	1,401.1	1,276.0	1,360.9	1,395.5	1,428.9	1,465.2	1,500.5
Gross Margin	15.6%	6.5%	-1.3%	11.1%	11.8%	17.7%	24.0%	24.7%	32.6%	34.2%	33.4%	35.0%	35.5%	36.0%	36.4%	36.8%
Reported																
Revenue	2,090	2,009	2,172	1,963	1,834	2,078	2,318	2,843	4,042	4,107						
COGS	1,785	1,799	1,938	1,744	1,617	1,712	1,762	2,135	2,761	2,704						
Gross Margin	14.6%	10.5%	10.8%	11.2%	11.8%	17.6%	24.0%	24.9%	31.7%	34.2%						
Adjusted COGS																
Adjusted Gross Margin																

Micron Technology

Valuation

Relative Valuation

Company	Ticker	Price 4/3/2014	52-Week		CY EPS				CY P/E				Diluted Shares(mil)	CAP (\$ mil)	Price-Sales			FY Ends	
			Low	High	2011	2012	2013	2014	2011	2012	2013	2014			TTM	Cur FY	Nxt FY		
Micron Technology *	MU	24.00	9.04	25.68	-1.12	1.15	2.70	2.97	NM	20.9	8.9	8.1	1,201	28,824	2.2	1.8	1.8	Aug	
Advanced Micro Devices	AMD	4.00	2.26	4.65	-0.16	-0.12	0.12	0.15	NM	NM	33.3	26.7	766	3,064	0.6	0.5	0.5	Dec	
Freescale	FSL	24.99	12.35	26.00	-0.08	0.45	1.40	1.92	NM	55.5	17.9	13.0	262	6,547	1.6	1.4	1.4	Dec	
Intel *	INTC	26.41	20.75	27.12	2.13	1.88	1.79	2.09	12.4	14.0	14.8	12.6	5,103	134,770	2.6	2.6	2.4	Dec	
STMicroelectronics	STM	9.24	7.11	10.05	-0.33	-0.23	0.25	0.60	NM	NM	37.0	15.4	891	8,229	1.0	1.0	1.0	Dec-ADR	
Texas Instruments*	TXN	47.69	33.56	49.77	1.50	1.79	2.17	2.57	31.8	26.6	22.0	18.6	1,102	52,554	4.3	4.1	3.8	Dec	
Average									22.1	32.1	25.0	17.3				2.0	1.9	1.8	

Company	Ticker	Price 4/3/2014	52-Week		CY EPS				CY P/E				Diluted Shares(mil)	CAP (\$ mil)	Price-Sales			FY Ends	
			Low	High	2011	2012	2013	2014	2011	2012	2013	2014			TTM	Cur FY	Nxt FY		
Micron Technology *	MU	24.00	9.04	25.68	-1.12	1.15	2.70	2.97	NM	20.9	8.9	8.1	1,201	28,824	2.2	1.8	1.8	Aug	
Atmel	ATML	8.71	5.89	8.91	0.33	0.28	0.46	0.63	26.4	31.1	18.9	13.8	438	3,811	2.7	2.6	2.4	Dec	
Spanion	CODE	18.19	9.70	18.38	0.99	0.76	1.37	1.88	18.4	23.9	13.3	9.7	59	1,071	1.1	0.8	0.8	Dec	
Cypress Semiconductor	CY	10.44	8.61	13.23	0.55	0.40	0.51	0.67	19.0	26.1	20.5	15.6	166	1,731	2.4	2.3	2.2	Dec	
GSI Technology	GSIT	6.98	5.53	7.40	0.13	0.01	0.02	0.08	53.7	NM	NM	NM	28	193	3.1	3.3	3.2	Mar	
Integrated Silicon Solutions	ISSI	15.12	8.31	15.95	0.85	0.82	0.98	1.09	17.8	18.4	15.4	13.9	31	464	1.5	1.4	1.3	Sep	
Netlist	NLST	2.02	0.51	2.41	-0.49	-0.34	-0.18	-0.07	NM	NM	NM	NM	32	64	2.8	2.0	1.3	Dec	
SanDisk	SNDK	82.22	50.68	83.52	2.37	5.36	5.77	6.07	34.7	15.3	14.2	13.5	233	19,141	3.1	2.9	2.7	Dec	
Average									28.3	23.0	16.5	13.3				2.4	2.2	2.0	

* Tokeneke estimate
Source: consensus as of 4/3/14

Historical Valuation

Company	Ticker	Price 4/3/2014	Trailing 12-month					
			Price/Earnings		Price/Sales		Price/Book	
			Current	Historical*	Current	Historical*	Current	Historical*
Micron Technology	MU	24.00	11.7		2.2		3.1	
			Average	47.0	Average	2.3	Average	2.3
			High	568.0	High	9.0	High	9.8
			Low	4.3	Low	0.3	Low	0.6

* weekly since 1990

The Company

Tokeneke Research is an independent research firm specializing in semiconductor industry business issues, providing fundamental research focused on US equities across all market capitalizations within the sector to investors. The company was founded in 2005 and is based in Connecticut.

The Offering

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My Background

I have an electrical engineering background, nearly 12 years of semiconductor industry experience, and was on Wall Street for nearly eight years where I was selected as the Best On The Street semiconductor analyst for 2002 by The Wall Street Journal, and third-rated Best of the Best across all sectors.

I obtained my undergraduate BS degree in electrical engineering from the University of Washington, and my MBA from Santa Clara University. My industry experience consists of nearly 12 years in various technical sales and marketing roles at four different semiconductor firms located in Silicon Valley beginning with Advanced Micro Devices in 1984, followed by two small start-up companies, and ending at Cirrus Logic where I supported the firm's Japanese market development. I joined Fahnstock & Co. as a senior semiconductor analyst in 1996 and was recruited by Needham & Co. in April 2000.

My formal coverage list as a sell-side analyst included the following equities: AMD, ALSC, ALTR, ARTI, ATML, CUBE, CY, ESST, GNSS, INTC, ISSI, LSI, MOSY, MU, OIIM, OVTI, RMTR, SIII, SMSC, STEC, SVTG, TDFX, TSRA, TXN, and ZRAN.

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