

Elpida Delivers DRAM Upside Longer-term NAND Growth: Raising Estimates, Reiterate Buy

Diluted Shares(mil):	1,196.0	Closing Price 1/7/14	FYE August	FY13 act	FY14	FY15
Market Cap(\$mil):	\$25,989	\$21.73	Revenue(\$mil)	\$9,073	\$16,224	\$16,614
Avg Volume(,000):	43,337		pro forma EPS	\$0.11	\$3.00	\$2.95
Net Cash/Share:	(\$1.17)	Recommendation/Target	Price/Sales	2.9	1.6	1.6
Tangible Book/Share	\$7.39	Buy/\$40 from \$30	Price/EPS	197.5	7.2	7.4

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

Summary: MU significantly exceeded both revenue and adjusted EPS expectations for its November-ended F1Q primarily due to DRAM product strength associated with the first full quarter of results following the acquisition of Elpida last August. Revenue of \$4.04B grew by +42% and GAAP EPS of \$0.30 included charges that otherwise would have yielded \$0.77. I continue to believe MU is extremely well positioned to benefit from a favorable market environment for DRAM and NAND suppliers. I am raising my estimates as well as my 12-month target price to \$40 from \$30 based on less than 15-times FY14 earnings, and reiterate my Buy recommendation on the shares.

FIQ Review: F1Q14 revenue of \$4.04B exceeded the high-end of published expectations and grew by +42% sequentially on DRAM growth of +69% associated with the first full quarter of Elpida's operations. The acquisition closed at the end of July and only one month of results were included in the prior quarter. NAND sales grew by +7% as higher output was partially offset by lower average selling prices. Gross margin expanded by 680 basis points to 31.7% due to a richer mix of higher-margin DRAM wafer sales from Elpida. Reported EPS of \$0.30 included a long series of charges that otherwise would have yielded \$0.77 per share, as noted below—and also exceeded the high-end of the range of published expectations. Pro forma gross margin was 34.4%.

FYE August	1QF14			Guidance	Consensus	Range
	Estimate	Actual	EPS Impact			
DRAM Bits Shipped	45.0%	69.0%		+ mid 40%		
DRAM ASP change	5.0%	0.0%				
DRAM Cost/bit change	-2.0%	-11.0%		- low 1-digit%		
NAND Bits Shipped	13.0%	17.0%		+ lo/mid teens%		
NAND ASP Change	-8.0%	-6.0%				
NAND Cost/bit change	-8.0%	-7.0%		- hi 1-digit%		
Revenue (\$ mil)	3,715	4,042	\$0.09		3,720	3,320-3,890
Revenue Growth	30.7%	42.2%			30.8%	+16.8%+36.8%
Gross Margin	30.3%	31.7%	\$0.05			
Opn Expenses (\$ mil)	560	496	\$0.04	525-545		
Restructuring/other	25	234	(\$0.19)	20-25		
Interest Income	(80)	(96)	(\$0.01)	(75-85)		
Minority Interest/non-opn	25	(17)	(\$0.03)			
Taxes (\$ mil)	75	80	(\$0.01)	70-80		
Diluted Shares (mil)	1,133.2	1,196.0	(\$0.02)			
Diluted EPS	\$0.38	\$0.30	(\$0.08)		\$0.44	\$0.18-\$0.72
pro forma EPS		\$0.77				

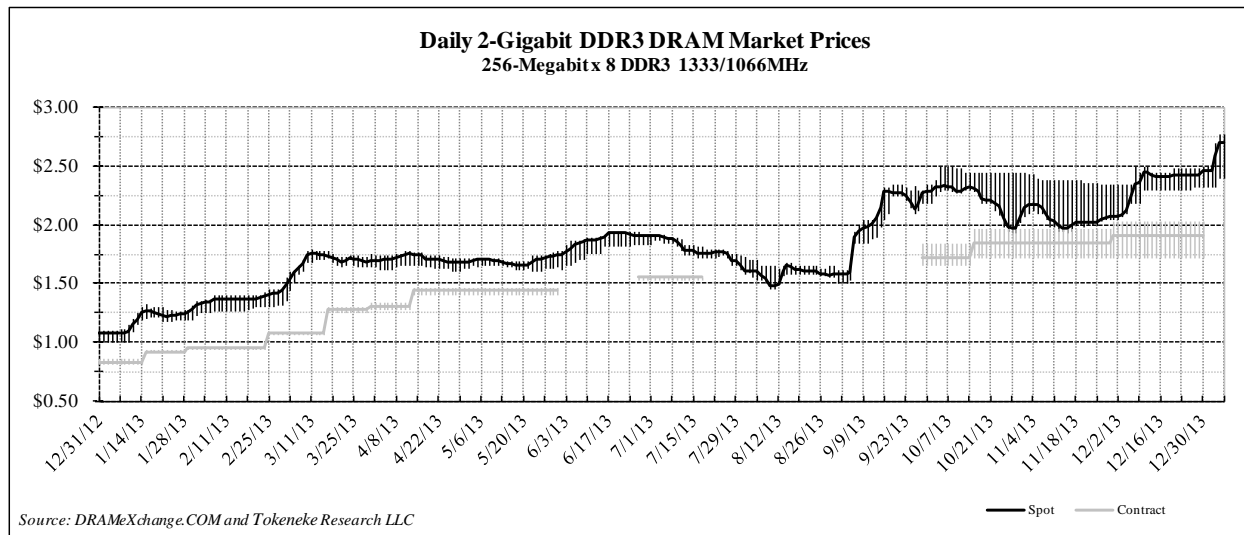
Cash from operations totaled \$1,507M which included a \$250M customer deposit for DRAMs; capital expenditures were \$669M; depreciation and amortization at \$541M; and cash increased by \$808M to \$4.4B (including \$538M in long-term marketable investments). Free cash flow totaled \$838M.

Pro Forma Adjustments: Were extensive and included the following: \$111M in COGS to step-up Elpida inventory; \$3M in restructuring adjustment gains; \$233M charge for the recent patent and anti-trust settlement with Rambus that was expensed entirely in the period (present value of \$280M over seven years); \$92M of losses associated with convertible note transactions; \$50M amortization of debt discounts; \$6M loss on currency; \$39M tax adjustment associated with these items; and \$73M of non-cash taxes related to Elpida. In addition, the diluted share count was reduced by 54M due to the anti-dilutive effects of a capped-call transaction. Adjusting for these items yields a net pro forma EPS of \$0.77, rather than the reported GAAP EPS of \$0.30. Got all that?

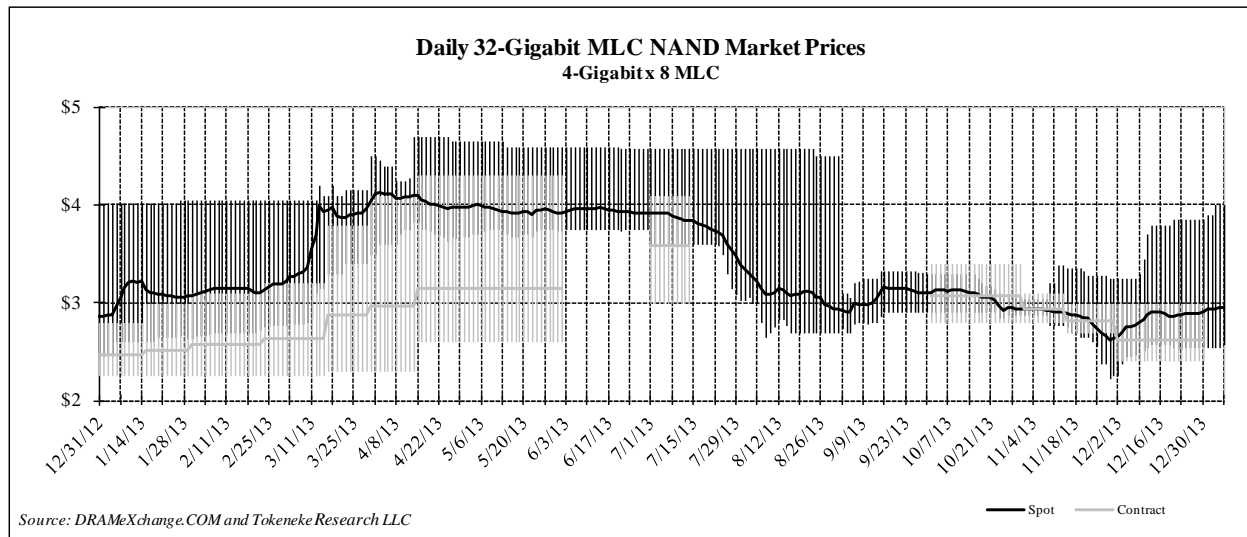
Dynamic RAMs: DRAM sales grew by +69% to \$2.8B or 69% of total sales on +69% bit growth and flat ASPs primarily due to a full-quarter's results of Elpida, while gross margin improved by seven percentage points to the mid- to low-30% range compliments of a cost reduction of -11% associated with a richer mix of higher-margin wafer-based sales. Excluding \$111M of inventory step-up charges from Elpida in COGS, gross margins would have added another seven percentage points. DRAM revenue split approximates 60% to DSG for computing, networking, server, consumer and graphics; 30% to WSG for mobile; and 10% to ESG for automotive, industrial, military and medical markets (AIMM). DRAM split per gigabyte approximated 40% to PCs, 35% mobile, 15% server, and 10% to networking and AIMM.

The company continues to ramp DRAMs to 25nm technology at both Elpida and Rexchip, will introduce 20nm 2HCY14, and believes it is the first supplier of low-power DDR4 devices. It is shifting to a richer mix of wafer-based sales that offer higher margin, albeit at lower ASP and cost. Micron's DRAM facilities now include the former Elpida operations in Japan focused on mobile and graphics markets, and the (35% interest in) Inotera and (89% interest in) Rexchip/MMT operations in Taiwan focused on computer, server and networking markets. Assembly and test is now a hybrid mix of internal and subcontracted operations depending on served markets. The company is converting its former DRAM operations at Fab 7 in Singapore to NAND production. DRAM industry supply is expected to grow in the mid-20% range this year, although MU will only grow in the mid-teens.

Micron completed its acquisition of bankrupt DRAM competitor Elpida at the end of July, and F1Q was the first full quarter reflecting Elpida operations (only one month was accounted for in the prior fiscal quarter that ended in August). Micron 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). 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 (that Micron was underexposed to) 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 an array of financial complexities that include: a large currency hedge; a big one-time gain in the prior quarter; accounting for Elpida deferred tax assets; step-up charges for acquired inventory; non-cash exchange transactions restructuring three previous notes (2027, 2031A, and 2031B) into a single convertible (the 2043G) resulting in a loss on the difference between carrying and fair market value as well as a make-whole interest charge; and charges for derivative settlement obligations associated with 2027 and 2031A note holders NOT participating in the note exchange transaction.



NAND Flash: NAND product sales grew by +7% to \$1.05B or 26% of total revenue as trade bit shipments grew by +17%, ASPs declined by -6%, and costs decreased by -7%. Sales of—and into—SSD applications accounted for 48% of trade NAND revenue, while consumer accounted for 30%, mobile 12% and AIMM the balance. NAND gross margins improved slightly into the low- to mid-30% range. Market prices were flat to slightly down and the decline in ASPs reflected a richer mix of higher-density products, although ASPs are expected to benefit in the future from a richer mix of sales to embedded systems, including SSDs. MU shipped its first 20nm-based enterprise SSD to a large OEM for qualification last quarter and is adding other OEMs and channel customers this quarter. The company is seeing increased penetration in the mobile market, as well as displacing NOR in certain industrial-oriented embedded applications. It is on track to ramp a 16nm planar device this year and 3D NAND production samples by April, although 3D NAND volume probably won't occur until 2015. 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 in Singapore. This transition breached the halfway mark last quarter and customer qualifications are underway, although it will probably take a couple of quarters for customers to ramp production before MU margins benefit fully from the transition. The transition is expected to be complete by mid-year.



NOR Futures: NOR flash declined by -7% and accounted 4% of total sales, or \$160M. 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: F2Q DRAM bit production is expected to be flat, ASPs QTD have been flat, and costs per bit are expected to decline in the high-single-digit percentage range. NAND bit production is expected to grow in the high-teen percentage, ASPs QTD are down in the high-teens, and cost per bit is expected to drop in the mid-teens percentage range. NOR is expected to range between \$100-110M. SG&A is expected at \$185-195M, R&D at \$355-365M, interest expense of \$75-85M, taxes at \$70-80M, and stock compensation at \$25M. Pro forma adjustments are expected to include: the last Elpida step-up inventory charge in COGS for \$30M; amortization of debt discounts of \$50M; a loss of \$70M from the repayment of the 2027 and 2031A convertible notes associated with refinancing; and a \$15-20M tax adjustment. Non-cash taxes associated with the Elpida acquisition are expected at \$65-75M and the diluted share count will drop by 43M if the average share price breaches \$22 thanks to the capped call financial transaction. FY14 capital expenditures are expected at \$2.6-3.2B with depreciation and amortization at \$2.4B.

Raising Estimates: 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	2QF14		FY14		FY15	
	Previous	Update	Previous	Update	Previous	Update
Total Revenue	3,850	3,999	15,340	16,224	15,823	16,614
Revenue Growth	3.6%	-1.1%	69.1%	78.8%	3.1%	2.4%
Gross Margin	34.9%	38.4%	33.5%	37.8%	33.2%	37.9%
Operating Expenses	560	575	2,240	2,225	2,240	2,300
Non-Operating Items	(55)	(80)	(220)	(210)	(220)	(320)
Taxes	75	75	300	266	300	300
Diluted Shares (mil)	1,133.2	1,146.0	1,133.2	1,145.0	1,133.2	1,146.0
pro forma EPS	\$0.58	\$0.70	\$2.09	\$3.00	\$2.20	\$2.95

Reiterate Buy: I am maintaining my Buy recommendation and raising my 12-month target price to \$40 from \$30 based on under 15-times FY14 EPS consistent with the lower average of its two peer groups as noted on Page 9. I am converting to pro forma EPS from GAAP EPS with this report consistent with management reporting, which I consider to be relevant and appropriate given the number and magnitude of business factors either one-time or non-operating in nature. Recall that I shifted to a price-earnings valuation ratio from price-sales two 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 somewhat 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 the risk-reward opportunity for MU remains favorable at current price levels as upside potential continues to significantly exceed downside risk.

Diluted EPS	2QF14	FY14	FY15
Tokeneke-revised	\$0.70	\$3.00	\$2.95
Tokeneke-previous	\$0.58	\$2.09	\$2.20
Consensus-previous	\$0.53	\$2.08	\$2.29
High Estimate-previous	\$0.80	\$2.97	\$3.73
Low Estimate-previous	\$0.25	\$1.07	\$1.03

Revenue, 31 estimates	2QF14	FY14	FY15
Tokeneke-revised	3,999	16,224	16,614
Tokeneke-previous	3,850	15,340	15,823
Consensus-previous	3,740	15,150	15,850
High Estimate-previous	4,560	17,490	19,840
Low Estimate-previous	2,910	12,710	12,890

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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	Q2	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	3,999	4,083	4,100	16,224	4,121	4,128	4,168	4,197	16,614
COGS	5,243	5,768	7,266	1,617	1,712	1,762	2,135	7,226	2,761	2,463	2,473	2,501	10,197	2,531	2,550	2,599	2,638	10,317
Gross Profit	(440)	2,714	968	217	366	556	708	1,847	1,281	1,536	1,610	1,600	6,027	1,590	1,578	1,570	1,559	6,297
SG&A	354	528	620	119	123	127	193	562	176	190	190	190	746	190	190	190	190	760
R&D	647	624	918	224	214	226	267	931	320	360	360	360	1,400	360	360	360	360	1,440
Restructuring	70	(10)	5	-	60	55	32	147	(3)	-	-	-	(3)	-	-	-	-	-
Other	165	(17)	39	(29)	(8)	(1)	9	(29)	237	25	25	25	312	25	25	25	25	100
Operating Expenses	1,236	1,125	1,582	314	389	407	501	1,611	730	575	575	575	2,455	575	575	575	575	2,300
Operating Income	(1,676)	1,589	(614)	(97)	(23)	149	207	236	551	961	1,035	1,025	3,572	1,015	1,003	995	984	3,997
Interest Income	(160)	(160)	(171)	(54)	(53)	(52)	(58)	(217)	(96)	(80)	(80)	(80)	(336)	(80)	(80)	(80)	(80)	(320)
Other Non-Opn Inc.	(16)	491	31	(59)	(159)	(45)	1,529	1,266	(80)	-	-	-	(80)	-	-	-	-	-
Tax Expense	1	(19)	(17)	13	(9)	(1)	5	8	80	75	75	75	305	75	75	75	75	300
Minority Interest	(29)	(89)	(295)	(52)	(60)	(10)	35	(87)	63	-	-	-	63	-	-	-	-	-
Net Income	(1,882)	1,850	(1,032)	(275)	(286)	43	1,708	1,190	358	806	880	870	2,914	860	848	840	829	3,377
EPS-basic	(\$2.35)	\$2.08	(\$1.04)	(\$0.27)	(\$0.28)	\$0.04	\$1.65	\$1.16	\$0.34	\$0.77	\$0.84	\$0.83	\$2.79	\$0.82	\$0.81	\$0.80	\$0.79	\$3.23
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	1,046.0	1,046.0	1,046.0	1,046.0	1,046.0	1,046.0	1,046.0	1,046.0	1,046.0
EPS-diluted	(\$2.35)	\$1.85	(\$1.04)	(\$0.27)	(\$0.28)	\$0.04	\$1.51	\$1.13	\$0.30	\$0.70	\$0.77	\$0.76	\$2.52	\$0.75	\$0.74	\$0.73	\$0.72	\$2.95
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	1,146.0	1,146.0	1,146.0	1,158.5	1,146.0	1,146.0	1,146.0	1,146.0	1,146.0
EPS-pro forma	(\$2.20)	\$1.35			(\$0.06)	\$0.15	\$0.29	\$0.11	\$0.77	\$0.70	\$0.77	\$0.76	\$3.00					\$2.95
Margin Analysis																		
Gross Margin	-9.2%	32.0%	11.8%	11.8%	17.6%	24.0%	24.9%	20.4%	31.7%	38.4%	39.4%	39.0%	37.1%	38.6%	38.2%	37.7%	37.1%	37.9%
SG&A	7.4%	6.2%	7.5%	6.5%	5.9%	5.5%	6.8%	6.2%	4.4%	4.8%	4.7%	4.6%	4.6%	4.6%	4.6%	4.6%	4.5%	4.6%
R&D	13.5%	7.4%	11.1%	12.2%	10.3%	9.7%	9.4%	10.3%	7.9%	9.0%	8.8%	8.8%	8.6%	8.7%	8.7%	8.6%	8.6%	8.7%
Operating Expense	25.7%	13.3%	19.2%	17.1%	18.7%	17.6%	17.6%	17.8%	18.1%	14.4%	14.1%	14.0%	15.1%	14.0%	13.9%	13.8%	13.7%	13.8%
Operating Income	-34.9%	18.7%	-7.5%	-5.3%	-1.1%	6.4%	7.3%	2.6%	13.6%	24.0%	25.4%	25.0%	22.0%	24.6%	24.3%	23.9%	23.4%	24.1%
Interest/Other Income	-3.7%	3.9%	-1.7%	-6.2%	-10.2%	-4.2%	51.7%	11.6%	-4.4%	-2.0%	-2.0%	-2.0%	-2.6%	-1.9%	-1.9%	-1.9%	-1.9%	-1.9%
Tax Rate	-0.1%	-1.0%	2.3%	-6.2%	3.8%	-1.9%	0.3%	0.6%	21.3%	8.5%	7.9%	7.9%	9.7%	8.0%	8.1%	8.2%	8.3%	8.2%
Net Income	-39.2%	21.8%	-12.5%	-15.0%	-13.8%	1.9%	60.1%	13.1%	8.9%	20.2%	21.6%	21.2%	18.0%	20.9%	20.5%	20.1%	19.8%	20.3%
Qtr-to-Qtr Growth																		
Revenue				-6.6%	13.3%	11.5%	22.6%		42.2%	-1.1%	2.1%	0.4%		0.5%	0.2%	1.0%	0.7%	
Operating Expenses				-12.5%	23.9%	4.6%	23.1%		45.7%	-21.2%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	
Operating Income				-30.7%	-76.3%	-748%	38.9%		166%	74.5%	7.7%	-1.0%		-0.9%	-1.2%	-0.8%	-1.0%	
Net Income				13.2%	4.0%	-115%	3872%		-79.0%	125%	9.1%	-1.2%		-1.1%	-1.4%	-1.0%	-1.2%	
EPS				13.1%	3.8%	-115%	3581%		-80.2%	135%	9.1%	-1.2%		-1.1%	-1.4%	-1.0%	-1.2%	
Year-to-Year Growth																		
Revenue	-17.8%	76.6%	-6.3%	-12.2%	3%	6.7%	44.8%	10.2%	120%	92%	76.1%	44.2%	78.8%	1.9%	3.2%	2.1%	2.4%	2.4%
Operating Expenses	-19.7%	-9.0%	57.7%	-18.9%	-6.0%	-3.6%	39.6%	1.8%	132%	47.8%	41.3%	14.8%	52.4%	-21.2%	0.0%	0.0%	0.0%	-6.3%
Operating Income	5.1%	-195%	-181%	18.3%	-88.7%	-179%	-248%	-138%	-668%	-4280%	595%	395%	1414%	84.2%	4.3%	-3.9%	-3.9%	11.9%
Net Income	16.2%	-198%	-718%	47.1%	1.4%	-113%	-803%	-215%	-230%	-382%	1947%	-49.1%	145%	140%	5.2%	-4.6%	-4.7%	15.9%
EPS	12.2%	-179%	-728%	42.4%	-1.9%	-113%	-731%	-208%	-210%	-350%	1769%	-49.8%	123%	151%	5.2%	-4.6%	-4.7%	17.1%

Micron Technology**Financial Summary**

dollars in millions

Fiscal year ends August

	FY10	FY11	FY12	FY13	1QF13	2QF13	3QF13	4QF13	1QF14
Assets									
Cash and equivalents	2,913	2,160	2,559	3,101	2,271	2,228	2,552	3,101	3,870
Net accounts receivable	<u>1,531</u>	<u>1,497</u>	<u>1,289</u>	<u>2,329</u>	<u>1,139</u>	<u>1,226</u>	<u>1,503</u>	<u>2,329</u>	<u>2,833</u>
Quick Assets	4,444	3,657	3,848	5,430	3,410	3,454	4,055	5,430	6,703
Inventory	1,770	2,080	1,812	2,649	1,831	1,721	1,732	2,649	2,459
Other	<u>119</u>	<u>95</u>	<u>98</u>	<u>832</u>	<u>74</u>	<u>189</u>	<u>99</u>	<u>832</u>	<u>207</u>
Current Assets	6,333	5,832	5,758	8,911	5,315	5,364	5,886	8,911	9,369
Property, plant and eqt, net	6,601	7,555	7,103	7,626	7,199	6,973	6,830	7,626	7,733
Goodwill and intangibles	323	414	371	386	359	346	331	386	386
Long-term mkt securities	335	535	374	499	527	546	347	499	538
Other	<u>1,101</u>	<u>416</u>	<u>722</u>	<u>1,696</u>	<u>667</u>	<u>683</u>	<u>661</u>	<u>1,696</u>	<u>1,768</u>
Total Assets	14,693	14,752	14,328	19,118	14,067	13,912	14,055	19,118	19,794
Liabilities and Shareholders Equity									
Current portion L-T debt	712	140	224	1,585	266	350	357	1,585	1,543
Accounts payable	1,509	1,830	1,641	2,115	1,584	1,498	1,590	2,115	2,630
Deferred Income	298	443	248	243	227	207	223	243	243
Other/Eqt Purchase Contract	<u>183</u>	<u>67</u>	<u>130</u>	<u>182</u>	<u>61</u>	<u>62</u>	<u>172</u>	<u>182</u>	<u>97</u>
Current Liabilities	2,702	2,480	2,243	4,125	2,138	2,117	2,342	4,125	4,513
Long-term debt	1,648	1,861	3,038	4,452	3,169	3,301	3,267	4,452	4,260
Other	<u>527</u>	<u>559</u>	<u>630</u>	<u>535</u>	<u>574</u>	<u>534</u>	<u>420</u>	<u>535</u>	<u>875</u>
Total Liabilities	4,877	4,900	5,911	9,112	5,881	5,952	6,029	9,112	9,648
Minority Interest	1,796	1,382	717	864	717	729	698	864	927
Common stock	8,446	8,610	8,920	9,291	9,063	9,115	9,179	9,291	9,219
Retained earnings	(536)	(370)	(1,402)	(212)	(1,677)	(1,963)	(1,920)	(212)	
Other	<u>110</u>	<u>230</u>	<u>182</u>	<u>63</u>	<u>83</u>	<u>79</u>	<u>69</u>	<u>63</u>	
Total MU Shareholders Equity	<u>8,020</u>	<u>8,470</u>	<u>7,700</u>	<u>9,142</u>	<u>7,469</u>	<u>7,231</u>	<u>7,328</u>	<u>9,142</u>	<u>9,219</u>
Total Liabilities and Equity	14,693	14,752	14,328	19,118	14,067	13,912	14,055	19,118	19,794
Sales and Income									
Revenue	8,482	8,788	8,234	9,073	1,834	2,078	2,318	2,843	4,042
COGS	5,768	7,030	7,266	7,226	1,617	1,712	1,762	2,135	2,761
Net income	1,850	167	(1,032)	1,190	(275)	(286)	43	1,708	358
Other									
Capital Expenditures	1,036	2,878	1,871	1,458	538	353	235	332	669
Depreciation and Amortization	2,005	2,162	2,222	1,926	485	485	384	572	541
Shares (weighted average diluted)	1,050.7	1,007.5	991.2	1,056.3	1,013.7	1,016.0	1,046.6	1,129.4	1,196.0
Employees (units)	25,900	26,100	27,400	30,900				30,900	
Cash Flow from Operations	3,096	2,484	2,114	1,811	236	234	624	717	1,507
Ratios									
Liquidity									
Quick Ratio	1.64	1.47	1.72	1.32	1.59	1.63	1.73	1.32	1.49
Current Ratio	2.34	2.35	2.57	2.16	2.49	2.53	2.51	2.16	2.08
Leverage									
Debt Ratio	0.33	0.33	0.41	0.48	0.42	0.43	0.43	0.48	0.49
Long-term Debt/Capital	0.15	0.16	0.26	0.26	0.27	0.28	0.26	0.26	0.26
Asset Management									
Fixed Asset Turnover	1.2	1.2	1.1	1.2	1.03	1.17	1.34	1.57	2.11
Total Asset Turnover	0.6	0.6	0.6	0.5	0.52	0.59	0.66	0.69	0.83
Receivables DSO	65	61	56	92	56	53	58	74	63
Inventory Days	110	107	90	132	102	90	88	112	80
Inventory Turnover	4.2	3.7	3.7	3.2	3.55	3.86	4.08	3.90	4.32
Annual Revenue/Employee									
Profitability									
Gross Margin	32.0%	20.0%	11.8%	20.4%	11.8%	17.6%	24.0%	24.9%	31.7%
Net Margin	21.8%	1.9%	-12.5%	13.1%	-15.0%	-13.8%	1.9%	60.1%	8.9%
Return on Assets	14.1%	1.1%	-7.1%	7.1%	-7.7%	-8.2%	1.2%	41.2%	7.4%
Return on Equity	28.5%	2.0%	-12.8%	14.1%	-14.5%	-15.6%	2.4%	83.0%	15.6%
Per Share Data									
Book Value/Share	\$7.63	\$8.41	\$7.77	\$8.65	\$7.37	\$7.12	\$7.00	\$8.09	\$7.71
Tangible Book Value/Share	\$7.33	\$8.00	\$7.39	\$8.29	\$7.01	\$6.78	\$6.69	\$7.75	\$7.39
Cash/Share (gross)	\$3.09	\$2.67	\$2.96	\$3.41	\$2.76	\$2.73	\$2.77	\$3.19	\$3.69
Cash/Share (net)	\$0.85	\$0.69	(\$0.33)	(\$2.31)	(\$0.63)	(\$0.86)	(\$0.69)	(\$2.16)	(\$1.17)
Earnings/Share	\$1.76	\$0.17	(\$1.04)	\$1.13	(\$0.27)	(\$0.28)	\$0.04	\$1.51	\$0.30

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	2Q	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%	4.0%	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%	0.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%
Revenue	778	729	875	796	715.3	893.9	1,089.7	1,663.4	2,788.6	2,788.6	2,755.1	2,722.1	2,689.4	2,657.1	2,625.2	2,593.7
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%	-8.0%	-5.0%	-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%	46.1%	45.7%	45.3%	45.0%	44.6%	44.2%	43.9%
Gross Profit																
COGS	787.8	813.9	889.6	801.5	773.5	894.3	864.1	1,283.7	1,805.7	1,504.0	1,496.0	1,488.0	1,479.9	1,471.7	1,463.6	1,455.4
NAND																
Bits Sold	21.0%	33.0%	66.0%	-7.0%	-10.6%	9.8%	0.0%	20.0%	15.0%	18.0%	10.0%	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%	0.0%	-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	1,024.7	1,127.1	1,177.8	1,230.8	1,286.2	1,344.1	1,404.6
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%	-15.0%	-5.0%	-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%	23.8%	30.0%	29.7%	29.4%	29.1%	28.7%	28.4%
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	780.4	788.7	828.0	869.3	912.5	957.9	1,005.6
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	3,813.2	3,882.2	3,899.9	3,920.2	3,943.4	3,969.3	3,998.3
Gross Profit																
Gross Margin																
Adjusted Gross Profit																
Adjusted Gross Margin																
COGS	1,460.9	1,613.0	1,931.9	1,495.4	1,388.3	1,469.0	1,468.6	1,957.3	2,533.0	2,284.4	2,284.7	2,316.0	2,349.1	2,384.3	2,421.5	2,460.9
NOR																
Revenue	287	228	228	234	220	187.0	185.0	171.0	162.0	145.8	160.4	160.4	160.4	144.3	158.8	158.8
Gross Margin	35.0%	35.0%	35.0%	35.0%	37.0%	37.0%	20.0%	9.0%	10.0%	12.0%	14.0%	16.0%	18.0%	20.0%	20.0%	20.0%
COGS	186.6	148.2	148.2	152.1	138.7	117.8	148.0	155.6	145.8	128.3	137.9	134.7	131.5	115.5	127.0	127.0
Other																
Revenue	116	118	121	97	91.7	125.0	116.0	28.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
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	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
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	4,049.5	3,999.0	4,082.6	4,100.3	4,120.6	4,127.7	4,168.1	4,197.1
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	2,728.8	2,462.7	2,472.6	2,500.7	2,530.6	2,549.8	2,598.5	2,637.9
Gross Profit	326.5	129.8	(29.1)	218.5	215.6	367.2	556.2	704.6	1,320.8	1,536.3	1,610.0	1,599.6	1,590.0	1,577.9	1,569.6	1,559.2
Gross Margin	15.6%	6.5%	-1.3%	11.1%	11.8%	17.7%	24.0%	24.7%	32.6%	38.4%	39.4%	39.0%	38.6%	38.2%	37.7%	37.1%
Reported																
Revenue	2,090	2,009	2,172	1,963	1,834.0	2,078.0	2,318.0	2,843.0	4,042.0							
COGS	1,785	1,799	1,938	1,744	1,617.0	1,712.0	1,762.0	2,135.0	2,761.0							
Gross Margin	14.6%	10.5%	10.8%	11.2%	11.8%	17.6%	24.0%	24.9%	31.7%							
Adjusted COGS																
Adjusted Gross Margin																

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1/8/14

Micron Technology

Valuation

Relative Valuation

Company	Ticker	Price 1/7/2014	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	21.73	7.24	23.67	-0.19	-1.12	1.15	2.98	NM	NM	18.9	7.3	1,196	25,989	2.3	1.6	1.6	Aug	
Advanced Micro Devices	AMD	4.18	2.26	4.65	0.51	-0.16	-0.14	0.14	8.2	NM	NM	29.9	764	3,194	0.7	0.6	0.5	Dec	
Freescale	FSL	15.19	11.18	17.82	0.98	-0.08	0.44	1.30	15.5	NM	34.5	11.7	261	3,965	1.0	1.0	0.9	Dec	
Intel *	INTC	25.58	20.10	26.04	2.39	2.13	1.91	2.14	10.7	12.0	13.4	12.0	5,100	130,458	2.5	2.5	2.3	Dec	
STMicroelectronics	STM	7.68	7.11	10.05	0.42	-0.33	-0.25	0.39	18.3	NM	NM	19.7	891	6,839	0.8	0.8	0.8	Dec-ADR	
Texas Instruments*	TXN	42.70	31.57	44.09	2.19	1.50	1.96	2.20	19.5	28.5	21.8	19.4	1,111	47,440	3.9	3.9	3.7	Dec	
Average									14.4	20.2	23.2	18.5				1.8	1.8	1.7	

Company	Ticker	Price 1/7/2014	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	21.73	7.24	23.67	-0.19	-1.12	1.15	2.98	NM	NM	18.9	7.3	1,196	25,989	2.3	1.6	1.6	Aug	
Atmel	ATML	7.93	5.89	8.40	0.92	0.33	0.28	0.55	8.6	24.0	28.3	14.4	439	3,480	2.5	2.5	2.3	Dec	
Spanion	CODE	13.73	9.70	14.00	0.85	0.99	0.76	1.37	16.2	13.9	18.1	10.0	59	807	0.9	0.8	0.6	Dec	
Cypress Semiconductor	CY	10.12	8.61	13.23	1.25	0.55	0.38	0.52	8.1	18.4	26.6	19.5	162	1,641	2.2	2.3	2.2	Dec	
GSI Technology	GSIT	6.66	5.53	7.40	0.31	0.13	-0.06	0.00	21.5	51.2	NM	NM	29	193	3.0	3.2	2.9	Mar	
Integrated Silicon Solutions	ISSI	11.89	8.31	12.43	1.11	0.85	0.84	1.02	10.7	14.0	14.2	11.7	30	361	1.2	1.1	1.0	Sep	
Netlist	NLST	0.84	0.51	1.29	-0.22	-0.49	-0.45	-0.18	NM	NM	NM	NM	31	26	1.2	1.0	0.7	Dec	
SanDisk	SNDK	69.28	45.06	70.93	4.66	2.37	5.19	5.81	14.9	29.2	13.3	11.9	235	16,281	2.7	2.6	2.4	Dec	
Average									13.3	25.1	20.1	13.5				2.0	1.9	1.7	

* Tokeneke estimate
Source: consensus as of 1/7/14

Historical Valuation

Company	Ticker	Price 1/7/2014	Trailing 12-month					
			Price/Earnings		Price/Sales		Price/Book	
			Current	Historical*	Current	Historical*	Current	Historical*
Micron Technology	MU	21.73	18.9		2.3		2.8	
Average			47.0		2.3		2.3	
High			568.0		9.0		9.8	
Low			4.3		0.3		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.

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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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