

Memories Continue to Drive Industry Growth July and 3Q Business Strong, But Equities Diverging

DRAM and NAND market price strength continue to drive semiconductor industry growth. July business conditions across the industry were very healthy, 3Q guidance is calling for above-average seasonal strength, and sector share prices continue to outperform broader market indices. However, equity price movements within my Universe have been volatile and are diverging from broader SOX index performance. My previous view of a 'sector correction due to SOX outperformance' now appears to be overly simplistic. Instead, I think we may be seeing a shift in investor sensitivity away from momentum in terms of revenue growth or share price performance, and more towards value. While this makes for a messy investing environment of volatility and divergences, it certainly provides opportunities. And the best part is—as an analyst who focuses on fundamentals—valuations count!

Memories Drive Growth: DRAM and NAND memories continue to drive semiconductor industry growth. While market researcher IC Insights expects 2017 revenue growth for the overall industry of +16%, the vast majority of that comes from DRAM growth of +55% and NAND growth of +35%—both due to market price increases. The rest of the semiconductor industry products *excluding* those two products is expected to grow by +6%. Other areas of relative strength include industrial special-purpose logic at +32% and both analog and logic for automotive-specific applications above +16%. Double-digit growers below +16% include two analog and microcontroller sub-segments, as well as special-purpose logic for computers and peripherals. 29 out of 33 sectors are expected to grow.

Structural Differences: Recall that my US-equity-based Tokeneke Universe does NOT include some three-quarters of industry DRAM and NAND business from Samsung, Hynix and Toshiba (with partner WD/SanDisk). While my Universe does include Micron, it will more closely track growth of +6% this year rather than +16%. Other structural differences in my Universe include the lack of very large international players (Samsung, Hynix, Toshiba, MediaTek, Infineon), although it includes wafer foundries (TSMC, UMC, SMIC, TowerJazz) and IP companies (Rambus, Tessera, Ceva, InterDigital and a chunk of Qualcomm) that, technically anyway, don't count as semiconductor industry revenues but rather costs associated with manufacturing. I also normalize fiscal quarters to the best fitting two out of three months (Marvell, Nvidia and Semtech have January-ending fiscal years, while Micron has an August-ending year). Unreported stub-periods associated with acquisitions are also a difference.

The bigger problem is that most US-based investors in the chip sector experience the industry from the Tokeneke Universe perspective. The Philadelphia Semiconductor Index Option (SOX) is similarly under-represented in memories, although this is somewhat mitigated by the inclusion of equipment companies supplying to memory manufacturers. And even if domestic investors are adventuresome enough to travel overseas, it is still difficult to isolate and benefit from current memory market strength: Only 31% of Samsung's 1Q revenue came from semiconductors, and Toshiba is currently flirting with bankruptcy due to a series of issues associated with its nuclear energy business—and, in fact, is looking to sell its NAND business in an effort to save itself.

July Acceleration: Worldwide semiconductor industry revenue growth for July was a stronger-than-expected gain of +3.1% sequentially on a three-month rolling average basis, according to statistics released by the Semiconductor Industry Association (SIA) this week. This now reflects a run of 14 consecutive above-average months, excluding a hiccup in March. July's performance compares to its average gain of +1.3% with a high of +5.4%, a low of -6.3%, and only six declines in the last 27 years—although three of those occurred in the last six years. The Americas led once again with a very strong +5.4% while the rest of the world grew at below-average rates (again) with Asia-Pacific at +2.8%, China at +2.7%, Japan at +2.1%, and Europe trailing at +1.2%.

Next month's release of August data typically reflects even stronger sequential growth. August has averaged a gain of +1.8% with a high of +5.2%, a low of -3.5%, and only four declines in the last 27 years—including none in the last 15 years. I expect it to be above-average once again as persistent memory market price strength is boosted by a smartphone seasonal recovery as new marquee platforms are introduced into the market.

2Q Twice as Good with Memory: The difference between official industry statistics (with memories) and my Universe (without) is pronounced, with the SIA having reported a 2Q sequential gain of +5.8% compared to my Universe at +2.7%.

Industry statistics for 2Q came in last month with strong sequential quarterly revenue growth of +5.8% that compares very favorably with average growth of +3.7%, a high of +20.0%, a low of -19.9%, and declines only five times in the last 27 years—including two of the last 10.

However, 2Q for my Tokeneke Universe is a very different story with only two of my 64 companies not yet reporting results. The weighted average sales currently reflects a sequential quarterly gain of +2.7% which is better than company guidance of +0.4% ranging from -2.5% to +3.4% after a short handful of a mix of preannouncements. When I exclude Micron's memory strength the weighted average falls to a gain of only +1.3%. The good news is that half of companies reporting have met and/or exceeded expectations for 2Q results and 3Q guidance.

Above-Average 3Q Seasonal Strength: The 3Q revenue outlook based on management guidance across my Universe during the 2Q earnings season reflects above-average seasonal strength. The specific weighted average guidance for revenue is +7.3% ranging from +4.4% to +10.2%—and Micron's memories are having limited impact. If I exclude Micron from the mix the center increases only slightly to +7.4% ranging from +4.6% to +10.3%. The chip industry has averaged a 3Q sequential revenue gain of +6.4% with a high of +19.9% and a low of -11.7%, and has declined only twice in the last 27 years—including none of the last 15 years, according to industry statistics.

Chip Sector Share Price Rally: Semiconductor sector share prices advanced and outperformed broader market indices during August, although my Universe stocks averaged a decline of -1.7%. The Philadelphia Semiconductor Index Option (SOX) grew by +2.7% with 32 out of 64 stocks in my Universe advancing compared to gains in the NASDAQ, S&P500 and DOW at +1.3%, +0.1% and +0.3%, respectively. The chip sector continues to outperform broader equity markets on a year-to-date basis—despite under-performing during 2Q—as noted in the tables below.

August				QTD (3Q)				YTD				Indices			
Winners (32/64)		Losers		Winners (39/64)		Losers		Winners (44/64)		Losers		Aug	QTD	YTD	
IOTS	33.2%	NLST	-41.7%	IOTS	42.9%	MOSY	-43.3%	IOTS	251.4%	MOSY	-57.8%	SOX	2.7%	7.7%	22.9%
IXYS	32.2%	INFN	-27.9%	IXYS	39.8%	NLST	-31.4%	MRAM	96.6%	NPTN	-45.9%	SMH	2.6%	8.2%	23.6%
HIMX	19.2%	NPTN	-27.6%	TSEM	26.7%	NPTN	-24.2%	IXYS	93.3%	XPER	-38.3%	NASDAQ	1.3%	4.7%	19.4%
TSEM	15.5%	MTSI	-24.8%	ON	21.7%	MXL	-22.6%	MX	83.9%	SMI	-38.1%	S&P500	0.1%	2.0%	10.4%
MRVL	15.1%	PI	-22.2%	STM	21.1%	PI	-21.4%	PXLW	71.4%	NLST	-31.4%	DOW	0.3%	2.8%	11.1%
average stock -1.7% SOX +2.7%				average stock +1.6% SOX +7.7%				average stock +18.5% SOX +22.9%							

M&A Follies: Mergers and acquisitions activity has stalled, although IXYS recently announced plans to be taken over. Losses to my Universe this year include: INVN going to TDK in Japan, EXAR going to MXL, GIG going to IDTI, ACTS going private in China, AMCC sold to MTSI, ISIL going to Renesas in Japan, and LLTC going to ADI. Pending takeovers include: IXYS to Littlefuse, LSCC (struggling) to go private with Chinese money, MBLV going to INTC, and NXPI going to QCOM (with drama). MOSY and SIGM are pursuing 'strategic alternatives.'

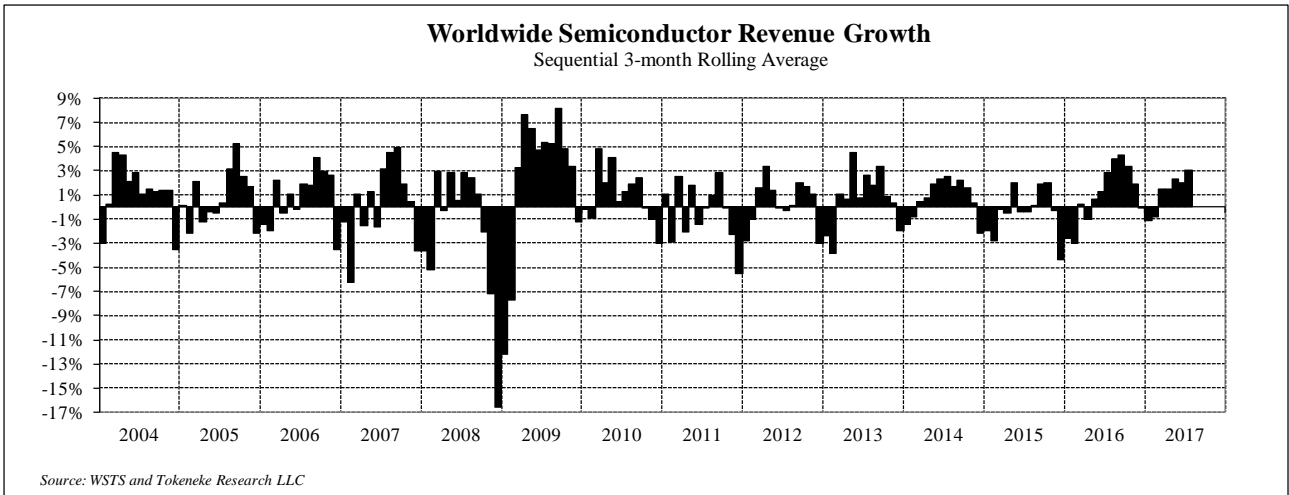
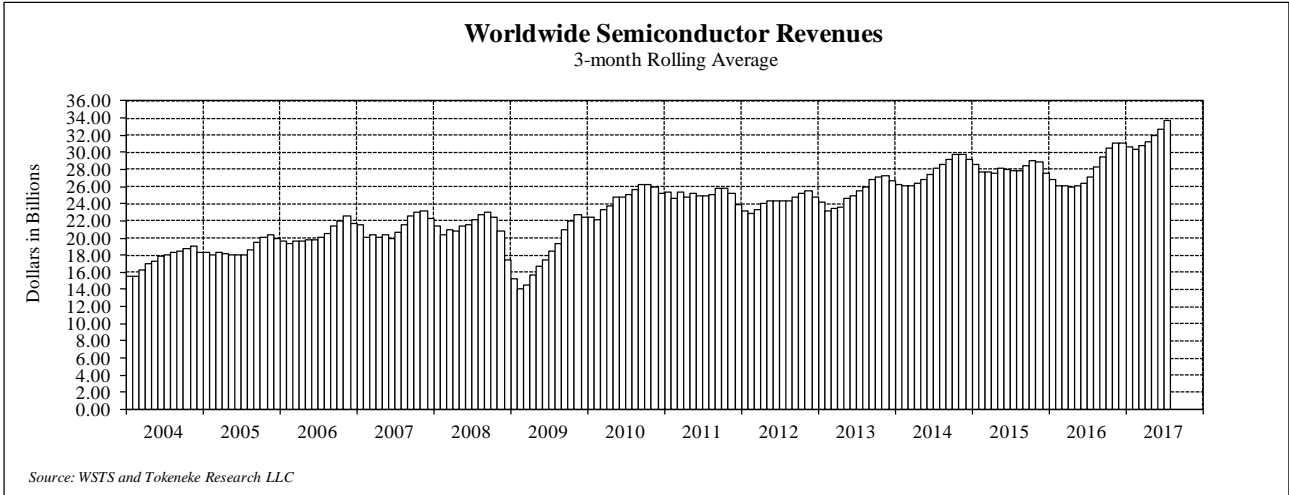
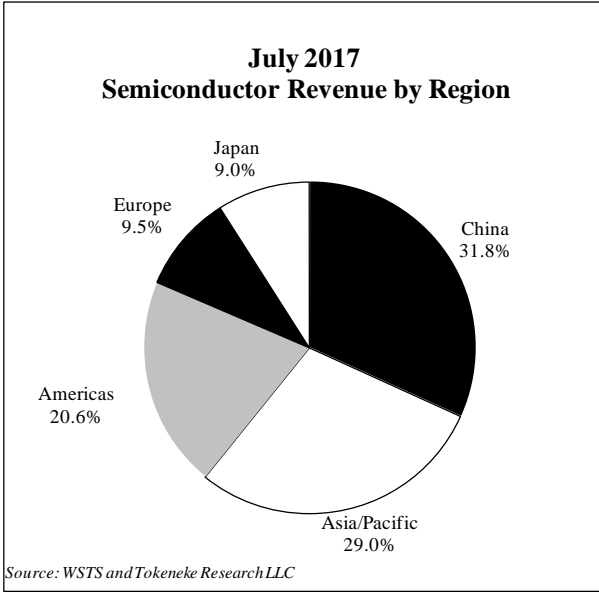
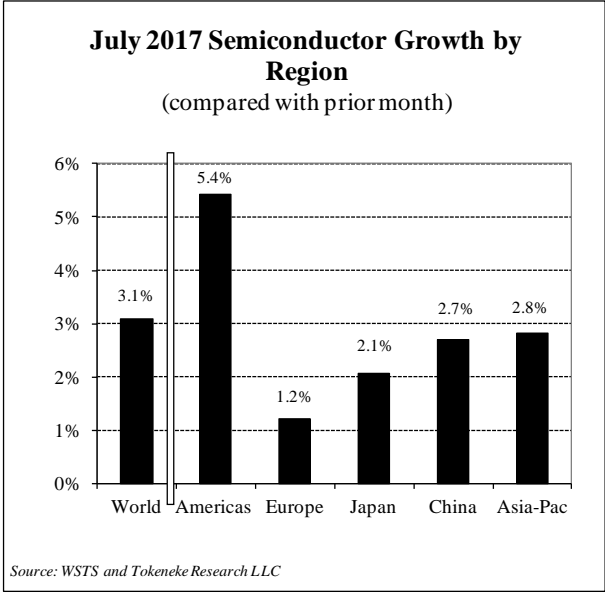
Sector Risk, Volatility—and Divergence: The SOX index rallied by over +4% in early-June and then declined by -9% to finish June at a net loss of -5%. July began with a -1% correction, followed by a +9% rally mid-month, and then a partially-offsetting -3% decline to finish the period at +5%. During August the SOX see-sawed and eked a gain in the last couple of days, although 34 out of 64 stocks in my Tokeneke Universe *declined* by an overall average of -1.7%. The relative outperformance of the semiconductor sector increasingly worries me as noted by the spread between the SOX and S&P500 in the graph on Page 4—as well as the volatility and divergence as noted.

Value Back in Vogue? I have found it increasingly difficult to generalize semiconductor sector characteristics this year given the significant outperformance of DRAM and NAND product revenue growth as well as the recent divergence in equity performance between the SOX and my Universe, as noted in the paragraph above. While this top-down approach is problematic, the bottoms-up approach reflected in my Investment Ideas may offer insight.

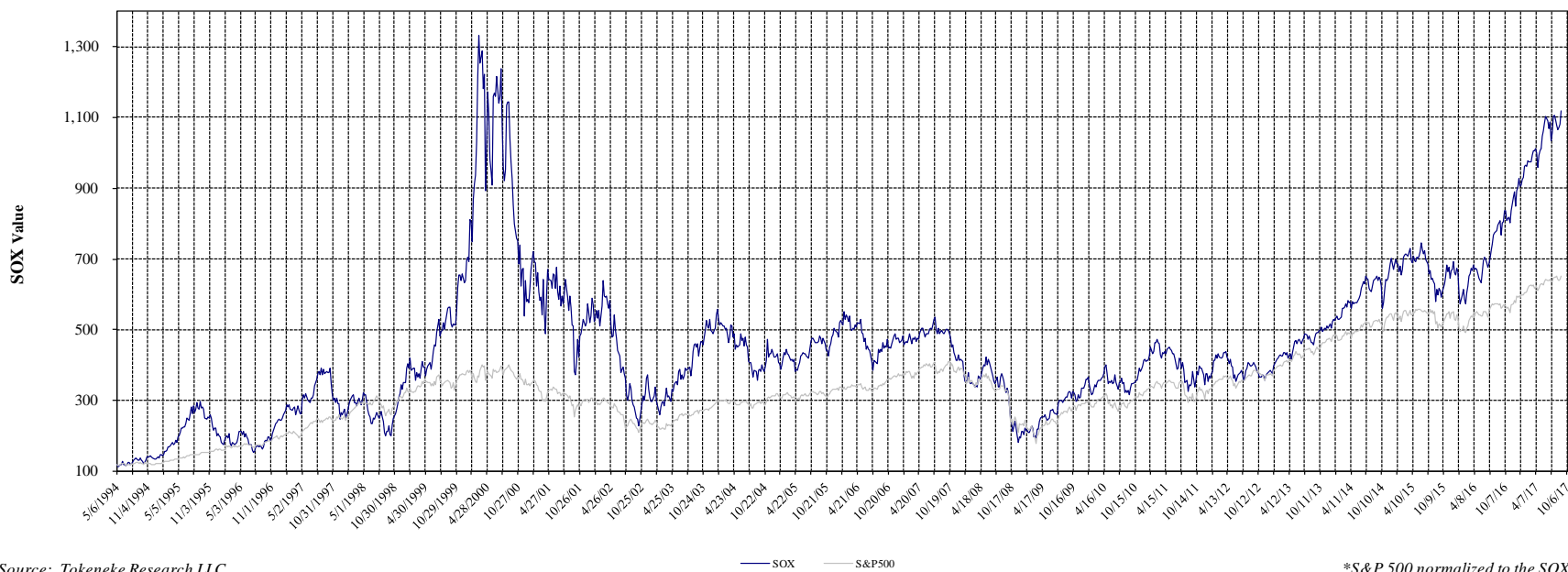
In early-August I upgraded a handful of my 64 stocks; two weeks later I upgraded a couple of handfuls; and then at the beginning of September I downgraded a couple of handfuls. My working theory is that this year's momentum-oriented style of investing appears to be transitioning toward value. Maybe because the fundamental valuations of those momentum names are becoming stretched so thin? As a fundamental analyst, I can only hope.

My previous view of a 'sector correction due to SOX outperformance' now appears overly simplistic. Instead, I think we may be seeing a shift in investor sensitivity more towards fundamental valuations and less so towards momentum in terms of revenue growth or share price performance, which has very much been the script this year. While this makes for a much messier investing environment of volatility and divergences, it certainly provides opportunities. And the best part is, valuations count!

—Dan K. Scovel
Semiconductor Analyst



Weekly Philadelphia Semiconductor Index Option (SOX) vs. S&P 500



Source: Tokeneke Research LLC

*S&P 500 normalized to the SOX

The Company

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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 Fahnestock & 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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