

RESEARCH BULLETIN

AUGUST 10, 2016

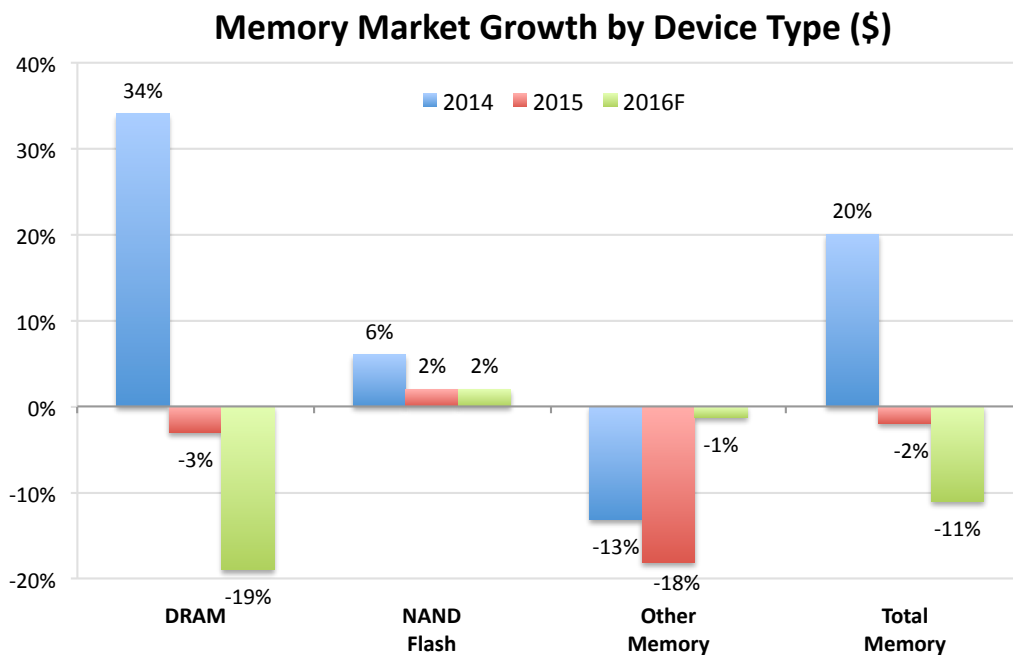
DRAM on Track to Be Worst-Performing Market in 2016

16% plunge in DRAM ASP expected to lead to 19% DRAM market decline.

The year 2016 is not expected to be a good one for the total memory market and the main culprit is DRAM. Declining shipments of desktop and notebook computers, the biggest users of DRAM, as well as declining tablet PC shipments and slowing growth of smartphone units have created excess inventory and suppliers have been forced to greatly reduce average selling prices in order to move parts. A DRAM ASP decline of 16% coupled with a forecast 3% decline in DRAM unit shipments is expected to result in the DRAM market declining 19% in 2016 (Figure 1), lowest among the 33 IC product categories IC Insights tracks in detail. This steep decline will be a drag on growth for the total memory market (-11%) and for the total IC market (-2%) in 2016.

MORE INFORMATION CONTACT

Brian Matas
 Vice President
 Phone: +1-480-348-1133
 Email: bmatas@icinsights.com



Source: IC Insights

Figure 1

Big swings in average selling price are not new to the DRAM market. Annual DRAM average selling price increases of 48% and 26% in 2013 and 2014 propelled the DRAM market to more than 30% growth each year. In fact, the DRAM market was the strongest growing IC product segment in each of those years (Figure 2). Then, marketshare grabs and excess inventory started the cycle of steep price cuts in the second half of 2015 and that continued through the first half of 2016.

Top-Growing IC Markets 2013-2016F (\$)

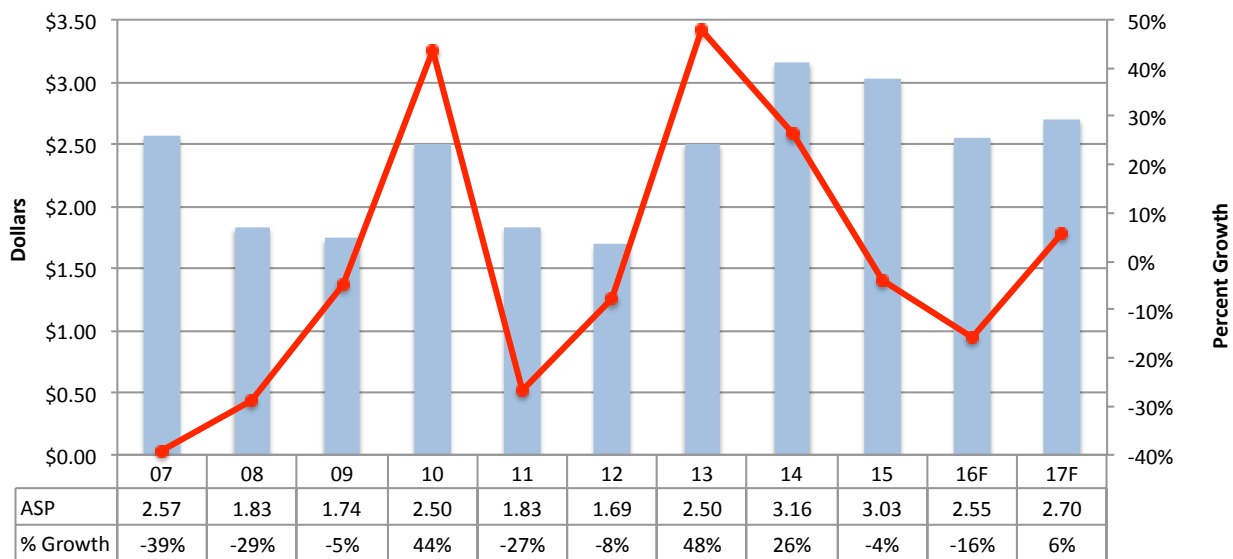
Rank	2013	2014	2015	2016F
#1	DRAM 33%	DRAM 34%	•	•
--	•	•	•	•
#18	•	•	DRAM -3%	•
-	•	•	•	•
#33	•	•	•	DRAM -19%

Source: IC Insights

Figure 2

Figure 3 plots changes in annual DRAM average selling prices starting in 2007. Looking more like the profile of an alpine mountain range, DRAM ASP growth has taken several dramatic upward and downward turns since 2007, confirming the volatility of this IC market segment. When coupled with strength or weakness in DRAM unit shipments, bit volume demand, and the amount of capacity and capital spending dedicated to DRAM production each year, this market can turn quickly up or down.

Volatile DRAM ASP Growth



Source: IC Insights

Figure 3

On a positive note, DRAM ASPs strengthened in late 2Q16 and are forecast to continue growing through the balance of 2016 and into 2017. The boost to DRAM ASP is expected to come from demand for enterprise (server) systems, which have been selling well due to the need to process “big data” (e.g., the Cloud and the Internet of Things). Also, low-voltage DRAM continues to enjoy solid demand for use in mobile platforms, particularly smartphones. Demand from new smartphone models is expected to help contribute to increasing DRAM ASPs through the end of this year and into 2017.

The upward DRAM ASP trend may be short lived, however, as two China-based companies, Sino King Technology in Hefei, China, and Fujian Jin Hua IC Company, plan to enter the DRAM marketplace beginning in late 2017 or early 2018. It remains to be seen what devices and what technology the two new entrants will offer but their presence in the market could signal that another round of price declines is around the corner.

Further trends and analysis relating to DRAM and the total memory market through 2020 are covered in the 250-plus-page *Mid-Year Update* to the 2016 edition of *The McClean Report*.

Report Details: *The 2016 McClean Report*

The McClean Report—A Complete Analysis and Forecast of the Integrated Circuit Industry (released in January 2016) is IC Insights' flagship market research report, with more than 400 charts and graphs providing data on all aspects of IC industry. A subscription to *The McClean Report* includes **free** monthly updates from March through November (including a 250+ page *Mid-Year Update*), and **free** access to subscriber-only webinars throughout the year. An individual-user license to the 2016 edition of *The McClean Report* is priced at \$3,890 and includes an Internet access password. A multi-user worldwide corporate license is available for \$6,890.

To review additional information about IC Insights' new and existing market research products and services please visit our website: www.icinsights.com

About IC Insights

IC Insights, Inc., based in Scottsdale, Arizona USA, is dedicated to providing high-quality, cost-effective market research for the semiconductor industry. Founded in 1997, IC Insights offers coverage of global economic trends, the semiconductor market forecast, capital spending and fab capacity trends, product market details, and technology trends, as well as complete IC company profiles and evaluations of end-use applications driving demand for ICs.

Web Site: www.icinsights.com • **Phone:** +1-480-348-1133 • **E-mail:** info@icinsights.com