

**JULY 11, 2019**

## **DRAM Capex to Plunge 28% in 2019 After Huge Outlays in 2017-18**

*Economic and trade uncertainties, softer demand to keep pressure on DRAM ASPs in 2019.*

IC Insights will release its 200+ page *Mid-Year Update to The McClean Report 2019* later this month. The *Mid-Year Update* revises IC Insights' worldwide economic and IC industry forecasts through 2023 that were published in *The McClean Report 2019*, released in January. Included in the update is a review of capital spending and DRAM market trends for the balance of this year and through the forecast period.

One of the significant questions facing the IC industry in the second half of 2019 is if and when the DRAM market will rebound. Any rebound in the market will be driven in part by available manufacturing capacity. After huge capex outlays for DRAM in 2017 and 2018, the question becomes how much new capacity will come online and how far DRAM prices (price per bit) will fall as a result of this buildup.

The three main DRAM suppliers—Samsung, SK Hynix, and Micron—generally agree that DRAM bit volume will grow roughly 20% per year over the next few years. Figure 1 shows Micron's perspective on the capex required to increase DRAM bit volume shipments 20% per year (data from Micron's 2018 Analyst and Investor Event) versus IC Insights' DRAM capex history and forecast data.

With new and very complex DRAM technologies requiring much more fab equipment and more fab space needed to house this equipment, Micron estimates that the industry capex required to grow DRAM bit volume by 20% more than doubled from \$8 billion in 2015 to \$18 billion in 2018! Actual DRAM expenditures in 2016 were slightly below what was needed to increase bit volume 20% and about equal to what was needed in 2017. However, in 2018, capex targeting the DRAM market reached \$23.7 billion, 32% more than the \$18.0 billion that was deemed necessary to grow DRAM bit volume by 20%. It is worth noting that in 2018, DRAM bit volume increased only 13% and is forecast to increase 17% in 2019.

Too much capex spending typically leads to overcapacity and subsequent pricing weakness—a condition that is amplified by economic weakness and softer demand from end-users. With Samsung, SK Hynix, and Micron aggressively spending to upgrade/add DRAM capacity last year, and with economic and trade uncertainties continuing to permeate global markets, IC Insights believes that the risk of too much DRAM

### **MORE INFORMATION CONTACT**

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capacity and the subsequent pricing weakness that results will continue for the remainder of 2019. On a brighter note, actual DRAM capex spending in 2019 is forecast to be less than what is required to maintain 20% bit volume growth. That could offset the overspending in 2018 and help start a return to supply-demand balance within the DRAM market in 2020.

### Capex Required to Achieve 20% DRAM Bit Volume Growth versus Actual DRAM Capex (\$B)

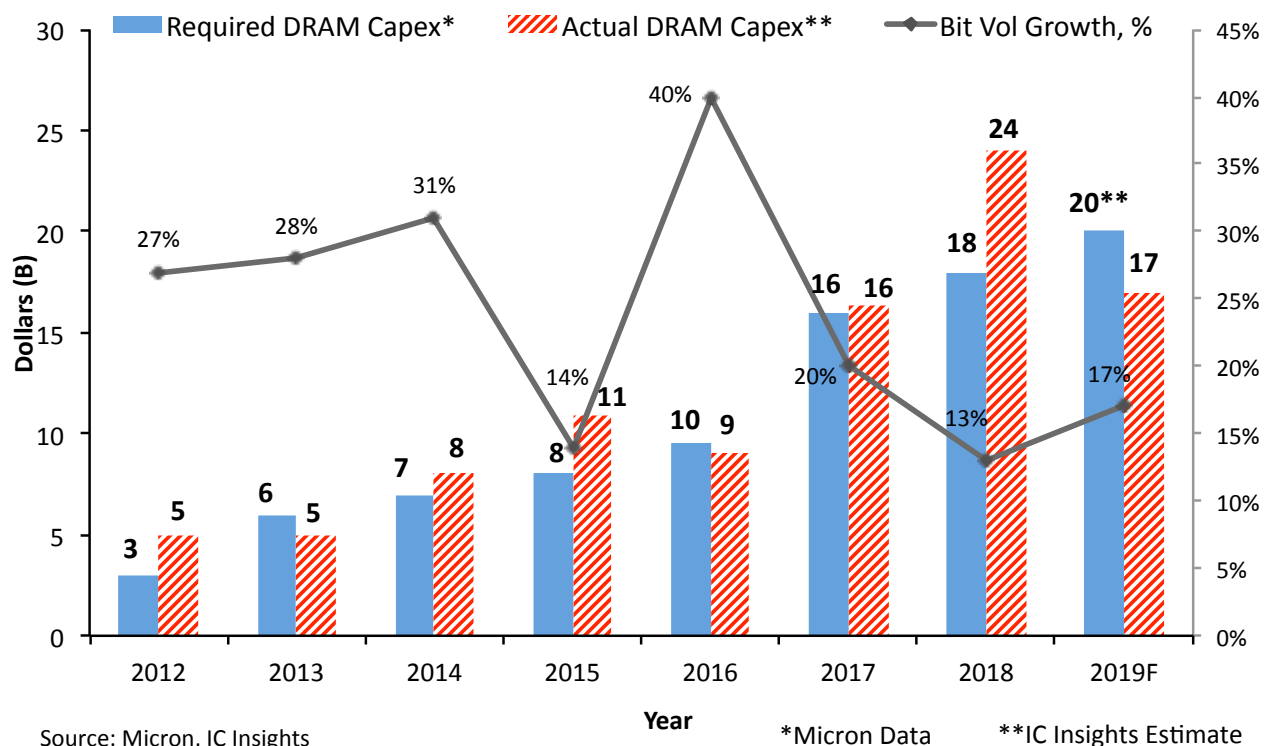


Figure 1

#### Report Details: *The 2019 McClean Report*

Additional details on semiconductor industry capital spending and IC market trends will be provided in the *Mid-Year Update to The McClean Report—A Complete Analysis and Forecast of the Integrated Circuit Industry*. A subscription to *The McClean Report* includes **free** monthly updates from March through November (including the 200+ page *Mid-Year Update*), and **free** access to subscriber-only webinars throughout the year. An individual-user license to *The McClean Report* is priced at \$4,990 and includes an Internet access password. A multi-user worldwide corporate license is available for \$7,990.

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### **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.

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