

#### DRAM

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## DRAM Industry Analysis – 4Q19

- ◆ After inventory digestion in the industry in 1H19, demand-side inventory has returned to normal in 2H19. Furthermore, some vendors pulled forward inventory in 3Q19 to avoid additional tariffs due to the US-China trade war, driving up DRAM suppliers' sales bit growth by more than 20%. Although the average DRAM quote slid by nearly 20% QoQ in 3Q19, DRAM revenue grew by 4.1% due to outstanding shipment performance, putting an end to three consecutive quarters of revenue declines.
- ◆ In 3Q19, all DRAM suppliers enjoyed slight QoQ growth in revenue, except Nanya, while the top three suppliers' market share remained largely unchanged. Thanks to Chinese smartphone vendors' pull forward of inventory and a slight recovery in server demand, Samsung's sales bits rose by 30%, offsetting the impact of a 20% decline in its quotes. In addition, Samsung's revenue increased by 5% QoQ to US\$7.12 billion with market share rising slightly to 46.1%. SK Hynix's sales bit grew by 23%, pushing its revenue to US\$4.41 billion, up by 3.5% sequentially. The company's market share remained at around 28.6%. Due to its relatively weaker base period in 2Q19, the third largest supplier Micron's sales bits rose by almost 30%, driving its revenue to US\$3.07 billion for 1.1% QoQ growth. However, Micron's market share dropped to 19.9%. TrendForce believes that Micron's lack of greenfield investment projects, hence a lack of new capacity, will lead to a continued decline in its market share.
- ◆ Affected by a 20% industry-wide decline in ASP, DRAM suppliers' operating profit margins continued to decline. Samsung's operating profit margin fell to 33%, lower than the 36% when prices hit rock bottom in 2Q16 and close to the company's typical medium-to long-term threshold of 30%. Therefore, TrendForce expects Samsung to be less willing to reduce prices further in the future. SK Hynix achieved significant cost optimization by adjusting its product portfolios. This cost optimization effort, plus a weak base period in 2Q19, resulted in a relatively modest dip in SK Hynix's operating profit margin in 3Q19 to 24%. Compared to Korean manufacturers, Micron's quote decline during the third fiscal quarter (June-August) was slightly higher, resulting in a more dramatic fall in operating profit margins. Micron's operating profit margins fell by 11 percentage points to 24%, nearly 10% behind Samsung. If the decline in quotes remains minimal, and cost optimization continues, the suppliers will be able to maintain their current levels of profitability well into 4Q19 without any significant downturn.
- ◆ Looking to the fourth quarter, as suppliers' inventory pressure has eased and prices have dropped by more than half since their peak, price declines will slow down dramatically and the market will shift back to focus on quarterly contract prices. For example, first-tier PC OEM vendors' pricing showed the contract prices for mainstream 8GB modules fell to US\$24.5 in October, less than a 5% QoQ decline. Contract prices for mobile and server DRAM has also fallen at a single-digit rate. Despite a high base period in 3Q19, the top three DRAM suppliers are expected to enjoy shipment growth in 4Q19 due to increased demand in the server and smartphone markets.

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Nov. 28, 2019

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