

DRAM Revenue Took a Turn for the Worse in 4Q18; Suppliers Declining in Profitability, Says TrendForce

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Investigations by [DRAMeXchange](#), a division of [TrendForce](#), show that DRAM quotes have taken a turn for the worse in 4Q18, causing the total revenue in the DRAM industry to fall. Due to high inventory levels on the demand end, purchases have become few and little, in turn causing a sales bit decline QoQ for most DRAM vendors. Under this double decline of both quantity and price, the global DRAM revenue fell by 18.3% QoQ in 4Q18.

DRAMeXchange pointed out that contract prices continued to fall in January 2019. In view of the pricings by first-tier PC-OEMs, the average prices of mainstream 8GB modules have descended to US\$50 for January, and will continue their descent through the monthly deals of February and March, with an estimated decline of 20-25% for the first quarter overall. Additionally, the production bit levels of DRAM suppliers in 4Q18 were far above sales bit levels, intensifying inventory pressure. Thus suppliers will redouble their efforts on pricing strategies to accelerate inventory closeouts.

From a revenue standpoint, most suppliers are fated to meet the inescapable quarterly decline. Taking the brunt of the sharp decline of server DRAM shipments, industry giant Samsung has seen the steepest sales bit decline in the fourth quarter among the top three vendors, with its revenue falling by 25.7% QoQ to US\$9.45 billion, and its revenue market share retreating to 41.3%. SK Hynix sales bit, however, only saw a drop of around 2%, thus taking a softer fall in revenue compared to Samsung: 12.3% QoQ to US\$7.14 billion. Its revenue market share rose above the 30% mark, landing at 31.2%.

Micron still held on to third place, with its revenue coming to US\$5.37 billion, thanks to its adoption of more flexible shipment strategies. Although this was a drop of 9.2% QoQ, Micron still performed the best out of the top three suppliers, its revenue market share rising to 23.5%.

DRAMeXchange estimates that Samsung, faced with the double pressure of its quickly eroding revenue share and rather high inventory levels, will be more proactive in its pricing strategies to avoid continual share shrinkage.

Looking at supplier profitability, the global price drop in 4Q18 from the beginning of the end for peaking revenues, and OPMs everywhere exhibited a decline. The supplier giant Samsung made the least effort to lower prices and drive sales, which, along with the steadily increasing allocation of 1Ynms, caused only a slight OPM drop from 70% to 66%. However, though pricings took a turn for the worse in the fourth quarter, DRAM production still enjoyed a gross margin of around 80%, which demonstrates that Samsung still has an arrow in its quiver to carry out more flexible pricing strategies.

SK Hynix completed a large number of shipments in the fourth quarter, sacrificing their profitability in the process. SK Hynix's OPM fell from 66% in 3Q18 to 58% in 4Q18. Micron, however, released a fiscal report spanning from September to November - and thus did not show a price fall to the extent of those calculated by Korean suppliers, which spanned from October to December - showing a mere drop of OPM from 62% to 58%. Looking towards 1Q19, suppliers will expect a further shrinkage in potential profits from the increasingly dramatic drop in prices.

On the technological front, with Samsung's expansion of its wafer production capacity on Line 17 and the raising of the DRAM production on the second floor of the Pyeongtaek plant, they have achieved their 2018 year-end target of a combined 1X+1Ynm production allocation of 70%. Although there are no plans on wafer production increase for the Pyeongtaek plant, Line 17 and the second floor Pyeongtaek plant will still continue their transition into 1Ynm, albeit one slowed by the current market. As for SK Hynix, 1Xnm yield rates have gotten on track, and the newly constructed second 12-inch wafer fab in Wuxi has begun contributing to output for the first half of this year. However, they won't get too active on increasing wafer production in the Wuxi fab due to the US-China trade dispute. Regarding Micron, its subsidiary Micron Memory Taiwan (formerly Rexchip) has already completed

the transition to 1Xnm production, and will be directly transitioning into 1Znm production, but substantial contributions will have to wait until 2020. Micron Technology Taiwan (formerly Inotera) has already begun the switch from 20nm to 1Xnm in the second quarter last year, and will begin to move on to 1Ynm in the first half of this year and gradually increase its percentage. and will begin to move on to 1Ynm in the first half of this year and gradually increase its percentage. and will begin to move on to 1Ynm in the first half of this year and gradually increase its percentage.

With respect to Taiwan-based suppliers, due to the weakening PC DRAM market, Nanya recorded a 20% fall in sales bit performance along with a huge drop of 30.8% QoQ in revenue for the fourth quarter. DDR4, which had a better gross margin, took up a smaller fraction in shipments – this, along with the global decline in quotes, caused OPM to shrink from 51.0% to 41.8%. It is feared that profitability will continue to shrink amidst rising depreciation and amortization expenses and the decreasing cost benefit of the 20nm process.

Powerchip's DRAM revenue rose by 10.3% QoQ if the calculation excludes its DRAM foundry business. If this part of the revenue were included, then the result would actually be a nearly double-digit decline from the previous quarter. As for Winbond, its DRAM revenue fell by 16.8% QoQ. The price cuts that Winbond made were relatively modest within the industry, averaging less than 5% QoQ. However, the weak overall demand dragged down the company's sales bit, which decreased by more than 10% QoQ.

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