Global DRAM/NAND

Deep consolidation unlikely soon

Industry Overview

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RESEARCH

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Elpida-Nanya-Micron tie-up unlikely to happen soon

Despite media speculation, we do not expect an immediate tie-up among Elpida, Micron and all of Taiwan's DRAM vendors. The obstacles include how to (1) reshuffle capital structure (equity and debt among three nations), (2) finance necessary spending on new capex and R&D activities, (3) reconcile potential conflicts among stakeholders and local governments and (4) manage opportunity costs during the integration period, which could last at least one year in our view.

Smaller tie-ups more feasible

Although we do not expect deep consolidation, it would be easier for ProMOS to be merged with the Nanya-Micron camp (more likely) or Elpida (less likely) if the Taiwan government provides enough incentives. It would be easier for the Taiwan government if ProMOS becomes part of Nanya (like Inotera) due to potential support from Formosa and Intel. ProMOS' fabs could be used for NAND production in our view.

Upcoming consolidation differs from previous rounds

Previous DRAM consolidation was driven by the massive shutdown of production lines. For instance, most Japanese chipmakers closed their DRAM fabs or converted them for other chips in the 1990s and 2001. Only one DRAM production line was left under Elpida. However, in upcoming consolidation it appears that most existing fabs will continue to be utilized after government bailouts.

Qimonda continues DRAM production for now

Following its insolvency filing, Qimonda has announced plans to close its Richmond fab and reduce utilization rates in Dresden to 25%, representing a significant reduction in output. However, our checks indicate that the company will relocate its US fab equipment to its headquarter fabs in Dresden (Germany) under the restructuring program. Qimonda's management has recently emphasized the viability of its flagship Buried Wordline technology, which is similar to stack technology.

Spot prices will easily fall back; reiterate Underweight

DRAM contract prices have failed to recover well despite the strong spot rally (6-7% vs. 20-25% YTD). This clearly reveals weak demand or major OEMs' resistance to price hikes. We note that the recent spot rally was driven by speculative trading at cash cost level (US$1 or below) and inventory build-up in the channels. We acknowledge that lower supply growth, speculation on ProMOS' potential failure to pay back its puttable CB (due 14 February) and government bailouts for the troubled chipmakers could lead to DRAM stock outperformance, but we still believe all Asian DRAM stocks are overvalued and the upcoming consolidation theme will not warrant an upturn for DRAM. We expect government bailouts to prevent deep consolidation, while weak demand remains a big concern.

Table 1: ML ratings on memory stocks

	Ticker	Rating	Price (Local)	Mcap ($bn)
Samsung	SSNLF	C-3-7	513,000	36.6
Hynix	HXSCF	C-3-9	9,240	6.6
Toshiba	TOSBF	C-3-8	256	9.2
Elpida	ELPDF	C-3-9	710	1.6
Powerchip	PWSMF	C-3-8	4.11	0.9
Nanya	NNYAF	C-3-8	7.18	0.9
Inotera	INMFF	C-3-8	13.10	1.3
ProMOS	PTGSF	C-3-9	1.59	0.3
Micron	MU	NA	3.74	2.9
SanDisk	SNDK	NA	9.89	2.2

Source: Bloomberg, Banc of America Securities-Merrill Lynch

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Deep consolidation unlikely

We do not expect deep consolidation in the DRAM industry in the near term. New tie ups or integration among non-Korean DRAM vendors (eg, Elpida, Micron and all of Taiwan's DRAM vendors) are unlikely to lead to true consolidation as most production lines will be continuously used thanks to local government bailouts and creditors' support. Previous rounds of consolidation immediately led to massive fab shutdowns/sharp supply declines. More than ten DRAM fabs in Japan were closed or converted for other chip production in the late 1990s and 2001. Only one DRAM fab (which is currently part of Elpida's Hiroshima production base) was left in Japan after the previous round of consolidation. Qimonda is now expected to continue its DRAM production and its management recently emphasized the viability of its flagship Buried Wordline technology, which is similar to the technologies used by other Asian chipmakers and Micron.

Of course all financially troubled chipmakers won't be able to conduct normal capex and R&D activities, and this clearly presents upside to the DRAM industry (eg, lower supply growth), but our global forecast still indicates a glut even in 2H09 due to weak demand (eg, limited impact from Vista and Windows 7 and substantial downside risks to corporate PC demand). Lastly we expect DRAM spot price to fall back to below US$1.0 despite the fact that it has rallied over 20% YTD. The current spot price still shows negative 50-60% margins for most DRAM vendors. We reiterate our cautious stance on the DRAM sector.

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Underperform	N/A	≥ 20%

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