

# TheNational

## Growth foreseen in semiconductor sector

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A TSMC facility in Taiwan. The company accounts for the half of the foundry market's revenue.  
TSMC / AFP

The semiconductor industry is expected to grow by as much as 12 per cent over the next two years as demand for electronic goods rises.

The expansion is expected to bring opportunities and challenges for the world's leading manufacturers of microchips, such as Globalfoundries, which is owned by Advanced Technology Investment Company (ATIC), based in Abu Dhabi.

To keep up with the expected increase in demand, the biggest manufacturers, including Taiwan Semiconductor Manufacturing Company (TSMC), United Microelectronics Corporation and Globalfoundries, will have to continually invest in the latest technology.

ATIC has made a number of high-profile investments since last March, when it bought a majority stake in Globalfoundries from Advanced Micro Devices (AMD).

The company recently pledged US\$3.6 billion (Dh13.22bn) to double Globalfoundries' capacity in its Dresden and New York facilities, which should increase production to about 200,000 silicon wafers a month by 2012.

Semiconductor wafers are discs made of pure silicon that are later manipulated to design the microchips used in electronic goods.

The ATIC announcement comes at an opportune time. After a slight dip during last year's economic downturn, the foundry industry's revenue is expected to rise to \$24.8bn this year, up from \$17.8bn last year, according to figures from the technology consultancy iSuppli.

"The foundry industry is expanding very profitably as a result of the two most recent economic downturns, in 2001 and 2009," said Len Jelinek, the semiconductor analyst for iSuppli. "The ability of one company, a foundry, to aggregate demand as well as share R&D [research and development] expenses has provided a strong platform from which to grow."

But despite Abu Dhabi's plans to be a big player in the semiconductor industry, it remains in the shadow of the market leader, TSMC.

Industry experts speculate that TSMC accounts for about 50 per cent of the foundry market's revenue and 80 per cent of the profit. The company has announced it will begin building its third "gigafab", a foundry capable of making 100,000 silicon wafers each month.

"TSMC has the scale and manufacturing excellence, but possible concerns are its research strengths ... to develop fabrication processes in future [microchip] nodes," said Boris Petrov, the managing partner of the Petrov Group, a semiconductor market analyst.

However, analysts say capacity is a key differentiator in ensuring that technology companies such as Samsung, Sony and Qualcomm sign up with a particular foundry to build the components required to make digital cameras and mobile computers and maintain that relationship over a long period.

"Unless your current partner is unable to deliver or there are other issues, it is highly likely you will never change," Mr Jelinek said. "Foundries know that, so they will do everything in their power to keep their clients."

Following that strategy, Mr Jelinek said Globalfoundries had no choice but to increase its capacity. After supporting AMD's microchips for so long as a subsidiary of that company, it must now diversify its offerings to meet the needs of its future customers.

That strategy must be executed if Globalfoundries wishes to accomplish its stated ambitions of doubling its market share from about 16 per cent within three years.

But Mr Petrov said Globalfoundries must focus on developing microchips for more advanced electrical circuits if it wanted to be a market leader.

One way of doing that would be to expand the relationship between Globalfoundries and IBM, the technology giant that provides the foundry industry with a specific set of microchip design standards.

"Historically, TSMC was always the first foundry to achieve this, taking all profits as prices declined, and only TSMC would maintain high margins," Mr Petrov said.

"Hence, Globalfoundries must deploy IBM's latest advanced [circuit] technology early, must have huge capacity in place and have early volume customers to drive yield increase as wafer prices rapidly decline."