



## **Analysis Excerpt:**

# **Semiconductor Quarterly Report Annual Review, 2006**

**ANALYSIS EXCERPT:  
SEMICONDUCTOR QUARTERLY REPORT  
ANNUAL REVIEW, 2006**

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***Introduction***

Anyone who watches the Taiwan semiconductor industry knows that politics is as often the driving force as is innovation. The year just past, 2006, was one of the most politically interesting in a long time. Chip industry policy aimed at China went full circle, from an outright ban on China investments by Taipei, to ending the year with major breakthroughs.

And while politicians may try to take credit for the China breakthroughs, U.S. investment firm The Carlyle Group and Taiwan's Advanced Semiconductor Engineering (ASE), the largest chip assembly company in the world, should also claim a share. In a year with several high profile, multi-billion dollar leveraged buyouts for chipmakers, the Carlyle-ASE deal was the fourth largest proposal. The deal is not yet concluded, but whether it is or not, the Carlyle offer prompted Taipei to finally grant several concessions to chipmakers with regards to China.

Nevertheless, politics is just one aspect of the industry. The business of manufacturing chips is the major side, and in that area, Taiwan excelled. Taiwan Semiconductor Manufacturing Company (TSMC) turned in its best year ever, as did all of the major DRAM makers on the island.

The key for the DRAM industry has been early and fast adoption of state-of-the-art 12-inch semiconductor wafer fabrication plants, or fabs. Taiwan is now home to the largest concentration of such fabs, and global chip equipment providers should take note that capital spending by the island will likely lead the globe in 2007 at over US\$11.25 billion (NT\$366.71 billion).

Partnering was a major theme for Taiwan chipmakers in 2006. The Japanese company Elpida Memory chose Taiwan's largest DRAM maker, Powerchip Semiconductor, to be its partner in a multi-year pact, and with that decision chose Taiwan as the location for four new 12-inch chip fabs. It was Taiwan's biggest deal of the year, but Powerchip was not the only chipmaker involved in new pacts, as several other companies found new partners to take on certain niches in the industry.

This report will focus on the four major trends in Taiwan's chip industry during 2006, China politics, the Carlyle/ASE deal, the steep rise in the chip manufacturing sector, and new partnerships. For readers not well versed, Taiwan is such an important link in the global technology industry food chain that any major disruption, from a killer earthquake to a military attack by rival China, could shut down a trillion dollars in trade. The island's chip industry made further strides in becoming even more important to the world in 2006, and has set the stage for an amazing 2007.

***The Political Path to China for Taiwan's Chipmakers***

Taipei ran full circle during 2006 in its fight to control chip-related investments in China. The year started with Taiwan authorities clamping down on all such investments due to a row with United Microelectronics Corporation (UMC) over its alleged role in illegally aiding in the establishment of Chinese chipmaker He Jian Technology. Officials claim that the work UMC did to help build He Jian violated official Taiwan policy, but it also highlighted the blind spots in government efforts to manage cross-Strait investments effectively.

The case caused Taipei to clamp down on China investment, and prosecutors indicted the second most powerful semiconductor industry executive on the island, then-UMC chairman Robert Tsao (now honorary chairman), alleging that he conspired with other executives in the establishment of He Jian. Officials suddenly clammed up on the investment issue, and said that in light of the UMC transgression, they would have to figure out new methods on how to monitor Taiwan chipmakers and their China plans. That was in January.

The industry would see no new breaks regarding the investment issue until late April, after a business summit with Chinese leaders organized by the main opposition party - the Nationalists, or Kuomintang (KMT) - ended in new import concessions for Taiwan farmers. Those farmers comprise the core supporters of the ruling party in Taipei, the Democratic Progressive Party (DPP), and the trade deals surprised Taipei greatly. Fearful that the KMT was wresting away control over China trade policy, President Chen Shui-bian's administration acted quickly, easing the ban on low-end semiconductor packaging and testing (chip assembly) investments in China.

However, the announcement quickly proved to be mere lip service on the part of the government. In fact, chipmakers were never given clear guidelines on how to go about making these approved investments, and at least one application was rejected outright, with little explanation. The government had been ready for the chip assembly opening for nearly two years. It seems that the easing of restrictions was a 'chip' the Chen Administration had been holding onto, and which it was then forced to play because of the political atmosphere in Taiwan.

It would take another eight months (until late December) before the first Taiwan chip assembly company, ASE, would be given permission to invest US\$60 million (NT\$1.96 billion) in a Chinese company. This permission was partly the result of heavy political pressure on the ruling party - in the form of key losses in the December Legislative Yuan (LY) elections and the indictment of the president's wife on corruption charges - but also resulted from a new fear; that companies in Taiwan would seek to be taken over or to merge with foreign companies so that they would no longer be held back by Taiwan investment regulations.

The combination of pressures on the ruling party prompted a windfall in China investment approvals for local chipmakers. Taipei not only approved ASE's investment plan, but it also went a step further and approved applications by DRAM makers Powerchip Semiconductor and ProMOS Technologies to set-up older, 8-inch fabs in China.

Indeed, the December surprise for Taiwan chipmakers was nothing short of amazing. Taipei also approved a request that TSMC submitted 2-years ago, asking for permission to use 0.18-micron technology in their China fab. The caveat here is that companies, including TSMC, have to apply for permission to use this advanced technology in China. TSMC has already applied for that permission, and believes it will be granted approval soon.

The only minor drawback for chipmakers was that Powerchip and ProMOS were only approved to use 0.25-micron manufacturing processes. The technology is not ideal for DRAM makers, yet both Powerchip and ProMOS plan to start construction of their new fabs in 2007, where they will likely produce low-end memory products for their own sales or for partners. The government announcement gives them a foothold in China, a starting point to move forward. And despite official fears over a headlong rush by chipmakers to move to China, both companies remain committed to making their biggest investments in Taiwan, with huge capital spending plans for sprawling 12-inch chip plants.

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**A Background Note on Taiwan-China History and Political Partisanship in Taiwan**

It is important to understand that the China issue ignites more passion than any other issue in Taiwan, and that the two major political parties, the DPP and KMT, are divided in their stances on reunification with the mainland. The DPP stance is to make Taiwan into an independent nation, while the KMT seeks to reunify with China. It is the issue that divides the island at every level of society; the mainlanders who came to Taiwan after losing the civil war against the Communists were very different from the population on Taiwan at the time, which looked, dressed, acted, and often spoke Japanese.

Taiwan was not claimed by China as a province until the late 1800s, and then mainly as a measure to check the growing power of Japan. It was a prescient move. A naval scuffle ended with Japan demanding Taiwan as a concession, and Japan took control from 1895 - not to lose the island until the end of World War II in 1945. Many older Taiwanese look back at that time with nostalgia, and indeed, Taiwan was the most advanced area outside of Japan in Asia at the time, while China was a backwater.

When the KMT took over the administration of Taiwan, it gained control of a complex economy - one tied to Japan in classic colonial style, where the island was used to supply Japan with resources and farm products. The mainlanders treated the local Taiwanese as traitors to China, and the locals regarded their new administrators as buffoons unable to govern, with no understanding of anything modern or technical. Riots broke out, and were quelled with guns. That was in the late 1940s, but the rift has remained ever since.

One of the areas where the two groups now square off is in business. The KMT is pro-China investment and would likely allow chipmakers to invest freely in China if they were in charge, while the DPP preaches that businesses should slow down their investments flowing into China. Official government policy is to promote Taiwan companies keeping their roots at home - locating corporate headquarters, marketing, R&D, and other core functions in Taiwan, while investing in low-cost centers such as Southeast Asia instead of China, to avoid entangling Taiwan's economy too closely with that of China.

While there is a clear philosophical difference between the DPP and the KMT on China policy, there is no doubt that the vast majority of Taiwan's voters believe that Taiwan should allow its companies to operate on the mainland - albeit with some restrictions. The early 2006 China initiatives of former KMT Chairman Lien Chan did indeed place greater pressure on the DPP administration to demonstrate that they could engage China on economic matters. The appointment of current Premier Su Tseng-chang was an important move for the DPP in that regard, as Su has embraced an incremental approach to cross-Strait technology liberalization. In the process, Premier Su has beefed up both his party's and his own credentials with Taiwan's voters, and he is now a leading candidate for the DPP's presidential nomination to run in March 2008 as the successor to President Chen Shui-bian.

The chip industry comes under special scrutiny from the DPP. Taipei not only fears the loss of chip factories and jobs to China, it also wants to avoid helping China develop more technologically sophisticated weapons that could be used against it. In addition, the island worries that its own defenses could be compromised if it lost its 'Silicon Shield,' - the massive amount of chip factories and output that make it as strategically vital to U.S. interests as Middle East oil, and help assure that the U.S. would respond in the face of a Chinese invasion of the island.

However, Taiwan chipmakers look at China in a much different way. The global electronics manufacturing industry, a major consumer of semiconductor chips, is rapidly moving production to China. Taiwan chipmakers want to build those chips, not be outgunned by rivals in China that are benefiting from a slightly lower cost base and a generous package of incentives. The island's chipmakers stand to benefit greatly from the rise of China - companies in many other industries moved their factories over years ago to take advantage of investment incentives, low-cost labor and a chance to get a lead on others in

entering a potentially huge market. Political partisanship, however, has negatively affected the ability of these Taiwan companies to expand in China, thereby preventing them from efficiently servicing their customers and maintaining their global competitiveness.

### ***The Carlyle Group Offers US\$5.5 Billion for ASE***

In early January, the U.S. investment firm The Carlyle Group made firm an offer to buy out Advanced Semiconductor Engineering (ASE) for around US\$5.5 billion (NT\$179.28 billion) and to take it private, a move that has become a huge political issue in Taiwan. The companies initially announced an indication of interest (not to be confused with a formal offer) in November of 2006, and then began the application process with the Taiwan government in early 2007.

The deal may run into stiff resistance from Taiwan regulators. ASE is the third largest chip company in Taiwan, and the largest provider of chip packaging and testing services in the world. A de-listing of the company's shares from the Taiwan Stock Exchange, where it represents 1% of total market capitalization, would be a blow to the market at a time when Taipei is trying to convince local companies to keep listing in Taiwan instead of moving to Hong Kong or Shanghai. Officials fear that by allowing this deal, it could open the floodgates to similar deals.

The Carlyle offer caught Taipei by surprise, and gave rise to the fear of losing other Taiwan companies outright. It is a heavy risk. Being acquired by Carlyle would free ASE from Taiwan law regarding China investments, because it would cease to be a Taiwan entity - it would instead become an American company, with far fewer restrictions on investing in China. Indeed, just days after the deal, UMC's Robert Tsao said that the Carlyle/ASE deal was a stroke of genius, and that his company should look into a similar tie-ups.

The chairman of ASE, Jason Chang, tried to quell such talk, saying that the buyout offer was unrelated to China policy. Nevertheless, President Chen Shui-bian and Premier Su Tseng-chang met with Chang to discuss the issue, and made a trip down to one of ASE's factories in Kaohsiung, Taiwan's second largest city.

The importance of the plant's location cannot be stressed enough. Not only is ASE a major employer, but most of its operations are based in the heartland of DPP supporters, putting a twist on the issue. Kaohsiung is in the poorer south of Taiwan, and the city has not prospered like Taipei has, despite major investment projects and the creation of a host of state-run companies in and around the city, including China Shipbuilding and China Steel, and despite it being Taiwan's largest container port. ASE is not only a local technology success story, but it is also a major technology industry employer in the area. The loss of such a business could take a toll on Kaohsiung, and in turn on DPP support in the city.

In the end, the dual fears of losing a major chip company and a major Kaohsiung employer prompted Taipei to act, and they announced the approval of ASE's investment in Chinese chip assembler Global Advanced Packaging Technology Ltd. (GAPT).

Politics could still derail the Carlyle/ASE deal, however. Regulators still have to approve the deal, and politically, it is hard for the ruling party to swallow. The issue at stake here, aside from Taiwan independence and the Kaohsiung location of ASE's factories, is face. If ASE and Carlyle adhere painfully to the political sensitivities involved - and promote the idea that the Chen administration is not only reasonable, but is also business savvy and easy to work with - then the deal will have a much better chance of actually going through. The approval of the US\$60 million (NT\$1.96 billion) investment is a sign that Taipei hopes to appease ASE, and indeed, if the deal is a ploy by ASE to gain greater freedom to operate in China, the company could win more such concessions in the near future.

As for Carlyle and ASE, the two parties have set the deal up for success. Carlyle proposed NT\$39 (US\$1.20) per outstanding share of ASE in an indication of interest (not a formal offer), and has already gained the support of Jason Chang and ASE Enterprises Limited, which collectively hold 18.4% of shares. Nevertheless, the companies will need regulatory and shareholder approval to close the deal.

### ***The State of the Industry: Taiwan Chip Manufacturing Turns in Stellar 2006***

Despite a few shining exceptions, Taiwan chipmakers fared grandly in 2006. The charge was led by TSMC, which turned in its best full year sales performance ever. The following chart shows the performance in dollar terms, but there was even more in terms of business deals. Companies signed new partnerships, expanded production, and set the stage for even greater success in 2007.

<b><i>Taiwan Chipmakers by Revenue</i></b>			
<b>Company</b>	<b>2006</b>	<b>2005</b>	<b>Growth</b>
TSMC	NT\$313.9 billion (US\$9.63 billion)	NT\$264.6 billion (US\$8.12 billion)	18.60%
UMC	NT\$104.1 billion (US\$3.19 billion)	NT\$90.78 billion (US\$2.79 billion)	14.70%
ASE	NT\$100.4 billion (US\$3.08 billion)	NT\$84.04 billion (US\$2.58 billion)	19.50%
Powerchip	NT\$92.12 billion (US\$2.83 billion)	NT\$51.61 billion (US\$1.58 billion)	78.50%
Nanya Technology	NT\$75.11 billion (US\$2.30 billion)	NT\$49.77 billion (US\$1.53 billion)	50.90%
Promos Technologies	NT\$60.05 billion (US\$1.84 billion)	NT\$29.50 billion (US\$905.02 million)	103.50%
Siliconware Precision	NT\$56.35 billion (US\$1.73 billion)	NT\$43.08 billion (US\$1.32 billion)	30.80%
MediaTek Inc.	NT\$52.94 billion (US\$1.62 billion)	NT\$46.49 billion (US\$1.43 billion)	13.90%
A-DATA Technology	NT\$44.15 billion (US\$1.35 billion)	NT\$31.97 billion (US\$980.80 million)	38.11%
Inotera Memories	NT\$40.78 billion (US\$1.25 billion)	NT\$23.03 billion (US\$706.53 million)	77.10%
Winbond Electronics	NT\$34.48 billion (US\$1.06 billion)	NT\$27.82 billion (US\$853.48 million)	24.00%
Novatek Microelectro	NT\$31.43 billion (US\$964.23 million)	NT\$25.98 billion (US\$797.03 million)	21.00%
Macronix International	NT\$22.79 billion (US\$699.17 million)	NT\$18.56 billion (US\$569.40 million)	22.80%
VIA Technologies	NT\$21.44 billion (US\$657.75 million)	NT\$19.13 billion (US\$586.88 million)	12.10%
Sunplus Technology	NT\$17.07 billion (US\$523.68 million)	NT\$18.78 billion (US\$576.14 million)	-9.10%
Powertech Technology	NT\$16.97 billion (US\$520.62 million)	NT\$11.17 billion (US\$342.68 million)	52.00%
Vanguard International	NT\$12.97 billion (US\$397.90 million)	NT\$11.37 billion (US\$348.82 million)	14.10%

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Realtek Semiconductor	NT\$12.42 billion (US\$381.03 million)	NT\$10.64 billion (US\$326.42 million)	16.80%
Silicon Integrated	NT\$7.907 billion (US\$242.58 million)	NT\$11.53 billion (US\$353.72 million)	-31.40%
Richtek Technology	NT\$4.306 billion (US\$132.10 million)	NT\$2.690 billion (US\$82.53 million)	60.00%
<i>Source: Companies</i>			

The biggest movers were in the DRAM industry. ProMOS more than doubled its sales as it ramped up production in new 12-inch fabs on the island, and it began building more. Powerchip came in second only to ProMOS in revenue growth. This furthers an idea put forth in an earlier Council report; that the DRAM industry is moving to Taiwan. The third top growth story last year was Inotera Memories, the DRAM partnership launched by Nanya Technology and Germany's Infineon Technologies. Infineon handed the joint venture to its DRAM unit, and opted to spin-off the unit as Qimonda AG. Powertech Technology turned in the fourth highest growth for the year. Its performance is also tied to the memory industry, as the company is a chip assembler, putting the finishing touches on DRAM and flash memory chips. Rounding out the top five growth stories was Nanya Technology, also a DRAM maker.

Not only was 2006 stellar, but the companies have set themselves up for even stronger growth in 2007 as they continue building 12-inch chip fabs. Their confidence in 2007 stems mainly from the launch of Microsoft Corporation's latest edition of the Windows operating system, Windows Vista, in late January. Many companies expect businesses and consumers to rush headlong to computer stores to buy new personal computers equipped with Vista. In fact, the new operating system adds a boost for DRAM makers as well, as Vista requires more memory per computer in order to run well. The launch of the product, and Microsoft's global marketing campaign, is expected to create increased demand for computers this year, and Taiwan companies have positioned themselves to profit.

<b><i>Taiwanese DRAM Makers Projected 2007 Investment in 12-Inch Fabs and Machinery</i></b>			
<b>Chipmaker</b>	<b>2007 Spending Plan</b>	<b>2006 Spending</b>	<b>Percent Growth</b>
Powerchip	NT\$60-70 billion (US\$1.84-2.15 billion)	NT\$85 billion (US\$2.61 billion)	Decline
ProMOS	NT\$39.12 billion (US\$1.2 billion)	NT\$30.97 billion (US\$950 million)	26%
Inotera Memories	NT\$48 billion (US\$1.47 billion)	NT\$40 billion (US\$1.23 billion)	20%
Nanya Tech	NT\$60 billion (US\$1.84 billion)	NT\$5.8 billion (US\$177.94 million)	934%
Winbond	NT\$8 billion (US\$245.43 million)	NT\$7.5 billion (US\$230.09 million)	6.70%
<i>Source: Companies</i>			
<i>Note: The Powerchip capital spending figure does not include projected spending by Elpida and Powerchip on their joint venture fabs in Taiwan.</i>			

Because of this continued expansion into 12-inch fabs, Taiwan DRAM makers will buy approximately US\$6.9 billion (NT\$224.91 billion) in semiconductor production machinery in 2007, a huge increase from 2006. This number also places Taiwan in a position to be the largest buyer of such equipment in the world in 2007. TSMC has said its capex in 2007 will be higher than the roughly US\$2.6 billion (NT\$84.75 billion) it spent in 2006.

In addition, UMC has said construction on its second 12-inch fab in Tainan is fully underway, with a price tag expected to be around US\$5 billion (NT\$162.98 billion) by the time it is completed. If the company spends a third of that total this year, around US\$1.75 billion (NT\$57.04 billion), then Taiwan will account for US\$11.25 billion (NT\$366.71 billion) in capital spending on chip machinery in 2007, a whopping figure considering its total for 2006 was an estimated US\$6.96 billion (NT\$226.87 billion).

The 2007 figure would also top Japan, which is expected to spend US\$9.63 billion (NT\$313.90 billion) on chip machinery in 2007, according to Semiconductor Equipment & Materials International's (SEMI) year-end forecast. The industry trade group said Japan was the biggest spender for chip production line equipment in 2006 at US\$9.11 billion (NT\$296.95 billion).

Strategic Marketing Associates, an industry researcher, estimates that the global chip industry will spend US\$60 billion (NT\$1.96 trillion) on new equipment in 2007, and will start production in around 29 new chip fabs and as many as 9 more DRAM factories.

If the Strategic Marketing figure is correct, then Taiwan will account for at least 18.8% of global chip equipment purchases in 2007, far outstripping all other nations. The figures show that Taiwan not only remains a major chip powerhouse able to attract investment, but it is also losing no ground at all to China. In fact, China is expected to spend just US\$2.42 billion (NT\$78.88 billion) on chip equipment in 2007, a minor increase from US\$2.39 billion (NT\$77.90 billion) in 2006, according to SEMI.

The capital-spending figure for 2007, if it pans out, will make Taiwan the number one market in the world for semiconductor equipment.

### ***Powerchip, Elpida Partnership a Huge Win for Taiwan***

Taiwan officials notched a huge victory for the local chip industry by helping lure Japanese memory chip giant Elpida Memory to build its production base on the island. In December, Elpida struck a deal with longtime partner Powerchip Semiconductor to spend US\$13.9 billion (NT\$453.08 billion) on four 12-inch chip fabs over the next five years, fabs that will be built in Taiwan and will be aimed at DRAM production. It is important to note that the 2007 capital spending forecast for Taiwan chipmakers (above) does not even take into account the Elpida-Powerchip deal.

The announcement of this deal ended months of speculation and rumors saying that Elpida may choose Semiconductor Manufacturing International Corporation (SMIC) of China as a partner instead, due to the lower costs and better investment incentives available in China. In the end, however, Powerchip and Taiwan emerged as the winner, a coup for the island and proof that its chip making prowess and ability to attract investments remains intact.

The business world has focused so much on China in recent years that numerous articles have appeared foretelling the demise of the Taiwan chip industry (and of the chip industries of other nations). The Elpida case proves that this is not the case. In fact, by choosing Taiwan as the location of the most significant investment it has made outside of Japan, Elpida showed that Taiwan remains a potent player in the global chip business many years after the world started looking to China as a possible successor. In fact, by attracting Elpida's investment, billions of dollars of future investment in the island is possible, and helps ensure that it continues to be a chip powerhouse for years to come.

Taiwan was one of four countries courting the Elpida investment, but was considered running in a dead heat against China because Powerchip and SMIC were both already partners with the Japanese company. Singapore and Japan were the other two countries seeking the Elpida investment.

Yukio Sakamoto, the chief executive officer of Elpida, credited three main reasons behind Elpida's choosing Taiwan: the long relationship between Elpida and Powerchip, better infrastructure, and a strong commitment by the Taiwan government to see the deal through. It is important to note that the company chose Taiwan even though "China offered by far the best incentives and the lowest costs," as Sakamoto said on the sidelines of a December 7 press conference in which the deal was announced.

Initially, Elpida and Powerchip will inject NT\$40 billion (US\$1.23 billion) into the joint venture, mainly to buy out a Powerchip plant already under construction at the Central Taiwan Science Park, near the city of Taichung. They plan to start moving equipment into the new 12-inch fab in the second quarter of 2007, and will initially ramp up production to 30,000 wafers per month.

When it opens, the fab will be using state-of-the-art 70-nanometer etching processes, and will ultimately produce chips on 60,000 wafers per month. Each of the four planned fabs will be built to produce 60,000 wafers per month, for total planned capacity of a massive 240,000 wafers. Thousands of DRAM chips can be made on each wafer.

Powerchip will be in charge of daily operations, staffing and other issues at the fabs. To staff all of the facilities fully, Powerchip estimates it will have to hire around 8,000 workers. The two companies will split all costs and output. Elpida and Powerchip will also jointly develop new production technologies. Their development pact will ensure that research continues down to the 50-nanometer level and beyond.

Powerchip's chairman, Frank Huang, credited the Taiwan government with ensuring the success of the partnership, indicating that policy makers pushed through some last minute incentives to finalize the deal.

### **For Taiwan's Chip Industry, the Powerchip/Elpida Deal Was Just One of Many in 2006**

Taiwan chipmakers played a part in a number of high profile deals and investments in 2006, displaying a vibrancy rivaled by few other nations.

Where leveraged buyouts gripped the global chip industry with such huge deals as the US\$17.6 billion (NT\$573.69 billion) bid for Freescale Semiconductor and US\$10.6 billion (NT\$345.52 billion) purchase of Philips Semiconductors, Taiwan boasted Carlyle offer for ASE.

While U.S. giants engaged in takeovers, such as the US\$5.4 billion (NT\$176.02 billion) deal between Advanced Micro Devices (AMD) and ATI Technologies, Taiwan companies were also snapped up. Graphics chipmaker Nvidia finalized its US\$52 million (NT\$1.69 billion) deal to buy ULi Electronics Inc. of Taiwan, a chipset maker, and Fairchild Semiconductor entered talks that led to its deal to buy Taiwan rival System General Corporation for US\$200 million (NT\$6.52 billion).

These trends, partnerships, buyouts and takeovers, are likely to continue over the next twelve months in Taiwan.

### **Looking Ahead**

While the business side of the chip industry looks rosy for Taiwan in the early days of 2007, the government/regulatory side will probably move back into a deep freeze. The government gave companies all of their Christmas presents in December – approval for 8-inch fabs for Powerchip and ProMOS; the go-ahead to use 0.18-micron process technology in China, albeit via an application process; and a US\$60 million (NT\$1.96 billion) China investment for ASE. There is little left over, and like a parent coping with an overused charge card, Taipei and the Chen administration now has to pay the piper, i.e. its pro-independence constituents. The government may prove to be very stingy with China investments in 2007, after finally clearing the table of deals that had been on hold.

In the first six-months of 2007, it is unlikely that Taipei will grant many applications for investments in China. A few more chip assemblers may win permission for small investments, but there will likely be no big deals. Not only did the government go out on a political limb in December, but it is also under intense pressure in so many other areas, while pro-independence groups are not happy with the administration's performance to date anyway.

The president is under fire on corruption allegations, as are other members of the ruling party. President Chen's family have been implicated in a few serious financial scandals, including one concerning Chen and his wife for allegedly misusing a special account meant for diplomatic missions and other special state purposes. The trial has already started for Chen's wife, and although President Chen escaped prosecution by virtue of his office, he has vowed to resign if she is found guilty. These court cases will be important to chip industry players because the more pressure is put on the Chen administration, the more unpredictable it is likely to become.

Chen is still the president and holds the power to make key decisions. He has also shown a penchant over the past few years of using scandal to his benefit. While everyone is looking at the newspaper headlines, he is often busy working behind the scenes on some other issue deemed important by his supporters. For a while, it has appeared that the issue would be revising Taiwan's constitution, which China views with concern.

The bottom line is that while President Chen retains the power of the presidency, the current corruption trial and the strength of the KMT have the ruling party in retreat. It is unclear how long that will last, and where it will lead. In the past, the ruling party has shown a willingness to dig in its heels and follow the will of its core pro-independence supporters. If it does the same this time, the minimum impact is that the chip industry will not see new China investment approvals anytime soon.

### **Conclusions & Recommendations**

Taipei made huge strides in the fourth quarter by passing a number of applications for China-bound investments that will enable Taiwan companies to better compete in China and to keep Chinese start-ups from taking their business. The government should be praised for its foresight in the approvals. They were long overdue, but the Council recognizes how politically difficult they were to pass.

However, despite these policy changes, the US-Taiwan Business Council believes that more needs to be done to ensure the economic competitiveness of Taiwan companies in the global marketplace, as well as to ensure their relevancy to the U.S. business community. The Council puts forth the following recommendations:

#### **Approve 0.18-Micron Technology Transfer to China**

Taipei needs to follow through on its promises and allow 0.18-micron manufacturing process technology transfers to China so that Taiwan companies can better compete with their Chinese rivals. Given recent statements by the government, the prospect for further delays exists. The Council suggests that Taiwan adopt a simple and transparent application process to facilitate quick implementation of the technology at TSMC Shanghai and future China fabs.

Further delay would be unfortunate, as the failure of the Taiwan government to relax this regulation has contributed to the development of the Chinese chip industry. Chinese chipmakers have suffered losses in recent years due to tough competition from Taiwan foundries, and are only surviving because there are no alternatives, with only one legal Taiwan fab in the market. They are also able to produce more advanced chips than their lone rival in China, TSMC Shanghai. TSMC's China fab has been disadvantaged, as its

China-based rivals have been using 0.18-micron and even more advanced processes such as 0.15 micron, 0.13 micron, and 90-nanometer for some time.

**Provide Finalized Regulations for Chip Packaging & Testing in China**

The government needs to provide Taiwan chip packaging & testing companies with a simple and transparent application process for investing in China. Despite the ASE investment, it is still unclear what the government requires of chip assemblers that would allow them to invest in China.

**Draft New China Investment Regulations for the Local Chip Industry**

Taipei needs to draft a new set of comprehensive guidelines for chip investment in China – detailing in a simple and transparent manner the process for submitting China investment applications. The old guidelines expired at the end of 2005, and nothing new has yet been drafted.

**Enhance Monitoring of Semiconductor Investments in China**

The government should also continue to improve its ability to effectively manage chip-related investments to China, and prosecute companies that violate the law.

**Remove the Cap on Taiwan Investments in China ("40% Rule")**

The government needs to remove the investment ceiling imposed on Taiwan companies in the China market – which amounts to up to 40% of net worth. This is not an effective method of limiting Taiwan corporate expansion in China, as companies are finding ways to circumvent the regulations to ensure their continued growth in the China market. These methods including selling-off operations with heavy penetration in China and listing the companies on a foreign exchange market, or just de-listing completely from the Taiwan financial market.

The present rule, far from protecting the Taiwan economy, hurts the Taiwan economy as it acts as a force pushing away Taiwan companies enjoying success in the China market, as opposed to nurturing those companies and ensuring that they have the incentives to remain in Taiwan. Those incentives include strong intellectual property rights protections, attractive investment criteria, 21st century infrastructure, and a simple and transparent legal environment in which to do business across the Taiwan Strait.

**Swiftly Approve the Carlyle Group and ASE Deal**

The Taiwan government should swiftly complete the application process for The Carlyle Group's proposed purchase of Advanced Semiconductor Engineering, Inc. (ASE). This deal highlights the ability of Taiwan companies to attract substantial foreign investments, greatly benefiting Taiwan's economy. It also underscores the attractiveness of Taiwan's semiconductor market.

It is important to move away from the notion that only semiconductor companies can realize synergies through mergers and acquisitions in the semiconductor sector. Private equity firms are also well positioned to add value. The purchase of a global leader such as ASE is an important addition to the Carlyle portfolio, and the deal will add value to ASE by providing it with access to Carlyle's other portfolio businesses.

US\$1=NT\$32.596

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## **ABOUT THE REPORT**

The US-Taiwan Business Council is committed to providing our members with tactical and strategic advice on how to succeed in the Taiwan market. As part of a suite of information products distributed to our members, the Council publishes several analysis reports each year. These reports are published each quarter, with an expanded report in the fourth quarter that covers the entire previous year.

The Semiconductor Quarterly Report focuses on the semiconductor industry as it relates to Taiwan, China, and the U.S., and provides up-to-date analysis of developments during each quarter. Each report also contains contact information valuable in initiating and maintaining a relationship with Taiwan private and government entities, as well as other useful information including organization charts and a glossary.

The US-Taiwan Business Council's Semiconductor Report has been published since the first quarter of 2002. Although these reports are generally distributed exclusively to members and to U.S. government employees, this analysis excerpt provides some insight into the focus and contents of the report.

For more information, please contact us directly at the below address, or visit us online at [www.us-taiwan.org](http://www.us-taiwan.org).

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