Global and China Semiconductor Industry Report, 2008-2009

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Abstract

According to China Semiconductor Industry Association, the integrated circuit industry scale was totaled at CNY 124.682 billion in 2008, a reduction of 0.4% of last year, which was the first time that a negative growth occurred in the recent 20 years. Driven by the constant consumption upgrading and 2008 Beijing Olympic Games, the industry maintained a growth of 10.4% in the first half of 2008, 12.5% and 8.3% respectively in the first quarter and second quarter. However, the growth rate sharply declined to 1.1% in the third quarter, and a negative growth of -20% in the fourth quarter, which was the biggest quarterly drop in the recent 20 years.

Considering the policy, China's semiconductor industry is currently in the dilemma, giving preferential policies will lead the issue of trade protectionism by the countries rely on semiconductor products export such as the U.S.A; if not, the Chinese companies will be more difficult to survive facing oversea competitors.

China is the largest IC market in the world, with a market scale at US $85 billion in 2008, but the market share of domestic suppliers was less than 7%. Although China is the global factory of electronics products, the orders and shipments are both controlled outside.

Considering the IC design, China has few of IC design houses like Solomon, Actions, Spreadtrum and Vimicro. The Solomon, derived from the LCD division of Motorola, relies on Motorola, lack of product innovations. Backed by the Realtek, the Actions is the world’s largest sound card manufacturer and has an outstanding performance in the digital audio field. Spreadtrum recorded a reduction of 50% in the fourth quarter of 2008, far higher than Mediatek. Protected by the huge domestic demand for PC camera, Vimicro stays steady; however, caused by its high labor cost, the company recorded successively operational loss in the last four quarters.

IC design sector suffered the most with the transfer of international financial crisis to the real economy, especially those newly established companies due to the break of their capital chain, venture investors also draw back, and the A-turn investment dropped 82% during 2000-2007. According to GSA, there were 74 companies shut down since Oct 2008, and most of which were small companies.

Nevertheless, the wafer OEM maintains a high expansion in china. Since its establishment in the year of 2000, SMIC has built productions in Shanghai, Beijing, Tianjin, Chengdu, Wuhan and Guangzhou through M&A and trusteeship. In addition, guided by Shanghai Government, the Huahong Group acquired Grace Semiconductor at the beginning of 2009, along with an extra investment of US $2.2 billion for a 12-inch wafer plant. However, the fact is that SMIC has been recording a loss since its establishment.

The cost structure of semiconductor manufacturing is roughly as following: machine depreciation 50%, materials 20%, water & power 5% and labor 10%. For Chinese companies, only 15% of the cost can be controlled, while the part has been played to the full extent. Moreover, the unilateral understanding to scale has fettered their imaginations of strategy, which makes the semiconductor industry in the situation of unmerited scale.

In addition, the semiconductor industry is always protected by governments, dare not or unwilling to face with the market-oriented risk. The Chartered is a typical example.

There are two typical development routes regarding the wafer OEM, one is represented by the TSMC: focus on the technology and high-profit business; the other is represented by the UMC: huge investment on IC design houses for the purpose of production capacity enhancement, for example the investment to MTK, Novatek and SIS are all proved successful. Novatek is the second largest IC design house in Taiwan, as well as the global second largest TFT-LCD drive IC manufacturer. MTK is the top mobile phone vendor and the 7th largest IC design house in the world, as well as the largest IC design house in Taiwan.

It is not enough to just invest a huge capital and the semiconductor industry also requires more input in the basic science and technology especially in China.

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