

Potential Revival in Semiconductor 'Valley': A Turnaround on the Horizon

Driven by the demand for AI, electric vehicles, and other technologies, the semiconductor industry cycle is once again in the spotlight.

HONG KONG, CHINA, July 28, 2023 /EINPresswire.com/ -- Since the existence of statistical data, the global [semiconductor](#) industry has seen a disruptive technological iteration about every 10 years, with a smaller cycle every 3-4 years. Each technological innovation brings about an explosion of demand, where the winners enjoy the spoils of success, while the losers quietly exit the stage.

This semiconductor cycle began its downturn in mid-2021, characterized by weakening demand, accumulating inventory, and manufacturers' losses. According to analyses from several institutions, after two years of adjustments, the coldest winter for the industry has passed, and a recovery is expected within the year.

1. Semiconductors Begin to Emerge from the Valley

As the most advanced technology of the past century, the development of the semiconductor industry globally is undoubtedly rapid. Continuous innovation is promoting the industry to evolve into more sophisticated areas, and countless intelligent minds worldwide have left their mark on the development of this industry.

However, as an industry with both growth and cyclicity, the semiconductor industry will present major cycles due to the technological iteration of products, fluctuations in the macro economy, and changes in application scenarios. The performance of enterprises is often a world of difference.

In the past, the rapid popularization of personal computers worldwide achieved the miracle of Intel's stock price increasing fiftyfold in ten years. But the burst of the internet bubble caused it to lose 80% of its market value. Once, the brilliance of smartphones made Qualcomm the darling of the capital market. But in recent years, the stagnation of mobile phone growth has almost halved Qualcomm's stock price... Examples like this are everywhere.

A recent research report released by Shanxi Securities believes that the semiconductor cycle has a high correlation with the global economic cycle. The essence behind the industry cycle

fluctuation is the change in supply and demand. In the rotation of the economic cycle, the change in supply and demand in the semiconductor industry can be divided into four stages:

Stage one, the upward economic cycle drives the recovery of demand for end devices and whole machines. When the demand growth rate is higher than the shipment growth rate, semiconductor product prices rise, and industry sales revenue enjoys both volume and price increases;

Stage two, in order to meet the continuously rising market demand, wafer factories and IDM companies increase capital expenditure and plan capacity expansion. At the same time, the economic recovery enters the overheating stage, demand growth rate gradually slows down, but the absolute value of sales revenue is still on the rise;

Stage three, the economic downturn suppresses downstream demand, and the release of expanded capacity keeps supply growing inertially. Supply exceeds demand, causing semiconductor product prices to fall and sales revenue to be under pressure;

Stage four, the economy continues to decline, market demand is weak, wafer factories and IDM companies lower their utilization rate and reduce capital expenditure, industry supply falls, gradually bottoming out.

Specifically analyzing this chip downturn cycle, it is due to the stagnation of global smartphone growth and the concentrated iteration of personal computers during the epidemic home period. After the fourth quarter of 2021, the consumption speed of the semiconductor market began to be slower than the production speed. The chip inventory in the upstream of consumer electronics gradually accumulated, and product prices began to decline accordingly.

In 2022, the high inventory crisis gradually spread to other types of chips, triggering further de-stocking of their own inventory levels at all links. In the first half of 2023, the overall inventory level was at a low level, but the demand recovery was still slow, leading to a continuous slump in the industry. However, the downstream industries facing semiconductors range widely, and the cycles in the subdivided fields are different.

Southwest Securities research report shows that in the digital chip field, driven by the demand for AI computing power, the business has begun to recover. In the first quarter, consumer electricity is still in the deepening stage of de-stocking, and the cycle needs to be observed. Analog chip-related companies have a high inventory level. After experiencing the downturn in 2022 and the impact of de-stocking, storage performance has fallen to a low point and has gradually stabilized since May this year. After experiencing a high level of prosperity in 2022, the manufacturing link has started to decline in capacity utilization due to weak demand, and capital expenditure has slowed down in 2023. The equipment link is closely related to the scale and growth rate of downstream wafer fabs' capital expenditure. It is expected to narrow the growth rate with the slowdown of Capex of international large wafer fabs.

2. Focus on the Third-Generation Semiconductors

Semiconductor materials are the most upstream part of the semiconductor industry chain; without semiconductor materials, there would be no downstream industries.

This year, despite the counter-cyclical nature of the semiconductor industry, the rapid development of subsectors such as 800V automotive electric drive systems, high-voltage fast charging piles, consumer electronics adapters, data centers, and communication base station power supplies continue to drive the market demand for third-generation power semiconductors.

The so-called third-generation semiconductors refer to wide-bandgap semiconductor materials represented by Silicon Carbide (SiC) and Gallium Nitride (GaN). Compared with the first two generations of semiconductor materials, they have superior high-frequency, high-voltage resistance, high-temperature resistance, and strong radiation resistance. Therefore, they have great application potential in new energy vehicles, photovoltaics, wind power, 5G base stations, high-speed rail, and other fields.

Taking Silicon Carbide (SiC) power as an example, market research firm TrendForce expects that by 2023, the overall SiC power component market will reach \$2.28 billion, an annual growth of 41.4%. By 2026, the SiC power component market is expected to reach \$5.33 billion.

From the perspective of the industry chain, domestically listed companies engaged in SiC can be divided into four categories: those focusing on substrate materials, such as Tianyue Advanced and Dongni Electronics (603595); IDM companies at the device end, such as China Resources Micro, Stard Semiconductor, and Wentai Technology (600745), etc.; companies integrating from materials to devices, such as Sanan Optoelectronics (600703); and chip design manufacturers, such as Xinjie Energy.

Currently, the main factor restricting the large-scale commercial application of Silicon Carbide devices is the high cost, with the difficulty of manufacturing Silicon Carbide substrates and the low yield being the main reasons. At present, the global Silicon Carbide market is dominated by the United States, Europe, and Japan, with domestic leading companies Tianke Heda and Tianyue Advanced only occupying a small share of the global Silicon Carbide substrate market.

Although the semiconductor sector's performance is not as expected, under the backdrop of domestic substitution, the third-generation semiconductor companies have still sparked a wave of financing and listing.

According to [Jak Electronics](#), Anhui Changfei Advanced Semiconductor Co., Ltd. (also known as "Changfei Advanced") recently announced that it has completed over 3.8 billion yuan in Series A equity financing. This sets a new record for the largest single financing in the semiconductor

private equity financing market since 2023. Changfei Advanced focuses on the research and development and manufacturing of Silicon Carbide (SiC) power semiconductor products. Since its establishment, it has completed multiple rounds of financing. This round of investors includes Guanggu Jinkong, Fuzhe, Zhongping Capital, China Building Materials New Material Industry Fund, etc., and old shareholders Changfei Optical Fiber (601869), Tianxing Capital, etc. also continue to add.

Meanwhile, some companies are planning to go public. For example, Tianke Heda submitted a prospectus as early as 2020. After the inquiry, it applied to withdraw the application document, and then the IPO was terminated. In 2021, Tianke Heda signed a counseling agreement with CICC. At present, the counseling work has been completed, and the IPO is getting closer.

On July 25 (next Tuesday), Huahong Semiconductor will start the subscription on the Sci-Tech Innovation Board of the Shanghai Stock Exchange. Huahong Semiconductor is known as the leader of the third-generation advanced semiconductors in China, covering almost all processes from design, development, manufacturing, testing, packaging, sales to technical services. Worth mentioning is that this is the second time this year that the National Integrated Circuit Industry Fund II (the second phase of the Big Fund) has supported Huahong Semiconductor, and it is also the latest case invested by the second phase of the Big Fund.

In this IPO, Huahong plans to raise 18 billion yuan for projects such as Huahong Manufacturing (Wuxi) Project, 8-inch Factory Optimization and Upgrade Project, and Innovation R&D Project for Special Process Technology. If all goes well, this will be the third-largest IPO in terms of fundraising on the Sci-Tech Innovation Board, and also the largest IPO on the Sci-Tech Innovation Board this year.

However, the overall performance of the semiconductor sector is currently not good. It is not easy to achieve an ideal valuation through listing and raise a large amount of money.

JAK Electronics
Jak electronics
+852 9140 9162
[email us here](#)

This press release can be viewed online at: <https://www.einpresswire.com/article/646830947>

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2023 Newsmatics Inc. All Right Reserved.