Impact and Implications of the U.S.-Japan Semiconductor Agreement on the Competitiveness of Japan's Semiconductor Industry

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This study explores the impact of the U.S.-Japan Semiconductor Agreement on the international competitiveness of Japan's semiconductor industry and the transformation of technology trade. It further examines the implications of Japan's experience for Taiwan. The "Second U.S.-Japan Semiconductor Agreement" highlighted two major points: (1) the foreign market share of semiconductor products in Japan must exceed 20%, and (2) preventing Japanese semiconductor manufacturers from dumping in overseas markets. These provisions adversely affected the development of Japan's semiconductor industry.

At that time, Japan's semiconductor companies, primarily focused on memory products, did not actively diversify wafer fabrication plants into overseas markets due to national security concerns, high overseas manufacturing costs, and a shortage of skilled technical personnel. Coupled with an excessive emphasis on durability and quality, and the rise of semiconductor foundries in Taiwan and South Korea, Japan's semiconductor companies faced declining revenue and profits. This weakened their capacity to invest in advanced process facilities.

During this period, Japanese semiconductor companies underwent several mergers, licensed technology to Taiwanese firms to establish joint ventures in the memory sector and sold packaging facilities to Chinese companies. However, these countermeasures were ineffective due to a failure to leverage external resources, a lack of focus on advantageous product lines, and the impact of the global financial crisis.

With the semiconductor industry increasingly characterized by vertical specialization, miniaturization and process refinement, and large-scale investments driven by rapid technological iterations, the trend of international collaboration and division of labor has become mainstream. Nonetheless, Japanese companies' global strategies remain relatively insular, potentially constraining their ability to enhance international competitiveness in technology and overseas markets.

In recent years, Japan’s industrial policies have shown a gradual shift toward a “focused” innovation strategy. For example, the Japanese government has introduced subsidy programs to attract leading overseas semiconductor foundries, such as TSMC, to invest in the Kyushu region. Concurrently, it encourages private sector investment in establishing companies like Rapidus, which collaborates with LSTC and IBM to develop advanced process technologies below 2nm. Additionally, Fujitsu and Panasonic have transferred mature domestic manufacturing facilities to Taiwanese semiconductor foundries.

Japan's experience may offer valuable insights for Taiwan's industries in navigating potential challenges under the "Trump 2.0" policies. Taiwanese semiconductor companies should consider establishing overseas production sites and R&D centers comparable to those in Taiwan, while adopting co-creation strategies to facilitate technology transfer and gather feedback at these locations. This approach would foster a virtuous cycle of achieving "high technological trade balance ratios and moderately high goods trade balance ratios," enabling timely responses to international political risks and mitigating geopolitical risks associated with Taiwan.

On the policy front, the government could gradually relax restrictions on these industries establishing high-end manufacturing facilities in overseas markets. Specifically, measures could focus on supporting domestic industry leaders in setting up factories or establishing R&D centers in advanced economies such as the United States, Japan, and Germany. Policies providing subsidies and guidance could be implemented to promote industrial clustering and facilitate the co-creation of technologies between Taiwan and these host countries.

Such measures would not only help Taiwan's industries mitigate “international geopolitical or market political risks” but also accelerate their global market expansion. This would enhance Taiwan's influence on the industrial development of major global economies and strengthen its international positioning.