

**Exports of U.S. Microchip Technologies to China –
The U.S. Government’s Misplaced Concern**

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For decades, U.S. export control laws have been the battleground for two competing government interests: preventing enemies from receiving vital U.S.-origin technologies, while also allowing their export to world markets. Unfortunately this dual mission leaves the government at odds with itself as well as with a high tech industry where most successful companies owe their growth to outsourcing and foreign production. A closer examination of U.S. export controls on shipments of semiconductor microchip technologies to China reflects the need for the U.S. government to view the private sector as a partner, not a problem.

The Export to China of Microchip Technology – Growing U.S. Concern

A recent report by the Defense Science Board, a U.S. Department of Defense advisory committee (“DSB”), highlights U.S. contradictory views of China. While the U.S. government is threatened by China, U.S. business sees China as a vast opportunity.

The DSB sounded alarms that the U.S. is losing its domestic sources of supply for military microelectronics. Their dire conclusion: due to outsourcing, the U.S. military is facing a loss of secure domestic manufacturing facilities of semiconductor materials, microchips, and integrated circuits.

To ensure continued U.S. Department of Defense (“DOD”) access to advanced, secure manufacturing facilities, the task force recommended a broad U.S. effort to offset the outsourcing of cutting-edge technologies to foreign countries, such as China. Some of its proposals supported the tightening and stricter enforcement of U.S. export controls, trademarks and patents, and World Trade Organization regulations. In addition, the report called upon the DOD and U.S. spy agencies to play a larger role in the formulation of export control policies.

What prompted the DSB report? The U.S. military is nervous about the rise of China’s semiconductor fabrication and microchip assembly industries, a development that is accelerating China’s international commercial power. Critics of current U.S. export controls, including the DSB, advocate a harder line on U.S. technology exports to China. They argue that the current 33-nation Wassenaar Arrangement, a coalition consisting of the U.S., the EU, and other “friendly” nations, has failed to ensure that “potential adversaries do not have access to leading edge design and wafer fabrication equipment, technology....” They particularly criticize the recent refusal of European allies to prevent the export of leading-edge semiconductor and microchip manufacturing equipment to China.

Increasing Exports of U.S. Microchip Technology – a Trend That Many Support

Many in the U.S. business community vehemently oppose further restrictions on the export of U.S. semiconductor and microchip technology. They respond that DSB's view of the world is outdated. They point out that trade restrictions are eventually thwarted by non-U.S. competitors. More importantly, they argue that restrictions only serve to stifle innovation – the real enduring strength of the U.S. economy.

Due to its high labor costs, among other reasons, the U.S. is already not a viable location for manufacturing electronic components. Even the Chairman of the DSB admitted this, stating, "It is clear from recent trade trends in the microelectronics industry that a significant migration of critical microelectronics manufacturing from the United States to other foreign countries has and will continue to occur."

His remark actually validates the popular view that "all national economies are global economies". The most successful U.S. companies owe much of their growth to outsourcing and foreign production of licensed U.S. technology.

What Really Bothers the U.S. Military?

In the case of China, U.S. export controls already prohibit exports of semiconductor and microchip technologies that are specially designed for military applications. Thus, the DSB's report reveals that the U.S. military is actually concerned about two problems that have no easy solution: 1) that the manufacturing plants of top quality semiconductor materials, microprocessors, and integrated circuits are located now largely overseas; and 2) the U.S. military's most cutting-edge microelectronic components incorporate technologies for which there is often no commercial demand.

The first issue is a logical result of today's global economy. Manufacturing facilities move to areas of lower cost production. The last ten years have been the China decade. High tech manufacturing will continue to be drawn to China for years to come. The second issue is certainly understandable, given that there are often few or no commercial markets for microchips for nuclear weapons, missiles, or radiation hardened circuitry, as examples.

Public/Private Partnership

In international trade, as long as the U.S. government views itself as a policeman of private industry, its dual mission of protecting vital military microtechnologies, while promoting trade, will remain contradictory. Instead, the U.S. military should view the private sector as a partner, not a problem. One solution the government might consider to bring the interests of the military and the private sector closer together is offering incentives to convince vital U.S. industries and their technologies to remain in the U.S. Perhaps the stick should be replaced with a carrot.

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