**More News about Semiconductors**

Last month, our article on the state of semiconductors in the whole world briefly discussed the importance of Taiwan’s Taiwan Semiconductor Manufacturing Co. (TSMC). We noted that TSMC is the largest foundary for semiconductors in the world, **and** the company makes the chips for almost every country that need chips, especially the most advanced chips for manufacturing many, many electronic products. TSMC makes the chips needed by the world, but large companies including Apple, Nividia, Broadcom and Qualcomm design the chips they need and avoid the high expense of getting into producing the chips they need themselves. Building a modern chip making plant runs into the billions and requires a lot of experts and specialists that are hard to find and expensive to upkeep.

While TSMC dominates the chip making world, the demand is so high, that TSMC cannot come close to providing all the chips their list of customers need. Thus, the company has already begun adding more chip production facilities (called Fabs) with the state of Arizona targeted add as many as 10 plants costing $10 billion per plant.

When this TSMC expansion is complete, America will be in position to dominate in partnership with TSMC, the future inventories of the most modern and powerful chips to the world, including our international competitors - China and Russia.

TSMC’s very significant position as the major, advanced semiconductor source is considered by some people as a severe vulnerability to the world. Today, this single company provides 92% of the most advanced chips in the world containing transistor circuits that are one-thousandth the width of a human hear. The largest chip contains a billion transistor circuits. Each of these super dense chips takes six (6) months of processing to complete.

TSMC’s customers are all screaming for more product, but the company is already at full capacity, running 3/24, or three shifts of workers every day.

Some analysts are stating that China is so desperate for TSMC’s best products that military action to capture Taiwan may be imminent. Other “experts” believe that this situation may actually deter Chinese military action, as war and rocket attacks on Taiwan will almost certainly disrupt TSMC’s operations (and cancel Chinese chip orders).

Taiwan can also threaten, or actually destroy or move their key components (to America?) to deny China (and others) access to the most advanced chips every major nation needs, and wants.

Technology is advancing and the current 5-nanometer technology chips will soon be replaced with 3-nanometer chips. If the Chinese do not attempt to grab Taiwan, the plan is to keep the best chips in Taiwan, with their foreign manufacturers making the 5-nanometer chips which will be important for some years into the future.

Dr. Morris Chang, the founder and principal owner of TSMC is an American citizen, but since the Taiwanese government funded most of his plant, and not American sources such as Intel, he is not abandoning Taiwan and moving their future 3 nanometer chip production out of Taiwan. Many officials in Taiwan also believed that TSMC and several other high tech companies in Taiwan provide a shield for Taiwan against Chinese aggression.

**Source:**

***https://www.wsj.com/amp/articles/the-world-relies-on-one-chip-maker-in-taiwan-leaving-everyone-vulnerable-11624075400***

**The World Relies on One Chip Maker in Taiwan, Leaving Everyone Vulnerable**

*Taiwan Semiconductor Manufacturing Co.’s dominance poses risks to the global economy, amid geopolitical tensions and a major chip shortage*

**By Yang Jie, Stephanie Yang and Asa Fitch, *WSJ*, June 19, 2021, B1, B8**

Taiwan Semiconductor Manufacturing Co. ’s chips are everywhere, though most consumers don’t know it.

The company makes almost all of the world’s most sophisticated chips, and many of the simpler ones, too. They’re in billions of products with built-in electronics, including iPhones, personal computers and cars—all without any obvious sign they came from TSMC, which does the manufacturing for better-known companies that design them, like Apple Inc. and Qualcomm Inc.

TSMC has emerged over the past several years as the world’s most important semiconductor company, with enormous influence over the global economy. With a market cap of around $550 billion, it ranks as the world’s 11th most valuable company.

Its dominance leaves the world in a vulnerable position, however. As more technologies require chips of mind-boggling complexity, more are coming from this one company, on an island that’s a focal point of tensions between the U.S. and China, which claims Taiwan as its own.

Analysts say it will be difficult for other manufacturers to catch up in an industry that requires hefty capital investments. And TSMC can’t make enough chips to satisfy everyone—a fact that has become even clearer amid a global shortage, adding to the chaos of supply bottlenecks, higher prices for consumers and furloughed workers, especially in the auto industry.

**This is just the beginning of the long article from the WSJ.**