



## THE SILICON SHIELD EROSION: FORTIFYING TAIWAN AGAINST GEOPOLITICAL SHOCKS

by  
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As of 2024, Taiwan produced [60 percent of the world's semiconductors](#) and 90 percent of the world's most advanced semiconductors. This impressive feat is spearheaded by the island's largest chipmaker Taiwan Semiconductor Manufacturing Company (TSMC), whose crucial components are used to power “everything from smartphones and electric vehicles to artificial intelligence and quantum computing applications”. The Taiwanese semiconductor industry is so advanced that certain experts believe in its ability to act as a [“silicon shield” for Taiwan](#), which is facing military pressure and ultimately the risk of invasion by the PRC.

### Cracks in Taiwan's Defense: The Limits of Semiconductor Protection

The term [“silicon shield”](#) emanates from Taiwan's ability to resist the Chinese threat owing to its unique technological know-how and integration into global supply chains. According to the silicon shield theory, the [protective function](#) of the Taiwanese semiconductor industry is two-fold: (1) China may not want to invade Taiwan since a conflict would disrupt its semiconductor imports on which it is largely dependent; (2) semiconductors are a matter of U.S. national security, making an American intervention in case of cross-strait conflict more likely since the U.S. is also dependent on Taiwanese chips.

Recent polls indicate that [the Taiwanese believe in the silicon shield](#). However, Taiwan has found itself facing a double-sided market pressure. China has decreased its technological dependence on Taiwan by ramping up its [domestic chip production](#), and the [U.S. has threatened Taiwan with semiconductor tariffs](#). Furthermore, Taiwan and China have [sharpened their rhetoric](#) against each other, indicating a deterioration in cross-strait relations.

### A Balancing Act: Navigating U.S. Protectionism and PRC Tech Ambitions

Taiwan exports [93.4 percent of its semiconductors](#) to its surrounding countries; China alone purchased 53.8 percent of Taiwanese exports in 2023. However, China's share of total imports from Taiwan has been declining since 2020 when its share lay at 61.2 percent. This is partly due to [China pursuing its “Made in China 2025” strategy](#), which aimed to increase the country's domestic semiconductor production by 40 percent by 2020 and 70 percent by 2025. Although the PRC only achieved its [first target in 2022](#), it still managed to make technological breakthroughs such as [successfully producing a seven-nanometer chip](#) in 2023.

Furthermore, Chinese companies specializing on mature-node chips have started [locally outcompeting Taiwanese companies](#), forcing them to shift to more advanced production. The PRC's technological progress is limited by the [dual-use technology export controls introduced by the U.S. in 2022-2023](#) and the [lack of access to advanced lithography machinery](#). However, the decreasing microchip imports and the PRC's technological progress indicate that Taiwan will need to safeguard its core technologies and diversify its commercial relationships.

Simultaneously, Taiwan should brace itself for protectionist trade policies coming from its closest partner, the United States. President Trump's [“America First”](#) policy has sent shockwaves across the world as the U.S. withdrew from many of its [international commitments](#) and began pursuing a [tougher stance towards Ukraine](#). Although Taiwan is unlikely to become [“tomorrow's Ukraine”](#) owing to recent U.S.-Taiwan [military commitments](#) and [planned arms purchases](#), the U.S. has undoubtedly pursued a hardline trade policy against Taiwanese chipmakers. Recently, TSMC has barely [avoided tariffs owing to a \\$100 billion U.S. bound investment](#) only to face a [discrimination lawsuit](#) and a [technology leak investigation](#).

To counter such [market pressures and diversify](#)



[risks](#), Taiwan is pursuing global ventures extending beyond East Asia. In 2016, Taipei launched a [“New Southbound Policy”](#) initiative aiming to deepen economic and cultural exchange with the southern Indo-Pacific. TSMC has also built a [semiconductor factory in Japan](#) and [invested \\$10 billion to build an industrial park in Dresden](#). However, despite diversification and American re-shoring pressure, TSMC chooses to [retain its most advanced production](#) in Taiwan to protect its industrial core.

Despite retaining the most advanced production, microchip manufacturing is increasingly moving away from Taiwan. Taipei is compelled to [diversify risks](#) through outbound investments given the combination of [China ramping up domestic production](#) and the [U.S. pressure](#) on Taiwan to re-shore its semiconductor production. Such market forces are eroding the island’s “silicon shield”, necessitating that Taiwan compensates for it using augmented defense capabilities.

### Porcupine Taiwan: Enhance Defense and Decrease Reliance

A [2023 CSIS wargame suggests](#) that an invasion of Taiwan is unlikely to end in Beijing’s victory and would have devastating consequences for all parties involved. However, although [opinions diverge](#) on how likely an all-out conflict is, China has [not ruled out military measures](#) to achieve unification, meaning that Taipei should prepare for a worst-case scenario. Moreover, cross-strait [tensions have intensified](#) since 2016 following the Democratic Progressive Party’s (DPP) election victory in Taiwan due to, inter alia, the DPP’s rejection of the [“1992 Consensus”](#) concerning the “one China” concept.

Recently, Beijing has also acknowledged its attempt to [“normalize” military pressure against Taiwan](#). Taiwan responded by labelling the PRC a [“foreign hostile force”](#), launching a [17-point anti-sabotage strategy](#), and announcing plans to [spend over 3 percent of its GDP on defense](#).

Should Beijing succeed with its “normalization” attempt, it could potentially use a military exercise as a [smokescreen for an invasion](#), gaining the element of surprise. Furthermore, [American reports](#) indicate the PRC’s advanced A2/AD weapon systems would likely prevent the timely arrival of U.S. reinforcements during a contingency, indicating the need for Taiwan to initially defend itself using domestic capabilities.

With this and the two-sided market forces at hand, Taiwan should combine its silicon shield with [“deterrence through protraction”](#) using an asymmetric [“porcupine” strategy](#). This would allow Taiwan to hinder the incoming invasion by [targeting Chinese air and sea capabilities](#) utilizing agile technologies such as midget submarines, offensive mining and land-based defenses. Such a strategy would make a potential conflict extremely costly, allowing Taiwan to resist until rescued, and decrease its reliance on the silicon shield.

Although [Washington seems to prioritize Taiwan’s defense](#), the U.S. might still pressure Taiwan into “friend-shoring” as semiconductors [increasingly become a question of U.S. national security](#). Add to this the deteriorating cross-strait relations and Chinese weapon systems possibly blocking out allied reinforcements, and the picture becomes clear: Taiwan cannot rely on semiconductors for protection and must bolster its defensive capabilities.

Consequently, despite the [widespread trust in the silicon shield](#), Taiwanese policymakers should move beyond their belief in semiconductors as an important security concept and enhance domestic defense. This will allow Taiwan to offset the eroding factors and increase its resilience against mounting existential threats.

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