
THE GREAT SHUTDOWN

HOW DISRUPTIVE WOULD A MILITARY ESCALATION OF THE CHINA TAIWAN CONFLICT BE TO GLOBAL ECONOMIES?

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Abstract

This research aims to examine the potential impact of a military escalation of the China-Taiwan conflict on global economies, with a particular focus on the microchip production industry in Taiwan. The academic paper will analyze the current economic ties between Taiwan and other countries, as well as the potential consequences of a disruption in trade and production caused by a military conflict. The research will also examine the role of Taiwan's microchip industry in the global supply chain and its potential vulnerability to a disruption in the event of a military escalation. Additionally, this scientific paper will explore the possible economic responses of other countries and the international community to a military escalation of the China-Taiwan conflict. The research will use a combination of the systematic literature review and the scenario technique to demonstrate potential impact of a military escalation of the China-Taiwan conflict on global economies, with a specific focus on the microchip production industry in Taiwan.

Keywords: China Taiwan conflict, war, microchip industry, semiconductors

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1 Introduction

The semiconductor industry now has one of the highest rankings in the global market. The reason is simple. It produces microelectronic components, called chips, without which the modern and digital connected world cannot do anything.

In East Asia, three countries compete with the world's highest market shares in the chip industry. In addition to this there is a conflict that has existed for many decades and now poses a serious threat - The China Taiwan Conflict.

2 Methodology

In this scientific work, two methods are used: the systematic literature review and the scenario technique.

Since the focus is on events with different future developments, the systematic literature review is used to determine the current status and to create a basis for the scenario technique.

Then, possible scenarios are discussed in a meeting with the five group members. The focus is on the extremes, the best-case and the worst-case.

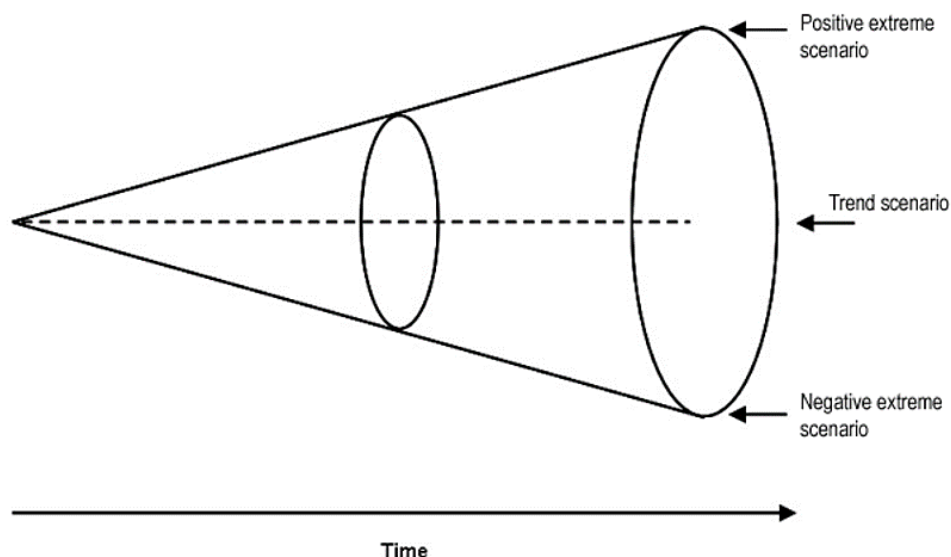


Figure 1: Scenario funnel with three basic scenarios (cf. Kaulfuss 2011)

3 The origin of tensions

When we try to understand the origin of the conflict, we must keep in mind that history is only a narrative. Better said, a timeline in the past on which different parties arrange different events in different ways. The narrator then puts them together to form the story, later known as history. So, in the following section, we must always keep in mind that there are two sides to the story: the Chinese point of view and the Taiwanese point of view.

From the 14th and 15th centuries onwards, Chinese populations began to settle on the island of Taiwan, in particular traders and fishermen. This immigration was to increase during the 17th and 18th centuries. Taiwan became a Chinese province in 1885 and was ceded to Japan ten years later following the Japanese victory over China in Korea. The outbreak of the civil war, which lasted from 1927 to 1949, opposing the communists of Mao Zedong and the nationalists of Chiang Kai Shek, considerably modified the situation of Taiwan, since the attachment of the latter to China became a demand of both parties. The defeat of the Axis powers, and therefore of Japan, meant that the island was officially returned to China in October 1945 (cf. Center for Strategic and International Studies 2007). Although this news was initially perceived positively by the Taiwanese population, they were soon disillusioned by Mao's victory - the People's Republic of China was proclaimed in 1949 - and the withdrawal of the Kuomintang nationalists to the island. Eager to erase all traces of the Japanese occupation, the latter embarked on a "Chinization" of the population within the framework of a veritable dictatorship whose central objective was the reconquest of mainland China. The struggle between the "two Chinas" then began, taking place within the global logic of the Cold War, with each decision or action of any actor on the issue inevitably being analyzed through the prism of the antagonism of the blocs (cf. Maizland 2022).

In 1971, the United Nations passed Resolution 2758 recognizing the People's Republic of China (Mao Zedong) as the sole representative of China at the UN (cf. United Nations 1972). As far as Taiwan is concerned, after the death of Chiang Kai Shek in 1975, we observe the simultaneous emergence of a certain democratic openness and a real Taiwanese identity within the government authorities (cf. United Nations 1972). It was in this context that the first presidential elections by direct universal suffrage were finally held in 1996. Generally speaking, if relations between the two protagonists, from 1945 to the fall of the Berlin Wall, took on the appearance of a sort of sub-Cold War, the end of the bipolar era led to a growing development of contacts, with in particular a notable increase in trade, but also tensions between the "two Chinas", the two territories not managing to settle their dispute. In view of a new, more constructive and reciprocal diplomatic approach, Taiwan, which accelerated its democratization process in the late 1980s, officially renounced its attempt to reconquer mainland China in May 1991. However, the effect was not what was expected, since Beijing refused to recognize the Taiwanese government and continued to perceive the island as a Chinese province (cf. Center for Strategic and International Studies 2007; cf. Maizland 2022).

The various projects to reunify China quickly confirmed this fact. More recently, while the election campaign on the island is partly centered on the proposal of a candidate to adopt a new constitution for Taiwan, the Chinese government does not hesitate to take a rather radical measure: In 2005, it votes the anti-secession law, article 8 of which authorizes Beijing to use non-peaceful means against Taiwan in case of a declaration of independence (cf. Hilpert et al. 2022).

This could have serious repercussions: If Taiwan were to declare its independence, triggering an armed Chinese reaction, it is unclear how the world would react or intervene. What would be the attitude of the EU, the US, or other regional powers?

4 Geostrategic crossroads

More generally, it is clear to us that the renewed tensions on this issue are part of a wider problem, considerably influencing the geopolitical game and the behavior of the major players in the region. For several years now, we have been able to observe that China is really asserting itself as a major world power at the political, economic, and military levels (recovery from the crisis, modernization of the army). This situation inevitably generates fears in Taiwan, but also worries other actors.

Indeed, both Washington and Tokyo are watching China's rise closely, fearing that their dominance in the Pacific will be challenged, while we are aware of the strong tensions between Washington and Beijing regarding American military support to Taiwan, which has increased since the early 2000s (cf. Center for Strategic and International Studies 2007). The recent controversy following the U.S. House Speaker Nancy Pelosi's trip to the island in 2022 is another striking example of the tensions between the two states. In November 2022, US President Joe Biden however reiterated US support for its longstanding "One China" policy, which recognizes the government in Beijing while allowing for informal relations and defense ties with Taipei, and its posture of "strategic ambiguity" over whether it would respond militarily if the island were attacked (cf. China Briefing Team 2021).

This brief geopolitical account of the situation allows us to understand the extent to which the Sino-Taiwanese conflict is part of a much broader dynamic in which each actor seeks to defend its geostrategic interests. Taiwan is indeed a non-negligible pole of attraction. A veritable geographical node between South-East Asia and North-East Asia, the island appears to be a crossroads through which all trade routes to North China, Japan and South Korea pass. In addition, it is also a bulwark between the Chinese navy and the Pacific, allowing Tokyo and Washington to maintain control. Overall, the central issue in the struggle for regional leadership is the need for these actors to minimize China's ability to fulfil its hegemonic ambitions in the region, as a whole, in order to avoid the emergence of permanent instabilities (cf. Hilpert et al. 2022).

However, this does not prevent us from asking a basic but fundamental question: Why does China, a powerful and large state facing many other fundamental problems and challenges, continue to insist on reclaiming "its renegade province"? We believe that, while the geostrategic position of Taiwan and many economic considerations are undeniably part of the answer, there is another aspect that is even more fundamental to many Chinese political leaders: China's territorial integrity. Indeed, this idea, which recalls the importance of national identity and love for one's country during the imperial period, is a source of political legitimacy that is far more important than one might imagine for the Chinese population. To illustrate this, we only need to read Article 8 of the 2005 Anti-Secession Law, which allows the use of non-peaceful means or any other means to protect China's sovereignty and territorial integrity (cf. Tian and Lee 2021).

Moreover, in a speech on the 100th birthday of the ruling Communist Party, Chinese President Xi Jinping pledged to complete "reunification" with self-ruled Taiwan and vowed to "smash" any attempts at formal independence (cf. Tian and Lee 2021). Taipei's approach is marked by more realism and political pragmatism, mainly with regard to foreign policy direction. For example, in its relationship with Europe, the Taiwanese authorities have accepted the official Brussels position - "one China" - knowing full well that a radical reorientation on this issue by the 27 is unlikely, if not unrealistic (cf. Maizland 2022).

The fact that Western countries have been keen to pursue economic rapprochement with Beijing, for example after some protest at the 1989 crackdown in Beijing, can only be interpreted by the Chinese leadership as an encouragement to persevere with the process in their intransigent attitude (cf. Hilpert et al. 2022).

5 Taiwan and the microchip production

Taiwan is the most important country when it comes to microchips. Taiwanese foundries hold nearly two-thirds of the global market share for semiconductors (cf. Chiao 2022). In addition, the production of microchips involves many processes and is highly complex. Taiwan is also the country with the most advanced technology for this type of production. The following section briefly summarizes how microchips are manufactured, what is needed and how they work.

Nowadays, microchips can be found in practically all electrical devices and it is impossible to imagine life without them. The production of the electronic components, which are just a few millimeters in size, is very complicated and requires enormous know-how and extremely complex machines and production facilities. There can be several million circuits and transistors on a single chip.

5.1 How a microchip is constructed

The base for the construction of microchips are so-called wafers. Wafers are thin silicon discs onto which complex circuits and transistors are applied in complex processes with the help of the most modern machines. Silicon is particularly suitable for use in microchips because it is a semiconductor. This means that silicon can be considered both a conductor and a non-conductor in terms of electrical conductivity. In its pure monocrystalline form, silicon is a non-conductor. However, through the targeted introduction of foreign atoms (usually boron or phosphorus), freely movable electrons are created, which make the conduction of electric current possible (cf. *Halbleitertechnologie von A bis Z* 2022).

With a portion of 25.8 %, silicon is the second most common element in the earth's crust and therefore very abundant in nature. This makes silicon very cheap to procure compared to other semiconductors or rare earths (cf. Institut für Seltene Erden und Metalle AG 2022). Another aspect that speaks for the use of silicon as a material for microchips is, that oxide layers can be produced on the silicon in a very targeted and cost-effective manner, which work as high-quality insulators. But the most important aspect for the use of silicon as a semiconductor material in microchips is the fact, that silicon exists as a single crystal in its pure form. Therefore, the silicon atoms are arranged completely regularly in the atomic lattice and interfering foreign atoms do not

occur. Silicon does not exist in its pure form in nature, but either as silicon dioxide in the form of sand and quartz or as silicate in combination with oxygen and other metals. However, for the wafer production and the utilization of the advantages of silicon, it is needed in its pure form. Therefore, the silicon has to be prepared in complex processes. For the preparation, mainly quartz sand is used, in which the silicon is present as silicon dioxide (SiO_2). The quartz sand is heated in furnaces up to a temperature of $1460\text{ }^\circ\text{C}$ and carbon is added. The carbon reacts with the oxygen to form carbon monoxide, which can be easily separated from the liquid silicon as a gas. The silicon is then in its pure form, but still contains other foreign substances that defile the silicon. In order to further increase the pureness of the silicon, the foreign matter content is reduced with the help of the process steps distillation and zone cleaning. After completing these process steps, the silicon is so pure, that it can be further processed into a single crystal (cf. *Halbleitertechnologie von A bis Z 2022*).

For this purpose, the silicon is heated in a crucible and under a protective atmosphere just above the melting point. Following this, a seed crystal on a rotatable rod is inserted into the crucible. The seed crystal consists of monocrystalline silicon. The silicon is then deposited on the seed crystal and takes over its crystal structure. During this step, the dopants are also introduced into the silicon to ensure the required conductive characteristics of the silicon crystal. The seed crystal is now pulled out under constant rotation and constant contact with the silicon melt. The diameter of the resulting silicon cylinder is controlled by the pulling speed (cf. *Halbleitertechnologie von A bis Z 2022*).

Since the crucible temperature is only just above the melting point of silicon, the deposited silicon solidifies. At the end of the process, the silicon is in pure form and has the required crystal structure, including the dopants. The resulting silicon cylinder is then turned to the desired diameter and cut into thin slices using special saws. In the next steps, the resulting silicon wafers are chemically and physically treated to ensure a perfect surface finish. At the end of the process chain, several finished wafers are produced. Transistors and conductor tracks are then applied to the finished wafers according to specified circuit plans. The circuit plans to be applied are created on the computer and then projected onto the wafers with light. These processes are done with highly complex machines and require many production steps (cf. *Halbleitertechnologie von A bis Z 2022*).

All processes after the production of the wafers take place in so-called clean rooms, where temperature and humidity are kept constant, and almost dust-free. This is the only way to eliminate any negative influence of dust or environmental influences on the processes. With the help of lithography and photosensitive lacquer, the desired structures are created step by step. High-energy beams are used to expose the targeted areas. The shorter the wavelength used, the smaller are the structural widths that can be achieved. And the smaller the achievable structure widths are, the more complex the chips can be built. In addition, the more complex and denser the structures on the chip are, the more powerful the chip is (cf. *Halbleitertechnologie von A bis Z* 2022).

The lowest wavelength currently used is extreme ultraviolet radiation (EUV), with a wavelength of just 13.5 nm. Because EUV lithography can pack more transistors onto a single chip, these chips can be mass-produced cheaply and have more processing intelligence, consume less energy, and have higher performance. The leader in the production of lithography systems is ASML, based in the Netherlands. ASML is currently the only company in the world that manufactures lithography systems in the EUV range. The leading manufacturers of advanced microchips, TSMC and Samsung, therefore, rely on ASML's machines and systems to continue the production of high-performance and advanced microchips. In turn, customers such as Apple, AMD, Nvidia and Tesla rely on TSMC's chips. Samsung alone, with its approximately 20 % share of advanced microchips, cannot cover the global demand. Therefore, the loss of TSMC as a chip manufacturer with 90 % share of advanced microchips would be extremely fatal for the supply chains and also for the global economy (cf. ASML Holding N.V. 2022).

The export ban imposed by the USA on ASML's latest, highly complex and globally unique machines that work with EUV radiation means, that China has currently no possibility of producing advanced microchips using this kind of EUV technology.

The procedures outlined in this chapter serve as a general guide for production and do not fully capture the whole intricacies involved. Additionally, major manufacturers often have additional steps in their production processes that are kept confidential for strategic competitive purposes.

5.2 How Taiwan masters the semiconductor manufacturing

Experience plays a significant role in shaping the production of microchips in Taiwan. With a long history of manufacturing and a highly skilled workforce, Taiwan has developed a reputation as a leading producer of microchips. The experience of manufacturers in Taiwan allows them to produce high-quality microchips using advanced technologies and techniques efficiently and effectively. Additionally, the experience of the workforce in Taiwan, including engineers and technicians, enables them to troubleshoot and solve problems that may arise during the production process. This in turn leads to a more consistent and reliable output of microchips. Furthermore, the experience of Taiwan microchip industry, in particular TSMC, also enables them to innovate and improve their production process and products, which in turn helps them to stay competitive in the global market (cf. Chang 2021; cf. Naseer 2023).

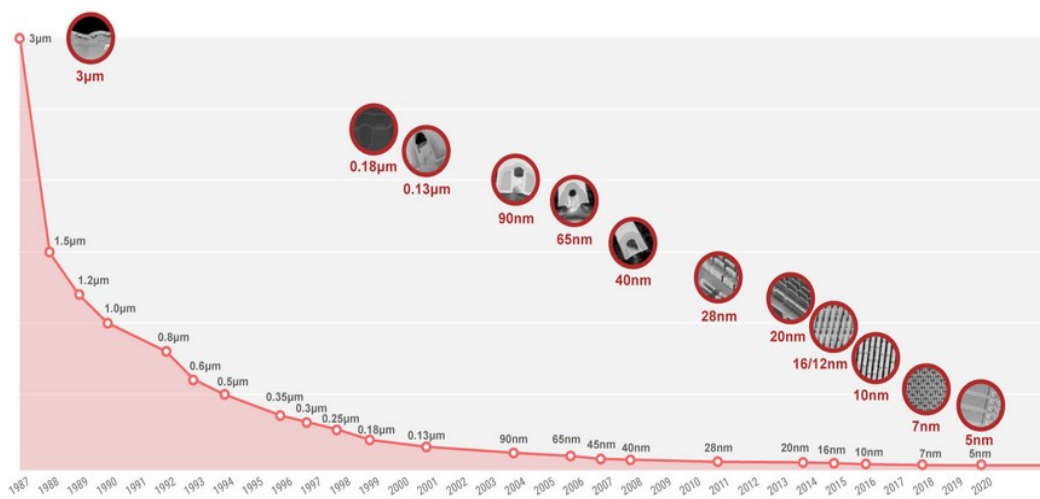


Figure 2: Development of TSMCs foundry process technologies (cf. TSMC 2023)

As Figure 2 shows, Taiwan Semiconductor Manufacturing Company (TSMC) has a long-standing history in the production and advancement of new technologies for the manufacture of superior microchips. TSMC is developing the 3nm technology (N3) as the next step from their 5nm technology (N5) (cf. TSMC 2023). In addition, TSMC is continuously working on improving its established manufacturing technologies. The quality and yield of the processes are increased via their process control and monitoring using AI (cf. TSMC 2023). From a business point of view, the learning curve effect that Taiwan's microchip industry can show is a very important point for success, and it is also an important factor for the success of TSMC.

6 Economies of scale in semiconductor industry

Since the first microchip was built the semiconductor manufacturing has been led by scaling effects. Gordon Moore, co-founder of intel, discussed the factors and published some laws. The Dennard Scaling states that as the dimensions of transistors on a microchip shrink, the power density of the chip increases. This law, proposed by Robert Dennard in 1974, states that as the size of transistors on a microchip decreases, the power density increases and the operating voltage decreases. This leads to an overall improvement in the performance and energy efficiency of the chip. Even if the Dennard Scaling is no longer valid nowadays, one of the key factors to the development of the semiconductor manufacturing is in fact the miniaturization (cf. Platt 2018; cf. Tuomi and Bogdanowicz 2009).

However, there is another scaling factor which is increasing highly: the costs. A report from the Joint Research Centre of the European Commission of 2009 states that the cost for setting up a state-of-the-art semiconductor manufacturing facility will be increasing rapidly. A similar progression has been analyzed for the R&D investment for the next generation of microchips (cf. Tuomi and Bogdanowicz 2009).

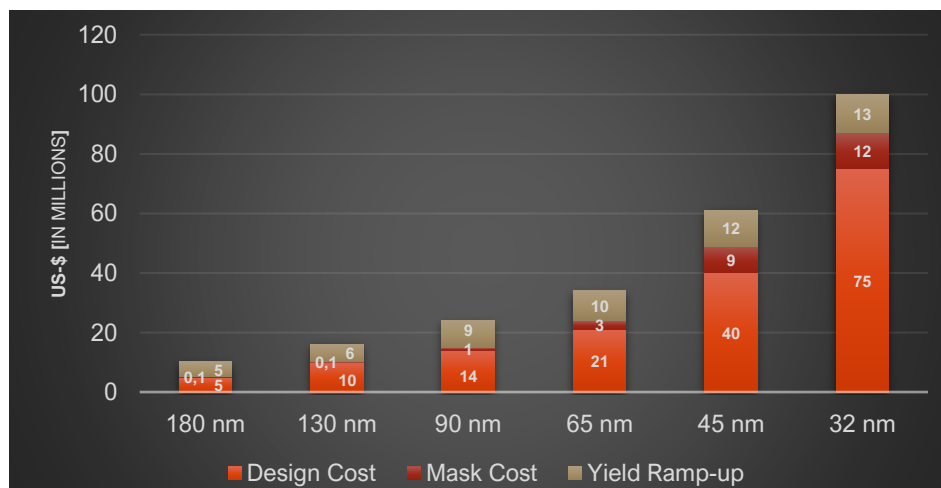


Figure 3: Development of the costs of producing digital chips (cf. Tuomi and Bogdanowicz 2009)

The Figure 3 shows the state-of-the-art of 2009. TSMC gives a more up-to-date assessment. The operating expenses of the R&D-Department of TSMC in 2021 were about \$4.1 Billion US-Dollars (cf. TSMC 2023). As well TSMC has announced a \$40 billion US-Dollar investment for two semiconductor fabs in Arizona (cf. Valinsky 2022). For this kind of investments, the economies of scale is the key factor to make profit and for continued growth.

7 Taiwan's impact on world's economies

In order to reduce dependency on Taiwan, many countries are now deciding to set up semiconductor foundries outside of Taiwan in their own hometown. In Europe, the European Chips Act, presented in February 2022, is the largest subsidy program ever decided by the Commission for a single industrial sector. The Act, which provides for 42 billion euros of investment in the field of semiconductors, aims to provide the continent with sufficient capacity to weigh on the world stage in this highly strategic sector (cf. European Commission 2022). The aim of the plan is "to ensure that as many semiconductors as possible are manufactured in Europe, in order to guarantee its technological sovereignty" (La Libre Eco with AFP 2022).

Over across the pond, in the US, the Creating Helpful Incentives to Produce Semiconductors and Science Act of 2022 (CHIPS Act), signed into law on August 9, 2022, is designed to boost US competitiveness, innovation, and national security. The law aims to catalyze investments in domestic semiconductor manufacturing capacity. The CHIPS Act provides for a total investment of around 200 billion US dollars by 2031 (cf. The White House 2022).

China's production of electronic chips by domestic companies and foreign factories in the country grew twice as fast as in 2020, according to the Chinese government. This is a significant acceleration since in 2020 the country produced 261.3 billion units, 16.2 % more than the previous year (cf. Xijia 2022). Despite being blacklisted by the US since the end of 2020, Chinese largest foundry SMIC (Semiconductor Manufacturing International Co.) continues to improve its etching processes at a good pace (cf. Michael Bennet - U.S. Senator for Colorado 2022; cf. Xijia 2022).

Semiconductor foundry is such a complex and complicated process that has been proven in Taiwan for a long time. A microchip goes through up to 1,000 work steps before it is completed and consists of components from various external suppliers (cf. Jehle 2022).

Just one interruption of the extremely complex process leads to a delay of several weeks and even months in production. The manufacture of a single semiconductor takes several months to complete. If something happens in Taiwan, the entire value chain worldwide will collapse in a matter of seconds (cf. Fröndhoff 2022). Building up this incredibly complex value chain in a short time is nearly impossible. The demand for microchips will only continue to grow over the years. It is estimated that the global demand for microchips is growing at 7 % to 8 % annually. Also, the area of e-mobility is playing an increasingly important role in order to achieve a technological advantage and, above all, to reduce CO₂ emissions in a climate-friendly manner. The goal of the Paris climate agreement is to be climate-neutral in all industrial sectors by 2050 (cf. Jehle 2022).

Justifying this need when building a new manufacturing facility outside of Taiwan will be a challenge to master. Especially in Europe. It would take at least more than a decade to build such an advanced microchip processing infrastructure due to a lack of knowledge in the field of chip development in European countries (cf. Kleinhans 2021). In 2021, IG Metall said that semiconductor profit skimming was relatively low, and it was a critical sign if the production rate of microchips did not exceed 90 % utilization. For new semiconductor manufacturing plants, it will take at least five years to become profitable (cf. Wissenschaftliche Dienste 2022). When the corona pandemic reached its peak, companies worldwide felt the consequences of a drastic chip shortage (cf. Chiao 2022).

Due to the ongoing tensions between the USA, Taiwan and China, the entire chip industry would be at great risk in the event of a forceful Chinese military invasion of Taiwan. The Taiwanese chip production, especially the company TSMC, has the largest market share in the global semiconductor sector (cf. Chiao 2022).

Figure 4 shows that compared to the other foundries in other countries, Taiwan has the highest foundry revenue with a market share of 64 % in 2021. The market share of microchips in Taiwan continues to increase in 2022 despite the geopolitical situation and reaches 66 %. These data show that Taiwan accounts for the bulk of the microchip industry and the rest of the world is heavily dependent on Taiwanese semiconductors. In Taiwan, TSMC plays an important role in the chip industry with a current market share of 56 %. TSMC masters the most advanced and state of the art microchip process like no other. TSMC dominates the semiconductor industry as a market leader (cf. Chiao 2022).

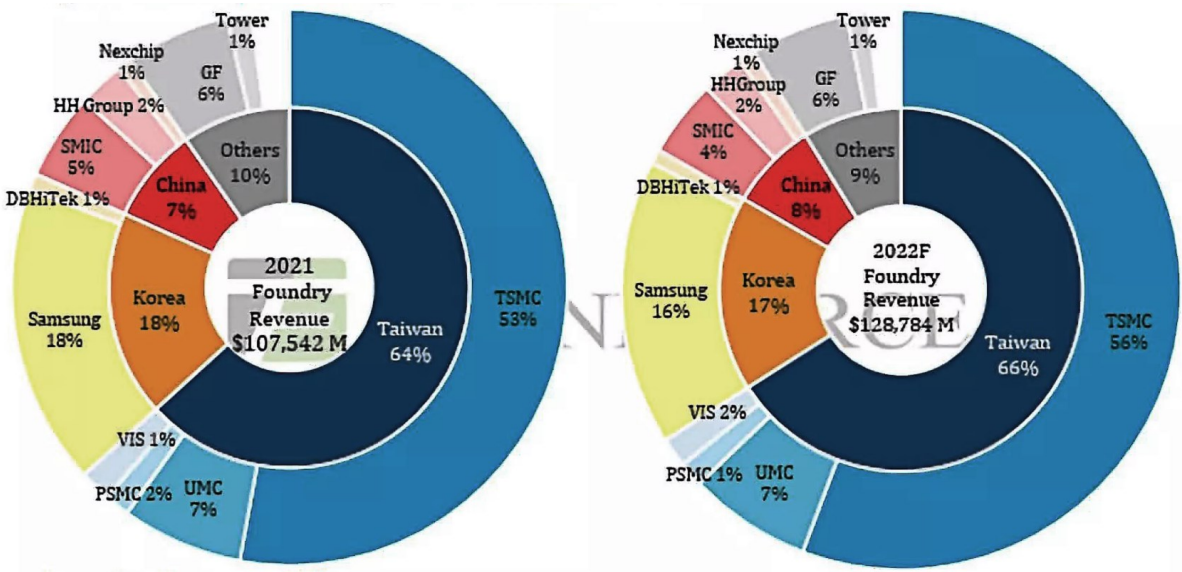


Figure 4: Semiconductor foundry revenue by market shares in 2021 and 2022 (cf. Chiao 2022)

This 2020 (Figure 5) chart shows that TSMC has the largest market share in advanced microchips at 90 % (cf. Hille 2021). Janka Oertel, security expert at the European Council on Foreign Relations, said the chip industry is a very fragile and complex entity. If there are delivery problems from Taiwan and external chip components suppliers, this will have a significant impact on the entire value chain (cf. Mallinckrodt and Mendgen 2022; cf. Tuomi and Bogdanowicz 2009).

The TSMC Chairman Liu stated that, “nobody can control TSMC by force. If you take a military force or invasion, you will render TSMC factory not operable, because this is such a sophisticated manufacturing facility, it depends on the real-time connection with the outside world, with Europe, with Japan, with U.S., from materials to chemicals to spare parts to engineering software and diagnosis. And it is everybody’s effort to make this factory operable. So, if you take it over by force you can no longer make it operable” (Zakaria 2022).

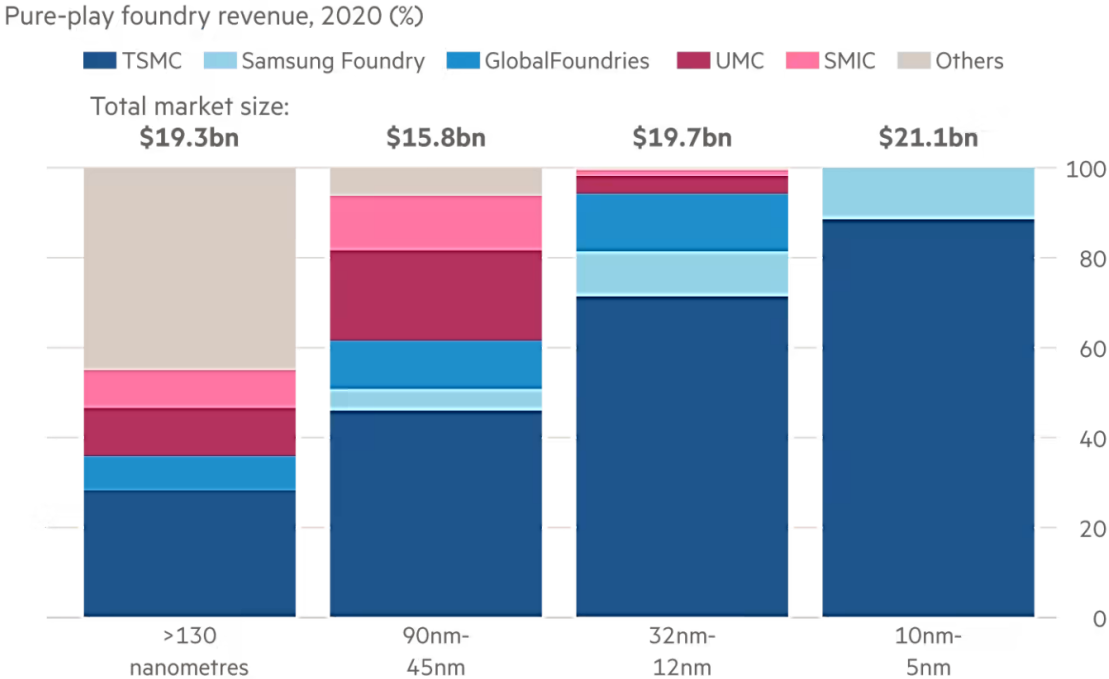


Figure 5: TSMC is the leader of advanced microchip technology (cf. Hille 2021)

8 The scenarios for this conflict

As already mentioned in the historic review, there is a lot of potential for conflict between China and Taiwan. As well there are many future scenarios for the development of this tense situation. For this academic paper we will take a look on the best possible case and the worst possible case. There are other scenarios in between these two extremes, but there is too much uncertainty and speculation, which would go beyond the scope of this paper. On the one hand, there could be a peaceful political agreement, on the other hand, there could be a violent military confrontation such as a Chinese invasion.

8.1 Best-case scenario

The best possible scenario is explained briefly and quickly. It would be a peaceful agreement: No war, no dead and injured, no people losing their homes, no crisis. The Chinese and Taiwanese governments come together to discuss a political peaceful agreement, which is respected and preserved in its entirety by both sides. The impact on the rest of the world would also be significantly less than with the worst-case scenario.

8.2 Worst-case scenario

For this academic paper is the worst-case scenario of a Chinese attack on Taiwan is considered. The consequences on the entire world would be catastrophic. As in any war, the worst consequences would probably be the loss and destruction of human life. Due to the complexity of this scenario, it is not possible to consider everything. The focus of this scientific paper is on semiconductor production and the associated consequences along the value chain.

Since Taiwan is an island state, it would make sense for China to establish a naval blockade. The import and export of goods would be severely restricted, if not stopped completely. It is very likely that there would also be a severe restriction in the production of microchips. For example, the foundries themselves could halt production, or China could attempt to cripple Taiwan's infrastructure through strategic cyberattacks or targeted bombings.

As described in Chapter 7, many countries and industries around the world depend on Taiwan as a major supplier of microchips. The possibility of absorbing the direct collapse of the supply chain is not given due to the complex manufacturing and the lack of know-how. Production of many technical devices from microelectronics to cars and passports would first deplete inventories, then inevitably grind to a halt. The stock markets would crash, companies would have to close, and many people would lose their jobs. A great worldwide economic crisis follows and the prosperity we know today will no longer exist.

This type of scenario thus contains the great shutdown in the global semiconductor industry. Since nowadays almost every industry relies on semiconductors due to digitalization and networking, this shutdown will trigger a chain reaction along the entire value network. China, one of the world's largest export and import nations, as well would be directly affected. Another possible effect in this scenario would be the political reactions of the nations of the world. If the U.S. were to intervene with military support, alliances such as ANZUS, AUKUS and NATO would be directly involved as well. It is often seen from the past that sanctions are levied against the opposing country by the allies. In this case, it would only massively intensify the following world economic crisis.

9 Conclusion

The conflict between China and Taiwan has existed for many decades and stems from a violent history with different ideals and views. The 100-year plan on the part of China with the goal of reunification, including Taiwan, is fueling the conflict once again. In particular, China's statement that it will use force if necessary is causing a stir. In addition, the U.S. has declared its support for a violent invasion through the Taiwan Policy Act and personal statements by the president. This would eventually activate further alliances.

In addition to the political side of the conflict, the technological side should not be neglected. As the number one producer of semiconductors, Taiwan has a global network. It possesses the most advanced technology and a special unchallenged know-how due to years of experience in the production of microchips. The production sometimes consists of thousands of processes and is very complex. Likewise, the necessary materials are not only rare, but also must be procured in important international supply chains.

The importance of Taiwan for the entire global semiconductor industry and the following industries along the value network becomes clear when looking at the Foundry Revenue by market shares.

With a share of 66 %, Taiwan forms almost a two-thirds majority in the entire world. A collapse of manufacturing in Taiwan would have drastic global consequences. It would set off a chain reaction that would culminate in a global financial and economic crisis.

China, as one of the largest exporting and importing countries, would also be hit hard by this crisis. It is therefore legitimate to ask whether this scenario cannot be seen in terms of a Pyrrhus war.

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