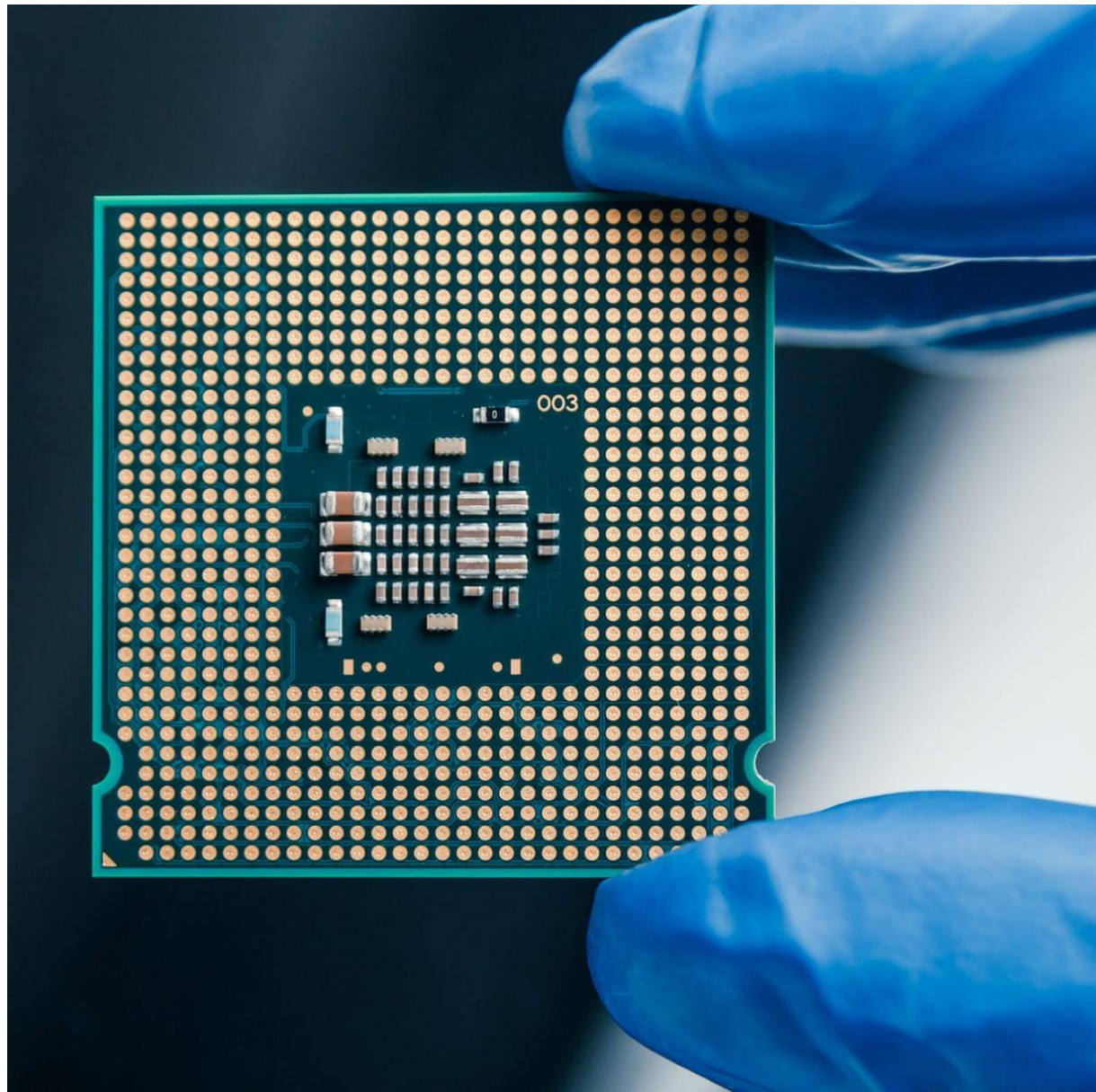


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*A semiconductor (Sweeney, 2021)*

## Chips for who?

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## Abstract

Semiconductors, more commonly known as chips, have become crucial for the survival and security of states. Therefore, governments are invested in securing their supply of chips, and the EU and USA are no exception to this. This paper tries to answer the following research question:

*To what extent has the EU's push towards strategic autonomy in the semiconductor industry so far been motivated by pressure from the USA?*

Based on mostly realist theory, the following hypotheses were formulated:

*H1a: The EU and its member states will push towards strategic autonomy in the chip sector, regardless of US pressure, to secure its supply of chips in the future.*

*H1b: The USA is pressuring the EU and its member states to build up its chip industry to secure its own supply.*

*H2: The European Commission will take charge in the collective effort towards strategic autonomy in the semiconductor industry.*

The data, consisting of various policy documents, speeches and articles, showed no signs of US pressure specifically targeting the EU, but rather pressure on all US allies and partners to improve the semiconductor industry. The EU Commission seems to indeed take the lead in working towards strategic autonomy in the semiconductor industry.

Content

Abstract ..... 1

Introduction ..... 2

    The importance of chips ..... 2

    Recent developments..... 2

    Stakeholders ..... 3

    The global semiconductor market ..... 4

    De-risking, reshoring and friendshoring..... 6

    Strategic autonomy ..... 7

    Research question..... 8

Theory ..... 9

    Realism..... 9

    EU collective action and realism..... 10

    Neo-functionalism ..... 11

    Hypotheses ..... 12

Methods..... 13

    Data collection..... 14

Analysis..... 15

    Motivations for striving towards strategic autonomy ..... 15

    Sentences indicating pressure from the USA ..... 16

    Interpretation ..... 16

    European Commission leadership ..... 18

Conclusion..... 19

    Insights ..... 20

References ..... 21

    Sources data appendix ..... 23

Data Appendix..... 25

## Introduction

### The importance of chips

Every modern appliance – from a toaster to a smartphone – requires a chip to function. Chips have been at the foundation of the technological revolution. Besides their use in civilian appliances, governments have also become increasingly reliant on them for tools like modern weapons and digital infrastructure. These things cannot work without chips, which makes them vital for national security. This also means that the country with the most advanced chips can gain an edge over their rivals, which is why governments have been involved in this industry since its conception.

The United States of America (USA) has historically always had access to the most advanced chips available (Vox, 2023). In recent times, however, it has started to notice that this position could be threatened by its adversaries. It is reliant on many different international actors for its supply of chips, using a supply chain spanning the entire globe. However, it now feels that it can no longer rely on this supply chain, believing that it is too vulnerable to disruptions. A massive risk for a product that is so important to its national security. It is not alone; the People's Republic of China (PRC) and the European Union (EU) seem to also want to be able to supply themselves of chips. It has become clear though that the process of making chips is too complex for one country to do alone in the near future, especially the most advanced chips. So the USA seeks to make more chips domestically, but they also want some allies in the semiconductor supply chain. To this end, it has introduced the CHIPS and Science act, which allocates a large sum of money for investment in the chip industry, both domestically and abroad. Among the friends and allies that the USA wants to be able to rely on, is the EU, which is keen on providing itself with chips as well. Therefore, the following question arises:

*To what extent has the EU's push towards strategic autonomy in the semiconductor industry so far been motivated by pressure from the USA?*

### Recent developments

To stay competitive in the chip industry, various policies have been proposed in recent years to invest and develop the chip industries. In the USA, this has mostly manifested through the CHIPS and science act. In the EU, the EU Chips act was introduced, and the PRC has laid out its strategy in the Made in China 2025 document. See figure 1 below for an overview of the goals set out by these countries

### What is a chip?

A (micro)chip or semiconductor is an extremely tiny electrical component used in nearly every modern appliance. Chips can vary in complexity based on the number of transistors on them. The first chip had only four transistors on it, but the modern ones can have more than 114 billion on them. According to Moore's law, this will exponentially increase. (Vox, 2023)

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<sup>1</sup> In 1960, the late Intel-founder Gordon Moore predicted that the number of transistors on a chip would double roughly every year, which has been the case so far. (Vox, 2023)

(European Council, 2022; State Council, 2015; Kannan & Feldgoise, 2022). The US also aims to prevent the PRC from producing the most advanced chips themselves. ASML, a Dutch company which produces the most advanced lithography machines, is the only company worldwide able to produce extreme ultra violet (EUV) machines. These EUV machines are needed to make the most advanced chips and are currently mostly sold to TSMC, Intel and Samsung. Not one EUV machine has been sold to the PRC so far. The predecessor of the EUV machines, the deep ultraviolet (DUV) machines, are made by more companies than just ASML, like Nikon and Canon. In recent months, the US has put increasing pressure on the Dutch government to put even further restrictions on the exports of ASML to the PRC. (CNBC, 2022)

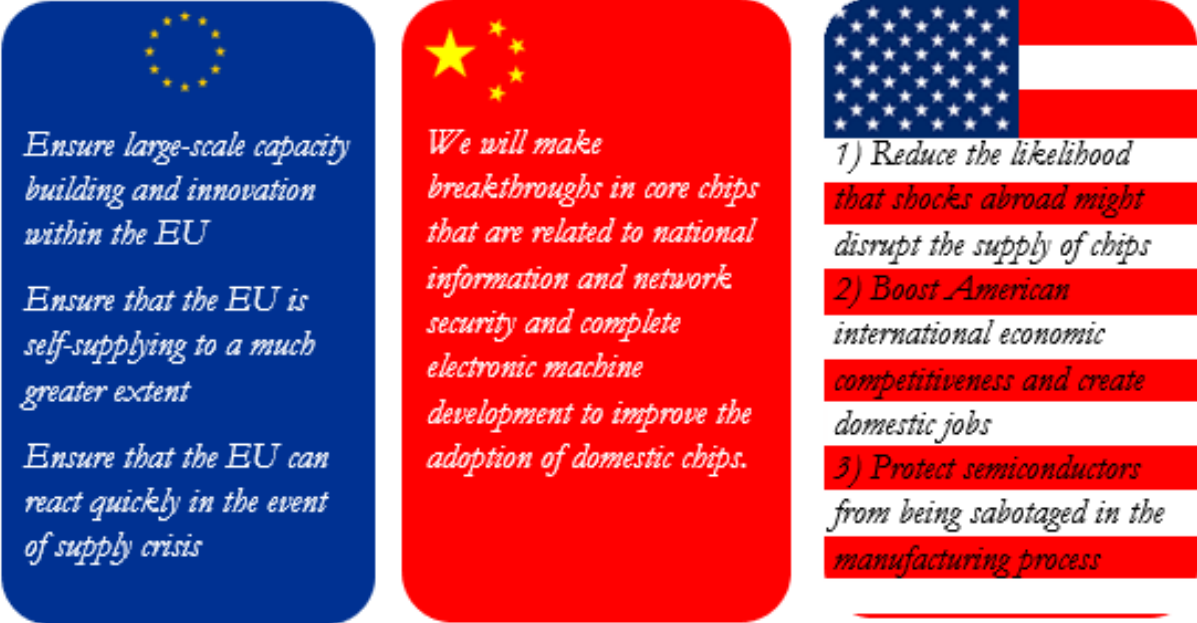


Figure 1: The three major policies for chip production (European Council, 2022; State Council, 2015; Kannan & Feldgoise, 2022)

Stakeholders

The global supply chain revolves around only a small pool of countries and companies that control the larger part of the supply chain. TSMC and Samsung are for example the only two companies worldwide manufacturing the most advanced chips. There are also some companies that are choke points in the supply chain, those will be mentioned later on.

In the table below, the major countries in the supply chain are represented alongside their companies and their roles that are involved in the global supply chain. For some countries, a short description of the goals and motivations of that country are also given.

Country		Important companies	Role in production chain	Motivation and goals
<b>EU</b>	NL	ASML	Sole supplier of EUV lithography machines	Ensure a supply of chips if the current global supply chain gets disrupted.
	DE	Zeiss	Sole supplier of mirrors required for ASML's EUV machines	
		Aixtron	Chemicals for fabrication	
		Trumpf	Components to machinery	
	BE	IMEC	Chip R&D	
	FR	Riber	Machinery production	
<b>USA</b>	Intel	Manufacturing	Protect dominant position in chip market from PRC	
	Qualcomm	Chip design		
	Broadcom			
	Nvidia			
	AMD	Ensure a supply of chips if the current global supply chain gets disrupted.		
	Cadence		Software for chip design	
	Mentor			
	Synopsys			
<b>ROC</b>	TSMC	Manufacturing	Use chip industry to deter an invasion from the PRC and keep the USA invested in defending the ROC	
	ASE Group	Assembly		
<b>PRC</b>			Ensure self-reliance in chip industry and catch-up to the USA	
<b>Japan</b>	Nikon	DUV lithography machines		
	Canon			
<b>South Korea</b>	Samsung	Manufacturing		

### The global semiconductor market

According to IFRI, the French institute for international relations, the production chain of chips can be divided into three phases. These phases are (Poitiers & Weil, 2022, p. 2):

1. “Design (specifying the layout and features);
2. Fabrication (i.e., manufacturing in foundries);
3. Assembly (i.e., testing and packaging of chips before they can be put in hardware).”

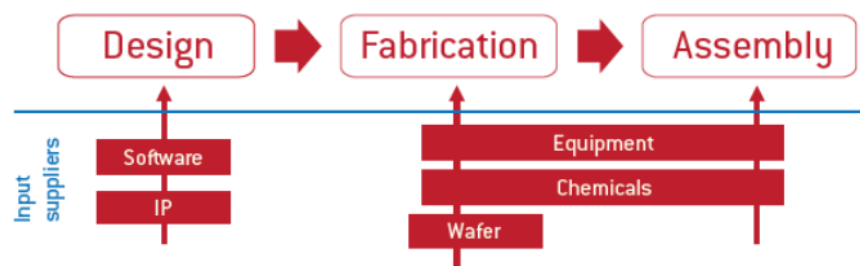


Figure 2: the phases of chip production (Poitiers & Weil, 2022)



These three phases are also depicted in figure 2. This picture also shows that other industries are essential for the supply chain, for instance the chemicals created by companies like Aixtron.

While it is common for design and fabrication to be integrated into a single company, so-called “integrated design manufacturers”, assembly usually stands alone (Poitiers & Weil, 2022, p. 2).

The fabrication phase is deemed the most “capital intensive” of the three, which explains why relatively few companies make up this market; it is often too expensive for small businesses to start in this phase. TSMC and Samsung are the only companies in the world able to produce the most modern chips. Looking at

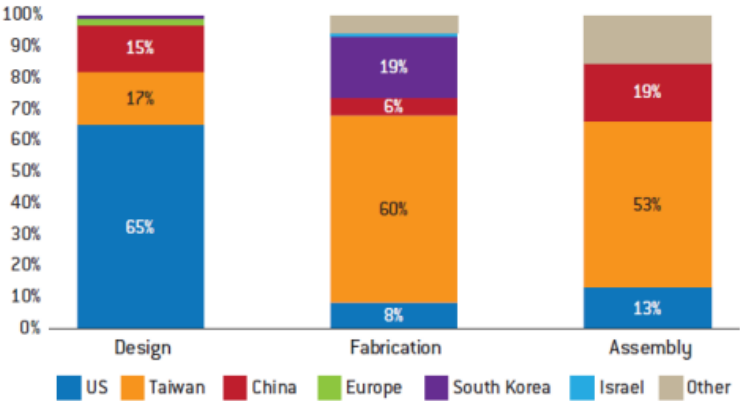


Figure 3: Firms' market share of semiconductor production steps (Poitiers & Weil, 2022, p. 3)

which country is dominant in which phase, one thing becomes apparent; the EU currently does not have a major stake in any of them, while Asia and the US do, see figure 3. One explanation that IFRI offers for the concentration of fabrication and assembly in Asia, is ‘gravitational’ pull. Because most chips are consumed by Asian markets, especially the PRC, it makes sense to produce the chips close to these markets. Europe, a relatively small consumer, gets relatively low fabrication and assembly following the same logic. (Poitiers & Weil, 2022, p. 4)

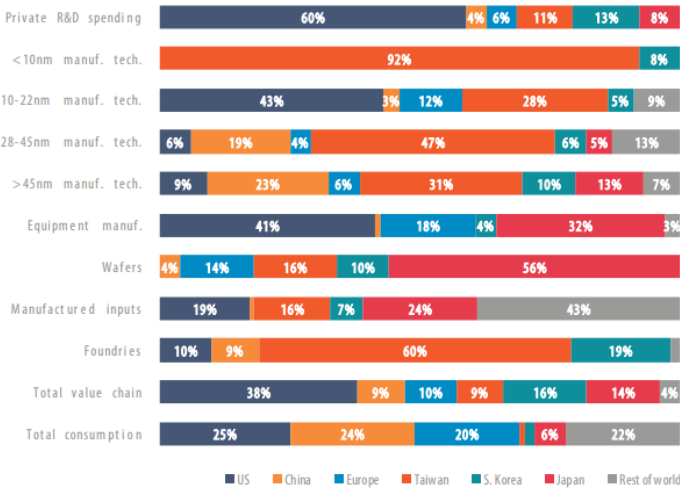


Figure 4: Shares of states in the global semiconductor value chain (ESPAS,2022)

The EU is dependent on other countries for its supply of chips, but so is everyone else. There is a strong global interdependence in the semiconductor industry. Making a chip is a complex and expensive endeavour, which makes the global supply chain difficult to disentangle. In figure 4, market shares per category is shown (ESPAS,2022).

At least for the most modern chips, and possibly less advanced ones as well, no country is able to meet its own demand of chips entirely by itself. The global supply chain has so-called “chokepoints” in it, referring to a single or small group of companies that have a monopoly on a certain part of the supply chain. For instance, the three American companies Cadence, Mentor and Synopsys are the only countries in the world who make the software for designing chips, and ASML in the

Netherlands is the only company who makes EUV lithography machines. Both of these are required for any country wishing to internalise the entire supply chain. (Vox, 2023)

This is why it is widely deemed impossible for any country to completely supply themselves with chips in the near future. That is the conclusion of multiple sources, as this quote from the US Department of Commerce exemplifies:

*“Given the complexity of global supply chains, the United States does not seek to become self-sufficient in semiconductor manufacturing. Instead, it aims to support a healthy global semiconductor ecosystem...” (U.S. Department of Commerce, 2023)*

### De-risking, reshoring and friendshoring

So if not complete self-sufficiency, then what? As mentioned before, the aim for most states is to prevent a supply chain disruption from affecting the flow of chips towards them. For this, the term “de-risking” is often used. It was for instance used in a press release from the European Commission regarding the EU Chips Act. In this statement, the Commission speaks of a “geopolitical context of de-risking” (European Commission, 2023a). No clear definition of this term was found, possibly due to its relative novelty. However, it is understood to mean working towards a resilient society and economy, that is able to weather challenges and disruptions. As a part of this aim, the European Commission on June the 20<sup>th</sup> of 2023 released the European Economic Security Strategy (EESS). It “focuses on minimising risks arising from certain economic flows in the context of increased geopolitical tensions and accelerated technological shifts, while preserving maximum levels of economic openness and dynamism.” (European Commission, 2023b). While not mentioning chips directly, it is not far-fetched to believe that this plan is also aimed on that sector.

Also not directly mentioned is the PRC, but it is widely understood that they are the main focus of the plan alongside Russia. According to NikkeiAsia, it is in fact “ a ‘de-risking’ strategy designed to develop a resilient economy that is less reliant on China in critical technologies” (De Beaurepaire, 2023).

In summary, the EU and USA want to de-risk their supply of chips, but are unable to fully internalise the supply chain. Therefore, they opt for *reshoring* and *friendshoring*. In the past decades, manufacturing has largely moved away from the western world towards places like the PRC and India. Reshoring means that these manufacturing jobs are pulled back. The motivations to do this are not just strategic; it also reduces shipping and therefore helps the environment and can be beneficial to the economy. In fact, when companies were asked why they decide to reshore, “geopolitical risks” did not even make it to the top five reasons according to the Reshoring Index 2022 (Kearney, 2023). The EU and USA have incentivised reshoring through policies like the CHIPS and Science act and the EU Chips act. Their motivation is, in apparent contrast to most companies, to de-risk their supply of chips.



However, like mentioned before, these governments do not expect to be able to meet their semiconductor demands alone. They will have to rely on other countries to help complete the supply chain. Since the goal is de-risking, it makes sense to have the production you rely on come from ‘safe’ countries. The chance of a disruption happening with a rival state is of course much greater than a disruption from an ally or partner state. So, countries are also incentivising their friends and allies to take on a role in the global supply chain. This concept is known as friendshoring, and we also see this happening already (Maihold, 2022). Documents around the CHIPS and Science act, for example, very regularly mention the coordination and cooperation with allies and partners of the USA.

### Strategic autonomy

After the start of the Russian invasion of Ukraine, European countries looked to punish Russia for its act of aggression through the use of economic sanctions. An essential part of this was, and still is, cutting off the flow of Russian energy resources into Europe. Most notably, the EU wanted to free itself from Russian gas. Through the purchasing of Russian gas, European states were indirectly financing the Russian war machine. This posed a challenge to many European states; what to replace the Russian gas with? To varying degrees, EU member states were reliant on Russian gas. The largest economy of these members, Germany, received over half of its gas from Russia before the invasion (Oltermann, 2022). For it to suddenly shift towards receiving little to no gas from Russia would be a challenge to say the least. For some other member states, especially some in the east, dependence on Russian gas was even greater.

Putin tried to use the EU’s reliance on its gas as leverage in an attempt to prevent it from imposing harsh sanctions. Former president Medvedev predicted that Europeans would “freeze in their homes” as a result of its solidarity with Ukraine. Ultimately, this was luckily not the case. The EU definitely did have to pay for its reliance, with gas prices soaring after the invasion, but it avoided an all-out disaster. (Henley et al, 2023)

The EU now seeks to prevent itself from getting caught in a similar situation again. President Von der Leyen specifically stated so in her state of the union address in 2022. Referring to the chip industry among other things, she said: “Whether we talk about chips for virtual reality or cells for solar panels, the twin transitions will be fuelled by raw materials. ... So we have to avoid falling into the same dependency as with oil and gas.” (Von der Leyen, 2022a). For the raw materials required to make chips, the EU is indeed dependent on the PRC. For the chips themselves, it is currently dependent on the Republic of China (ROC). If a conflict were to erupt in the strait of Taiwan, it is not unlikely that the flow of these resources would decrease significantly if not stop altogether. Unfavourable for the EU, to put it mildly.

Strategic autonomy is a concept which refers to “the ability to act and cooperate with international and regional partners wherever possible, while being able to operate autonomously when and where

necessary.” (European Commission, 2013). This term was introduced by the European Commission in 2013 and has become an increasingly important policy objective, especially in the Von der Leyen administration.

For the chip industry, this means that the EU needs to be resilient to a sudden disruption in the supply chain. Working with the PRC or the ROC, or any other country, is fine, but the EU must not find itself in a situation where it is dependent on another country for an essential resource, like it was with Russia and gas. By the strictest interpretation of this term, this would also mean that the EU should be autonomous from its closest ally, the USA. Although this might be an eventual goal for the EU, its focus for now seems to be on creating strategic autonomy from states that are more unreliable than the USA, like the PRC and Russia.

### Research question

It is without question that the EU is pushing towards an increased level of autonomy in the semiconductor industry, perhaps heralding the return of industrial policy to the continent. However, its motivations are up for debate. Is it to reach a higher degree of sovereignty, is it to protect itself from supply chain disruptions or is it because of US pressure? The latter of these options could be possible; the US wants to be able to rely on its allies and partners for the entire supply chain, and cut out the PRC. To study this relation, the following research question has been formulated:

To what extent has the EU’s push towards strategic autonomy in the semiconductor industry so far been motivated by pressure from the USA?

The following sub questions will be used to help answer the main research question:

- 1) To what extent is the EU working towards strategic autonomy?
- 2) To what extent is this push towards strategic autonomy motivated by pressure from the USA?

This is a causal research question, with ‘pressure from the USA’ being the independent variable and ‘EU strategic autonomy in the semiconductor industry’ being the dependent variable. This quantitative research hopes to find out if the USA is significantly influencing the actions of the EU. This will not lead to an exact result (for example, 60% of the actions towards strategic autonomy of the EU are motivated by pressure from the USA), but will rather lead to an answer like ‘US pressure has had no effect’ or ‘The USA has had large influence in this regard, but relatively none in that regard’.

## Theory

Every theory of international relations will offer its own explanation of why events are unfolding as they are. Realism was chosen to be the most fitting to explain the situation in this paper and will therefore be the main theory used. Neofunctionalism will shortly give another view on EU collective action.

### Realism

Realism is a popular school of thought in international relations. It is often described as a very pessimistic and gloomy perspective on geopolitics. In realism, two assumptions are most important. Firstly, the nation-state is the central actor on the world stage. International institutions like the UN do not have the necessary authority to be relevant, which means that there is nothing to ‘control’ the nation-state. This means that the world order is *anarchical*, with no international authority. Second, the people controlling the state are rational beings, which means that they will always pursue national interest and national security. Doing otherwise would simply not be rational. Why would a decision maker act in such a way that they weaken their country or make it vulnerable? (Camisão & Antunes, 2016)

These two assumptions generate the essential themes of realism; the anarchical world order and the absolute focus on state-survival. Together, these two themes combine to make a world stage in which states use all the power and leverage they have to infinitely strengthen their position. In working for this, they will not shy away from abusing and manipulating states that are smaller than them for their own gain. The anarchical world order ensures that they can do this without some intervention by a higher authority.

Because states care most about their survival and security, they are keen on being self-sufficient for resources that are important to their power. If a state relies on another state for a power resource, they are (partially) dependent on that state, which can use it as leverage over them. This is why realism stipulates that states will want to keep the production of resources important to national security, like weapons, technology and also chips, in their borders.

### Thucydides’ trap

A possible theory explaining the tensions between the PRC and the USA, intertwined with realism, is what is known as Thucydides’ trap. This theory revolves around two states; one of these states is the *ruling power*. This country is the strongest state in a certain regard and is therefore invested in maintaining the status-quo. For example, these would include France in the first half of the 16th century or the UK in the early 20th century. Currently, the USA can be considered the ruling power. It is the lone world superpower, and outmatches any country in most metrics of power. Next to the ruling power is the *rising power*. This is the power who is quickly developing and catching up to the ruling power. Eventually, the rising power will overtake the ruling power. The ruling power will want to defend its position from the rising power, as realism explains; state-survival is all-important, and states will go to

great lengths to protect and improve this. Being the strongest state in the world is an excellent way of ensuring national security. (Allison, 2018)

To defend this position, the ruling power wants to ‘crush’ the rising power before it becomes more powerful than itself. Its window of opportunity ends once they get overtaken, so this creates pressure for the ruling power to intervene quickly. Therefore, war becomes a serious threat. In his book called “Destined for war”, Allison explores Thucydides’ trap in recent centuries. He finds the following points at which a rising power overtook or threatened to overtake the position of the ruling power. See figure 5. What is most disturbing about Thucydides’ trap, is that out of the sixteen cases found by Allison, twelve have resulted in a war between the rising and ruling power. (Allison, 2018)

Nº	Period	Rulling Power	Rising Power	Domain	Result
1	Late 15th century	Portugal	Spain	Global empire and trade	No War
2	First half of 16th	France	Hapsburgs	Land power in western Europe	War
3	16th and 17th centuries	Hapsburgs	Ottoman Empire	Land power in central and eastern Europe, sea power in the Mediterranean	War
4	First half of 17th century	Hapsburgs	Sweden	Land and sea power in nothern Europe	War
5	Mid-to-late 17th century	Dutch Republic	England	Global empire, sea power and trade	War
6	Late 17th to mid-18th centuries	France	Great Britain	Global empire and European land power	War
7	Late 18th and early 19th centuries	United Kingdom	France	Land and sea power in Europe	War
8	Mid-19th century	France and United Kingdom	Russia	Global empire, influence in Central Asia and eastern Mediterranean	War
9	Mid-19th century	France	Germany	Land power in Europe	War
10	Late 19th and early 20th centuries	China and Russia	Japan	Land and sea power in East Asia	War
11	Early-20th century	United Kingdom	United States	Global economic dominance and naval supremacy in the Western Hemisphere	No War
12	Early-20th century	United Kingdom suportored by France and Russia	Germany	Land power in Europe and global sea power	War
13	Mid-20th century	Soviet Union, France, United Kingdom	Germany	Land and sea power in Europe	War
14	Mid-20th century	United States	Japan	Sea power and influence in the Asia-Pacific region	War
15	1940s-1980s	United States	Soviet Union	Global power	No War
16	1990s-present	United Kingdom and France	Germany	Political Influence in Europe	No War

Figure 5: Thucydides' trap in recent centuries (Allison, 2018)

The theory is based on the Peloponnesian war as recorded by Thucydides. The rise of Athens as the rising power in Greece threatened the position of Sparta, the ruling power. A quote from Thucydides has become iconic in describing Thucydides’ trap:

*“It was the rise of Athens and the fear that this instilled in Sparta that made war inevitable.” (Allison, 2018, p. 14)*

### EU collective action and realism

If realism assumes that states only care about their own national survival and security, then it might be difficult to explain why European countries work together through the EU. Because states are, in realist theory, dedicated to survival, they care greatly about their own power. However, power is relative; if a rising adversary increases its power, then the power of other states diminishes. Since the fall off the Soviet Union in 1991, the world has been *unipolar*, meaning that there is one state who is unrivalled in the world. This is of course the USA. Unipolarity is in contrast to *bipolarity*, meaning that two states are on roughly equal footing, seen during the Cold War. Unipolarity leads to the sole superpower abusing its position of power to shape the international arena in its favour. Other states have a few options in a unipolar world. First, they could ‘bandwagon’, and try to take part in the success from the USA. A second option would be to go at it alone and try to compete with the USA. (Posen, 2014)

Bandwagoning has its issues, however. It puts a state at the mercy of the unipolar superpower, which can act however it pleases given that the world stage is anarchical and no one, not even a decently sized coalition, can threaten it. As Posen puts it: “Though the US may be a benign hegemon today, there is no reason to assume that this will always be so.” (Posen, 2014)

Bandwagoning is the strategy that most European states have chosen nonetheless. NATO has become an instrument for the USA to exert its power in Europe, but the USA is also the main state paying the price for the defence alliance. In more recent times, it appears that European states have become more uncomfortable with the rather docile nature of this bandwagoning arrangement. This has led to these states looking for an alternative. By any reasonable definition, these states by themselves have little to no chance to achieve more autonomy from the USA. As a united block of European states, however, they have a much greater chance.

The European states understand that they have no chance individually to achieve autonomy from the US in a unipolar world, so by grouping together they feel that they can come closer to being a major power on the world stage. Because of the rise of the PRC, the world might be moving towards a bipolar situation. This move from unipolarity to bipolarity might be what is emboldening the EU to look for this autonomy now. As Posen puts it: “Consequential states will at minimum act to buffer themselves against the caprices of the US and will try to carve out an ability to act autonomously, should it become necessary. Such ability would permit a divorce at a later date. It could support a strategy of buckpassing – waiting for another truly great power to emerge and bell the US cat or, ultimately, a policy of directly balancing the power of the US.” (Posen, 2014)

Under the USA, a global supply chain, consisting of largely US partners and allies has been set up. The EU has been bandwagoning with this system for its own chips, and also plays a small role in it. Posen says that consequential states, like the European states, will want to build some autonomy from the USA, so that can fall back on that if the USA decides to suddenly radically change its stance towards the rest of the world. So in the case of chips, it can be explained why the EU is seeking some degree of strategic autonomy instead of relying blindly on the USA.

### Neo-functionalism

There are multiple theories on EU integration, one of which will be discussed shortly here, namely neo-functionalism. In neo-functionalist theory, the concept of “spillover” is essential. This term is used to describe three phenomena, dubbed functional, political and cultivated spillover. Functional spillover refers to the idea that cooperation in one area will lead to cooperation in similar areas. For instance, cooperation in the single market led to cooperation in a common currency. Second is political spillover, which explains that political actors drive integration because it is in their interest. Political parties and pressure groups, for instance, will create pressure for integration if that is in their interest (Hatton & Sonny, 2015). Finally, cultivated spillover explains that supranational institutions, like the EU, will try

to enlarge their own powers. To do that, they try to integrate their member states, stripping away competences from them and moving them to the supranational entity (Niemann, 2016). So we can expect an institution like the European Commission to try and take on as much as it can, because it is interested in expanding its own competences. Due to these three forms of spillover, integration will fuel itself .

### Hypotheses

Realism emphasises that states will always work in the interest of their national security and to strengthen their power. With that in mind, it is clear to see why the EU is working towards strategic autonomy in the chip sector; it has recently experienced what a chip shortage does to its economy and security, and it wants to prevent itself from being in such a position of vulnerability again. Especially with the US and PRC seemingly escalating their conflict over chips, further disruptions in the supply chain are to be expected. If a conflict involving the USA, PRC and ROC were to break out, be it a military conflict or an economic one, the EU does not want to get caught in the crossfire. Translating this into a hypothesis:

*H1a: The EU and its member states will push towards strategic autonomy in the chip sector, regardless of US pressure, to secure its supply of chips in the future.*

So, if the USA is pressuring the EU to build up its chip industry, then why? According to realist theory, the USA has much of the same motivation as the EU, namely to secure its chips supply from disruptions. The USA, however, has another motivation that the EU does not necessarily have; to curb the PRC's capability to produce chips. The EU and the PRC are not rivals of each other to the same extent as the USA and the PRC are; the EU and PRC are not locked in Thucydides' trap together, while the PRC and USA are. The EU is also not as present or interested in the Asia-Pacific region as the US is (through Guam, Hawaii and their alliance network). The USA, on the other hand, is still the dominant world power and will, as Thucydides' trap also explains, go to great extents to protect that position of dominance. Yet, with an eye on the chip sector, the EU is more interested in maintaining its supply of chips if a conflict broke out between the PRC and the USA, as a matter of its security rather than countering the PRC. Form this theory, the following hypothesis emerges:

*H1b: The USA is pressuring the EU and its member states to build up its chip industry to secure its own supply.*

Cultivated spillover from neo-functional theory explains that supranational entities are always looking for more power to expand themselves. So it would make sense that the EU would do the same. The European Commission can therefore be expected to take the lead in building up a European chip industry; because taking the lead means more power. Realist theory would expect the same, but of course with a different explanation. The states of Europe, interested in their state survival, cannot reasonably



expect to stay relevant by themselves in the current world, where the USA and PRC are the major powers. Therefore, they will try to work together, so that they can collectively participate with the other larger states. Having to provide a unified voice and policy, they will follow the lead of the European Commission. For chips, this is especially true. If the USA admits to not being able to internalise the entire supply chain, then surely no European state will be able to do so alone. Collective action, through the leadership of the Commission, is their only chance. These two theories lead to the following hypothesis:

*H2: The European Commission will take charge in the collective effort towards strategic autonomy in the semiconductor industry*

### Methods

To answer the research question, a single case study will be most fitting. Case studies are useful for causal questions like the one in this research. Because only one case is being studied here, that one case can be very thoroughly looked at. There is enough time and resources to look into every detail and variable that is relevant to the research. The other side of this is knowing when to stop digging deeper, or in other words, when the time and resources that it costs to continue zooming in is no longer worth the relevant information that is produced.

The ‘case’ in this paper will be every major move the EU and USA have made towards strategic autonomy in the chip sector since the Biden administration. This might seem like an arbitrary starting point, and partially, it is. However, the “chip war” has only really started unfolding after he took office. Since then, many policy documents and company announcements have been made. In the timeline below, some important events of the past few years have been put together. On the top half, the events relating to the USA are shown. On the bottom half, the same but for the EU.

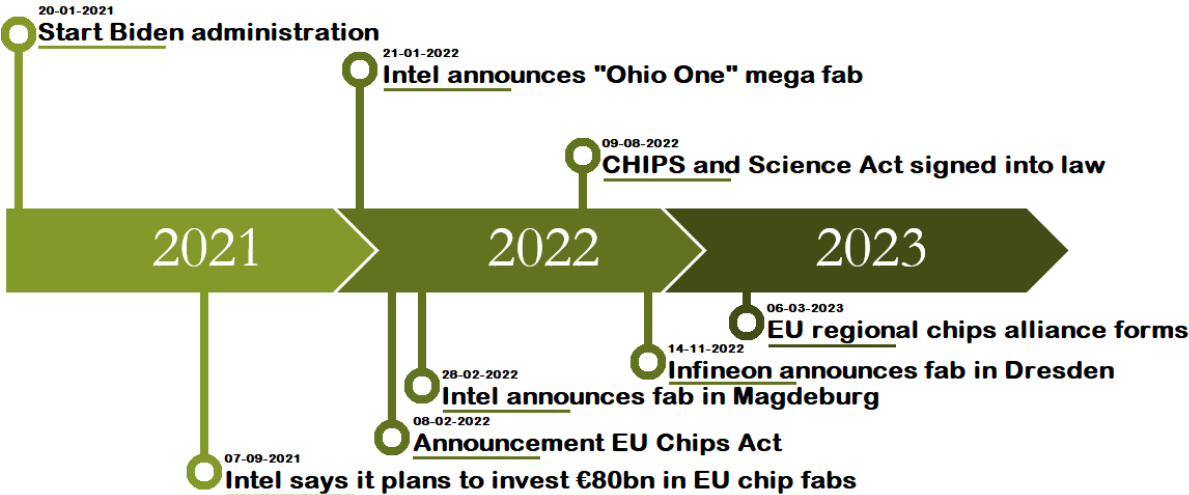


Figure 6: An overview of recent developments

Many different documents from many different sources will be consulted for this research. These documents all relate to the motivations of the EU's push towards strategic autonomy in the chip industry. Besides this, the actions and policies from the Americans must also be studied to see if they indicate any pressure towards the EU. Here, a much smaller pool of actors are relevant. It is reasonable to assume that only actors at the federal level of the USA have the gravitas to exert pressure on the EU; the individual states do not have the competence of deciding its foreign policy, in contrast to the EU. So on the American side, federal agencies, like the department of state and the department of commerce, and the office of the President are important to study.

From these aforementioned relevant institutions and actors, policy documents, press releases, speeches or other remarks relating to EU strategic autonomy in the semiconductor industry are all within the scope of this study. These sources are the way to find out how these actors think about the issues important to this study and how they (plan to) work towards their respective goals.

As discussed in the theory, strategic autonomy is a concept very closely related to the EU. Because the term 'strategic autonomy' is solely used to apply to the EU in this paper, and not to other actors like the USA or the PRC, the definitions only needs to fit the EU. Therefore, it makes sense to use the EU's own definition of strategic autonomy; what does it perceive itself to be the definition of its self-proclaimed goal? In 2016, the "Implementation Plan on Security and Defence" used the following definition:

"...the ability to act and cooperate with international and regional partners wherever possible, while being able to operate autonomously when and where necessary." (Council of the European Union, 2016)

### Data collection

To answer the research question and test H1a and H1b, the following two points must be checked in the texts:

Motivations for striving towards strategic autonomy (in the chip industry) for the EU;

Sentences indicating pressure from the USA;

The texts will be scanned for content relating to these two points. When words or sentences are important to these points, they will be highlighted in the colour that is attached to the point. All these highlighted texts will be put into a category which represents the essence of the selected text. The number of times each category is found will be tallied and used to draw an eventual conclusion.

The two points were chosen because they represent H1a and H1b. For the first point, there is no distinction made between motivations for striving towards strategic autonomy in general and in the chip sector. This is because the two are inseparable; if the EU wants to achieve strategic autonomy in general, it will also need strategic autonomy in the chip industry, which is what matters for this research.

To test H2, a different approach is required. To test if the Commission is indeed taking charge in this matter, policy documents and news articles will be studied to determine where initiatives to build up the chip industry are coming from. This will result in a discussion of a couple sources that will give a nuanced conclusion.

## Analysis

In this chapter, the findings of the case study will be analysed. The table below shows the results of the research, which will be elaborated and explained below. As mentioned above, the texts were analysed for the following two subjects:

1. Motivations for striving towards strategic autonomy (in the chip industry) for the EU;
2. Sentences indicating pressure from the USA

For point one, a good number of documents were found mentioning the motivations of the EU, for point two, the sample pool was smaller, due to less sources being available for that point. See the table below for the results.

<b>1. Motivations for striving towards strategic autonomy (in the chip industry) for the EU</b>	
Avoid being dependent on other countries	7
Continuing/preserving/developing the European identity/values	5
Have the power to steer the evolution of the world	3
Security of supply	2
Safeguard its interests	2
<b>2. Sentences indicating pressure from the USA</b>	
Coordinate/work together with allies and partners	10
Construct international supply chains	4
Specifically mentioning the EU	0

### Motivations for striving towards strategic autonomy

Five categories of motivations were found in the analysis;

1. Avoid being dependent on other countries
2. Continuing, preserving and/or developing the European identity or values
3. Have the power to steer the evolution of the world
4. Security of supply
5. Safeguard its interests

The first two were the most prevalent in the texts. Avoiding dependence on other countries was expected, the EU learned a hard lesson from the energy crisis brought on by its dependence on Russian energy resources. Now, it is possibly facing a similar fate with the semiconductor industry. This comparison was also directly drawn by the European Commission.

## Sentences indicating pressure from the USA

This variable describes the concept that was defined earlier as friendshoring. In various documents coming from sources like the State Department and the Department for commerce, the USA has called for cooperation with its “partners and allies”. This term is one that is very common in these documents. Rarely does the USA specify who exactly is meant by this. Except for one excerpt, in which the Department of Commerce writes the following:

*“...allies and partners, including countries in the Americas and those participating in the Indo-Pacific Economic Framework for Prosperity...” (U.S. Department of Commerce, 2023)*

Other than this quote, no specific reference to a country or region was found. Notably, the USA doesn't talk about working together with the EU specifically to achieve a new supply chain either. It is safe to assume that the EU does fall under the category of partners and allies, but it does not seem that the USA have the EU specifically in mind. So, seemingly, there is pressure on all US allies and partners to increase their stake in the semiconductor industry.

As mentioned before, the USA is not planning on building the entire supply chain within its own borders. Rather, it wants to set up a supply chain with like-minded countries that are reliable. This notion of wanting to achieve a cross-border supply chain was underscored several times, and no claim to complete self-reliance was found in the literature.

## Interpretation

The data suggest that the EU is already working hard to ramp up its capabilities in the semiconductor industry. Mostly through the EU Chips Act, it is attempting to develop its industry in all three steps of the semiconductor supply chain. The motivation for this is not US pressure, but rather a desire to avoid dependence on other countries for an industry so critical to its national security. In addition to this, it claims that it wants to preserve European values.

The fact that the EU does not out-right say that it is developing its chip industry to help out the USA only makes sense. The EU is keen to show that it is autonomous and independent from the USA and directly citing the USA as its motivation would undermine this perception. Plus, for an investment of the scale of the EU chips act, a better motivation than just US pressure is needed. Of course, this is not to say that US pressure could not have played a role in the decision to improve the chip industry. It could be the case that US pressure was part of a larger pool of motivations for the EU to pursue the EU chips act. To what degree this pressure made a difference is impossible to say, but it is likely that it only had a very minimal effect, or none at all.

As mentioned, the EU is more motivated by securing its independence and de-risking the supply chain. Commission President von der Leyen puts the importance of this in the following way:

*“We depend on state-of-the-art chips manufactured in Asia. So this is not just a matter of our competitiveness. This is also a matter of tech sovereignty.” (Von der Leyen, 2021)*

What von der Leyen implies with this, is that having the high-end chip production in Asia is a risk. Assumedly, the reason why this is a risk, is the rise of the PRC and its increasing assertiveness over the South China Sea and Taiwan. The perceived threat to “tech sovereignty” can be interpreted in two ways. Either the Commission president fears that dependence on Asian states can be used as leverage over them in a similar way to Russian energy resources, or that a sudden stop in supply from Asia could leave them vulnerable. Most likely, it is a combination of both.

Having this “tech sovereignty” is also what is supposed to stop the EU from being put in a position where it is not able to pursue and protect its own identity and values. This motivation was also mentioned often, and it speaks to the importance for the EU of having these protected. The EU is often described as not just an economic union, but also a union of values (European Parliament, 2018). This means that the EU does not only act to protect and improve its economic interests, but also to protect its values of democracy, rule of law and civil freedoms.

So why does the USA not explicitly call for the EU to step up its efforts in the semiconductor industry? This could be for the same reason as it was decades ago. When the chip industry first began, right after the second world war, the chips were still much simpler and (almost) the entire supply chain was inside of the USA. However, in the late sixties, the USA decided to move parts of the supply chain to quickly developing economies in East Asia, like Japan, South Korea and Taiwan. Mostly, the parts of the supply chain that were moved here were fabrication and assembly, while design stayed in the USA. The reason for this was simple; chips were also beginning to be used in civilian products, which required far more and far cheaper chips. The cheaper labour in the aforementioned economies allowed for this. The US did make sure that these companies moved the manufacturing towards countries aligned with the USA, so that it could rely on and keep a close watch over the production in these countries (Vox, 2023).

Now, the USA could be looking to do something very similar. The USA has come to rely too much on Taiwan especially, which has left it in a vulnerable position if a conflict were to commence over the island. Moving fabrication to the EU would however most likely make chips more expensive due to higher labour costs in Europe. This could explain why the USA would rather move production to places like Indonesia and countries in the Americas. These countries are aligned with the USA, which is essential to the concept of friendshoring mentioned earlier. In these countries, the USA finds the friendly governments and cheap labour it is looking for. In the EU, it only finds the former.

## European Commission leadership

To test H2, there will now be an overview of current initiatives to boost the semiconductor industry in Europe.

The European Commission (EC) has undoubtedly taken a big step by introducing the EU Chips Act. This act clearly sets out goals and sets aside money to be invested in the semiconductor industry. This goal being a market share in chips of 20% by 2030 and aiming for the most sophisticated chips to be made in Europe (Breton, 2023). The EC boasts of “100 billion euros of announced planned investments (both private and public)” (Breton, 2023), but it is of course unclear if these companies and governments would have acted differently if there was no EU Chips Act.

To get companies to build their fabs in Europe, state aid is being used. There are two notable examples of this; a French investment worth almost 3 billion euros for a production facility in Crolles and an Italian investment worth almost 300 million euros for a plant in Catania. But can these investments be attributed to EC leadership or initiative from the respective national governments?

To first tackle the Italian case, they are using the Recovery and Resilience Facility (RRF) of the EU to finance their investment. So, while the EC points out that the investment is in line with the goals set out in the EU Chips Act and is a part of it, it is not drawing money from there directly. Notable about the approval by the EU for this state aid, is the conditions it demanded. These are the following (European Commission, 2022):

- (i) satisfy EU priority rated orders in the case of a supply shortage,
- (ii) invest in the development of next generation of microchips,
- (iii) continue contributing to the strengthening of the European semiconductor ecosystem.

The Commission has apparently ensured that this factory will serve all of the EU, and not just Italy, especially in times of dire need. A move that does show the EC’s commitment to securing strategic autonomy for the whole EU.

The case of the French investment is about a much larger sum of money. It is meant for a ‘microchips manufacturing facility’ in Crolles, near Grenoble. A joint undertaking by STMicroelectronics and GlobalFoundries, it would be a significant boost for the EU chip industry. Similar to Italy, the EC put the following conditions on the state aid approval (European Commission, 2023c):

- (i) satisfy EU priority rated orders in the case of a supply shortage;
- (ii) continue investing in the development of the next generation of FD-SOI technologies; and
- (iii) make available some capacity for small and medium enterprises (‘SMEs’) and third parties to test and develop their products in a real industrial production environment, thereby supporting research and development (‘R&D’) activities and further contributing to the strengthening of the European semiconductor ecosystem.



The conditions are very similar to the ones for the case in Italy, again aiming to secure a supply for the whole EU if a supply crisis were to emerge. The EC also underlines again that this is part of the EU chips act, making these two cases the only two example so far of state aid flowing from the EU Chips act.

Talks of another fab in Dresden by TSMC are also in a mature stage, with the last discussion point being the amount of subsidies they can expect (Clarke, 2023). Another fab in Dresden by Infineon has already started construction, but has not secured any subsidies yet (Mann, 2023). Finally, Intel is also constructing a mega fab in Germany, this time not in Dresden, but rather in Magdeburg. They have secured a large amount of subsidies for their project from Germany, but this deal still needs to be approved by the EU. Chancellor Scholz also made statements similar to those made by the EU, regarding wanting to de-risk, but not decouple. (Von der Burchard & Haeck, 2023)

Seemingly, good use is being made of the money put available by the EU. With two subsidies already having been approved and more on the horizon, there is no doubt that the EU Chips Act is having a positive effect on the chip industry in Europe. However, who is to be thanked for this? The EC took the initiative by introducing the EU Chips Act, but it is the member states, in this case Italy, France and Germany, who have turned it into reality.

So who is taking charge in the building up of the semiconductor industry in Europe? While the EU took the initial initiative by introducing the EU Chips Act, the member states have used it to get investments to their countries. Still, since the member states are following the lead set out by the EC, it can be concluded that the EC is indeed taking charge of the push towards strategic autonomy in the chip industry in the EU.

## Conclusion

To answer the question “To what extent has the EU’s push towards strategic autonomy in the semiconductor industry so far been motivated by pressure from the USA?”, several documents were scanned on key indicators of motivations and pressure.

It can be concluded that the USA is most likely indeed pressuring the EU to become more self-sufficient in its production of chips, but it is also pressuring all of its other allies and partners. In addition to this, the pressure from the USA does not seem to be making a difference in the EU, since they cite different motivations for striving towards strategic autonomy. In other words, the EU would most likely also strive for strategic autonomy in the chips sector without pressure from the USA.

The following three hypotheses were formulated for this paper:

*H1a: The EU and its member states will push towards strategic autonomy in the chip sector, regardless of US pressure, to secure its supply of chips in the future.*

This hypothesis has been confirmed. The motivations for pursuing strategic autonomy in the semiconductor industry were most likely barely affected by US pressure, but was rather pursued out of its own desire for de-risking and protection of its way of life.

*H1b: The USA is pressuring the EU and its member states to build up its chip industry to secure its own supply*

The USA seems to want all its allies and partners to step up their game in the semiconductor industry. The EU has not been found to have been mentioned specifically, but is an ally of the US. So while it is not specifically targeted, it is probably feeling pressure from the USA. The hypothesis is thus confirmed.

*H2: The European Commission will take charge in the collective effort towards strategic autonomy in the semiconductor industry*

While the EC has introduced the EU Chips Act, the member states have been the one ensuring that companies settle in the countries. However, since the EC decides how the money is spent and created the situation in which these member states are able to lure companies towards them, it is fair to say that the EC is in charge.

### Insights

This paper has made clear that the EU is not just acting out of pressure from the US, but has in this instance determined its own agenda. This can be interpreted as a sign of greater EU autonomy from the USA. The research could have been more in depth if more resources were available, like using more sources for the data set and looking into each one further. The sources from the US side were unfortunately rather limited. In the future, when more time has passed, it is likely that more sources will also have become available, which might lead to different insights. For a future paper, it would be interesting to further explore the relationship between the PRC and the EU in the semiconductor industry, since they have a very different dynamic than the USA and the PRC have.

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## Data Appendix

Source	Date	Statement
Von der Leyen, 2022a	14-9-2022	<p>“Honourable Members, My third point for our SMEs and our industry. Whether we talk about chips for virtual reality or cells for solar panels, the twin transitions will be fuelled by raw materials. Lithium and rare earths are already replacing gas and oil at the heart of our economy. By 2030, our demand for those rare earth metals will increase fivefold. And this is a good sign, because it shows that our European Green Deal is moving fast. The not so good news is – <b>one country dominates the market. So we have to avoid falling into the same dependency as with oil and gas.</b> This is where our trade policy comes into play. New partnerships will advance not only our vital interests – but also our values. Trade that embraces workers’ rights and the highest environmental standards is possible with likeminded partners. We need to update our links to reliable countries and key growth regions. And for this reason, I intend to put forward for ratification the agreements with Chile, Mexico and New Zealand. And advance negotiations with key partners like Australia and India. But securing supplies is only a first step. The processing of these metals is just as critical. Today, China controls the global processing industry. Almost 90 % of rare earths and 60 % of lithium are processed in China. We will identify strategic projects all along the supply chain, from extraction to refining, from processing to recycling. And we will build up strategic reserves where supply is at risk. This is why today I am announcing a European Critical Raw Materials Act. We know this approach can work. Five years ago, Europe launched the Battery Alliance. And soon, two third of the batteries we need will be produced in Europe. Last year I announced the European Chips Act. And the first chips gigafactory will break ground in the coming months. We now need to replicate this success. This is also why we will increase our financial participation to Important Projects of Common European Interest. And for the future, I will push to create a new European Sovereignty Fund. Let’s make sure that the future of industry is made in Europe.”</p>
Von der Leyen, 2021	15-9-2021	<p>“Digital is the make-or-break issue. And Member States share that view. Digital spending in NextGenerationEU will even overshoot the 20% target. That reflects the importance of investing in our European tech sovereignty. <b>We have to double down to shape our digital transformation according to our own rules and values.</b> Allow me to focus on semi-conductors, those tiny chips that make everything work: from smartphones and electric scooters to trains or entire smart factories. There is no digital without chips. And while we speak, whole production lines are already working at reduced speed - despite growing demand - because of a shortage of semiconductors. But while global demand has exploded, Europe’s share across the entire value chain, from design to manufacturing capacity has shrunk. We depend on state-of-the-art chips manufactured in Asia. So this is not just a matter of our competitiveness. <b>This is also a matter of tech sovereignty.</b> So let’s put all of our focus on it. We will present a new European Chips Act. We need to link together our world-class research, design and testing capacities. We need to coordinate EU and national investment along the value chain. The aim is to jointly create a state-of-the-art European chip ecosystem, including production. That <b>ensures our security of supply</b> and will develop new markets for groundbreaking European tech. Yes, this is a daunting task. And I know that some claim it cannot be done. But they said the same thing about Galileo 20 years ago. And look what happened. We got our act together. Today European satellites provide the navigation system for more than 2 billion smartphones worldwide. We are world leaders. So let’s be bold again, this time with semi-conductors.”</p>

<p style="text-align: center;">Macron, 2023</p>	<p style="text-align: center;">11-4-2023</p> <p>“... because if you accept to lose your sovereignty, <b>it means that you accept to depend on other powers</b>. You put yourself in a situation not to decide for yourself and not to be in charge of, precisely, <b>continuing, preserving, developing your own identity</b>. Defending sovereignty doesn’t mean to shy away from our allies. It means we must be able to choose our partners and <b>shape our own destiny rather than being, I would say, a mere witness of the dramatic evolution of this world</b>. This means that we must strive to be rule makers rather than rule takers. And this we can do in a cooperative matter in keeping with our spirit of openness and partnership. But I think the wakeup call was made during the pandemic; we discovered that we were dependent on a lot of devices, on a lot of drugs, on a lot of (inaudible), suddenly. And even those who were supposed to cooperate with us, some allies, decided to ban the (inaudible) as long as they were not being served and protected...” “... The pandemic and the war just pushed us in the situation to discover that we have to <b>reduce our dependencies</b> if you <b>want to preserve the European identity</b>. Otherwise, we will progressively be dependent on everything...”</p>
<p style="text-align: center;">European Council, 2019</p>	<p style="text-align: center;">20-06-2019</p> <p>In a world of increasing uncertainty, complexity and change, the EU needs to pursue a strategic course of action and increase its capacity to act autonomously <b>to safeguard its interests, uphold its values and way of life</b>, and help <b>shape the global future</b>. The EU will remain a driving force behind multilateralism and the global rules-based international order, ensuring openness and fairness and the necessary reforms. It will support the UN and key multilateral organisations. The EU will use its influence to lead the response to global challenges, by showing the way forward in the fight against climate change, promoting sustainable development and implementing the 2030 Agenda, and cooperating with partner countries on migration. The EU will promote its own unique model of cooperation as inspiration for others. It will uphold the European perspective for European States able and willing to join. It will pursue an ambitious neighbourhood policy. It will develop a comprehensive partnership with Africa. Together with global partners sharing our values, the EU will continue to work towards global peace and stability, and to promote democracy and human rights. But to better <b>defend its interests and values</b> and help <b>shape the new global environment</b>, the EU needs to be more assertive and effective. This requires us to be more united in the stances we take, and more determined and effective in exerting our influence. It also means making more resources available and better using those we already have at our disposal. And it means giving a clearer priority to European economic, political and security interests, leveraging all policies to that end. An ambitious and robust trade policy ensuring fair competition, reciprocity and mutual benefits is a central element in that respect, both at the multilateral level in a reformed WTO and in bilateral relations between the EU and its partners. The EU’s CFSP and CSDP must become more responsive and active and be better linked to the other strands of external relations. The EU also needs to take greater responsibility for its own security and defence, in particular by enhancing defence investment, capability development and operational readiness; it will cooperate closely with NATO, in full respect of the principles set out in the Treaties and by the European Council, including the principles of inclusiveness, reciprocity and decision-making autonomy of the EU. Relations with strategic partners, including our transatlantic partners, and emerging powers have to be a key component of a robust foreign policy. To that end, there need to be far more synergies between the EU and the bilateral levels. The EU can only engage with other global powers on an equal footing if it avoids a piecemeal approach and presents a united front, backed up by EU and Member State resources.</p>

European Council, 2020	2-10-2020	<p>“Achieving strategic autonomy while preserving an open economy is a key objective of the Union” “The EU must pursue an ambitious European industrial policy to make its industry more sustainable, more green, more competitive globally and more resilient. The European Council invites the Commission to identify strategic dependencies, particularly in the most sensitive industrial ecosystems such as for health, and to propose measures to <b>reduce these dependencies</b>, including by diversifying production and supply chains, ensuring strategic stockpiling, as well as fostering production and investment in Europe. It calls for:...” “...developing new industrial alliances, including on raw materials, medical equipment, microprocessors, secure telecommunication networks, low-carbon industries, and Industrial Clouds and Platforms;...” “developing capacities in strategic digital value chains, especially microprocessors;”</p>
Von der Leyen, 2022b	8-2-2022	<p>Good morning, The College of Commissioners has adopted today the European Chips Act. In the European Chips Act, we are combining investment, a regulatory framework and the necessary strategic partnerships to make Europe a leader in this market that is so important. The global demand, as you know, for chips is exponentially growing. Chips are at the centre of the global technological race. They are, of course, also the bedrock of our modern economies. They are essential for the goods that we use on an everyday basis – we have them in our smartphones; we have them in our washing machines. During the pandemic, for example, we needed them crucially in the life-saving ventilators. Or now, for example, with the energy topic, they are in the electric grids. So the chips are crucial in almost every device. But the pandemic has also painfully exposed the vulnerability of chips supply chains. You all know that the global shortage of chips has really slowed down our recovery. We have seen that whole production lines came to a standstill, for example with cars. While the demand was increasing, we could not deliver as needed because of the lack of chips. So this European Chips Act comes absolutely at the right time. And it has two main goals: The first goal is, in the short term, to <b>increase our resilience to future crises by anticipating and thus avoiding supply chain disruptions</b>. And the second part is, of course, looking at the mid-term, and there to <b>make Europe an industrial leader in this very strategic market</b>. For that, we have set ourselves goals. ... It should be clear that no country – and even no continent – can be entirely self-sufficient. This is impossible. Europe will always work to keep global markets open and to keep them connected. This is in the world's interest; it is in our own interest, too. But what we need to tackle are the bottlenecks that slow down our growth, as we are just experiencing it right now. And therefore, Europe will build partnerships on chips with like-minded partners, for example the United States or for example Japan. It is about balanced interdependencies and it is about reliability. With the European Chips Act, we are putting out the investment and the strategy. But the key to our success lies in Europe's innovators, in our world-class researchers, in the people who have made our continent prosper throughout the decades. Europe is the continent where all the industrial revolutions have started. And Europe can be the home of the next industrial revolution, too. Thank you so much.</p>
Von der Leyen, 2022c	2022	<p>Our semiconductor supplies come from a few producers outside the EU. <b>This is a dependency we cannot afford</b>. The European Chips Act in early February will aim to make Europe a strong global player... Let's create more balanced interdependencies, for supply-chains we can trust...</p>

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Von der Leyen, 2022d</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">20-01-2022</p>	<p>...Or take the critical sector of semiconductors. Demand for them is skyrocketing. Today, we have microchips, not only in our PCs and smartphones, but also in our cars, in the heating system of our homes, in our hospitals, in life-saving ventilators. There is no digital without chips. And the European need for chips will double in the next decade. This is why we need to radically raise Europe's game on the development, production and use of this key technology. Europe is strong in some specific areas, such as the design of components for power electronics, or chips for the automotive and manufacturing industries. Europe is the world's centre for semiconductor research. And Europe is also very well positioned in terms of the materials and equipment that are needed to run large chip manufacturing plants. But Europe's global semiconductors market share is only 10% and today most of our supplies come from a handful of producers outside Europe. <b>This is a dependency and uncertainty we simply cannot afford.</b> By 2030, 20% of the world's microchips production should be in Europe. Keep in mind that the world's production itself will double. This means quadrupling today's European production. We have no time to loose. This is why I can announce that we will propose our European Chips Act in early February. It will help us to make progress across five areas. First, we will strengthen our world-class research and innovation capacity in Europe. Secondly, we will focus on ensuring European leadership in design and manufacturing. Thirdly, we will further adapt our state aid rules under a set of strict conditions. This will allow public support for European 'first of a kind' production facilities that benefit all of Europe. Fourthly, we will improve our toolbox to anticipate and respond to shortages and crises in this sector to shore up our <b>security of supply</b>. And fifth, we will support smaller, innovative companies, in accessing advanced skills, industrial partners and equity finance. I want to be clear; Europe will always work to keep global markets open and connected. It is in the world's interest, and in our own. But we do need to tackle the bottlenecks that slow down our own growth. This will help us become a strong player, not just in some niches, but throughout the whole value chain. To conclude, we will promote diversification among like-minded partners. We will create more balanced interdependencies. And we will build supply chains we can trust by avoiding single points of failure...</p>
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">United States Department of State, n.d.</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">n.d.</p>	<p>“When any one country tries to control global telecommunications networks or semiconductor supply chains, they have the means to manipulate or disrupt essential services, critical infrastructure, and supply chains with the push of a button. Should adversaries dominate these sectors, they will be better able to export authoritarian practices and undermine democratic governance. In order to reduce those risks and bolster global economic security, the CHIPS Act enables strategic U.S. investments in these critical sectors. The ultimate goal is to bring new trusted information and communications technology vendors and semiconductor production capacity into the global market, in ways that will directly benefit the United States as well as <b>our allies and partners.</b>” “No one country, including the United States, can produce or onshore everything it needs. It is vital that the United States and its partners and allies work together to diversify critical supply chains and collaborate on technologies of the future to support our shared economic growth, security, and democratic values.”</p>
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United States Department of State, 2023	14-3-2023	<p>“The U.S. government recognizes that U.S. leadership and strong international cooperation are critical to maintaining a stable, reliable supply chain for semiconductors. To ensure a more diverse, resilient, and secure global semiconductor supply chain, ITSI funding will support the following efforts: ... Protecting National Security. Some uses of advanced semiconductors can pose national security risks. The mechanisms to mitigate those risks – including collaboration with international partners on export controls and licensing policies – require strengthening. The Department will facilitate the development and close coordination of such policies and practices with supply chain allies and partners.”</p>
U.S. Department of Commerce, 2023a	28-2-2023	<p>“As part of Implementing the Bipartisan CHIPS and Science Act, Department of Commerce Seeks Applications to Revitalize Domestic Semiconductor Industry and Bring Supply Chains Back to the U.S.” “ ... for manufacturing incentives to restore U.S. leadership in semiconductor manufacturing, support good-paying jobs across the semiconductor supply chain, and advance U.S. economic and national security.” “To advance U.S. economic and national security, the Department aims to reach the following goals by the end of the decade: (1) make the U.S. home to at least two, new large-scale clusters of leading-edge logic chip fabs, (2) make the U.S. home to multiple, high-volume advanced packaging facilities, (3) produce high-volume leading-edge memory chips, and (4) increase production capacity for current-generation and mature-node chips, especially for critical domestic industries.” “Engaging with U.S. Partners and Allies: The Department will coordinate with international allies and partners to support a healthy global semiconductor ecosystem that drives innovation and is resilient to a range of disruptions, from cybersecurity threats to natural disasters and pandemics. This includes coordinating government incentive programs, building resilient cross-border semiconductor supply chains, promoting knowledge exchange and collaboration on future technologies, and implementing safeguards to protect national security.”</p>
U.S. Department of Commerce, 2023b	28-2-2023	<p>“The United States will work to strengthen global supply chains in close coordination with allies and partners. Given the complexity of global supply chains, the United States does not seek to become self-sufficient in semiconductor manufacturing. Instead, it aims to support a healthy global semiconductor ecosystem that drives innovation and is resilient to a range of disruptions, from cybersecurity threats to natural disasters to pandemics.” “Building resilient cross-border semiconductor supply chains. Increased demand for semiconductors will provide opportunities for emerging economies to develop or expand upstream and/or downstream production and participate in integrated global supply chains. The Department of Commerce, alongside other agencies, will engage with allies and partners to identify bottlenecks in existing supply chains and build out new capacity in regions with an eye toward diversifying risk. For example, the Department of Commerce will support ongoing work with allies and partners, including countries in the Americas and those participating in the Indo-Pacific Economic Framework for Prosperity, to ensure the adequacy of conventional packaging capacity outside countries of concern.”</p>