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Silicon Sovereignty: The EU's Geoeconomic Strategy in a Fragmented Global Order

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“The Old Is Dying and the New Cannot Be Born”

Antonio Gramsci

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Introduction

Donald Trump's second inauguration has sent shockwaves through global politics. Already after the first months of his mandate, "the new US president has shaken America's executive branch, European security, the liberal international order and global economics" (Vinjamuri et al., 2025). In times when Trump unsettles allies and adversaries alike with a multitude of executive orders (Ewing & Desrochers, 2025), the measures to reduce the U.S. trade deficit by increasing tariffs is being questioned and heavily criticized by economists (Dorman, 2025), whereas the dynamics of 'Made in America' could fuel a global recession, leading to an economic downward spiral (Jeyaretnam, 2025). In this global political climate, the major world economies are preparing countermeasures that increasingly call for confrontation and protectionism (Reuters, 2025). The world currently undergoes a profound structural change, that is transforming from the unmatched leadership of the United States of America since the end of the Cold War into a multipolar world order (Wertheim, 2025). Recent developments in politics trigger an unrest to decades of relative peace, prosperity, and cooperation (Harari, 2025). As these dynamics cannot be ignored in terms of their impact on the global stage, they appear as symptoms within a much deeper and stronger dynamic, manifesting itself as the crisis of the *International Liberal Order* (ILO) (Ikenberry, 2018a).

The contested political developments at the roots of this cataclysm challenge the very foundations of the Western assumptions about the functioning of the ILO (O'Neill, 2018). After the triumph of liberalism and the emergence of increasingly interconnected regimes in the world economy, institutionalized trade integrated nation states into the ILO. Today, however, the result is shaped by persistent protectionist efforts, including decoupling key technological and economic assets from systemic rivals. This signals the beginning of a new economic period, which evolved from a liberal understanding of the world economy to an increased vision of realism. Scholars have observed a shift away from the ILO in the wake of the U.S.-China trade war, which undermines established rules of economic engagement and signals the rise of intensified geoeconomic competition among states (Roberts et al., 2019). Due to the constant state of globalized economy, the emergence of what is later defined as geoeconomics is a perpetual trade-off between economy and security (Gehrke, 2022). Indeed, the sentiment expressed by the

previous authors is reinforced and best summarized by the reflections of Babic et al. (2022, p. 2), discussing the contestation of the Washington Consensus:

> We argue, that after decades of neoliberal globalization, the global economic order is transforming. It is becoming more unwieldy, complex, and antagonistic. Since 2016, we are observing an advancing disintegration of the relatively stable phase of neoliberal globalization …. The advent of new hegemonic clashes between old, new, and aspiring powers is not only a theoretical, but a realpolitik phenomenon. However, we hold that different from earlier rounds of global rivalries, today's battle for supremacy and hegemony will not have a mainly geopolitical, but much more a geoeconomic character. This means that beyond military, state-centered forms of 'hard' power competitions, today's global landscape is being governed by more economic, network-centered, and complex forms of confrontation, competition, and cooperation.

In a political moment where the return of Trump is actively worsening the already precarious situation (Bown, 2025), cyclical manifestations of crisis, among others, are shattering the foundations of world trade along the lines of geopolitical competition (Blanga-Gubbay & Rubínová, 2023). However, in this changing scenery, one area where Trump's policies have notably succeeded is in advancing U.S. self-reliance in semiconductor production. With 90% of the most advanced chips produced in Taiwan, by a single company, *Taiwan Semiconductor Manufacturing Company* (TSMC), the U.S. faces significant strategic concerns. In the midst of the U.S.-China trade war, the latter has been increasingly aggressive in its stance towards Taiwan, conducting operations in the gray area of modern warfare (Shetler-Jones, 2025). This escalation is tied to China's assertion of its historical claim over the island, rooted in its 'One China' policy. The United States fears that an invasion could impede chip production, which would make it difficult to cater for the latest technologies "from smartphones to super computers and weapons" (Sacks & Miller, 2023, Sacks & Huang, 2024). The Covid-19 pandemic highlighted the risks posed by shortages in the semiconductor supply chain, underscoring its significance for both economic stability and national security (Wishart-Smith, 2024).

By offshoring semiconductor and microchip production capacities to the Southeast Asia region, the United States has made itself more competitive, but has also increased its dependency on global supply chains as a result. In the case of Taiwan, this was linked with safety guarantees, with President Biden reaffirming the commitment to the "Silicon Shield" in the event of a Chinese invasion (Reinsch & Whitney, 2025; Yang, 2022). Yet, the new U.S. administration seems to reverse on its foreign policy behavior towards Taiwan, as the President threatened Taiwan's chip industry with tariffs (Wang,

2025). Whether this is an actual U-turn or just an attempt to position itself better in business terms, the strategy has already proved effective: Out of fear of tariffs, TSMC has announced a 100$ billion investments in U.S. manufacturing facilities, with the latest Arizona factory being regarded as “the poster child for Trump’s policy” (Islam, 2025).

Given these significant developments in semiconductor geopolitics, it is crucial to consult the work of one of the most influential scholars in the field: Chris Miller. His outstanding book *Chip War: The Fight for the World’s Most Critical Technology* (2022) has made an invaluable contribution to the discourse surrounding semiconductors. Miller’s (2022) extensive research into the history, present, and future of microchips has been essential for understanding the complexities of semiconductor production and its global implications. His research has sparked renewed interest of this often-overlooked industry, which plays an indispensable role in technology and digitalization. His work has covered the industry’s evolution, as the narrative follows the industries close ties with the U.S. military-industrial complex, the race for technological and weaponry supremacy during the Cold War, and the subsequent rise of Asia as a critical hub for semiconductor production.

As the global balance of power continues to shift, the EU finds itself increasingly caught in the crossfire of geopolitical forces. These forces have prompted the EU to reconsider its traditional position as a proponent of international norms. Hans-Jürgen Bieling (2022) currently positions the EU in an era of new geopolitics, provoked by the trade war between the USA and China. According to the author, this confrontation has sparked a triadic competition, marked by significant changes in financial, technological, and production structures. Bieling (2022) argues, that geopolitics is increasingly shaped by geoeconomic consideration, signaling a sharp departure from the EU’s historical trajectory, during which is substantially benefited from international trade, multilateral agreements, and the ILO.

For the EU, this new pattern in global power dynamics signals the beginning of a growing strategic awareness, as the Union seeks to recalibrate its position. This environment is defined by intensifying U.S.-China competition, the gradual erosion of the ILO, the weaponization of economic interdependence, and the rise of geoeconomics. Not only does it threaten global economic growth, but also risks escalating into a broader conflict. The EU, aiming to remain neutral, promotes de-escalation and free trade, while

also acknowledging the need for strategic autonomy. Although the dispute presents new trade and investment opportunities for the EU, it largely shares U.S. concerns about China, yet simultaneously suffers from American tariffs (Goulard, 2020). As a defender and advocate of liberalism, Europe is now confronted with a world that is changing its political ambitions and its position within the world order. French President Macron, a strong advocate of Europe's commitment to international norms and values, has also highlighted the increasing threats by illiberal actors, both within and outside the EU, seeking to undermine the rules-based order (Staunton, 2022). Recent speeches by other European leaders, such as Olaf Scholz's (2022) *Zeitwende* ('turning point') address, reflect an acknowledgment of the evolving realities of foreign policy and economic interaction. Amid discourses growingly shaped by rivalry and trade-offs, European leaders have begun to demonstrate a heightened awareness of the evolving dynamics of global politics and the need to adapt accordingly.

According to Jacobs et al. (2023), the Covid-19 crisis sparked a deeper change within the trade rationale of the EU, touching the self-conception of actors and redirecting the grand strategy of the hegemonic project of the EU. Since then, the authors have identified a disruption in the neoliberal paradigm which governed EU trade policy for decades and a newly gained relevance of discursive concepts such as "'autonomy', 'sovereignty', 'self-sufficiency', 'protection' and the 'reshoring' of offshore production" (p. 10), which challenge the embeddedness of liberal practices. As the vulnerabilities in supply chains became more apparent, 'Strategic Autonomy and Resilience' (Jacobs et al., 2023) became a prominent discursive tool within the EU's trade policy, and triggered debates about de-globalization and re-shoring. This evolving rhetoric is captured as well by Lavery et al. (2022), who note that "strategic autonomy has therefore expanded from being a narrowly geopolitical vision to a comprehensive, albeit tension ridden, geoeconomic programme for Europe's place in a changing global order" (p. 66).

However, despite the EU's growing recognition of the importance of semiconductors, much of the global discourse has largely focused on the U.S. and Asia. While scholars such as Miller (2022) have explored the semiconductor industry, the role of the EU, despite the efforts to gain technological sovereignty, is marginalized. There is a significant gap in literature that systemically investigates the EU's position within the semiconductor supply chain. As a result, there is a need to explore how the EU can

enhance its capabilities within the industry. This thesis aims to fill the academic gap by critically examining the EU's role in the global semiconductor industry of a changing world order. Specifically, it will explore the strategies that the EU has adopted within the fragmentation of world politics to strengthen its capacities. By doing so, the research's aim is to contribute to a more comprehensive understanding of the EU's position geoeconomics by exploring the latter's industry, strategies, and challenges.

Thus, the central research question guiding this thesis is:

To what extend is the EU able to strengthen its autonomy in the semiconductor industry amid intensifying U.S.-China geoeconomic competition?

To answer this question, the thesis is structured into five chapters.

Chapter 1 introduces the theoretical lens, together with a comprehensive definition of geoeconomics. This chapter provides a deepened understanding for structural power in International Political Economy and sets the focus of the literature review and the empirical analysis. In *Chapter 2 & 3*, an understanding of the ILO and its contestation in the shadow of the rise of China is created. Hereby, academic literature regarding U.S. and Chinese responses in economic statecraft is analyzed. This chapter contributes a review on the structural constrains and strengths of the policies of global superpowers, to analyze the impact of the broader geoeconomic conflict on the EU. Chapter 4 presents an outlook on the current state of the semiconductor industry. Finally, *Chapter 5* presents the methodology, which is based on the theoretical framework and the study by Kim & Rho (2024) and the empirical basis of an in-depth analysis of the EU's semiconductor sector.

1. Theoretical Framework

The theoretical framework is presented prior to the literature analysis to provide a conceptual lens through which the existing literature is analyzed. By outlining key theoretical assumptions, the framework offers a clear structure to discuss the diverse strands of academic debate. The literature on international competition is both extensive and multidisciplinary. It ranges fields such as International Political Economy, International Relations, industrial policy, and global supply chain research. Scholars interpret the reality through various perspectives, from liberalism, to realism, to neo-Gramscianism, and analyze developments from macroeconomic, geopolitical, and technological angles. This range of diversity necessitates a structured theoretical lens to engage and interpret with the existing scholarship. Concepts such as geoeconomics, weaponized interdependence, and structural power help analyze the U.S.-China rivalry and its possible impact on Europe's semiconductor industry.

1.1. Globalization and Geoeconomics

The concept of 'complex interdependence', as articulated by Keohane and Nye (1977), describes the intricate web of relationships among sovereign states in an era marked by the declining primacy of military power. In this scenario, international institutions and regimes are increasingly interconnected through diverse channels of interaction and communication. Globalization has contributed to this just as much as non-state actors, transnational corporations, and shared global governance. Under this framework, the authors argue, that the primacy of the state is being undermined by the vast emergence of new players and supranational units. This attempt to explain the new state IR from the point of view of Liberal Institutionalism marked a significant break with the predominant realist perspective.

Traditionally, geopolitics has dominated foreign affairs, basing a strong focus on territorial and military power, as well as strategic alliances between countries. In recent years, however, there has been a shift toward geoeconomics, whereas states pursue foreign policy objectives by using economic means. While this is often framed as a departure from traditional geopolitics, geoeconomics reconfigures and extends the

prevailing logic. According to the definition provided by the author, the dualities can be understood as “two conceptually distinct yet interrelated and often simultaneous types of strategy” (Baracuhy, 2019, p. 15). This approach merges the zero-sum consideration of realist theory with market-driven interests, and the pursuit of mutual gains. While the term geoeconomics has experienced an upswing in academic relevance in recent years, the person to bring the term into the spotlight was Luttwak (1990) in the context of the end of the Cold War, as “methods of commerce are displacing military methods” (p. 17). The author’s thesis reflects the shift away from traditional warfare towards “the admixture of the logic of conflict with the methods of commerce” (p. 19), integrating economic actors, such as multinational firms, in previously state-dominated concerns of conflict. Perceived as an extension of classical geopolitical aims, geoeconomics becomes a tool to reach geopolitical aims, even as the boundaries of geography blurred through the dense network of transnationally operating companies.

Even though scholars engaged into the geoeconomic debate often refer to the work of Luttwak, the subject of treatment itself remains a contested and unclearly defined concept until today (Mallin & Sidaway 2024; 2025). During the time of neoliberal globalization, geoeconomics “helped describe how inter-state conflict could be reconceptualized and conducted through the grammar of commerce” (p. 1). Today’s understanding, however, refers to the new emergence of power blocs, and the strategic reorganization of alliances and the reconfiguration of space, advocating for a critical approach to geoeconomics (Sparke, 2024).

Some scholars, such as Poon (2025), argue that the old logic of globalization, centered around liberal institutionalism and multilateral trade are already being replaced by a geoeconomic understanding of globalization, centered around critical materials, supply chains, technology, and industrial re-shoring. Although scholars have put much emphasis on the distinctive features of national models of capitalism within the context of de-globalisation (Nölke, 2022), these shifts, according to Sparke (2024), must be enacted within the struggle of hegemony and be understood from a critical perspective which combines geopolitical, as well as geoeconomic considerations, taking into consideration views of foreign policy and economics experts, geography, discourses, and statecraft.

As interdependencies have multiplied over the years, we are observing a shift from the mutual benefits of interconnectivity towards a perspective that overall perceives reciprocal dependencies in the economy as problematic (Schadlow, 2024). Farrell & Newman's (2023) work and much-quoted book *Underground empire: how America weaponized the world economy*, contributed substantially to the major debate on how states weaponize economic relations. Building on this perspective, Farrell and Newman (2019) emphasize that global networks, such as the semiconductor ecosystem, shape both the national and international institutional conditions and create an asymmetric power structure. These networks can be *weaponized* through the so-called 'Panopticon effect', whereas states are at key nodes in information networks, where intelligence can be gathered, and global economic flows monitored. The 'Chokepoint Effect' in contrast, refers to the ability of states to restrict or block access to essential networks and flows. In fact, weaponization can be seen in the behavior of both the United States and China, for example in the export controls of the U.S. on semiconductors (Gupta et al., 2024), or China's export controls on rare earths (Chen, 2025). In this context, weaponization is based not only on state-driven dynamics, but also on capital-driven dynamics, whereby both can reinforce each other despite their relative independence (Farrell & Newman, 2019).

In fact, while economic coercion is not a new phenomenon, the growing intensity of geopolitical competition is driving states to increasingly engage with "private firms that constitute the networked global economy – the transnational banks, payment companies, technology giants, energy suppliers, and infrastructure conglomerates that can either bolster or thwart governments' policy ambitions" (p. 117). Governments within relatively closed economic systems, such as China, have the autonomy to cooperate with multinational companies: As a result, they have an increased capacity to exert geopolitical leverage towards open economies, such as the United States and the European Union. At the same time, China faces growing scrutiny over its questionable market practices, driven by persistent skepticism regarding the ties between firms and the government (Gertz & Evers, 2020). In response to China's growing strategic advantage, the United States has sought to reduce economic dependence through selective decoupling. However, given the deep interdependence between the two economies, complete disentanglement remains unrealistic. Instead, the U.S. has pursued a strategy of

containment by strengthening bloc alliances, introducing tighter regulations on Chinese state-owned enterprises, and fostering closer public-private partnerships to enhance national resilience in key sectors, such as semiconductors (Leoni, 2024).

The transformation of the global economy has led states to a race to achieve autonomy through "balancing dependence", by "interventions in the economy directed at safeguarding their 'strategic assets', 'critical infrastructure' or 'emerging technologies' from control or influence by foreign state and/or market forces" (Choer Moraes et al., 2022, p. 30). Kulakevich (2024) has used the example of the Russian war of aggression against Ukraine to demonstrate, that even strong economic dependencies cannot necessarily deter military force: on the contrary, the poorly diversified supply chains can contribute to the aggressor exploiting its position within a network, as the example of Russia with its blackmail on gas and oil to the EU showcases. These economic loopholes are ascribing a new role to companies due to their importance in matters of dependencies, as they often form the economic links. A useful illustration of how the intertwining of companies with states affects geoeconomic considerations is provided by Lim (2025) in his analysis of the US efforts to weaken Chinese semiconductor production: the rise of transnational companies highlights the need to reconsider the boundaries of geoeconomic influence. While state-led spatial strategies remain central to shaping territorial arrangements that facilitate capital accumulation, transnational corporations increasingly play an active role in reshaping those spatial configurations, driven primarily by the pursuit of profit, rather than broader political goals. This means that within this bargain, states have a geostrategic interest in keeping critically positioned companies in cooperation with the government. Therefore, as best explained by Lee et al. (2018), the reproduction of territory itself is the product of the interaction of geopolitics and geoeconomics. Although the former is often being marginalized by the transnationality of the latter's capital, the authors demonstrate, through the case study of the BRI and the TPP, that "territorial fixity and fluidity is a product of inter-scalar geopolitical and geoeconomic processes deriving from class-relevant social struggles" (p. 426), indicating once again the intertwinement of both concepts. Based on this new level of understanding of the complexity of contemporary global economy, Oatley (2019) criticizes contemporary theoretical frameworks for their insufficiency in grasping patterns observed in the real world.

Therefore, for the purpose of this research, the concept of geoeconomics is adopted from Blackwill and Harris (2016) and defined as "the use of economic instruments to promote and defend national interests, and to produce beneficial geopolitical results; and the effects of other nations' economic actions on a country's geopolitical goals", understanding geoeconomics "as both a method of analysis and a form of statecraft" (p. 20) The definition provided by the authors frames geoeconomics not only from a theoretical perspective, but as a precise and distinct form of statecraft. Further, the definition is clarified through a set of conceptual dimensions:

- In a first step, they draw a clear distinction between geopolitics and geoeconomics: while it is true that both are oriented toward the exercise of power, geoeconomics is characterized by the application of economic tools to satisfy geopolitical aims within strategic considerations, and often projecting outcomes as zero-sum as military measures. Insofar, it is stressed that "geoeconomics essentially combines the logic of geopolitics with the tools of economy, viewing the economic actions and options of a given state as embedded within larger realities of state power. This fact often places geoeconomic approaches in tension with the assumptions of economics" (Blackwill & Harris, 2016, p. 24).

- Second, using economic instruments for strategic advantages does not change the ends of foreign policy itself. States continue to pursue traditional geoeconomic objectives, even if they increasingly rely on markets for their achievement. In the logic of geoeconomics, states are not merely shifting away from security concerns to a primacy of economic priorities, but create instruments at the intersection of economic, political, and strategic objectives.

- Third, geoeconomic influence is unevenly distributed among states. The effectiveness of the usage and development of geoeconomic tools is depending on structural conditions or what is defined as "geoeconomic endowments" (Blackwill & Harris, 2016, p. 28), which includes the size of an economy, institutional capacity, or strategic leverage through asymmetric dependencies. In the study, economic statecraft

- Fourth, the authors acknowledge the controversy of ambiguous cases, in which it is contested, if and to what extent an act can be classified as geoeconomic. As for example, operations such as cyberattacks on infrastructure or economic blockades constitute a hybrid grey zone, reflecting the dynamic nature of contemporary statecraft, while rendering difficult to establish a clear taxonomy (Blackwill & Harris, 2016).

- Fifth, geoeconomics is analytically "distinct from foreign (or international) economic policy, mercantilism, and liberal economic thought" (Blackwill & Harris, 2016, p. 30). While often overlapping, these theories differ significantly, as geoeconomics is concerned specifically with the strategic use of economy for geopolitics. For the sake of the analysis of geoeconomics it not important to which theoretical framework those means are associated to, while for example mercantilism or liberalism can possibly serve geoeconomic objectives, depending on how they are instrumentalized to the advantage of national interests.

In the following chapter, Blackwill and Harris (2016, Chapter 2) identify three factors driving the shift from traditional military power towards geoeconomic means to secure strategic objectives. The drivers behind this shift are strategic preferences of rising powers, the rise of state capitalism, and the structural changes which are undergoing the global markets. These factors lead states to enable instruments such as *Foreign Direct Investment* (FDI), state-backed companies, financial coercion, and trade manipulation to strengthen their position in the international system.

The ground shaking revival of state capitalism is crucial in this regard, as state owned enterprises have become major actors in global economic mechanisms. These actors are not only looking for profit but can be seen as an extraterritoriality of state power and if coordinated, they reproduce national interest. These instruments, when applied, blur the line between economy and economic warfare, as market-based moves have become subject of strategic interests of nation states rather than commercial dynamics. Furthermore, the influence of geoeconomics through investments, preferential contracts, and politically directed trade flows allow governments to exert influence over other states. Those interventions aim to reinforce domestic structures, reduce exposure to influence,

and secure infrastructure and supply chains. The result of this behavior is an increased interdependence between economic leverage and national security (Blackwill & Harris, 2016). Finally, the authors contend that geoeconomics, combined with statecraft, are currently reshaping the international system to its core. For those states who are open to redirect and subordinate market efficiency for their strategic ambitions. The West is facing major difficulties to respond because of institutional and normative limitations. Consequently, the emergence of geoeconomics in the 21st century challenges market-liberal assumptions of economy, leading to a reevaluation of our understanding of economic power in a globalized world.

While describing the rise of the geoeconomic order, Roberts et al. (2019) explicitly places the US and China as primary actors, shaping this change within dynamics of economic, security and technological rivalry. Nevertheless, the ways in which other actors respond to these shifts are crucial in influencing the configuration and direction of the evolving global order:

> Whatever balance is ultimately struck between economic and security concerns in this new order will depend not just on internal machinations within these states, but also on the responses of third actors, including international organisations like the WTO, third states, and private actors like corporations and universities. The U.S.-China relationship is embedded in a web of actors, many of which are likely to seek to temper great power competition and retard efforts to economically or digitally decouple or allow security concerns to trump economic considerations. (p. 22)

When it comes to academic literature on geoeconomics and the fields of application, specific insights into the areas of tension regarding geoeconomic rivalry are provided: global infrastructures (Abels & Bieling, 2023; Prausmüller, 2021), as well as in the digital world and in industrial production (Schindler et al., 2024), and in the financial world (Westermeier, 2022); In this context, the variation in respective perspectives and policy responses widely discussed (Schneider, 2023; Erlbacher & Schmalz, 2023), as well as the areas where weaponized interdependence comes into play (Drezner et al., 2021). Nevertheless, the EU plays only a minor role in academic literature about weaponized interdependence, whereby the focus is more on the U.S. and China.

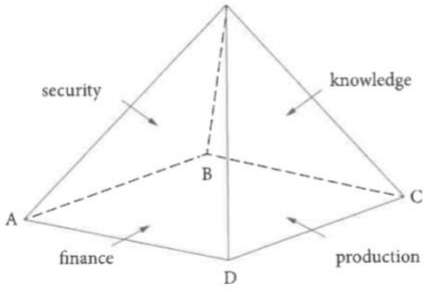
1.2. The Structural Roots of Power

This section sets out the contributions of Cox (1981; 1986) and Strange (2015) to the conceptualization of power in International Political Economy. By combining both perspectives, the theoretical understanding of how power is propagated in global governance structures serves as a perspective on the implications of the research subject.

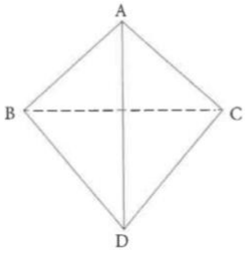
In his groundbreaking work of Robert Cox (1981, 1986) laid the foundation for an innovative understanding of the world order, rooted in a derivation of historical materialism, which he describes as historical structures. Within this framework, he identifies three categories of forces, which interact with each other in a reciprocal way. By analyzing the structure of world order, three interrelated components are essential: material capabilities, ideas, and institutions. Material capabilities refer to both the destructive and productive potentials that exist dynamically as technological and organizational resources, and in accumulated form as natural assets, equipment, or wealth. Ideas, on the other hand, are shaped by historical experiences and function as collective understandings of political and social order held by various groups. Institutions serve to stabilize and maintain these prevailing orders: They are embedded with the power dynamics present at the time of their formation and initially reinforce dominant ideological frameworks. Over time, however, it is important to understand that institutions can evolve beyond their original purpose, becoming contested spaces or giving rise to alternative structures that reflect competing visions of order. These institutions, as composites of both material forces and ideational constructs, actively shape and are shaped by the ongoing development of global power relations.

Based on the debate of the origins of hegemony following Cox (1981; 1986), Susan Strange (2015) introduced her innovative work surrounding the "two kinds of power exercised in political economy" (p. 26): *Relational Power* and *Structural Power*. As Relational Power occurs primarily in political realism, it refers to the ability of a state to influence a third state. In contrast, Structural Power is defined by as "the power to shape and determine the structures of the global political economy within which other states, their political institutions, their economic enterprises … operate" and "the power to decide how things shall be done, the power to shape frameworks within which states relate to each other, relate to people, or relate to corporate enterprises" (Strange, 205, p. 27).

Figure 1. *The Four Dimensions of Structural Power*



But since each structure affects the other three, but none necessarily dominates:



Note. Source: *States and Markets*, by S. Strange, 2015, Bloomsbury Publishing.

This definition revolves around a framework concerning the control over interrelated structures of production, finance, security, and knowledge, as illustrated by **Figure 1.** As these predispositions subsequently determine secondary structures, such as ‘trade’ or ‘energy’. Even more importantly, the author stresses the importance of the underlying power structures for policy: According to Strange (2015), the subject who retains control over the dimensions of structural power has the ability, without coercing others, to influence their decisions by either opening or restricting possibilities.

2. From Hegemony to Multipolarity: The Waning of the International Liberal Order

The following two chapters provide a critical review of the existing academic and peer-reviewed literature relevant to International Political Economy, with a particular focus on the effects of a disintegrating international order on geopolitical rivalry, geoeconomics, and state actorness. The aim is to identify and discuss key theoretical debates, highlighting competing perspectives from academics from different schools of theory, and examine the empirical evidence on the emerging pattern of action by major international powers. The review is structured thematically, beginning with foundational theories of liberal order and hegemonic stability, followed by relevant scholarship on the rise of China and the trade & tech war with the United States, protectionist policies, the impact on Europe, and supply chain politics. By analyzing the current state of research, this chapter seeks to investigate the concept of geoeconomics.

2.1. The Autoimmune Crisis

The decline of the United States and the ILO it championed has been predicted on numerous occasions, ranging from early analyses such as Cafruny (1990) to more recent contributions by Zakaria (2011) and Khanna (2019), who have excitingly contributed to a revival of the academic debate. So far, the structures have proven to be more resilient than the narrative of their demise. The ILO has evolved from the preceding rule-based international order, which was established after the Second World War and was most famously marked by institutions like Bretton Woods and the United Nations. After the collapse of the Soviet Union, the order was expanded to ensure the inclusion of countries that had previously been under the umbrella of the Soviet Union or were relatively independent from the Cold War superpowers. The international regime's network has been strengthened by multilateral partnerships and international institutions, such as the World Bank, the International Monetary Fund, and the *World Trade Organization* (WTO). These institutions have systematically strengthened the legitimacy of the order by committing themselves to international law, neoliberalism, democracy, and the rule of law at the national level. One influential definition of the ILO comes from Ikenberry

(2014), describing it as "vision of order tied together by partnerships, institutions, and grand bargains. It was built around multilayered agreements that served to open markets, bind democracies and anti-communist authoritarian regimes together, and create a far-flung security community" (p. 45). Further, the initial resilience of the ILO is frequently attributed to its "success in reducing conflict and poverty, the institutionalization of the order and the following international legitimacy, as well as through the role of multinational companies" (Lake et al., 2021, p. 245).

The westernized liberal order was upheld by the United States as hegemon and "organized around economic openness, multilateral institutions, security cooperation and democratic solidarity" (p. 7). However, events like Brexit and the election of Trump are clear signals of a fracture within the structures of the liberal international order, which is directly caused by the weakening of America's influence in world politics, resulting in the reconfiguration of the global order. The latter is now facing multiple challenges: These can be traced back to the risks of multilateral cooperation and global interdependence, resulting in a broader crisis of authority. As the order began to lose its coherence as a security community, the process accelerated by the 2008 financial crisis and the global economic shift toward emerging powers like China and India. This shift, alongside long-term changes in technology, trade, labor organization, and manufacturing, have reinforced economic stagnation among Western working and middle classes, undermining the legitimacy of the liberal order (Ikenberry, 2018b). At the same time, the ILO to a decline in state sovereignty, favored by the internationalization and collectivization of transnational issues, increasingly discussed in a common framework in international organizations. On this fertile ground, revisionist forces have begun to reject the rules of international engagement, rules-based dispute settlement mechanisms, and coordination mechanisms. Precepted as an interference into high politics, the discontent led to an advent of nationalism and anti-globalist movements, which revise liberal beliefs (Börzel & Zürn, 2021).

When, after the collapse of the Soviet Union, the "unipolar moment" (Krauthammer, 1991) happened in the form of the unchallenged Pax Americana, the United States had the power to impose its own order on the world by largely shaping the composition and functioning of the institutions that maintained the ILO. According to Mearsheimer (2019), the policies had great success in increasing international trade and

collaboration in some specific areas, some unintended consequences led to major backlashes. In particular, the interference in the domestic politics of dissenting countries backfired and triggered a wave of nationalism and opposition to American leadership. While the ILO was fundamental for the phenomenon of globalization, the supranational functioning of its institutions “creates conditions that lead to serious political problems regarding sovereignty and national identity within the liberal democracies themselves” (p. 31). And while globalization has brought great benefits for multinational firms, major problems emerged for national economies. Further, attempts to integrate Russia and China into the order have backfired, as the latter's inclusion and the considerable contribution to its economic miracle, which made it a de facto superpower, undermined unipolarity and thus the status of the ILO (Mearsheimer, 2019).

This saw the US retreat from its role of leadership in the WTO during the time of the Obama presidency (Fatma & Bharti, 2019). In addition, foreign policy tools implemented against diverging powers, such as sanctions, create a boomerang effect, by further diverging marginalized actors, subsequently looking for alternative networks to avoid the possibility of being hit with retaliatory measures (Inozemtsev, 2024). Ramos et al. (2023) see the developments and the reaction of the West after Russia’s invasion, especially due to the restructuring of finances due to the sanctions to protect the liberal order as a change, which is ulteriorly prompting the structural decline of U.S. hegemony. At the same time, the debate about the decline of US power is already decades old (Santa Cruz, 2020). According to Owen (2021), that the current trend is a clear sign towards “the emergence of two overlapping international orders” (p. 1416), whereas The West would retain a scaled-down version of the so-called ILO, which is contested by China's state-centered model. In the author's view, the two spheres are not cut off from each other, but are maintained through connectivity, while differing in their approach to global governance. In fact, as shown by the findings of van Apeldoorn and de Graaff (2022) the emphasis the role of the state in modern capitalism due to China’s model have dominated academic discussions about the U.S.-China rivalry, whereby a comeback of state-led configurations after a period of neoliberal globalization has been predicted.

The subsequent analysis by Kitchen and Cox (2019) applies the theory of structural power to the situation in the USA. In doing so, they point to the abbreviated understanding of "trends in relative capabilities", which do not capture the source of

power, which stems from network centrality and the attached ability of shaping outcomes. Therefore, while China's relative power might increase in the face of the U.S., its success is bound to its ability to control and shape key economic, organizational, and infrastructural focal points. Yet, due to decades of neoliberal deregulation Gertz and Evers (2020) argue that the U.S.'s capacity to exploit their network centrality is much weaker today, because companies have decoupled from the U.S. government and navigated with a high degree of autonomy.

2.2. China's Rise from Rule-Taker to Structure-Shaper

As there is much emphasis in literature on the United States and its relative decline, this next section explores American perceptions on the empowerment of China, the latter's fast catch-up growth and the influence of its new status in world politics.

While the binary nature of the view of China's behavior as either an ally or an enemy has been heavily criticized, new approaches to theorize about China's policies have emerged (Weinhardt & ten Brink, 2020), rather focusing on China's pragmatic and selective approach to issues touching international cooperation (Liu & Yang, 2023). In a case study, Kim (2020) analyses China's behavior and showcases the range of varying approaches towards institutions such as the UN General Assembly, the WTO, and the Asian Infrastructure Investment Bank. As follows, de Graaff and van Apeldoorn (2018) discuss three possible scenarios, ranging from immediate conflict to integration into the international system, to a form of coexistence. According to the authors, the outcome depends on transnational capitalist interests and evaluations by foreign policy elites, with a special emphasis on "*the interlinked nature of domestic state-society models and the global political economy*" (de Graaff et al., 2020, p. 199).

However, this future scenario develops, the pivot towards Asia under Obama (Silove, 2016), marks the rise of China as a challenger to the declining hegemonial power of the United States and its allies. According to Dunford & Liu (2023) in U.S. debates China is often pictured as an autocratic government in opposition to America's interests, a narrative that is instrumentalized to revive domestic manufacturing, justify tariffs and export controls in the technological sector, as well as other restrictive measures on international trade. Global infrastructure projects like the *Belt and Road Initiative* (BRI),

the launch of the digital renminbi, as well as debt-based development in the Global South are often scapegoated. Although these measures remain controversial, China has experienced tremendous growth and lifted large parts of its population out of poverty, partly due to effective policies and partly due to the relocation of Western industry to China, critically impacting the power distribution in Asia. The economic miracle that the Chinese state model has achieved under the banner of fast catch-up growth is best described by Lim and Ikenberry (2023, p. 1) as follows:

> China's emergence as a global power is one of the defining events of modern world politics. In three decades, China has moved from its position as a large developing country on the global system's periphery to near peer competitor status with the United States. China's far-flung and rapidly expanding trade and investment relations have given it a political presence in every global region. With the world's fastest growing military, China is increasingly asserting itself both within East Asia and beyond. Its ambitious vision of the Belt and Road Initiative (BRI) and commitment to leadership in next-generation science and technology also mark China's arrival as a global power.

According to Layne (2018), the U.S. is no longer robust enough to withstand Chinese pressure and is losing ground in the military and economic sphere, while the institutions that the U.S. has built around the world are waning, jeopardizing U.S. soft power supremacy. This has triggered far-reaching debates on how the U.S. should deal with the rise of China and its growing contribution to the global economy, as well as the institutional foundations on which this order is built. Opinions in the academic literature are generally divided into two camps, with the so-called "engagers", arguing that China is being pushed towards conformism by the economic sphere, while critics of this approach see China as a revisionist power that is undermining the system from within (Johnston, 2003). The current debate among international relations scholars' centers on whether China is a challenger to, or a beneficiary of the liberal international order established in the post-World War II era under U.S. leadership. One perspective asserts that the rise of China represents a fundamental challenge to this U.S.-led order, as Beijing seeks to reshape global norms and institutions to better align with its own strategic interests. Conversely, another school of thought contends that China, having thrived economically within the existing system, is more likely to support and preserve it rather than overturn it. As Ward (2017) notes, however, the trajectory of China's engagement with the LIO may ultimately depend on the degree of accommodation it receives from the West. He warns that a failure in adequately integrating China into the governance

structures and benefits of the current system could trigger a shift in Beijing's policies toward open contestation of the prevailing norms and institutions.

While China meanwhile is gaining legitimacy on the international, it has yet failed to implement market-opening and democratic reforms, which are demanded by some members of the international community. Because of China's protectionism towards its domestic markets, it often faces "zero-sum resistance" (Dunford & Liu, 2023, p. 135). China has evolved rapidly to one of the global powerhouses in technological innovation and has produced notable outputs, making the United States and its partners reconsider their approach to the Asian giant. According to Kennedy (2023), the West can commit to mutual benefits by an open economical and scientific exchange, while risking dual use of technology, fueling the authoritarian Chinese apparatus militarily. On the other hand, reducing openness is risk-linked, as it could lead to "potentially exacerbating differences between Washington and its partners" (p. 115).

To generate a deeper understanding of China's development, it is necessary to examine the continuity in the self-perception of China's role in the international order. One starting point is the relationship to the complex history shaped by the narrative of the "Century of Humiliation" (Kaufman, 2010, p. 2), which continues to shape Chinese identity, as well as domestic and foreign policy under the *Chinese Communist Party* (CCP) until this day. When it comes to the construction of the narrative, the Century of Humiliation, "which attributes the national humiliation to China's economic, military, and technological backwardness vis-à-vis foreign powers" (Wang, 2020, p. 887), it is fundamental to understand continuities under Xi Jinping and his influence on China's approach in relation to the ILO.

The 20th National Congress of the *Chinese Communist Party* (CCP) marked the new authoritarian course under Xi Jinping's China. This evolution is also reflected in the Chinese political discourse, which is shifting from economic development to a debate on security, whereby there is a notable focus on "becoming self-reliant in science and technology, of protecting the security and resilience of China's supply chains, and of the need for the country to sanction-proof its economy" (p. 58). The consequent of policy-decisions has an increased focus on security as part of a larger strategy of self-sufficiency in key technological and scientific sectors, such as "semiconductors and artificial intelligence" (Magnus, 2022, p. 61).

3. Is It a Trade War, a Tech War—Something in Between or Both?

While engagement with China initially appeared advantageous for the United States in its broader strategy against the communist bloc, Caporaso (2023) attributes the eventual deterioration of bilateral relations to deeper structural tensions, despite the substantial profit margins enjoyed by consumers and firms. Indeed, from a systemic point of view, the distinguished political systems create a diverging output on the working methods of international organizations, whose "rules reflect characteristics of liberal market societies" (p. 4):

> The United States has not only abandoned its traditional leadership role in the multilateral trading system but, beginning under former President Trump, has launched an unprecedented assault on the very system it had once created and led. Discarding any commitment to multilateral cooperation or respect for the rule of law, the United States has openly embraced the raw use of coercive power in trade. While this included launching a trade war with China, it also went far beyond U.S.-China trade relations. (Hopewell, 2022, p. 59)

According to McDonagh (2025), the tensions between the United States and China cannot be fully understood through material interests alone: These tensions are deeply rooted in divergent political cultures that shape each country's assumptions and approaches toward international engagement. The ILO, largely an extension of U.S. domestic political and economic principles, inherently conflicts with China's state-led development model and authoritarian governance structure. This ideological mismatch creates friction not only at the diplomatic level, but also in the formulation of economic policies and the interpretation of global norms. McDonagh (2025) illustrates this geoeconomic divergence through recent U.S. legislation, noting that "this new geoeconomic world economy is epitomized in the legal prescriptions of both the Inflation Reduction Act and the CHIPS and Science Act" (p. 13). These acts reflect a strategic turn toward industrial policy and economic nationalism in the U.S., reinforcing the incompatibility between the two systems and signaling a shift from multilateralism to a more competitive, state-centered approach to global economic governance. The rise of interventionist approaches can be attributed to the emergence of the U.S.-China rivalry and is expressed by a switch in foreign economic policy, as mentioned best reflected through the CHIPS and Science Act, posing a challenge to the ILO. Key strategic economic assets undergo weaponization, reflected through "subsidies, export controls

and investment screenings". This resembles a significant departure and paradigm-shift from free market economy for geopolitical gains through geoeconomics. It is a new era of zero-sum game and geopolitical prioritization (Luo & Van Assche, 2023). When it comes to international trade, importantly, Weinhardt and Ten Brink (2020) conclude that while China is unlikely to construct an alternative global trade regime, it is equally improbable that it will take a leading role in reviving or reforming the WTO, revealing a strategic pragmatism rather than ideological opposition to the existing order.

3.1. Protectionism, Power, and the Politics of Techno-Nationalism

The United States has long benefited from the liberal international order. However, internal contradictions regarding economic and political equity have undermined its ability to sustain hegemonic leadership, constraining its international flexibility and paving the way for the emergence of an 'America First' approach. Thereby, the security umbrella regarding the partnership with NATO, the prioritization of bilateral trade agreements, the decoupling from the WTO, as well as the role of the dollar in the global monetary system have led to a more protectionist and isolationist approach by the U.S. (Norrlof, 2018). Within this context, "Techno-Nationalism", a term which was coined by Robert Reich (1987), describes a trend which dumps international cooperation to achieve technological supremacy, leveraged as political power. Today, the term is linked to semiconductors, geoeconomics, and global value chains (Park, 2023).

Due to policies supporting its ambition in technological sovereignty dating back as early as the 2000s, China has traditionally closed access to foreign investment into critical technological sectors and pushing state-led investment into the industry (Ahmed & Weber, 2018). Therefore, China's policies have frequently been characterized as "neo-techno-nationalist" (Suttmeier & Yao, 2004), reflecting a strategic approach in which the state leverages the benefits of a globalized economy to advance its national security objectives. In addition, the authors case study of China's success in 5G and technology policies illustrates China's growing influence as a key actor in the international institutionalization of domestically developed standards. In contrast to earlier studies, Kim et al. (2020) argue, that national innovation strategies can be assessed through three key pillars: state empowerment, growth orientation, and global connectivity, offering a multidimensional framework for evaluating the effectiveness of science and technology

policy in a globalized context from the lens of techno-nationalism, connecting it to the discussions on structural power.

The research of Diegues and Roselino (2023) analyzes the Chinese implementation of techno-nationalist strategies to win the technological war against the US over Industry 4.0 technologies such as physical systems like robotics, and technology infrastructure, such as 5G.

In general, the key pillar of Chinese techno-nationalism, modern technology, is heavily reliant on the modernization of semiconductors. As the industry is vital for military weapons and the modernization of manufacturing, China is eager to ramp up production and research, favored by its huge domestic consumer market. Nonetheless, it is far from being auto sufficient, as leapfrog innovation in design and manufacturing is concentrated in the West, South Korea, and Japan. While for the Chinese case it can be said that science has had great success in the recent decade in sectors such as AI, data centers, and 5G through massive investments into R&D activities, facilitated by the Made in China 2025 roadmap, a flexible financing system, a dynamic domestic market, as well as state-coordinated industrial policy. That said, China is still heavily reliant on importing high-end semiconductors, as the production facilities are strongly restricted by the U.S., who has imposed export and cooperation bans on the most developed companies in the semiconductor supply chain working with China. (Majerowicz & de Medeiros, 2018).

Following the Obama administration's efforts to push for greater economic openness in China, particularly through initiatives like the Trans-Pacific Partnership (TTP), which aimed to counterbalance China's ties to state-linked enterprises, there was a clear attempt to encourage investment liberalization and reduce China's structural advantages. The Trump head-on approach has further implemented a set of comprehensive policies which determine the U.S.'s approach in technological war with China for the coming years. On a larger scale, the hostile economic reaction by the U.S. toward China has enjoyed bipartisan support for export controls to impede access by state-linked companies in China, while closing the investment system for foreigners' access to critically perceived U.S. companies, mostly in the high-stake tech sector (Cohen & Rogers, 2021).

The core of the strategy is to restructure the model of global supply chains to prevent that critical technology finds its way uncontrolled to China and can be further

processed and analyzed there. At the same time, technological supply chains shall be re-shored, and investments relocated into the national sector. These strategic moves are not going unnoticed in Beijing, with the administration putting all its weight behind reducing network vulnerabilities and built up its own industry and R&D, especially in the development of semiconductors (Seagal, 2020).

Under Biden, trade-distorting practices enacted by Trump were maintained, with a strong focus on American industry infrastructure, technological supply chain related sectors (Scherrer, 2022). The American perception ends up being caught in the "Economic Thucydides Trap" (Moosa, 2020, p. 49), which could also take on intensified militarized traits in the sense of a hegemonic war between the two nations (Allison, 2017). In fact, Taiwan, as the most critical hub for advanced semiconductor production, faces the persistent threat of a Chinese military invasion, an event widely regarded as a serious risk to U.S. national security, given the essential role of semiconductors for technology, especially modern weapon systems (U.S.-Taiwan Business Council & Project 2049 Institute, 2023).

In his most recent book, Yanis Varoufakis (2023) argues, that the new Cold War needs be understood through the rivalry between high-tech companies in both economies, Silicon Valley on one side, and the Chinese state-linked enterprises on the other. His work focuses primarily on the emergence of digital or "cloud"-capital, whereas the competition is foremost data-driven. For the Greek economist, despite the strong economic interdependence in trade and finance, the challenge on technological competition by China triggered American security concerns and ultimately led to Biden's export ban in 2022, with the aim of slowing down China's technological advancement and giving its own companies a competitive advantage. The export ban was extended to non-U.S. companies to prevent them from any trade that could help China become a leader in areas such as microchip production.

In the perception of Kim (2019), the trade war initiated by the United States is primarily driven by a deep-seated fear of losing its status as the world's leading economic and political power to the rapidly growing Chinese economy. This fear is fueled by China's impressive catch-up growth, exemplified by ambitious initiatives such as the BRI, Made in China 2025, and the Asian Infrastructure Investment Bank, all of which seek to enhance China's global economic influence and technological capabilities. Kim

(2019) argues that these initiatives represent a strategic effort by China to challenge U.S. dominance by seeking to reshape the global order in its favor. In response, the United States has adopted a protectionist stance as part of a broader containment strategy aimed at preventing China from overtaking it and maintaining its hegemony in the international system.

3.2. De-coupling: Off-Shoring, Friend-Shoring, Re-Shoring

Through the practice of offshoring and outsourcing (Kirkegaard, 2008), especially by Western companies to Asia, the concepts have become a key aspect of supply chain management (Cook & Gibson, 2007). While offshoring industries had a very positive impact on competitiveness, production costs, trade specialization and *Research and Development* (R&D) when it comes to the technological sector (Bournakis et al., 2018). Orefice and Rocha (2014) have demonstrated that offshoring production networks have contributed to a substantial increase in Preferential Trade Agreements (PTAs), while the deep integration has been favoring foremost Asian economies, which in today's world play a pivotal role in the distribution of supply chains. In recent times, due to the precarious situation of international relations and the subsequent economic risks for multinational enterprises, the concept of re-shoring has emerged as a significant and widely debated topic in contemporary public debate and supply chain discourse, impacting the practice of re-shoring of production and links by companies (Delis et al., 2019).

The end of "inclusive economic globalization" (p. 21), as a reaction from the West to China's challenging rise and the growing dependencies on deviating powers in key sectors, such as rare minerals for the construction of technological goods, stems from the recognition of the fragility of supply chains and can be traced back to the global Covid-19 pandemic. Another major concern which goes hand in hand with offshoring is the "forced technology transfer" (Prud'homme et al., 2018), whereas foreign institutions require sharing Intellectual Property to get access to a foreign market, which is especially true in the case of China's restricted openness. However, the research of Charoenwong et al. (2023) shows that even amid the efforts of Donald Trump to re-shore companies back to the United States, companies were reluctant to reestablish production capacities outside China and back to the U.S. Instead, evidence provided by the authors shows, that

companies pivoted toward, among others, Southeast Asian countries such as Vietnam and Indonesia.

Subsequently, in an effort to revive domestic manufacturing and address trade imbalances, President Trump advocated for a decoupling strategy from China, which entailed severing key economic ties between the two countries (Reuters, 2020). According to Farrell and Newman (2020), globalized networks have shaped business, governments, and societies in a way that China and the United States cannot decouple one from each other. Instead, a de-risking approach was adopted, reflecting the recognition that complete economic isolation between the two countries is neither feasible nor desirable. Rather, the focus shifted toward managing interdependencies while reducing vulnerabilities (Dai & Tang, 2024).

This suggests that the growing use of economic coercion by actors such as China or the U.S. has increased the need for strategic alignment, contributing to the emergence of what is now referred to as "ally-shoring" (Austin & Dezenski, 2021). To enhance this process, the U.S.
and its democratic and economic liberal allies have increased their level of cooperation through initiatives like the *Trade and Technology Council* (TTC) *and the Indo-Pacific Economic Framework* (IPEF) to increase the resilience of supply chains by diversification (Jain & Kroenig, 2023). Another similar practice, discussed in the article of Wolfe (2023), referred to as "friend-shoring" (p. 478), is the use of trade directive to achieve foreign affairs objectives, especially in the form of *Preferential Trade Agreements* (PTAs), deviating from the WTO's multilateral framework, which endeavors to minimize "discriminatory tariffs, subsidies, and regulation" between allied countries (p. 478).

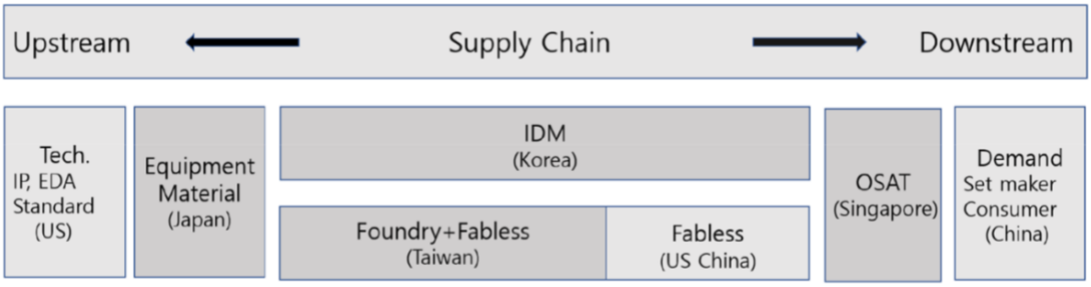
4. The Global Semiconductor Value Chain

In this chapter, the structure of the global semiconductor value chain is analyzed to contextualize the strategic positioning of major geoeconomic actors, including the United States, China, South Korea, Japan, and Taiwan. The semiconductor GVC is characterized by a high degree of specialization, where different countries dominate distinct stages. Understanding the distribution of capacities and dependencies is crucial to assess, how states enact industrial policy. This chapter, therefore, provides a comparative overview of the global landscape, before turning to a more detailed evaluation of the European Union through the operationalization after the methodological chapter.

4.1. The Chips War and the Complexity of Semiconductor Supply Chains

Rapid advances in semiconductor processing speed, coupled to the relative decline in cost have played a key role in the digital economy. These leapfrog technologies were driven by massive investments in materials and engineering efforts and are at the core of today's and tomorrow's electronic devices. Beyond the digital logic, advanced analog semiconductors have enabled high-end wireless communication, paving the way for technologies like 5G. The manufacturing of semiconductors requires sophisticated workflows, large investment in R&D, while highly specialized companies operate along a dispersed and partially fractured global value chain. The production of high-end chips depends approximately 300 material inputs and 50 categories of precision equipment across a decentralized production network. The industry's global integration risks undermining innovation capacities and presents strategic vulnerabilities, which must be carefully managed to sustain long-term performance and benefits (Varas et al., 2021). In total, the global semiconductor industry is experiencing significant growth, with sales projected to reach $627 billion in 2024, increasing by 19% from last year, boosted by the demand for AI chips (Deloitte, 2024).

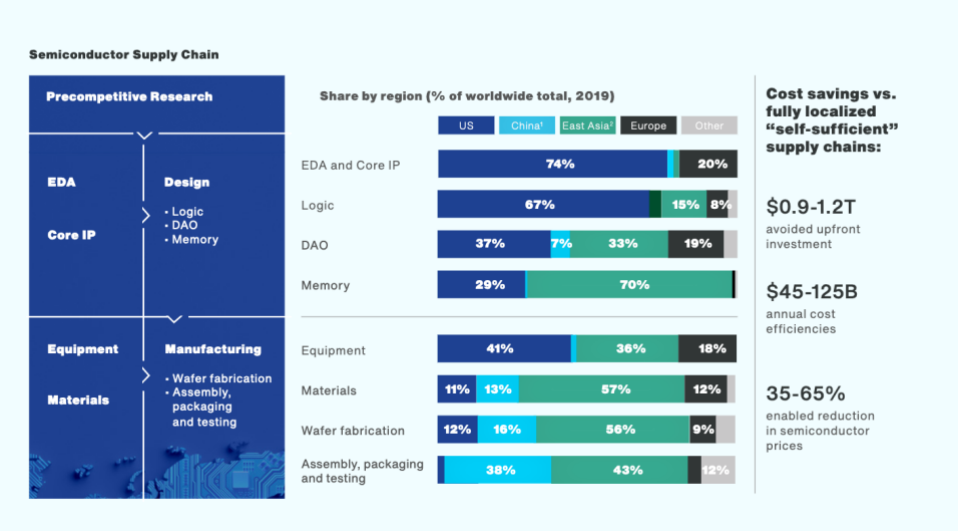
Figure 2. *Production Steps of the Semiconductor Value Chain*



Note. Source: *The US–China chip war, economy–security nexus, and Asia*, by Y. Kim & S. Rho, 2024, *Journal of Chinese Political Science, 29*(3), 433–460. https://doi.org/10.1007/s11366-024-09881-7

A global value chain can be defined as "a governance arrangement that utilizes, within a single structure, multiple governance modes for distinct, geographically dispersed and finely sliced parts of the value chain. In other words, a GVC is the nexus of interconnected functions and operations through which goods and services are produced, distributed, and consumed on a global basis" (Kano et al., 2020, p. 579). In **Error! Not a valid bookmark self-reference.**, the single steps of production of the semiconductor value chain are specified together, showcasing with the leading countries in the respective segments. Varas et al. (2021) define semiconductors as "highly specialized components that provide the essential functionality for electronic devices to process, store and transmit data" (p. 9). They explain that most modern semiconductors are integrated circuits, or "chips" which are composed of layered, miniaturized electronic circuits on a silicon wafer which contains billions of elements such as transistors, capacitors, and diodes. According to the experts, semiconductors fall into four primary categories: logic chips, which serve as the core of computing; memory chips, for the storage of data; so-called discrete and analog chips, which manage signals and frequencies, and EDA and IP, software tools for chips design and licensed building blocks for chips.

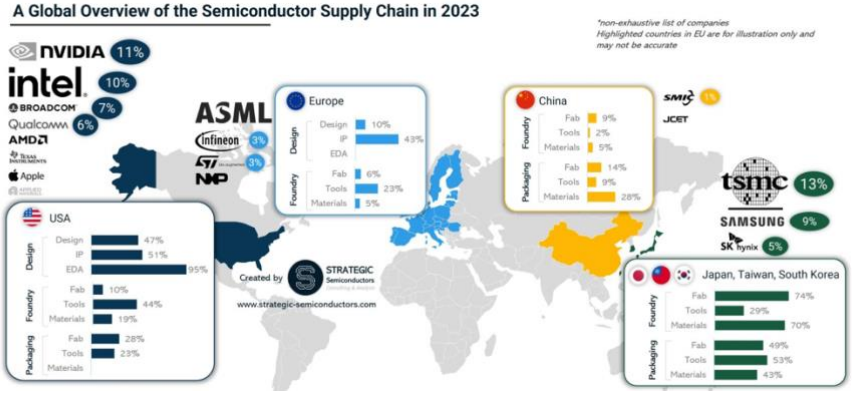
Figure 3. *Specialization by World Region & Financial Benefits of Integration*



Note. Adapted from *Strengthening the global semiconductor supply chain in an uncertain era*, by A. Varas, R. Varadarajan, R. Palma, J. Goodrich, & F. Yinug, 2021, *Boston Consulting Group & Semiconductor Industry Association*. https://www.semiconductors.org/wp-content/uploads/2021/05/BCG-x-SIA-Strengthening-the-Global-Semiconductor-Value-Chain-April-2021_1.pdf

Figure *3*. illustrates the regional distribution of the semiconductor supply chain, highlighting the geographic concentration of capabilities. In the GVC, upstream activities refer to the early, high-value segments such as R&D, design, and the production of manufacturing equipment, while downstream activities encompass the back-end processes of assembly, packaging, testing, and integration into final electronic products. The data also estimates the immense cost of achieving self-sufficiency in any one region, amounting to about $1 trillion, underscoring the economic inefficiency of decoupling. This visualization reinforces the deeply interconnected semiconductor ecosystem and the structural constraints facing the regions.

Figure 4. *Leading Global Semiconductor Companies and Regional Market Share*

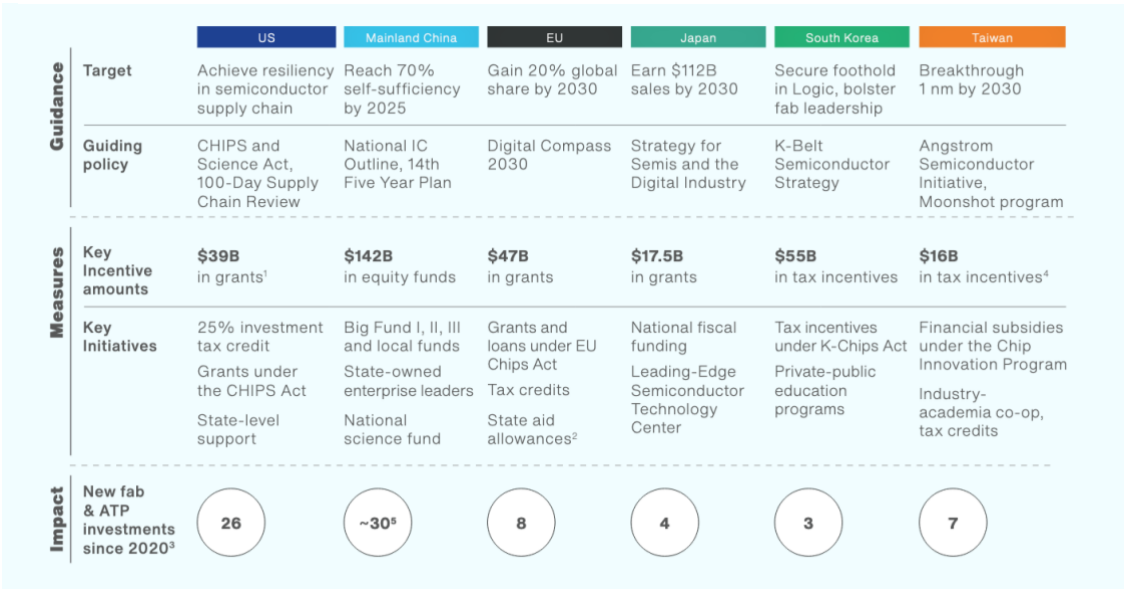


Note. Source: *Semiconductor market: Rebound expected in 2024, but challenges lie ahead*, by A. B. Slimane, 2024, *EE Times Europe*. https://www.eetimes.eu/semiconductor-market-rebound-expected-in-2024-but-challenges-lie-ahead/

Figure *4*. features a visual overview of leading global semiconductor companies, segmented by region and specialization, illustrating the geographic distribution and market dominance of key industry actors. It highlights the dominance of U.S. firms in design and intellectual property, the strength of East Asian companies in foundries and manufacturing, and Europe's niche leadership in areas such as equipment, IP, and power electronics. This visual representation underscores the highly concentrated industry, reflecting the strategic importance of specific capabilities.

As the semiconductor value chain has emerged as a highly important strategic asset for digitalization and economy, it contributes crucially to underpinning everything from consumer electronics, data, and industrial usage. The industry has become increasingly complex, capital-intensive, and geographically dispersed, its role in security and competitiveness has massively increased.

Figure 5. *Economic Statecraft Measured by Government Incentives*



Note. Adapted from *Emerging resilience in the semiconductor supply chain: Global trends and prospects for the European Union*, by R. Aversa, M. Buchta, M. Fabritius, T. Holle, T. Müller, & M. Westner, 2024, *Semiconductor Industry Association & Boston Consulting Group*. https://www.semiconductors.org/emerging-resilience-in-the-semiconductor-supply-chain/

The 2021 chip shortage, has exposed the fragility and fragmentation of the supply network, driving states to reevaluate their policies and dependencies. Major economies have launched substantial public investments initiatives to reinforce domestic capacities. As shown in **Figure 5.**, governments provided large funding and subsidies to their ambitious goald within the industry. The U.S. has invested $52 billion through the CHIPS and Science Act to restore their domestic manufacturing capacities, while South Korea unveiled a $65 billion package supported by the government, and the EU wants to double its share in production up to 20% by 2030 through the European Chips Act. Among these global efforts, China has adopted an expansive and state-directed approach, labeling semiconductors at the heart of national security. Between 2014 and 2022, China spent about $130 billion on funding, which has been used to acquire foreign IP, build domestic factories, and subsidize domestic companies. In addition, local governments in China have created specialized funds to stimulate further growth through cheap loans and tax exemptions. The scale of China's strategy, characterized by state-owned capital and industrial planning, highlights the ambition to restructure the global value chain amid a 20% annual growth in the sector. However, these advancements have increased tensions, leading to the implementation of export controls and investment screenings aimed at curbing China's efforts (Ciani & Nardo, 2022).

4.2. Antagonism and Weaponization

Having considered the complexity of the semiconductor supply chain as outlined by the previous authors and graphs, the global supply chain does not function as a singular, unified structure but rather as a set of interconnected networks encompassing design, raw materials, manufacturing equipment, and assembly of chips. Each of these segments possesses its own topology and distribution of centrality among state and corporate actors. Beaumier and Cartwright (2024) argue that the architecture of this supply chain must be understood through the lens of network analysis, where centrality metrics such as strength, bridging-role, and node-centrality expose the differential capacities of actors to exert influence. Crucially, they identify chokepoints not merely as sites of material scarcity or production bottlenecks, but as network related nodes whose control affects the ability to coerce or constrain others. The strategic value of chokepoints arises from the dependencies they produce across the network. Thus, power within global supply chains

is less about absolute capacity and more about the position from which actors can shape flows and outcomes.

Rather than requiring centrality across all segments of a supply chain, a state may leverage asymmetries between networks to achieve strategic objectives, as what is refered to as ‘cross-network weaponization’. This dynamic is illustrated by two contrasting recent episodes: In 2019, Japan imposed export restrictions on hydrogen fluoride and other key semiconductor inputs to South Korea, ostensibly in response to historical grievances. Although Japan temporarily impeded South Korea’s access to these components, its effort ultimately failed. South Korea diversified its sources, ramped up domestic production, and even attracted Japanese firms to relocate production to neutral jurisdictions. The underlying reason for this failure, Beaumier and Cartwright (2024) argue, is that Japan’s influence was confined to a single narrow segment of the supply chain and not embedded in a broader network of coercive interdependencies.

In contrast, the United States’ sanctions against Huawei represent a successful case of cross-network weaponization. Initially, U.S. attempts proved insufficient, as the company continued sourcing chips through foreign foundries. However, the U.S. adapted a strategy which effectively extended its export controls to any company that used U.S.-origin software or equipment in their production processes. This extraterritorial measure forced leading chip producers in Taiwan and South Korea to halt shipments to Huawei, as continued access to U.S. technology was essential for their own operations. In this case, the United States’ structural dominance in the design network enabled it to manipulate behavior across the manufacturing and trade networks where it held less direct influence. Huawei’s subsequent decline in global smartphone market share, and the estimated financial losses exceeding $30 billion annually, underscore the efficacy of this approach and the power of network centrality. This structural power, as the authors draw on Susan Strange’s (2015) work, is not defined only by material resources, but to shape the operations of others. Not merely the control of goods matter, but the control of infrastructures, protocols, and knowledge systems that make those goods possible. This enables the U.S. to dictate access, define standards, and orchestrate the dependencies of allied and rival states alike. (Beaumier & Cartwright, 2024). This structural capacity to coerce through design dominance highlights the limitations of viewing global economic power through the lens of market share or production output alone. The semiconductor

industry illustrates how influence operates through systemic position, legal and regulatory capacity, and the strategic coupling of networks. Beaumier and Cartwright (2024) conclude that a multi-network perspective is essential for understanding how power is accumulated, projected, and resisted in the global economy. States no longer need to dominate entire industries to shape outcomes. It is enough to dominate one network and build the institutional tools to extend that dominance across others. In this way, cross-network weaponization becomes not only a strategy of economic statecraft but also a window into the evolving nature of power in a deeply interconnected world.

As highlighted in the introduction of their study, Kim and Rho (2024) observe that when the delay in deliveries during the Covid-19 crisis affected leading economies such as the U.S. and China, both aimed to strengthen their supply chains in a way that protects them from exogenous shocks and environmental hazards. Especially China's international competitiveness is heavily reliant on the procurement of chips for the export of technological goods. The United States, on the other hand, is trying to maintain its technological lead through a strategy of containment to continue to undermine its leading position in the military, the economy and security policy. By comparison, China is acting from a position of weakness, as their complaint to the WTO to backdrop U.S. sanctions, confirms their reactive position in the semiconductor conflict. The study by Kim & Rho (2024) has found that each of the neighboring countries which are integrated into the supply chain, reflect their role from the perspective of the relationship between economic policy and security. For example, South Korea has specialized on memory chip production and enjoys proximity to Chinese markets has shifted to a balancing strategy. Along a similar paradigm, Singapore, specialized in packaging processes, adapts a similar hedging approach with the U.S. and China. On the contrary, Taiwan and Japan have a strong presence on foundries and materials and are less reliant on the Chinese market, thus present a more confrontative stance towards China (Kim & Rho, 2024).

5. Methodology

This thesis uses a qualitative, interpretative research design, which is grounded in case study methodology to investigate how the EU is repositioning itself within the global semiconductor value chain and the intensifying techno-geoeconomic rivalry between the United States and China. The semiconductor industry is both at the heart of the current rivalry and the industry of the future. The EU's growing involvement provides a special case of strategic recalibration. Semiconductors are a sector where dependencies, supply chains, and strategic alliances become apparent and measurable, ideal for analyzing geoeconomic agency. The study is in line with a problem-focused approach, often found in contemporary international political economy research, as the study aims to generate an understanding for policy decisions within a complex and evolving global environment. The aim is not to test a classical hypothesis through a statistical model, but rather interpret and contextualize the latest developments considering the theoretical frameworks discussed in the previous sections. The case of the EU is not examined as a coherent actor, but as a strategic bloc who navigates structural constraints and dependencies, as well as geoeconomic and geopolitical pressure.

The methodology draws directly from the approach developed by Kim and Rho (2024), who have previously worked on East-Asia in the domain of semiconductors and statecraft. Their outline offers a practical framework for linking macro-level changes with sectoral policy responses. Their model identifies two key independent variables that shape economic statecraft in the chip sector: the integration or separation of the economy-security nexus, and a state's industrial position within the global semiconductor value chain. The reflections of their analytical model are therefore adapted and applied to the context of the EU. The methodology is further deepened through the structuralist perspectives of Susan Strange and Robert Cox, who provide the conception of situating the actual dynamics within broader structures of power, production, and historical continuity.

The first variable, the 'economy-security nexus', is operationalized as the degree to which economy and security are integrated in the aspirations of the EU when it comes to policymaking regarding the semiconductor sector. Hereby, an integrated nexus is reflected by strategic industrial policy choices and protectionist rhetorical practices. By

contrast, a separated economy-security nexus reflects a liberal approach, whereas open trade and non-market intervention is clearly prioritized. The second variable, industrial position, refers to the EU's specialization in key segments of the supply chain. These characteristics both enable and constrain the EU's capacity to develop effective geoeconomic statecraft. The dependent variable of this study is economic statecraft, understood as the geoeconomic deployment of economic instruments, such as subsidies, regulatory tools, the public-private partnership, and alliances to achieve strategic goals. In the case of the EU, the dependent variable includes initiatives such as the Chips Act, coordinated investment frameworks, and discourse around OSA and de-risking.

The EU is treated as the core case study. While Kim and Rho (2024) conducted an analysis of East Asian states, this research focuses on a single, highly complex actor, which operates along a multi-level governance structure. The EU is a unique case because it is not a traditional sovereign state, neither a passive observer of the shifts in the structure of international relations. On the contrary, the EU is an ambitioned actor with partial sovereignty, important regulatory power, and a big consumer market. The position of the EU is marked by exposure to U.S. strategic alignment and Chinese market opportunities, positioning the EU at the intersection of economic interdependence and geoeconomic coercion. The semiconductor sector represents an ideal empirical case for observing these tensions, encompassing both vulnerabilities and opportunities.

The empirical material for this study draws from a combination of primary and secondary sources. Primary material includes official EU communications, legislative texts, policy papers, and public statements by key institutional figures. National initiatives are also examined where they intersect with EU-level semiconductor policy. Secondary sources compromise policy reports from think tanks and industry associations, offering analytical insights into the discursive, institutional, and strategic dimensions of the EU's semiconductor engagement.

The analytical strategy employed is grounded in theory-guided discourse and document analysis, supplemented by selective process tracing. The analysis begins by tracing the evolution of EU semiconductor strategy over the period from 2018 to 2025, identifying key turning points such as the aftereffect of Trump and Brexit, Covid-19, as well as initiatives in the sector. As noted, the developments are not only examined by their institutional content, but also by the language through which the EU frames its

objectives, such as for example concepts related to OSA, sovereignty, and resilience. These words serve as discursive markers and are contextualized as indicators of how the economy-security nexus is constructed and contested within EU policy.

In parallel addition, the industrial position of the EU within the semiconductor value chain is analyzed to determine how structural conditions shape policy responses. The strengths of the EU, which lie in upstream and highly specialized segments of the value chain, affect both vulnerabilities and policy tools. The study ultimately explores how this shapes the EU strategy: aligning with U.S. export control regimes and the weaponization of economic channels, investment in sovereignty and independence, or pursuing a balancing position. When appropriate, parallels and contrasts are drawn towards Kim and Rho's (2024) confrontation with statecraft responses, such as alignment or integration, hedging, autonomy, balancing, or bandwagoning. Rather than data-driven, the study is problem-focused (Ege et al., 2021), in line with the approach proposed by Kim and Rho (2024), looking for an explanation and interpretation of the evolving role of the EU. Rather than generalizations, the research is particularly suited for analyzing evolving phenomena by an understanding for the mechanisms of the EU within the context of broader shifts of the international system, driven by geoeconomic dynamics.

However, the methodological process has some limitations. Most importantly, the EU-level analysis characterizes the EU as a single actor, whereas the heterogenous character of member states is not considered. Secondly, the absence of company- and stakeholder-level interviews or specific datasets limits the informative value of the research. Third, given the ongoing evolution of geoeconomics and geopolitics, especially considering the confusion which the new U.S. administration has caused in domains such as trade, tariffs, and alliances, the findings are necessarily limited, due to fast evolving developments in the segment.

Nonetheless, this methodology provides a grounded analysis framework of the EU's evolving strategy in a critical sector of the global economy. By adapting the analytical logic of Kim and Rho (2024) and the theoretically elaborated concepts in Chapter 2, the study captures the dynamic interplay between geoeconomics, industrial capacities, and institutional dynamics. It provides a foundation for assessing how the EU navigates systemic rivalry and whether it is emerging as a strategic actor with its own scope of action. The study does not aim to test a hypothesis, but rather interprets policy

developments, institutional discourses, and strategic behavior through the lens of geoeconomic theory and related concepts, as discussed in the previous sections. The Analysis investigates how the EU constructs, pools, and implements economic statecraft in the changing global order, based on their relative capacities.

6. Analysis

Drawing on the typology adapted from Kim and Rho (2024), the EU's behavior can be interpreted along a spectrum ranging from alignment, to hedging, to bandwagoning, to autonomy. These categories offer a lens through which assess the response of third-party actors to systematic rivalry. By evaluating the EU's rhetoric, industrial positioning, and policy instruments, interpreted as economic statecraft, this chapter examines empirically the extent to which the EU is aligning with specific strategies, hedging between the major powers, or seeking to reach a position of autonomy in the global semiconductor value chain.

The analysis is operationalized through an interpretative examination of key speeches, policy documents, legislative texts, and reports. The selection process of the study is based on their respective significance for the overall semiconductor sector. These texts are analyzed not only for their output, but for their underlying structural assumptions, which include the framing of threats and hazards, as well as concepts like multilateralism, interdependence, and leverages. The objective is to generate and understanding of the EU to navigate a contested global order, drawing from the theoretical framework of geoeconomics and structural power.

6.1. Brussels' Rebranding

The following analysis is subdivided into three sections, which aim to capture the shift within the economic-security nexus from the perspective of the EU. The following section examines how the EU's political leadership, especially through Commission president Ursula von der Leyen and her college, began to merge economic and security logics into the public discourse and into the design of strategic initiatives. By using key policy guidelines and speeches, it traces the emergence of a rhetoric which increasingly moves from a conception of international collaboration towards a tactical outlook which indeed strives for international cooperation, but also recognizes the critical role of economic dependencies, as well as the need to catch up with other powers, especially in the technological field. Hereby, rhetorical operators such as *resilience*, *sovereignty*, or *competitiveness* are considered indicators of a developing nexus.

6.1.1. Open-Market Logic (2018-2020)

The 2017 communication on the EU industrial policy (European Commission, 2017) represents an articulation of the efforts under the Juncker Commission, just one year after the first election of Donald Trump. The policy goals are market-driven and techno-optimistic, with the focus on simpler access to investments for European companies and sustainability. The document spotlights digital modernization, innovation, and competitiveness, all grounded within a rules-based liberal order founded through multilateralism without referencing to economic dependencies and security concerns. However, the European Commission (2017) presents the initiative for scaling up "trade defense instruments" by increasing transparency on foreign direct investment through a screening framework. This is verbalized as a response to the growing concern about the acquisition of Western technologies and access to infrastructure by "State-owned enterprises", implicitly referring to capital flows from China.

The mentioned elements suggest an early awareness of some economic vulnerabilities, even though the broader framework centers around competitiveness and innovation. The proposal for an EU-wide screening of FDI marks a precarious apprehension of strategic risks within the industrial policy, especially when it comes to high-end technology. This comes at a point where the logic of weaponization had not been absorbed yet by the mainstream political discourse on behalf of the Commission. It anticipates later integration of the spheres of economy and security but remains within the boundaries of a technocratic and depoliticized language. It took another year for these concerns to be taken up by the Juncker Commission and expressed politically. Furthermore, while the liberal logic continues to dominate, the introduction of FDI-screenings signals a first crack in the liberal consensus and shows, that risks had entered the policy imagination.

In Juncker's (2018) *State of the Union* speech, several key themes emerge for the assessment of the current situation and the strategic priorities for the European Union. The then president retained the European spirit of international cooperation that was typical of the time, with a clear intention to "champion multilateralism". One of the focal points of Juncker's 2018 address is the need to forge new trade and partnership agreements in response to shifting geopolitical dynamics. This is encapsulated in his assertion that "the time for European sovereignty has come," reflecting an early

discursive attempt to position the EU as a more autonomous global actor. While this position relates primarily to the political ambition to emphasize the EU's capacity to act independently on the international stage, it refers foremost to security and foreign policy in the traditional sense of the word, as a response to cybersecurity, terrorism, and instabilities, such as the civil war in Syria. However, this vision is articulated within the constraints of normative and institutional efforts, as well as liberal policies, not as a reaction to economic dependencies or structural rivalries. Even though the term "sovereignty" occurs prominently, there is no application to (economic) resilience or autonomy within the sphere of technology. The digital and industrial agenda was discussed within the context of competitiveness, by strengthening the single market, and increasing the effort in innovation, whereas dependencies, especially for high-tech sectors were not addressed. This reflects the continuation of the market logic with a clear absence of an integrated economy-security nexus at that time.

The inauguration of Ursula von der Leyen as new president of the Commission marks a turning point in the reframing of the EU's global role, as shown by her opening speech at the European Parliament:

> I want Europe to strive for more. I want us to be the guardians of multilateralism … I want the European Union to become the world's leader when it comes to the economy, the environment, and technology. And I want us to be more assertive in the world. This is the time for a geopolitical Commission. (von der Leyen, 2019a)

The essence of her vision for the EU is articulated in the *Political Guidelines for the Next European Commission 2019-2024* (von der Leyen, 2019b). Von der Leyen presents an ambitious political agenda, with a clear imperative to strengthen the role of the European Union, both domestically and on the international level. The document makes strong reference to green, social, and sustainable growth, as well as democracy and a united Europe. In addition, it highlights the role of Europe in the digital age, and more generally, the place of the EU within the international system. Thereby, the focus is not just on a fit Europe in terms of digital skills, but also on investment and research in technological infrastructure, with the aim of achieving "technological sovereignty in some critical technology areas", by enhancing competitiveness through initiatives such as the Digital Services Act (von der Leyen, 2019b, p. 13). When it comes to the EU's global role, the central priority is a clear commitment to "uphold and update the rules-based global order" as a reliable partner and initiative taker. Alongside the multilateral

approach, there is a clear interest in "a strong, open and fair trade agenda" that breathes new life into the trade-regime led by the WTO, but does not shy away from a determined coercive usage of trade defense instruments (von der Leyen, 2019b, p. 17). The same cooperative stance is represented when it comes to defense, as NATO is reflected as a key pillar of security, with the provision of "new funding opportunities for our high-tech industries" (von der Leyen, 2019, p. 19b) to deal with cybersecurity issues and hybrid threats.

While the first signs of a slightly heightened awareness of potential threats are already emerging in this timeframe, the EU largely remains embedded in their traditional multilateral setting. As such, the economic-security nexus remains largely separated. The framing of cybersecurity concerns remains primarily vague and is directed against a seemingly future and unknown threat, which makes it look more like an empty signifier. However, in terms of the structures of Cox (1981; 1986), the EU is rhetorically increasing its actorness within the structures of world order in terms of material capacities and institutions, reflected by the appointment of von der Leyen, which is charting a new course in response to current challenges.

6.1.2. A New Vocabulary Emerges (2020-2022)

In response to the unprecedented economic and social disruption caused by Covid-19, von der Leyen (2020) articulates a comprehensive vision for the recovery of Europe in her 2020 *State of the Union* address. Central is the NextGenerationEU recovery fund, a €750 billion strong package which has been agreed upon and designed to mitigate the impact of the crisis on people's lives and companies' business, and among other things to strengthen resilience and promote the green and digital transition. This address to the EU institutions and its citizens offers insight into the Commission's evolving strategic framework. This is crucial to understand the EU's strategic priorities during a period of crisis, setting a foundation for analyzing the direction specified by the Commission. Following the speech, the approach reflects a broader shift in EU policy toward greater intervention. It exemplifies the EU's attempt to shift the focus towards the "Digital Decade", concerning data as well as technology and Artificial Intelligence. In doing so, the Commission recognizes that in many digital areas Europe faces a critical juncture, as it heavily relies on external actors and must acquire a proactive leadership role to secure

"Europe's digital sovereignty". Therefore, the Commission proposes investment into digital infrastructure and for the development of cutting-edge technology such as supercomputers and microprocessors. When it comes to the EU's approach to multilateral cooperation, explicitly in international organizations such as the WTO and the WHO, von der Leyen pushes for an active and leading role, acknowledging the "need to revitalize and reform the multilateral system". Within this context, von der Leyen also directly refers to the relationship with China, as what she sees as an "negotiating partner, an economic competitor and a systemic rival". Thereby, she stresses about China's closed economic system, which provokes an uneven situation when it comes to trade and investment regimes, as well as democratic values (von der Leyen, 2020). In sharp contrast, while there has been some disagreement, von der Leyen confirms her adherence to the transatlantic partnership, by strengthening areas such as "trade, tech or taxation".

Another key document is provided by the European Commission (2021a) on an updated industrial strategy, which has been firstly formulated just before the Covid-19 pandemic struck the world. The precariousness of long-held securities was thereby exposed in one blow, prompting the Commission to adopt the new reality:

> During this period [global Covid-19 pandemic], we witnessed the resilience, ingenuity and adaptability of the EU industry but we were also exposed to new vulnerabilities and older dependencies …. The crisis revealed the interdependence of global value chains and the value of a globally integrated Single Market. It also illustrated the need for more speed in the transition towards a cleaner, more digital, and more resilient economic and industrial model, in order to maintain and enhance Europe's drive towards sustainable competitiveness. This is why President von der Leyen announced in her State of the European Union address an update of the EU's industrial strategy: to learn the lessons of the crisis, strengthen our economic resilience and accelerate the twin transition while preserving and creating jobs. (European Commission, 2021a, p. 1f)

It is worth noting, that the shortcomings in global supply chains, which have been fractured by the pandemic and have led to disruptions in the procurement of important components, have attracted the attention of the EU, which is becoming aware of its dependencies and the asymmetrical distribution of supply chains. In fact, as the document notes, "one of the key lessons of the crisis is to get a better grasp of Europe's current and possible future strategic dependencies. This will provide the basis for the development of facts-based, proportionate and targeted policy measures to address strategic dependencies while safeguarding the open, competitive and trade-based EU economy" (European Commission, 2021a, Chapter 2).

The response by the Commission marks he clear emergence of a new consciousness regarding supply bottlenecks, which exposed vulnerabilities within the liberal trade system and the lack of auto-sufficiency when it comes to the procurement of critical resources. This development is characterized by the emergence of terms such as "resilience", to which a separate chapter is devoted, where actions such as the surveillance on imported products is foreseen. Further, the European Commission (2021a, Chapter 4) provides a clear roadmap for the handling of vulnerabilities in the chapter titled "Dealing with dependencies: open strategic autonomy in practice", whereby the example of semiconductor shortages and the disruptive effect on the automotive industry is also explicitly mentioned. While acknowledging the existence of weaknesses in form of strategic dependencies, the Commission also emphasizes on the EU's own strengths within the global value chains: although the EU is reliant on exterior inputs, third countries are as well dependent on European exports, coined as "reverse dependencies", that can function as a stabilizing factor. Moreover, the used notion of "common dependencies" refers to shared dependencies between the EU and its allies. The areas in which the EU has a very strong dependency due to its own "inability" to diversify and substitute procurement are "energy intensive industries (such as raw materials) and health ecosystems … as well as concerning other products relevant to support the green and digital transformation" (European Commission, 2021a, p. 11).

For instance, the document frames them as opportunities for strengthening international cooperation and common practices of resilience, rather than liabilities. This reflects the process of understanding interdependencies partially as a risk, but also as leverage and common ground for coordinated geoeconomic responses.

In her 2021 address (von der Leyen, 2021), Commission president von der Leyen links digital capacity to the question of sovereignty. This becomes evident than in her focus on semiconductors, described as essential to every aspect of digital infrastructure and consumer electronics, as well as industrial systems. The speech highlights the EU's growing concern on their diminished role in the semiconductor value chain and the dependence of manufacturing in Asia. This is not only framed as both vulnerability and risk, announcing the European Chips Act. To achieve "European tech sovereignty", the centrality of EU's semiconductor policy is to enhance the integration of investment with research, design, and testing to "jointly create a state-of-the-art European chip

ecosystem". The speech depicts a major shift in the EU discourse, as technological-industrial policy becomes a key feature of EU geoeconomic reflections.

During the speech at the presentation of the new European Chips Act (European Parliament & Council of the European Union, 2023), European Commissioner for Internal Market, Thierry Breton (2022), remarks on the unilateral approach of the USA and China during the Covid-19 pandemic, which is acknowledged as a "new reality beyond the health crisis". The dependencies which painfully manifested itself in the field of semiconductors, fossil fuels, and raw materials are being used as "geopolitical lever". To achieve what Breton (2022) calls a "sovereign Europe, a resilient Europe, an autonomous Europe", the Commission has brought initiatives on its way which aim toward "a more assertive policy, open to the world yet on our terms [European]", in order to decrease interdependencies and boost productive capacities. Conversely to increasing its capabilities in the sectors, the Union continues to pursue an open market logic in the diversification of supply chains, forging new trade alliances. Just as important, the Commissioner notes, that "the geopolitics of value chains also implies rebalancing the balance of power …. only when the European Union set up an export control tool – in short, leverage – were we able to unblock the supply chains …. This is a lesson that we must learn from the crisis" (Breton, 2022).

Due to the Covid-19 pandemic, states have flexed their muscles in terms of relational power, coercing others. Thus, relational power can be manifested through the weaponization of single critical chokepoints. The emphasis set European Union reflects the groundwork of what Susan Strange would call a shift in the EU's control of the structures of production and knowledge over secondary structures like value chains and semiconductors. It shows a clear attempt by the EU to merge the four dimensions of structural power to neutralize by their statecraft capacities tools of economic coercion.

6.1.3. Geoeconomic Consolidation (2023-2025)

A critical insight into the EU's changing self-image, which has been shaped by the Russian war of aggression, is delivered by von der Leyen's (2023) speech at the 2023 edition of the World Economic Forum. The dependencies on Russia around energy supplies are only one part of the picture of the more complex global scenario. As von der Leyen observes in her address, "We see energy being used as a weapon, we see threats of

trade wars and the return of confrontational geopolitics". Also, domestic initiatives like the Inflation Reduction Act are straining the transatlantic relationship by providing asymmetric advantages to U.S. companies, thereby placing their European counterparts at a competitive disadvantage. Nevertheless, the Commission remains committed to working towards a peaceful solution from which both sides can benefit, by showing alignment toward their allies and rejection towards their competitors.

In addition, the Commission wants to work with its international partners to improve supply chains for raw materials by "sourcing production and processing to overcome the existing monopoly", implicitly referring to China's primacy in the procurement of the resources. Europe's success within the new strategic orientation is to be achieved primarily by diversifying the supply chains, applying "tax break models" and "state aid", through new funding opportunities by a "European sovereignty fund". Most importantly, however, the goals are to be achieved by "open and fair trade to the benefit of all", implying that "there will be a need for strong and resilient supply chains" (von der Leyen, 2023). China has actively sought to attract energy-intensive industries from Europe by offering low-cost energy, cheap labor, and favorable regulatory conditions. Simultaneously, it reinforces its industrial dominance through substantial state subsidies and by limiting market access for European firms, creating structural imbalances in global competition. The European Union acknowledges the necessity of continued economic engagement with China, particularly in the context of the green transition. Rather than pursuing a strategy of decoupling, the EU advocates for a "de-risking" approach, by addressing unfair market practices through economic regulatory instruments such as subsidies regulations. This strategy aims to ensure reciprocity, safeguard market integrity, and promote a fair, rules-based global order, especially in tackling shared challenges like climate change (von der Leyen, 2023).

The European Chips Act (European Parliament & Council of the European Union, 2023) underscores the strategic imperative of reducing dependencies and boost resilience across the semiconductor supply chain. As the EU relies on external design and manufacturing, the legislation establishes a comprehensive framework by enhancing technological sovereignty and supply chain security through coordinated investment. By promoting the development of new governance structures and competence centers, the Act seeks to strengthen the production and innovation ecosystem. This is emphasized by

the framing of semiconductors as “essential to the functioning of today’s economy and society as well as defense and security”. The tone is set by a phrasing which emphasizes on critical concepts relevant to geoeconomics, such as “reducing dependencies, enhancing digital sovereignty, … security, adaptability and resilience of the Union’s semiconductor supply chain”, as well as the emphasis on the goal “for increasing the Union’s long-term resilience and its ability to innovate and provide security of supply … with a view to increasing robustness in order to counter disruptions” (European Parliament & Council of the European Union, 2023). This initiative, the stance adopted by the Commission, as well as the narrative advanced reflects the geoeconomic shift within a broader geoeconomization, indicating the solidification of a merging economy-security nexus.

In her 2025 speech at Davos, von der Leyen (2025) cements the era of geoeconomic consolidation by directly emphasizing on the very nature of networks and weaponized interdependence:

> It is common that a chip is designed in the US, built in Taiwan with European machines, packaged in Southeast Asia, and assembled in China. On the other hand, last year alone global trade barriers have tripled in value … Our supply chain dependencies are at times weaponized, as shown by Russia’s energy blackmail … The world’s major economies are vying for access to raw materials, new technologies and global trade routes. … As this competition intensifies, we will likely continue to see frequent use of economic tools, such as sanctions, export controls, and tariffs, that are intended to safeguard economic and national security.

Through this critical inspection of public appearance and communication, it becomes clear that recent political events have brought about a profound change within the EU. The economy-security nexus has become increasingly interconnected over the period under review, with both Cox's historical structures and Strange's structural components flowing strongly together and cementing the EU’s geopolitical ambitions. The EU’s geoeconomic actorness has been updated to have the cohesion to effectively implement the concentrated power of economic statecraft.

6.2. Industrial Positioning

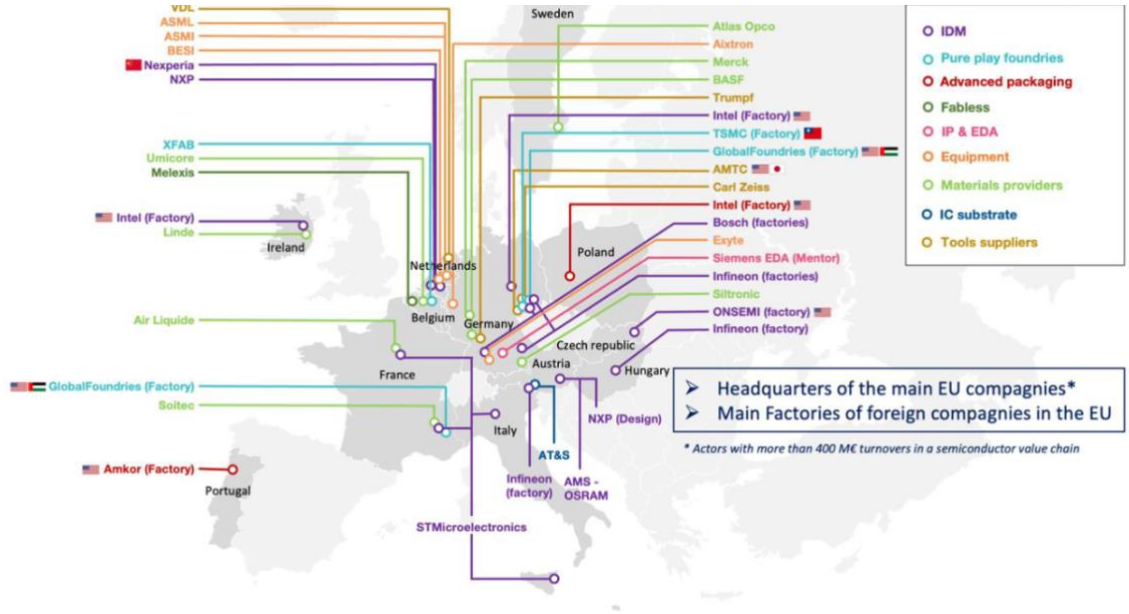
In this section, the EU’s industrial position within the semiconductor supply chain is outlined. This chapter draws on the insights provided in *Chapter 4*. The aim is to create a deeper understanding of the dependencies and the leverages of the EU. The reviewed

material consists of expert reports from independent studies, industry associations, and the EU, as well as insightful illustrations through figures.

6.2.1. Competitive Advantages

While the European semiconductor ecosystem held a share of about 20% in the industry in the 2000s, the market witnessed an important shift in manufacturing towards Asia, because of which the European market share shrunk to around 9% of the global market. In some critical segments, however, the market share accounts to only about 2%, exposing the market to disruptions in the value chain and risking “direct implications for the security, safety, and health of Europeans” (DECISION Études & Conseil, 2024, p. 19). As the report by DECISION Études & Conseil (2024) highlights, the European Union's semiconductor market closely matches between its industrial needs and domestic production capabilities in segments such as power and analog devices, optoelectronics, sensors, and microcontrollers, which collectively account for about 63% of EU semiconductor consumption in 2022, marking significantly higher numbers than the global average of 39%. This alignment has enabled the EU to maintain strategic autonomy in these domains. According to Cerutti and Nardo (2023), the EU’s position in the semiconductor value chain is characterized by a high degree of specialization across high-value segments of upstream activities, while underrepresented in downstream segments of the supply chain. One of the core strengths lies in manufacturing equipment (ASML) and in optoelectronics (Infineon, Bosch, STMicroelectronics), which is contributing to the automotive sector and industrial applications. Further, the continent is an important hub for R&D, with IMEC (Belgium) and CEA-Leti (France) fostering leading-edge innovation.

Figure 6. *Geographical Location of Major Semiconductor Companies in the EU*



Note. Source: *Economic analysis of the EU and international semiconductor ecosystem* [Report], by DECISION Études & Conseil, 2024. https://www.decision.eu/wp-content/uploads/2024/07/Public-Version-ICOS-Economic-Analysis.pdf

As **Figure 6.**, highlights, the EU serves as a hub for several globally significant players in the semiconductor industry. It is home to three major European integrated device manufacturers (IDMs), STMicroelectronics, Infineon Technologies, and NXP Semiconductors, each of which plays a central role in the EU's vertically integrated semiconductor value chain. In addition to these European-based firms, the EU hosts operations of several prominent non-European IDMs, including Intel, ON Semiconductor, and Samsung, further enhancing the region's industrial base. However, the contribution of dedicated foundry services within the EU remains relatively underdeveloped, with only limited activity from domestic firms like XFab and foreign players such as GlobalFoundries. In contrast, the fabless segment is bolstered by the presence of notable firms including Melexis, Qualcomm, and Nvidia. Central to the EU's technological edge in semiconductor equipment is ASML, the world's leading supplier of extreme ultraviolet (EUV) lithography systems. ASML's ecosystem is strongly embedded within the EU, supported by strategic partnerships with advanced research and industrial organizations such as TNO, Trumpf, and Carl Zeiss (Delicado et al., 2024).

Complementing its industrial base, the EU is also home to leading research and technology organizations (RTOs) such as IMEC (Belgium), CEA-Leti (France), and the Fraunhofer-Gesellschaft (Germany), all of which contribute significantly to the R&D infrastructure underpinning Europe's semiconductor innovation capacity. Materials capabilities are further strengthened by firms like Soitec, a global leader in engineered substrates, particularly in the field of fully depleted silicon-on-insulator (FD-SOI) technology.

From a demand-side perspective, European semiconductor firms exhibit global leadership in embedded systems, with application dominance in sectors such as automotive electronics, industrial automation and robotics, energy management, aerospace and defense, medical technologies, and telecommunications infrastructure. Notably, EU-based suppliers command 34% of the global automotive semiconductor market. They also hold substantial shares in key application-specific domains, including 27% in embedded automotive systems, 22% in aerospace, defense and security semiconductors, and 20% in industrial and robotics applications (Delicado et al., 2024).

6.2.2. Limitations and External Dependencies

Structurally, the EU faces substantial vulnerabilities in microprocessor and memory production, which are accounted as critical components in emerging technologies such as AI and cloud computing. These components, which represent approximately 37% of EU semiconductor demand in 2022, are projected to rise to 50% by 2030. Although the EU Chips Act has incentivized production investments by American firms such as Intel and GlobalFoundries in Europe, these developments increase the EU's dependency on foreign capital and intellectual property. Despite recent initiatives, such as TSMC's planned facility in Germany and the planning of a microprocessor production led by companies like NXP, Bosch, and several startups, the European market remains dominated by US firms including Intel, Nvidia, Qualcomm, and AMD. Without targeted policy measures to foster indigenous design and manufacturing capabilities, the EU risks deepening its strategic dependence on foreign actors and companies for advanced semiconductor technologies (DECISION Ètudes & Conseil, 2024).

Figure 7. *Semiconductor Turnover in Specified Segments of the Value Chain*

	EQUIPMENT (SME)	CHEMICALS AND GAS SUPPLIERS	MATERIAL SUPPLIERS	FABLESS	FOUNDRIES	IDMS	OSATS
EU	27.02%	34.19%	33.08%	0.17%	0.48%	16.83%	0.00%
USA	31.35%	17.19%	7.80%	61.17%	3.09%	33.75%	13.77%
TAIWAN	1.27%	0.08%	4.43%	13.67%	39.28%	2.99%	37.43%
JAPAN	24.15%	32.73%	46.58%	3.47%	4.70%	28.96%	11.02%
SOUTH KOREA	7.62%	15.80%	3.64%	1.24%	39.42%	7.62%	3.66%
CHINA	4.18%	0.00%	4.27%	17.59%	6.34%	8.30%	27.62%
OTHERS	4.40%	0.01%	0.20%	2.68%	6.70%	1.54%	6.50%

Note. Source: *The position of the EU in the semiconductor value chain* (JRC Technical Report No. JRC129035), by A. Ciani & M. Nardo, 2022, European Commission.
https://publications.jrc.ec.europa.eu/repository/bitstream/JRC129035/JRC129035_01.pdf

As **Figure 7.** shows, beyond the world-leading lithography equipper ASML, the EU faces significant gaps in the supply chain in front-end manufacturing, the EU is heavily reliant on U.S. companies, such as LAM Research, KLA Tencor, and Applied Materials. Outside of the EU and U.S., the only major alternative is Tokyo Electron, while China is also developing its capacities. Even ASML is partly owned by investors from the U.S., while also having deployed a notable proportion of its workforce in the United States, limiting the European-based control. In terms of design, the EU lacks on IP providers and is dependent on companies from the U.S., UK, and Japan. While the EU on the other hand benefits from Siemens in the design of software, most of EU companies still rely on relationships with external providers due to cost mitigation. Furthermore, Europe does not have a major manufacturing foundry that produces the most advanced chips, as the production is owned by the major players, foreign companies like Intel, GlobalFoundries, and TSMC. Similarly, the EU does not have a strong presence in chip packaging and testing, the end stage of production, an increasingly critical sector due to the opportunities of performance enhancement through advanced packaging. After decades of capacity outsourcing toward Asia, European companies have no major players in this area (DECISION Études & Conseil, 2024). However, the EU's share in chip and semiconductor fabrication, as well as assembling, testing, and packaging is very low, as labor-intensive segments of the value chain are heavily underrepresented. The EU relies heavily on non-EU countries for the import of raw materials (Cerutti & Nardo, 2023). This disposition reveals a structural imbalance: Europe indeed contributes to crucial

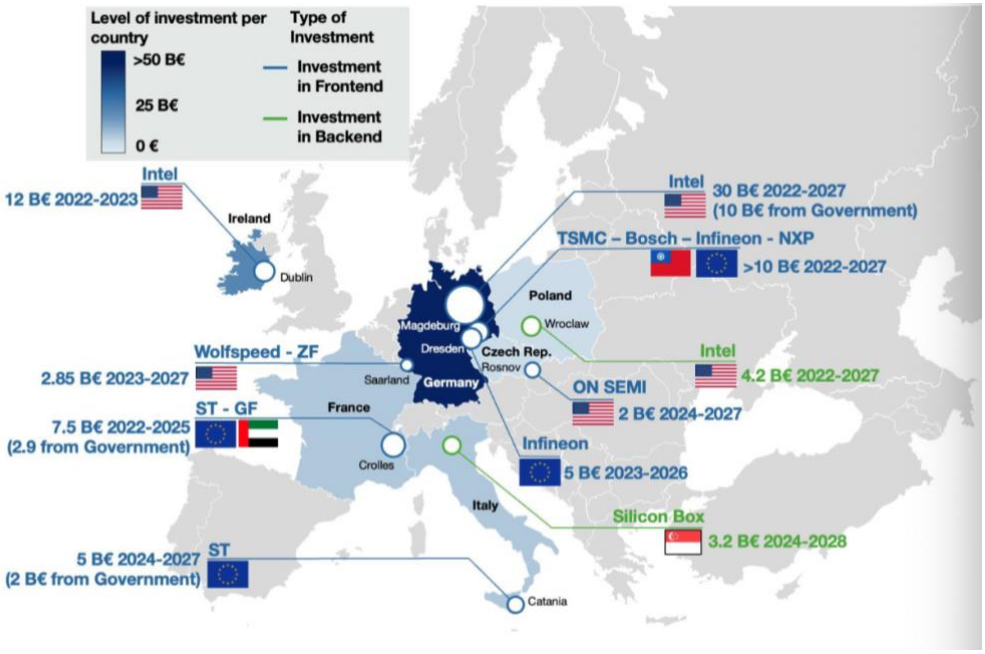
technology and components but lacks the vertical integration and autonomy which are found in other semiconductor-producing economic regions.

In terms of material capabilities and production, the EU's position is very weak compared to its international competitors, characterized by structural dependencies. Nonetheless, there is a strong presence in the domain of knowledge, as the EU possesses some of the most sophisticated companies when it comes to semiconductor production. This proofs again how fractured the semiconductor ecosystem in reality is, as no major global power, since no major power is in a position to achieve uncontested structural power due to the extraterritoriality of upstream and downstream operations.

6.2.3. Bringing Production Back to the EU?

It is estimated that the impact of the Covid-19 crisis has led to losses of GDP of $240 billion alone in the U.S., while $500 billion of revenue have been lost on a global scale (U.S. Department of Commerce, 2022). To prevent such a disruption in the future, the world is witnessing a "semiconductor fabrication renaissance" (Adams, 2023), as Intel, TSMC, Samsung, Texas Instruments, Micron, and other companies have announced or already started with the construction of high-end semiconductor fabs, totaling to tens of billions of dollars. In the EU, there are several new plants under construction, situated foremost in Germany and to be completed until 2027. In Magdeburg, the American company Intel is constructing two new fabs, with cost estimated to mount more than $30 billion. As Germany represents the center of the new semiconductor efforts, the city of Dresden is expecting two new capacities, one planned by Infineon, while the other is a joint venture between TSMC, Infineon, Bosch, and NXP (Adams, 2023).

Figure 8. *New Investment for Leading-Edge Manufacturing Plants*

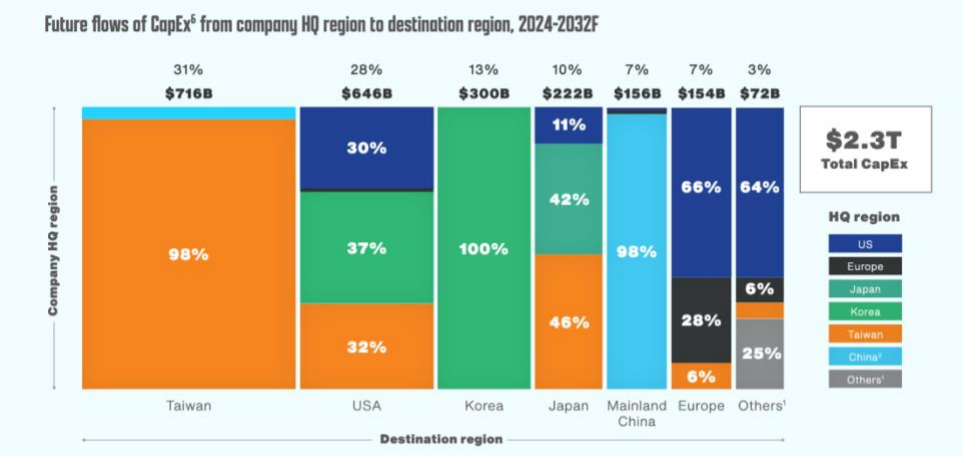


Note. Source: *Economic analysis of the EU and international semiconductor ecosystem* [Report], by DECISION Études & Conseil, 2024. https://www.decision.eu/wp-content/uploads/2024/07/Public-Version-ICOS-Economic-Analysis.pdf

Although the global investment landscape remains heavily skewed toward Asia and North America, the EU has seen an upward trend in semiconductor-related capital expenditure, catalyzed by the adoption of the EU Chips Act, as highlighted by **Figure *8*.** This legislative framework has facilitated several large-scale strategic investments across Member States. Key examples include Intel's €17 billion fab in Magdeburg, Germany, and its €12 billion expansion in Leixlip, Ireland; the €10+ billion joint venture between TSMC, Bosch, NXP, and Infineon in Dresden; STMicroelectronics and GlobalFoundries' €7.5 billion initiative in Crolles, France; Infineon's €5 billion Dresden facility; and STMicroelectronics' planned €5 billion megafab in Italy. Additionally, Bosch has announced a €3 billion investment program to expand its semiconductor production capabilities, supported under the Important Projects of Common European Interest (IPCEI) scheme (Delicado et al., 2024). These capital-intensive projects, strategically distributed across the EU, are expected to significantly scale the Union's semiconductor production capacity. Projections suggest that, should these investments proceed as planned and demand trajectories hold, Europe could achieve a 70% increase in semiconductor output by 2030, marking a potential inflection point in its ambition to

reduce reliance on non-European supply chains and regain competitiveness in advanced microelectronics manufacturing (Delicado et al., 2024). In terms of trade, the report by Decision Etudes & Conseil (2024) highlights that the EU mainly imports semiconductors from China (14%), Malaysia (18%), and Taiwan (20%). Further, several European manufacturers maintain a significant proportion of their manufacturing capacities in Southeast Asia as part of an internationalized production process. These configurations primarily correspond to outsourced intermediate steps in production, implying only minor dependencies. In contrast, more substantial dependencies arrive from imports of countries where there is low interaction along the supply chain, such as Taiwan, China, Israel, the U.S., South Korea, and Japan. When it comes to exports, the EU trades goods and services valued at €36 billion, with the main countries to which exports are made China (33%), U.S. (10%), and Taiwan (8%), whereby the trade deficit in the total volume amounts to €42 billion in 2022 (Decision Etudes & Conseil, 2024). These imports, often due to offshoring manufacturing practices or end-product acquisitions, are revealing considerable difficulties in the EU's supply chain structure. Such weaknesses in the position within supply chains can underline the importance of diversification and potentially draw attention to strategic advantages through re-shoring.

Figure 9. *Expected Investments Across the Value Chain*



Note. Source: *Emerging resilience in the semiconductor supply chain: Global trends and prospects for the European Union*, by R. Aversa, M. Buchta, M. Fabritius, T. Holle, T. Müller, & M. Westner, 2024, *Semiconductor Industry Association & Boston Consulting Group*. https://www.semiconductors.org/emerging-resilience-in-the-semiconductor-supply-chain/

One of the most significant structural barriers hindering growth of the semiconductor industry in the EU is the lack of sufficient financing to support companies and match global competitors, as illustrated in **Figure 9.** Expected Investments Across the Value Chain As the European Court of Auditors (2025) note in their special report, although the Chips Act set an ambitious target, the actual mobilization of funding capacities remains relatively low in comparison to the capital-intensive demands of the industry. The report highlights that the share of capital expenditure continues to decline, while other regions increased their expenditure level. The court concludes, that without more financial commitment, the EU is risking of falling short of its industrial sovereignty objectives.

In addition, the uncertainty caused by protectionist measures under the new Trump administration could lead to several trade disruptions because of an increase in prices, increasing difficulties of procurement of key resources for semiconductors and restricting export capacities (European Parliament, 2025). Imposing tariffs on semiconductors has led to major distortions in the GVC, with important implications for the EU. As analyzed by Wiseman et al. (2025), tariffs have increased costs across the semiconductor industry and accelerated the re-shoring of production. European and third-country firms have experienced losses through higher input costs, a reduction in accessibility for components, and exposure to retaliatory measures affecting downstream industries such as car production. On the other hand, the EU has benefited from the opening space of U.S. diversification efforts with the possibility of attracting new investment (Wiseman et al., 2025). Further, export controls have emerged as a pivotal factor in reshaping the semiconductor industry. For Levy et al. (2025), an expansive export controls regime has not only fragmented supply chains, but also compelled companies to reassess their market strategies. For the EU, which relies on globalized market mechanisms, export controls can lead to an increase in costs, supply bottlenecks, and reduced access to critical technology, threatening the competitiveness of the semiconductor sector.

The EU's strength in semiconductor production lies predominantly in the upstream segment, where the region provides some of the globally most advanced capacities in R&D and lithography. Therefore, the ability by the EU to respond to supply shocks or economic coercion is limited due to the ability of the foundry capacity. The asymmetry between upstream- competitiveness and downstream-dependencies creates a

structural hybrid position, which allows a selective influence but a very limited autonomy. Therefore, the constrains of the EU support a policy of hedging and alliance-building, rather than unilateral action by European companies.

6.3. European Statecraft in the Semiconductor Sector

The first efforts by the EU to counter the loss in relative market share in the semiconductor industry dates to 2013, where the Commission launched the Electronics Strategy for Europe, which consists of facilitating a €100 billion investment into the EU chips production together with a €5 billion public-private partnership to increase the size of design and manufacturing (European Commission, 2014). According to the Court of Auditors (2025), the intervention has indeed increased to European capacity by 63% but could not stop the fall measured in relative shares. The difficulties of remaining competitive has led to broad support for the 2021 EU Industrial Strategy and the Chips Act, a new endeavor to gain autonomy.

The European Chips Act (European Parliament & Council of the European Union, 2023), formally proposed in 2022 and adapted in 2023, is the cornerstone of the EU's evolving economic statecraft to respond to both structural dependencies and intensifying political competition in the sector. The Act aims to counter shortages and supply chain disruptions by mobilizing €43 billion in public and private investment to boost innovation, manufacturing, and resilience. Beyond addressing bottlenecks, the Chips Act redefines the EU's strategic position in the global value chain and is a direct response to the domestic initiatives led by the U.S. and China. It coordinates and institutionalizes the industrial policy of the EU by enabling state-aid, the establishment of the Chips Joint Undertaking and promoting investment in weaker segments of the production processes. This marks a significant shift in the economy-security nexus, as competitiveness is not being left for market mechanisms, but is actively incentivized and subsidized by the European institutions, linking it to autonomy and technological sovereignty. The EU moves away from the traditional liberal approach towards a harmonization of strategic-industrial necessities.

From the perspective of the typology established by Kim and Rho (2024), the Chips Act represents a dual approach: on one hand, it signals partial alignment with the U.S. technology containment grand strategy, particularly through coordination regarding

export controls, while on the other hand, it advances the vision of a sovereign and autonomous actorness in the semiconductor sector. The ambiguity of the strategic outlook reflects the overall EU intermediate position, as the Union requires external input and cooperation as well as the upgrading of own capacities. Viewed through the structuralist theory of Strange (2015), the Chips Act is an attempt to adjust the EU's position within the political economy of production, gaining control over critical technologies situated at chokepoints, while at the same time resisting structural dependencies. At the same time, subsidies and incentives improve productive and financial structures, which is evidence that the EU is using its economic capacities to intervene into the market and kick-start sensible sectors when it comes to strategic priorities.

Besides, the EU, due to its flexible multi-level governance structure, has been able to bring to life several task-specific jurisdictions on EU-level, which deal with the state of the semiconductor industry as part of the overall EU Chips Act-package: Chips for Europe Initiative includes the establishment of a design platform, the development of pilot lines for technology transfer, targeted investments, and the creation of Union wide networks of competence, alongside the launch of a Chips fund to provide investments for startups and companies (European Commission, 2025a). Moreover, the Chips Joint Undertaking was founded as the implementing body for managing funding and project coordination, with the goal to "reinforce the EU's strategic autonomy", boost "scientific excellence and innovation leadership", and "enable the development and deployment of cutting-edge semiconductor technologies" (European Union, n.d.-a). Furthermore, the European Semiconductor Board has been established as a task force of the Directorates-General on Communications, Networks, Content and Technology, which in close collaboration with the Commission advises on policy and coordinates with member states (European Commission, n.d.-a). Additionally, a Semiconductor Alert System has been created to "strengthen the preparedness and monitoring of the European semiconductor field", in order to "bolster Europe's competitiveness, security of supply and resilience" (European Commission, 2023). Furthermore, forums like the Alliance on Processors and Semiconductor Technologies were organized for the exchange of relevant stakeholders (European Commission, n.d.-b).

The EU has established a framework for the control of exports, above all for goods and technologies that can be used for both civilian and military purpose (European Union, 2021). In strong coordination with the U.S., the regulation reflects the growing

importance of tech security by promoting transparency and coordination among member states. The threat of dual use, especially from Russia and China, enables the EU to align closer with its partners in export governance, deeply marks intervention into trade practices. This calls for increased attention to emerging technologies like high-end semiconductors. As such, the regulation constitutes a major component of the EU's economic statecraft, as trade considerations are balanced with concerns about intellectual property theft and security concerns.

While the EU emphasizes their commitment "to de-risking, not decoupling from China", complaints about "distortive industrial policies and practices" due to import substitution, a discriminatory and politicized internal market, subsidies, and intransparency have mounted (European Commission, n.d.-c). The EU therefore has opened a tariff regime against China on the import of electric vehicles in 2024 (European Commission, 2024), as important government subsidies challenged the market competitiveness of the European automobile industry. Other subsidy related tariffs and defensive instruments against China increased importantly in multiple sectors in 2025, such as in Mobile Access Equipment (European Commission, 2025b). Other tariffs against China were justified by anti-dumping measures for goods such as biodiesel (European Commission, 2025c), or glass fibre yarns (European Commission, 2025).

During Trump's first term in office, there were major difficulties between the transatlantic alliance in terms of trade. After the USA complained about its trade deficit with the EU it accused the latter of unfair trade practices, the U.S. imposed tariffs on steel and aluminum, provoking reciprocal measures (Schneider-Petsinger, 2019). As things stand, it looks like tensions are escalating during Trump's second term: after a somewhat calmer phase under Biden, the EU, like much of the rest of the world, is in a tariff war with the U.S. Regardless of future speculations of how the scenario with the USA develops, the EU's determination to respond to perceived market shifts, reveals the strong actorness in responding to economic-security concerns.

While the Union justifies retaliatory measures, and formally remains committed, by WTO rules and dispute settle mechanisms (European Council, n.d.), the "WTO-sclerosis"

currently prevents effective and rules-based dispute settlement. According to the analysis of Bongardt & Torres (2022), the diminished influence of the WTO in trade governance has led to the proliferation of PTAs in the EU's trade policy despite the formal commitment to international standards set by intergovernmental organizations (European Commission, 2024b). While this has led to a rising trend in the EU for the proliferation of preferential trade agreements, the EU has increased its efforts in maintaining international trade with semiconductors and related products. In relation to international institutions, a core category of Strange's (2015) theoretical remarks, the EU has made several attempts to coordinate cooperation in the field of semiconductors. As such, the EU is part of the Digital Partnership, a coalition together with Japan, South Korea, Singapore, and Canada. One of the main goals of the alliance is to secure and increase the resilience of semiconductor supply chains (European Commission, 2025e). Likewise, the EU has established the TTC together with the U.S., which is intended to serve as a forum on cooperation in technological matters and related areas such as export controls, FDI screening, secure semiconductor supply chains, international standards, and trade challenges (European Commission, n.d.-d). While Trump's tariff policy could signify a backdrop in recent efforts to coordinate semiconductor resilience and technological governance, the TTC reaffirms the importance of securing semiconductor supply chains by alignment: Thereby, representatives of both parties' express concerns about non-market practices, initiating a joint undertaking to counter geopolitical risks and market distortions. An early warning mechanism for shortages and a transparency mechanism for the mutual disclosure of public subsidies in the sector coordinates the EU Chips Act and the US Chips Act. (Office of the United States Trade Representative, 2024).

The EU has therefore managed to secure important partnerships with key countries within the GVC of semiconductors based on international cooperation, are proof of a composed attitude of aligning when it comes to strategic decisions. By taking the initiatives, the EU builds transnational networks, extending its structural reach beyond its own borders. While the EU adheres formally to international trade practices, it also does not shy away from taking countermeasures. This demonstrates that the EU delivers what it promises: the first way is always through multilateralism, and if this gets blocked, then we have the necessary determination and coherence to strike back. While the EU is increasingly demonstrating its economic statecraft through innovative initiatives, the

dimension of financing, aligned with Strange's conception of structural power, has gained momentum through instruments such as NextGenerationEU. However, viewed through Cox's materialist lens, must disappoint the euphoria, as material capabilities remain nonetheless limited compared to the U.S. and China, whose dominant use of economic statecraft grant them stronger economic statecraft.

7. Conclusion

This thesis examines how the EU navigates the complex environment of the global semiconductor industry, particularly in a context where the U.S. and China are confronting each other through the means of geoeconomic statecraft. Through a theoretically guided exploration of geoeconomics as an object of analysis and by assessing the structure and vulnerabilities of the semiconductor value chain, this research argues that the EU needs to critically revise its posture to thrive in a multipolar world, characterized by dependencies and techno-nationalism. The escalating trade and technology war has not only reshaped bilateral economic relations but has also generated significant effects across the global economy. Positioned between these two economic superpowers, the EU finds itself entangled in a complex dynamic that challenges its strategic autonomy goals, trade policy coherence, and balancing acts. While the EU has largely attempted to maintain a neutral stance, the intensification of Sino-American trade tensions exposes structural vulnerabilities in trade interdependencies, supply chain configurations, and global economic positioning in a broader sense.

The EU's current dependency on the United States and Southeast Asian countries, particularly in downstream sections of production, such as manufacturing, reveals vulnerabilities, despite global leaders like ASML. The resulting dependency is particularly pressing in view of recent disruptions and the shift toward protectionism, domestic industrial policy, and the trade war. Although the EU has taken important steps, such as the European Chips Act, its current tools remain limited compared to the scale of superpowers such as the U.S. and China.

However, the EU's semiconductor strategy demonstrates not only reactive statecraft, but also a deep concern about the control over key structural domains, such as production, knowledge, and resilience. This is in alignment with the understanding of Strange of structural power, defined as the capacity to shape the environment in which the international community operates. The semiconductor industry is a clear example for the power structures of Strange (2015). Knowledge drives innovation in chip technology, while finance provides funding and investment. Both structures have an impact on production, as manufacturing capacities depend on capital-intensive investments and leapfrog technology. Further, the strength of these domains will determine the aspect of

security, as the U.S-China rivalry over control on the semiconductor GVC is tied to economic and military power. Yet, the EU's actorness remains bounded by the integration into the transatlantic security umbrella and globally predefined supply chains. This suggests that while the EU has integrated the economy-security nexus, the structural conditions of a fully-fledged autonomy remain restrained or only partially realized.

Furthermore, Cox's analytical framework, applied to the semiconductor industry, provides a multi-layered understanding of how material capabilities, ideas, and institutions along the EU's position. In relation to this perspective, material capabilities refer to the EU's limited manufacturing base and dependence on foreign actors. Ideas are reflected in the EU's evolving discourse on autonomy, sovereignty, and resilience. Institutions, on the other hand, include both internal mechanisms as well as external regimes such as international organizations and strategic partnerships. Combining this framework with the findings of the research reveals that the EU is limited in capacity but increasingly aware in strategy within a structurally asymmetric system. The EU remains materially dependent on key resources but is increasingly promoting ideas such as strategic autonomy to redefine its global role. While the Chips Act shows institutional adaptation, limited capacities constrain its effectiveness. From a Coxian perspective, the EU's future global influence depends not only on shifts in material capabilities, but also on its ability to shape ideational and institutional structures that underpin the current world order.

Building on the introduction into geoeconomics, this research has demonstrated that economic policy, such as tariffs, subsidies, investment screenings, or export controls have become a geopolitical extension. While the EU has been ramping up its geoeconomic arsenal in recent years, the multilateral and market-oriented approach limits its flexibility in responding to the coordinated state-led strategies in the spirit of U.S. and Chinese statecraft. Arguably, this poses a normative dilemma for the EU: Can the EU maintain its rules-based stance while simultaneously exercising economic coercion in the sphere of geoeconomics?

To advance its global position in the semiconductor value chain, I argue that the European Union should:

1) Increase technological leverage by building downstream capabilities in manufacturing, testing, and assembling. In critical areas the EU still faces comparative disadvantage but could differentiate economic ties through further attracting foreign investment and providing domestic incentives.
2) Deepen strategic commercial partnerships while maintaining a degree of flexibility in aligning with the U.S. to preserve access to critical raw materials from countries like China.
3) Strike a balance between economic openness and security needs by identifying sectors where autonomy is critical and adapting policy instruments accordingly, rather than applying a comprehensive model to mitigate risks.

Future research could build on the findings of this thesis and examine the internal position of member states to assess the effectiveness of EU-wide technology alliances in practice. Understanding how national interests, industrial capacities, and political priorities vary across member states is crucial to evaluate the EU'S ability to act as a coherent geoeconomic actor. As this thesis has treated the EU as a unified strategic actor, in practice the Union's capacities depend heavily on the internal consensus, particularly through voting mechanisms and the role of the European institutions. Moreover, future research could explore the role of the private sector more in detail, as this thesis focused primarily on the supranational level. Future research should also examine how external corporate players influence of external companies, especially from the perspective of export controls and R&D frameworks.

Concluding, the analysis stresses the importance of non-economic dimensions of technological leadership. Semiconductors, rather than merely a tradeable good, have become instruments of national security, digital innovation, and sovereignty. If the EU does not act decisively, there is a risk of marginalization in an area that will determine the geopolitical future of world politics. However, this research also points to the limits of the EU's current capacities. A relatively weak role within the supply chain, financial constraints, and long implementation times limits the bloc's ability to react quickly and

deliver strategic policies. As the global semiconductor industry is characterized by rapid innovation capacities and high capital intensity, it will be difficult for the EU to achieve technological sovereignty in the short or medium term. Given these constraints, the EU should prioritize strategic and predictable interdependence over full autonomy. Instead, the EU should consider a robust and diversified hedging position that engages with diverging actors, reduce vulnerabilities, and maintain access to networks and chokepoints. This thesis argues that the understanding of semiconductors as the engine for future technologies may determine the European relevance in the era of global power.

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