

MASTER THESIS

Titel der Master Thesis / Title of the Master's Thesis

„The Future of NATO Burden Sharing: Challenges within the European Defence Industrial Base and Their Larger Implications for European Strategic Autonomy“

verfasst von / submitted by

Louis Centner, BSc

angestrebter akademischer Grad / in partial fulfilment of the requirements for the degree of
Master of Advanced International Studies (M.A.I.S.)

Wien 2024 / Vienna 2024

Studienkennzahl lt. Studienblatt
Postgraduate programme code as it appears
on the student record sheet:

A 992 940

Universitätslehrgang lt. Studienblatt
Postgraduate programme as it appears on
the
student record sheet:

Internationale Studien / International Studies

Betreut von / Supervisor:

Priv.Do. Robert Schuett, Ph.D.

Abstract

The Russian war of aggression against Ukraine demands Western ammunition and weapon systems to sustain and push back Russian offenses. However, Europe's defense industries are not fully capable of supplying sufficient aid to Ukraine while simultaneously replenishing their own stockpiles, a critical need in the event of the war spreading to EU or NATO Member States. The insufficiency of European defense industrial bases (EDIBs) can be attributed to a variety of factors, including political issues, historical contexts, and industrial shortcomings. This thesis employs a three-dimensional model, consisting of national, European, and transatlantic dimensions. It examines the challenges faced by Europe's largest DIBs, specifically focusing on Germany, France, and the UK. Through a realist lens, the author analyzes how the challenges at the national level impact European cooperation on defense industries and joint procurement which in turn impact the role of the US through NATO in the European defense architecture. The thesis showcases that the challenges of the EDIBs leave European security heavily reliant on the US for off the shelf weapon systems and China for raw earths, needed in weapon production, which complicates the strive for European Strategic Autonomy (EU-SA). The thesis finds that as a result of these challenges, EU-SA can only be materialized within the framework of NATO's security structure, in which European defense evolves into a stronger and more responsible pillar within NATO. Ultimately, the thesis concludes that the future of burden sharing between European NATO members and the US will evolve into burden shifting. This shift implies that while the US will maintain its military industrial interests in Europe, the production focus for arms and weapons will transition towards a European framework. This new framework will ensure that European systems remain compatible with US weaponry, fostering greater interoperability within a European led NATO pillar.

Abstrakt

Der russische Angriffskrieg gegen die Ukraine erfordert westliche Munition und Waffensysteme, um die russischen Angriffe zurückzuschlagen. Die europäischen Verteidigungsindustrien sind jedoch nicht in der Lage, der Ukraine ausreichende Hilfe zu leisten und gleichzeitig ihre eigenen Bestände aufzufüllen, was im Falle eines Übergreifens des Krieges auf EU- oder NATO-Mitgliedstaaten von entscheidender Bedeutung wäre. Die Unzulänglichkeit der europäischen Rüstungsindustrie kann auf eine Vielzahl von Faktoren zurückgeführt werden. Dazu gehören politische Fragen, historische Zusammenhänge und industrielle Schwachstellen. In dieser Master These wird ein dreidimensionales Modell verwendet, das aus einer nationalen, einer europäischen und einer transatlantischen Dimension besteht. Sie untersucht die Herausforderungen, mit denen die größten europäischen Verteidigungsindustrien konfrontiert sind und konzentriert sich dabei auf Deutschland, Frankreich und das Vereinigte Königreich. Mit Hilfe der Realismus-Theorie analysiert der Autor, wie sich die Herausforderungen auf nationaler Ebene auf die europäische Zusammenarbeit in Bezug auf die Verteidigungsindustrie und die gemeinsame Beschaffung auswirken, die wiederum die Rolle der USA, über die NATO, in der europäischen Verteidigungsarchitektur beeinflussen. Die These zeigt, dass die Herausforderungen der europäischen Rüstungsindustrien die europäische Sicherheit in hohem Maße von den USA bei Standardwaffensystemen und von China bei Rohstoffen abhängig macht, die für die Waffenproduktion benötigt werden, was das Streben nach europäischer strategischer Autonomie (EU-SA) erschwert. Die These kommt zu dem Entschluss, dass die EU-SA aufgrund dieser Herausforderungen nur im Rahmen der NATO-Sicherheitsstruktur verwirklicht werden kann, in der sich die europäische Verteidigung zu einem stärkeren und verantwortungsvolleren Pfeiler innerhalb der NATO entwickelt. Darüber hinaus kommt die These zu dem Schluss, dass sich die künftige Lastenteilung zwischen den europäischen NATO-Mitgliedern und den USA zu einer Lastverschiebung entwickeln wird. Diese Verlagerung bedeutet, dass die USA zwar ihre militärisch-industriellen Interessen in Europa aufrechterhalten werden, der Schwerpunkt der Rüstungs- und Waffenproduktion jedoch auf einen europäischen Rahmen verlagert wird. Dieser neue Rahmen wird sicherstellen, dass die europäischen Systeme mit den US-Waffen kompatibel bleiben und eine größere Interoperabilität innerhalb einer europäisch geführten NATO-Säule gefördert wird.

Table of Contents

Preface.....	vi
Abbreviations	vii
Introduction	1
<i>Relevance</i>	<i>4</i>
Chapter 1	5
<i>Methodology</i>	<i>5</i>
Research Design.....	5
Data Collection.....	6
<i>Theoretical Framework.....</i>	<i>7</i>
Realism	8
Defense Industrial Base.....	11
Strategic Autonomy Theory	12
Collective Action Theory	16
Chapter 2 – Challenges Facing the EDIBs: A Case Study of Germany, France, and the UK	19
<i>Germany – A Neglected Arms Industry Playing Catch Up</i>	<i>19</i>
Short-Termism.....	20
Bureaucracy	22
The Capacity Problem.....	23
<i>France – A Difficult Switch into a War Economy</i>	<i>25</i>
Labor Shortage.....	26
Short-Termism.....	27
Supply Chain Issues	28
<i>The UK – A Broken Defense Procurement System</i>	<i>29</i>
Capability Gaps.....	31
Short-Termism.....	32
Supply Chain Issues	33
Chapter 3 – The Fragmented EDIBs: A Challenge for a Joint European Defense capability.....	35
<i>The European Defense Industrial Strategy</i>	<i>35</i>
<i>Political Challenges.....</i>	<i>36</i>
The Strategic Cacophony Problem.....	36
The Strategic Fit Problem	38
The Specialization Dilemma	39
<i>Economic Challenges.....</i>	<i>39</i>
Fragmentation	40
Short-Termism.....	41
<i>Military Challenges</i>	<i>42</i>
Defense Planning Alignment.....	42
Joint Procurement.....	43
Chapter 4 – Strategic Autonomy: The Dependency on the United States and China	44
<i>Historical Dependence on the United States.....</i>	<i>44</i>
The Origins of US Dependency	44
Varied Dependencies on US Arms	45

<i>Dependency on China</i>	47
The EU's Critical REE Dependence	47
China's Grip on Cotton Linter Supply.....	48
<i>European Ambitions for Strategic Autonomy</i>	49
Complications in Achieving EU-SA	49
EU-SA: Three Scenarios Unfold	51
Chapter 5 – The Evolving Role of the EU's Cooperation with NATO	52
<i>Biden vs. Trump: Differing Trajectories for Europe</i>	52
Trump's Potential NATO Disruption.....	52
NATO Outlook Under Biden.....	53
<i>From Burden Sharing to Burden Shifting</i>	54
Europe's Defense Spending Surge	54
Strategies for Burden Shifting.....	55
<i>EU and NATO Operability</i>	57
A Stronger European NATO Pillar	57
UK's Post-Brexit Security Role	58
Conclusion	59
Bibliography	62

Preface

The idea for this thesis originated during my exchange trimester at Stanford University. Under the guidance of Rose Gottemoeller, I began exploring the challenges confronting the German Defense Industrial Base. As I delved into my research, it became apparent that while Germany often faces criticism for its military capabilities in Europe, it is not alone in encountering such challenges. I was intrigued to expand this research in the broader context of the European strive for Strategic Autonomy. With Rose Gottemoeller's insights as the former Deputy Secretary General of NATO, I not only examined the current state of affairs but also contemplated the implications of the challenges facing European Defense Industrial Bases for NATO's future. This preliminary research provided me with an excellent case study on Germany's DIB which I used as a foundation for this thesis. When I returned to Vienna, I took a course on Transatlantic Relations, taught by my thesis supervisor Professor Robert Schuett. This course provided me with a deep understanding of the underlying political dynamics that have shaped transatlantic relations throughout history, greatly enriching the theoretical framework on which my thesis is built. During this course, I wrote a paper speculating on whether a hypothetical Trump presidency would lead to a withdrawal from NATO. Some of the findings from this exploration were incorporated into the Chapter four of my thesis. I would like to thank both Professor Schuett and Professor Gottemoeller for their guidance and feedback which has been a tremendous help in my thesis writing journey at the Diplomatic Academy of Vienna.

On my honour as a student of the Diplomatische Akademie Wien, I submit this work in good faith and pledge that I have neither given nor received unauthorized assistance on it.

Abbreviations

ARES	Armament Industry European Research Group
ASAP	Act in Support of Ammunition Production
ASCOD	Austrian Spanish Cooperation Development
BAAINBw	Bundeswehr Equipment, Information Technology, and In-Service Support
CFSP	Common Foreign and Security Policy
CRMA	Critical Raw Materials Act
CSDP	European Common Security and Defense Policy
DE&S	Defense Equipment and Support
DGA	Direction générale de l'armement
DIB	Defense Industrial Base
EDA	European Defense Agency
EDC	European Defense Community
EDF	European Defense Fund
EDIB	European Defense Industrial Base
EDIP	European Defense Industry Program
EDIS	European Defense Industrial Strategy
EDTIB	European Defense Technological and Industrial Base
EEC	European Economic Community
ESDI	European Security and Defense Identity
EU-SA	European Union Strategic Autonomy
FCAS	Future Combat Air System
GDLS-UK	General Dynamics Land Systems UK
IOC	Initial Operating Capability
KMW	Kraus Maffay Wegmann
MGCS	Main Ground Combat System
MoD	Ministry of Defense
NATO	North Atlantic Treaty Organization
NSS	National Security Strategy
PESCO	Permanent Structured Cooperation
REEs	Raw Earth Elements

Introduction

The war in Ukraine caused a shift in the security environment of Europe. On the 24th of February 2022, Russian troops invaded Ukraine and two and a half years later there is no end of the war in sight. From one day to the other, European countries with close relationships to Russia, anchored in their energy dependencies, had to dismiss the idea that the specter of war in Europe had been relegated to the annals of history books. The new reality for the European continent to be at war with the East has never loomed closer than since the end of World War II in 1945. European leaders quickly responded to the changing environment by announcing measures to enhance the defense capabilities of their countries. French President Emmanuel Macron pushed for a transition to “war economy” within the French defense industry, while German Chancellor Olaf Scholz declared a *Zeitenwende*, entailing a fundamental shift in the country’s security and foreign policy (Vincent, 2024 and DGAP, 2022). German Defense Minister Boris Pistorius stated in 2023 “We have to get used to the idea again that there could be a threat of war in Europe. We must become fit for war. We must be able to defend ourselves and prepare the military and society for it” (Pistorius, quoted in Knight, 2023). To become “fit for war” translates into increasing defense spending, especially investing into the European defense industrial bases (EDIBs), given not only the threat of Russia but also the uncertainty of a future US protective umbrella over the European continent. In the 2024 US presidential campaign, former president Donald Trump has threatened that if he were to become president, he is not willing to protect European NATO nations. In fact, he encouraged Russia to “do whatever the hell they want” because European Nations “gotta pay” (Sullivan, 2024). Although he has softened his rhetoric, stating that he would protect Europe if they “play fair”, there exists a level of uncertainty among European leaders concerning the US commitment to European security (McDonald, 2024).

Europe has been under the protective umbrella of the US since the beginning of NATO’s creation in 1949. As the dependency of Europe on the US grew, especially during the Cold War, skepticism began to surface regarding the inequities in burden-sharing within the alliance. Starting with George W. Bush in 2002, there were calls for European NATO countries to increase their military contributions to the alliance. This was also echoed by President Obama in 2016 when he remarked that “sometimes Europe has been complacent about its own defense,” emphasizing the importance of every NATO member contributing 2% of their GDP

(Dale, 2024). The US criticism is valid, given that in 2023 only 11 out of 30 NATO members have met the 2% target (ibid). The US critique is largely aimed against Germany. Compared to France and the UK, which with Germany make up the three largest military powers in Europe, Germany has the lowest defense expenditure as a percentage of GDP. Between 2014 and 2019 Germany spent between 1.19% to 1.35% of their defense expenditure as a percentage of their GDP (NATO, 2023). In 2023, Germany reached 1.66% and according to a defense ministry spokesperson, Germany is to reach the 2% target in 2024 (NATO, 2024 and Ratz, 2024). France's share ranged between 1.78% to 1.82% from 2014 to 2019 and was at an all-time high with 1.90% in 2023 (NATO, 2024). The UK alone of the three countries which has continuously reached the 2% target, ranging from 2.03% to 2.14% between 2014 to 2019 and reaching 2.28% in 2023 (NATO, 2023 and NATO, 2024). The numbers showcase that defense spending trends in Europe are increasing, but only referring to defense expenditure as a percentage of their GDP provides a distorted reality. While demand and political willingness to increase defense spending are present, Europe is facing a complex web of interconnected problems that delay the process of rearmament significantly. The continent finds itself struggling with the consequences of the dependencies it has cultivated over the past decades, now facing the harsh realities of their repercussions in the face of geopolitical threats from Russia and US protectionism. In a speech at Sorbonne University in Paris in April 2024, President Macron stated "The era of basing our production in China, of delegating our defense to the US, and of getting our energy from Russia is over. The rules of the game have changed" (Caulcutt, 2024). While the rules of the games have changed, European countries are using different rule books to address these security threats, with differing national priorities and security strategies.

This thesis aims to analyze the challenges facing European defense cooperation, beginning with an analysis of the national Defense Industrial Bases of Germany, France, and the UK as the most important European defense countries. It aims to assess the impact of their challenges on European strategic autonomy and explore the broader implications these challenges pose for the future of NATO burden sharing, necessitating an understanding of burden shifting dynamics. The question at the center of this thesis is "Why do challenges within the European Defense Industrial Base and the Pursuit of Strategic Autonomy have consequences for NATO Burden Sharing?" Europe's defense dilemma involves three interconnected dimensions: national, European, and transatlantic, posing complexity through their interrelations. Chapter two of the thesis analyzes the national dimension, the DIBs of Germany, France, and the UK,

focusing on the internal and external challenges which persist in the DIBs. Primarily, the focus lies on the major arms industries for each country, including Rheinmetall in Germany, Thales in France, and BAE Systems in the UK. Focus is put on the political and economic challenges including the procurement process, the resource availability, the relation between arms industry and government as well as the bureaucracy associated with arms procurement.

The third Chapter analyzes how the national challenges directly translate into the European context, by magnifying the EU's attempt to align their defense interests and resources, leading to a collective action problem. The collective action problem essentially hinders collaborative efforts in Europe for defense procurement due to individual incentives. National defense matters lie outside the competence conferred upon the EU in its founding treaties, as the EU is primarily an economic union. Historically, crises have demonstrated that EU members tend to initially address challenges at the national level. The collective action problem spans political, military, and economic dimensions, creating substantial hurdles to cooperation and partnership. Furthermore, it complicates the EU's pursuit of strategic autonomy and highlights Europe's reliance on external markets, such as China for raw materials and the US for off-the-shelf weapon systems. This dependency introduces the transatlantic dimension of the thesis discussed in Chapter four. The US has established a multifaceted relationship, consisting of a US-provided nuclear umbrella and significant influence in shaping the strategic landscape in Europe (Meijer and Brooks, 2021). This has provided the US with large influence on how to shape the direction of European defense (Alvarez-Couceiro, 2023). The Chapter examines the dual strategy of the US, which is to advocate for increased European defense contributions while also lobbying to ensure sustained procurement from US manufacturers, hindering efficient European cooperation. Moreover, the analysis focuses on the dilemma the majority of European nations are facing as a result of their fragmented and overburdened DIB; namely supplying weapons to Ukraine while simultaneously replenishing their own domestic stocks. While immediate procurement of US weapon systems offers a comfortable short-term solution, it deepens the long-term reliance on the US. The Chapter also critically assess Europe's arms industry dependency on China for raw materials and analyzes alternative options, such as Greenland by discussing the European critical raw materials act. The Chapter then explores EU-SA challenges and outlining three potential trajectories.

Chapter five prognosticates a potential future trajectory for NATO, leaning on the analysis of the previous Chapter. It highlights the evolving dynamics within NATO, marked by a transition

from burden-sharing to burden-shifting, for which Europe's defense capabilities are not yet ready. NATO has sustained Europe's dependence on the US, influencing both European defense autonomy and burden-sharing within the alliance. However, NATO's current objectives diverge from the original aim articulated by Lord Ismay in 1949, which sought "to keep the Soviet Union out, the Americans in, and the Germans down" (Schake and Pepe, 2019). The US' primary threat lies with China rather than Russia, shown by the gradual but definite strategic shifts in US foreign policy towards the Indo-Pacific. As the threat of Russia continues to persist in the future, regardless of the outcome of the war, NATO's new role for Europe has transformed into keeping the Americans close, Russia down and China far away (Puglierin and Zerka, 2023). This underscores the importance of understanding how the challenges within EDIBs will shape the future of NATO burden sharing.

Relevance

Europe's defense capabilities are pertinent, not only within current security challenges, but also in the post-war years. The trajectory of European defense capabilities in the coming decade will profoundly influence Europe's position among global superpowers. Assessing the current security landscape in Europe, it becomes apparent that European countries require a functioning and operational military to defend against a potential worst-case scenario: a war involving European nations. Despite doubt regarding the Ukrainian war spreading to NATO territory, the importance of maintaining a strong EDIB remains essential for two reasons. Firstly, in order for Ukraine to sustain the war against Russia, they need weapons and military equipment from the West. Without the billions in military aid from Europe and the US, Ukraine would have lost the war long ago. To sustain ongoing weapon and aid deliveries to Ukraine, EDIBs must possess both capacity and political determination. Secondly, states exist in a self-help system which entails that they should have the capabilities to build up military capabilities and make strategic calculations to survive in an anarchic nature. This anarchic nature suggests a strategic imperative: ensuring a robust DIB which is capable of defending national borders in the worst-case scenario. The demand to reinforce and invest in EDIBs did not emerge suddenly due to Russia's invasion of Ukraine. For many years, especially in Germany, the call for military modernization and investments have been suppressed by pacifist political agendas and a prevailing anti-military sentiment rooted in the nation's history. Hence, the thesis' relevance did not emerge from the war; instead, the war provided a final wake-up call, making the issue more tangible for the European population at large.

The thesis' relevance transcends national borders by addressing joint defense cooperation, a crucial aspect for understanding the future of NATO. The main priority of the 2022 US National Defense Strategy concerned “defending the homeland, paced to the growing multi-domain threat posed by China” (Lopez, 2022). Despite the Biden Administration’s commitment to supporting Ukraine, the upcoming US election could potentially disrupt this assistance. If Trump wins, there is a substantial risk of a reduction or cessation of aid to Ukraine. This would entail that the Western responsibility to support Ukraine would solely rest on European shoulders. To bolster European self-reliance and reduce the dependence on the US, a new security architecture is needed in which the US and the European states operate within NATO, with the EU taking on a more prominent defense role. The US has the central role in NATO’s military credibility, fostering a historical dependency. As Europe pursues strategic autonomy in its defense initiatives, crucial questions arise about the implications for a shift of the military credibility to European nations within NATO. The alliance must reaffirm a robust commitment to the indivisibility of security between the US and Europe. Without such a commitment, there is a real risk, that “the transatlantic bargain could well begin to come undone” (Sloan, 2020, p.18). Therefore, it is highly relevant to analyze the evolving position of NATO in order to understand the possible future trajectories of the alliance and shed light on the complexities of transatlantic relations within the new global security challenges.

Chapter 1

Methodology

Research Design

This thesis utilizes a qualitative research design featuring a three-dimensional model, offering insights into the interconnected levels of this research. The intricacies of European strategic autonomy can only be understood in their full context which span a national, European, and transatlantic dimension. Therethrough, the thesis is able to illustrate the deep interconnectedness between the EDIBs, collaborative European defense challenges, and burden-shifting dynamics within NATO. The framework provides the reader with a deep analysis on the current challenges Europe is facing. The foundation of the research design consists of three case studies to compare and contrast the status quo of the three strongest

EDIBs. The case-by-case analysis aids the reader to understand the problem of Europe's strive for strategic autonomy from a national point of view, including diverging national perspectives. This distinction is particularly relevant when examining how challenges in EDIBs impact European defense procurement, reliance on the US and NATO interoperability. Moreover, these case studies provide the reader with a holistic explanation on the challenges of the largest EDIBs, making an impactful contribution to academia on this subject matter.

The choice for the case studies (Germany, France, and the UK) is grounded in the 2022 SIPRI report on the "Top 100 arms-producing and military services companies in the world" (SIPRI, 2023). The United Kingdom, France and Germany represent 7, 5 and 4 companies, respectively, in the top 100, making them the strongest European defense industries. One limitation of the case selection is that these countries do not offer a well-balanced geographic distribution across Europe. This becomes particularly important when addressing the challenges associated with varying geographical threat perceptions in light of attempting to harmonize the European arms industry. Germany and France, situated in central and southern Europe, play key roles, but the arms industries of all European countries are crucial for evaluating EU-SA. Due to time constraints, it is not possible to conduct an in-depth analysis on every major arms industry in Europe, but the premises is as follows: If EU-SA materializes, it will begin in Berlin and Paris. Therefore, by focusing on the challenges in the major EDIBs, one can apply these to smaller European nations. Although the UK is no longer in the EU, it continues to play a significant role in European security because a major security threat for EU Member States also poses a concern for London (Mölling and Giegerich, 2018, p.2). The UK provides a leading contribution to European security through its intelligence services and military capabilities (ibid). Theoretically France and the UK, despite expressing their dissent, are the countries capable of offering extended nuclear deterrence to NATO (Horovitz and Wachs, 2023, p.1). This inductive research, which specifically examines the challenges faced by DIBs in three major European countries, will ultimately provide a general conclusion applicable to the rest of European DIBs. There are two limitations to this. Firstly, the chosen EDIBs potentially neglect unique geopolitical challenges faced by former Soviet Eastern European countries that are not covered by Germany, France, and the UK. The second limitation concerns the heterogeneity of the EDIBs as they vary in size, structure, and priorities.

Data Collection

The thesis employs a qualitative research method, incorporating a mix of primary and secondary sources. For the analysis of the first Chapter, the thesis conducts three separate case studies on the challenges of the DIBs in Germany, France, and the UK. The research is based on various reports from think tanks as well as government reports that assess the procurement processes and bureaucratic structures. Moreover, it explores newspaper articles from well-known publishers such as “Tagesschau” in Germany, “le Monde” in France, “the Financial Times” in the UK and “Politico” in the US. The analysis in Chapters three and four is based on a comprehensive literature review drawing from a variety of sources. Alongside previously mentioned sources, this literature review primarily utilizes academic journal articles and think tank reports on the subject. Some of the most central think tanks include the Armament Industry European Research Group (ARES) which has published a vast variety of policy papers on France, Germany, and the UK. These policy papers provide tailored, country specific policy briefs. Another important think tank is the Center for Strategic and International Studies which publishes extensively on the strive for EU-SA and NATO burden sharing dynamics.

The thesis combines two disciplines taught at the Diplomatic Academy of Vienna: Political Science and Economics. The Political Science aspect is evident in the nature of the topic, which analyzes the defense challenges in Europe and their impact on NATO. It also includes a discussion of transatlantic and China-European relations, which are discussed from a military, security and economic perspective. The economic portion of the thesis focuses on the concept of economic growth of the arms industry, the procurement process of the arms industry which includes purchasing goods and services, scarcity of raw materials and the relationship between government and private industry.

Theoretical Framework

The theoretical framework consists of three theories and one concept which together provide a foundation for the analysis of this thesis. Realism is used as the theoretical lens through which the challenges of Europe’s DIBs are understood, as well as their wider European and transatlantic impact. Realism’s emphasis on material and hard power is crucial to this thesis, which centers on challenges faced by European DIBs. This base, comprised of diverse actors and entities responsible for inventing, producing, and delivering a nation’s military capabilities, are integral to this study and need to be understood in a realist context. Moreover, realism’s core assumption, that states exist in an anarchical nature, ties together the other theories of this

thesis. The strive for EU-SA is a response to the evolving threats and interdependence EU states are confronted with. The EU, being a community of states rather than a single state, does not conform to the classical realist assumption of single states existing in an anarchic environment. Instead, the EU strives to achieve greater independence from external influence by attempting to act as a single unit on the international stage. This introduces the collective action problem which is crucial for understanding the significant obstacles to achieving EU-SA. Despite the realist emphasis on material power, European states struggle to turn the theoretical discussions on enhancing national and cross-border DIB cooperation into practical outcomes. Through this network of theories and concepts, this thesis employs a three-dimensional model that analysis the challenges at the national, European and transatlantic level.

Realism

To comprehend the evolving geopolitical security landscape in Europe, realism provides an explanatory lens towards stronger European defense capabilities. There are two realist branches which are especially helpful in understanding the theoretical foundations of this thesis, namely classical realism and neorealism. To begin with, classical realism, as explained by Hans J. Morgenthau, provides the fundamental ideas about the status quo of current power politics. According to Morgenthau, the human lust for power, which he terms *animus dominandi*, brings mankind into conflict with each other (Morgenthau in Jackson, Sørensen and Møller, p.78, 2018). He writes that “politics is a struggle for power over men, and whatever its ultimate aim may be, power is its immediate goal [...]” (ibid). For Putin, the expansion of NATO presents a clear security threat to Russia and in order to be free from intervention, Putin mobilized his military power against the West, Ukraine being the central battlefield. Putin himself is the epitome of *animus dominandi*, as under his rule, Russia is a revanchist power, keen to restore the country to the former great power status in northern Eurasia (Masters, 2023). From the European perspective, Russia presents a threat to Europe, meaning that Europe has to mobilize their power in order to “organize themselves into a capable and effective state by means of which they can defend their interests” (Jackson, Sørensen and Møller, p.79, 2018). This anarchical state system, defined by the power struggle between states, leads to the justification of using force (ibid). A central normative doctrine of Morgenthau’s classical realism is that there exists a fundamental difference between morality of the public and private sphere. This leads to political ethics tolerating actions that would not be tolerated by private morality (ibid). The violation of private morality to defend national security can best be explicitly illustrated

in the nature of Russia's war against Ukraine. Putin's disregard for the human rights of Ukrainians serves as a stark example of prioritizing national interests over private ethical considerations. This difference can also be observed in a more nuanced form in Europe. As countries are increasing their defense capabilities, there exist some groups who regard it as morally wrong to increase defense capabilities, arguing that it will draw Europe into war. However, it is crucial for political leaders to prioritize national defense capabilities over private morality, especially to guarantee readiness to counter potential Russian threats. Thus, classical realism's "self-centered, self-regarding, and self-interested" nature explains the need for increasing European's defense capabilities as well as Russia's motivations (idem, p.80).

Another important theory, neorealism, was first outlined by Kenneth Waltz. This theory is grounded in some classical realist elements such as states existing in international anarchy but Waltz's explanation for state's behavior in international relations is rooted in structural constraints, not in human nature (idem, p.86). There are two major theories within neorealism; defensive neorealism as proposed by Waltz and offensive neorealism which was John Mearsheimer's contribution to the field. For defensive realists, international systems are characterized by a balance of power in which states seek security and survival to prevent any single power from dominating the system (idem, p.87). Waltz believes that great powers are satisfied with the existing balance of power and do not seek to change it as the offense-defense balance usually favors the defense (Lobell, 2017, p.16). A change in the system is only caused when the balance of power shifts between great powers as has happened after WWII (Jackson, Sørensen and Møller, p.88, 2018). In Waltz's words "the structure of a system changes with changes in the distribution of capabilities across the system's units" (Waltz, 1979, p.97). Thus, for defensive realists, any power that exceeds the need for security and survival is unnecessary. European countries building up their defense capabilities are therefore attempting to reach the minimum-security need rather than trying to change the status quo. Moreover, the position of the US to focus more of its attention towards China while ensuring that it does not get directly involved in the war in Ukraine can be understood as a form of selective engagement. This strategy is aimed at safeguarding US' crucial alliances while establishing priorities that ensure the protection of its vital interests (Art in Lobell 2017, p.16). The most compelling reason for the reluctance of the US and European countries to actively engage in the war concern the nuclear threats posed by Russia. The mutual assured destruction limits great powers such as the US to intervene, but weapons are not part of the structural system, introducing a limitation in Waltz's theory (Jackson, Sørensen and Møller, p.91, 2018).

Mearsheimer agrees with Waltz on the role of anarchy in the international system, but he argues that states are more aggressive than in Waltz's defensive realism (idem, p.93). Within offensive realism, major powers are incentivized to maximize their opportunity to gain power, thereby weakening their rivals (idem, p.94). Hegemony is their final goal as it maximizes the chances of survival in a system where states are in a constant struggle for power (Lobell, 2017, p.15). Thus, states should strive for primacy and block any rivals in the system (idem, p.16). While Russia may not present an immediate threat to the US' position in the global order, China emerges as a potential contender. Consequently, the US strategically concentrates its military presence in the Indo-Pacific region to maintain regional dominance. Additionally, it adopts an offshore balancing approach in Europe to prevent Russia from attaining regional hegemony (idem, p.16). An offshore balancing strategy allows the US to "husband the power upon which US primacy rests and minimizes the fear that US power provokes" (Walt in Lobell, 2017, p.16-17). Regarding Russia, Mearsheimer views the annexation of Crimea in 2014 as a defensive event, arguing that no Russian leader would tolerate an enemy of Moscow to move into Ukraine (Mearsheimer, 2014, p.82). According to him, the Western expansion into Eastern Europe has forced Russian reactions (Rösch, 2022, p.204). Both defensive and offensive neorealism offer valuable insights into the structural dynamics of the evolving military capabilities of the EU. While defensive neorealism emphasizes the pursuit of security and the maintenance of a balance of power, offensive neorealism highlights the quest for dominance among major powers. These theories help to explain the strategic behaviors of the EU and the US in response to emerging global challenges, such as the rise of China and the expansion of Russia.

Realism cannot be regarded as a homogeneous theory but should be understood as a theory with numerous strains that have different views and emphases. At the core of realism remains the focus on power, order, and survival in an anarchic global arena, but each strain of realism puts the emphasis on different aspects (Brands and Feaver, 2017). In the context of US realism, it can be observed that different forms of realism have steered American Foreign Policy in two major ways. Realism during the Cold War called for an active role of the US in the international arena, emphasizing a fine line between "energetic action blended with moderation" and "hard-headed power politics linked to a regard for partnerships and values" (ibid). Current academic realism, as outlined by Mearsheimer's defensive realism, has advocated for a withdrawal of the US from global affairs based on the belief that the international order can regulate itself and that the US can thrive in a more unstable world (ibid). This perspective within realism emerged

with the end of the Cold War, which removed the threat of an expansionist USSR from American Foreign Policy (ibid). It can be argued that the threat of China provides a reversal to classical American realism in the Indo-Pacific, but offshore balancing will continue to be the favored approach in the rest of the world to force local actors in Europe and the Middle East to assume greater responsibility for their own security (ibid). Another strain in realism is progressive realism which offers an alternative lens to traditional and academic realism by embracing the possibility of fundamental structural transformations in the international order towards justice and peace (Scheuerman, 2019, p.2-9). Robert Schuett's "progress through humility" argues that elements of Morgenthau's realism have progressive values such as diplomatic approaches, recognizing the limitations of human nature in the international system, and suggesting the potential for progress through rational approaches grounded in national security interests (Schuett, 2011, p.198). According to Schuett, progressive realism critiques the state-centered nature of realism which neglects other entities in international relations. This is important in the discussion of the EU becoming an autonomous actor within the NATO framework, given that within a classical realist perspective, the EU would technically not be considered a real actor since it is not a nation state. Yet, the EU's combination of national interests and global cooperation positions it as an important actor in the international arena.

Defense Industrial Base

The Defense Industrial Base (DIB) consists of a country's network of public and private industries which provide, produce, and supply different types of defense-related products, services, and materials to domestic governments and international markets (Nicastro, 2023, p.1). The DIB includes various entities that form the basis of the military operability of a country's armed forces, mainly private firms operating on a for-profit basis such as Rheinmetall, BAE Systems and Nexter (ibid). The private sector distinguishes between prime contractors and subcontractors. Prime contractors are suppliers that directly engage in contractual agreements with the government, while subcontractors are entities that supply prime contractors with the goods and services essential for fulfilling defense contracts (ibid). Other entities include not-for-profit research centers, university laboratories, and government-owned industrial facilities (ibid). Through these various entities, the DIB is able to cover all the needs of the military which is not limited to sophisticated weapon systems but also incorporates highly specialized operational support such as intelligence analysis, commercial technological equipment such as computers, or routine services including information

technology support (ibid). To have oversight over the size of DIBs, policymakers frequently divide it into different sectors according to their key products (ibid). For instance, entities specializing in tank production are categorized within the “tank industrial base” (ibid). This categorization aids analysts and policymakers in better understanding the diverse array of actors within the DIB. According to David G. Haglund, an international relations professor at Queens University, the states’ DIB must essentially fulfill two principles: “It must be able to provide for the normal peacetime material requirements of the country’s military; and it must be rapidly expandable to meet the increased demand of wartime or emergency situations” (Haglund, 2021, p.1). While these are ideal requirements, he maintains that no DIB can come close to fulfilling those ideal requirements (ibid). The largest dilemma he points out that confronts the DIB is the contradiction between “optimizing in the interests of security, armaments self-sufficiency, and minimizing, also ironically in the interests of security, the costs of weapons production” (ibid).

In France there are 5000 companies involved directly or indirectly in the DIB, providing over 400.000 jobs with 165.000 directly in the armament industry (Ministère de l’Europe et des Affaires étrangères, n.d.). Some of the largest companies in the sector are Dassault Aviation, Naval Group, Airbus Group, MBDA, Nexter, Safran and Thales (ibid). The French industry accounts for roughly 25% of the European capabilities. The UK also has a strong DIB which supports over 141.000 direct jobs linked to defense industries and further 78.000 jobs through industry supply chains (Williams, 2022, p.5). The Ministry of Defense reports that it has spent over £20 billion with the UK industry in 2021/22, of which 5% went to medium-sized companies (idem, p.10). Most of the money, £5.3 billion was spend on technical and financial services while £4.3 billion went into the Navy and £1.9 billion into the air force (ibid). Germany’s DIB holds a leading global position as the producer of air defense systems, precision-guided ammunitions, battle tanks, and diesel-electric submarines (Gady, 2023). The German DIB sector includes a workforce of over 135,000 people, with 55,000 employees directly engaged in arms industry production (Bücker, 2023). Entities within the DIB contribute an annual revenue of 30 billion Euros, making it the strongest arms industry in Europe, as claimed by Hans Christoph Atzpodien, the chairman of the Federal Association of the German Security and Defense Industry (ibid).

Strategic Autonomy Theory

The European Union defines EU-SA as the “capacity of the EU to act autonomously – that is, without being dependent on other countries – in strategically important policy areas” (Damen, 2022, p.1). This implies that the EU seeks to assert its autonomy in determining its priorities and making decisions regarding its foreign policy agenda through its internal institutions and politics (Lippert et al., 2019, p.5). This may involve cooperation with third parties or alone. In both scenarios, the aim remains to “set, modify, and enforce international rule” (ibid). There are three different dimensions of the term “autonomy” which can be categorized into autonomy *for*, autonomy *from* and autonomy *through* (Damen, 2022, p.6-7). Autonomy *for* entails a common vision and purpose aimed at achieving strategic objectives based on interests and values of the EU (idem, p.4). The major issue concerning the EU’s objectives regarding autonomy for achieving EU military capabilities is its highly divided nature, particularly between Germany and France. Autonomy *from* refers to the limitations which the EU faces in achieving independence from external influences, including reliance on US weapons and raw materials from China. The EU acts as an “intermediate level between its Member States on the one hand and the global environment of third countries and international organizations on the other”, meaning that the EU must navigate both of these interests to boost EU-SA (idem, p.8). Member States are more prone to object the widening of EU competences in areas where they prioritize national autonomy, such as in defense. These concerns originate from fears that increased EU defense competences might compete with NATO competences and negatively impact national trade and industrial policies (ibid). In the situation where the EU depends on a third country for strategic needs, EU-SA can become difficult if a country ceases to provide the necessary materials or protection (ibid). Autonomy *through* refers to the methods and capabilities, such as legislation and EU policies, that need to be developed to gain strategic autonomy (ibid). While the EU has strong legislative capacities in policy areas related to economy and the environment, it has only limited competences in defense-related policies. While these competences have increased over time, they remain small in comparison to the competences held by Member States or those of NATO (idem, p.7-8).

Strategic autonomy is not a binary choice, meaning that it does not refer to having or not having autonomy, but should be understood within a spectrum of varying degrees of autonomy and dependency (Fiott, 2018, p.7). In the words of Joseph Borell, “no one advocates the development of a fully autonomous European force outside NATO, which remains the only viable framework to ensure the territorial defense of Europe” (Kamiński, 2022, p.41). There are three main conceptual visions that reflect favorable and unfavorable dependencies within

the spectrum of EU-SA: autonomy as responsibility, autonomy as hedging and autonomy as emancipation (Fiott, 2018, p.2). These different visions provide a framework through which one can understand the burden sharing within NATO. Autonomy as responsibility envisions the notion that Member States should shoulder a larger burden within NATO (ibid). Within this vision, autonomy is not defined as autonomy *for* but rather as autonomy to independently conduct missions and operations through its own military capabilities, thereby falling into the dimension of autonomy *through* (ibid). Under this vision, Member States should advocate for more national defense-industrial autonomy but operationality and industrial autonomy do not have to be linked (idem, p.4). Especially for smaller Member States, buying American weapons strengthens national defense and increases their military's interoperability within NATO as they have access to "cutting-edge military technologies" (ibid). However, for larger defense industries in Europe, this may come at the expense of developing a strong national DIB (ibid). The following vision, autonomy as hedging, can be understood as a more secure version of autonomy that ensures that the EU defense structures are "autonomous and effective enough to take on a range of military tasks should the US gradually withdraw from Europe over time" (ibid). Therefore, hedging focuses on the industrial dimension within the EU, by stressing the need for Europe's defense-industrial autonomy (idem, p.6). Examples of hedging include the Permanent Structured Cooperation (PESCO) which aims to develop a certain level of "freedom of action of the Union and its autonomy" (ibid). Autonomy as hedging thus needs to be understood in terms of the EU not being able to have operational or political autonomy without industrial autonomy (ibid). The last vision, autonomy as emancipation, argues that both responsibility and hedging do not provide the EU with enough strategic autonomy to deal with the multipolarity of European security threats (ibid). This radical vision entails that the EU either has the capabilities to protect its interests and territory through its internally developed capabilities or it cannot (ibid). The logic of this vision is grounded in the belief that the EU not only seeks to undo dependencies from the past but also to prevent new dependencies (ibid).

The demand for EU-SA originated in the security and defense realm but has evolved to incorporate all large EU policy fields that have an external dimension, including trade, research and development, foreign policy, and digitalization (Kamiński, 2022, p.36). In light of the COVID-19 pandemic, strategic autonomy became a buzzword in Brussels, as it highlighted the dependency of the EU on outside countries, first for face masks and later for vaccines (ibid). The concept gained significant importance again during the Ukraine war, refocusing its emphasis on the security aspect. The concept of EU-SA is not new but has evolved significantly

within European public and policy discourse (Council of the EU, 2021). These crises have unveiled additional dimensions of the EU-SA framework, which historically primarily focused on the military and security realm. Since the origins of the creation of European organizations, starting with the European Coal and Steel Community, there has been a Western European strive for self-assertion within the bipolar political status quo of post WWII (Lippert et al., 2019, p.6). In 1950, France first suggested forming a European Defense Community (EDC) under the Pleven Plan (Hüttmann and Wehling, 2013, p.344). The plan failed in 1954 due to revisions that raised concerns, particularly from the French, regarding West Germany's potential remilitarization which was considered a threat to France's national sovereignty (Lippert et al., 2019, p.6). The rejection of the EDC resulted in the European Economic Community (EEC) relying on NATO for their security and defense requirements. This is considered the starting point of US primacy in the European defense and security realm (ibid). Through the US protection over Europe, the EC/EU was able to gradually develop its foreign policy and security aims through cooperation in three sectors: the common trade policy (1960s), the European Political Cooperation (1970s), and the Economic and Monetary Union (1980s) (ibid). The developments of the EC/EU towards an independent actor have advanced unevenly across various sectors, undermining the initial establishment of an EDC, which requires an exceptionally high level of pooling and transfer of sovereignty (ibid). Moreover, as the analysis illustrates, fundamental historical differences in the priorities of European autonomization between France and Germany, which continue to exist today, have relegated the idea to the background over the years (ibid). With the outbreak of the war in Kosovo in 1998, the concept of EU-SA gained momentum again as it became evident that the EU was unable to deal with an unfolding security crisis in its neighborhood (Kamiński, 2022, p.40). This led to the signing of the St. Malo Declaration in 1988, in which France and the UK agreed that "the Union must have the capacity for autonomous action, backed up by credible military forces, the means to decide to use them, and a readiness to do so, in order to respond to international crises" (CVCE, 1998). This deceleration was a building stone for the launch of the European Common Security and Defense Policy (CSDP), transforming the NATO initiated European Security and Defense Identity (EurLex, n.d.). The phrase, "Strategic Autonomy", was first mentioned 15 years later in the European Council conclusions on the EU CSDP in December 2013 and featured four times in the 2016 EU Global Strategy² (Damen, 2022, p.12). Within these documents, EU-SA refers to the need to bolster the EDIB, aiming to revise the CSDP framework under the Common Foreign and Security Policy (CFSP).

As the historical overview has portrayed, traditional EU-SA focuses predominantly on military security, but security involves a broader dimension, including food, energy, health, economic and digital areas (Kamiński, 2022, p.39). From the perspective of ordinary citizens in the EU, the number of hospital beds available (health security) might be more important than the number of tanks (military security) because the former has a higher direct impact on daily lives (idem, p.40). The interconnected nature of security highlights that EU-SA relations cannot be reduced to the military aspect. However, the Ukraine war and the shift in US foreign policy has refocused the strive for EU-SA on the security dimension (idem, p.39). While from an “ordinary citizens perspective” European military deficiencies might not dominate the daily security thinking, it is undeniable that in the broader context, it plays a crucial role in the reality of European security. Therefore, this thesis will exclusively employ strategic autonomy theory within a military dimension. This is not to imply that the military dimension is more important than another security realms, but it represents a central aspect of EU-SA in this thesis which centers around EDIBs, thereby constituting the core of European military security.

Collective Action Theory

The book “The Logic of Collective Action” by Mancur Olson provides an explanation on the theory of collective action (Olson, 1971). Olson explains that collective action refers to the belief that groups, consisting of individual actors that share common interest, will naturally collaborate to further their interests (Olson, 1971, p.1). The foundation for this assumption is the view that individuals in a group act in their self-interest, similar to how an individual would pursue a personal goal. Thereby the group will act collectively if it benefits them on an individual basis (ibid). However, Olson has argued that this assumption does not hold for larger groups. He argues that even if all individuals in a group benefit from achieving a common goal, there exists a reluctance of members in that group to act because the group’s objective are delegated to many members, making the individual cost of participating potentially higher than the benefit from collective action (idem, p.2). Once any member within a group provides a collective good, it becomes accessible to all other members within that group (Majone, 2014, p.2). An individual member of the group can only get a partial benefit of the expenditure made to obtain more of the collective good (ibid). This results in discontinuing the purchase of the good before reaching the optimal amount of that good for the entire group (ibid). Olson states that “unless there is coercion or some other special device to make individuals act in their common interest, rational, self-interested individuals will not act to achieve their common or

group interests” (Olson, 1971, p.2). This argument holds true even if there exists a unanimous agreement within the group about what the common good is and how it can be achieved (ibid). This is exemplified in the collective action problem concerning defense cooperation of the EU. Tom Valasek, former Slovak diplomat to NATO, argues that the way in which the European countries cooperate to fight wars contrasts the “insular manner in which most prepare for them [...] Yet in peacetime EU militaries revert to their national ways [...] This is a very wasteful way to build armed forces” (Valasek in Monaghan, 2023, p.4). As the European defense capabilities showcase, the major issue of the collective action problem is that every member is worse off than if they had cooperated.

The collective action problem for European defense cooperation consists of three dimensions: political, economic, and military (Monaghan, 2023, p.4). Within the political dimension, there are three challenges which are the strategic cacophony problem, the strategic fit problem, and the specialization dilemma (ibid). The “strategic cacophony problem”, as defined by Hugo Meijer and Stephen G. Brooks, concerns the significant divergences among EU Member States across various aspects of national defense policies, including threat perception (ibid). The core problem for cooperation among European arms industries is that divergent national defense policies make it difficult for arms industries to align their products and strategies. The strategic fit problem revolves around the factors which influence European defense cooperation including shared goals, strategic culture, and geography (Monaghan, 2023, p.5). The factors often include political and ethical issues about the use of force (ibid). An example is the demand of France to not exclude the option of using NATO forces in Ukraine, which is viewed with strong opposition by other European nations. This ethical alignment is not static, illustrated by the delivery of Leopard II tanks by Germany to Ukraine after months of debating the delivery, resulting in a “dynamic development of cooperation in defense” (ibid). This changing dynamic makes strategic fit extremely difficult because it has to be maintained in a changing political environment (ibid). The last problem in the political dimension the specialization dilemma. Specialization is understood as one country’s industry focusing on one singular product to enhance efficiency (ibid). However, the application of this theory in the defense procurement industry is limited, as defense goods are less responsive to market principles. The issue is exacerbated through the strategic cacophony problem because European states are limited to which capabilities they can give up or rely on by other states (ibid). This results in the specialization dilemma in which countries know that specialization would provide benefits, but they do not follow through (ibid). An example includes the joint tank plans for the Main Ground

Combat System (MGCS) between Germany and France which reached a deal in March 2024. Prior, it had caused conflict for months because the two nations could not agree on how to divide the work equally, being divided over who would specialize in the different components of the tank (Chazan, 2024).

The following dimension of the collective action problem involves the economic challenges, consisting of fragmentation and short-termism. The strategic cacophony has created a heterogeneous market in Europe which relies on demand and supply from national defense industries (Monaghan, 2023, p.5). In terms of demand, European states have prioritized the procurement of domestic defense equipment over cooperation with European arms manufacturers. Data from the European Defense Agency (EDA) reveals that from 2006 to 2015, collaborative defense procurement in Europe constituted less than a quarter of the total procurement (Meijer and Brooks, 2021, p.31). For example, only 32.6% of EU combat aircrafts have been collaboratively produced (ibid). The existence of these “compartmentalized national markets for weapons systems” led to an extremely fragmented EDIB, characterized by duplications and inefficiencies (ibid). This fragmentation has resulted in incoherence, incompatibility and capability gaps within Europe’s militaries, which currently operate 178 different weapon systems (Monaghan, 2023, p.5). In contrast, the US just operates 30 weapon systems, despite the EU having only half of the US budget (ibid). Another problem is short-termism which is a problem for two reasons. Firstly, it does not create trust between the government and the arms industries because arms industries are only willing to increase their production to a certain limit without having future security from long-term government contracts. As a result, European arms industries sell to the international market which leads to the second problem of European nations buying off-the-shelf equipment from outside of Europe (Monaghan, 2023, p.6). The final aspect of the collective action problem is the military dimension with three distinct challenges. The first challenge is defense planning alignment, referring to the non-alignment of procurement cycles and military requirements among European countries, making cooperative solutions difficult (ibid). The large variety in size and capabilities of European national militaries makes this problem more difficult (ibid). For example, the realization of the Eurofighter Typhoon was only possible when the majority of European nations prioritized the project at the same time (ibid). The next challenge in the military realm is joint procurement because it requires the managing of multinational organizations and structures, often leading to more costs and higher frictions (ibid). Nations also have various preferences with regards to requirements and incentives for joint procurement

which makes it difficult to align them (ibid). For example, the realization of the MGCS was prolonged because France and Germany could not agree on the requirements for the tank. The German arms producer Rheinmetall demanded a 130mm gun, while the French company Nexter focused on a 140mm gun developed in France (Noll, 2023). Another challenge in joint procurement is the “specificity dilemma” which arises when nations cooperate on easier items with low-specificity such as medical supplies compared to high-specificity weapon systems (Monaghan, 2023, p.6). The last problem concerns Multinational Operations which are gaining more complexity with the increased integration of complex weapon technologies (ibid). Primarily, this issue arises at the command-and-control level of multinational operations, where challenges like language barriers and interoperability issues can impede efficiency (ibid). These different challenges of the collective action problem build the foundation for the analysis of chapter two.

Chapter 2 – Challenges Facing the EDIBs: A Case Study of Germany, France, and the UK

Germany – A Neglected Arms Industry Playing Catch Up

Germany’s plans to boost military expenditure were unveiled in February 2022, as part of Scholz’s renowned *Zeitenwende* speech. During the speech, he proclaimed a pivotal shift in Germany’s security and foreign policy approach (DGAP, 2022). This was followed by the publishing of Germany’s first National Security Strategy (NSS), under the title “robust, resilient, and sustainable” in June 2022 (German Federal Government, 2022). Although the drafting of this document had been approved in December 2021, the urgency behind its completion was heightened by the Russian invasion of Ukraine (Malhotra, 2023). The NSS outlines a commitment to ensuring Germany’s security and protecting its values through integrated security, emphasizing collaboration. It also acknowledges Germany’s responsibility for peace and stability, particularly regarding Russia’s aggression against Ukraine and the role of Germany in the changing global security landscape to defend democracy and uphold human rights (German Federal Government, 2022, p.11-16). The NSS signaled Germany’s commitment to modernizing its military. However, a transformation has occurred only to a limited extent. The announcement by German defense minister Pistorius in April 2024 “to restructure the *Bundeswehr* in such a way that it is optimally positioned even in the event of an emergency, in the event of defense, in the event of war,” reflects the general positive outlook

in German politics, yet it overlooks the challenges confronting the DIB and military (Cienski, 2024). The challenges for Germany's DIB run deep, rooted in decades of negligence for Germany's *Bundeswehr*. Addressing these issues will require decades before Germany can take on a prominent position in European defense. The challenges which this thesis explore include major procurement challenges, including the problem of short-termism, bureaucratic hurdles, and the capacity problem.

Short-Termism

The German government's website states that Germany is providing support to Ukraine by delivering weapons and equipment through the government's armaments aid program, resulting in over 32 billion Euros sent to Ukraine (Bundesregierung, 2024). This has only been made possible by maximizing production in the arms industry. Across Germany, efforts have been made to maximize production output by hiring additional staff, implementing extended shifts, acquiring new machinery, and prioritizing the production of urgently needed weapon systems at the front lines (Kayali et al., 2023). For example, Rheinmetall has committed to ramp up its annual production of 155-millimeter artillery shells from 450,000 to 600,000 units (ibid). This expansion entails enhancing its current production facilities in Hungary and constructing a new powder factory in the German state of Saxony, necessitating an investment of 750-800 million Euros (Pearson and Wilkes, 2023 and Kayali et al., 2023). In 2023, Rheinmetall achieved a milestone with consolidated sales reaching nearly 7.2 billion euros, setting a new record (Inverardi and More, 2024). However, the company reported an order backlog of €38.3 billion, reflecting a significant increase of €12.2 billion compared to the previous year. (ibid). Hence, while there is a real increase in production, the arms industry's peace time operation mode for the past decades is not prepared to swiftly transition into emergency mode. Bridging this gap will require significant investment worth billions of euros and several years. The arms industry and government clash over long-term contracts due to differing interpretations and definitions, leading to government reluctance in issuing them. Industry representatives advocate for contracts spanning ten to 15 years as a means to mitigate risks, whereas governments tend to favor shorter durations, such as annual or multiyear contracts ranging from 2 to 5 years (Aries et al., 2023, p.13). The hesitancy to invest in long-term contracts can be partially explained by a breakdown of the defense budget within Germany's medium-term financial plan up to 2027 (Mölling and Schütz, 2023, p.1). The German defense budget for 2024 includes 51.8 billion Euros allocated by the Ministry of

Defense, 19.2 billion Euros from the Special Fund, and an additional 7 billion Euros from various other budgets (ibid). Thus, Germany has 78 billion Euros for defense spending at its disposal (ibid). While current military expenditures add to the short-term operational readiness, it does not meet the long-term goal of modernizing Germany's military (ibid). A major challenge will arise in 2026, when the 100 billion Special Fund is spent, leaving a massive hole in Germany's defense budget (ibid). For 2024, the defense spending plan deviates from the original intention outlined in the Special Fund of equipment modernization and focuses more on the maintenance of materials like spare parts, thereby enhancing the operational readiness of the *Bundeswehr* (ibid). This leads to challenges for the arms industry as projects which were not initially designated for the Special Fund are now depleting funds allocated for expensive long-term projects. This hinders the establishment of long-term contracts between industries and the German government.

The arms industry is only willing to increase production up to a certain limit without the assurance of long-term government contracts. The CEO of Rheinmetall, Armin Papperger, proclaims this clearly, "I need orders. Without orders, I won't produce anything [...] Any shortage of ammunition won't be the defense industry's fault. Industry can deliver what's needed" (Pearson and Wilkes, 2023). The reluctance by the German government to issue long-term contracts can be attributed to two major reasons. Firstly, the arms industry operates within a niche market without private demand, thus making these companies heavily dependent on government contracts (Kayali et al., 2023). Secondly, arms companies are reluctant to invest without secure long-term contracts, as the demand may decrease once the war in Ukraine ends and governments are pressured to reallocate money to other priorities (Aries et al., 2023). It is also noteworthy that the growing influence of the European Environmental, Social, and Governance agenda has made it increasingly difficult for defense companies to secure financial support. The tensions are further exacerbated by the fact that Germany has announced substantial special funds to modernize the military, boost production and close the procurement gap (ibid). However, the government's actions often fall short of its rhetoric, as it continues to offer mainly short-term contracts (Schütte, 2023). An example is the current ammunition shortage. The *Bundeswehr* requires ammunition orders exceeding 20 billion Euros to replenish stocks for various weapon systems, yet only 200 million Euros are scheduled to be contracted between 2023 and 2024 (Aries et al., 2023). Arms industries are unable and unwilling to sustain production facilities unless they have a "clear forward visibility of demand" (ibid). The Senior Vice President at KNDS, Marcel Grisnigt, articulates this crucial point by stressing "Clarity is

not signals or promises, it's contracts — it's simply contracts, long-term, firm contracts” (Kayali et al., 2023).

Bureaucracy

A cross cutting issue within Germany is excessively burdensome bureaucracy, which also complicates the procurement of military goods. In Germany, the Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support (BAAINBw) is tasked with procuring military equipment (Bosen, 2022). The bureaucratic process in the BAAINBw can be explained as follows: when the *Bundeswehr's* armed forces identify a need for new equipment, the authorities evaluate whether the requirement can be met internally. If internal resources are not sufficient, soldiers work together with the administration to develop a detailed catalogue outlining their specific equipment needs, which is reviewed and approved by the general inspector of the *Bundeswehr*. Following this, the procurement team of the BAAINBw translates these demands into technical service descriptions, which then undergo another round of approval. The civil servants at the BAAINBw must adhere to public procurement law, which requires that all services and products must be tendered across Europe to align with the EU's principles of economic competition (Lenhardt, 2022 and Sonnenberg, 2023). Prior to the war in Ukraine, the BAAINBw has already been facing criticism for its cumbersome processes and complex bureaucracy, which were exacerbated by the conflict as the agency struggles to adapt to the heightened demand (Tenenbaum and Péria-Peigné, 2023, p.22). The decades of military cutbacks have created a “corporate culture” of austerity within the BAAINBw, building their processes around saving rather than spending money (ibid). Pistorius has acknowledged the bureaucratic hurdles within the BAAINBw and has proposed several ways to “remilitarize” the BAAINBw (Tenenbaum and Péria-Peigné, 2023, p.22). Certain reforms have achieved moderate success such as a law that permits the “direct buying” of products which cost less than 5000 Euros (Bosen, 2022). Through an EU exemption related to national security reasons based on Article 364 TFEU, such goods can be procured directly (Helmonds et al., 2023, p.29). The new law allows the BAAINBw to award contracts more quickly and efficiently until the end of 2026 (Deutscher Bundestag, 2022). Additionally, the law guarantees that foreign companies deemed inadequate in safeguarding Germany's security interests will be disqualified from participating in contract tenders, enabling smaller arms companies to engage in *Bundeswehr* procurement processes (ibid).

Apart from new legislation, Pistorius has also initiated personnel changes in the BAAINBw by appointing Annette Lehnigk-Emden as its new head. During Lehnigk-Emden's presidency, the BAAINBw has become more flexible and faster as she deleted half of the 160 existing internal rules and regulations (Trams, 2024). However, most procurements, especially those funded by the 100 billion euro special fund, entail significant volume numbers. Lehnigk-Emden argues that despite the BAAINBw's efforts to streamline processes, many of these procurements are delayed, which she blames on the long delivery times of the arms industry (Bosen, 2022 and Trams, 2024). Other analyses are at odds with Lehnigk-Emden's judgment. Despite the implementation of reforms such as the Acceleration Procurement Act, intended to accelerate equipment and material procurement, the BAAINBw remains burdened by bureaucratic obstacles. Conflict researcher Michael Brzoska from the Institute for Peace Research and Security Policy notes that while the specifications of the Acceleration Act may appear promising in theory, the presence of around 1000 vacant positions in the procurement office, coupled with concerns about civil servants' ability to fulfill complex legal requirements, often leads to inaction when faced with uncertainty, resulting in significant setbacks (Stuchlik, 2024). The large influx of money into the BAAINBw through the special military fund has increased interdependence between the German arms industry and the procurement's bureaucracy due to increased order volume and a demand for faster delivery. (Brzoska, 2023, p.33). Thus, bureaucracy continues to be a problem for the German military procurement service and even if the bureaucracy decreases, the BAAINBw will face its next large problem in 2027 when the 100-billion-euro special fund is depleted, creating a large gap in procurement.

The Capacity Problem

Another major problem for the *Bundeswehr*, caused by the decades of underfunding in the arms industries, is a capacity problem. The arms industry has an optimistic outlook, asserting confidence that it can deliver what is required by the German military. This assertion should be taken with a degree of skepticism. The question is not whether the industry can deliver, but rather how long it takes? The *Bundeswehr* is confronted with the fact that the German arms industries primarily specialize in complicated and custom-made production, which prolongs ramping up production. Moreover, the German arms industries are facing supply chain issues regarding semiconductors and raw materials (Gady, 2023). To provide a concrete example, in November 2022, Armin Papperger announced that the waiting time for specialized tank steel armor is between eight and 12 months, while the delivery time for electronic tank components

is 24 months (Aries et al., 2023, p.8). This has to do with the customized process of tank manufacturing in Germany, involving only a limited number of employees, each requiring extensive yearlong specialized training (Endt, 2023). CEO of Kraus Maffay Wegmann (KMW), Ralph Ketzel, estimates that an increase to larger scale tank production requires at least two to three more years (ibid). One striking example showcasing the problems surrounding German tank production is the “Puma”, the successor of the “Marder”, having entered serial production in 2015 through a joint venture of Rheinmetall and KMW (Kramper, 2023). The tank has become the problem child of the German military, gaining waves of negative news coverage, especially during an exercise of the 37 Armored Infantry Brigade in 2022 when all 18 Puma tanks broke down (ibid). Until December 2023, Rheinmetall was supposed to deliver 15 Puma tanks to the *Bundeswehr*, but as of March 2024 only ten have been delivered (Hinzmann, 2024). Of these ten tanks, none are fully operational for battle due to security concerns regarding the built-in fire extinguishers (ibid). Thus, as of 2024, the 37 Armored Infantry Brigade, which was designed in 2023 to have an important role in NATO’s Rapid Reaction Force, is without a single operational tank. The Puma’s problems have been persisting for almost 25 years, but the prolonged production is not just caused by manufacturing flaws. The *Bundeswehr* has over the years requested hundreds of additional features for the tank, the latest being a colored display for the onboard computer and a retrofitted rear-view camera (Endt, 2023). In May 2023, the German budget committee approved the acquisition of 50 Puma tanks for the *Bundeswehr*, amounting to 1.5 billion Euros which are to be paid by the 100 billion special fund (Heiming, 2023). The current improvements to the Puma will take an additional five years, meaning that the Puma will only be ready for battle in 2029. This is 15 years after it has been initially released.

The capacity problem in Germany not only results in capability gaps within its own borders, as illustrated by the issues with the Puma, but also poses challenges for its allies, most urgently for Ukraine, due to the inability to deliver ammunition. Volodymyr Zelensky sums up the problem in his infamous statement “I need ammunition, not a ride” (Ataman and Sebastian, 2023). Ukraine urgently requires 155-millimeter caliber ammunition, needed for artillery systems like the M777 howitzer. In February 2024, Josep Borrell wrote that “Ukrainian soldiers are hampered in their fight against the aggressor – because they lack ammunition” (Barigazzi, 2024). The numbers speak for themselves. Ukraine is shooting almost 6000 rounds of 155-millimeter ammunition daily while the Russians are shooting up to 10,000 rounds (ibid). According to Ukrainian Defense Minister Oleksii Reznikov, Ukraine needs 350,000 shells per

month to effectively fight back Russian advancements, resulting in an annual demand of 1.5 million artillery shells (ibid and Pearson and Wilkes, 2023). However, Rheinmetall can currently only produce 450,000 artillery rounds per year. Although plans are underway to open an ammunition factory in Ukraine, projections suggest that production will only reach 600,000 by 2025 (Reuters, 2024 and Pearson and Wilkes, 2023). Rheinmetall has received a long-term contract by the *Bundeswehr* until 2029, for the production of several hundred thousand artillery shells valued at 1.3 billion Euros (Rheinmetall, 2023). This is one of the few long-term contracts issued, crucial for boosting long-term production capacity to meet requirements not only in Ukraine but also to replenish domestic stockpiles. In the larger context, the discrepancy between ammunition supply and demand poses a significant challenge for Germany's DIB, particularly considering Rheinmetall's backlog of 38.3 billion euros, of which 10 billion euros are attributed to ammunition (Ataman and Sebastian, 2023). As long as the war continues in Ukraine, catching up to these backlogs will pose a significant challenge, thereby creating a substantial risk to Germany's military readiness (ibid). Germany's current ammunition reserves would last only a few hours to a few days in a wartime scenario.

France – A Difficult Switch into a War Economy

France has adopted the most assertive rhetoric in advocating the need for increased military production. During a speech in June 2022, President Macron asserted that a re-evaluation of the military planning law was needed which should lead France into a “war economy” (Vincent, 2022). The notion of a war economy entails that the entire economy of France is mobilized for war production (Schnitzler, 2024, p.4). The plan to ramp-up production centers around a threefold objective of “producing more, better and faster” with five different pillars of concentration: visibility, simplification, securing supply chains, human resources, and access to financing (ibid). As in the case of Germany, producing more, better, and faster has proven difficult for large French arms industries such as Thales and Dassault, which are experiencing difficulties in processing the large increase of orders. For example, more than 200 Rafale Fighter jets produced by Dassault are waiting to be manufactured (Záboji, 2024). Unlike Germany, France has a history of a strong DIB which is deeply ingrained into the French defense policy (Despont, 2022, p.2). The French defense industry consists of nine big industrial groups and 4000 small and medium-sized enterprises, with the French state being a large shareholder in a number of big industry groups (ibid). For example, the French State holds 26% in Thales (Thales, 2022). Their involvement in the industry has guaranteed continued financial

support but other problems have led to tensions between the industry and the government. The inability of arms industries to deliver equipment, ammunition and weapons in a timely manner has prompted the French government to threaten them with requisition (Brändle, 2024). At a press conference, Defense Minister Sébastien Lecornu declared that if the arms manufactures do not work faster, the French state will seize the private arms companies (ibid). This threat was materialized by the 2023 army law which outlines France's long-term military planning and explicitly allows for requisition if there is a current or foreseeable threat, such as the war in Ukraine (ibid). The main problems for the French defense industry include a labor shortage which prevent arms companies from operating at full capacity. Similarly, to Germany and the UK, French defense industries grapple with short-termism, causing tensions between the government and producers due to a lack of clear forward visibility. Another problem in the French defense industry involves supply chain issues resulting from the aforementioned problems.

Labor Shortage

The shortage of labor is an issue that is present within all defense industries in Europe, as the industry requires people which are highly trained and specialized. Especially in France, the shortage in the defense industry is having an impact on the availability of weapons and equipment. CEO of Dassault, Éric Trappier stated that the entire industry is struggling to recruit “We can feel that all of our suppliers are suffering from their struggle to recruit” (White and Abboud, 2023). A solution posed by the French MoD has been to make the defense industry more attractive to young people and identify critical skills that are needed in the industry. The goal of the MoD is the creation of an “industrial reserve” that includes 3000 people by the end of 2024 (Schnitzler, 2024, p.11). The labor shortages are exacerbated by the increased military spending of the French MoD. The military budget for 2019 to 2025 was 295 billion Euros while the newly announced budget for 2024 to 2030 is 400 billion Euros, representing an increase of 40% (Abboud, 2023). This budget increase, according to Lecornu, will result in an estimated order increase of 40% for Airbus and 70-75% for Dassault, Thales and MBDA (White and Abboud, 2023). Although these orders are beneficial for the industry, they also put significant pressure on industries which are still recovering from the workforce reductions caused by the Covid-19 pandemic (ibid). At the end of 2023, the French aerospace, defense, and security industry experienced a 16% increase in job postings (Army Technology, 2024). Dassault anticipates expanding its workforce by 1000 employees, supplementing its current workforce

of 12,000 people. This increase surpasses its previous annual intake, addressing the impact of a significant wave of retirees (ibid). Nexter has raised concerns about a decline in interest for the jobs in the defense industry whose locations are often far from major urban centers. The employment hubs of key industries such as Yvelines, Hauts-de-Seine, and Essonne are not easily relocatable and are in remote areas (ibid and Ministère des Armées, 2022). According to Nexter CEO Nicolas Chamussy “We need people with rare skills in welding, cyber, and pyrotechnics, and our operations are in locations like Rouanne and Bourges where recruiting is challenging” (White and Abboud, 2023). The largest recruitment plans are made by Thales who announced in 2023 that they are planning to recruit 12,000 new workers, having already recruited 11,500 in 2022 (Klasa, 2023). Subtracting departures and retirements from the equation, this results in a net hire of 4000 people, presenting a 5% increase in employees (White and Abboud, 2023). Recruiting in the defense sector faces two significant challenges. Firstly, there is the effort required to train individuals for the industry. For instance, it takes about a year to train an employee in production techniques and safety protocols for missiles and ammunition, while training them as site manager can take anywhere from three to ten years (ibid). Secondly, the defense industry continues to have a negative reputation due to its involvement in the production, delivery, and sale of weapons and equipment designed for lethal purposes. The shortage of workers in the defense industry creates problems for France to transition into a war economy, as production sites cannot maximize production, leading to backlogs as shown in the case of the Rafale Fighter jets.

Short-Termism

The French arms industry encounters similar challenges to the German defense sector, both grappling with government reluctance to issue long-term contracts ensuring adequate orders. Without these orders, arms companies cannot take the financial risk to invest in their production facilities (Schnitzler, 2024, p.6). In France, the *Direction générale de l'armement* (DGA) is responsible for procuring weapons for the MoD. The DGA has acknowledged the challenges posed by short-termism and “has announced the future introduction of global orders for a certain number of essential items of equipment, deemed to be a priority in the event of a high-intensity conflict”, but such orders have not yet been placed (ibid). A notable contrast in challenges regarding short-termism between Germany and France, lies in the French arms industry’s capability to expand production sites, considering the aforementioned challenges posed by labor shortages. Nexter aims to double its production of 155-millimeter shells by

2025 and is working on expanding its industrial site. However, without confirmed orders, Nexter is hesitant to proceed with the expansion (Kayali, 2023). Although France introduced a new military programming law (LPM 2024-2030), orders remain insufficient, not providing the long-term visibility demanded by the arms manufactures (Schnitzler, 2024, p.6-7). For example, the MoD has only ordered 100 Mistral surface-to-air missiles from the French arms manufacturer MBDA, and those orders were placed before the war. Between February 2022 and December 2023, MBDA has not received any new orders (ibid). This is paradoxical to the demand of the French government to transition into a war economy, threatening to requisite companies, but failing to place orders where demand and capability already exist. Another issue with the LPM 2024-2030 is that, despite its substantial budget of 413 billion euros over seven years, most of the funds are allocated to orders placed in previous years, prior to the war in Ukraine. This leaves approximately 100 billion Euros available for new orders (Auran, 2024). The MoD has asserted that the 100 billion Euros, marked for major armament programs, in addition to the 49 billion Euros for equipment maintenance, should provide the long-term visibility demanded by the arms industry (Schnitzler, 2024, p.7). This line of argument reveals a key disparity between the industry and government. According to the French government, arms manufacturers should not wait for contracts but rather build stocks of raw material and spare parts to be available when the orders arrive (Kayali, 2023). The government has recognized that this demand is met with resistance from the arms industry and emphasized the importance of proceeding with caution, recognizing a future end of the war. While it continues to encourage the private sector to finance the DIB, it also calls for a “mechanism of reversibility”, meaning that while the industry must increase production, it should also have the ability to reduce production if the international situation changes (Sougouna, 2023). Finding a balance between long-term contracts and implementing a reversible mechanism remains a persistent challenge for the French DIB, especially with the government’s push towards a full-scale war economy.

Supply Chain Issues

The combination of labor shortages and short-termism poses a risk for supply chains which is a challenge evident across all European defense industries striving to increase production. Thales has announced that it expects to face severe supply chain issues in 2024 which will slow growth despite a record high of orders in their books (Abboud, 2024). Thales’ defense and security sector anticipates “mid-single digit” growth, despite recording orders worth 45 billion

Euros of equipment, vehicles and weapons that could be fulfilled more rapidly if supply chain challenges were less severe (ibid). The Thales-owned factory in Limours which develops the GM400 Alpha radar systems, capable of detecting aircrafts 500km away, is facing issues in reworking every aspect of production (Kayali, 2024b). They are currently producing 10 radars a year, but their target is over 20 (ibid). While improvements have been made to the facilities, such as adding an extra testing chamber and almost doubling the testing zones, there still exists significant potential for the factory to improve further (ibid). The vice president of strategy for the radar business stated that in order to speed up assembly “We need a perfect synchronization of arrivals of equipment to avoid waste and wait” (ibid). However, the increase in demand leads to logistical bottlenecks that hinder perfect synchronization. The DGA reports that approximately 160, or about 4%, of French defense small and medium-sized enterprises have been identified as unable to accelerate their production due to supply chain issues (Schnitzler, 2024, p.8). The factors contributing to supply chain issues encompass more than those outlined in this thesis, including shortages of machinery and disruptions from suppliers. To mitigate these supply chain issues and ensure the readiness of the French armed forces, the French MoD has incorporated the following provision into Article 49 of the LPM 2024-2030, granting the administrative authority the power to “order, by decree, any company (...) to build up a minimum stock of materials, components, spare parts or strategic semi-finished products which it is required to replenish continuously” (Schnitzler, 2024, p.8-9). As mentioned previously, the costs attributed to building up these stockpiles must be borne by the arms companies which “cannot be compensated for losses relating to the costs of building up and maintaining these stockpiles” (ibid). In case of noncompliance, the MoD can issue a fine amounting to double the value of the stockpiles that have not been built up (ibid). The inclusion of the clause in the LPM 2024-2030 has faced opposition from arms companies, citing concerns about bearing the sole financial burden of stockpiling and questioning the feasibility of the provision. As supply chain issues already cause production backlogs, there are concerns about how the industry can build up stockpiles while struggling to meet existing orders.

The UK – A Broken Defense Procurement System

The UK has recognized the gravity of the threat posed by Russia, with Britain’s Defense Minister Grant Shapps emphasizing that 2024 marks an “inflection point” to decide the future of British defense (Piper, 2024). Yet, the British government policy outlined in the 2023 Integrated Review Refresh, which periodically updates the government’s security, defense, and

foreign policy priorities, contradicts this intention (Dorman, 2024). While recognizing the heightened threats posed by Russia and China, the policy delays immediate action and commits to increasing defense spending to 2.5% of GDP only when the economy and government finances are more favorable (ibid). The British government cannot afford to delay action, as the complexities of enhancing UK defense capabilities have increased (ibid). However, the challenges facing the UK's readiness to reach an "inflection point" this year run deeper than mere policy choices, as the entire defense procurement system in the UK is fundamentally broken. The majority of problems, similar to Germany, revolve around capability gaps, short termism and supply chain issues as outlined in the 2021 RAND report "Persistent Challenges in UK Defence Equipment Acquisition" and the House of Commons Defense Committee "Ninth Report of Session 2022–23" (Retter et al., 2021 and Defense Committee, 2023). In the UK, defense equipment acquisition occurs through a body of the MoD, the Defense Equipment and Support (DE&S), which is tasked with managing equipment and service purchases for the UK (Defense Committee, 2023, p.5). Between 2022-23, over 37% of MoD procurement expenditure was with ten suppliers in the UK, with BAE system making up just under 14% of these procurements, followed by Babcock with 7% and QinetiQ around 3% (Ministry of Defense, 2024). BAE Systems received £4.6 billion in contracts out of the £33 billion paid by MoD core departments in 2022/23 (ibid). BAE's leadership was underscored by an increase of £569 million compared to the previous fiscal year, manifesting its standing as a the most important industry in the UK defense procurement landscape (ibid). Nevertheless, there are serious challenges that also the major arms industries face.

The analysis reveals that although Germany and the UK share similar challenges, they arise in different ways. The capability gaps emerge from poor requirement setting in addition to workforce challenges (Retter et al., 2021, p.4). The supply chain issues are rooted in misaligned assumptions between the industry and MoD as well as a "conspiracy" of optimism within the MoD, coupled with a large imbalance between the Navy, Army, and Air Force (ibid). Lastly, short termism is caused by short production runs with limited units and frequent adjustments to program deliveries, similar to the German issues with the Puma (ibid). These challenges form a complex web of obstacles for the entire UK DIB, impacting industries, the MoD, and the Armed Forces. In the words of Air Commodore Jim Back, "Our defense industrial base is as critical as our own warfighting capability, because it's intrinsic to us being able to sustain a war-footing" (Hoyle, 2023).

Capability Gaps

Defense capability development comes with uncertainties, requiring assumption about the operating environment, competition, and technology (Retter et al., 2021, p.5). In order to mitigate these risks, the MoD has historically responded to these uncertainties by setting detailed technical specifications that need to be met by the industry, thereby limiting the industry's ability to be innovative and optimize solutions for performance, cost, and scheduling (ibid). These requirements are driven by multiple factors, such as the need to maintain existing capability, analyzing the evolving threat posed by potential adversaries, and evaluating the equipment being developed by allies (Defense Committee, 2023, p.26). As stated, the requirements are set by the MoD, more specifically by the Front-Line Commands, which is made up of military personnel (ibid). The misalignment between industry and the MoD results in military programs delivering end products that may not offer the optimal capability solution. This leads to unnecessary cost escalation due to specific design specifications (Retter et al., 2021, p.5). According to Air Chief Marshal Sir Stephen Hillier, these highly specific requirements can become critical because when the requirements state "I want to go this fast, I want to go this distance, I want to carry this weapon load and I want this level of technical capability," a key decision-making point is reached. He claims that while aiming for the top end may be necessary, there needs to be data regarding the risks involved (Defense Committee, 2023, p.26). Due to uncertainties in development, this data is often not as reliable as assumed. Furthermore, military personnel within the Front-Line Commands are not always familiar with the capability of the industry because it is not their field of expertise (ibid). Another issue arises when the DE&S, despite being responsible for equipment management, is frequently left out of the formal requirements-setting process and only offers input upon request, as noted by Andy Start, CEO of DE&S (ibid). The following example of the land vehicle system Ajax illustrates these problems and showcases how capability gaps are created in the British military.

One of the largest procurement failures in the MoD is the development of a fleet of armored vehicles for the British Army's Armored Cavalry Program, the Ajax (Defense Committee, 2023, p.17). In 2014, General Dynamics Land Systems UK (GDLS-UK) entered a contract with the MoD to produce 589 Ajax vehicles in six different variations (idem, p.18). The design program started four years prior in 2010 when GDLS-UK won the contract against BAE Systems and the Initial Operating Capability (IOC) for the Ajax was set for 2017 (ibid). However, delays in the production meant that the IOC was pushed back to July 2020 (Lye,

2020). Just a few months after, in November, trials for the Ajax were stopped concerning excessive noise and vibration issues. In 2021, Minister for Defense Procurement, Jeremy Quin, stated that “it is not possible to determine a realistic timescale for the introduction of Ajax vehicles into operational service with the Army” (Quin, 2021). These issues prompted the MoD to halt payments to GDLS-UK, having already invested £5.5 billion in the program (Quinn, 2023). In 2023, the MoD resumed investments in the Ajax program again, confirming that the IOC was scheduled between October 2028 and September 2029 (ibid). This results in a delay of 10-11 years between the original IOC and the revised IOC. The MoD’s detailed technical requirements bear significant responsibility for this delay. The initial design of the Ajax was based on an existing “off-the-shelf” platform from the Austrian Spanish Cooperation Development (ASCOD), but the MoD had over 1200 capability requirements for the different Ajax vehicles (Defense Committee, 2023, p.18). This requirement included integrating a 40mm cannon and turret, which was technically challenging because the ASCOD platform was originally designed for a 30mm Mauser MK-30/2 autocannon (Army Technology, 2000). Additionally, in 2018, the DE&S was informed that the Ajax testing phase was operating with a high risk of accident, related to the high levels of vibration. These concerns were disregarded, resulting in 15 injuries in the military and the ultimate suspension of trials in November 2020 (Defense Committee, 2023, p.19). The issues with the Ajax illustrate how detailed technical specifications from the MoD to the industry create large capability gaps for the British armed forces. The UK now has troubles to fulfil their NATO obligation as the Ajax was to be a central part of the Armoured Brigade Combat Teams which took on a leading role in NATO’s Very High Readiness Joint Task Force Land (Matthews, 2016). As of 2024, not a single Ajax vehicle is deployable.

Short-Termism

In Germany’s DIB , short-termism is linked to the practice of issuing short-term contracts to arms industries. Conversely, in the UK, the challenge of short-termism arises from the management of production on a short-term basis due to complex requirements and frequent adjustments to military programs linked to annuality. The UK military is plagued by production inefficiencies that hinder a program to be delivered in its defined performance, cost, and schedule timeframe (Retter et al., 2021, p.5). These production inefficiencies originate from a new type of production process that emerged in the European defense industry. Unlike traditional mass manufacturing, this approach no longer benefits from economies of scale,

which typically lower unit costs (ibid). Many military programs only have short production runs, producing limited units which can be attributed to the high requirement settings for new military equipment. The trend for large weapon systems such as ships and submarines has been toward increasing complexity and cost, essentially creating “prototypes” of each unit (ibid). This limits the potential for economies of scale and reduces the productivity benefits that could be utilized for future technological advancements. Another problem centers around the lack of fixed long-term budgets in the funding cycle of the MoD. The challenge of “annuality” refers to the problems associated with tight one-year funding cycles for the arms industries large defense procurement programmes (Defense Committee, 2023, p.41). Almost all large projects take multiple years or run longer than anticipated as in the case of the Ajax. Stephen Hillier points out that the challenge with these year-to-year cycles, particularly for large programs, is that “if every single year you have to land the budget on the sixpence of what you forecast at the beginning of the year, or otherwise lose the money, that is really difficult, and it is not an efficient way to do business” (ibid). He proposes a margin for projects to be managed on a multi-year basis as this would lighten the financial overlook of the DE&S (ibid). This system, described by Hillier, creates a constant flux in the arms industry that requires “frequent adjustments to programme delivery management” to meet the Annual Budget Cycle (Retter et al., 2021, p.13). These tensions between high-level financial management and equipment program budgets means that the budgets are frequently tweaked at the expense of time, delivery schedules and costs (ibid). Moreover, it limits the industry’s ability to manage risks and find long-term efficiencies, exacerbating capability gaps by slowing down projects as a result of restricted cash-flow. For instance, in 2008, the production of the UK’s aircraft carriers was delayed by two years, increasing costs from £3.7 billion to £5.2 billion. This delay was deliberately orchestrated to manage cash flow and remain within the budget cycle (Defense Committee, 2023, p.42). A more recent example involves the Royal Air Force E-7 Wedgetail order. Initially, the MoD ordered five aircraft but subsequently reduced the order to three due to cost-related considerations. The order of five E-7s cost £2.1 billion, while the three E-7s cost £1.89 billion, meaning the new deal presents an extremely poor value for money (idem, p.16).

Supply Chain Issues

The UK DIB encounters challenges arising from what is termed a “culture of optimism.” This culture stems from misalignment in expectations between the DE&S and the industries, ultimately having a significant impact on the supply chain within the DIB. Both sides, the MoD,

and the industry, are incentivized to be optimistic about program costs as the project teams in the DE&S can increase their chance of funding while the industry is incentivized to assume the program will run smoothly (Retter et al., 2021, p.15). Yet, it has been repeatedly demonstrated that projects exceed anticipated costs, leading to cost overruns (ibid). The standard confidence measure used by the DE&S is 50%, meaning that there exists a 50% probability that the project will exceed the budget. On average, projects turn out to be at the 70% confidence level, meaning that DE&S should increase its confidence measure to 75%, creating a more realistic nature in project forecasting (Retter et al., 2021, p.15 and Defense Committee, 2023, p.28). A concrete example includes the Royal Navy's Type 26 frigate whose delay, caused by optimistic forecasting of the engineering design, cost the MoD £233 million (Defense Committee, 2023, p.14). Misaligned expectations often stem from discrepancies in assumptions, such as baseline costs and schedule estimates, which are essential in the making of capability delivery plans and acquisition strategies (Retter et al., 2021, p.10). The critical factor is not necessarily whether these assumptions are robust or weak, but rather that they are mutually understood and shared by both the MoD and the industry. Areas in which these discrepancies can have the largest impact on the supply chain include design maturity and integration challenges or Industrial base capabilities (ibid). Misaligning assumptions in these areas, which build the foundation of projects, easily lead to erroneous assumptions from the outset and increase the likelihood of cost growth and schedule slippage, resulting in delays in the supply chain (ibid). Thus, optimistic project forecasting stemming from misaligned assumptions, results in delays in capability delivery which have a serious impact on the supply chain and pose threats for national security objectives. Another issue for supply chain management within the UK's DIB concern the different approaches of the Navy, Army, and Airforce in acquiring weapon systems. There exists an imbalance between the different military services as the allocation of defense equipment budgets favor long-term programs for the Navy and Air Force which are platform-centric, involving large amounts of capital (Retter et al., 2021, p.12). In contrast, the equipment programs of the Army center on incremental improvements to existing structures. Although the Army is in desperate need of modernization, its programs often face budgetary constraints, as funds are allocated to long-term projects for the Navy and Air Force (ibid). Not only does this create capability gaps for the Army but it also limits the availability of resources as suppliers face challenges in sourcing materials, skilled labor, or production capacity, needed to fulfill their orders. Additionally, the MoD is reluctant to cancel programs that do not meet affordability requirements, resulting in a lack of available funds for modernization efforts across all services (idem, p.13). This inflexibility of the MoD may result in suppliers being

locked into contracts that do not align with the shifting defense priorities, preventing supply chains to respond effectively to changing priorities of the defense sector.

Chapter 3 – The Fragmented EDIBs: A Challenge for a Joint European Defense capability

This Chapter aims to analyze the European Defense Strategy's proposed actions within the context of the political, economic, and military dimensions of the collective action problem as outlined by Sean Monaghan. Moreover, this Chapter illustrates the interconnectedness of the challenges faced by the individual EDIBs in Germany, France, and the UK, highlighting the difficulties they pose for joined European defense cooperation.

The European Defense Industrial Strategy

In March 2024, the European Commission presented the first-ever European Defense Industrial Strategy (EDIS) which aims to set out “a clear, long-term vision to achieve defense industrial readiness in the European Union” (European Commission, 2024). The strategy rests on the theoretical premises, that defense cooperation provides economic benefits due to reduced equipment duplication and lower costs associated with production (Besch, 2024). However, in practice, the prioritization of national interests and varying operational approaches among countries' defense industries have historically prevented collaboration (ibid). Many of the crises in the EU have initially been tackled first at the national level, such as the energy crisis and the Covid-19 pandemic. This pattern has also been observed in military expenditures among EU Member States. Governments perceive a robust national DIB as crucial for safeguarding national sovereignty, meaning that “national protectionist practices [...] remain the dominant driving force in EU defense procurement” (Uttley, 2018, p.690). The EU faces constraints in allocating funds for military expenditures of Member States, as its treaties prohibit the use of EU funds for such purposes (Besch, 2024). Additionally, the EU's competences in defense-related policies are limited. The competences of the CFSP are parallel competences, meaning that Member States are not prevented from acting at the national level. Moreover, CFSP acts do not have direct applicability, which entails they cannot directly enter into national legal orders (Eckes, 2015, p.539). The CFSP aims to coordinate foreign policy of the Member States rather than impose uniform policies for the EU (ibid). In the past, the European Commission attempted to regulate defense procurement but has largely failed as

Member States were reluctant to delegate decision-making sovereignty on defense related matters to the Union (Besch, 2024). For example, the European Defense Industry Reinforcement Through Common Procurement Act or the Act in Support of Ammunition Production (ASAP) have proven useful but not transformative for European defense (Bergmann et al., 2024 and Besch, 2024). The EDIS, though nonbinding, aims to address this issue and signal a significant advancement in the EU's ambition to collectively procure weapons in Europe, thereby enhancing its preparedness for potential war (ibid). The strategy encourages Member States to “invest more, better, together and European” which will be promoted by new European programs aimed to simplify cooperation (European Commission, 2024). It also encourages supporting research and fixing supply chain issues by making the European defense industry “stronger, more responsive and more innovative” (ibid). Furthermore, the strategy envisions a new funding program, the EDIP, worth 1.5 billion Euros (ibid). Lastly, it calls for joined cooperation with partners, making it possible for the Ukraine to be a part of the EDIP (ibid). By 2030, the strategy aims to achieve several targets, including to buy at least 40% of defense equipment through joined procurement, spending at least 50% of defense budgets on European products and trading at least 35% of defense products among Member States (ibid). While theoretically sound, the analysis illustrates that these objectives and strategies encounter numerous challenges in various dimensions of the collective action problem, threatening the success of the EDIS.

Political Challenges

The Strategic Cacophony Problem

EU Member States have varying national defense policies which are characterized by divergences in their security threat perceptions, geopolitical positions, historical contexts, and economic abilities. These disparities present significant challenges for cooperation among arms industries, as they complicate efforts to harmonize products and strategies on a European scale. The EDIS aims for Member States to identify European defense projects of common interest and collaborate on their production, thereby addressing capability gaps (Besch, 2024). The capacity problems and capability gaps present in the EDIBs have the consequence that some countries continue to rely on off-the-shelf orders for short-term readability while other countries demand a long-term strategic outlook. A prime example of this is the Sky Shield initiative, illustrating the different perspectives of France and Germany regarding a strategic alignment on European defense (Urvoy, 2023). While Germany advocates for a more pragmatic

approach, by investing in the established solutions from the US and Israel, France insists on relying on systems developed in Europe (ibid). Instead of working out a solution, they have settled on two different systems. Germany's Sky Shield initiative uses US made Raytheon's Patriot missile batteries and Israel's Arrow 3 system in addition to Germany's IRIS-T technology (ibid). France is investing in another defense project which uses a Franco-Italian MAMBA air defense battery system (ibid). Thus, merely identifying defense projects with a common interest does not seem to be the solution to filling capability gaps as the underlying problem of varying threat perceptions remains unresolved in the EDIS. Hugo Meijer and Stephen G. Brooks examined Russian threat perceptions before the invasion and their results showed clear divergences on the Russian threat (Meijer and Brooks, 2021, p.17). Southern and Western European countries of smaller size prioritize transnational terrorism and instability across the MENA region (ibid). France viewed threats such as terrorism, more urgent, while Germany viewed Russia as a threat with equal significance to threats such as terrorism (idem, p.19-20). Northern and Eastern European states had the highest threat perception of Russia, especially after the Russo-Georgian war (idem, p.21-22). These varying threat perceptions have had a lasting impact on the operability of conventional defense as the majority of larger arms industries are located in countries where threat perception after the Cold War has declined significantly regarding Russia (idem, p.23). The Eastern and Northern European states have focused on territorial defense, most notably in the light of the invasion of Crimea in 2014 but their defense capabilities are limited (idem, p.24). While the Russian invasion of Ukraine has aligned threat perceptions in a more consistent manner in the past two years, there continues to exist a divergence on how to address the Russian threat. Working on joined defense projects continues to pose challenges, especially between France and Germany. For Germany, cooperation problems regard the support which the French Industry receives from the government, which is perceived as a disadvantage for Germany (Maulny and Mölling, 2020, p.3). Moreover, Germany questions how French strategic autonomy can be incorporated into industrial cooperation and sharing (ibid). The French are skeptical about Germany's procurement procedures (idem, p.4). The French and German operational needs are not coherent, with France having a "precise understanding of their needs because they have combat-proven equipment types" (ibid). Continued disagreements regarding the form and goals of industrial strategies stem from a deeply ingrained cacophony problem, which will continue to hinder the realization of common defense projects.

The Strategic Fit Problem

In order for Member States to achieve long-term defense industrial readiness, as outlined in the EDIS, there needs to exist a shared perception of the goals and strategic culture in the EU. The strategic approaches of France and Germany differ significantly. France, for the past 60 years, has advocated for domestic strategic autonomy, enabling it to act independently, particularly due to its strong DIB, in which government and industries are closely intertwined. France supports the development of European defense capabilities and has endorsed initiatives such as the European Defense Fund (EDF) as it is convinced that collaborative financing of defense actions not only strengthens the DIB but also fosters cooperation among European defense companies (Maulny, 2024, p.5). In 2022, France was leading the participation in EDF projects (ibid). Moreover, France has shown a general willingness to engage with EU institutions, including the European Commission and the EDA. However, it has to be noted that France has a “deep-seated distrust” in the European Commission which stems from the ideological angle pursued by the Commission, perceived in France as ultra-liberal (ibid). France also critiques that the Commission has no competences in defense or armaments (ibid). This creates the following strategic scenario: France leans towards a European defense industrial policy that aligns with national defense strategies, yet it hesitates to relinquish this responsibility to the Commission (idem, p.8). For France, the Commission is not yet in the position where it could “take the lead in crafting a European defense industrial policy capable of partly or even fully replacing the policies formulated at the national level” (idem, p.1). In contrast, Germany’s strategic culture centers around NATO as the primary framework for defense. The strategic approach followed in Germany is to strengthen the European pillar within NATO (Puglierin, 2024, p.3). This has led to deep-rooted skepticism towards EU defense integration as Germany is concerned that “such moves could alienate Washington” (ibid). The German approach prefers maintaining national sovereignty over European defense procurement, but it does acknowledge European defense initiatives, including the FCAS and the MGCS (idem, p.4). However, it continues to opt for off the shelf orders from the US, which are rooted in strong transatlantic ties, as exemplified by the Sky Shield initiative. The strategic fit problem that arises from the differing priorities and approaches by France and Germany constitute a core problem of the collective action problem. While France seeks to enhance European defense capabilities with a focus on collective defense, Germany remains cautious about giving too much sovereignty to EU institutions and prefers to focus on NATO. This strategic misalignment complicates the aims outlined in the EDIS.

The Specialization Dilemma

EDIBs would benefit from specialization as the industries problems leading to capability gaps and capacity problems are often caused by a lack of focus and expertise in specific areas. Specialization is difficult to achieve if national policies, instead of European cooperation, govern the direction of the DIB. Germany and France again provide an example as to why specialization is difficult to achieve. Two projects, the joint next-generation fighter jet (FCAS) and joint next-generation battle tank (MGCS), are at the core of Franco-German procurement but their production have been slowed down by friction on specialization (Kayali and Posaner, 2024). The two countries had various conflicts regarding the share of responsibility for the production of the tank (ibid). The French criticized the Germans for their perceived lack of commitment to the project, accusing them of working on it “half-heartedly” (ibid). The French critique arises from a greater sense of urgency, as their Leclerc tanks are scheduled to be phased out by 2040, while Germany will continue to produce its Leopard tanks. In April 2024, Pistorius and Lecornu came to an agreement that divides the workshare equally under eight different pillars, in which the overall project management will be under German leadership (Defense Archives, 2024). In the case of the FCAS, there were disagreements between Germany’s Airbus and France’s Dassault concerning the flight control system development which led to over a year of delay in the first phase of the program (Dangwal, 2024). Although the issue has been resolved at the end of 2022, these disagreements over specialization pose a risk for European defense, delaying projects and making them more costly. In the context of European defense, specialization does not imply focusing solely on one product. Rather, it involves dividing and sharing the responsibility for producing European defense products to improve efficiency. While the EDIS is an EU program, it also involves other stakeholders such as Ukraine. However, it notably overlooks one of the most influential players crucial to European defense: the UK (Bergmann et al., 2024). The UK could provide Member States of the EU with extensive maritime security, but UK defense firms need to be included in initiatives and strategies such as the EDIS (Besch et al., 2023). Therefore, reinforcing the EDIBs must also include policymakers in London to explore how UK arms firms can contribute to an integrated defense industrial base across Europe (ibid).

Economic Challenges

Fragmentation

The organization of EDIBs along national lines has led to a fragmented European defense market. This fragmentation results in financial burdens due to duplicated systems across different countries. These hurdles impede collaborative and cooperative efforts which prevent interoperability (Barbieux, 2023, p.1). It is estimated that increased cooperation could gain the EDIBs between 24.5 billion and 75.5 billion Euros a year (ibid). Nearly 90% of arms sales and production in Europe is concentrated within the countries that endorsed the 2000 “Letter of Intent” aimed at restructuring the European arms industry. These nations include France, Germany, Italy, Spain, Sweden, and the UK (Béraud-Sudreau and Scarazzato, 2023, p.7). While larger Western European arms companies produce in all military domains (air, ground, naval, missile and space), Central European arms companies are more specialized due to their limited economic strength (idem, p.12). These differences could build a strong foundation for cooperation, but cross-border links are much more prevalent in Western and Northern Europe compared to Central Europe (ibid). This results in Central European companies being excluded from the Western European supply chains and defense markets (ibid). Western Europe defense markets focus especially on technology-intensive sectors whereas Northern European companies are active in subsystems sector for naval systems. Baltic companies focus on surveillance and communication systems while Central European companies specialize in small arms, light weapons, and hardware components (idem, p.8). According to the 2022 Coordinated Annual Review on Defense, this fragmentation has resulted in a mere 18% collaboration on defense programs, stating that “cooperation remains the exception rather than the norm” (European Defense Agency, 2022, p.7). A study from 2017 shows that the members of the EDA used 178 types of major weapon systems compared to the US only using 30 (Olsson, 2021, p.1). In 2021, Per Olsson affirmed that the findings from 2017 remain valid and since the beginning of the war in Ukraine, it is to be assumed that there has been no change in cooperation regarding major weapon systems due to the mounting pressure and urgency of the war (ibid). The EDA uses 12 different Main battle tanks, the US only has 1 (ibid). The EDA has 25 different destroyers/frigates, the US has 2, the EDA has 14 different fighter planes and 16 different infantry fighting vehicles (IFV) while the US only has 5 and 3 respectively (ibid). The founding treaties “allowed Member States to create isolated domestic industries, which over time developed into a system with a high degree of redundancy and duplicate efforts” (Alvarez-Couceiro, 2023). This was necessary at the time as giving up national security to a supranational entity would have most likely failed the EU project (ibid). Some of the reasons

for fragmentation stem from the DIB challenges analyzed in Chapter one. For example, the highly fragmented nature of destroyers and frigates can be explained by the short-term nature of shipbuilding, as explained in the case of the UK, where ships are built in small batches and are highly customized (Olsson, 2021, p.6). Moreover, countries who possess shipbuilding capabilities wish to preserve them (ibid). The fragmentation of IFVs is partially caused by “legacy vehicles” which are IFVs from former Warsaw Pact or Soviet members or by the fact that most IFVs are only operated in their respective home countries, such as the German Puma or the French VBCI (idem, p.3). As demonstrated by these examples, fragmentation poses a fundamental challenge to overcoming the collective action problem, undermining the feasibility of the EDIS.

Short-Termism

Short-termism, especially in the case of Germany, has consequences for the funding of the EDIS. If governments hesitate to award long-term contracts to arms companies, these companies may seek opportunities elsewhere, particularly in the US or the Middle East, where long-term contracts are more readily available. However, there are limitations, particularly in Germany due to its strict arms export regime. Short-termism in finance and procurement and prioritizing non-EU equipment, has two significant implications for EDIS funding dynamics. Firstly, off-the-shelf orders from third countries divert funding away from collaborative defense envisioned by the EDIS. The EDIS attempts to mitigate this risk through a protectionist angle, prioritizing EU-based defense firms over non-EU suppliers (Besch, 2024). This has created tensions over the necessity of this approach to preserve EDIBs (ibid). Especially the large capability gaps in ammunition necessitate off-the-shelf orders from outside the EU to continue delivering ammunition to Ukraine while building up domestic stockpiles. Secondly, the EDIS’ level of funding for investment in the defense industrial readiness presents no solution to the problem of short-termism, in fact it exacerbates it. The Commission proposed 1.5 billion Euros of funding through the European Defense Industry Program (EDIP), which is just 1.5% of the 100 billion Euros proposed by Thierry Breton, the European internal market commissioner (Bergmann et al., 2024). The budget underscores a lack of commitment to long-term investment in European defense capabilities. Despite the challenging nature of EU budget negotiations, it is crucial to establish long-term funding for defense within the EU (Besch, 2024). One possible solution to fund long-term investments was proposed by Von der Leyen, namely, to use frozen Russian state assets for joined procurement of military equipment (ibid). Another idea is to

mobilize “adequate” funding modeled after the pandemic recovery fund which is declined by Germany and the Netherlands who are opposed to issuing new debt (Bergmann et al., 2024). Other countries are concerned about new debt negatively affecting the EIB’s credit rating while not addressing the core problem of issuing long-term defense contracts (ibid). Hence, the problem of short-termism is also evident in the EDIS, potentially worsening the challenges of short-termism at the national level.

Military Challenges

Defense Planning Alignment

The difficulties to align procurement cycles and military requirements needed for defense planning are to a large extent the outcome of the fragmented European defense market and the decision-making at national level. Defense cooperation can occur in a variety of forms among European countries, including bilateral cooperation, regional formats, in wider groups, or in the EU and NATO (Zandee et al., 2016, p.1). The broad scope of multinational defense cooperation complicates cooperation efforts in Europe. In 2022, the EU presented its Strategic Compass, an “ambitious plan of action for strengthening the EU’s security and defense policy” (EEAS, 2022). At the core of the Strategic Compass sits the idea to develop a rapid reaction force consisting of 5,000 troops which can be immediately deployed in a crisis (Reuters, 2022). This idea should be approached with caution for two main reasons. Germany stated that it would contribute the core of the rapid reaction force but as explained in Chapter one, Germany does not have the necessary capacity to deliver on its promises as the example of the Puma tank illustrates. Moreover, the German military is having an “enormous personnel problem” aiming to increase troops from 181,000 to 203,00 by 2031 (Deutsche Welle, 2024). Currently, the German military is shrinking with 1,537 fewer service personnel at the end of 2023 (ibid). This should not be surprising, given the years of underfunding which have turned Germans away from joining the *Bundeswehr*. It is therefore questionable how Germany will provide the majority of troops and equipment to the European rapid reaction force, especially when it faces challenges in meeting the minimum requirements at the national level. From a historic perspective, the EU has failed to provide the 60,000 troops strong intervention force after the Kosovo war, as well as the 1,500 troops for a battlegroup (Witney, 2022). Hence, there is no historical evidence pointing towards a successful creation of European troops. Moreover, its success is further scrutinized by the fact that its command structure would not be an EU Operational Headquarters, but an “EU Military Planning and Conduct Capability” which does

not have the facility or manpower to become a reality (ibid). Another project aimed at defense planning cooperation is PESCO, launched in 2017 (PESCO, 2024). PESCO's main ambition is to bring together defense planning by merging isolated projects towards "planned and impact-based cooperation" (ibid). Membership in PESCO operates on a voluntary basis, but the commitments made within PESCO are legally binding on all of its members (ibid). The project has enjoyed some success but its inclusion of over 68 projects has led to projects already being cancelled due to bureaucracy and insufficient progress (Pugnet, 2023a). Moreover, PESCO has not been used for the integration of core European defense projects, including next generation platforms such as FCAS or MGCS, but has focused on smaller, less important acquisition programs (IISS, 2021). These are just two examples that illustrate the difficulty of defense alignment on the European scale.

Joint Procurement

At the end of 2023, the European Parliament approved the 300-million-euro European Defense Industry through the Joint Procurement Act (EDIRPA) which aims to assist Member States in funding urgent defense needs in the short-term (Pugnet, 2023b). As mentioned previously, only 18% of equipment procurement in the EU was a joint effort (Schnitzler, 2023, p.3). The EDIRPA poses two primary risks that work against the objectives outlined in the EDIS. As a short-term instrument, it benefits non-European countries, undermining efforts to bolster the EDIB (idem, p.6). The EDIB does not produce all of the products which are demanded in the EU, which tempts Member States to revert to off-the-shelf equipment from outside the EU (ibid). The European Council has enforced restrictions to ensure that defense equipment is made in Europe, including that products shall not contain more than 30% of foreign components (ibid). However, the European Parliament has left room for potential changes, which could mean that it may propose alterations to these regulations. In the long term, such changes could weaken the EDIB as it would lead to a loss in the market share of European arms industries (ibid). It could also lead to an increase in joint procurement from foreign markets as Member States already use Israeli Spike and US Javelin anti-tank missiles, even though there exist European alternatives such as the French Akeron (idem, p.7). The EDIRPA's framework also runs the risk of contributing to the fragmentation in Europe as it incentivizes Member States to compete for EDIRPA funding (idem, p.6-7). This competition creates a level playing field but slows down and complicates the selection process which stands in contrast with the urgency to replenish stockpiles (ibid). Although EU projects for joint procurement are needed, the

EDIRPA encounters challenges due to its disregard of strategic autonomy, favoring non-European equipment for joint procurement.

Chapter 4 – Strategic Autonomy: The Dependency on the United States and China

Historical Dependence on the United States

The Origins of US Dependency

Since the end of WWII, the US has become a central actor in European security. Those origins can be traced back to the US' Grand Strategy within the context of NATO of keeping the Soviets out, the Germans down, and the United States in (Meijer and Brooks, 2021, p.11). Throughout the Cold War and the subsequent period of the 21st century, the US designed and led a liberal world order based on a complex relationship of interdependence, with itself as the hegemon, uniting Europe under its protection (ibid and Berlinski, 2018). This allowed the US to shape the strategic European environment, placing Europe in the position of a “junior partner” of the US in world politics (Rittberger and Zelli, 2004). Europe gladly embraced this role in the post WWII era, as it created conditions under which both the US and Europe flourished (Berlinski, 2018). Through the Marshall Plan, Europe received 13 billion dollars for the postwar economic recovery (ibid). Moreover, and most importantly in the context of this thesis, NATO provided Europe with a US security umbrella, paving the way for the creation of the EU. This enabled the continent to flourish into a single market (ibid). According to Mark Blyth, professor of international economics at Brown University, the creation of the EU “did not begin as a large political project but rather as a series of small steps in an American-led effort to promote postwar security” (Ross, 2019). The underlying foundation of the EU is based on an American idea, which acknowledged the risk of a single European country, Germany being the largest fear, dominating the continent (ibid). This risk could be diminished by spreading out the industry used for weapon production, such as metal, coal, and steel among the European countries (ibid). The author Claire Berlinski asserts that the dependence of Europe on the US was “all part of the plan of a generation of postwar American leaders” (ibid).

This dependence has especially manifested itself in the defense sector, with 55% of arms imports by European states between 2019-23 coming from the US (Wezeman et al., 2024, p.10). The war in Ukraine has clearly contributed to a stronger dependence on American

weapons as the structural problems in EDIBs are deeply ingrained, requiring off-the-shelf weapons to continue support for Ukraine while building up domestic stockpiles. In comparison, after the period between 2014-18, which includes Russia's invasion of Crimea, imports of US weapons were at 35% (ibid). Thus, in the past five years, dependence on US weapons has increased by 20%. However, varying levels of dependence among EU Member States contribute to the challenge of achieving EU-SA, as analyzed in the next section. France imported 20% of the total volume of major arms from the US between 2018 and 2023 while the share of Germany's total imports of major arms from the US made up 63% and that of the UK reached 89% (Wezeman et al., 2024, p.6). The dependence on US weapon imports is therefore most significant for the UK but Germany's dependence is also noteworthy, given that the second largest importer in Germany is Israel with 16% and the UK with 5.7% (ibid). France is the only country to have its primary import partner situated in Europe, namely the UK, which accounts for 38% of France's total imports (ibid). The US is second with 20%, followed by Italy with 18% (ibid).

Varied Dependencies on US Arms

The different levels of dependencies on the US can partially be explained by the relationship between the countries' defense firms and historical evolution. The large dependence of the UK on the US is an outcome of the "Special Relationship" that exists between the two countries (Belin et al., 2017, p.24). While the UK is the main exporter to the US for major weapon systems, accounting for 25%, the dependence is stronger for the UK. Both nations have been allies in conflicts including WWI and WWII, the Cold War, the Gulf War, Afghanistan, and Iraq (ibid). Their Special Relationship has created close cooperation in armaments. An example of their close cooperation includes the 2007 UK-US Defense Trade Cooperation Treaty which allows the exchange of specific types of defense equipment without needing a US license under the International Traffic in Arms Regulations (idem, p.25). Moreover, BAE Systems is the largest foreign supplier to the DoD and can buy US defense firms (ibid). Benefits of military procurement between the two nations include interoperability between US and UK weapon systems which have a long history, dating back to WWI. There also exist economic benefits, exemplified by the 116 million dollars UK contribution to the Polaris and Trident missile systems research and development costs, which would have been significantly higher, if the UK had developed these technologies themselves (idem, p.26). Thus, for the UK, it has made

historically, economically, and militarily sense to align with the US which has resulted in almost 90% of their weapon imports coming from across the Atlantic.

Germany does not have a Special Relationship with the US but is largely dependent on US weapon imports. The 100-billion-euro special fund determined for the modernization of the *Bundeswehr* was welcomed by German defense industries, but they soon realized that they were not the intended recipients of the funds. Up to half of the 100 billion Euros have been contracted with US defense companies (Hübner, 2023). Military equipment from US firms includes 35 F-35 fighter jets to replace the outdated Tornado jets, 60 Chinook transport helicopters and eight P-8 Poseidon aircrafts (Schütte, 2023, p.3). Germany's dependence on the US is rooted in West Germany's accession to NATO in 1955 which demanded Germany to contribute to the arms race of the Cold War (Belin et al., 2017, p.10). The subsequent rearmament phase was almost exclusively based on US equipment such as M47 tanks and F-104 fighter aircrafts (ibid). Although Germany has enormously decreased its dependence from 1960 levels, it continues to rely on state-of-the-art weapon systems from its transatlantic partner because of three reasons. Firstly, Germany's strategic outlook focuses on interoperability within NATO and given the US' role in the alliance, Germany will continue to focus on US weapon systems. Secondly, the urgent need for weapons in Ukraine is depleting stockpiles in Germany. Lastly, the capability gaps in the German DIB demand off-the-shelf weapon systems and ammunitions in the short term.

France's low level of imports of major weapons from foreign markets, especially the US, can be explained by the desire of French strategic autonomy (idem, p.6). Historically, France has a complex stance on European defense integration which is highlighted by its dual role in promoting Europeanization while simultaneously asserting its own sovereignty (Česnakas and Juozaitis, 2023, p.46). France's fear of German rearmament motivated France's choice for Europe after WWII but when the fear of the "German factor" was removed, France's strategic goal shifted to its domestic defense industry's viability (ibid). Maintaining the French DIB's vitality is considered a matter of national sovereignty (idem, p.42). Thus, since the 1980s, France has pursued an active strategy of promoting arms exports, especially given that there has been a reduced domestic demand and increasing costs of innovation (ibid). While Germany had to destroy its DIB after WWII, the French were in a position to rebuild their DIB, thereby limiting its dependence on US weapons from an early stage (Belin et al., 2017, p.6). This deeply ingrained DIB in the French state has resulted in France only buying US defense equipment

through direct buys in two circumstances. Either the product is needed in such small volumes that developing it nationally would not be profitable or to meet a specific or immediate need (ibid). An example includes the two KC-130J Hercules ordered in 2020 to “expand the Armée de l’Air’s already robust airlift and refueling resources” (Airforce Technology, 2020). The varying degrees of dependency present a significant challenge to achieving European Strategic autonomy.

Dependency on China

The EU’s Critical REE Dependence

The dependence of the EDIBs on weapon systems and military equipment from the US is not the only risk for EU-SA. Europe is entirely dependent on China for rare earth elements (REEs), importing 98% of its REEs from the country (van Wieringen and Álvarez, 2022, p.3). REEs are essential for manufacturing weapons, such as Neodymium, which is crucial for magnets in missile guidance systems (Kenlan, 2020). However, Europe’s limited mining of REEs, due to their rarity, means the continent relies heavily on imports for this critical resource, making the EU vulnerable to REEs supply squeezes (van Wieringen and Álvarez, 2022, p.1). China dominates the REEs supply with a global market of 60% (ibid). As China controls the mining of REEs, as well as their subsequent processing stages, it has a monopoly over the entire value chain and production of REEs (Feulner, 2023). Another REE is cobalt, which is essential in high-performance batteries for military equipment. The Democratic Republic of Congo is a key actor in cobalt’s global supply chain, contributing 70% to its extraction (van Wieringen and Álvarez, 2022, p.3). China owns 70 % of Congo’s mining industry, illustrating the indirect reach of China in the global supply chain of REEs (ibid). This creates immense risks for supply disruptions. The EU has realized the risk of such dependencies and released the European critical raw materials act (CRMA) in March 2023 (European Commission, 2023). The CRMA aims to reduce the EU’s dependency on China, diversify the supply of raw materials and promote sustainable sourcing practices (ibid). While the EU agrees that it can never be completely self-sufficient for REEs, it aims to reach several goals through the CRMA. By 2030 the EU aims to have at least 10% of their consumption of REEs coming from within the EU (ibid). EU countries may also only source a maximum of 65% of REEs from a single country while at least 40% has to be processed in the EU (ibid). In addition to the CRMA, the EU has signed an agreement with Greenland for the development of sustainable value chains for the

extraction of REEs (Lin, 2023). Greenland has rich deposits of REEs, containing 25 out of the 34 critical REEs (ibid). These resources are becoming increasingly accessible due to the melting of glaciers, but the country is divided about creation of REEs mines due to their impact on the environment (Gregory, 2023). Another problem is that the transition to Greenland's REEs would require at least 15-20 years, meaning that China will continue to have a monopoly on REEs for the foreseeable future (Lin, 2023). Nevertheless, the EU needs to address this issue sooner than later and diversify its supply chain of REEs.

China's Grip on Cotton Linter Supply

European arms manufactures are also concerned about supply disruption risks for other products. There exists a significant over reliance on China for cotton linters which are used to produce nitrocellulose, one of the main components in gunpowder for ammunition (Alim and Nilsson, 2024). The aforementioned capacity problems of ammunition in Chapter one, are largely due to supply chain constraints of nitrocellulose (ibid). According to Papperger, EDIBs rely on China for “more than 70 per cent” of cotton linters (ibid). This dependency makes it increasingly difficult to scale up production and there exists the risk that China could restrict exports for geopolitical reasons, or if relations between China and the EU worsen (ibid). China supplies nitrocellulose to European states, as well as to Russia, which has increased its purchase of Chinese nitrocellulose from 3.4 million dollars in 2022 to 7.8 million dollars in 2023 (Kayali, 2024a and Alim and Nilsson, 2024). There are currently no shortages of nitrocellulose in the major defense firms, but BAE System is “aware of potential concerns relating to the future availability of nitrocellulose” while Rheinmetall has amassed three years' worth of cotton linters (Alim and Nilsson, 2024). European defense firms agree that they must diversify their sources of supply and create a long-term independence for cotton linters. Either they scout for new producers, whose cotton needs to be qualified which demands time, or they consider new products for gunpowder such as wood cellulose which the Swedish defense firm Saab has started to experiment with (Kayali, 2024a and Alim and Nilsson, 2024). The example of nitrocellulose dependency exposes the need for European defense companies to diversify their supply chains in a “multipolar world” where not only the “western rules-based order will be present” (Alim and Nilsson, 2024). The EU has already taken steps, including allocating almost 250 million Euros from the ASAP to projects aimed at European powder production (Kayali, 2024a). However, these projects will take time and Europe continues to rely on China in the next years for its delivery of REEs and cotton splinters.

European Ambitions for Strategic Autonomy

Complications in Achieving EU-SA

The aspiration of EU-SA has been continuously complicated by the dependencies on external actors, especially China and the US. Even more concerning are the potential shifts in the relationship between the EU and its external partners, given that the US security focus is shifting towards the Indo-Pacific and there exists the possibility of China aligning itself with Russia. (Zaborowski, 2024). The EU has already presented several initiatives, such as the discussed EDIS, the CRMA and the ASAP but achieving EU-SA will be a long and problem ridden path. To begin with, the EU's closest ally, the US, has been pursuing a dual strategy which complicates EU-SA. On the one hand, the US has exerted pressure on EU countries, especially under the Trump administration, to increase defense expenditures by spending at least 2% of their GDP on defense. On the other hand, the US has actively discouraged and intervened in projects aimed at collaborative defense ambitions within the EU (Alvarez-Couceiro, 2023). The American resistance stems from the fact that US arms contractors are heavily benefiting from the weapon and ammunition demand in Europe and argue that joint European defense projects could lock US companies out from the European market (Bergmann and Besch, 2023). For example, when the EU announced its plan for the EDF in times of the Trump administration, former US Secretary of Defense Jim Mattis, strongly objected the project and lobbied for US firms to have access to these funds (ibid). It also had concerns that PESCO would restrict US firms to participate in European military projects (Česnakas and Juozaitis, 2023, p.84). Thus, the Trump administration, only supported EU-SA to the extent that it would not weaken NATO or duplicate its functions (ibid). Under the Biden Administration, EU-SA is generally supported if it enables burden-sharing in the transatlantic alliance but Biden views NATO as the primary framework for European defense (idem, p.88). For Biden, stronger EDIBs would create a valuable partner for the American defense industry but only if they serve a strong partnership (idem, p.89). Therefore, protectionist lobbying has continued under the Biden administration, with the focus of the US-EU security dialogue centering on an "administrative arrangement" which grants the US access to more EU defense projects (Bergmann and Besch, 2023). The Biden administration's primary concern is not about a strengthened EU defense sector; rather, it concerns the EU failing to execute the EU-SA. The US no longer wants to manage European security problems but still aims to benefit from the European market. For this to happen, an EDA Administrative Agreement is necessary, allowing

US firms to participate in EDA-managed defense projects which requires a working EU-SA in the future (Česnakas and Juozaitis, 2023, p.89).

Member States vary in their levels of dependence on the US. While smaller states or those with a significant history of reliance on the US are cautious not to offend their closest ally, other states, especially France, are eager to seize every opportunity to advance EU-SA. When the EDA was charged with procuring ammunition, France insisted that EDA funds could only be spend on European products which significantly slowed down the process (Zaborowski, 2024). In light of the deteriorating ammunition situation in Ukraine, Czech President Petr Pavel became creative within the limited capacity of European ammunition producers by starting to raise funds to procure ammunition from various sources, including South Korea, Turkey, and South Africa (ibid and Lazarová, 2024). The European Council supported the scheme, and 20 Member States have since voiced their contribution, including Germany, Sweden, Portugal and even France (Zaborowski, 2024). The scheme aims to deliver 1.5 million shells to the Ukrainian battlefield as early as June 2024 (ibid). Thus, the urgency to support Ukraine, paired with the capability gaps in EDIBs, pushes Member States to revert to off-the-shelf orders for quick solutions, concerned that there is no time to wait for European producers to ramp up production (ibid). For example, in 2023 Poland signed a 1.4 billion dollar deal with the US to buy 116 M1A1 Abrams tanks as well as a 10 billion agreement for High Mobility Artillery Rocket Systems from Lockheed Martin (McLeary and Lynch, 2023). Poland chose not to wait for the MGCS project which can be linked to the perceived urgency of modern tanks in Poland's military, based on its geographical position, history of invasion as well as the problems between German and French cooperation on the MGCS. Other countries, such as Slovakia and Spain are planning on buying F-16 Fighter Jets, while Spain is a partner in the development of the European FCAS (ibid). The problem of American arms sales is that they weaken the EDIBs by "depriving a European company of its core market" (Bergmann and Besch, 2023). When Poland chose the M1A1 Abram, instead of waiting for the MGCS or buying a German Leopard 2, it entered into a decade long commitment of buying and maintaining a weapon system which sets back the opportunity for European defense industries and EU-SA at large (ibid). The US will continue to advocate for US weapon purchases from Europe and even though some European leaders prefer their own defense firms, there lacks a general agreement on the various aspects of EU-SA. If European leaders fail to address these questions, the dynamic of "when the United States speaks on defense in Europe, Europeans listen" will persist. (ibid).

EU-SA: Three Scenarios Unfold

There are three possible scenarios for how EU-SA will unfold. The first scenario is that the EU will become fully independent from the US which is the least likely scenario. The war in Ukraine has shown that a completely autonomous EU from the rest of the world, especially the US and China, has become even less of an option than before (Helwig, 2023, p.64). However, except for France, the idea of a fully autonomous Europe has never been at the center of EU-SA, which can be argued has been dismissed by France as well. France is cautious about fully supporting European defense independence due to its perceived vitality of the French DIB (Česnakas and Juozaitis, 2023, p.46). This reflects a shift in France's prioritization of defense industrial interests over broader EU-SA (ibid). As portrayed, the US holds a significant influence over European defense autonomy which further complicates France's desire to promote EU-SA within the transatlantic alliance because it conflicts with Biden's demand of NATO continuing to have a dominant role in Europe (ibid). The war has highlighted that the current and future state of EDIBs will continue to depend on the US for off-the-shelf orders. A number of Central and Eastern European countries, including Germany, have a strong skepticism towards a completely autonomous Europe, which is exemplified by their continuous dependence on NATO interoperability. Moreover, the decision of Sweden and Finland to join NATO, further illustrate the close security links between Europe and the US (Helwig, 2023, p.64).

The second option for EU-SA is for the EU to increase its capacity to act within its dependence on the US (Česnakas and Juozaitis, 2023, p.211). This scenario seems to be the most probable, given that the EU has shown agency within the system of the US security alliance and economic dependence on China, thereby exercising strategic autonomy *through*, referring to the capabilities of the EU to accomplish its goals (Helwig, 2023, p.64). While military capacities for joint and autonomous actions have only had a limited success and largely depend on the US' continued support, the EU's ability for "collective and impactful decision-making" has portrayed agent driven influence based on its own preferences (idem, p.58). For instance, decoupling from Russian energy, providing membership prospects to Ukraine, and increasing the role of European defense through initiatives such as the EDIS or ASAP showed the political capacity of the EU to act in crisis, without US or NATO influence (idem, p.64). Concerning China, the EU has chosen a strategy that does not involve severing economic ties entirely. Instead, the EU aims to mitigate risks through the CRMA mentioned earlier and the EU's

economic security strategy from 2023 (ibid). This is also different to the approach favored by the US, which includes a stricter decoupling strategy. It will depend on China, especially regarding its support of Russia and any potential military actions concerning Taiwan, whether the EU's approach will be successful (ibid). While the EU has demonstrated some degree of agency in autonomous decision-making, the security and defense policies remain an unfulfilled ambition due to the lack of coordinative, political, and legislative capacities within the EU on these matters (ibid). For instance, while France prioritizes strategic autonomy, other countries like Germany and the UK aim to maintain strong ties with the US due to historical alliances and military cooperation. Furthermore, a lack of alignment in political objectives is the outcome of the strategic cacophony problem which leads to cautious support for EU-SA, especially in Central and Eastern European countries which prioritize NATO interoperability over EU-SA, opting for short-term solutions from the US rather than waiting for European defense firms. While the EU has been able to present important policy initiatives, it still lacks clear legislation due to its limited competences in defense and option to amend the budget to provide military aid as laid out in Art. 41 (2) TEU (Helwig, 2023, p.59). Lastly, there exists a third path, in which EU Member States fail to reach a compromise on EU-SA, leading to different trajectories for defense integration (Česnakas and Juozaitis, 2023, p.211). This outcome would intensify the collective action problem in the EDIBs as fragmentation, the strategic cacophony problem, and defense planning would lead to two groups, one supporting stronger defense integration, while other Member States lag behind (ibid). This outcome is also unlikely as it would fundamentally undermine the concept of EU-SA and erode the very foundation of the EU itself.

Chapter 5 – The Evolving Role of the EU's Cooperation with NATO

Biden vs. Trump: Differing Trajectories for Europe

Trump's Potential NATO Disruption

The previous Chapters analyzed the complex dynamics within the EDIBs and the therethrough resulting challenges for EU-SA. It is evident that under the Biden administration, there is a robust emphasis on strengthening transatlantic ties, with Biden actively pursuing Euro-American relations within NATO's framework. The current administration views the EU as a crucial pillar for transatlantic relations, supporting the EU's plans to shoulder a greater share of responsibilities in the transatlantic alliance (Česnakas and Juozaitis, 2023, p.86). However,

the current support for the NATO–EU strategic partnership is in jeopardy, given the 2024 US elections. As of April 2024, the Republican candidate Donald Trump is leading the election polls (The Economist, 2024). Under the last Trump presidency, heavy critique hailed on European leaders about the unfair burden-sharing in the alliance (Česnakas and Juozaitis, 2023, p.83-84). Trump has consistently critiqued European states for not paying their “bills” with his critique reaching a high at the campaign rally in Conway in February 2024, where he stated that he would not protect European states under Art.5 of NATO (Sullivan, 2024). Although he softened his rhetoric in March, he still hinted at his dissatisfaction of Europe’s military spending, stating that America has “an ocean in between some problems ... we have a nice big, beautiful ocean” (McDonald, 2024). If Trump were to win the election, it is unlikely that he would withdraw from NATO. The strategic and economic advantages are too significant, and he would face considerable pressure both from the American public and from within the GOP, leading to political deadlock (Younis, 2024, Brands and Feaver, 2017, Rooney et al., 2022). Withdrawing from NATO is not Trump’s only option, as he could create a “Dormant” NATO which is an idea pushed by Trump-allied think tanks (Wolf, 2024). The premise is that as commander in chief, Trump could severely disrupt NATO through a number of administrative actions (ibid). These include reducing the number of NATO exercises the US takes part in, reduce the presence of the currently over 100,000 US troops stationed in Europe and withhold payments to NATO infrastructure (ibid). Within a “Dormant” NATO, the US would still be bound under Art.5, but it would not be prepared as it will not have the capabilities in Europe anymore (ibid). Under this approach, the European frontiers would be completely guarded by the Europeans as the US would shift the European security burden to the European continent (Maitra, 2023, p.13-15). The US would assume the role of an “offshore balancer” with a primary focus on the Asia-Pacific (ibid). Under this strategy, there would be a significant reduction of US naval and air presence in Europe and the main focus would be on strengthening nuclear security partnerships with France and the UK (idem, p.13). Thus, the US would serve as “a logistics provider of last resort and Washington as the final guarantor of free sea lanes and trade routes” (ibid). It is not certain that Trump would adopt such a strategy, but given his ongoing criticisms of European NATO partners, it is a scenario that his administration could potentially pursue.

NATO Outlook Under Biden

Under Biden, such a scenario is unlikely, given that his administration consists of “Atlanticists”, such as Antony Blinken, serving as Secretary of State, and who is known for his pro NATO stance or National Security Adviser Jake Sullivan who shares similar world views with European leaders (Česnakas and Juozaitis, 2023, p.84). In Biden’s speech on NATO’s 75th Anniversary, he stated “Today, NATO is larger, stronger, and more determined than ever before [...] we must choose to protect this progress and build on it” (Biden, 2024). Although, another Biden term would provide the alliance with more security, it remains imperative for Europe to transfer the burden of defense from the US to its own forces (Michta, 2024). Currently, the US is debating whether it should prioritize the Pacific or continue its presence in the Atlantic and the Pacific. An outbreak of a crisis in Asia could turn into a zero-sum game in which Europe will lose (ibid). In either election outcome, NATO will maintain a pivotal role within the European security architecture and European states will embark on burden shifting rather than burden sharing. As Niklas Helwig from the Finnish Institute of International Affairs projects, “the EU’s role on security and defense is set to become that of a muscled-up junior partner to the United States and NATO” (Helwig, 2023, p.65). The election results will influence how smooth the transition from the current status quo will be. A victory for Trump would introduce more uncertainty regarding the EU’s role within NATO. Trump’s intentions are more ambiguous, given that he could aim for a “Dormant” NATO. Additionally, his criticisms on European military spending and unwillingness to provide aid to Ukraine further contribute to this uncertainty. Conversely, a Biden victory suggests a smoother transition. Biden views EU-SA cooperation as a means to facilitate more efficient burden-shifting in transatlantic relations. Consequently, it would be easier for the US to redirect attention toward other global regions (Česnakas and Juozaitis, 2023, p.90). The following section examines the implications of burden shifting for Europe and assesses Europe’s capacity to manage it.

From Burden Sharing to Burden Shifting

Europe’s Defense Spending Surge

The war in Ukraine has increased efforts in Europe to contribute to a fair and equitable share of defense spending among NATO allies. Defense spending in Europe has increased from 300 billion USD in 2021 to an expected 380 billion USD in 2024, which for the first time amounts to 2% of their combined GDP (NATO, 2024b). At the Vilnius Summit in 2023, it was agreed that allies should invest a minimum of 2% (ibid). While progress is being made, the challenges

on the EDIB level are going to have an impact on future spending trends, as most defense industries are already working at maximum capacity. Thus, the concept of burden sharing, defined as “the degree to which allies are financially shouldering the costs of collective security” will continue to remain an issue in the alliance (McInnis et al., 2024). Especially Germany, which is predicted to reach the 2% goal in 2024, will have a massive financial gap in military spending when the 100-billion-euro special fund is used up in 2027. In 2023, only 11 out of 30 NATO members reached the 2% goal, showing that burden sharing has proven ineffective to reach its desired outcome. This sparked a new debate about the lopsided distribution of power in NATO, namely from burden sharing to burden shifting (Menon, 2022, p.5). Within this framework, the US is going to minimize its own contribution to Europe by offloading responsibilities to the continent. Burden shifting involves more than defense spending, as it centers around the primary responsibilities that Europe needs for its defense (ibid). These capabilities include rapid deployment, strategic airlift capabilities and C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance) capabilities (ibid).

Strategies for Burden Shifting

Political scientist Rajan Menon suggests four steps that Europe should take to materialize burden shifting: change the spending pattern, increase coordination in armament production, create a European Rapid Response Force, and a “all-European defense” on the eastern front (idem, p.6-7). The idea to change the spending pattern has been evoked by several experts. In a CSIS Brief, Kathleen McInnis and Daniel Fata, both part of the international security program, argued that “NATO’s collective strength isn’t just in its ability to defend its members from an attack [...] but also in its requirements to ensure members are undertaking necessary domestic activities to prepare for crisis response and, potentially, military action” (McInnis and Fata, 2023). They argue that allies should spend 4% of their GDP on defense, with at least 2% allocated to security-related activities which are not accounted for in NATO’s defense spending (ibid). Rather than conceptualizing NATO contributions as solely financial, they advocate for a broader understanding of how allies share responsibilities for collective defense such as investments in Dual-Use Infrastructure in frontline NATO states, including transportation networks that are needed for military mobility and logistical support (ibid). For example, former Warsaw Pact members have different railroad gauges and load standards which require significant investments to update their standards of sending and resupplying troops to the

frontlines (ibid). This framework for NATO spending, termed “responsibility sharing” includes other responsibilities such as expenditures on public safety, support for Ukraine and the cost of pivoting from Russian energy sources (McInnis et al., 2024). Using these measurements, 13 allies are spending over 4% of GDP on “responsibility sharing” (ibid). While broadening the scope of NATO contributions are positive steps, defense spending will remain at the center of the burden shifting debate. The second suggestion of increasing coordination in armament production is difficult in practice as the previous Chapter has shown.

The divergent national interests, fragmentation, and a lack of alignment in political objectives hinders effective coordination and integration in armament production. Menon argues that increased cooperation can be achieved through comparative advantage, but the specialization dilemma is complicating such efforts as well as various threat perceptions across Europe. The demand for a European Rapid Response Force, and an “all-European defense” on the eastern front is also an aspiring demand, given the challenges outlined at the national levels. During the Madrid Summit, NATO proposed the New Force Model (NFM) which aims to provide more forces than the NATO Response Force (Barry et al., 2023, p.2). However, the capabilities of European key ground forces are limited and there are several challenges regarding the implementation of the NFM (idem, p.3). While support for the NFM exists at the political-strategic level, there is uncertainty over the divergences in national policy and capability development in practice (ibid). The strategic fit problem leads to nations developing different land modernization plans which are based on their geographical locations, such as frontline states having worst-case plans while other European allies might not (ibid). Other problems include the multinational design and the shrinking size of national armies due to shortages in the military (ibid). These challenges need to be overcome because the expectations of the US are that Europe supplies at least half of the forces needed to protect the Euro-Atlantic area (idem, p.9). The US finds itself at a crossroad regarding defense cooperation with Europe. Historically, the US has urged European nations to increase their defense contributions, but only if these efforts strengthen NATO rather than fostering independent European defense capabilities and command structures. However, as the burden of defense gradually shifts from the US to Europe, European countries continue to rely on existing US frameworks. This dependency is exemplified by Germany’s strong preference for US systems to maintain interoperability within NATO. This leads to a pressing question: Will collective defense initiatives be realized through NATO or the EU?

EU and NATO Operability

A Stronger European NATO Pillar

This section aims to analyze how NATO and the EU can organize their strategic foundations for security and defense in Europe. Following the invasion of Ukraine, collective defense has been the primary security challenge for Europe (Perot, 2022, p.1). For NATO this means a return to its original “raison d’être” which is more difficult for the EU’s CSDP which primarily focuses on crisis management (idem, p.3). According to the NATO strategy adopted in Madrid, collective defense is the guiding principle of NATO and crisis management should complement this principle to guarantee the security of all NATO members (Matlé, 2023, p.20). The Strategic Compass of the EU acknowledges that NATO is essential for the collective defense in Europe, and it thus becomes apparent that NATO will continue to play a central role in this regard (ibid). The EU can play an indirect and direct role in contributing to collective defense (Perot, 2022, p.4). As an indirect contributor, the EU can continue to enhance military mobility in the continent because as already outlined, transferring troops from Western to Eastern Europe presents a logistical challenge (ibid). Furthermore, it entails that EU initiatives such as PESCO and the EDIP are “geared towards meeting the capability needs associated with collective defense” (ibid). The focus should not just be on advanced weapons but also on enhancing their production methods and joint procurement (ibid). As the analysis has shown, the dilemma that emerges here is that collective defense under NATO rests on US weapon systems and the capability gaps in Europe complicate the shift towards meeting those capability gaps. In a more direct role, the EU could make use of Article 42.7 of the TEU which states the obligation of EU Member States to provide all available aid and assistance to a victim of armed aggression (ibid). However, in practice, the EU does not have the practical arrangements to implement such obligations, leaving collective defense with NATO (Perot, 2022, p.4). With collective defense remaining under NATO, the dynamic between NATO and the EU will mirror what has been discussed previously regarding EU-SA, namely the EU evolving into a stronger partner alongside the US and NATO, effectively forming a robust “European Pillar” within NATO (Ringsmose and Webber, 2020, p.1). The analysis has shown that a non-NATO solution to European defense is out of the picture and the current initiatives of the EU have demonstrated that they continue to rely on American leadership (idem, p.12). European projects such as the EDIP are meant to preserve NATO, not undermine it (ibid). The state of the EDIBs has shown that the defense sector in Europe will require at least 10 to 15 years to have strong enough

capabilities to replace those of the US (ibid). Even then, the EU would not have the credibility and autonomy for which Article 5 is set up for (ibid). Although the US remains irreplaceable, Europe needs to step up, especially considering NATO's primary security concern being Russia but the US focus is on the Indo-Pacific. This means that Europe must assume a greater strategic responsibility (Matlé, 2023, p.21). This should happen in two ways. Firstly, European countries should provide half of the forces and capabilities required for collective defense (Binnendijk, Hamilton and Vershbow in Matlé, 2023, p.2). Secondly, the EU should be able to operate in Europe's neighborhood without reliance on US enablers (ibid). This would create a European pillar in the context of burden shifting. The aim is to "demonstrate the worth of 'European capabilities in the NATO context' and to show to the US that there is a constructive basis to its relationship with the Alliance" (Ringsmose and Webber, 2020, p.15). By enhancing European capabilities within the NATO framework, Europe can solidify its role as a key partner alongside the US.

UK's Post-Brexit Security Role

Since Brexit, the UK is no longer officially part of the EU security architecture, but it continues to contribute to European security both at the European and NATO level. In the Ukraine war, the UK was an early adopter while it simultaneously contributed to filling European capability gaps that widened with more equipment sent to Ukraine (Whitman, 2024). For instance, when Poland sent T-72 tanks to Ukraine, the UK sent its Challenger tanks to Poland to ensure that there exist no capability shortfalls (McInnis and Fata, 2023). The UK's role is clarified in the 2021 publication the Integrated Review of Security, Defense, Development, and Foreign Policy which highlights Britain's status as a Euro-Atlantic power (Whitman, 2024). However, it emphasizes that, regarding security and defense, the UK's primary focus remains on Europe. Although not formally part of the EU's CSDP, the UK has coordinated its support for Ukraine with the EU on sanctions and military training operations (ibid). Yet, the UK's position on the EDIS is more reserved due to the exclusion of non-EU members (ibid). Nevertheless, the UK views itself as a "thought leader" in security and defense and is deeply committed to NATO (ibid). For the UK, NATO makes up the core of European security and any EU project outside NATO should have the aim to enhance the capabilities within the alliance (ibid). The UK occupies a unique position as a mediator between the EU and the US. It strongly advocates for a transatlantic relationship rooted in NATO. However, it has to showcase the advantages of a military alliance with Europe to the US while encouraging European states to enhance their

security and defense capabilities (ibid). If the next US administration were to significantly reduce its involvement in Europe, the UK would prefer to strengthen its current individual security partnerships with European countries rather than rely on the EU for collective security. Lastly, it is crucial to mention that the UK yields significant value to NATO's nuclear deterrence given that, along with the US, the UK is the only NATO ally that assigned its nuclear forces to NATO (Webber in Olsen, 2024). While nuclear deterrence within NATO is of significant importance, this thesis primarily concentrates on conventional fighting capabilities. It is undoubtedly an area warranting further research in the context of the EU-NATO-UK-US security architecture in response to the Russian threat.

Conclusion

As the war in Ukraine continues with no end in sight, demanding increasingly more weapons, equipment, and ammunition, Europe's security landscape grows increasingly precarious. While the US and Europe are continuing to provide financial and military aid to Ukraine, there are several challenges that jeopardize a multitude of relationships, future security architectures and interdependencies. These challenges will be most acutely felt on two fronts: at the European level and within the transatlantic alliance, significantly influencing the future trajectory of NATO. These challenges are deeply interconnected, and this thesis has aimed to provide the reader with a comprehensive framework for grasping their interconnected nature. To explain how these challenges affect the broader context in which they exist, the thesis employed a three-dimensional model which assessed the challenges at a national, European, and transatlantic level.

The first Chapter elucidated the foundational challenges within the security landscape, focusing on the intricate web of industries, military entities, and governmental bodies making up the DIBs. The first conclusion from this is that the challenges surrounding Germany, France, and the UK has demonstrated that the largest European arms industries are facing similar problems, but that the challenges originate from varying domestic factors. The decades long neglect in Germany's DIB has unveiled deep rooted challenges. The government's short-termism hinders long-term contracts for sustainable production. Bureaucratic hurdles plague procurement processes, despite reform efforts in the BAaINBw. Capacity issues, evident in prolonged production timeframes and supply chain disruptions, delay delivery times of critical

ammunition. Similarly, the French DIB encounters difficulties in meeting heightened production demands. Labor shortages hinder full-scale mobilization, exacerbated by increased military spending. As in the case of Germany, short-termism strains government-industry relations, hindering long-term planning. Supply chain disruptions further impede production. Despite efforts to streamline processes and encourage industry growth, tensions persist between the government's push for a war economy and industry concerns about financial burdens and feasibility. The UK's defense procurement system is broken and overstrained by technical specifications that hinder industry growth, as exemplified by the Ajax program. Short-term budget cycles hinder long-term planning which lead to delays and cost overruns. A culture of optimism and misaligned expectations exacerbates supply chain challenges, impacting capability delivery.

These challenges extend beyond the borders of individual nations, significantly affecting the collective action problem across the political, economic, and military domain. The second conclusion is that European states will continue to rely on the US for their military security as a result of the fragmented status quo concerning European defense. Divergent threat perceptions among EU Member States complicate cooperation on defense projects, exemplified by France and Germany's differing strategic approaches. The strategic fit problem arises from these disparities, with France prioritizing EU defense autonomy while Germany leans towards NATO. The specialization dilemma slows down joint projects like the FCAS and MGCS due to conflicts over responsibility sharing. The exclusion of the UK further complicates EDIB efforts, highlighting the need for broader inclusion in European defense initiatives. Economic challenges, such as fragmentation in the European defense market, arise from national protectionism, leading to duplicated systems and limited cooperation. Moreover, the lack of cross-border links exacerbates this issue. Short-termism, in Germany and France, diverts funding from EU-based defense firms, worsening with limited long-term investment. At the military dimension, defense planning faces challenges resulting from the fragmented European defense market and national decision-making. While initiatives like the Strategic Compass and PESCO aim to enhance cooperation in the EU, it is evident that Europe is going to continue to rely on the US. However, the EU's defense problems do not just have an internal dimension as the analysis of China's domination of the European supply chain for critical minerals illustrates. China poses a significant threat for the EU-SA project, especially because of the uncertainty governing China's alignment with adversaries of European states. A deterioration in relations could impact the supply chain, leading to severe shortages in the EU

defense market. Mitigating the danger of this dependence will not be possible in the short-term, but the EU is actively attempting to diversify their supply chain, which will also depend on the decision of external actors such as Greenland. European states have to carefully balance their need for Chinese REEs and cotton linters while ensuring that Chinese foreign policy does not work against the targets set out in Europe's strategic compass.

EU-SA should not be viewed as an entirely autonomous strategy, as the EU neither seeks nor possesses the capacity for full military independence. The third conclusion is that based on the challenges present in Europe, EU-SA will follow a middle path, in which the EU increases its capacity to act within its current dependencies on the US and China and builds a stronger European NATO pillar. This form of EU-SA is a combination of autonomy as responsibility and autonomy as hedging. EU members have to align their strategic aims to the extent that they can jointly shoulder a larger burden within NATO. EU members have to advocate for more defense-industrial autonomy and collaboration, but countries should continue to be able to collaborate with other industries outside of Europe. At the same time, the EU's approach to EU-SA should incorporate the possible withdrawal of the US from Europe's security architecture, requiring Europe to strengthen its defense-industrial autonomy. In order for this to happen, Germany and France have to align their concepts of strategic autonomy and include the UK in their strategy, both at a political and an industrial level. The UK remains a crucial partner for the EU and is committed to protect its European allies but primarily within the focus of NATO. The challenges within the EDIBs and the pursuit of EU-SA have significant consequences for NATO burden sharing as NATO will continue to be the primary security structure through which the EU achieves collective and territorial defense. The framework of the EU is tailored more towards crisis management and the capability gaps resulting out of the challenges in EDIBs are too large to be filled by the EU in the near future. This does not mean the EU can just continue depending on the US but needs to actively demonstrate the value of European capabilities within NATO, especially given the fact that the role of the US in NATO might change with the upcoming elections. The thesis forecasts that the US is going to start shifting the burden of European defense to Europe, regardless of Biden or Trump securing victory in 2024, given the US' strategic priorities in the Indo-Pacific. Under Biden, this burden shifting dynamic will be more favorable to current state of EDIBs, giving them more time and resources to build up their capabilities. Trump might trigger more damaging actions through a dormant NATO, leading to a faster burden shift to Europe, for which it is currently not prepared. European military autonomy aligns with US interests and both sides of the Atlantic would

benefit from stronger EDIBs. Yet, in order for Europe to become a stronger pillar within NATO, the US, France, Germany, and the UK must find solutions on how to enhance the autonomy of Europe's arms industries. This strategy should not exclude US industry interests in Europe while simultaneously shifting the operability of arms and weapons from the US into an autonomous European framework which uses European weapons and collaboration, but whose security architecture operates within the broader context of NATO. Therefore, EU-SA should be understood as the European strive, including the UK, to overcome the challenges of EDIBs while striving for autonomy within NATO's framework. This transition would indicate to the US that Europe is evolving into a dependable military partner, enabling the US to decrease its protector role in Europe and for the first time since the end of WWI, making Europe the defender of Europe again.

Bibliography

- Abboud, L. (2023) 'Emmanuel Macron to boost French defence spending in response to Ukraine war,' *Financial Times*, 20 January. <https://www.ft.com/content/36985cf0-715e-46f7-92cb-cce87d7cc8a6>.
- Abboud, L. (2024) 'Thales's growth hit by supply issues as order book hits record high,' *Financial Times*, 5 March. <https://www.ft.com/content/ff9df8a9-0339-4c04-962b-cbfbfdc9644f>.
- Air & Space Forces Magazine and Kenlan, A. (2020) 'Rare Elements of Security,' *Air & Space Forces Magazine*, 6 November. <https://www.airandspaceforces.com/article/rare-elements-of-security/>.
- Airforce Technology (2020) 'French Air Force receives two KC-130J Super Hercules refuellers,' *Airforce Technology*, 10 February. <https://www.airforce-technology.com/news/french-air-force-super-hercules/>.
- Alim, A. and Nilsson, P. (2024) 'European defence groups warn over reliance on Chinese cotton used in gunpowder,' *Financial Times*, 8 April. <https://www.ft.com/content/23807ef8-fc6b-41c9-ae7b-9c9ad3a27e82>.

- Alvarez-Couceiro, P. (2023) *Europe at a strategic disadvantage: a fragmented defense industry - War on the rocks*. <https://warontherocks.com/2023/04/europe-at-a-strategic-disadvantage-a-fragmented-defense-industry/>.
- Aries, H., Giegerich, B. and Lawrenson, T. (2023) 'The Guns of Europe: Defence-industrial challenges in a Time of War,' *Survival*, 65(3), pp. 7–24.
<https://doi.org/10.1080/00396338.2023.2218716>.
- Army Technology (2000) *ASCOD (Pizarro / Ulan) Armoured Fighting Vehicle - Army Technology*. <https://www.army-technology.com/projects/ascod/?cf-view=>.
- Army Technology (2023) 'Hiring activity in the French aerospace, defence and security industry increased in Q4 2023,' *Army Technology*, 19 October. <https://www.army-technology.com/dashboards/jobs/hiring-french-aerospace-defence-and-security-industry/>
- Ataman, J. and Sebastian, C. (2023) 'Ukraine is firing shells faster than can be supplied. Can Europe catch up?,' *CNN*, 17 September.
<https://edition.cnn.com/2023/09/17/europe/ukraine-shell-supplies-intl/index.html>.
- Auran, J. (2024) 'Examining the French Military Programming Act 2024–2030,' *European Security & Defence*, 30 January. <https://euro-sd.com/2024/01/articles/36190/examining-the-french-military-programming-act-2024-2030/>.
- Barbieux, F. (2023) *Tackling the Issue of Fragmentation in the European Defence Industry*, Finlabel European Army Interoperability Centre. <https://finabel.org/wp-content/uploads/2023/09/IF-PDFs.pdf>.
- Barigazzi, J. (2024) 'Countries must send more ammo to Ukraine: EU's top diplomat,' *POLITICO*, 22 February. <https://www.politico.eu/article/countries-must-send-more-ammunition-ukraine-eu-top-diplomat-josep-borrell/>.

- Barry, B. *et al.* (2023) *The Future of NATO's European Land Forces: Plans, Challenges, Prospects*, IISS. https://www.iiss.org/globalassets/media-library---content--migration/files/research-papers/2023/06/iiss_the-future-of-natos-european-land-forces_june-2023.pdf.
- Belin, J. *et al.* (2017) *Defence Industrial Links Between the EU and the US*, ARES. <https://www.iris-france.org/wp-content/uploads/2017/09/Ares-20-Report-EU-DTIB-Sept-2017.pdf>.
- Béraud-Sudreau, L. and Scarazzato, L. (2023) *Beyond Fragmentation?: Mapping the European Defence Industry in an era of strategic flux*, Centre for Security, Diplomacy and Strategy. <https://finabel.org/wp-content/uploads/2023/09/IF-PDFs.pdf>.
- Bergmann, M. *et al.* (2024) 'The European Union Charts Its Own Path for European Rearmament,' *CSIS*, 8 March. <https://www.csis.org/analysis/european-union-charts-its-own-path-european-rearmament>.
- Bergmann, M. and Besch, S. (2023) 'Why European defense still depends on America: Don't believe the hype—The war in Ukraine has led to little change,' *Foreign Affairs*, 7 March. <https://www.foreignaffairs.com/ukraine/why-european-defense-still-depends-america>.
- Berlinski, C. (2019) 'Europe's dependence on the US was all part of the plan,' *POLITICO*, 18 April. <https://www.politico.eu/article/europe-dependence-on-the-us-was-all-part-of-the-plan-donald-trump-nato/>.
- Besch, S. (2024) *Understanding the EU's new defense industrial strategy*. <https://carnegieendowment.org/2024/03/08/understanding-eu-s-new-defense-industrial-strategy-pub-91937>.
- Besch, S., Droin, M. and Monaghan, S. (2023) 'A stronger European defense requires resetting cooperation between the U.K. and Europe,' *Lawfare*, 28 February.

<https://www.lawfaremedia.org/article/stronger-european-defense-requires-resetting-cooperation-between-uk-and-europe>.

Biden, J. (2024) *Statement from President Joe Biden on NATO's 75th Anniversary*.

<https://www.whitehouse.gov/briefing-room/statements-releases/2024/04/04/statement-from-president-joe-biden-on-natos-75th-anniversary/>.

Bosen, R. (2022) 'German military: Strangled by bureaucracy,' *DW*, 7 June.

<https://www.dw.com/en/germanys-military-upgrade-hampered-by-bureaucracy/a-62046032>.

Brändle, S. (2024) 'Rüstungsfirmen verstaatlichen: Frankreich erwägt Kriegswirtschaft,' *Der Standard*, 29 March.

<https://www.derstandard.at/story/3000000213713/ruestungsfirmen-verstaatlichen-frankreich-erwaegt-kriegswirtschaft>.

Brands, H. and Feaver, P. (2017) *Saving Realism from the So-Called Realists*.

<https://www.commentary.org/articles/hal-brands/saving-realism-called-realists/>.

Brands, H. and Feaver, P.D. (2017) 'What are America's alliances good for?,' *Parameters*, 47(2). <https://doi.org/10.55540/0031-1723.2928>.

Brzoska, M. (2023) *Arsenale, Aufträge, Amigos: (K)eine Wende in der Rüstungsbeschaffung der Bundeswehr?*, *Greenpeace*.

https://www.greenpeace.de/publikationen/Beschaffungsstudie_Bundeswehr.pdf.

Bücker, T. (2023) 'Wie die deutsche Rüstungsindustrie dasteht,' *Tagesschau*, 3 February.

<https://www.tagesschau.de/wirtschaft/unternehmen/ruestungsindustrie-branche-waffen-101.html>.

Bundesregierung (2024) *Waffen und militärische Ausrüstung für die Ukraine* |

Bundesregierung. <https://www.bundesregierung.de/breg-de/schwerpunkte/krieg-in-der-ukraine/lieferungen-ukraine-2054514>.

- Caulcutt, C. (2024) 'Macron warns Europe 'can die' in alarmist speech on protectionism, geopolitical threats,' *POLITICO*, 25 April. <https://www.politico.eu/article/emmanuel-macron-europe-china-competition-protectionism-geopolitics/>.
- Česnakas, G. and Juozaitis, J. (2023) *European Strategic Autonomy and small states' security*, Routledge eBooks. <https://doi.org/10.4324/9781003324867>.
- Chazan, G. (2024) 'France and Germany reach 'breakthrough' on joint tank plans,' *Financial Times*, 22 March. <https://www.ft.com/content/4c9e40a7-cb30-4915-b750-fb9c26254c6e>.
- Ciensi, J. (2024) 'Defense chief revamps German military to prepare for war,' *POLITICO*, 4 April. <https://www.politico.eu/article/germanys-pistorius-reorganizes-bundeswehr-to-prepare-for-war/>.
- Council of the EU (2021) *Issues paper: Strategic Autonomy, Strategic Choices*. Council of the European Union. <https://www.consilium.europa.eu/media/49404/strategic-autonomy-issues-paper-5-february-2021-web.pdf>.
- CVCE (1998) *Joint Declaration on European Defence Joint Declaration issued at the British-French Summit (Saint-Malo, 4 December 1998)*, CVCE. https://www.cvce.eu/en/obj/franco_british_st_malo_declaration_4_december_1998-en-f3cd16fb-fc37-4d52-936f-c8e9bc80f24f.html.
- Dale, D. (2024) 'Fact check: Debunking five false Trump claims about NATO,' *CNN Politics*, 13 February. <https://edition.cnn.com/2024/02/13/politics/fact-check-trump-nato/index.html>.
- Damen, M. (2022) *EU strategic autonomy 2013-2023: From concept to capacity*. European Parliamentary Research Service. [https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI\(2022\)733589](https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2022)733589).

Dangwal, A. (2024) 'German Airbus, French Dassault 'Lock Horns' over Eurodrone RPAS project; comes after 6th-Gen FCAS spat,' *The EurAsian Times*, 3 February.

<https://www.eurasiantimes.com/german-airbus-french-dassault-lock-horns-over-eurodrone/>.

Defense Archives (2024) *Details emerge on workshare agreement for the MGCS.*

<https://defensearchives.de/news/details-emerge-on-workshare-agreement-for-the-mgcs/>.

Defense Committee (2023) *It is broke — and it's time to fix it The UK's defence procurement system, House of Commons Defence Committee.* HC 1099.

<https://publications.parliament.uk/pa/cm5803/cmselect/cmdfence/1099/report.html>.

Despont, C. (2022) 'French Defense at a Crossroads,' *CSS Analyses in Security Policy*, 307.

<https://doi.org/10.3929/ethz-b-000554992>.

Deutsche Welle (2024) 'Germany's military is aging and shrinking, says report,' *Deutsche Welle*, 12 March. <https://www.dw.com/en/germanys-military-is-aging-and-shrinking-says-report/a-68504942>.

Deutscher Bundestag (2022) *Deutscher Bundestag - Bundestag beschleunigt Beschaffungswesen bei der Bundeswehr.*

<https://www.bundestag.de/dokumente/textarchiv/2022/kw27-de-bundeswehrbeschaffungsbeschleunigung-900544>.

DGAP (2022) *Zeitenwende.* <https://dgap.org/en/research/expertise/zeitenwende>.

Dorman, A. (2024) *Britain must rearm to strengthen NATO and meet threats beyond Russia and terrorism.* <https://www.chathamhouse.org/2024/03/britain-must-rearm-strengthen-nato-and-meet-threats-beyond-russia-and-terrorism>.

- Eckes, C. (2015) 'The CSFP and Other EU Policies: A Difference in Nature?,' *European Foreign Affairs Review*, 20(4), pp. 535–552.
https://pure.uva.nl/ws/files/2796405/179461_544419.pdf.
- EEAS (2022) *A strategic compass for security and defence*.
https://www.eeas.europa.eu/eeas/strategic-compass-security-and-defence-1_en.
- Endt, C. (2024) 'Veraltet, verspätet, überteuert: Deutschlands Nachrüstungsindustrie,' *Sächsische Zeitung*, 10 April. <https://www.saechsische.de/fernsehen/veraltet-verspaetet-ueberteuert-deutschlands-nachruestungsindustrie-5871170.html>.
- EurLex (no date) *European security and defence identity*. <https://eur-lex.europa.eu/EN/legal-content/glossary/european-security-and-defence-identity.html>.
- Euronews and Urvoy, H. (2023) 'Homemade or imported - France and Germany have different strategies on air defence systems,' *Euronews*, 29 June.
<https://www.euronews.com/2023/06/29/homemade-or-imported-france-and-germany-have-different-strategies-on-air-defence-systems>.
- European Commission (2023) *Critical Raw Materials: ensuring secure and sustainable supply chains for EU's green and digital future*.
https://ec.europa.eu/commission/presscorner/detail/en/IP_23_1661.
- European Commission (2024) 'First-ever European defence industrial strategy to enhance Europe's readiness and security,' *European Commission*, 5 March.
https://commission.europa.eu/news/first-ever-european-defence-industrial-strategy-enhance-europes-readiness-and-security-2024-03-05_en.
- European Defence Agency (2022) *2022 Coordinated Annual Review on Defence Report*, *European Union*. <https://eda.europa.eu/docs/default-source/eda-publications/2022-card-report.pdf>.

- Feulner, S. (2022) 'Defense Metals - Die Abhängigkeit der Rüstungsindustrie,' *Researchanalyst*, 9 March. <https://researchanalyst.com/de/report/defense-metals-die-abhaengigkeit-der-ruestungsindustrie>.
- Fiott, D. (2018) 'Strategic Autonomy: Towards ‘European Sovereignty’ in EU Defence?,' *European Union Institute for Security Studies* [Preprint].
<https://www.jstor.org/stable/resrep21120>.
- Gady, F.-S. (2023a) 'German defense companies could be Europe’s arsenal of democracy,' *Foreign Policy*, 6 July. <https://foreignpolicy.com/2023/07/06/germany-bundeswehr-defense-industry-zeitenwende-weapons-arms-exports-rheinmetall-leopard-tanks-drones/>.
- Gady, F.-S. (2023b) 'German defense companies could be Europe’s arsenal of democracy,' *Foreign Policy*, 6 July. <https://foreignpolicy.com/2023/07/06/germany-bundeswehr-defense-industry-zeitenwende-weapons-arms-exports-rheinmetall-leopard-tanks-drones/>.
- German Federal Government (2022) *National Security Strategy Robust. Resilient. Sustainable. Integrated Security for Germany*, The Federal Government.
<https://www.nationalesicherheitsstrategie.de/National-Security-Strategy-EN.pdf>.
- Giegerich, B. and Mölling, C. (2018) 'The United Kingdom’s contribution to European security and defence,' *DGAP* [Preprint].
<https://dgap.org/en/research/publications/united-kingdoms-contribution-european-security-and-defence>.
- Gregory, M. (2023) 'Greenland Has Climate Change-Fighting Minerals. Will it Mine Them?,' *Atmos*, 3 May. <https://atmos.earth/greenland-rare-earth-elements-glaciers/>.
- Haglund, D.G. (2021) *The Defence industrial base and the West*. Routledge.

- Heiming, G. (2023) 'Die Beschaffung von 50 Schützenpanzer Puma gebilligt,' *Europäische Sicherheit & Technik*, 11 May. <https://esut.de/2023/05/meldungen/41984/die-beschaffung-von-50-schuetzenpanzer-puma-gebilligt/>.
- Helmonds, S., Mölling, C. and Winter, T. (2023) *European Defense in A New Age (#EDINA)*, DGAP. German Council on Foreign Relations. https://dgap.org/system/files/article_pdfs/DGAP-Report-2023-6-EN-EDINA%20.pdf.
- Helwig, N. (2023) 'EU Strategic Autonomy after the Russian Invasion of Ukraine: Europe's Capacity to Act in Times of War,' *Journal of Common Market Studies*, 61(S1), pp. 57–67. <https://doi.org/10.1111/jcms.13527>.
- Hinzmann, K.-D. (2024) 'Bundeswehr-Reform: Pistorius plant Neuausrichtung der Kommandostrukturen,' *Merkur*, 10 April. <https://www.merkur.de/politik/nato-bundesregierung-cdu-ukraine-krieg-putin-bundeswehr-puma-panzer-92991703.html>.
- Horowitz, L. and Wachs, L. (2023) 'France's Nuclear Weapons and Europe,' *German Institute for International and Security Affairs*, 15. https://www.swp-berlin.org/publications/products/comments/2023C15_Frances_NuclearWeapons.pdf.
- Hoyle, C. (2023) 'RAF to highlight need for strong UK defence industrial base during DSEI show,' *DSEI*, 27 September. <https://www.dsei.co.uk/news/raf-highlight-need-strong-uk-defence-industrial-base-during-dsei-show>.
- Hübner, A. (2023) 'German firm sees U.S. getting lion's share of 100 billion euro military fund,' *Reuters*, 4 July. <https://www.reuters.com/business/aerospace-defense/german-firm-sees-us-getting-lions-share-100-bln-euro-military-fund-2023-07-04/>.
- Hüttmann, M.G. and Wehling, H.-G. (2013) *Das Europalexikon*. Dietz.
- IISS (2021) 'The coordination problem in European defence planning,' *Strategic Comments*, 27(7), pp. vi–viii. <https://doi.org/10.1080/13567888.2021.1987757>.

- Inverardi, M. and More, R. (2024) 'Rheinmetall sees record sales in 'new decade' of defence spending,' *Reuters*, 14 March. <https://www.reuters.com/business/rheinmetall-hails-new-decade-defence-spending-drives-up-sales-2024-03-14/>.
- Jackson, R., Sørensen, G. and Møller, J. (2018) *introduction to International Relations theories and approaches*. 7th edn. Oxford University Press.
- Kamiński, T. (2022) 'Don't Look at Trump: The EU Needs Strategic Autonomy,' *Toward a Bright European Future* [Preprint], (16). https://4liberty.eu/wp-content/files/TOMASZ_KAMISKI_DONT_LOOK_AT_TRUMP_THE_EU_NEEDS_STRATEGIC_AUTONOMY.pdf.
- Kayali, L. (2023) 'France's arms heartland tiptoes into the war economy,' *POLITICO*, 21 March. <https://www.politico.eu/article/eu-france-defense-arms-heartland-nexter-war-economy-ukraine/>.
- Kayali, L. (2024a) 'China is a threat to Europe's gunpowder supply, defense boss warns,' *POLITICO*, 19 April. <https://www.politico.eu/article/saab-ceo-warns-against-reliance-china-make-weapons-europe/>.
- Kayali, L. (2024b) 'France has a military drone radar everyone's desperate to get,' *POLITICO*, 8 April. <https://www.politico.eu/article/soar-demand-france-military-radars-ground-master-air-surveillance-thales-war-ukraine/>.
- Kayali, L., Bayer, L. and Posaner, J. (2023) 'Europe's military buildup: More talk than action,' *POLITICO*, 15 June. <https://www.politico.eu/article/europe-military-industry-defense-buildup-war/>.
- Kayali, L. and Posaner, J. (2024) 'France and Germany can't agree on how to fight Europe's wars,' *POLITICO*, 15 February. <https://www.politico.eu/article/france-germany-macron-scholz-russia-defense-policy-european-union/>.

- Klasa, A. (2023) 'Thales steps up hiring as defence spending booms,' *Financial Times*, 26 February. <https://www.ft.com/content/8edfa356-09a9-4e2f-90c7-624ea65ad9b4>.
- Knight, B. (2023) 'German military must be ‘fit for war,’' *dw.com*, 31 October. <https://www.dw.com/en/bundeswehr-must-be-fit-for-war-says-german-defense-minister/a-67268608>.
- Kramper, G. (2023) 'Schützenpanzer Puma: Warum sich einer der beiden Hersteller über den Totalausfall von 18 Panzern freuen kann,' *Stern*, 9 January. <https://www.stern.de/digital/technik/schuetzenpanzer-puma--warum-sich-einer-der-beiden-hersteller-ueber-den-totalausfall-von-18-panzern-freuen-kann-33021056.html>.
- Lazarová, D. (2024) *President Pavel: Czechia has found possible sources of ammunition for*. <https://english.radio.cz/president-pavel-czechia-has-found-possible-sources-ammunition-ukraine-8808818>.
- Lenhardt, S. (2022) 'Beschaffungsamt der Bundeswehr: Schaffen die das?,' *Tagesschau*, 23 March. <https://www.tagesschau.de/inland/innenpolitik/bundeswehr-beschaffungsamt-103.html>.
- Lin, C. (2023) 'Greenland-EU mining agreement: “We’re starting from a blank sheet of paper”,' *Polarjournal*, 6 December. <https://polarjournal.ch/en/2023/12/06/greenland-eu-mining-agreement-were-starting-from-a-blank-sheet-of-paper/>.
- Lippert, B., Von Ondarza, N. and Perthes, V. (2019) 'European strategic autonomy: actors, issues, conflicts of interests,' *German Institute for International and Security Affairs*, pp. 5–39. <https://doi.org/10.18449/2019rp04>.
- Lobell, S.E. (2017) *Structural Realism/Offensive and Defensive Realism*, Oxford University Press eBooks. <https://doi.org/10.1093/acrefore/9780190846626.013.304>.
- Lopez, T. (2022) 'DOD releases National Defense Strategy, missile defense, nuclear postu,' *U.S. Department of Defense*, 27 October. <https://www.defense.gov/News/News->

[Stories/Article/Article/3202438/dod-releases-national-defense-strategy-missile-defense-nuclear-posture-reviews/](#).

Lye, H. (2020) 'General Dynamics' Ajax to achieve initial operating capacity this year,' *Army Technology*, 22 January. <https://www.army-technology.com/news/general-dynamics-ajax-to-achieve-initial-operating-capacity-this-year/>.

Maitra, S. (2023) *Policy Brief: Pivoting the US Away from Europe to a Dormant NATO*, Center for Renewing America. <https://americarenewing.com/policy-brief-pivoting-the-us-away-from-europe-to-a-dormant-nato/>.

Majone, G. (2014) *European Union: The Limits of Collective Action and Collective Partnership*. LUISS. <https://leap.luiss.it/wp-content/uploads/2022/09/PB7.14-EU.-the-limits-of-collective-action-and-collective-leadership.pdf>.

Malhotra, S. (2023) 'Germany's National Security Strategy: Where the devil is in the lack of detail,' *Observer Research Foundation*, 19 June. <https://www.orfonline.org/expert-speak/germanys-national-security-strategy/>.

Masters, J. (2023) 'Ukraine: Conflict at the crossroads of Europe and Russia,' *Council on Foreign Relations*, 14 February. <https://www.cfr.org/background/ukraine-conflict-crossroads-europe-and-russia#chapter-title-0-5>.

Matlé, A. (2023) 'A New Burden-Sharing Formula in the Making?,' in *Towards a New European Security Architecture*. European Liberal Forum, pp. 17–23. https://liberalforum.eu/wp-content/uploads/2023/06/BOURCHIER_ELF_New_European_Security.pdf.

Matthews, A. (2016) *Iron Fist prepare for spearhead role*. <https://web.archive.org/web/20160314023556/http://www.forces.tv/24069825>.

Maulny, J.-P. (2024) *France's Perception of the EU Defence Industrial 'Toolbox'*, ARES. <https://www.iris-france.org/wp-content/uploads/2024/02/ARES-94-Comment.pdf>.

- Maulny, J.-P. and Mölling, C. (2020) *CONSENT, DISSENT, MISUNDERSTANDINGS: The Problem Landscape of Franco-German Defense Industrial Cooperation*, iRiS.
<https://www.iris-france.org/wp-content/uploads/2020/01/French-German-Cooperation-janvier-2020.pdf>.
- McDonald, A. (2024) 'Donald Trump says he won't quit NATO — if Europe pays its way,' *POLITICO*, 19 March. <https://www.politico.eu/article/donald-trump-says-he-wont-quit-nato-if-europe-pays-its-way/>.
- McInnis, K. et al. (2024) *Pulling their weight: the data on NATO responsibility sharing*, CSIS. <https://www.csis.org/analysis/pulling-their-weight-data-nato-responsibility-sharing>.
- McInnis, K. and Fata, D. (2023) *From burden sharing to responsibility sharing*, CSIS.
<https://www.csis.org/analysis/burden-sharing-responsibility-sharing>.
- McLeary, P. and Lynch, S. (2023) 'The US wants Europe to buy American weapons; the EU has other ideas,' *POLITICO*, 15 June. <https://www.politico.eu/article/us-europe-buy-american-weapons-military-industry-defense/>.
- Mearsheimer, J. J. (2014) 'Why the Ukraine Crisis Is the West's Fault: The Liberal Delusions That Provoked Putin on JSTOR,' *Foreign Affairs*, 93(5), pp. 77–89.
<https://www.jstor.org/stable/24483306>.
- Meijer, H. and Brooks, S.G. (2021) 'Illusions of autonomy: Why Europe cannot provide for its security if the United States pulls back,' *International Security*, 45(4), pp. 7–43.
https://doi.org/10.1162/isec_a_00405.
- Menon, R. (2022) *Reconfiguring NATO: The case for burden shifting*, *Defense Priorities*.
<https://www.defensepriorities.org/explainers/reconfiguring-nato-the-case-for-burden-shifting>.

Michta, A.A. (2024) 'Without European rearmament, NATO is setting itself up for failure,'

POLITICO, 22 April. <https://www.politico.eu/article/without-eu-rearmament-nato-set-itself-failure-war-ukraine/>.

Ministère de l'Europe et des Affaires étrangères (no date) *Defence industries and*

technologies. <https://www.diplomatie.gouv.fr/en/french-foreign-policy/economic-diplomacy-foreign-trade/supporting-french-businesses-abroad/strategic-sector-support/defence-industries-and/>

Ministère des Armées (2022) *Report to Parliament: on France's Arms Exports 2022*,

Ministère Des Armées. <https://www.defense.gouv.fr/sites/default/files/ministere-armees/Report%20to%20Parliament%20on%20France%20s%20Arms%20Exports.pdf>.

Ministry of Defense (2024) *MOD trade, industry and contracts: 2023*.

<https://www.gov.uk/government/statistics/mod-trade-industry-and-contracts-2023/mod-trade-industry-and-contracts-2023>.

Mölling, C. and Schütz, T. (2023) *Germany's defense Budget 2024*, DGAP.

<https://dgap.org/en/research/publications/germanys-defense-budget-2024>.

Monaghan, S. (2023) *Solving Europe's Defense Dilemma: Overcoming the Challenges to*

European Defense Cooperation. CSIS. <https://www.csis.org/analysis/solving-europes-defense-dilemma-overcoming-challenges-european-defense-cooperation>.

NATO (2023) *Defence Expenditure of NATO Countries (2014-2022)*, NATO.

https://www.nato.int/nato_static_fl2014/assets/pdf/2023/3/pdf/230321-def-exp-2022-en.pdf.

NATO (2024a) *The Secretary General's Annual Report*, NATO.

https://www.nato.int/nato_static_fl2014/assets/pdf/2024/3/pdf/sgar23-en.pdf.

- NATO (2024b) *Secretary General welcomes unprecedented rise in NATO defence spending*.
https://www.nato.int/cps/en/natohq/news_222664.htm.
- Nicastro, L. A. (2018) *The U.S. Defense Industrial Base: Background and Issues for Congress*, Congressional Research Service. R47751. Congressional Research Service.
<https://crsreports.congress.gov/product/pdf/R/R47751>.
- Noll, A. (2023) 'Germany and France: Still keen on joint defense projects?', *DW*, 22 September. <https://www.dw.com/en/germany-and-france-still-keen-on-joint-defense-projects/a-66899923>.
- Olsen, J.A. (2024) *Routledge Handbook of NATO*. Routledge.
<https://www.taylorfrancis.com/chapters/edit/10.4324/9781003364108-22/nato-united-kingdom-mark-webber>.
- Olson, M. (1971) *The logic of collective action: Public Goods and the Theory of Groups*. Harvard University Press.
- Olsson, P. (2021) *The European Defence Market — Unevenly Fragmented*, FOI Swedish Defence Research Agency. <https://www.foi.se/rest-api/report/FOI%20Memo%207730>.
- Pearson, A. and Wilkes, W. (2023) 'Germany's Top Defense Contractor Blames Government for Ammo Shortfalls,' *Bloomberg*, 14 March.
<https://www.bloomberg.com/news/articles/2023-03-14/rheinmetall-says-europe-must-double-shell-production-for-ukraine>.
- Perot, E. (2022) *NATO, the EU and the Return of Collective Defence*, CSDC.
https://www.brussels-school.be/sites/default/files/CSDS%20Policy%20brief_2212.pdf.
- PESCO (2024) *Permanent Structured Cooperation (PESCO)*.
<https://www.pesco.europa.eu/about/>.

- Piper, E. (2024) 'UK defence faces 'inflection point' in dangerous world, minister Shapps says,' *Reuters*, 15 January. <https://www.reuters.com/world/europe/uk-commits-20000-military-personnel-nato-exercise-europe-2024-01-15/>.
- Puglierin, J. (2024) *Germany's Perception of the EU Defence Industrial 'Toolbox,' ARES*. <https://www.iris-france.org/wp-content/uploads/2024/01/ARES-91-Comment.pdf>.
- Puglierin, J. and Zerka, P. (2023) 'Keeping America close, Russia down, and China far away: How Europeans navigate a competitive world,' *ECFR*, 7 June. <https://ecfr.eu/publication/keeping-america-close-russia-down-and-china-far-away-how-europeans-navigate-a-competitive-world/>.
- Pugnet, A. (2023a) 'EU's flagship defence cooperation PESCO struggles to show life,' *Euractiv*, 19 May. <https://www.euractiv.com/section/defence-and-security/news/eus-flagship-defence-cooperation-pesco-struggles-to-show-life/>.
- Pugnet, A. (2023b) 'European Parliament adopts joint defence procurement fund,' *Euractiv*, 13 September. <https://www.euractiv.com/section/defence-and-security/news/european-parliament-adopts-joint-defence-procurement-fund/>.
- Quin, J. (2021) *Armoured Cavalry Programme (Ajax) Programme*. <https://questions-statements.parliament.uk/written-statements/detail/2021-09-06/hcws260>.
- Quinn, B. (2023) 'British army's new Ajax fighting vehicle will not be ready until end of decade,' *The Guardian*, 20 March. <https://www.theguardian.com/uk-news/2023/mar/20/british-armys-new-ajax-fighting-vehicle-will-not-be-ready-until-end-of-decade>.
- Ratz, A. (2024) 'Germany hits 2% NATO spending target for first time since end of Cold War,' *Reuters*, 14 February. <https://www.reuters.com/world/europe/germany-hits-2-nato-target-first-time-since-1992-reports-dpa-2024-02-14/>.

- Retter, L. *et al.* (2021) *Persistent challenges in UK defence equipment acquisition*, RAND Corporation eBooks. <https://doi.org/10.7249/rra1174-1>.
- Reuters (2022) 'EU to establish rapid reaction force with up to 5,000 troops,' *Reuters*, 21 March. <https://www.reuters.com/world/europe/germany-offers-provide-core-eu-quick-reaction-force-2025-2022-03-21/>.
- Reuters (2024) 'Rheinmetall to open ammo factory in Ukraine in joint project,' *Reuters*, 17 February. <https://www.reuters.com/world/europe/rheinmetall-open-ammo-factory-ukraine-joint-project-2024-02-17/>.
- Rheinmetall (2023) *Rheinmetall receives major order for artillery shells by the Bundeswehr*. <https://www.rheinmetall.com/en/media/news-watch/news/2023/7/2023-07-18-rheinmetall-receives-major-order-for-artillery-shells-by-bundeswehr>.
- Ringsmose, J. and Webber, M. (2020) 'Hedging their bets? The case for a European pillar in NATO,' *Defence Studies*, 20(4), pp. 295–317. <https://doi.org/10.1080/14702436.2020.1823835>.
- Rittberger, V. and Zelli, F. (2004) 'Europa in der Weltpolitik. Juniorpartner der USA oder antihegemoniale Alternative,' *Europa in Der Weltpolitik*, 78(2–3). https://lucris.lub.lu.se/ws/portalfiles/portal/36041448/10_Rittberger_Zelli.pdf.
- Rooney, B. *et al.* (2022) *Does the U.S. Economy Benefit from U.S. Alliances and Forward Military Presence?*, RAND. RRA739-5. https://www.rand.org/content/dam/rand/pubs/research_reports/RR400/RR4700/RR4739-5/RAND_RRA739-5.pdf.
- Rösch, F. (2022) 'Realism, the war in the Ukraine, and the limits of diplomacy,' *Analyse & Kritik/Analyse & Kritik (Internet)*, 44(2), pp. 201–218. <https://doi.org/10.1515/auk-2022-2030>.

- Ross, E. (2019) 'How the US influenced the creation of the EU - The World from PRX,' *The World*, 28 January. <https://theworld.org/stories/2019/01/28/how-us-influenced-creation-eu>.
- Schake, K. and Pepe, E. (2019) '70 Years of NATO: The Strength of the Past, Looking into the Future,' ETH Zürich, 6 May. <https://css.ethz.ch/en/services/digital-library/articles/article.html/1097618a-96c9-45b2-89f7-092198f84a7c>.
- Scheuerman, W.E. (2019) 'Progressive realism: possible? yes. cogent? perhaps not,' *Social Science Research Network* [Preprint]. <https://doi.org/10.2139/ssrn.3448691>.
- Schnitzler, G. (2023) *EDIRAP/EDIP: Risks and opportunities of Future joint procurement incentives For the european defence market*, ARES. <https://www.iris-france.org/wp-content/uploads/2023/03/ARES-81-Policy-paper.pdf>.
- Schnitzler, G. (2024) “WARTIME ECONOMY”: FROM BUZZWORD TO REALITY?: *Changes in European Defence industrial strategies since February 2022*, IRIS. https://www.iris-france.org/wp-content/uploads/2024/03/ProgIndusDef_1.pdf.
- Schuett, R. (2011) 'Peace through Transformation? Political Realism and the Progressivism of National Security,' *International Relations*, 25(2), pp. 185–203. <https://doi.org/10.1177/0047117811404445>.
- Schütte, L. (2023) *What future European defence and technological industrial basis (EDTIB) do we want/need?*, ARES. <https://www.iris-france.org/wp-content/uploads/2023/10/ARES-85-Comment.pdf>.
- SIPRI (2023) *The SIPRI Top 100 arms-producing and military services companies in the world, 2022*. <https://www.sipri.org/visualizations/2023/sipri-top-100-arms-producing-and-military-services-companies-world-2022>.
- SIPRI (2024) *European arms imports nearly double, US and French exports rise, and Russian exports fall sharply*. <https://www.sipri.org/media/press->

[release/2024/european-arms-imports-nearly-double-us-and-french-exports-rise-and-russian-exports-fall-sharply.](#)

Sloan, S.R. (2020) *Defense of the West: Transatlantic Security from Truman to Trump*.
Manchester University Press.

Sonnenberg, P. (2023) 'Behörde in Koblenz: Blackbox Bundeswehr-Beschaffungsamt,'
Tagesschau, 8 March. <https://www.tagesschau.de/inland/innenpolitik/bundeswehr-beschaffungsamt-105.html>.

Sougouna, H.-L. (2023) *France -Economie de guerre : montée en puissance et réversibilité*.
<https://www.eurosatory.com/france-economie-de-guerre-montee-en-puissance-et-reversibilite/>.

Stuchlik, S. (2023) 'Reformen bei Bundeswehrbeschaffung: 'Weitgehend gescheitert,'
Tagesschau, 27 December.
<https://www.tagesschau.de/inland/innenpolitik/bundeswehrbeschaffung-100.html>.

Sullivan, K. (2024) 'Trump says he would encourage Russia to 'do whatever the hell they want' to any NATO country that doesn't pay enough,' *CNN Politics*, 11 February.
<https://edition.cnn.com/2024/02/10/politics/trump-russia-nato/index.html>.

Tenenbaum, É. and Péria-Peigné, L. (2023) 'Zeitenwende: The Bundeswehr's Paradigm Shift,' *Focus Stratégique*, 116.
https://www.ifri.org/sites/default/files/atoms/files/tenenbaum_peria-peigne_zeitenwende_the_bundeswehrs_paradigm_shift_2023.pdf.

Thales (2022) *Share and shareholding*. <https://www.thalesgroup.com/en/investor/retail-investors/share-and-shareholding>.

The Economist (2024) 'Trump v Biden: who's ahead in the latest polls?,' *The Economist*, 20 April. <https://www.economist.com/interactive/us-2024-election/trump-biden-polls>.

- Trams, I. (2024) 'Konferenz zur Zeitenwende: Einiges angestoßen, mehr zu tun,' *ZDFheute*, 30 January. <https://www.zdf.de/nachrichten/politik/deutschland/bundeswehr-zeitenwende-ruestung-100.html>.
- Urvoy, H. (2023) 'Homemade or imported - France and Germany have different strategies on air defence systems,' *Euronews*, 29 June. <https://www.euronews.com/2023/06/29/homemade-or-imported-france-and-germany-have-different-strategies-on-air-defence-systems>.
- Uttley, M. (2018) *Arms procurement*, Oxford University Press eBooks. <https://doi.org/10.1093/oso/9780198790501.003.0040>.
- Van Wieringen, K. and Álvarez, M. (2022) *Securing the EU's supply of critical raw materials*, European Parliament. [https://www.europarl.europa.eu/RegData/etudes/ATAG/2022/733586/EPRS_ATA\(2022\)733586_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2022/733586/EPRS_ATA(2022)733586_EN.pdf).
- Vincent, E. (2022) 'Macron says France must enter 'war economy', announcing military budget re-evaluation,' *Le Monde.fr*, 14 June. https://www.lemonde.fr/en/france/article/2022/06/14/macron-says-france-must-enter-war-economy-announcing-military-budget-re-evaluation_5986750_7.html.
- Vincent, E. (2024) 'Macron advocates a war economy that 'produces wealth',' *Le Monde.fr*, 12 April. https://www.lemonde.fr/en/france/article/2024/04/12/macron-advocates-a-war-economy-that-produces-wealth_6668228_7.html.
- Waltz, K. (1979) *Theory of International Politics*. Addison-Wesley Publishing Company.
- Wezeman, P. et al. (2024) *TRENDS IN INTERNATIONAL ARMS TRANSFERS, 2023*, SIPRI. https://www.sipri.org/sites/default/files/2024-03/fs_2403_at_2023.pdf.

- White, S. and Abboud, L. (2023) 'French defence companies step up hiring as they grapple with labour shortage,' *Financial Times*, 1 June. <https://www.ft.com/content/29fae4d9-694e-48e8-a3e5-35db9fd25fa2>.
- Whitman, R. (2024) *The role of the UK in a new European Security Architecture*.
<https://www.boell.de/en/2024/01/26/role-uk-new-european-security-architecture>.
- Williams, D. (2022) *UK Defence in Numbers 2022*, Ministry of Defence.
https://assets.publishing.service.gov.uk/media/63f5e7c1d3bf7f62ee69ede3/UK_Defence_in_Numbers_2022.pdf.
- Witney, N. (2022) 'The EU's Strategic Compass: Brand new, already obsolete,' *ECFR*, 31 March. <https://ecfr.eu/article/the-eus-strategic-compass-brand-new-already-obsolete/>.
- Wolf, Z. (2024) 'Congress acted to protect NATO. But it might not be enough to stop Trump,' *CNN*, 13 February. <https://edition.cnn.com/2024/02/13/politics/congress-trump-nato-what-matters/index.html>.
- Younis, B.M. (2024) 'Americans remain committed to NATO, critical of UN,' *Gallup*, 29 February. <https://news.gallup.com/poll/611261/americans-remain-committed-nato-critical.aspx>.
- Záboji, N. (2024) 'Frankreichs Rüstungsindustrie kommt mit dem Produzieren nicht hinterher,' *FAZ*, 3 March. <https://www.faz.net/aktuell/wirtschaft/unternehmen/thales-und-dassault-frankreichs-ruestungsindustrie-boomt-19570220/franzoesischer-kampfjet-vom-typ-19570308.html>.
- Zaborowski, M. (2024) 'EU's Defence Renaissance: Navigating Strategic Autonomy and Industrial Resurgence,' *Visegrad Insight*, 16 April. <https://visegradinsight.eu/eus-defence-renaissance-navigating-strategic-autonomy-and-industrial-resurgence/>.

Zandee, D., Drent, M. and Hendriks, R. (2016) *Defence cooperation models: Lessons learned and usability*, Clingendael. https://www.clingendael.org/sites/default/files/2016-02/Report_Defence_cooperation_models.pdf.