"Marching Onward Into the Future"
- Prospects for the European Defence-Industrial Landscape -

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This thesis, *Marching Onward into the Future: Prospects for the European Defence-Industrial Landscape*, was written as partial fulfilment of the requirements for a Master’s Degree in International Relations (specialisation International Security) at the University of Groningen, the Netherlands.

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Declaration of Authenticity

I hereby declare that this thesis, *Marching Onward into the Future: Prospects for the European Defence-Industrial Landscape*, is my own work and my own effort and that it has not been accepted anywhere else for the award of any other degree of diploma. Where sources of information have been used, they have been acknowledged.

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Abstract

Recognising that International Relations as an academic discipline has traditionally had a lethargic relationship to the everyday world of policymaking, this thesis encourages a mutually beneficial relationship between the two by examining the ways in which the European defence-industrial landscape could develop over the next ten years. For that purpose, a post-positivist framework is adopted where it is understood that future developments are erratic and therefore uncertain, rather than predictable by observing historical patterns. Using scenario analysis as developed by Royal Dutch Shell with a view to structuring the enquiry, this thesis first details the history and main actors of the European defence-industrial landscape, before discussing three uncertainties deemed pivotal for its development: defence-industrial culture (what states view as desirable), threat environment (the absence or presence of threats to security), and financial stability (the extent to which the current financial crisis continues to impact defence budgets). Based on these three driving forces, eight scenarios are generated of which four are discussed in detail. These scenarios paint distinctly different futures ranging from full European political integration and defence-industrial consolidation fuelled by violent conflict, to regional defence-industrial blocks originating from a lack of financial resources and a disdain for Europeanisation. It is concluded that such scenarios could be used by decision-makers, noted that implications vary greatly across interest groups, and that especially the European Union might struggle over the next ten years, thence demonstrating the policy relevance of this work of International Relations. Moreover, it is maintained that the scenarios contribute to the wider debate surrounding European defence-industrial capabilities by transcending current literature, which has persistently focussed on what is impossible rather than what is possible, by providing new and engaging insights, stimulating debate and opening up new areas of enquiry.
The completion of this thesis marks the end of my Master’s Degree in International Security at the University of Groningen, and is consequently also the culmination of my academic career thus far. Having opted for a career-oriented Master’s programme, rather than a research-oriented one, it only seemed fitting to produce a document that is not only a work of International Relations, but also directly relates to policy-making. Moreover, this thesis allowed me to incorporate imagination and creativity, and encourage critical thinking – qualities which I deem highly valuable in everyday life. Regrettably, ‘mainstream’ International Relations has long overlooked some of these values as much as it has refrained from policy-related research, even though it may be argued that both could contribute to the discipline’s overall relevance. Through this thesis I hope to have contributed to the acceptance of these values, as well as to fostering a closer link between academia and practice.

The completion of this thesis is not solely my own achievement, however. A number of people, who have provided invaluable support and understanding, must be thanked for their contributions. First of all, I would like to recognise the efforts of my supervisor, dr. Benjamin Herborth, who, despite having a demanding schedule in general, managed to guide my writing and train of thought. Moreover, there are a number of friends who contributed. Sanne de Boer, who holds a Master’s Degree in Creative Writing, was kind enough to comment on my narratives and provide advice. Matthijs Maas, a fellow International Relations graduate, spent considerable time discussing options for outlines with me, and provided advice related to the theoretical framework. Then there are Rune Rossius, Daithí O Conbuídhé, and Jorinde Bosma, who have suffered hours of rants but nonetheless remained supportive. In addition, I am grateful for my family’s support. My mother, Anita Kremer, must be thanked for her overall support in general and her chicory with ham and cheese in particular. My father, Martin Craanen, provided valuable moral support. I also appreciate the hospitality offered by my sister, Anne Craanen, and her partner, Daan Scholtens.

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1. Introduction

Over the course of the development of International Relations (IR) as an academic discipline, one prominent recurring debate concerns its relation to the everyday world of policymakers. Scholars such as Han (2011), Junio and Mahnken (2013), Bernstein, Lebow, Stein and Weber (2000), Neumann and Øverland (2004), and Nye (2009), among many others, have expressed their concerns that International Relations remains (and is increasingly) detached from the realm of policymaking – in service of which, authors like Bernstein et al. (2000; 43) argue, it was originally established. Han (2011; 60) articulates that “[o]ne of the recurring criticisms of IR scholarship is that scholars tend to (...) stay away from a real world of global politics”, and concurs with Bernstein et al. (2000; 44-45) and Neumann & Øverland (2004; 258) that it is indeed baffling that after decades, International Relations has achieved so little success in that regard. Nye, who hardly needs to be introduced as one of the most influential IR scholars, warned in a 2009 Washington Post article that not only are policymakers thence bereft of the vast knowledge possessed by International Relations scholars, but that the discipline in this way seals itself and future generations of students off from real world politics and, by extension, from real-world relevancy. He stresses that “...academics might be considered to have an obligation to help improve on policy ideas when they can…”, that “...such engagement can enhance and enrich academic work, and thus the ability of academics to teach the next generation”, and that the discipline should as such “...give greater weight to real-world relevance...”.

In that context, it may be considered that International Relations scholars ought to not only slump in the past to endlessly generate theory from trends and observations for the sake of generating theory, but must also actively investigate potential future developments – with which policymakers are actively concerned on a day-to-day basis as they “...need to make decisions in the face of uncertainty about the future” (Bernstein et al., 2000; 52). As a consequence, “...social scientists cannot afford the luxury of only examining the past but are deeply engaged in the attempt to explain the present and think analytically about the future” (ibid; 52-53). The importance of analysing the future in a bid to seek cross-fertilisation is hammered home also by Junio and Mahnken (2013; 393), who state that "[t]hinking and writing about the future in a robust way offers political scientists an exciting opportunity to push the boundaries of current debates and to generate new ones, while also improving the processes of teaching and theory building". 
This thesis therefore seeks to encourage a forward-thinking approach rather than a backward one. In that spirit, it does not seek to solely theorise how this might be done and thereby distance itself from policymaking. Rather, the future of the European defence-industrial landscape is taken as a case study. Over the past years, numerous authors, including Briani, Marrone, Mölling, and Valasek (2013), Ballester (2013), Wiśniewski (2012), Vlachos (1998), and Eliassen and Sitter (2006) have noted the policy-related importance of this subject – a notion confirmed by recurrent mention in major newspapers such as Spiegel Online, Time, and the Economist. As the remainder of this introduction details in further detail and as eloquently summarised by Sköns:

“Studies of the defense industry and its national and international organization can contribute to our understanding of international relations as well as international political economy. In a more narrow sense, these studies provide a better understanding of the basis for decisions on security policy, and in particular for arms procurement decisions. The production and sale of military goods and services, which is the preoccupation of the defense industry, is situated at the intersection between security and defense policy on the one hand and economics on the other” (Sköns, 2002; 1).

Having so outlined the research aim of this thesis, it may conveniently be condensed into a research question by asking ‘what are the ways in which the European defence-industrial landscape could develop over the coming ten¹ years, and how can thinking about the future of the European defence-industrial landscape help increase the policy relevance of International Relations and at the same time contribute to scholarly debate on that topic?’ This first chapter – the introduction of this thesis – makes a case for studying the future possibilities for the European defence-industrial landscape. The following two sub-sections serve to justify the choice for this particular case study, as well as outline the approach taken for this particular research, detailing the division into chapters.

¹ For the purpose of this thesis, ten years was chosen because five years was deemed too short a time period for anything substantial to occur and it would have been very difficult to accurately discuss developments over a twenty-year period. Ten years is therefore regarded as a manageable timeframe.
1.1 Case Study

The future of the European defence-industrial landscape provides a captivating case study – a view supported by a large number of scholars and policymakers who have sought to research this topic over the years. Enquiries conducted include major reports such as *The Cost of Non-Europe in Common Security and Defence Policy* (Ballester, 2013), *The Comparative Survey on the National Public Procurement Systems across the PPN* (Bianchi & Guidi, 2010), and the *The development of a European Defence Technology and Industrial Base (EDTIB)* (Briani, Marrone, Mölling, and Valasek, 2013), as well as minor periodic reports and research papers by think-tanks including *Arms Procurement in the European Union: Achieving Mission Impossible?* (Eliassen & Sitter, 2006) and *The EU Defence and Security Procurement Directive: A Step Towards Affordability?* (Edwards, 2011). The body of literature also includes journal articles such as *Chains, networks and shifting paradigms: the UK defence industry supply system* (Dowdall, 2013), *Eliciting Substance from ‘Hot Air’: Financial Market Responses to EU Summit Decisions on European Defense* (Bechtel & Schneider, 2010), and *Defence Industry in the European Union - Challenges and Opportunities in Times of Economic Crisis* (Wiśniewski, 2012), and moreover encompasses numerous articles in major newspapers such as Spiegel Online and the Economist, and many others. This section first of all elaborates on the relevance of this particular topic as a case study before explaining how the current body of literature might benefit from an inquiry into the matter’s future development.

Relevance

Policymakers and scholars alike appear to regard the European defence industries as both important and intriguing for three main reasons. First of all, authors recognise their sheer numerical importance. Yearly figures provided by the Aerospace and Defence Industries Association of Europe (ASD), combining records of twenty arms-producing member-states, demonstrate that the industries’ combined turnover was €197 billion over 2013 (ASD, 2014). Ballester (2013; 45) and Briani et al. (2013; 47) note that this makes that they are second in size to the United States. The ASD also provides that roughly half of that turnover originated from defence orders, while the other half came from civilian produce, and demonstrates that turnover has risen in most sectors over the past six years.

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2 For further reference, please see the list of sources at the end of this thesis.

3 In a bid to remain consistent in terms of facts and figures, all numerical and statistical information in this thesis was, if not otherwise indicated, obtained from The SIPRI top 100 arms-producing and military services companies in the world (excluding China), 2013. (2013) and from the SIPRI Arms Transfers Database. (n.d.).

4 The distribution is approximately as follows: civil aeronautics, €89 billion; military aeronautics, €49 billion; land defence, €27 billion; naval defence, €21 billion; space, €11 billion (ASD, 2014).
years (notable exceptions being naval and land defence) (ASD, 2014). Wiśniewski (2012; 99-100) further reveals that in some sectors, such as submarine production, European (and Russian) companies retain a virtual global monopoly. Ballester (2013; 45-47) highlights that investment in defence has a multiplier effect of 1.6 on GDP across numerous areas (including transport, health, and education), and also has respectable multiplier effects on skilled employment (7.6) and R&D (12 to 20 times greater than the aforementioned areas). These figures are generated by Europe’s defence firms, four of which lay claim to global top-ten positions (namely BAE Systems (#3), Airbus (#7), Finmeccanica (#9), and Thales (#10)). Notably, besides these four European companies, the remainder of the list is reserved for American companies. As a final indicator of the magnitude of Europe’s overall defence-industrial activity, SIPRI’s 2013 figures show that in that year, five out of the top-ten global arms exporting states were European (These being France (#4, $1489 million), the United Kingdom (#5, $1394 million), Germany (#6, $972 million), Italy (#7, $807 million), and Spain (#9, $605 million)). These states, together with Sweden and the Netherlands, which both exported for over $300 million, shipped a combined grand total of $6074 million. This means that at a European level, export is on par with the United States, which exported $6153 million over 2013.

Considering these figures, it is not surprising that authors including Ballester (2013; 45) regard these industries, like their American counterpart, as being world-class.

Secondly, authors note the interdisciplinary nature of the matter. The defence industries have a profound impact on social and political matters, as well as on issues of national security. Notably, the ADS (2014) and Ballester (2013; 45) emphasise that the sector’s arms manufacturing businesses provide 800,000 employment positions across Europe’s member-states in various departments including aerospace, land defence, and electronics. Authors including Repinski, Schult, and Traufetter (2013), Bechtel and Schneider (2010; 200), and Briani et al. (2013; 47) emphasise that social relevance stretches beyond this, as the general public is engaged with defence-industrial production in two more ways. Firstly, as defence orders are almost always placed by governments due to their having a monopoly on violence, materiel is paid for with taxpayer’s money. Secondly, defence has historically been a sector with a high spill-over effect. In other words, advanced military technologies often eventually make their way to the general public in the form of domestic appliances. In that way, defence-industrial research and development is of interest to common citizens as well. Moreover, defence-industrial production has a political and security-related aspect not least because they are widely regarded as an integral part of the broader debate on European

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5 It is interesting to note that both the combined European states and the United States made significantly less than the Russian Federation, which exported $8283 million in defence capabilities.
Union’s role as a security actor. As is commonly known, the Union has only recently received recognition in that regard, and scholars and policymakers alike continue to debate its rise to prominence in the face of United States disengagement and the extent to which recent initiatives, including for instance the European Battlegroups, can be said to have constituted a success (Ballester, 2013; 10 / Dorussen, Kirchner & Sperling, 2009; 789 / Lundmark, 2011; 275). Having said that, Europe’s defence industries provide the backbone of its emergent defence apparatus – a view recognised by the European External Action Service (EEAS, n.d.), and by numerous scholars, newspapers and other authors, including Repinski et al. (2013), the Economist (2013), Ballester (2013; 23) and Briani et al. (2013; 12), who collectively stress that the state of Europe’s defence industries directly relates to the performance of troops in conflict situations and that a healthy supply chain and technological superiority are key to successful military operations. In other words: if the Common Security and Defence Policy (CSDP) is the battleship that “…enables the Union to take a leading role in peace-keeping operations, conflict prevention and in the strengthening of the international security” (EEAS, n.d.), the defence industries are the nuts and bolts, the steel plating and the firepower, that allow that ship to carry out its tasks effectively. By extension, the industries are obviously also crucial to the armed forces of Europe’s individual member-states, many of whom make use of the products manufactured by its defence firms, including the well-known Leopard II Battle Tank, produced by German-owned Krauss-Maffei, and the Eurofighter, produced through a joint effort of various companies (Wiśniewski, 2012; 99-100).

Thirdly and perhaps most importantly, scholars appear intrigued and policymakers worried by the fact that the defence market has proven very resilient to general integration trends and policies over the past years. Although former prime minister Edward Heath predicted that “[i]n time there will come a common defence and procurement policy, with a common foreign policy at its basis” (Bittleston, 1990; 4), authors such as Balis and Heidenkamp (2013; 6) and Ballester (2013; 50-51), as well as various newspapers have noted that attempts at transnational defence-industrial consolidation have been fraught with ineffectiveness, and that as a result the European defence market remains “…organised largely on national lines” and “…shaped by an autonomy-centred conceptualisation of sovereignty” (Economist, 2013). Ballester (2013; 56, 60-61) and Briani et al. (2013; 30) note that only 1,7% of all defence contracts on a competitive basis were awarded cross-border over 2013, that offsetting of up to 100% of the contract value mitigates transnational defence-industrial projects, and that roughly 80 to 90% of all defence materiel in Europe is currently procured nationally. Ballester states that “…between 2006 and 2010 cooperative procurement never exceeded, on average, 26% of the combined national procurement budgets” (2013; 50). Scholars such as Eliassen and Sitter thence commonly regard the defence sector as “…almost the last bastion
of interventionist and protectionist policy in an increasingly free-market and integrated European Union” (2006; 3). One consequence of this is that overproduction in Europe is very high compared to the United States. For example, Ballester (2013; 61) and Repinski et al. (2013) note that “[t]here are 16 large shipyards building warships in the EU, compared with only two in the United States” and Wiśniewski highlights that “[t]here are also 16 producers of Armoured Fighting Vehicles, 3 of 155 mm howitzers and two industrial centres capable of producing nuclear-powered submarines” (2012; 103). Some sources, including Repinski et al. (2013) and the Economist (2013), claim that this causes a consistent overspending of up to 40%. Moreover, Ballester (2013; 58) highlights that the European Defence Agency (EDA) estimates that in a fully integrated market, €500 million could be saved on standard ammunition, and up to €1,5 billion on ground-launched ammunition each year. Numerous policymakers and military figures, including Austrian General Wosolsobe, have expressed concerns about this, claiming that such ‘wasteful policy’ threatens the survival of European defence-industrial autonomy and raises “…the long-term question of whether we, as the EU, can preserve our autonomy in defense policy” (Repinski et al., 2013).

**Literature Gap**

Considering that the European defence-industrial landscape could for the above reasons be said to be a relevant area for academic enquiry in multiple ways, and moreover due to the fact that it has contemporary policy relevance in that policymakers are concerned about its future, it is remarkable that there appears to be a lack of studies that explore the way(s) in which that landscape might develop. Instead, many authors appear to have conducted research predominantly and persistently within the limits of a rigorous divide between ‘integration’ on the one hand and between ‘non-integration’ on the other, and consequently oftentimes refrain from discussing alternative possibilities. This is evident in both large and small works. With regards to the former, Ballester (2013) details predominantly the effects of non-integration by considering how the lack of integration in the European defence sector has negatively affected both defence firms and government finances. Briani et al. (2013) centre their enquiry around the question why integration and transnational defence-industrial consolidation has not happened and what measures could be implemented to realise it. Bianchi and Guidi (2010) analyse how public procurement systems vary across the member-states of the European Union, detailing the differences and similarities between numerous states. Concerning smaller papers, Eliassen and Sitter (2006) analyse the likelihood of integration happening in general, and Edwards (2011) assesses the degree to which specific legislation has contributed to the creation of a European defence technological industrial base (DTIB). Although these studies are all very extensive and indeed elucidating, they generally and
repeatedly present the same conclusions: integration is unlikely to happen and non-integration is bad (Ballester, 2013; 11, 60-61 / Briani et al., 2013; 59 / Dowdall, 2004; 546.) Eliassen and Sitter argue that while Europe is indeed more of a military actor than it was before, “…all the main problems remain in one form or another” and that integration is essentially a “…mission impossible” (2006; 13, 16). Ballester (2013; 60-61) repeatedly concludes that non-integration results in long-term problems, and Repinski et al. (2013) determine that “…the odds are truly against a common European defense policy”.

No more than a handful of authors have attempted to transcend that divide over the years by exploring alternative possibilities, and most of those studies that have are either rather outdated or rudimentary. Examples of outdated works include Bittleston, who in 1990 explained that “…procurement options range from purchasing everything possible from indigenous industry, through various forms of licensed co-production, to international collaboration (…) and, finally, international competition” (1990; 3), as well as Vlachos (1998; 36-37) who rather incompletely speculates about options ranging from the emergence of an intra-NATO defence market to a reformation of the European defence market to a US-like model. More recent examples include Lundmark (2011; 328-330), who provides a rather limited discussion, suggesting that Europe could in thirty years create an internal defence market but that it is likely that they will for the time being favour trans-Atlantic cooperation. Wiśniewski (2012; 108-112) provides a somewhat more elaborate overview of possible future configurations, ranging from a trans-Atlantic defence market to export dependency becoming the norm among European states, where “…European companies derive most of their turnover and profits from extra-European markets” (ibid.; 111). Faced with such a limited array of research focussed on future possibilities, it may be stated that the literature on this important topic can benefit from an extensive enquiry into the possible ways the defence-industrial landscape might develop, so transcending the ‘integration, non-integration’ divide adhered to by many authors, and moving debate from what is impossible to what is possible, while at the same time servicing policymakers’ needs. In other words, it can be said that this particular topic is well-suited as a case study for this thesis.
1.2 Outline of Approach

Having outlined the aim of this thesis (to demonstrate the use of policy-oriented research in International Relations) and the way in which it seeks to accomplish that aim (by researching the future of the European defence-industrial landscape), what remains is to briefly explain how this study seeks to conduct that enquiry. This section concludes the introduction and outlines the division into chapters and what these chapters are for. For convenience, it is divided into ‘Part One’ which concerns preparatory steps related to theory and the method, and ‘Part Two’ which details the conduct and results of the actual analysis.

Part One: Preparation

As relevant literature on the future of the arms industries is – as previously stated – remarkably absent, this thesis does not feature an extensive literature review beyond the outline present earlier. Instead, more attention is devoted to solving the problem and addressing the research aim itself. The first part of this thesis commences with chapter two and then continues with chapter three. It focusses primarily on theoretical considerations and the method used for the conduct of the eventual analysis. In that context, chapter two provides a broad overview of how theoretical assumptions influence thinking about the future and also how they limit the degree to which the future can be investigated, demarcating the framework of this enquiry. With a view to contextualising the assumptions on which this thesis is based, the chapter first of all outlines and critiques ‘positivist’ approaches to futures thinking, before making a case for a post-positive approach. Chapter three builds on this by suggesting scenario analysis as a method suitable for structuring such a post-positivist enquiry. That chapter first of all details the origins and purpose of the method, as well as its conduct, before detailing the design choices made for the purpose of this thesis.

Part Two: Analysis

The second part of this thesis, commencing with chapter four and continuing through chapters five and six, details the process and the results of the analysis itself. Chapter four serves to further delineate the topic introduced previously by outlining its (recent) historical context and by providing an overview of the European defence-industrial landscape’s most important actors. Chapter five builds on this by detailing those three driving forces deemed capable of majorly affecting future developments, structured so as to highlight their uncertainty and potential impact. Chapter six finalises the main body of the enquiry by presenting a number of scenarios, which feature coherent plot-lines and key events (also known as ‘critical junctures’). Lastly, chapter seven concludes this
research. It provides an overview of the main findings or conclusions of each chapter, a brief discussion about how policy advice could be distilled from the narratives presented, and a discussion about how this scholarly endeavour can be said to have contributed to the wider debate on this topic and in what way. It closes with a short overview of how future research could improve on and extend this research.
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2. The Discipline and the Future

As outlined in the introduction of this thesis, investigating the future is not particularly common in the discipline. However, committing to such an endeavour – in this case concerning the future of the European defence-industrial landscape – nonetheless requires a discussion of International Relations theory. After all, the assumptions underlying different theoretical lenses that are today available and used to study actors, trends, and process, necessarily determine how we view the possibilities and limits for the future development of any issue (Bernstein et al. 2000; 46). Choucri, already having noted this over four decades ago, states that

“...underlying beliefs -or theories- inevitably affect the nature of the forecast, and when investigators differ in their underlying beliefs and assumptions about each of these considerations, the forecasting outcomes will almost certainly differ. (...) How we interpret data, observations, and present or past facts depends largely on our theories of presents and pasts and upon the ways we employ theory to guide our search and understanding of alternative futures” (1974; 65)

This chapter therefore serves to explicitly outline the theoretical foundations on which this thesis is based, by detailing and evaluating the ontological, epistemological, and methodological assumptions of two prominent 'paradigms' in IR. This especially concerns debates over the extent to which the future is 'predetermined' and conditioned by the past, or rather open-ended and uncertain, as well as questions over how, then, we should best approach the study the future. Accordingly, this chapter will first outline (neo)positivism so as to demonstrate how dominant, mainstream approaches shape thinking about the future, and then offer some critiques of these approaches. It will then discuss post-positivist theories as a valid, promising and more policy-relevant alternative to positivist theory, in understanding the future(s) of political trends in general, and European arms industry integration in particular.
2.1 Positivism: Laws and Predetermination

With a view to contextualising the theoretical approach taken for this thesis, this first section details the dominant strand of thought in IR enquiry, to which the approach taken for this theory will be contrasted in the next section: positivism. Positivism is, of course, an umbrella term. It encompasses a wide range of International Relations theories, understandably including the various strands of Realism\(^6\), as well as Neo-liberalism\(^7\). Moreover, positivist approaches to futures thinking also include some flavours of Marxism\(^8\). This section first of all outlines the basic premises that – admittedly generalised – guide positivist enquiries concerning the future. Its second half paves the way for the next section by detailing critique to positivist approaches.

Outline of Positivist approaches to futures thinking

Over the development of the discipline of IR, there have been a number of recurring debates concerning the role and utilisation of the so-called ‘scientific method’ for studying and understanding political phenomena. This discussion emerged with IR theory’s ‘Second Great Debate’, which took place in the 1960s and which saw the positivistic ‘behavioural revolution’ establish its dominance over older interpretative approaches (Bernstein \textit{et al.}, 2000; 44 / Jackson, 2011; 3, 6, 11-16). Despite this, the ‘science question’ remains far from being resolved and has continued to animate discussion – a notion eloquently summarised by Wight, who elucidates that the field remains stuck in “…a set of deep contestations over the very idea of science itself and the extent to which IR can, and should, be a science” (2010; 23). Still, despite the ongoing criticism of what some have called ‘scientism’ (Halliday, 1995; 737) or ‘physics envy’ (Kratochwil, 1993; 69), the majority of ‘mainstream’ theorists in International Relations have taken to heart the assumptions inherent in positivism and, as Smith notes, adopted “…a commitment to a unified view of science and the adoption of methodologies from the natural sciences to explain the social world” (2000; 378). Thence, positivist thought dictates that, as is the case natural sciences such as physics, there are certain “…law-like patterns of

\(^6\) Including classical realism (See Morgenthau, 1948), neo- (or ‘structural-’) realism (Waltz, 1979 / 1990) with its offshoots defensive (See Van Evera, 1999) and offensive realism (See Mearsheimer, 1990, 2001), and even ‘neoclassical’ realism (See Gray, 1999a)

\(^7\) See Fukuyama (1992).

\(^8\) Interestingly, although classical Marxism might not commonly be thought of as post-positivist, its futures thinking (path-dependent towards a communist system), is.

\(^9\) For an excellent study of the ‘Great Debates’ and the historical development of IR theory, see Schmidt (2010).

\(^10\) See also Jackson (2011; 3)
recurrence and continuity” (Hobson, 2002; 15), which may be discovered by analysing human (political) behaviour. That is, ‘nomothetic’ theories argue that events in the past can, in principle, be mapped by considering trends and recurring patterns, and so be explained through universal theories (which may be considered akin to ‘laws’, hence the reference to physics). As such, the aim of positivist scholars is to generalise trends and condense them into generalisations that may be applied to other, similar, cases, which is achieved by working with abstract, deductive, and structuralist models11 anchored in simple and clearly defined principles, mechanisms or assumptions (e.g. ‘balance of power’, ‘international anarchy’, and ‘rational self-interest’) that allow for the formulation of narrow and falsifiable hypotheses that make clear point-predictions (which, admittedly, are subject to probability) that can be tested through large-n statistical and quantitative analyses (Bernstein et al., 2000; 45).

Having thence briefly outlined the basic principles of positivist enquiry, the purpose of this thesis makes that it is imperative to understand what these mean for researching the future. The main underlying assumption of deductive theory is that, in fact, underlying historical patterns or principles are (mostly) invariable. What this, in generalised terms, means, is that positivists assume that by looking at the past it is possible to obtain insights into the key mechanisms of the political world in the present – and by extension this also automatically provides insight into the future. Building on this, if the future is assumed to be heavily pre-determined (or conditioned) by the present and the past, it is therefore predictable in the same sense that physical processes are (in principle) predictable. In short, as Berenskoetter summarises, positivist scholars are “…convinced that solid assumptions, coherent theories and rigorous research designs enable us to identify historical patterns which can be projected into the future (2011; 647), and the main point of positivist research is therefore to identify the most important principles, laws, or drivers that have shaped actors’ interests and behaviour throughout history, and to subsequently extrapolate these into the future.

So how do these positivist assumptions affect positivist perceptions of history and the future? As a result of focussing on underlying structural trends, principles or conditions that govern international relations, positivist theories (can) lead to the perception that history (and by extension the future) is essentially ‘fated’ and determined by the prevailing conditions of the past. In other words, they encourage views that regard the course of history (and by extension the future) as static

or 'atemporal'. As in realist accounts that argue that while surface details may change and some states may become more or less powerful over the course of time, “...the texture of international politics remains highly constant.” and “...patterns recur, and events repeat themselves endlessly” (Waltz, 1979; 66-67). The underlying assumption here is that the baseline or equilibrium conditions of political practice (e.g. international anarchy) give rise to patterns of behaviour (e.g. balance-of-power politics) that exert strong strategic pressure against anything that might meaningfully challenge this state of affairs. Accordingly, realists such as Gray argue that “…in order to understand the 1990s, or the 2090s, study the 1890s, 1790s, and so forth. The future is the past in the ways that matter most. ‘Statecraft’ and strategy are made of the same ingredients, and work (or fail to work well) for the same reasons, in all periods and among all participants.” (1999a; 163-164). Other positivist theories (including some versions of Realism) do entertain the notion that historical change takes place, but manifests as a cyclical sequence of events. To such approaches, ‘time’ (or, the ‘future’, as distinct from the ‘past’) is not so much absent as it irrelevant as a useful dimension of analysis. Finally, there are a number of theories such as Liberalism (or in the context of Europeanisation, functionalism), that argue that the future might be different from the past, but that it remains predictable because the sequence of events can be extrapolated up and outwards towards a certain ‘end-state’ (in other words, this sequence of events is presumed to be linear). That is not to say that theories such as these do not entertain the notion of sudden unexpected change, and indeed many of these approaches also nuance claims through probability estimates, but these theories simply presume that such changes are anomalous in the long-term, or at most deeply path-dependent and determined by the past.

**Critique of Positivist Approaches**

Such positivist approaches might offer an appealing and indeed comforting model in suggesting that we can mimic the natural sciences in discovering underlying and universal laws or principles that drive history, and that this will, in time, allow us to accurately predict the future. However, as

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12 Or as Robert Cox calls it, ‘a-historical’, which he strongly links to his notion of ‘problem-solving’ theory (1981; 89)

13 For instance, in Gilpin’s theory of Hegemonic War (1988). For a neoclassical realist discussion of the ‘cycles’ of war, see Gray (1999a)

14 It is interesting to note that although Marxism is not generally classed as a 'mainstream' theory, and has indeed given rise to both positivist and post-positivist theories, original Marxist doctrine does clearly presume an historical end-state towards which events must over time inexorably move; as such, in terms of futures thinking, Marxist thought could be said to be very positivist.

15 For instance, one might consider the claim, by the ‘predictioneer’ De Mesquita, that politics is predictable and that “[a]ll that is needed is a tool (...) that takes basic information, evaluates it by assuming everyone does
mentioned previously, there have been numerous authors who, over time, have critiqued the validity of such nomothetic approaches – including Hawthorn (1990), Bernstein et al. (2000), Han (2011), Gaddis (1992), and many others. These authors argue that positivist scholars fundamentally underestimate the complexity and contingency of the political system, and highlight the epistemological, methodological, and pragmatic problems of trying to study it ‘scientifically’. As such, as Han has noted, even if we accept that the positivist assumptions prove usable over short time spans, their actual predictive accuracy falls off dramatically over longer time-periods, as even “...computer-based predictive enterprise does not seem to effectively deal with upcoming surprises and unexpected contingencies” (2011; 58). Indeed, positivist theories as a whole have had a remarkably poor track record of providing policy-relevant insights into the real range of future possibilities. "[T]heories abound..." Bernstein et al. observe; "...but few meet the most relaxed 'scientific' tests of validity...” and “...even the most robust generalizations or laws we can state (...) are close to trivial, have important exceptions, and for the most part stand outside any consistent body of theory" (Bernstein et al., 2000; 44). Their remarks echo those of Hawthorn, who argued ten years earlier that attempts to provide generalisable descriptions of causal connections in human affairs “...have turned out either to have to be phrased at a level that is so general as to be insufficiently informative and not address our interests in explanation; or to be so conditional as to not be general; or, when they have generated testable predictions, to be false” (1991; 160-161).

This poverty in policy-relevant 'output', even after more than 50 years of well-funded academic research and development (Bernstein et al., 2000; 44), may be interpreted as indicative of a number of fundamental problems with applying the (neo)positivist, deductive-nomological paradigm in studying – and predicting – political practice. These problems are diverse, but include the following: (1) an inherent difficulty in the identification, definition, operationalisation, measurement, and coding of key variables that often represent abstract ‘idealizations’ such as ‘rational actor’ (Bernstein et al., 2000; 46); (2) an insufficiently large sample size to permit reliable statistical analysis—or the lumping together of single cases that are in fact too qualitatively different (or even unique) to be legitimately analysed as different cases in one sample; (3) the world of politics what they think is best for them, and produces reliable assessments of what they will do and why they will do it” (De Mesquita. 2009; xix).

16 In the context of his discussion of the game-theoretic work of De Mesquita (2009).

17 Many though not all of these are derived from the excellent discussion by Bernstein et al. (2000: 45-48)

is a complex open system, characterized by multiple causation and equifinality\textsuperscript{19}, with too many factors involved, and with too high a degree of uncertainty about these factors, about the (underlying or immediate) causal relations between them, and about changes in these relationships themselves (Han, 2011; 56); (4) different cases are not independent of each other, since experiences or lessons (or even studies) of earlier cases can affect actor behaviour in later cases.\textsuperscript{20} This implies that general or law-like theories of trends have only restricted validity or utility.

As a result of this, positivist theories – what Bernstein \textit{et al.} have called "...backward-looking attempts to build deductive, nomothetic theory" (2000; 45) – may be stated to be often at risk of becoming too biased towards historical continuity and the status quo\textsuperscript{21} and are rarely able, as Cold War historian Gaddis observed, of finding ways "...to introduce discontinuities into theory, or to attempt to determine what causes them to happen" (1992; 52). By trying to emulate the physical sciences, and by being too focused on extrapolating rigid (i.e. falsifiable) predictions on the basis of past trends, positivistic theories often provide too-narrow readings of the range of possibilities in the future, and therefore fail to provide useable insights that are not continually frustrated by new events. That is not to say that positivist theories cannot be used to study the future of anything, including that of the European arms industries, but it does mean that the toolbox, which brings such "...backward-looking attempts to build deductive, nomothetic theory" (Bernstein \textit{et al.}, 2000; 45) to the table has hardly proven adequate over the years and is, consequently, not nearly the best choice for this thesis as it will likely not provide interesting or useful insights into the future of political systems in general, and the European defence-industrial landscape in particular.

\textsuperscript{19} E.g. similar results might be achieved from different initial conditions and by different means.

\textsuperscript{20} For instance, actors’ behavior in more recent crises (such as wars, or economic crisis) is often influenced by the experiences and 'lessons' of earlier conflicts. As such, any 'law-like' descriptions of society, even if they are initially valid, will tend to become self-altering when applied to the future, because actors will have a strong incentive to utilize the new knowledge to adapt their behavior and achieve more favorable results (Bernstein \textit{et al.} 2000: 44-47, 51-52).

\textsuperscript{21} See also Berenskoetter (2011:660)
2.2 Post-Positivism: Engaging with Uncertainty

While the previous section concludes that mainstream International Relations approaches might not be most suitable for studying the future, it remains necessary to do so with a view to achieving the research aim of this thesis, which is to foster a closer link between academia and policy by demonstrating how thinking about the future of the European defence-industrial landscape can benefit both scholars and policymakers. Thence, as noted by Bernstein et al., the first step is to recognise that although “International relations scholars cannot predict the future...”, it is clear that “...neither can we ignore it” (2000; 52). People and policymakers alike must take day-to-day decisions in a context of uncertainty. So, what remains to be done is to outline an alternative approach that is more successful at coming to terms with the complexity of politics and which can produce policy-relevant insights and at the same time identify opportunities for future change. The strand of thought that is almost completely at odds with positivist theories and which might be considered suitable is (rather anticlimactically named) post-positivism. Post-positivism, like positivism, is an umbrella term, incorporating many theories including Social Constructivism, Critical Theory, and Complexity Theory. While many of these theories differ considerably on many premises, it is sufficient for the purpose of this thesis to outline a number of basic premises on which most of these theories are based, and which determine the distinct way post-positivists frame their enquiries about the future. This section consequently serves to present post-positivism as the approach of choice for this thesis, and for that purpose first of all details its origins and foundations, before emphasising its merits, highlighting why post-positivism might provide a more constructive, forward-looking, and intelligent strategy for engaging with future possibilities.

Outline of Postpositivist approaches to Futures Thinking

Post-positivism particularly came to the fore in the 1980s during what has since commonly been styled the ‘Third Great Debate’ of International Relations (Lapid, 1989; 235-254). This was an epistemological debate between, on the one hand, the ‘positivist orthodoxy’ of Waltz’s (1979) neo-realism, and on the other of a spate of critical and post-structural theorists including Cox (1981), and Walker (1993). While the emphasis of post-positivist critique often lies with issues of epistemology (specifically the role of ‘science’), rather than ontology, their critique of positivist approaches is often based on the view that the political world is not only socially constructed, but also far more complex and contingent than is captured adequately in ‘objective’, universal explanations that only concern

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22 This category of futures thinking also includes approaches such as counterfactuals, and specifically what Junio & Mahnken have called ‘future counterfactuals’ (2013; 375).
macro-scale trends or principles. As such, an in almost complete contrast with positivist theories, post-positivist enquiries regard the future a fundamentally uncertain and characterised by erratic sequences of events. Post-positivist scholars recognise that, as Han puts it: “...in a real world of politics too many uncertain factors are involved and thus politics can be understood as a non-linear process toward unpredictable outcomes” (2011; 56). The argument is that world politics, even (or especially) at the high-stakes level of European security and defence, is irreducibly characterised by uncertainty, limited information, and indeed surprise, and that it is moreover prone to unexpected outcomes and sharp discontinuities as a result of ‘wild cards’ (unexpected but impactful events) or other system shocks. In other words, adherents of the various theories previously noted all more or less agree that the political system is open and non-linear and within which prediction of the scientific, positivist, sort is almost categorically impossible (Bernstein et al., 2000; 48).

Such awareness of the complexity (and social construction) of the present world is wedded to an insight in the contingency of the past – the idea that, as Hawthorn observed, the “...course of history was not predictably linear...” and that “[m]any events could have gone one way or the other” (1991; 17-18). This emphasis on historical contingency is perhaps one of the most important post-positivist insights. After all, if the past is contingent and the present inherently complex, then the future is uncertain and open-ended and therefore events can develop in innumerable non-linear ways. Based on this, some of the most visible post-positivist authors – ranging from critical theorists to ‘radical’ constructivists to feminists and post-colonial writers – have criticised mainstream IR theory for taking for granted (and reproducing) traditional realist power-relations. They argue that, in the worlds of Fuller and Loogma, “...a commitment to the objective ‘real’ seals us off from other possibilities, and in eliminating a ‘rich sea of alternatives’ by quieting alternative discourses, it limits possibilities of action (2008; 73). Consequently, post-positivist scholars have developed a far-reaching affirmation of the open-ended nature of the future, challenging “...those who view the future as more of the same...”, instead insisting that “...it is an open and contestable and, as such, political space” (Berenskoetter, 2011; 651). This is supported by Hutchings’ account which notes that “[a]lthough critical theory takes many different forms, it always distinguishes itself from other forms of theorizing in terms of its orientation towards change and the possibility of futures that do not reproduce the patterns of hegemonic power of the present” (2007; 72).

Note that this does not mean that post-positivism necessarily requires an ethical or anti-hegemonic political goal: rather the point is that this perspective allows, indeed encourages scholars to freely explore anomalies, wild cards, and ‘fringe opportunities’, and thereby consciously correct for the ‘continuity bias’ that – they argue – threatens to skew mainstream positivist perspectives on
international affairs. Therefore, even if the aim is not to challenge the status-quo, post-positivist theories can still allow for more open-ended analysis that allows one to better come to terms with the severe limits of general theories, and gain a greater understanding of unexpected events or discontinuities – a feature very suitable to the purpose of this thesis. Such an approach demonstrates that the most productive way to engage with the future is not by formulating predictions, but rather by obtaining a better understanding of uncertainty and complexity, as well as possibilities for future change. Moreover, post-positivist scholars such as Bernstein et al. (2000; 53) emphasize the value of subjective knowledge and "culturally local knowledge" in understanding the future. Rather than all-encompassing and universal answers, post-positivism seeks to ask or highlight new questions.

**Merits of such approaches**

While such an approach, where uncertainty and complexity are the only constants, might seem rather daunting, it in fact brings with it a number of major advantages – both for this research as well as for the discipline in general. In the first place, and as noted previously, it could be argued that post-positivist approaches to futures thinking are rooted in a much more realistic understanding of the nature of developments in the social world and of the limits of attempts to comprehensively 'predict' them. Specifically, post-positivism is much more able to accept the uncertainty, immeasurability, and contingency of the political world. Furthermore, post-positivist thought self-consciously counters the historical myopia of theories that try to focus too much on continuity, and which might unwittingly misread historical cases in order to 'fit' them neatly into their historical laws. Significantly, it also shifts the burden of proof from those who argue that things will change, to scholars who argue that they will stay the same (Neumann & Overland, 2004; 265) – which could be perceived as a much more sensible and productive attitude to take to the future. The assumption that future change is not just possible, but actually plausible – or even probable – already validates and justifies a more explorative approach that can take better stock of different future pathways, without getting tied down in the 'tunnel vision' of positivist analysis.

In the second place, and extending upon the previous paragraph, post-positivism also relieves us of the ‘responsibility to predict’ (that is; much emphasis is placed on the probability of a certain outcome), by demonstrating that this is a false challenge: trying to achieve 'hard' positivistic predictions is at worst futile, and at best one of the least productive and sensible ways to gain practical insights. Bernstein et al. concretise that view, stating that "...the goal is to learn from the
future (...) not predict it" (2000; 56). What that means is that rather than predicting the path that future developments must inevitably take, the best we can achieve in terms of futures thinking is the increase understanding of developments through iterative and broad considerations of possibilities for change. A good analogy to understand such a research attitude is offered also by Bernstein et al. (2000; 70), who present evolutionary biology as being a better guide to the study of international relations than (positivist) theories modelled on Newtonian prediction of 'clock-like regularities'.

In the third place, the emphasis on the legitimacy of subjective, local knowledge and qualitative insight--particularly in the form of informed judgment--can be a substitute for the positivist reliance on (flawed) statistical inferences. Moreover, while post-positivism does not (need to) deny or ignore the role of material factors or structural conditions, the social constructivist emphasis on the political power of ideas and inter-subjective narratives offers a better tool to understand how past political experiences can provide 'lessons' that significantly alter actors' calculations and behaviour during future crises.

And finally, post-positivism can be said to enable enquiries into future possibilities that have greater policy-relevance than their positivist counterparts, in that it enables a 'forward-tracking' of International Relations that pays greater attention to the unique characteristics and context of the case under analysis, understands the strategic utility of being prepared for unexpected outcomes, and is able to review and deconstruct the worldviews of policymakers in a historical context. This is important because, as Bernstein et al. argue: "...one of the valuable consequences of thinking about historical contingency in a disciplined way is that it forces people who are going to make decisions to ask what they would do if they found themselves in -- or heading towards-- a world different from the one they expect. (...) scenario thinkers are more likely to generate results that contain surprises or challenging combinations of events when they begin from beliefs or ideas about fundamental causes, rather than from preconceived notions of the most likely outcome states" (2000; 57-58).

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23 Also: "It appears that social constructionism is highly resonant with the production of foresight knowledge. [...] Methodologically, the accuracy of the knowledge is less significant than the process by which the knowledge is produced" [Fuller & Loogma, 2008; 78].
3. Scenario Analysis

If it is assumed that the future of any particular topic is unknowable and uncertain, but we ought to study it nonetheless and can do that by engaging with uncertainty, what method can be used to structure the process? Scholars such as Jackson (2011; 31-34), Han (2011; 55), Bernstein et al. (2000; 53), and Neumann & Øverland (2004; 265) all concur that the method used for that purpose should be ‘scientific’, with the latter stating that “The future is unknowable, but it does not follow that the methods that we use to discuss future probabilities cannot be held to scientific standards” (ibid.). In that context, a number of scholars – including a number of those mentioned above such as Bernstein et al. (2000), Han (2011), and Neumann and Øverland (2004), but also others such as Wright (2004), Dammers (2010), and Chermack (2007) – contend that the method of scenario analysis could provide a suitable medium compatible with postpositivist assumptions and capable of channelling academic knowledge of the international system into the policymaking process, and in the process obtain valuable insights.

This method, the particulars of which are discussed later in this chapter, originated as a corporate means of heuristic strategic planning (that is, it is used to explore the possible ways in which a situation might develop) and is commonly attributed to Kahn, one of RAND Corporation’s main strategists of the previous century. It was subsequently made popular by Royal Dutch Shell (RDS) in the 1970s and has since manifested itself as one of the most widely used planning methods.

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24 Authors refer to Scenario Analysis in a various ways. Sometimes the practice is called Scenario Planning, other times it is referred to as Scenario Building. For the purpose of this thesis, it is referred to as Scenario Analysis as it here serves to analyse a particular situation by use of Scenarios. The purpose is not to solely build scenarios for the sake of it, nor to plan.

25 Various scholars have sought to adapt scenario analysis, which is traditionally a business tool, to the Discipline. Neumann and Øverland (2004) have for instance suggested what they call ‘perspectivist’ scenario analysis, by which they seek to expressly emphasize non-linearity (Neumann and Øverland, 2004; 258). In the form of scenario analysis used in this thesis, non-linearity is assumed, but paradoxically the scenarios themselves are subject to path-dependent thinking. Others have suggested that the method might benefit from theoretical eclecticism, where IR theory is used to further legitimise the driving forces uncovered in the scenario process, and that such an approach might be used to improve theory, too (Han, 2011; 53 / Junio & Mahnken, 2013; 382 / Choucri, 1974; 66). Although both concepts seem promising, they remain rudimentary and devoid of best practices for their application. Although perhaps not optimal, I would argue that Shell’s method provides a more battle-ready method for coping with otherwise limitless possibilities. Thence, while an investigation into the application of these ideas might eventually prove fruitful, such a task cannot be carried out within the scope of this thesis.
(Schoemaker, 1993; 195 / Dammers, 2010; 786). Neumann and Øverland (2004; 264) remark that “...the use of scenarios has blossomed not only in management circles, but also in such traditional IR areas as government and international organisations”. Han (2011; 60), observing this too, notes that consequently “...the scenario method could provide some alternatives for the overflow of grand paradigmatic debate in the discipline and contribute to more focus on empirical puzzles, which policy makers eagerly seek to solve”.

While numerous scholars identify the method as suitable for addressing the ‘policy-academia divide’, it is remarkable that it is only rarely used for academic publications. Although “...the method is popular in fields as disparate as business, demographics, ecology, pharmacology, public health, economics and epidemiology” (Junio & Mahnken, 2013; 374), IR continues to slouch far behind (Han, 2011; 49). Junio and Mahnken (2013; 374), quoting a quantitative study, demonstrate that only 2% of 18,764 articles sampled made use of some form of scenarios. These authors generally lament this fact, and Neumann and Øverland (2004; 264) bitterly remark that “…the losers here are exactly IR scholars and the people they train….”. Thence, in this chapter, scenario analysis as the method of choice for investigating the future of the European defence-industrial landscape is delineated. It first of all outlines the method, highlighting its corporate origins and its purpose and conduct, before specifying the design choices made for this study. It concludes with a brief discussion of remaining limitations.
3.1 Outline of the Method

Scenario analysis itself is a rather flexible method and may be adapted for specific purposes (Han, 2011; 43-44). As such, it is no surprise that it is often only loosely defined\textsuperscript{26}. Schoemaker, one of Shell’s scenario pioneers, states that “[s]cenario planning is a disciplined method for imagining possible futures” (Schoemaker, 1995; 25). Han defines it as “…a means by which people can articulate different futures with trends, uncertainties, and rules over a certain about of time” (Han, 2011; 41). At the EU-level, scenario analysis is regularly applied in numerous policy areas. Over time this has resulted in reports such as ‘Scenarios Europe 2010’ and ‘Four Futures of Europe’ (Dammers, 2010; 785-786 / Neumann & Øverland, 2004; 266). It may as such be considered surprising that the method has not yet been applied to the policy issue to which this thesis seeks to contribute. This section details the origins of the method, details its purpose, cautions against its pitfalls, and outlines its general conduct.

Origins

Early usage of scenario methods can be traced back to the military sector in the mid-20\textsuperscript{th} century, where computer simulations were used during the Manhattan Project and war games were regularly conducted by the United States Air Force (Schoemaker, 1993; 195 / Wright, 2004; 6). Eventually the method was adapted for civilian purposes by Kahn, who at that time was one of the RAND Corporation’s main strategists. Although the method became applicable in a multidisciplinary manner, Kahn’s approach maintained an outlook focussed on issues of security, mostly detailing possible ways in which a nuclear war between the USA and USSR might unfold (Han, 2011; 41 / Wright, 2004; 6-7 / Neumann & Øverland, 2004; 261 / Junio & Mahnken, 2013; 387).

Numerous methods for futures thinking were eventually developed based on Kahn’s work, many of which are still in use today\textsuperscript{27}. Of all these methods, scenario analysis as outlined by Royal Dutch Shell eventually became the most prominent (Schoemaker, 1993; 195 / Dammers, 2010; 786). Shell’s approach was specifically designed to overcome inherent problems in linear means of forecasting, which, until then, were the norm. Such approaches were thought to be unable to

\textsuperscript{26} Shell itself is a remarkable exception. They state that, among other things, scenario analysis is “…a collaborative, conversation-based process that facilitates the interplay of a wide variety of ideas” which “…enables different fields of knowledge and ways of knowing to be combined”, which “…reframes questions, prompting the generation of ideas across disciplines rather than going over old ground”, which “…encourages the involvement of different perspectives on an issue or question”, and which allows one to think “…of the future as full of possibilities” (Explorer’s guide, 2008; 8).

\textsuperscript{27} Examples include Synetics and Morphological Analysis, Dialectic Reasoning, and the Delphi Method (Schoemaker, 1993; 195)
account for matters such as human bias and uncertainty (Wack, 1985; 150; Schoemaker, 1993; 196; De Ruijter & Janssen, 1996; 2, 6).

Through their form of scenario analysis, Shell proved most successful in navigating the oil crises of the 70s. Since then, the method has manifested itself as perhaps the most common tool for long-term strategic thinking (Dammers, 2010; 785; Wright, 2004; 7). In 1982, it was estimated that over 50% of all Fortune-500 companies were using scenario analysis. Traditionally, the method was used primarily by industries that have long set-up times such as those producing petroleum and electricity (Schoemaker, 1993; 199; Schoemaker, 1995; 25). Over time, other entities that are also subject to slow rates of progress, such as states started to use the method as well (Nationaal Coördinator Terrorismebestrijding en Veiligheid / Dammers, 2010; 785-786; Neumann & Øverland, 2004; 266).

Purpose and Conduct

As evident from previous paragraphs, scenario analysis is a tool designed to account for uncertainty and to explore ways in which the future might unfold so as to improve decision-making processes (Explorer’s Guide, 2008; 4, 6, 8, 12; Wright, 2004; 6-7; Han, 2011; 41). Schoemaker states that the method seeks to discourage tunnel-vision and anchoring, and that “...scenario planning attempts to capture the richness and range of possibilities, stimulating decision-makers to consider changes they would otherwise ignore” (Schoemaker, 1995; 27; Schoemaker, 1993; 196). Wack also echoes that statement, arguing that the ultimate purpose of scenario analysis is to lead “...to strategic insights beyond the mind’s previous reach” (Wack, 1985; 140, 146). Han defines the purpose of a scenario exercise as “...building a shared framework in which strategic thinking, diversity, and more sensitivity to external changes and opportunities is encouraged” (Han, 2011; 41). As such, while definitions vary somewhat, it can generally be said that the purpose of scenario analysis is to provide insights into the possible ways in which the future could develop, encouraging decision-makers to take developments into account of which they were previously unaware – a purpose well-suited to the aim of this thesis (Explorer’s Guide, 2008; 66).

The process by which this is achieved is best explained by breaking it down into a number of steps. The exact number of steps varies from author to author and seems to be greatly dependent on the purpose of the study for which it is used (i.e. policy-oriented scenario exercises require extended recommendations to be distilled from the scenarios themselves). Schoemaker, who was previously identified as a founding father of Shell-style scenario analysis, identifies ten respective steps (1993; 197). Bernstein et al. (2000; 55) recognise seven. Han (2011; 44) explains that the Global Business Network approach consists of five steps. A majority of authors, however, seem to favour a simplified
three-step approach for generic scenario exercises (Han, 2011; 43-44 / Özkaynak & Rodriguez-Labajos, 2010; 997 / Horton, 1999; 006). These three steps are visualised in figure 1 to the right.

The first of these steps involves defining the topic – in this case European defence-industrial production – further in a bid to obtain a solid understanding of it and to get a feel for the various actors and factors involved in its development. In that context, Schoemaker (1993; 197) suggests clarifying the matter’s historical context and outlining the main actors that make up the present situation, an approach endorsed also by Han (2011; 44) and in Shell’s Explorer’s Guide (2008; 14). Wack (1985; 140) and Schoemaker (1993; 197), along with virtually all others, delegate that scenario developers should subsequently select a number of driving forces through a process of informed judgment (based on perceived levels of uncertainty and impact) which they believe are likely to be crucial in shaping future developments. Schoemaker (1995; 32) refers to these driving forces, which are thought to be highly uncertain and have major potential impact, as ‘critical uncertainties’. Lastly, authors use these critical uncertainties to produce the scenarios – the definition of which was previously provided. The scenarios are generated through the creation of a so-called scenario matrix, where the critical uncertainties are plotted on a number of axes. These axes range from one extremity to another (for instance, a factor ‘US involvement’ could translate to an axis ranging from ‘US withdraws completely’ to ‘US significantly increases presence’). Although, as indicated on the diagram, the creation of the scenarios effectively marks the end of the exercise itself, Wack (1985; 139) especially stresses that a discussion of how organisations are affected in these scenarios is essential for adequate interpretation. By extension, it may also be argued that, for the purpose of this thesis, a discussion of how the scenarios relate to the wider debate on European defence-industrial production in general would be fruitful.

28 Some authors, including Dammers (2010; 789) and Han (2011; 43), note that another commonly used extension to the scenario process is examining the impact of so-called wild cards on the scenarios. These are “…conceivable, if low probability, events or actions that might undermine or modify radically the chains of logic or narrative plot lines” (ibid.) While a thorough discussion of such wild cards is out of the scope of this thesis, I have included it in the conclusion as a recommendation for further research.
3.2 Design Choices and Limitations

Having provided a basic outline of a basic scenario exercise, it is important to remember that the method is generally rather flexible (i.e. adaptable to specific purposes). Remembering the purpose of this thesis, namely to encourage engagement with policy-making within International Relations, the remainder of this chapter thence specifies the most important design choices that were made with a view to successfully reaching that aim. The following sections thence details the manner in which the process of informed judgment by which the driving forces were obtained, as well as the manner in which the scenarios themselves were constructed. It concludes with a brief discussion of the drawbacks of this particular research design.

Collecting Data

Step two of the process outlined above stipulates that driving forces must be uncovered so as to be able to produce the final scenarios. Commonly, authors, including for instance Junio and Mahnken (2013; 383) and Schoemaker (1993; 196, 200), as well as Shell’s Explorers Guide (2008; 6, 16), suggest that this is best achieved through group exercises, where collective knowledge of the participants can provide collective informed judgement. Such a pooling of knowledge, they argue, is likely to produce the most robust scenarios. For this thesis, adhering to that procedure would require that military figureheads, industry managers, and scholars from various academic disciplines – all of which must be very knowledgeable about the topic at hand – come together in one place to conduct an interactive scenario exercise, engaging in vivid discussions in order to generate the best results. For this thesis, such an endeavour is undoubtedly out of scope and thence the matter requires a different approach.

Faced with such limitations, it is of course possible to conduct the scenario exercise in a similar fashion to the one described above by providing less-knowledgeable individuals (e.g. faculty students) with reading materials. However, it seems likely that such an approach would first of all encourage severe bias as the reading materials provided would be selected by the researcher, meaning that the participants themselves do not base their input solely on their own views. Moreover, it may be argued that such a shallow approach is also likely to produce suboptimal, oversimplified results in general as a result of the participants’ superficial knowledge. However, although scenario experts appear to prefer group exercises, there are also other ways to incorporate numerous viewpoints into the process. Various authors, including Dammers (2010; 787), Horton (1999; 006), and Özkaynak and Rodríguez-Labajos (2010; 998) have suggested that it could suffice to
base the driving forces on a large and varied body of literature\textsuperscript{29}. The latter two authors, for instance, articulate explicitly that “[t]he insights for external driving forces [and] [i]nformation on local factors (...) can be obtained through desktop research” (2010; 998). It could be claimed that such a way of collecting data is not one-hundred percent optimal in general, but keeping in mind that this thesis merely seeks to demonstrate the method’s utility, this procedure is likely to be sufficient. Moreover, this particular approach can also be said to provide one additional benefit over other approaches, namely that it is possible to elucidate the informed judgement process with examples from the literature, somewhat alleviating the ‘replicability problem’ described in the final section of this chapter.

Having decided upon an approach whereby literature is reviewed in order to pry out critical uncertainties, what remains is to outline the sources that contributed to this. Again assuming that a higher degree of diversity is likely to produce more robust and reliable scenarios, the selection of literature consulted for this thesis was ensured to be not only extensive, but also varied in terms of origin, purpose, and perspective and moreover includes both primary and secondary sources. Primary sources accessed include important European Union treaties and legislation, such as the Treaty on the Functioning on the European Union (TFEU) and a number of arms procurement directives published by the European Defence Agency, but also include national procurement strategies such as Britain’s 2005 White Paper on Defence, as well as trans-national declarations such as the Letter of Intent signed in 1998 between Europe’s main arms producing nations. Examples of secondary sources examined include news articles by standard newspapers such as Spiegel Online and the Economist, as well as by more specialised websites such as DefenseNews and EUobserver. Moreover, the list of secondary sources include scholarly articles published in influential journals like International Organization and European Security, but also features a selection of independent research and conference papers by both individual academics and renowned research institutions such as Chatham House and the Clingendael Institute. Finally, there are a number of major and lesser policy-oriented published by a number of organisations, including documents such as periodical evaluation reports and more extensive research reports. For a comprehensive overview of sources

\textsuperscript{29} Some authors have also suggested that quantitative research might serve to enhance the validity of scenarios (Explorer’s Guide, 2008; 59). However, for this particular case authors have cautioned against reliance on quantification; as a result of secrecy, much of the data on the matter is never made public. Thus, there are too many gaps in quantitative data to produce reliable or useful results (Briani \textit{et al.}, 2013; 20-21). Therefore, for this thesis, statistical and numerical data have been used in an illustrative fashion.
which have contributed to the process of informed judgment, please note the list of references at
the end of this thesis.\(^{30}\)

**Crafting Scenarios**

Concerning the design choices relating to scenario construction, there first of all appears the be
little consensus about the exact amount of scenarios that ought to result from any standard scenario
exercise, and the number consequently varies from organisation to organisation. Even within
organisations, it fluctuates. In their Explorer’s Guide (2008; 46), Royal Dutch Shell advocates the use
of two critical uncertainties for the creation of scenarios, which would consequently result in a
maximum total of four scenarios. Schoemaker (1993; 197) on the other hand (who was previously
identified as one of Shell’s foremost scenario experts), suggests that at least two scenarios should be
created, but allows that it is possible to create more and does not specify a maximum. Wack (1985;
139), who was also previously identified as one of the founding fathers of scenario analysis, describes
a situation where six scenarios were constructed. Some others, such as Lefkowits and Miller (2007;
400), who discuss the promise of scenarios for the educational system, create as many as sixteen
scenarios, of which they subsequently discuss only four. The reason for this is that, as previously
stated, the method originated as a policymaking tool and can therefore be adapted to specific
purposes. After all, it might be argued that ignoring a key critical uncertainty for the purpose of
rigorous adherence to a rigid process would undermine the quality of the scenarios. This is
articulated by Han (2011; 45), who explains that the Global Business Network approach recommends, like Shell, that two critical uncertainties should be used, but allows that sometimes a
particular situation calls for more. Junio and Mahnken (2013; 383), however, caution that it is
important not to get ‘snowed under’ as a result of too many scenarios. Heeding these advices, three
critical uncertainties were selected for this thesis, as demonstrated in later chapters. For the purpose
of this thesis, however, it is not necessary to discuss all eight resultant scenarios in an elaborate way,
and as such four were discarded in a bid to favour quality over quantity.

Having justified the amount of scenarios generated for this study, what remains is to briefly
detail the basis on which they were constructed. In elaborating upon this, it is useful to draw
attention to a distinction made by numerous authors, including Han (2011; 47-48), Schoemaker
(1993; 197), Junio and Mahnken (2013; 383), and in Shell’s Explorer’s Guide (2008; 54, 56). These

\(^{30}\) It must be noted that the literature referenced here is not exhaustive. Rather, it serves to provide an
overview of the various types of sources read for this thesis. The reason for it not being exhaustive is that it is
impossible to determine exactly how many sources contributed to the writing of this thesis, as even articles
read for leisure on the topic influence judgment in some way.
sources discern two types of scenarios. First of all there are ‘learning scenarios’, which are commonly described as being incoherent and implausible. Then there are ‘decision scenarios’, which are internally consistent and coherent, as well as reasonably plausible. All of the above authors concur that it is desirable that learning scenarios are eventually transformed into decision scenarios (and that those who cannot be made reasonably plausible ought to be discarded), as “...people seem to relate best to concrete, causally coherent narratives” (Schoemaker, 1993; 196). Some authors, however, have challenged that view, claiming that from an academic perspective it might not be beneficial to maintain too rigorous a focus on coherence and plausibility. In that context, some authors, most notably Wright (2004; 10), have gone as far as to suggest that narratives might in fact be the most interesting and thought-provoking if they are left implausible and incoherent. For the purpose of this thesis, however, a more nuanced interpretation of that criticism has been adopted, based on the views of authors such as Bernstein et al. (2000; 59) who state that “…end-states should be plausible within existing conceptual frameworks, but when possible, challenging to official futures”. To ensure that these narratives remain accessible, each scenario includes a diagram illustrating the chain of events – a technique suggested by Shell (Explorer’s Guide, 2008; 60)

Remaining Drawbacks

As with virtually any method, the research design for this study is subject to a number of drawbacks and pitfalls. For academic purposes, it is important to recognise these as they impose limitations on the results produced through this research. As noted in the introduction of this thesis, International Relations scholars have, despite the method’s popularity in other fields and among policymakers, not been very receptive to scenario analysis. Junio and Mahnken (2013; 383) and Wright (2004; 12) detail that the method has been critiqued especially severely for its inherent reliance on informed judgment, which critics argue makes it impossible to replicate the procedure and, as a consequence, replicate results. Wright (ibid.) notes that as a result, practitioners of scenario analysis have often sought to make their work more replicable by adding ‘positivist’ elements. He subsequently argues that since the method’s original success derived from its reliance on matters such as creativity, imagination, and informed judgment, attempts to accommodate such critics have only led to an undermining of the method’s theoretical integrity and a squandering of the method’s full potential. Instead, he argues, we must simply accept poor replicability as a drawback – a viewpoint endorsed also by Junio and Mahnken (2013; 384). It may however also be argued that both critics and authors such as Wright and Junio and Mahnken create a schism that does not exist. Instead, it may be argued that replication has different meanings. To positivists, replicability means verification of results through a second, identical study. In postpositivist research, on the other hand, it ought perhaps to
be understood as a complimentary process whereby a second study contributes new, controversial insights that can enhance interpersonal understanding. As such, we need not worry about replication of results, but must still ensure that trains of thought and decisions are made clear.

What this adherence to the method’s core values mans, though, is that a number of things must be kept in mind. First of all, continual reliance on informed judgment means that the scenarios are only as reliable as the perception of the researcher who compiled them – a drawback referred to by Junio and Mahnken (2013; 382-383) as ‘GIGO’ (Garbage in, Garbage out). In other words, while scenario analysis’s success is rooted in informed judgment, uninformed or biased judgment is likely to compromise the final scenarios. Should the researcher anchor to a desired future prior to the research, his scenario are likely to be biased in favour of that future. It may be argued that since this thesis does not rely on group exercises where one person’s bias can be nuanced or eradicated through discussion, it is more susceptible to this pitfall. Remembering this, it is also paramount to stress again that since the scenarios are based not on a rigorously structured process but rather on informed judgment, they “...do not provide a consensus view of the future, nor are they predictions...” (Explorer’s Guide, 2008; 8). Instead, “[t]he focus is (...) on bounding and better understanding future uncertainties” (Schoemaker, 1993; 196). Finally, it is also important to remember that scenarios are designed to cope with complexity, and do so by simplifying a situation (Junio & Mahnken, 2013; 383-384). It could as such be said that another drawback of the method is that scenarios are not fully able to capture the ‘full picture’ and that it is easily possible to oversimplify a situation.
4. The European Arms Industries

The introductory chapter of this thesis delineates the various reasons why the European defence-industrial landscape is of interest. It notes the numerical relevance of European defence-industrial production, detailing that it remains a world-class industry in that it is second only to the United States with a total 2013 turnover of nearly €200 billion across its various sectors (Ballester, 2013; 45 / Briani et al., 2013; 47 / ASD, 2014). Moreover, it is highlighted that authors, including Ballester (2013; 10), Dorussen et al. (2009; 789), and Lundmark (2011; 275) generally concur that the configuration and health of these industries also strongly affect other policy areas and therefore has not only economic, but also socio-economic, socio-political and security-related facets, and relates to wider debates on the EU’s role as a security actor. Lastly, it is explained that the European defence-industrial landscape remains fragmented and so has proven a notable exception to (successful) efforts at creating a common European market.

As outlined previously, the first step in any scenario exercise involves defining this topic – the defence-industrial landscape of Europe – further, which Schoemaker (1993; 197), who was previously identified as one of Shell’s main scenario experts, suggests could best be done by providing a historical context with a view to obtaining basic understanding of trends (so as to be able to realistically estimate developments), and by delineating those actors that presently have a stake in the matter so as to understand who the ‘main characters’ of the scenarios should be. Besides this being a standard procedure for this type of enquiry, it seems an especially good approach in this case, as Hartley (2007; 1141-1142) stresses that it is exceptionally difficult to capture the essence of the defence market in a single definition due to the fact that its boundaries are tremendously fuzzy. One important reason for this is that the defence sector is highly politicised (Lundmark, 2011; 275). Bechtel and Schneider explain that it is “…almost completely dependent on government contracts” (2010; 200), a view substantiated by Briani et al. who explain that “[m]ost of the companies are state-owned...” (ibid.; 34). Consequently, its landscape is presently comprised of both political and industrial actors, with considerable overlap between these two categories as lobbying is commonly known to be extensive in defence. Another reason is that, as noted by for example the United

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31 Although already noted in the introduction of this thesis, it seems prudent to once again stress that all numerical and statistical information in this thesis, including knowledge presented in this chapter regarding the size and global position of companies, was, if not otherwise indicated, obtained from The SIPRI top 100 arms-producing and military services companies in the world (excluding China), 2013. (2013) and from the SIPRI Arms Transfers Database. (n.d.). Additional examples of European defence companies may be found in the top-100 list available through the link provided in the list of references at the end of this thesis.
Kingdom’s Ministry of Defence (UKMOD), “...major defence companies, who take on the delivery of complex, integrated systems and platforms, are heavily dependent on a wide range of lower level suppliers, many of whom are significant international companies in their own right” (UKMOD, 2005; 26), making it “...difficult to properly assess (...) which entities are in the “defence business” and which are only supporting it” (Wiśniewski, 2012; 101).

In that context, this chapter commences with a brief overview of the historical context of the European defence-industrial landscape detailing the period from 1990 up to the present, and based on a selection of important political and industrial happenings. Following this, section 4.2 closes this chapter with a comprehensive overview of the defence firms, governments, and transnational political entities that currently characterise the European defence-industrial landscape32.

32 The ways in which authors provide overviews of the main actors of the defence-industrial landscape appear to vary somewhat. While authors such as Lundmark (2011; 61-62) and Briani et al. (2013; 33, 35-47) predominantly centre their studies around ‘prime contractors’ (defence-industrial giants), others such as Wiśniewski (2012; 95-96) provide a broad but less detailed overview, detailing the variety of companies and political actors present. For this thesis, both approaches have been tried, and it was decided that the scope of this thesis is best suited to the latter approach as the former allows only for the discussion of four to six main companies, which hardly provides the comprehensive general understanding required.
4.1 A Brief History

Although Europe has a long history of defence-industrial production, being the cradle of the Industrial Revolution, the recent history of that topic commences with the end of the Second World War. In the aftermath, European nations began to rebuild their defence-industrial bases under American guidance. Through access to US technology, sovereign states worked closely in a trans-Atlantic fashion (Edwards, 2011; 4). Following re-armament, and due to eventual protectionist policies by the United States which limited European access to that market, Europe’s states eventually started to consider increased cooperation on their own continent. Nonetheless, Sköns (2002; 2) and Edwards (2011; 4) emphasise, production and procurement remained organised along national lines. The fall of the Berlin Wall, however, resulted in a significantly altered security environment in which states and businesses alike were forced to consider alternative strategies, resulting in the defence-industrial landscape that exists today (Sköns, 2002; 3 / Briani et al., 2013; 37). This section therefore outlines the historical context from 1990 onwards, and, as it is not feasible to outline every single event, it aims to provide a comprehensive overview of the major developments of the past 24 years. For that purpose, it is divided into two ‘periods’: 1990-2001, characterised by ‘integration’, and 2001-2015, characterised by ‘stagnation’.

1990-2001: Integration

Sköns (2002; 2) narrates that in the less-demanding security environment heralded by the collapse of the Soviet Union, demand for materiel declined by one-third in just five years’ time, and that as a result many Western European companies discarded (parts of) their defence branches. Also, many smaller companies went bankrupt. Many industrialists realised that national self-sufficiency was a luxury of the past, and they sought to cope with declining budgets and interest through consolidation (Bittleston, 1990; 4, 7, 45 / Sköns, 2002; 2). Thence, the start of the 90s saw a wave of consolidation, most of which happened at a national level, although transnational mergers did occur (Sköns, 2002; 3 / Guay & Callum, 2001; 1). Although governments initially tried to stop this from happening, they eventually realised that in order to compete with the defence industry of the United States, to adequately respond to peripheral unrest in the Balkans, and to prevent a further loss of defence-industrial production capabilities, some form of organised cooperation was necessary (Sköns, 2002; 2-3 / Guay & Callum, 2001; 2).

The second half of the decade was consequently characterised by European-level advances towards integration. For instance, in 1996, the Organisation Conjointe de Coopération en matière d’Arment (OCCAR) was founded by Germany, the United Kingdom, Italy, and France in an effort to
facilitate joint production and procurement (Edwards, 2011; 5). Moreover, in that year, the Western European Armaments Organisation (WEAO) was created to provide support for defense R&T (Eliassen & Sitter, 2006; 6). In 1998, France and Britain together issued the St. Malo Declaration, urging for increased integration at the EU-level (Herz, 2009; 1). In the same year, a Letter of Intent (LoI) was signed (and ratified in 2000) by Spain, Sweden, the United Kingdom, France, Germany and Italy in a bid to encourage quick harmonisation of standards and procedures, and restructuring of national defence industries for that purpose (Edwards, 2011; 5).

In that context, companies eagerly pursued further mergers and acquisitions. In 1997, French companies Thompson-CSF and Dassault Electronique merged with the satellite branch of Aerospatiale. In 2000, the new company acquired Racal Electronics, a British firm, forming Thales (Sköns, 2001; 3 / Guay & Callum, 2001; 3). In 1999, British Aerospace and Marconi Electronic Systems (both British) combined, forming the then-2nd-largest defence company in the world, BAE Systems (Sköns, 2002; 3 / Guay & Callum, 2001; 2). In 2000, the first real European company, EADS, was formed, when Aerospatiale and Matra (both French) merged with German-owned DaimlerChrysler’s aerospace branch and with CASA, Spain’s chief aerospace company (Guay & Callum, 2001; 2). These consolidations resulted in the Eurofighter being finished in 2003, and the Tiger attack helicopter being completed in 2008. Both of these are regarded as major European projects. In 2001, BAE Systems, EADS and Finmeccanica established MBDA. In that same year Italy’s Agusta merged with Britain’s Westland to form AgustaWestland, and BAE Systems and Finmeccanica created Selex Sensors and Airborne Systems, which was to become Selex SE in 2007 when BAE Systems sold its shares to Finmeccanica (Sköns, 2002; 3 / Guay & Callum, 2001; 3 / Aviationweek, 2013).

2001-2013: Stagnation

While the first years of the 21st century feature numerous examples of integration, Sköns (2002; 3) note that they also heralded the start of a period of stagnation. In 2001, plans for a further joint venture between EADS and Finmeccanica, which was to become a key military aircraft producer, collapsed. Around the same time, Britain decided to opt for the US-led Joint Strike Fighter project – a decision soon followed by other European nations (ibid.). With the onset of the Great Recession in 2008, companies again saw themselves challenged financially as budgets were consequently slashed by 10-15% on average. Although companies attempted a number of mergers over the years, no

33 The original plan involved a merger between British Aerospace and the aerospace branch of German-owned DaimlerChrysler, as well as some French organisations. This would have created the first European aerospace company. However, British Aerospace eventually preferred a national merger (Guay & Callum, 2001; 2).

34 BAE Systems also inherited a significant amount of shares in Saab from British Aerospace, which were sold in 2010.
consolidation comparable to the start of the decade took place (The Economist, 2013 / Briani et al., 2013; 44). For example, Repinski et al. (2013) and The Economist (2013) highlight that 2012, BAE Systems and EADS proposed a merger in a bid to limit duplication and overproduction where the former would own 40% of shares and the latter the remaining 60%. Although France and Britain supported this effort, Germany eventually thwarted as it feared job losses in Bavaria (where EADS’s German branch is located). Furthermore, these sources elucidate that while Thales and Safran (both French) have expressed interest in unification, there has been only limited progress in hammering out a concrete agreement. Arguably the most significant event of this period was the restructuring and renaming of EADS in 2014, when the company changed its name to Airbus, shedding its profoundly European image. The new company also incorporated and renamed most of its subsidiaries (ibid.).

Paradoxically, although mergers and acquisitions ground to halt, the last ten years saw a major increase in the number of European and transnational integration and cooperation initiatives. Hertz (2009; 1), Edwards (2011; 6), and Eliassen and Sitter (2006; 2) note that at a European level, the EDA was established in 2004 in order to administer the CSDP and promote the creation of a common EU defence market, taking over the WEAO’s responsibilities. It has, since its inception, provided a number of initiatives. For instance, in 2006, the EDA outlined its Long Term Vision report, which details actions to be undertaken by member states if further European defence-industrial consolidation is to be achieved (Herz, 2009; 2). Moreover, in the same year, it presented a Code of Conduct for the procurement of defence capabilities, which applies to all non-sensitive contracts over one million euros. This document was signed by 25 member states and was, upon its introduction, hailed as the birth of a European defence market (Edwards, 2011; 6 / Eliassen & Sitter, 2006; 12). The EDA supplemented this in 2012 with another Code of Conduct on the pooling and sharing of materiel (Von Voss, Major & Mölling, 2013; 2). Besides these initiatives, the EC has produced a number of directives on arms procurement, most notably Directive 2009/81/EC, which seeks to outline more rigorous procurement guidelines for participating member-states (Edwards, 2011; 8). Most recently, in 2014, the Commission presented the ‘New Deal for European Defence’, which calls for “…an Internal Market for Defence…”, “…an EU-wide security of supply regime…”, and “…an industrial policy which fosters competitiveness of European defence industries and helps to deliver at affordable prices all the capabilities Europe needs to guarantee its security” (EC, 2014; 2).
At a regional level, a number of transnational cooperation initiatives were recently unveiled. One example of such an initiative is the 2010 ‘Weimar Triangle Initiative’. This initiative, proposed by Germany, France, and Poland, seeks to foster increased cooperation between the EU and NATO and envisions the creation of a European military HQ as well as joint military capability development. It was approved by the EU in 2011. Spain and Italy have since joined, forming Weimar Plus, and in 2012 these five states signed the Declaration on European Defence, whereby they commit to a strengthening of R&D activities at the European level, and call for the implementation of a European DTIB (Voss et al., 2013; 7). One further example of regional cooperation is the Joint Nordic Defence Industry Cooperation Group, which serves to “…support and strengthen cooperation among the [Nordic] countries’ procurement agencies and governments and to bolster the competitiveness of the Nordic defence industry” (ibid.; 8). Finally, NATO outlined its ‘Smart Defence Initiative’, which seeks to build a platform for pooling and sharing resources and technology among NATO members (ibid.; 1)

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35 Examples not elaborated upon here include NORDEFCO (2009, Denmark, Finland, Sweden and Norway), the Anglo-French Declaration on Defence and Security Cooperation of 2010, the Declaration on Defence Cooperation signed by the Benelux countries (Netherlands, Belgium, and Luxembourg) in 2012, and the Declaration of Intent signed between Poland and Germany in which the countries commit to joint production and procurement of submarines (Voss et al., 2013; 5-11). For more information, see: Voss, A., Major, C., and Mölling, C. (2013). The State of Defence Cooperation in Europe. Stiftung Wissenschaft und Politik, Berlin.
4.2 Present Actors

As previously outlined, authors including Lundmark (2011; 275), Bechtel and Schneider (2010; 200), and Briani et al. (2013; 34) emphasise that the defence market is situated at the intersection between politics and industry. Moreover, the introduction of this thesis and the previous section detail that authors such as Ballester (2013; 56, 60-61), Briani et al. (2013; 30), and Wiśniewski (2012; 103) as well as a number of newspapers highlight that instead of a European internal market there remain numerous national markets. Thence, this topic features hundreds of different actors. Wiśniewski (2012; 102) notes that, besides states and transnational political bodies, there are about 20 main contractors, close to 100 medium-sized component suppliers, and hundreds of minor enterprises. Hartley provides that in one case, a “...prime contractor had some 200 first level suppliers, each of which had an average of 18 suppliers; in turn, the second level suppliers each had an average of 7 suppliers; and the third level suppliers had an average of 2–3 suppliers with many of the second and third tier suppliers unaware of their involvement on defense work” (2007; 1142). As it is not feasible to detail all of these within the scope of this thesis (indeed, it would be difficult to do this within the scope of any medium-length study), this section serves to provide a comprehensive overview by focussing on European states (and noting the involvement of foreign and trans-national actors) as well as on a selection of defence firms mentioned in SIPRI’s top-100. For future reference and convenience, fig. 2 provides an overview of some important defence firms and the states that hold major stakes in them.

Political Actors

Concerning political actors, there are first and foremost the various nations of Europe. Although the Aerospace and Defence Industries Association of Europe (ASD) factsheet (2014) includes data from twenty different states, there appear to be only seven states that are especially important, namely those represented in the LoI(+) framework. Briani et al. note that “...the six LoI countries (France,
Germany, Italy, Spain, Sweden and United Kingdom) hold about 80% of the relevant DTIB in the EU” and that “[t]he LoI plus Poland (LoI+) represents 75% of the EU defence budget”. They also note that that “[t]he LoI DTIBs employ about 520,000 people”, and that “[t]he turnover of LoI+ may well account for 90% of the defence (industrial) turnover in Europe” (2013; 25). Honing in further, some authors, including Vlachos (1998), Briani et al. (2013), and Kerttunen, Koivula, and Jeppsson (2005), have suggested that the three Great Powers (France, Britain, and Germany) are the true ‘main characters’ of Europe. As demonstrated shortly (and shown partially by fig. 2), these states hold substantial shares in top defence companies. In that context, Kerttunen et al. highlight that France and Britain have thus far proven the “…two most influential EU countries in terms of security and defence issues” and that when France and Britain announced the St. Malo agreement, “…rapid Europeanisation (...) followed” (2005; 10). Briani et al. argue that this, coupled with the existing interconnectedness between their industries, means that these two countries, together with Germany (due to its sheer size and many smaller companies), will likely be most important in shaping future developments, decisively influencing “…the allocation of R&D funds and production sites…” (2013; 34, 38), a view at least partially confirmed by Santopinto and Price (2013; 6, 27, 134).

Having noted that, it seems prudent to briefly discuss the attitudes these states have regarding defence-industrial production, not least because the importance of these attitudes is further elaborated upon in the next chapter. First of all, Santopinto and Price (2013; 27), in their excellent study on this matter36, note that Germany generally favours European defence integration (despite its opposition to militarisation), but Vlachos provides that this was not always the case and noted over a decade ago that “[a]n important priority of the German government seems to be the balancing of armaments cooperation on the European level with that on the transatlantic one--in order to preserve access to the US market” (Vlachos, 1998; 17-18). Lastly, Briani et al. (2013; 27) stress that despite its integration-oriented attitude, its economic policy remains highly protective. France, according to Briani et al. (2013; 27) and Vlachos (1998; 16-17), generally maintains, like Germany, an attitude favourable towards Europeanisation, but pursues markedly more liberal defence-industrial policies. Finally, the United Kingdom is widely considered opposed to economic protectionism (Briani et al., 2013; 27). Its ideological preferences, however, are somewhat erratic. Vlachos (1998; 18-19), and Williams (2006; 3), note that Britain has previously initiated EU-oriented initiatives, but that that its attitude has traditionally tended towards Atlanticism. Santopinto and

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36 For further information on member-state attitudes to defence(-industrial production), it is most assuredly worth reading Santopinto, F., & Price, M. (eds.). (2013). National Visions of EU Defence Policy: Common Denominators and Misunderstandings (Centre for European Policy Studies)
Price (2013; 134) confirm that Eurosceptic attitudes have in the past reinforced its preference for NATO – and add that they might again do so in the future.

Lastly, there remain a number of other political actors\(^37\), the most important of which for this thesis (which concerns the European defence-industrial landscape) is arguably the European Union and especially its bodies involved with defence, which, as illustrated by the previous section, are the EDA (which oversees the Europeanisation of defence) and the EC\(^38\) – a view shared by many authors including Edwards (2011; 9), Ballester (2013; 51), and Nielsen (2014). As detailed in the historical context provided earlier, the European Union has been involved extensively through its continual campaigning for a European internal defence market, producing numerous procurement regulations. Lastly, scholars such as Briani \textit{et al.} (2013; 52-53), Wiśniewski (2012; 103) and Ballester (2013; 61) have noted that the United States plays a role in that “….US companies have been able to keep and sometimes even increase their traditionally strong footprint on the continent”\(^39\) (ibid.). By extension, NATO might also be thought of as an important latent actor that can influence the process as member states are not keen to undermine it (ibid.; 58).

\textit{Arms Manufacturers}

Besides political actors, there are industrial actors. Europe is home to numerous defence companies ranging from world-class to very small across a number of areas of production, which Briani \textit{et al.} (2013; 35-47) categorise as being ‘electronics’, ‘land’, ‘aerospace’, and ‘marine’\(^40\). It must be noted that while some of these firms depend predominantly on defence contracts, others manufacture predominantly civilian products but have defence branches or provide civilian components with a military application\(^41\). Concerning ‘defence’ companies (here taken to be those companies which SIPRI shows to have a defence turnover that is more than 50% of their total turnover), major

\(^37\) It could be argued that Russia is also an important political actor as its defence industries are sizable and compete with those in Europe. However, within the limits of this thesis, Russia cannot be discussed (although it features in some of the scenarios presented later).

\(^38\) With a view to retaining scope and based on the presumption that readers of this document are familiar with the basics of the European Union, the various bodies have not been outlined in more detail.

\(^39\) For instance, while naval vessels in are produced in Europe, they are propelled by US-made engines. Such influences can also be found in aerospace and missile production (Briani \textit{et al.}, 2013, 53). The ongoing Joint Strike Fighter project also marks American involvement in European defence (Eliassen & Sitter, 2006; 16).

\(^40\) For an extended overview of these sectors and which main companies are active in them, please see Briani \textit{et al.} (2013) pp. 35-47

\(^41\) Consequently, companies classed as ‘defence’ are highly dependent on government contracts and oftentimes governments own a large amount of their shares. ‘Dual-use’ companies are not nearly as dependent on public contract and have more private shareholders, lessening their overall dependence on governments.
companies include BAE Systems (94% defence dependent) and Thales (55% defence dependent). BAE Systems, a British company, has an extensive portfolio which includes naval products (both complete battleships and components), information systems, missiles, infantry equipment, armoured vehicles, and aircraft (BAE Systems, Products & Services). Its products include the Eurofighter Typhoon, the F-35 Joint Strike fighter, and the CV-90 combat vehicle. Thales, a French firm (26.5% government-owned (Thales, 2015a)), is well-known for its services to the French navy (alongside DNCS), but is also active in sectors such as aerospace, space, and ground transportation (Thales, n.d.). Thales was chosen to design the PA2 Aircraft Carrier before the project was cancelled but continues to contribute to the Queen Elizabeth-class Aircraft Carriers of the Royal Navy (Thales Canada, n.d.). Other products (partially) developed by Thales include the European FREMM Multipurpose Frigate (Thales, 2015b), and the GRIFFON and JAGUAR armoured vehicles (Thales, 2014). Smaller companies include Swedish-owned Saab (81% defence dependent), known internationally for the Gripen multirole jet fighter, German Krauss-Maffei Wegmann (95% defence dependent), which was identified in the introduction as the producer of the Leopard II tank, and Finnish Patria (91% defence dependent), a major component supplier for Airbus (mentioned shortly) and manufacturer of land defence products (Patria, n.d.).

Concerning those companies that do not obtain the majority of their turnover from defence (50% or less), here styled ‘dual-use’ companies, two of the most important firms are Airbus (formerly EADS, 20% defence turnover) and ‘hybrid’ Finmeccanica (50% defence dependent). Airbus, one of the few ‘trans-European’ companies (registered in the Netherlands with a head office in France (Wiśniewski, 2012; 96)), is widely known for its civilian aerospace products, including the Airbus 380, the world’s largest passenger aircraft. Examples of distinguished military products produced (or contributed to) by the company, and which are produced by its defence departments43, include the Eurofighter Typhoon, the Tiger attack helicopter, and the A330 MRTT refuelling aircraft (Airbus Defence & Space, n.d.). Finmeccanica is one of Italy’s prime companies and the government owns 32% of its shares (Commissione Nazionale per le Società e la Borsa, 2014). Known mainly for its metro and railway systems, the company is also active in various other sectors such as electronics

42 As with all major companies, BAE Systems has shares in other companies, two of which are noteworthy. Firstly, it has an American subsidiary, BAE Systems inc. (91% defence dependent). Secondly, it owns 37.5% of the shares of MBDA, a major missile manufacturer (ranked in the global top-25) and joint venture between BAE Systems, Airbus (also 37.5% of shares), and Finmeccanica (25% of shares) (MBDA Missile Systems. (n.d.).

43 SIPRI’s 2013 database was compiled prior to Airbus’s restructuring and therefore its defence branches are classed as subsidiaries. These included EADS Cassidian (85% defence dependent, now Airbus Defence and Space) and Eurocopter (45% defence dependent, now Airbus Helicopters).
and space. Its main military products, manufactured by its subsidiary\textsuperscript{44} AgustaWestland, include the AW101 Transport Helicopter, and the iconic Apache MK.1 Attack Helicopter\textsuperscript{45} (AgustaWestland, n.d.). Besides these, there are a number of other civilian companies with lower (albeit still significant) defence turnovers. One is Rheinmetall (47% defence dependent), which is German and has a well-rounded defence portfolio including air defence, vehicles, and reconnaissance systems, and has for instance provided the gun for the Leopard II tank. Another is Dassault Aviation (31% defence dependent), which as its name suggests provides mainly aerospace solutions and is known globally for its Rafale fighter aircraft (Dassault Aviation, 2015). Although Thyssenkrupp, also German, only obtains just 3% of its revenue from defence, its size means that it is still a global top-50 defence company. Besides being widely known for elevators and other electronic equipment, Wiśniewski (2012; 100) highlights that Thyssenkrupp Marine Systems is world-renowned for its naval capabilities, and it produces “...both surface and subsurface combatants”, including U240 submarines.

\textsuperscript{44} Selex ES, another subsidiary (73% defence dependent), provides electronics and technology for all military sectors.

\textsuperscript{45} Although the Apache is a product of Boeing, many of these helicopters are built under license by AugustaWestland.
5. Driving Forces

As outlined in chapter three, uncertainty is a key premise of scenario analysis and thence the driving forces that are eventually used in the creation of the scenarios are commonly determined by ranking them by their perceived levels of impact and uncertainty, after obtaining them through a process of informed judgement. For the purpose of this thesis, this, as mentioned previously, was done based on a thorough understanding of numerous sources relating to the subject. The literature utilised for that purpose includes scholarly articles such as Edwards (2011) and Wiśniewski (2012), as well as policy reports like those by Briani et al. (2013) and Ballester (2013). It also includes articles published in major newspapers, including Spiegel Online and The Economist. This chapter details the results of that process.

As the topic studied in this thesis is relatively broad, it is not surprising that authors identify a great many actors and factors involved with the development of European defence-industrial production. Fig. 3, above, provides a few examples of such driving forces. Most commonly, studies discuss the role of actors that are involved with the development of the arms industries on a day-to-day basis and which are therefore continuously in the spotlights. Some of these actors are continental. Numerous authors, including Edwards (2011; 9), Ballester (2013; 51), and Nielsen (2014), consider for instance the European Defence Agency and the European

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46 As I cannot possibly hope to incorporate every quote, driving force and work in this chapter / introduction, I have resorted to using the most relevant works, driving forces and quotations as examples. However, as previously stated, a full list of sources consulted, all of which have to some degree contributed to my understanding of the subject matter, can be found following the bibliography.

47 All examples given here are substantiated also by their mention in the historical overview provided in the previous chapter.

48 Keeping in mind the restrictions to which this paper is subject, I had to choose whether or not I’d discuss all of these driving forces or simply demonstrate knowledge and then discuss the three most important ones in detail. As I feel it is more important that the reader has a proper understanding of the three most important driving forces before reading the scenarios, I have chosen the latter.
Commission, as these organisations have historically been closely tied to the industries and defence integration in general. The major companies outlined in the previous chapter might also be thought of as important actors (Dienstbier, 2014 / Edwards, 2011; 9). Other prominent actors may be categorised as trans-Atlantic, the most notable examples being the United States and NATO. According to Briani et al., American companies “...have been able to keep and sometimes even increase their traditionally strong footprint on the continent...” (2013; 52). NATO also has a historic presence which states are keen to preserve, as emphasised by for instance Ballester (2013; 58), and as evident from clause 28 of Directive 2009/81/EC (2009; 80), which provides an exemption to European procurement rules for NATO programmes. Then there are a number of other driving forces. One example is globalisation, which, as authors such as Briani et al. (2013; 10), Balis & Heidenkamp (2014; 2), and Guay and Callum (2001; 16) argue, can be said to affect the control of individual states over their industries.

However, ranking such driving forces by their perceived level of uncertainty and impact, renders a number of those prominent actors and factors uninteresting for the purpose of this thesis, and highlights others. EU-bodies, for example, while prominent on a day-to-day basis, are not actually particularly uncertain nor impactful. Briani et al. argue, for instance, that while the EU has consistently pushed for further integration and is likely to continue to do so, over time “...EU policies have (...) not shaped the sector and have failed to deliver with regard to their own objectives and benchmarks” (2013; 48), a view shared by others, including Eliassen and Sitter (2006; 13). With regards to presence of the

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49 It must be noted here that while neither the EDA nor the EC have been very influential, the EC might eventually become more important over time, according to Briani et al., who state that “[t]he European Commission has succeeded in establishing a role at the intersection of defence vis-à-vis issues of internal market, industrial policies and research. It may be the only actor that can effectively establish a framework for competitiveness through defence specific legislation and policies.” (2013, 23). This view has been taking into consideration for the final scenarios where appropriate.
United States, Briani et al., argue that while the US remains present, “...US involvement in European market is slowly being eroded by a growing ‘buy European’ preference” and that there it is therefore reasonably certain that US interference is likely to continue to diminish over time\(^50\) (2013; 54).

Having judged the uncertainty and impact of numerous driving forces, including those in fig. 3, in such an informed way (that process being visualised in fig. 4), I would argue that there are three driving forces that are worth considering for the creation of the scenarios. These are: the absence or presence of a European Defence-Industrial Culture; the threat presented to Europe by peripheral unrest; and the fiscal pressures exerted on governments and companies by financial instability. Although it is difficult to pinpoint the exact process of informed judgement, it is possible to illustrate these three chosen driving forces through extended historical examples and by relating them to the literature.

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\(^{50}\) Briani et al. state that: “...the US footprint shrank considerably in the last decade; however, US companies have been able to keep and sometimes even increase their traditionally strong footprint on the continent in very specific market segments, especially in the aerospace sectors. Generally speaking, US producers are rarely able to sell platforms to EU countries, though they supply systems, sub-systems and components. EU industry is increasingly active in segments that have been dominated by the US, such as AA missiles or UAVs. On present trends, EU dependency on US exports will probably be limited to sub-systems and components in state-of-the-art technologies” (2013; 52-53). This information has been taken into account for the scenarios.
5.1 Defence-Industrial Culture

In the overall context of European security, a number of authors have underlined the importance of National Strategic Culture with regards to member state attitudes to European defence and the preferences of states for cooperation through one framework or another. Chappell states that “…a country’s strategic culture provides its policy-makers with a range of beliefs, attitudes and norms concerning what actions are appropriate within the security and defence field” (2009; 2). Gray defines the concept as encompassing “…the beliefs attitudes and norms towards the use of force, held by a security community which has had a ‘unique historical experience’” (1999; 51-52). For the purpose of this thesis, that concept has been applied to defence-industrial production as a component of defence policy in general. As demonstrated previously, states have profound influence on arms production and the development of the defence-industrial landscape in that they not only own major shares of defence companies, but are also their primary customers. In other words, “[d]efence companies are (…) dependent on and closely affected by the actions of governments and government bodies” (Lundmark, 2008; 11). This section thence concerns Defence-Industrial Culture as the first factor of choice for this study, detailing first of all the prevalent preference for national DTIBs, and subsequently the (ir)regularly resurfacing of an aspiration for Europeanisation of DTIBs.

National Security

As mentioned in the introductory chapter of this thesis, the current defence-industrial landscape remains characterised by national DTIBs and thence, at the European level, by overproduction and duplication. Regardless of whether this is ‘problematic’ or not, the continued absence of an internal market showcases member state preferences for national DTIBs. Contemporary scholars often argue that the reason for maintaining national defence markets is their sensitivity; the notion that state security and, by extension, the sovereignty of a state depend on the integrity of arms production and procurement processes (Ballester, 2013; 50 / Eliassen & Sitter, 2006; 2). Briani et al. clarify that “…many arms-producing states see their national independence and the security of supply as requiring the existence of own, national armaments industry” (2013; 28) and that these states “…see it as key to independence and sovereignty because they are reluctant to rely on others for the supply of defence material” (2013; 8), which they feel would compromise “…industrial sovereignty and the ability to defend themselves” (2013; 23). Hartley elaborates on that notion, stating that

“A national defence industrial base offers both military-strategic and wider economic and industrial benefits. The military benefits include independence and security of supply and re-supply, especially during a conflict. Arms can be designed for the specific requirements of a
nation’s armed forces; a national DIB enables the procurement agency to be a more informed buyer as well as providing a degree of bargaining power when considering foreign acquisitions. There are wider economic benefits in the form of jobs, many of which can be highly-skilled and hence, high wage jobs; there are technology and spinoff benefits; and possible balance of payments contributions from export earnings and import-savings” (Hartley, 2007; 1167).

Such views are also deeply enshrined in existing EU legislature on arms procurement. For instance, Article 346 TFEU states that “…any Member State may take such measures as it considers necessary for the protection of the essential interests of its security which are connected with the production of or trade in arms, munitions and war material…” (Bonde, 2008; 193). Similar clauses can be found in Directive 2009/81/EC, which was mentioned previously in the historical context, where it is stated that “(n)ational security remains the sole responsibility of each Member State, in the fields of both defence and security” (European Union, 2009; 76). Although the European Union has stressed that invoking these clauses should be an exception, scholars notice frequent use of these loopholes in practice (Ballester, 2013; 50-51, 54 / Briani et al., 2013; 22, 24 / Eliassen & Sitter, 2006; 3-4). In short, should member states in the future choose to continue to adhere to national ideas of sovereignty, defence-industrial production may remain fragmented51.

Indeed, there are numerous occasions where states have clearly demonstrated a preference for national procurement and production – or at least as national as conditions allowed at those times. Recent examples include the aforementioned merger between BAE Systems and EADS, which was blocked by Germany as the German government reportedly feared a loss of German jobs and too strong an Anglo-French presence in the resultant company (Repinski et al., 2013 / Economist, 2013). Moreover, in response to Russian expansionism, as discussed in more detail in the next chapter, it would appear that, concerning defence, member states have generally opted for a NATO framework (Hjelmgard, 2014 / BBC, 2015) - an option which does not require member states to transfer responsibility to an overarching institution but which instead encourages cooperation only, arguably allowing member states to retain more control of their national defence industries.

51 Some authors, such as Ballester (2013; 51) and Bechtel and Schneider (2010; 200) argue that in such a case, European companies will be highly dependent on government subsidies as they cannot possibly hope to compete with economies of scale. I am sceptical of this argument, however, considering that European companies have done well in the past under national DTIBs, and continue to do so, as demonstrated in chapter 4.
Europeanisation of DTIBs

So, on the one hand, states have traditionally demonstrated a desire to keep defence-industrial know-how and production close to home. On the other hand, however, there have been numerous occasions where – it may be argued – member states consciously opted to pursue the establishment of a European DTIB. That claim is nestled among ongoing debates concerning the probability of the emergence of a European Strategic (or Defence-Industrial) Culture. There are a number of scholars who believe it unlikely that cultural distinctions could eventually be overcome and that states will in the future consider defence a solely common, rather than predominantly national responsibility. Numerous other academics, however, argue that process towards that end are already underway or might happen in the future (Chappell, 2009; 5). Scholars such as Matthews (1992) and Bittleston (1990) have for instance argued that national sovereignty might eventually cease to be a matter of importance in time, stating that “[t]he capability to act alone remains a good, but in an economically dependent world, not a sufficient reason for governments to nurture their defence industries (Bittleston, 1990; 7-8). Such debates, if anything, are a good indicator of the uncertainty of this particular factor.

Regardless of whether or not it is likely that a European DTIB will ever come to fruition, I would argue that there are most certainly many occasions where member states have showcased their interest in Europeanisation of defence-industrial responsibilities. Perhaps the most notable period characterised by Europeanisation was the one following the Balkans Crisis, as exemplified by the St. Malo Declaration, where, as previously indicated, Britain and France pleaded for worthwhile European defence capabilities to counter future crises (Herz, 2009; 1). This declaration was followed by a string of associated initiatives, including the Letter of Intent Framework Agreement and the establishment of the ESDP, both of which sought to harmonise standards and procedures across Europe (Edwards, 2011; 5). Moreover, the period was also characterised by trans-national industrial consolidation and in the wake of this period a number of European joint projects were finalised, including the Eurofighter Typhoon and Tiger Helicopter.

Furthermore, it may be argued that the various political initiatives including the directives produced by the EDA demonstrate a continuing albeit subterranean interest in Europeanisation.

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52 Authors such as Ballester (2013; 61) seem to suggest that the Eurofighter was not a success, considering that its production costs were on par with the Joint Strike Fighter at roughly €19.5 billion, but only around 700 aircraft were delivered (compared to over 3000 for the Joint Strike Fighter). However, it may be argued that even though its cost-benefit statistics might not live up to American standards, it is nonetheless remarkable that European countries (which just 70 years ago fought each other in one of history’s most destructive wars) managed to complete such a project, sharing secret technology with one another.
Although legislation includes numerous exception clauses that allow states to circumvent rules, articles two and three of Directive 2009/81/EC also state that:

“The gradual establishment of a European defence equipment market is essential for strengthening the European Defence Technological and Industrial Base and developing the military capabilities required to implement the European Security and Defence Policy. Member States agree on the need to foster, develop and sustain a European Defence Technological and Industrial Base that is capability driven, competent and competitive” (European Union, 2009; 76).

As this document was ratified by all member states and was implemented without considerable delay by most, it could be argued that despite the existing exemption clauses, such documents display another temporary preference for Europeanisation (Ballester, 2013; 53). The concept that Europeanisation remains and could resurface as an ideologically interesting proposition to many states, is also highlighted by Briani et al., who argue for instance that states currently show an increasing tendency to favour “…more European co-operation on major programmes” (2013; 54), an argument echoed by Tran and Chuter (2012). In summary: although states have often exhibited a reluctance to transfer what they perceive as a matter of national security and interest to the European level, there have been occasions where they evidently considered Europeanisation to be desirable and which resulted in transnational consolidation. What states choose to opt for in the future remains to be seen.

53 Although France, Britain and Germany are considered to be the main actors in this thesis, it is important to remember that states such as Spain have previously not always adhered to the views propagated by France, Britain and Germany, and that it is thus possible that, should far-reaching Europeanisation in defence-industrial production come about under Franco-Germano-British initiatives, Spain or others might nonetheless decide to opt out (Eliassen & Sitter, 2006; 5).

54 It is interesting to note here that a number of authors, such as Tran and Chuter (2012) argue that the main determinant of whether or not governments will choose to Europeanise is the orientation of their government. These authors argue that a left-wing government is generally more favourable towards Europeanisation than a conservative one, pointing at the St. Malo agreement which was announced by a Labour government. Although I have here simply called the factor ‘Europeanisation’ as I do not believe the distinction to be that simple, these observations have been taken into account for the scenarios.
5.2 Threat Environment

As is the case with any market, output and revenues of the defence industries are subject to the basic economic principles of supply and demand. In the area of defence-industrial production, demand is partially assured as materiel of course requires continual expert maintenance and upgrading. However, demand for new and improved military capabilities, including next-generation aircraft and high-tech infantry equipment, is dependent on the threat environment with which states are faced – a link eloquently summarised by Newmyer (2014) who states that “[n]ew fights mean new stuff, after all...”. Numerous other authors make mention of this link, including Vlachos (1998; 13), Lundmark (2011; 148), and Hartley (2007; 1170). In other words, an increase in threat leads to state prioritisation of defence-industrial adequacy, and consequently it can be argued that a decrease in threat results in political disinterest in defence. The uncertainty of this factor is highlighted by the fact that “Europe faces a wide range of threats in the form of terrorism, international piracy and regional instability on its doorstep” and that thence “[t]here are insecurities on the EU periphery, and longterm strategic issues at play in Ukraine, Turkey, the Middle East and Northern Africa” (Ballester, 2013; 10). The prevalence of such potentially threatening conflicts is (concisely) illustrated through fig. 5. It may be argued that the way these conflicts escalate or de-escalate, or alternatively the emergence of new, unforeseen conflicts, profoundly impacts the financial health and by extension the sustainability of defence-industrial production in Europe. In substantiating such claims about the factor considered here – threat environment, this section first of all provides an example of where a lack of threat resulted in a low demand for materiel, before outlining how violent conflict has resulted in a re-prioritisation of defence-industrial production by states.

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55 Some firms classed as ‘defence firms’, such as Babcock International (based in the United Kingdom) focuses solely on maintenance of existing materiel and services related to security systems and defence (Babcock Group International, n.d.).
Non-demanding Threat Environment

As stated, it may be argued that a relatively low level of threat (alternatively: a relatively stable world order) causes a loss of interest by states in defence as governments are preoccupied with other, more pressing issues, a cause-and-consequence relationship noted by for instance Vlachos, who states that “[d]ecreasing (...) threats in the (...) international strategic environment result in shrinking defence budgets” (1998; 4). While there are a number of instances where it is evident that an increase in threat resulted in an increase in demand for materiel, as the second part of this section demonstrates, there are fewer examples substantiating the opposite that are so clear-cut. There is, however, at least one particularly illustrating example. That example is the End of the Cold War, which Edwards claims “...signalled a significant reduction in EU arms production (...) in response to a reduced security threat” (2011; 5). Sköns elucidates, stating that “[t]he Western European defense industry has undergone a profound transformation since the end of the Cold War” and that “[t]his transformation reflects changes in both the larger security environment and in national defense policies” (2001; 1). That observation is also shared by Vlachos, who concurs that the end of the Cold War “...created the expectation that security could be achieved at much lower levels of armaments” and that as a result, governments turned to other policy matters that required their attentions including “...growing employment, health care and other social objects”, meaning that “...the priority given to military procurement on national and European agendas fell remarkably as governments struggled with these broader and more immediate political issues” (1998; 13).

Concretely, that ‘transformation’ entailed a number of major budget cuts accompanied by a wave of reorganisations among firms, with some going out of business entirely as explained in the historical overview provided earlier. In that context, Vlachos states that “...states reassessed weapon requirements and real budgets shrunk in most western countries...” (1998; 13). That observation is echoed by Sköns who states that the new security environment “...involved significant cuts in production volume and capacity and changes in the structure and ownership of the defense industry” (2002; 1). These authors also highlight the extent of such measures. Vlachos demonstrates that defence budgets declined by 5.3% overall in the 1985-1994 period and that a quarter of these cuts were inflicted upon procurement (Vlachos, 1998; 13). Sköns highlights that between 1989 and 1995, “...the demand for military equipment in Europe (...) declined by 31 percent”. She further details that from 1990 to 1996, arms sales in Western Europe declined by nearly 25% according to official figures, but that the actual number might have been higher, and she concludes that an absence of threat during this period caused the “...downsizing of the defense industry in all main arms producing countries, including those in Europe” (Sköns, 2002; 3).
Volatile Threat Environment

As a less-demanding threat environment results in a lower demand for top-notch weaponry, so does a volatile threat environment encourage an increase in demand for materiel. Perhaps one of the best examples of a situation where violent conflict caused a prioritisation of defence (and thence an increase in demand for quality materiel), is the Yugoslav War and the Kosovo Conflict in particular which followed the period just described (and thence ties in properly). As previously argued, this conflict not made European nations realise that conflict in Europe was still very much possible, but “...combined with increasing American disengagement left the EU with a number of serious question marks regarding the capacity of the Union to provide an independent response to external emergencies, should they arise” (Major & Mölling, 2011; 9). This in turn resulted in the numerous important initiatives mentioned previously, including OCCAR, the WEAO, the LoI Framework Agreement, and most importantly, the St. Malo agreement, all of which would likely not have happened without this conflict (Skön, 2002; 2-3 / Guay & Callum, 2001; 2 / Kerttunen, Koivula, & Jeppsson, 2005; 10 / Eliassen & Sitter, 2006; 6 / Edwards, 2011; 5 / Franco-British Summit: Joint Declaration on European Defense, 1998). These initiatives were followed by the important mergers which resulted in the formation of many of Europe’s most important firms mentioned in chapter 4, including BAE Systems (1999), Thales (2000), and EADS (2000), and might be considered responsible for the continuation of major transnational projects such as the Eurofighter Typhoon and the Tiger (Skön, 2001; 3 / Guay & Callum, 2001; 2-3).

A further, more contemporary example may be drawn from more recent developments. A number of authors have argued that Russian expansionism has since the start of the Ukraine Crisis had profound impact on state prioritisation of defence-industrial production. Authors such as Rettman (2010, 2010a) and Croft (2015) make mention of this, arguing that Russia has in the recent past and in current times been a significant reason for shifts in policy. Moreover, the BBC has observed that “…Ukraine has provided a significant impetus for states to huddle together for mutual protection...” (BBC, 2015). Although not all states have responded by increasing military budgets yet, some have, and Poland provides a particularly telling example. DefenseNews (2015) notes that “…Poland has kicked-off an unprecedented military spending spree worth billions to overhaul its forces as Warsaw believes peace in Europe is no longer a given”. The article continues by highlighting that Poland has, in the face of Russian expansionism, reversed austerity measures (discussed in the next chapter) and committed €33.6 billion to upgrading its defence capabilities over the next decade. These investments include “…a missile shield and anti-aircraft systems, armored personnel carriers and submarines as well as combat drones” and “[i]ts long shopping list is full of pricey items including
multi-role and combat helicopters, an anti-missile system and cruise missiles for submarines and drones. Seventy multi-role helicopters top the list, a contract worth €2.5 billion”. It is expected that many of the contracts associated with these deals will be awarded to Airbus. Such examples clearly highlight the impact of violent conflict on defence-industrial success.
5.3 Financial Stability

The recent financial crisis has had implications for virtually all industries and markets across the European Union. In that context, defence is generally considered a relatively resilient market – that is, it is less affected by budget cuts. In the 2009 NATO Review, it is explained that “[m]ost defence spending involves long term commitments from governments which are difficult and often expensive to reverse” (Braddon, 2009). Despite this, many authors now concur that prolonged financial instability caused by the 2008 financial crisis has had profound effects on defence spending and consequently the financial health of the defence market. A number of works featured in the extended bibliography of this thesis make mention of – or focus entirely on – the impact of the financial crisis on defence. Documents include Wiśniewski (2012), who argues that the crisis is one of the number one threats for the development of a competitive industry, as well as Cervera (2012) and the 2011 report on the matter by the European Directorate-General for External Policies, both of which outline the financial and political effects of the crisis. The ongoing economic crisis is also a recurring theme in a great many recent newspaper articles, including Spiegel Online (2013) and the Economist (2013). While much has been done to combat the crisis, it is not yet over and authors such as Wiśniewski argues that it is conceivable that, should member states experience economic backlashes in the next years, austerity measures imposed on the defence industries might well be reinstated or maintained for a longer period of time, highlighting the uncertainty of this factor (2012; 103-104). This section thence concerns the final driving force; financial instability. This section, in contrast with the previous two, focuses solely on the recent effects of the economic crisis so as to ensure adequate understanding, and details first of all the extent of budget cuts, before considering other potential effects.

Austerity and the Decline of Defence-Industrial Production

Not unlike the consequences of an overall lack of serious conflict, the most immediate and perhaps most obvious results of the recent economic downturn are budget cuts and prolonged austerity measures. Balis and Heidenkamp observe that since the start of the crisis governments have demonstrated a tendency to view defence, and, by extension, defence-industrial production, as “…a legitimate ‘budgetary quarry’ from which savings can be swiftly realised with widespread public

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56 The previous two sections have been roughly divided into two parts in order to illustrate ‘both sides of the coin’. As this factor is markedly more specific than the other two, in that it concerns the degree to which a particular situation persists; as financial stability is the status-quo (severe economic crises occur only every few decades (Braddon, 2009)), making it nigh impossible to determine the precise effects of that ‘side of the coin’; and as this factor is somewhat more complex than the other two, this section focuses solely on the effects of economic instability.
acceptance” (2014; 5). That observation is shared by Cervera, who demonstrates that “...in Europe part of the cost of the crisis has been borne by defence budgets in an attempt to reduce public deficit”\(^57\) (2012; 37). As a result, a majority of European states have made significant cuts to their defence budgets\(^58\) (Wiśniewski, 2012; 104). Balis and Heidenkamp conclude that since 2008, “...defence equipment and R&D budgets have significantly decreased in real terms” across the European Union (Balis & Heidenkamp, 2014; 5).

Wiśniewski highlights that “[a]ccording to data compiled by the International Institute for Strategic Studies for the 2008-2010 period, real-terms reductions in defence spending occurred in 16 out of the 23 European NATO members” and that “[i]n over 40% of those states, expenditure decline amounted to more than 10%” (2014; 104). Nations with major defence-industrial interests that have imposed especially severe austerity measures include, most notably, Poland and the United Kingdom. Cervera summarises that the United Kingdom has, among other measures, committed to reducing its nuclear warheads and shelve the upgrading of the Vanguard-class submarines which carry these. Moreover, Britain is set to reduce overall materiel across its armed forces and re-negotiate a number of ongoing contracts (Cervera, 2012; 41). The report by the European Directorate-General details that “[t]he impact of the financial crisis on the Polish economy in 2008 forced the MoD to make severe cuts by approximately 20% in the 2009 defence budget which decreased from €6.3bn to €5.8bn” and that “[m]ost of the long-term procurement contracts were reviewed with the aim to reduce, delay or suspend payments (and deliveries)”\(^59\) (Directorate-...

\(^57\) It is interesting to note that European response to the financial crisis in terms of austerity measures imposed on defence-industrial production has been markedly different from the rest of the world. Cervera states that “[w]hen we look at the impact that the economic crisis has had on global defence spending, contrary to what we might expect, we find that the upward trend initiated before 2008 has in fact continued” (2012; 35), but that in Europe states almost immediately turned to defence in a bid swiftly realise a reduction of public expenditure (2012; 37-38).

\(^58\) It is important to note here that not all states have cut budgets as a result of the crisis only. While German cuts in defence-industrial spending have affected the “...A-400M programme and the NH-90 and Tiger helicopter programmes, along with the temporary suspension of its order for 37 Eurofighters, 25% of the 400 Puma armoured vehicles and the MEADS missile defence system”, Cervera stresses that “[i]n the case of Germany, the budget cuts are not due to the economic crisis, (...) but rather the major reorganisation which the Bundeswehr is undergoing in order to become a professional army” (2012; 42). Similarly, he demonstrates that while France has shelved a number of projects including the Mirage 2000D fighter aircraft and the A-330 Tanker Aircraft, “...the initially envisaged impact of the cuts to the budget earmarked for equipment is not estimated to exceed €1.3 billion, thus allowing key programmes to continue...”. Such programmes include the the “…Rafale (Dassault) fighter plane; participation in and acquisition of the A-400M; the European Multirole Frigates (FREMM); the Suffren class nuclear attack submarines; the advanced combat infantry system or the Integrated Infantryman Equipment and Communications (FELIN)” (2012; 42).

\(^59\) The report by the Directorate-General also states that as a result of economic recovery in 2009 and 2010, there have been no further budget cuts and that Poland is set to increase its budget again in the future (2011; 23). Nonetheless, as demonstrated, Poland’s response to the economic crisis was characterised by severe...
Wiśniewski concludes that across the European Union, “…entire classes of weapon systems have been reduced, most visibly the aircraft carriers and combat naval aviation” as a result of austerity measures (2012; 104).

In short, it may be stated that austerity measures have a profound impact on the revenues of arms manufacturers, who are then forced to seek out alternative markets or diversify their activities, and this in turn impacts the degree to which Europe can maintain defence-industrial autonomy (Ballester, 2013; 10). That view is underlined by various sources. The Economist, for instance, stresses that “…the European defense industries are increasingly cornered. It is crucial that the issue of Europe’s ailing defense industry is addressed within considerable time so as to ensure Europe’s future sovereignty in the realm of arms procurement…” (Economist, 2013). Wiśniewski also underlines that notion, stating that it is doubtful “…whether servicing the shrinking European armed forces structures’ will be enough to ensure the further development of the defence-industrial base (or perhaps even to maintain its current position)” (2012; 104).

Integration Catalyst

While austerity measures imposed on defence-industrial projects as a result of financial instability have a profound impact on the sustainability of the defence industries, several authors have suggested that the resultant deterioration of defence-industrial autonomy may also affect the degree to which states are willing to cooperate or integrate. As mentioned previously, the European defence-industrial landscape is characterised at the European level by multiple national defence markets rather than a single European market – a configuration that has led to overproduction, which in turn has led to a consistent overspending, estimated around 40% by some (Repinski et al., 2013 / Economist, 2013). Faced with financial instability, states may (albeit reluctantly) seek to guard the defence industries against detrimental deterioration and thence allow mergers and acquisitions, as well as joint production and procurement with other states (Sköns, 2002; 3 / Balis & Heidenkamp, 2014; 2 / Ballester, 2013; 61). Sköns, describing processes taking place in the 1990s, argues that the aforementioned wave of consolidation, while partly due to a demanding threat environment, was “…reinforced by the economic recession in Europe and a general restraint on public expenditures” (2002; 3). Vlachos, drawing conclusions from roughly the same period, has argued that “…collaborative projects can often be costlier than national ones because of the additional costs of coordination, management and inefficient work-sharing intended to accommodate national political interests…” but that “…individual cost-shares will be much lower and cooperation may often be the

austerity measures and I would argue that it is as such not unlikely that, should an economic backlash occur, the Polish government might seek to impose similar measures.
only way in which the project can be afforded at all” and that as a consequence financial instability “…may favor consolidation, by forcing nations to form joint ventures and collaborative efforts to afford major new systems, but also by encouraging armaments cooperation (1998; 11-13).

Considering that the recession which catalysed cooperation was a relatively minor one, it may be imagined that a major financial downturn could at least yield similar effects, and there is indeed evidence of such processes taking place. Nielsen, for instance, highlights that the European Union has presented a number of plans, part of which involve further cooperation among member states, to combat the effects of the financial crisis on European defence-industrial adequacy (Nielsen, 2014). In addition, Cervera argues that member states themselves have shown initiative in the face of financial difficulties in that they “…stimulate joint production with other countries” (2012; 30). That statement is concretised by the Directorate-General’s report, which details how France and Britain have consented to promoting further integration of MBDA so as to reduce wasteful policy. Besides, the report also details that “Paris and London also agreed to co-operate on the next generation of nuclear submarines, mine countermeasures, Satellite Communication, in the missiles sector, as well as on MALE UAVs and on UCAVs” and that “[a]ll these co-operation items could lead to industrial consolidation” (2011; 15). In summary, it may thence be said that a continuation or resurgence of financial instability would not only result in further budget cuts and by extension in a loss of European defence-industrial capabilities, but might also radically transform the defence-industrial landscape as states allow more mergers and seek closer cooperation to reduce overspending in a bid to prevent the industries from advanced deterioration.
6. Scenarios for 2025

In the preceding chapter, three driving forces are outlined based on their perceived level of impact and uncertainty. These three driving forces are: Defence-Industrial Culture, or the degree to which states perceive arms production and procurement as either a national or European matter; Threat Environment, or the degree to which states are confronted (or feel they are confronted) with a demanding (number of) violent conflict(s); and last but not least, Financial Stability, or the degree to which the economic situation in the European Union gets better or worse. On the basis of these three factors, it is possible to create what might be styled as a Triple Axis Scenario Matrix. This matrix, displayed below and consisting of three axes each ranging from one extreme situation to another, provides eight distinct scenarios.
Although all of these scenarios can provide an interesting narrative capable of providing some insights into how a configuration of the three driving forces might influence future developments, not all of them are outlined in this chapter. As outlined in section 2 of chapter 3, in a bid to provide quality narratives over superficial descriptions, half of the scenarios have been discarded, while the remaining four are discussed here. The four particular scenarios elaborated upon in the following sections have been chosen based on their divergence – in other words, through the selection of scenarios decided upon, it is –arguably – possible to get an adequate overview of the various diverse ways in which the defence-industrial landscape might develop over the next ten years, without having to discuss all other scenarios (although, as outlined in the conclusion of this work, it might well be fruitful to elaborate upon the remaining scenarios in a supplementary study for the sake of completeness). For convenience and clarity, each of these scenarios is described through use of three main events (or what might be styled ‘critical junctures’) that lead to the end-state, and as previously stated, narratives were written with an eye to provoking thought, favouring interesting improbability over uninspiring probability where appropriate.

Thence, this chapter commences with a scenario titled Swords into Ploughshares, which details a situation where threats subside, financial instability persists, and where Europe’s member states consider procurement and arms production a European matter. Section two details Ka-boom, Ka-Ching, a scenario which features a very demanding threat environment, where European member states huddle together in response, and where the financial situation stabilises. Section three describes At Ease, a scenario where states face no demanding threats, where austerity measures prove fruitful in combating financial instability, and where states continue to think of procurement and production as distinctly national matters. The chapter concludes with Keeping Friends Closest, which narrates how an end-state characterised by financial instability, high threat levels, and a preference for national DTIBs comes about.
6.1 Swords into Ploughshares

This scenario is characterised by an end-state featuring a peaceful environment as well as continued financial instability. Moreover, in this scenario, member states have come to view Europeanisation as a desirable prospect for defence-industrial development. This end-state is shaped primarily by a number of major events, which are detailed in the narrative provided shortly, and illustrated by the chronological diagram to the right.

First of all, the threat environment with which European states are faced is considered considerably less demanding as the Ukraine Crisis is solved and the situation in the Middle East does not escalate, leading to a de-prioritisation of arms production and procurement. Second, continued economic malaise further disengages governments from defence, causing them to impose further budget cuts. Finally, governments, recognising the malaise with which the industries are eventually confronted, half-heartedly decide at a European summit meeting that Europeanisation ought to be the standard. Overall, this results in a defence-industrial landscape characterised by a much lower amount of defence companies and by a loss of defence-industrial capabilities as those companies that remain and are able steer clear from public contracts and the European market as much as they can, but also by increased consolidation at the European level as some major trans-national mergers are allowed.

The Donbass Agreement

Europe rejoices as the Ukrainian government and the separatists formulate a solemn Covenant of Peaceful Co-existence, styled by the media as ‘The Donbass Agreement’, wherein the separatist regions of Eastern Ukraine are given far-reaching autonomy, which some experts have said is comparable to de-facto independence. Entering into effect after a period characterised by one
broken ceasefire after another, many are initially sceptical about whether or not the agreement will prove successful. Such scepticism, however, proves unfounded. After about year, violent skirmishes are virtually unheard of and although the European Union continues to chide Russia over its annexation of the Crimea, and Russia periodically returns the favour by contesting NATO presence on its Western borders, all parties have – albeit perhaps with reluctance – settled into the new geopolitical status-quo. In Europe, that achievement is met not only with relief but also with a reinvigoration of the belief that in the modern, interconnected world, the pen will always trump the sword. Moreover, the Donbass success is complemented by a further decrease in peripheral unrest as Arab nations, with the aerial support provided by the US-led Coalition of the Willing, manage to curb rebellious movements in the Middle-East.

Although such developments are socially desirable, they also prove problematic for Europe’s arms manufacturers. After all, a decrease in violent conflict means a decrease in demand for advanced weaponry. Indeed, as the success of the Donbass Agreement becomes evident over time, defence orders decrease and companies are faced with declining revenues, causing concern among especially the smaller, defence-dependent companies, as they are likely to be hit hardest by long periods of low demand. For the time being however, the majority of companies, while wary as a result of hardships previously, are not concerned about such trends. After all, there’s always ups and downs with anything, and there is no reason why demand shouldn’t rise again in the near future. In the meantime, running contracts, which are not cancelled, combined with general maintenance and other services, means that arms manufacturers feel reasonably confident about the future and thence largely steer the course they’ve always done.

_Austerity Measures 2.0_

What makes matters worse from a defence-industrial viewpoint, however, is that while companies seek to cope with the consequences of what might be described as a total lack of demand, many of Europe’s member states, including the United Kingdom, France, and Germany, before long decide to impose further austerity measures on defence. Despite efforts of governments over a decade ago to curb economic instability in the European Union, recovery has proven fragile and characterized by frequent relapses. As governments feel secure and have no demand for further increased materiel, the most recent downturn in 2020 – three years after the Donbass Agreement – has caused them to once again eye defence budgets and subsequently makes them decide that, much like straight after the start of the fiscal crisis, defence-industrial budgets provide a useful quarry from which they can realise savings without objections from the public. Across the union, budgets for defence fall by up to one-third, and especially R&D budgets are severely cut.
This combination of austerity and an overall low demand within Europe hits the industries hard. Especially smaller, Europe-focussed companies who have been struggling since conflict died down, experience a major fall in revenue and by the end of the year a number of companies have defaulted and gone out of business. In a flurry of panic, Airbus declares that it intends to cut severely in its defence branches, focussing instead on its civilian products, which they view as having more potential – a move swiftly followed by other aerospace companies including Finmeccanica, which has outed a wish for less dependence on public contracts as well. Even such all-round, defence-dependent companies such as BAE Systems, who nonetheless benefit from their strong international presence, are rumoured to consider scrapping the development of a number of experimental programs, instead focussing on their prize products.

The Defence-Industrial Adequacy Summit

A couple of years on, peace and austerity have dramatically impacted the defence-industrial landscape. Overall, companies have continued to cut in their defence branches, discarding unprofitable product ranges, cutting jobs and in some cases, firms who are traditionally invested more in civilian products than in defence are well on their way to discarding their defence-industrial activities altogether. Not only that, but worryingly, major companies who have sought in their panic to quickly enter foreign markets have become tainted by attempts at bribery, damaging not only the companies themselves but also embarrassing the European Union and its member states, who still have major interests in defence.

Although member states are generally contend with the quality of their defence materiel, these recent developments do catch their attention as labour unions and other pressure groups’ voices call out ever louder for action. France and the United Kingdom, traditionally the most defence-minded, call for a European summit on the future of defence-industrial production in Europe. At this summit, European countries, pressured by the Lol+ countries who have the highest stakes in defence, decide that, due to more pressing issues and continued financial instability, it is no longer feasible nor desirable to cling to what they see as old-fashioned traditions of national defence-industrial production. It is announced that procurement and production responsibilities will be transferred progressively to the European level in a bid to reduce overproduction and other ‘wasteful policies’.

Although initially considered good news, it quickly becomes clear that most attempts at doing so are half-hearted as the lack of threat and prevalence of other issues prohibit governments from giving the required attention to the matter. As such, although there is a tendency to favour Europeanisation, the movement lacks momentum and no true European defence market forms before 2025. However, although they do not actively pursue political integration, individual member
states recognise the dire position of the defence industries and demonstrate a willingness to allow more (trans-)national mergers, joint ventures, and acquisitions in order to provide the industries with some way to cope with the budgetary pressures exerted on them. A great many arms manufacturers swiftly move to close deals while this window of opportunity is open, and against all expectations, BAE Systems and Airbus, having desired a merger for a long time, are finally allowed to merge, creating a European giant with competitive defence and civilian branches capable of matching American firms.
6.2 Ka-Boom, Ka-Ching

This second scenario details the pathway to an end-state characterised by a financially stable environment, but where violent conflict is rife. In this scenario, too, European member states have come to think of procurement and arms production as a European, rather than national responsibility. All in all, this scenario might be thought of as the birth of a European internal defence market. The defence-industrial landscape is characterised by a multitude of defence companies still, but rather than producing separate and competing products, these companies now work together through multiple joint ventures, not unlike MBDA, and in other ways to produce materiel that could be considered genuinely European. The end-state comes about through various events, pictured in the diagram on the right. Firstly, economic malaise, dragging on for a few more years, is eventually halted in 2018, incentivising states to increase their defence budgets to assist their ailing arms producers — a situation that lasts throughout the period. Following this, 2021 sees the invasion of the Baltic states by Russia, a highly unexpected event that triggers extreme further increases in defence spending across the continent, as well as military action. Finally, a European Crisis Council is formed and given far-reaching authority in a bid to ready Europe for the future militarily. This council sets out to harmonise standards and procedures and develop European-wide rather than national materiel.

Austerity No More

Following the 2008 financial crisis, austerity measures impacted the defence industries majorly. Branches were discarded, and firms threatened to move away to more profitable foreign markets. After 2015, states, although worried about such developments and giving industries some leeway,
persist and continue to enact the measures they decided upon. A number of smaller companies are forced out of business, and larger companies cling to whatever reserves they have. Although frequently criticised, such severe measures eventually prove fruitful. Economic recovery continues, and by 2018 budget cuts on defence-industrial production are largely revoked. More and more countries, having more to spend, increase their defence spending to comply with NATO standards; although countries such as Poland had already ramped up their defence budgets even despite financial instability, other countries increasingly feel that the bettering financial situation warrants a higher defence budget.

For defence companies, this is a major relief. As orders increase, companies such as Airbus and Finmeccanica, who already started diverting their attention to dual-use products slowly but surely turn their attention back to their respective defence branches. Larger companies that specialise in defence, including BAE Systems, recognising the increasingly positive situation back at home, turn their attention back to the European market – although years of austerity means that the global presence of such companies has increased markedly. In addition, the fact that the crisis is finally over means that many smaller defence companies who by now were on the verge of bankruptcy, have much more breathing space, as defence orders for the larger companies trickle down to smaller component suppliers.

Russia intervenes in the Baltic States

In the meantime, matters of security are uneasy at best. Trouble continues to brew on Europe’s periphery. Despite efforts by the United States and its local and European allies to decrease volatility in countries such as Iraq and Yemen, it proves very hard to stamp out the fires of rebellion completely. Moreover, and perhaps more worrisome, there remains the situation in Ukraine. The European Union continues to push for a diplomatic solution, frequently chiding Russia for its inactivity, but agreements between the Russian-backed rebels and the Ukrainian government are commonly broken as soon as they come into effect. Putin, emboldened by what he perceives as years of European and trans-Atlantic impotence, begins stirring up trouble in the Baltic states. Russian state media release a number of polls – which Western experts claim to be fraudulent – which show that support for armed intervention is high among ethnic Russians in the Baltic states. While this thoroughly upsets Europe and its national leaders, no one expected what was considered as unthinkable: in 2021, Russian tanks roll across the borders of Lithuania, Latvia and Estonia under the feeble pretext of humanitarian intervention. Europe, baffled and taken completely by surprise, scrambles to respond. It is hurriedly decided that NATO troops in the area must engage and
skirmishes break out between NATO spearhead troops and Russian battalions near the borders, but despite this neither side pushes further, fearing the effects of a total war.

For Europe’s defence firms, this crisis proves a steel-fuelled goldmine. Although business was already decent as defence budgets were relatively high in the preceding period as a result of relative peripheral instability and financial stability, the Russian invasion blows budgets through the roof. Demand for advanced weaponry result in the dusting off of shelved programs including the French Aircraft Carriers, and Britain’s parliament votes in favour of investing heavily in Trident, its nuclear deterrent. Nations now considered frontline, including Poland and those countries united in the Nordic Union immediately enact emergency measures which increase defence budgets by 100%. All in all, the crisis, although just begun, is already proving extremely lucrative for arms manufacturers, and it is no surprise that civilian companies such as Airbus are considering options for increasing their defence-producing branches.

*The Crisis Council*

Over the next year, NATO manages with reasonable success to restrain its former enemy, but states continue to disagree over offensive countermeasures. As the Russian troops consolidate their positions in the Baltic states, Europe-oriented nations, most notably France and Germany, feel that the continent must be able to present itself as united and militarily capable in the face of neighbourly aggression without hiding behind the trans-Atlantic skirt. These countries, understanding the need for concrete action, submit a proposal to the European Union. In this proposal, they detail the need for a European Crisis Council with far-reaching powers. Other EU nations, encouraged by Franco-German decisiveness, are quick to endorse the proposals – some willingly, others forced by circumstances. Within two months, it is decided that the Crisis Council is to be given emergency powers. In mid-2023 the Council becomes operational.

The Council, eager to perform now that the European Union might finally be considered a capable security actor, sets out a number of extensive plans to establish a European defence-industrial base. It decrees that procedures and standards must be harmonised within a considerable timeframe and that all procurement guidelines are to be legally binding. In addition, the Council decides that a number of major defence-industrial programmes akin to the Eurofighter are to be instigated so as to encourage joint procurement and harmonisation, and to modernise European armed forces. These programmes include the development of multi-purpose land vehicles, missile systems, and naval defence capabilities. Moreover, the Council communicates that defence-industrial mergers, joint ventures, and acquisitions at a European level are not only to be allowed but of vital importance to achieving the aforementioned goals in the face of the Baltic War. By 2025, not
all of these processes and projects have been completed, but fear of further escalation and the availability of financial resources (there being no more financial instability) mean that they are nonetheless well underway. Although the European defence-industrial landscape remains characterised by a large amount of thriving companies, some companies such as BAE Systems, Finmeccanica and Airbus have set up joint ventures to facilitate orders for European capabilities.
6.3 At Ease

The end-state towards which this scenario narrates could be considered the least exciting of the range of scenarios presented in this chapter. It is characterised by economic prosperity and the absence of severe threats. Governments, not particularly enticed by prospect that involve transferring responsibilities to the European level, and encouraged by the laid-back state of affairs, continue to think of arms procurement and production as being national responsibilities. Thus the defence-industrial landscape of Europe is, in this scenario, characterised by more or less a continuation of the status-quo, albeit a bit more prosperous. The landscape features a host of both small and large companies; mergers, joint ventures and acquisitions are kept to a minimum; overproduction is abound; and Europe thence remains divided into numerous national defence markets. Moreover, in this end-state, governments and firms increase their exports to outside of the European Union, and as such ventures require competitive projects, European firms shy away from major experimental development projects and instead capitalise on previous successes, including missiles, aerospace capabilities, and submarines. This scenario, too, here comes about through three main events (which in this particular case are perhaps best thought of as trends). These are: 1) a revoking of austerity measures, 2) curbing of peripheral threats, 3) failed attempts at Europeanisation by the EDA and EC.

**Budget Cuts Revoked**

Although a number of experts were highly critical of the means by which European governments have tried to rein in the most recent economic crisis, it proves that such methods are in fact highly successful. Following a number of tough years characterised by budget cuts and other austerity measures, government deficits have fallen impressively and economic recovery picks up pace
throughout 2016. From 2017 onwards, that economic situation is markedly better and the general public’s spending levels are at a point comparable to before the start of the crisis. In this context, over the course of that year, most governments in Europe reverse austerity measures on defence.

This results in a 15% higher defence budget in 2017 compared to a year earlier, with another 25% increase intended for the year after. For the defence industries, that provides welcome breathing space, as much of those increases in spending are allocated to defence-industrial production. Governments, recognising the impact austerity has had on their respective defence industries, order a number of major projects to begin. BAE Systems, for instance, benefits greatly from being chosen as one of the main contractors (together with Rolls Royce and Babcock International) for several upgrades to materiel across the British Army. Moreover, having greater spending power, other governments decide to continue a number of major projects that were shelved as a result financial hardship. In that regard, companies such as Thales profits majorly from restarted projects such as France’s aircraft carrier programme.

*Peace at Last*

Increases in defence spending over the years following 2015 are very much helped by conflicts in Europe’s vicinity, which at this point are still ongoing. However, the intensity of tensions and armed conflicts have lessened during that period. Indeed, over the course of the following years, peripheral conflicts subside almost completely. Despite gloomy predictions, Russia and the European Union, very much helped by Germany’s reasonable stance, manage to assist in formulating a successful agreement between the Ukrainian rebels and the central government. Moreover, the Islamic State across the Middle East and Northern Africa, crippled by Coalition attacks, sees many of its adherents, who are disappointed and disillusioned now that the momentum of the organisation has stopped dead, trickle away.

Although it is true that a significant reduction in threat almost automatically leads to budget cuts, the situation is in this case not necessarily problematic, although the situation cannot be described as plentiful. With the final dispersion of the Islamic State in 2021 and with what would otherwise turn into other volatile situations under control, major long-term projects on which defence firms are currently working are maintained as budgets allow states to do so, and are likely to provide a few more years of sound income. What this new, peaceful situation does mean, however, is that production specialises. European nations are confident in their ability to withstand threats and, faced with a low-demand security environment, are less concerned about defence-industrial adequacy. Still being able to spend money on it however, they instead increasingly order materiel suitable for export. Thence, although the prosperous financial situation ensures the survival of a
broad range of defence branches, there is a clear tendency with firms to privilege branches that can satisfy the demand for traditionally successful products such as aerospace. For companies such as Airbus and Finmeccanica, such developments even lead to an increase in revenues from those departments.

**Europe? Who cares.**

Meanwhile, the European Union, despite a lack of violent conflict, and thence despite there being no need for advanced crisis management capabilities at the present time, continues to press for further Europeanisation of procurement responsibilities and defence-industrial cooperation between member states. The EDA continues to call specifically for limiting offsets. However, with neither threats being high nor financial burdens being demanding, member states have zero incentive to transfer what they see as the basis of national security and sovereignty to the European level. Although states recognise and concur that continuing preference for national DTIBs – policies referred to by the European Union as ‘wasteful’ – have an expensive price-tag, they are happy to spend significant amounts of money to ensure the persistence of national defence-industrial production, which as a convenient side-effect means that government popularity increases at home as jobs are not lost due to mergers.

As such, although a number of minor agreements are signed between member states, most notably an extended directive in 2024, to signify their polite commitment to the European Union in general, these hardly carry any real weight. Not only do they remain voluntary, but they are also riddled with exception clauses, meaning that they are in effect quite useless. Thence, no European internal defence market comes about. States continue to procure and produce nationally as much as they can, and the good financial situation means they are able to do so to a large extent. 2025 is thence characterised by numerous national defence markets, and overall hardly any mergers have taken place, meaning that the defence-industrial landscape has hardly changed.
6.4 Keeping Friends Closest

This particular scenario is characterised by an end-state where peripheral threat is considered demanding, but where states, afraid of losing security, are reluctant to transfer defence-industrial responsibility to the European level. At the same time, states and industries are faced with financial instability. In 2025, the European defence-industrial landscape is characterised by somewhat fewer companies than at present. In this landscape, states procure primarily on a national – albeit sometimes on a regional – basis. Production of major capabilities is conducted transnationally to some degree, and through NATO pooling and sharing increases in popularity. This section again describes three events that lead to this end-state. The first is a wave of retaliation attacks across the European Union against Muslims, leading to increased polarisation. Secondly, failed European initiatives solidify national attitudes towards procurement and production. Thirdly, an unexpected economic relapse forces states to somewhat reconsider their attitudes, tentatively opening up to regional and trans-Atlantic cooperation.

**Terrorist Attacks and Retaliation**

In recent months, the Coalition of the Willing, led by the United States and supported valiantly by its numerous allies, has managed to push back the Islamic State in Iraq. Pushed to the edge, the Islamic State targets the continent and Europe witnesses a number of bloody extremist attacks similar to those in Paris in early 2015. Over a hundred people are killed and many more injured. Fear grips the hearts of European citizens, and support for anti-Islam groups increases dramatically across Europe. Thousands upon thousands of people attend rallies against immigrations and over the next years extreme-right political parties see their votes skyrocket. Moreover, burnings of Mosques and general violent discrimination becomes increasingly common. Many young Muslims, feeling threatened by
this, find a safe refuge with the Islamic State, which they increasingly, albeit perhaps reluctantly, see as an alternative to the increasingly hostile West. Membership triples over the course of a year and the organisation, with renewed vigour, manages to reclaim almost all of the territory so laboriously reconquered by the Coalition of the Willing. Besides, it significantly increases its presence across unstable stables including Afghanistan and Libya.

European right-wing governments, perceiving this as an enormous threat, decide to increase defence budgets and reverse a number of austerity measures, despite continuing fiscal instability. That news is joyously received by European defence firms, who experienced great distress under years of budget cuts and many of whom were forced to discard a number of projects or sought out opportunities for entering foreign markets. As a result of renewed threat, however, these companies see their revenues in Europe increase. After some deliberation, France restarts its aircraft carrier programs, and especially demand for multi-role attack helicopters and fighter aircraft increases as these have proven very successful in previous fights against the Islamic State. Not only that, but this threat, which has proven to be able to surface anywhere, also increases demand for cutting-edge infantry equipment, including small firearms and armour, so as to be able to conduct small-scale missions on the one hand, and equip security forces within Europe’s borders so as to ensure adequate responses to threats from within on the other. What this means is that not only large companies benefit, but small companies, who focus on hand-held firearms and infantry technology also see an increase in revenues.

*Governments refuse European Proposals*

The increase in threat not only incentivises national governments to undertake action. The European Union, too, calls for increased powers. The European Defence Agency recommends that member states consider accelerating harmonisation of demand and argues that the volatile and unpredictable situation that exists warrants the creation of a European body with the authority to decisively coordinate joint action. Although some states, especially smaller states with limited or no arms industries, endorse such proposals, the larger states of Europe decline. Great Britain and France, although traditionally open to cooperation, feel that it is extremely imprudent to attempt any ‘experiments’ at Europeanisation. They argue that as doing so would require them to share defence-technological know-how, and would hence render them more vulnerable.

Thence, without widespread support, procurement and production remains a national matter and states continue to be reluctant to allow trans-national mergers in a bid to keep defence-industrial production at home. The re-prioritisation of defence-industrial adequacy means that companies continue to have reasonable amounts of orders, and as governments are keen to ensure self-reliance
for as far as they can, defence-industrial portfolios of major European nations are reasonably well-rounded. As a result, at a European level, overproduction and duplication of products and facilities remains very high compared to for instance the United States, but European states, prioritising defence-industrial sovereignty are willing to take these losses despite continued financial instability. However, this continued financial instability means that the situation is precarious, and a number of companies, including Rolls Royce and BAE Systems seek cooperation at a national level as far as they are able to deal with the less-than-ideal financial situation, remembering recent budget cuts.

*The Great Financial Relapse*

Such moves prove prudent. In 2022, the financial situation proves a powder keg and explodes into a new economic downturn. Although governments have implemented budget cuts and austerity measures across policy areas, measures proved inadequate and, after a period characterised by frequent relapses, the economic situation once again takes a major turn for the worse. Although states were until now able to allocate sufficient resources to defence-industrial budgets to ensure their adequacy, this financially problematic situation makes such efforts untenable. States, still reluctant to share technological know-how and still unwilling to cooperate at the European level, but continuing to be highly concerned about the persistent threat posed by the Islamic State and their allies, see no other choice but to seek defence-industrial alliances to ensure the continuation of major production programmes and to engage in joint procurement to some degree.

In that context, states, rather than risk defence-industrial deterioration, turn to existing military and defence-industrial alliances. Over the years, the members of the Visegrad Group set out to modernise their defence-industrial infrastructure so as to ensure their role as viable security actors. Those countries collected in the Nordic Union further harmonise their procedures, and Baltic states accept further cooperation with them. In the Benelux, which has had a relatively extensive record of cooperation, countries decide to completely harmonise standards and procedures and procure together, resulting in what might best be described as a regional defence market. Moreover, countries such as Spain, Germany, Italy, the United Kingdom, France and Sweden increase cooperation through OCCAR, allowing for savings but retaining national control. Additionally, NATO’s pooling and sharing initiatives increase in popularity. What this means for the defence-industrial landscape is that countries are much more willing to allow trans-national mergers within their regional alliances – an opportunity taken by a number of smaller arms producing companies. Larger companies, however, are as of yet unable to convince their governmental stakeholders of the benefits of further trans-European consolidation.
7. Conclusion

The first paragraph of this thesis problematizes the relationship between the academic discipline of International Relations and the everyday reality of decision-makers. It highlights that it is oftentimes argued that IR’s detachment from policymaking jeopardises the discipline’s credibility and relevance. It is explained that the aim of this thesis is therefore to research the near future (taking a ten-year scope) of the European defence-industrial landscape in a bid to demonstrate how such endeavours can contribute to the discipline’s policy-relevance, but also how they can contribute to overall scholarship on a particular issue. The remainder of the introduction consequently details the relevance of the subject and notes that so far, authors have predominantly engaged in a dichotomous black-and-white debate over whether or not, or why a European internal defence market is impossible, rather than allowing an open-ended discussion about those developments that are possible. It is subsequently noted that these debates could benefit from a heuristic, future-oriented approach. It concludes with a short overview of the set-up of this thesis.

Following the outline of this thesis’ research aim, the first ‘part’ of this thesis, consisting of chapters two and three, details the preparatory considerations of this enquiry. Chapter two paves the way by opting for a post-positivist theoretical framework based on the assumption that future developments are non-linear and erratic and that the future of any topic including that of the European defence-industrial landscape is uncertain. This notion, inherent in theories such as constructivism and complexity, and at the core of concepts such as counterfactuals, is opposed to positivist assumptions, which dictate that the future can be ‘mapped’ (to a certain degree, subject to probability) by observing trends and the subsequent creation of universal ‘laws’ that explain these trends. Building on this decision, chapter three outlines the utility of scenario analysis as a means of coping with the innumerable possible developmental pathways that result from the theoretical assumptions. The chapter highlights the method’s recent successes, its corporate origins, and notes that a number of International Relations theorists have previously identified the method as suitable for enquiries like this thesis. It is also explained why, for this thesis, literature, rather than group exercises, was used to obtain the insights for the process of informed judgment from which three ‘critical uncertainties’ (driving forces deemed to be able to greatly influence future developments) resulted, and that the scenarios based on these driving forces ought to have possible and coherent narratives, but should also be thought-provoking. Lastly, it is explained that the research design remains subject to limited replicability and possible researcher bias.
Part two, consisting of chapters four, five and six, details the results of the analysis. Chapter four further defines the topic. It provides an overview of present-day actors, which include political ones such as the United Kingdom, Germany, France, and the EU, as well as industrial ones including BAE Systems, Airbus, Finmeccanica and Thales, after outlining a historical context containing a selection of important events, which shows how the European Union experienced a surge of national and transnational defence-industrial and political consolidation in the late 1990s, before stagnating. Following this, chapter five justifies the choice for the three driving forces that were deemed pivotal for future developments. The first of these is defence-industrial culture, or the extent to which European nations consider defence a national or European matter. The second is threat environment, or the degree to which states prioritise defence-industrial health as a result of severe internal or external threats to security. The last driving force is financial stability, or the degree to which the economic crisis will continue to affect defence budgets over the next ten years. Based on these three driving forces, chapter six presents eight scenarios generated through a triple-axis scenario matrix, of which four are discussed in detail. The first of these, Swords into Ploughshares, paints a thinned-out defence-industrial landscape resulting from a peaceful environment and continued financial malaise, where only a number of major companies remain and political union is absent. Ka-Boom, Ka-Ching sketches a scenario where states, faced with violent conflict and desiring Europeanisation, transfer defence-industrial responsibilities to the European level, creating a strong and competitive European defence market. At Ease features an end-state characterised by peace and financial prosperity the resultant defence-industrial landscape is dotted with companies of varying sizes. The final scenario, Keeping Friends Closest, details a situation where states, faced with low budgets and a high threat level, and feeling contempt for the European Union, are forced to form regional defence-industrial blocks and seek increased cooperation through NATO.

In short, this study has sought to answer the question ‘what are the ways in which the European defence-industrial landscape could develop over the next ten years, and how can thinking about the future of the European defence-industrial landscape help increase the policy relevance of International Relations and at the same time contribute to scholarly debate on that topic?’ Based on post-positivist assumptions and a sound understanding of the subject matter, and structured through the method of scenario analysis, this enquiry has resulted in eight scenarios based on three pivotal driving forces, of which four were detailed. What remains, then, is to come full circle. With a view to answering the remainder of the research question posed, this concluding chapter first of all finalises the enquiry by discussing the implications of the analysis for both policymakers and scholarship, and closes with a number of suggestions for future research.
7.1 Implications

All of the scenarios provide coherent and hopefully compelling narratives. However, these scenarios are not set in stone and the outcomes, although depicted as path-dependent, are not fated. Thence, these narratives should not be taken literally as if they were predictions. In this context, Wack (1985; 139), as previously stated, stresses that it is imperative for a scenario developer to detail the implications for policymakers, highlighting best and worst-case scenarios as well as the ways they might prepare for (a) particular scenario(s), encourage the fruition of (a) particular scenario(s), or even capitalise on important events (or ‘critical junctures’) to alter the outcome of a developmental process, if and when possible. In that way, it is possible to demonstrate how this endeavour could be used to contribute to policy. By extension it may be argued that for an academic endeavour such as this thesis, which has explicitly sought to demonstrate how the discipline can benefit from policy-oriented research, it is equally important to detail the implications of the scenarios for scholarship. This section thence provides a discussion about the consequences of these scenarios for various interest groups mentioned throughout this thesis, as well as about the way they relate to the overall (academic) debate surrounding the European defence-industrial landscape.

Policy

As stated previously, part of the aim of this thesis was to produce policy-relevant work, as "...academics might be considered to have an obligation to help improve on policy ideas when they can..." (Nye, 2009). In that context, the implications of the various scenarios could be said to vary remarkably across those interest groups mentioned over the course of this thesis, the most important of which are arguably the European Union, the European arms manufacturers, and Europe’s major arms-producing member-states60. For the latter of these, a few scenarios (At Ease, Swords into Ploughshares) might be considered problematic in the long run as their realisation would mean a (permanent) loss of defence-industrial capabilities. As defence-industrial production, as stated previously, comprises the backbone of state defence, it may be argued that companies losing expertise in certain fields means a loss of security at the very basis of state sovereignty as well as a loss of bargaining strength in international conflicts. Moreover, protectionist states such as Spain

60 Although there are numerous other actors that have an interest in the way the European defence-industrial landscape might develop, including the United States, NATO (for whom for instance Keeping Friends Closest is a good scenario due to member-state preference for trans-Atlantic cooperation, boosting US geopolitical influence and opening up the European market further to US companies), and perhaps even other foreign powers such as China or Russia, these cannot be adequately discussed within the scope of this thesis. As the thesis concerns the European defence-industrial landscape, this discussion details the implications for those actors most invested in it.
might be distressed by scenarios such as *Keeping Friends Closest* where they are forced to share military know-how more or less against their will. Interestingly, from a defence-industrial point of view, those narratives featuring excessive violent conflict (*Ka-Boom, Ka-Ching* and *Keeping Friends Closest*) could be considered the best-case scenarios as these feature (relatively) healthy and able defence industries. Based on such interpretations, states might for instance choose to continually monitor the state of defence-industrial production even – or especially – in time of economic crisis and peace, for instance through committees. This would make that violence is no longer a necessity for defence-industrial success. Alternatively, states like France might choose to reinforce Europeanisation as a policy préférée in the hopes that other states will eventually choose to follow their lead.

For the European Union and its bodies (i.e. most notably the EDA and the EC), most of these scenarios could be considered fairly distressing as they either paint pictures where the Union is marginalised at a defence-industrial level (*At Ease, Keeping Friends Closest*), or where the Union inherits a broken defence industry (*Swords into Ploughshares*). In the first two scenarios, the Union’s agency is shackled as member-states prefer national or transatlantic defence-industrial initiatives, and in the latter the Union is forced to handle restoring trust among companies and defence-industrial capacity, all the while being subject to disinterested member-states. Undoubtedly the most positive scenario is *Ka-Boom, Ka-Ching* where the Union is given not only all the power it requires, but also generous funding to accomplish its goals. As the Union is subject to member-state approval, there are only limited ways in which the Union might seek to cope with this. Most notably, it could continue to encourage Europeanisation through lobbying and by continually presenting itself as a capable and, most importantly of all, decisive security actor. While such policy might not prove effective during peaceful and financially stable conditions, such persistent effort could convince member-states that the Europeanisation is a viable alternative to regional or trans-Atlantic cooperation as soon as violence increases and stability decreases. Moreover, the Union could encourage syndicates of smaller companies (detailed shortly) and so generate goodwill among companies.

For defence firms the implications of the scenarios might be thought of as particularly varied and arguably somewhat confusing, but overall reasonably positive for larger companies (albeit admittedly less so for small and medium enterprises). Policymakers could be forgiven for assuming that *Ka-Boom, Ka-Ching* provides the best prospects, as this scenario describes an end-state where budgets and demand are exceptionally high. However, this scenario could, for the long(er) term, prove a trap: should companies become too confident of continual profits, they could be caught unaware by a sudden reduction in threat level or a new unexpected economic downturn, leading to
deterioration of smaller companies and a loss of the larger companies’ position in the global market – a situation akin to the early 90s as described in chapter four. Such pitfalls are not limited to Ka-Boom, Ka-Ching but are also inherent in Keeping Friends Closest, where a sudden reduction in threat could prove detrimental for smaller companies, and At Ease, where governments essentially subsidise defence firms and therefore have them at their mercy (although on the other hand this scenario prepares companies for problematic situations to some extent as they are encouraged to focus on internationally competitive products). It is then interesting to note that while Swords into Ploughshares could be considered a detrimental scenario (and indeed it is for smaller companies), for larger companies it could in the long term turn out to be beneficial. Although these larger companies are forced to go through painful restructuring processes, they also have opportunities to pursue mergers and acquisitions and those companies that survive the ordeal are consequently not only firmly competitive in the global defence market (and therefore less dependent on their European benefactors), but are also able to fall back on civilian products when required. In other words, the remaining companies are highly resilient. Based on these interpretations, what strategic choices could be recommended to defence firms? For smaller enterprises, it seems prudent to firmly ‘ally’ themselves with larger companies so as to ensure that their components are essential at all times. Alternatively, smaller companies could consider forming syndicates (as far as law allows) to collectively counter the power of larger companies and survive demanding times. Larger companies could for instance be recommended to heed the lesson learned from Swords into Ploughshares and start restructuring their companies even in (or especially in) times of prosperity by dedicating attention to their respective ‘spearhead’ products and concretise negotiations about mergers and joint ventures early so as to benefit maximally from any opportunities presented.

Scholarship

Having outlined how the scenarios created in this study may increase the policy relevance of International Relations as an academic discipline by discussing the implications of the scenarios for a number of main actors and outlining some suggestions for recommendations, what remains is to discuss how this policy-oriented work has contributed to scholarly debate surrounding the topic – remembering that the aim of this thesis was not only to detail how International Relations might contribute to policy but equally to detail how discussing a policy-relevant issue can contribute to scholarship as well. After all, it is detailed at the very start of this thesis that numerous authors have lamented the chasm that divides policy and academia, claiming that cross-fertilisation can also be

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61 That is, products for which they are internationally renowned and which are in high demand, including Thyssenkrupp’s submarines, Finmeccanica’s most popular helicopters, and Thales’s electronics.
beneficial to scholarship. These authors include Nye (2009), who argues that “...such engagement can enhance and enrich academic work, and thus the ability of academics to teach the next generation”, Bernstein et al. (2000; 43-44), who argue that scholarship and policy are linked because the discipline was originally established to contribute to debates relevant for policymaking, and Junio and Mahnken who stress that “[t]hinking and writing about the future in a robust way offers political scientists an exciting opportunity to push the boundaries of current debates and to generate new ones...” (2013; 393). So, how do the scenarios written for this thesis do that?

First and foremost, it may be concluded that the scenarios produced in this thesis do indeed contribute new and engaging insights to the debate on the matter – a hope expressed near the end of the introduction of this thesis. As noted just before that, scholarly debate on this topic is severely limited to a black-and-white view of ‘integration’ versus ‘non-integration’ without regard for possible alternatives, and that as a result many contemporary enquiries, including Ballester (2013), Bianchi and Guidi (2010), Eliassen and Sitter (2006), Edwards (2011), and others, generally shied away from investigating the future, despite it being at the centre of the real-world day-to-day concerns surrounding this issue, and echoed the same conclusion. That conclusion being that “…the odds are truly against a common European defence policy” (Repinski et al., 2013), and that a European internal defence market is likely fated to remain a “...mission impossible (Eliassen & Sitter, 2006; 16), which Ballester (2013; 60-61) and others conclude to be a major problem. Moreover, it is detailed that articles that do (to any extent) explore the future of the defence-industrial landscape seem often outdated (e.g. Bittleston (1990) and Vlachos (1998)) or have insufficient detail (e.g. Wiśniewski (2012) and Lundmark (2011)).

Remembering this, it may be claimed that this study has transcended much of the existing literature in that it provides a broader overview of possibilities in general and specifically provides much more detailed prospects than those enquiries that have engaged in similar endeavours by examining the matter through a post-positivist framework – which by extension also demonstrates the utility of post-positivist assumptions for scholarly research about the future of a topic. While some of the end-states presented could be described as distinctly depicting ‘integration’ (Ka-Boom, Ka-Ching) or ‘non-integration’ (At Ease), these scenarios hammer home that developments are hardly distinctly black-and-white. Swords into Ploughshares could be considered an example of ‘integration’, but is not at all positive for many actors, and Keeping Friends Closest does not create a

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62 Moreover, this research, while having aimed to paint pictures of possible ways the European defence-industrial landscape might develop, also provides scholars with insights in the driving forces behind such change, which in turn could be used to further analyse the overall importance of such driving forces on European defence integration, as outlined also in the next section of this chapter.
European internal defence market, but neither does it feature a distinct trans-Atlantic market, or impregnable regional markets. While it is impossible to currently assess which of these scenarios is most plausible, they should hopefully by able to nuance currently dominant views and move (scholarly) debate surrounding European defence-industrial production from a black-and-white view of ‘integration’ versus ‘non-integration’ to one that actively seeks to recognise the multitude of possible end-states that occupy the ‘grey space’ surrounding these two. In summary, while integration (i.e. political union and a fully functional European internal defence market) may be an ideal situation for many actors and though it is undoubtedly important that studies examine that scenario, the results presented in this study emphasizes that it is only one scenario out of many and that too intense a focus on it might obscure others (which could be a reason for the majority of literature being based on dualism), not only causing day-to-day policymakers a great disservice but also preventing debate from moving beyond that one (or two) scenario(s).

63 Indeed, it is interesting to consider that in order to overcome this duality-based view it could be imperative not to think of these alternative possibilities as located on a line ranging from ‘integration’ to ‘non-integration’ but rather as merely being located in the same space.
7.2 Future Research

Although this thesis has demonstrated that policy-oriented research in the form of enquiring about the future of a particular topic – in this case the European defence-industrial landscape – can increase the policy relevance of the discipline and same time contribute to scholarly debates about said topic, it has only scratched the surface of this particular subject. As with virtually any research, there are many ways to improve upon this study and the scenarios and conclusions presented in this research may provide fertile ground for a number of follow-up studies. This very last section closes the thesis by elaborating upon this, detailing a number of improvements that could be made, and providing a few suggestions for future research.

Improvements

As described in chapters three and five, the scenarios presented in chapter six were created through on a process of informed judgment. What this means is that, as with many other cases of post-positivist research, they are based on the researcher’s understanding and interpretation of the matter. One major improvement or extension could therefore involve redoing the scenario exercise in the traditional manner (i.e. through group exercises with a number of experts where active cross-fertilisation of ideas and views takes place). While this might prove difficult as it would require many high-profile participants, it would arguably be interesting to afterwards compare the results to those of this thesis. Alternatively, as noted in section 3.2, an individual scholar might re-do the study and compare his views.

It could also be argued that another way to improve this research would be to have participants work in close cooperation with a professional (screen-)writer. Writing compellingly is a craft mastered only by a few, and by dictating the basic chain of events and through constant feedback from both sides with regards to coherence, plausibility and the degree to which the scenarios are challenging, such cooperation could well result in more captivating scenarios. After all, the ‘power’ of scenarios stems from their ability to compellingly challenge existing views and the better the story, the likelier that people will take them to heart. Naturally, the writer should in such a case be present for the scenario exercises so he or she can understand the train of thought of the researcher or the exercise’s participants.

Further Research

With regards to further research, there are many options. One follow-up study could, for instance, investigate the impact of so-called ‘wild cards’ on the scenarios presented. As mentioned in footnote
28 in chapter three, Dammers (2010; 789) and Han (2011; 43) explain that wild cards are “...conceivable, if low probability, events or actions that might undermine or modify radically the chains of logic or narrative plot lines” (ibid.). Examples of a wild card applicable to this study include situations where Europe is engulfed by a continent-wide war, or where the global economy experiences a complete crash. Such follow-up studies could provide policymakers with insights about how such events might impact their long-term strategies, but could also be of interest to scholars as they might provide valuable information on the relative importance of certain happenings within the context of defence-industrial production, which could be used for the further development of theory.

Alternatively, further research could investigate the likelihood of one scenario over another. This could on the one hand help policymakers in determining their long-term strategies, and on the other it could help scholars direct the focus of their research on the topic. Schoemaker (1995; 26) suggests that researchers run quantitative models to assess this, but alternatively it may be argued that such a study could also be done by interviewing experts and compile and analyse their views into a short (relatively rudimentary and exploratory) study.

Furthermore, as mentioned also in chapter three (footnote 25), International Scholars including Han (2011; 53), Junio and Mahnken (2013; 382), and Choucri (1974; 66) have suggested that use of theory could contribute to the legitimacy and explanatory power of the scenarios or indeed any form of foresight in general. However, these suggestions remain conceptual and have not been applied to this thesis, as haphazard application of theories would not benefit this study nor would they fit its scope. However, a further, more extensive or more theoretical study could investigate and outline best practices for that process. Alternatively, that kind of study could evaluate the scenarios presented in this thesis through theory.

Of course, these are only a few examples and undoubtedly there are many other ways to build upon the results of this study. For any further enquiry about the European defence-industrial landscape or indeed any topic, however, it may hence be considered that while the so-called and infamous ‘Ivory Tower’ might provide a refuge where scholars can discuss the world without ever participating in it, policy-related research might not only be considered a responsibility of International Relations scholars towards policymakers, but is, as this thesis has sought to provide, also an equally – if not more – valid way of contributing to contemporary debates.
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Front page by Carlos Arellano

Triple-Axis Scenario Matrix diagram by Alexander Martens

Fig. 5 map information and base image retrieved from http://adevarul.ro/assets/adevarul.ro/MRImage/2015/02/21/54e84cbf448e03c0fdd5f23c/627x0.jpg and http://upload.wikimedia.org/wikipedia/commons/5/5a/BlankMap-Europe-v4.png