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ARTICLE



# Cooperation and non cooperation in European defence procurement

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## ABSTRACT

The increasing cost of weapons, decreasing defence budgets and globalization of armaments supply-chain have made defence-industrial cooperation a priority in the European context. However, despite strong systemic incentives, European cooperation in defence-industrial activities remains very discontinuous. Why do European countries decide to cooperate with their partners in some instances and refrain from acting cooperatively in others? The present article introduces market size as a variable to elucidate different first and second-tier states' approaches towards European defence-industrial cooperation. While firms settled in larger domestic markets lobby to maintain existing technological capabilities, firms in smaller domestic markets prefer to be competitive in limited sectors of the defence-industrial supply-chain in order to preserve export market *niches*. The article tests the plausibility of this argument by way of in-depth case studies of the French, German and Italian approaches towards two collaborative armaments projects: the Eurofighter and the A400M.

## KEYWORDS

Defence procurement;  
European armaments  
cooperation; European  
defence; France; Germany;  
Italy

## 1. Introduction

The re-launching of the Permanent Structured Cooperation (PeSCo) on defence and the European Defence Fund (EDF) have been considered 'proof' of a revived interest in defence-industrial cooperation. Today, European defence-industrial cooperation is structured around multiple initiatives that are located both within and outside the EU framework. First, intergovernmental agreements have been signed to develop joint armaments projects. Second, European institutions and member states have promoted several EU-level initiatives in order to strengthen the European Defence Technological and Industrial Base (EDTIB) (see [Table 1](#)).

In recent years, the academic literature has focused mainly on the second mode of cooperation, analysing how EU-level initiatives have established common defence procurement regulations and have promoted economic and financial incentives to strengthen the EDTIB (Britz [2010](#); Haroche [2019](#)). However, little attention has been paid to the first mode of cooperation, related to the joint development of armaments programmes (DeVore [2014](#)). This is surprising, given that most of the EU-level

**Table 1.** Two different modes of European defence-industrial cooperation.

	Modes of Collaboration	Cases
Intergovernmental Level	Intergovernmental initiatives aimed to develop joint armaments projects	Projects: Tornado, Eurofighter, NH90; A400M; FREMM Frigate
EU-Level	EU-level initiatives to strengthen the European defence-industrial base and to harmonize cross-national defence procurement	European Defence Agency; EU Directives on Defence Procurement and Offsets. More recently: PESCO and the EDF

initiatives are actually designed as institutional framework to facilitate the joint development of defence equipment (European Commission 2017). National governments and EU institutions have repeatedly highlighted the inefficiencies created by redundancies, the lack of interoperability among similar weapon systems and the economic resources wasted in the development of armament projects. To give just one striking example, a recent report emphasizes that while the United States (US) uses 30 major weapons systems, EU member states use 178 (Munich Security Conference 2017). Defence-industrial cooperation would therefore seem an appealing strategy for developing sophisticated weapons systems, given its positive economic (lower costs and economies of scale), operational (interoperability and standardization of military equipment) and political (strengthen European defence cooperation) externalities. These two modes of defence-industrial cooperation entail different distributional implications. In the first, concentrated benefits for firms create incentives to mobilize and protect their position in the domestic and European arms market, since defence firms from different states have adversarial relationships with each other (Tucker 1991). In the second mode of cooperation, distributional implications are less stark, as it is mostly characterised by EU-level collaboration with economic and financial incentives and therefore defence firms are less concerned about competition with other European industrial suppliers (DeVore 2014).

This article focuses on the first mode of cooperation concerning the joint development of armaments programmes. If, on the one hand, European governments sometimes have collaborated in the development of some weapon systems, on the other hand, inter-governments and inter-firms rivalries have frequently hampered such cooperation. Specifically, protectionism, oligopolistic strain on markets and a tendency to privilege domestic suppliers have prevented a more efficient development of European armaments programmes (Mawdsley 2013; DeVore and Weiss 2014). In other words, defence-industrial relations in Europe are characterized by both inter-state competition and European cooperation. In order to come to terms with this puzzling mix, I propose to answer the following research question: why do European countries cooperate in some instances and refrain from acting cooperatively in others, despite the strong geopolitical and economic incentives for the development of joint armaments programmes?

To address this empirical puzzle, the present article introduces market size as a variable aims to explain European countries' preferences towards defence-industrial cooperation. More precisely, I argue that the strategy pursued by governments and defence firms is decisively shaped by market size because of its importance in determining the relative costs and benefits of collaborative armaments arrangements. While firms settled in larger domestic markets have incentives to lobby for maintaining a full spectrum of technological capabilities, firms operating in smaller domestic markets prefer to be competitive in

limited sectors of the industrial supply-chain in order to preserve export market *niches*. Firms settled in the largest domestic markets will therefore see less benefit in projects where there is a high degree of technology transfer which might give an advantage to their industrial competitors at the European level. In contrast, firms settled in medium and small defence-industrial markets will be favourable to projects involving higher transfer of technology and be less concerned by possible competition because of their positions as *niche* leaders.

### **1.1. The European defence-industrial panorama: between cooperation and competition**

The existing academic literature contains no satisfactory explanation for the simultaneous presence of cooperation and competition in the European defence-industrial sector. The International Relations (IR) literature on the subject has focused predominantly on the systemic factors that discourage or encourage greater defence-industrial cooperation at the EU level. Traditionally, the Realist approach has been sceptical about the possibility of defence-industrial cooperation, assuming that governments will enact policies designed for the sole objective of maximizing their security against military threats. Therefore, sovereign states are likely to pursue defence-industrial autonomy because the international system is anarchic and the future behaviour of allies is unpredictable (Dyson and Konstadinides 2013). However, since the launch of the Common Security and Defence Policy (CSDP), most discussion has focused on whether European security calculations are driven by a will to balance against US unipolarity or bandwagon with the US (Jones 2007; Dyson 2013). The Liberal approach has mainly focused on long-term trends towards greater defence-industrial cooperation, highlighting the progressive liberalization of the defence market and the role of transnational corporations as the principal forces for cooperation (Britz 2010). However, given their predominant focus on systemic incentives towards cooperation, IR's two mainstream approaches have not been able to explain the simultaneous presence of cooperation and competition in the European defence-industrial field. While EU institutions, member states and defence firms have promoted some joint defence-industrial initiatives, protectionism and rivalry among European governments and industries continue to be persistent features of the European defence-industrial panorama. Recent studies have also analysed the role of EU institutions as crucial drivers to regulate defence procurement and promote competitiveness in the defence-industrial policy-domain (Strikwerda 2018; Haroche 2019). However, these analyses focus exclusively on the second mode of cooperation, in which there are less distributional concerns among European governments and defence firms.

In order to overcome these shortcomings, an International Political Economy (IPE)-inspired branch of research has focused on the EU member states' heterogeneous politico-economic bases to explain why European countries have enacted divergent policies in the defence-industrial domain (Moravcsik 1993; DeVore and Weiss 2014; Calcara 2017). For example, DeVore and Weiss predict that the French defence industry is more able to influence European defence-industrial cooperation than its British counterpart due to the peculiar close relationships and educational background of the former's governmental and industrial actors (DeVore and Weiss 2014). Previous research shows that the French defence industry has exercised its influence over

lawmakers to sabotage multinational armaments projects when the proposed terms of collaboration were unfavourable (Tucker 1991; Moravcsik 1993; Calcara 2017), whereas the British defence industry lacks comparable influence and has therefore been unable to hinder cooperative agreements at the European level (DeVore and Weiss 2014; Calcara 2017). However, these arguments have still limited explanatory power because they specifically address two countries with large markets, meaning that they both have the luxury of choice when it comes to collaborating (or not) with European partners in the development of joint armaments projects. Medium or small European states have a necessarily narrower range of policy options. What is their attitude towards European defence-industrial cooperation?

## 1.2. Market size

In a seminal work on the subject, Krause provided a systematic division of the international arms market into three different tiers of producers. More specifically, he differentiated between first-tier states, those at the technological frontier with large domestic markets that produce the entire range of weapon systems; second-tier states, which have smaller domestic markets and depend more heavily on exports or state subsidies; and third-tier states, that, given their small domestic markets, find their comparative advantage in specialised sectors for unsophisticated weapons (Krause 1992). In the early 90s, Krause identified two first-tier armaments producers (the US and the Soviet Union), several second-tier arms producing states (UK, France, Italy, West Germany, Spain, Sweden in Europe plus other countries like Japan and Israel), while the rest was included in the third-tier states group. Yet, after the Krause's remarkable analysis, little work has been done on how to divide the tiers, how to assess the possibilities of movement between tiers and almost no attempt to analyse how different regional markets have developed their own arms-producing tier's hierarchy.

The European context represents an interesting case to deal with, given the presence of stable alliances, common regulations in defence procurement and a number of transnational groups with pan-European business interests (Airbus, BAE Systems, Leonardo<sup>1</sup> and Thales). However, the European defence-industrial field remains fragmented in terms of both supply and demand. Indeed, notwithstanding a disparate defence-industrial consolidation in the 90s, this process has recently had a slowdown, especially when the proposed merger between the European Aeronautic Defence and Space Company (EADS) and BAE Systems in 2012 was blocked by the German government. Similarly, despite multiple EU and NATO initiatives, progress on the demand side was minimal (Mawdsley 2018, 261). A study on the EU Directive's 2009/81/CE implementation indicates that 80–90% of defence procurement contracts continued to be awarded domestically (Masson et al. 2015).

The European context is also interesting because, despite there is often a generic reference to the 'European defence industry', defence firms still differ enormously across the region, reflecting the size of countries in which they are based and their distinctive skills and competencies. In this regard, drawing on previous research on the topic (Krause 1992), I argue that the size of the defence-industrial sector depends on the internal market's capacity to absorb domestic weapon systems (which is strictly related to defence spending) and on national arms industries' position in the regional and global defence

market. France, Germany and the UK are by far the countries that spend the most on defence. Moreover, French, German and British companies accounted for 16 of top 25 European prime arms contractors, as shown in Table 2. In addition, both Airbus and MBDA have French and German shareholders. All 18 prime contractors are also among the top 100 defence companies worldwide (SIPRI 2018). Italy, Spain, Netherlands, Poland and Sweden are second-tier arms producers with varying degrees of defence spending and competitiveness in the European and international arms markets. All other EU member states can easily be considered third-tier arms producers.

The size of the defence-industrial market is decisive in shaping government and defence firms' strategy regarding European cooperation. More precisely, the distinction between first and second-tier states in the European context is crucial, because actors have a mixture of common and conflicting interests: that is, a mutual desire to combine their resources synergistically to increase absolute gains, yet divergent interests when deciding how the joint benefits of cooperation are divided between them (Tucker 1991; Simón 2017). Firms settled in larger markets possess the financial and technological capacity to maintain a more autonomous industrial structure. These firms are often uninterested in cooperative endeavours because of the desire to maintain competitive domestic defence-industrial capabilities. In contrast, firms settled in smaller markets should find alternative strategies to maintain their position in the European market. In this regard, I argue that states can enhance their leverage within the European and global defence market by positioning their corporations as producers of *niche* and specialized components. In other words, firms settled in smaller domestic markets tend to specialize in certain arms-related products in order to develop a comparative advantage. Companies that possess unique, specialized technologies can capture and profitably exploit a *niche* in the market. Such firms usually survive and even remain profitable, maintaining or expanding their market share, if they can capture economies of scale within their *niche* and if a profitable export market exists to support them (Creasey and May 1988, 32).

Technology transfer is a pivotal concern for governments and defence firms when two or more countries cooperate in a complex high-tech armaments programmes (Tucker 1991). Indeed, most European countries have detailed measures to safeguard some technologies at the domestic level. In France, the Direction Générale de l'Armement (DGA) checks that some crucial technologies are not transferred to foreign partners (Fauconnet, Malizard, and Pietri 2019, 179). The UK has also included similar considerations in its defence-industrial strategy (Dorman, Uttley, and Wilkinson 2015, 27–28). Because of the directional nature of technological know-how as it flows from one partner to another, countries become concerned with excessively favouring a foreign partner to the detriment of their own technological base. In other words, if two players have unequal technological capabilities, collaboration generally enables the weaker player to improve its relative position at the stronger player's expense. Unintentional transfer of technology may damage a company's position in the European market. Thus, when two or more countries seek a collaboration to produce joint weapon systems, they will be very concerned about distributional issues. Although all partners should theoretically profit from a well-managed collaborative project, the uneven distribution of gains within a project provides rival firms with powerful incentives to pursue relative gains at the expense of their partners. In this regard, Moravcsik underlines that in collaborative armaments projects, 'firms seek to preserve two sorts of competitive assets: technological

**Table 2.** Top 25 European Arms-producing and military services companies. (Source: SIPRI Top-100 Arms-producing and military services companies 2017).

European Rank (2016)	World Rank (2016)	Company	Country	Arms Sales (2016)	Arms Sales 2015 (constant 2016 prices)	Total Sales	Arms Sales as a % of total sales (2016)	Total profit (2016)	Total Employment (2016)
1	3	BAE Systems	UK	22 790	22 689	24 008	95	2 351	83 000
2	7	Airbus Group	TransEuropean	12 520	12 869	73 652	17	1 101	133 780
3	9	Leonardo	Italy	8 500	9 264	13 277	64	561	45 630
4	10	Thales	France	8 170	8 094	16 471	50	1 073	64 100
5	16	Rolls Royce	UK	4 450	4 260	18 601	24	..	49 900
6	23	DCNS	France	3 480	3 327	3 530	99	97	12 800
7	25	MBDA	TransEuropean	3 260	3 162	3 319	98	7	10 340
8	26	Rheinmetall	Germany	3 260	2 876	6 327	52	238	20 990
9	28	Babcock International Group	UK	2 950	3 024	6 136	48	776	35 000
10	30	Saab	Sweden	2 770	2 626	3 342	83	137	15 470
11	33	Safran	France	2 600	2 378	18 232	14	2 111	66 490
12	42	CEA	France	2 020	1 948	4 577	44	-83	15 620
13	47	ThyssenKrupp	Germany	1 770	1 894	43 433	4	289	156 490
14	54	Fincantieri	Italy	1 600	1 494	4 899	33	15	..
15	57	Cobham	UK	1 550	1 743	2 623	59	81	10 690
16	58	Serco	UK	1 500	1 450	4 713	32	45	47 000
17	60	Dassault Aviation Group	France	1 390	1 849	3 967	35	425	11 940
18	68	GKN	UK	1 210	845	11 906	10	329	58 000
19	75	PZG	Poland	1 140	1 131	1 268	90	..	..
20	78	Krauss-Maffei Wegmann	Germany	950	842	996	95	..	4 000
21	80	Meggitt	UK	940	774	2 688	35	231	11 210
22	82	Nexter	France	910	1 129	958	95	..	1 750
23	94	Kongsberg Gruppen	Norway	770	726	1 886	41	77	7 160
24	97	Ultra Electronics	UK	720	605	1 061	68	92	4 000
25	89	Navantia	Spain	710	737	801	88	-336	5 510

capabilities, which permit the production of sophisticated products and export market *niches*, which permit the amortization of costs over a large market' (Moravcsik 1993, 132).

Therefore, the market size variable suggests that countries with a larger defence-industrial market will be more concerned with maintaining proprietary technological capabilities in order to be able to produce complex weapon systems at the domestic level. These firms will be less inclined to participate in projects where there is a high degree of technology transfer because of the risk to their position in the European arms market. Conversely, firms within a smaller defence-industrial market will have an incentive to specialize in some products in order to be competitive in limited sectors of the defence supply-chain in the global market. They will be favourably disposed toward projects that promise a high transfer of technology. These companies wish to acquire new technologies and industrial capabilities rather than solely build on existing national comparative advantages. Their preference, indeed, is to maintain export market *niches*. Specifically, I hypothesise that:

- (1) The prime contractors in a larger domestic market will be inclined to lobby for *maintaining technological capabilities*. These firms will therefore be less inclined to participate in projects where a high degree of technology transfer might damage their position in the European arms market.
- (1) In contrast, the prime contractors settled in smaller markets have an incentive to specialize in some products and to be competitive in limited sectors of the defence supply-chain in the European market in order to develop *export market niches*. Firms within a smaller defence-industrial market, therefore, will be favourable to projects where there is a high transfer of technology.

### 1.3. Case selection and methodology

This article explores the plausibility of this argument through in-depth case studies of the French, German and Italian approaches towards two European joint armaments programmes. I selected these countries to reflect the diversity of the European defence market. Indeed, while in France and Italy, governments maintain significant shareholdings within their defence industries, the German state does not own national defence industry<sup>2</sup> (Hoeffler 2008; Caruso and Locatelli 2013). Moreover, the three cases reflect also the diversity of European market sizes. As specified in the previous section, France can be considered as a European first-tier state, while Italy can be considered as a second-tier arms producing country. Germany is an interesting case. In his seminal work, Krause emphasized the difficulties to compare Germany with other global second-tier producers, given that German defence-industrial production was 'still more limited in its indigenous design and production capabilities than either France or Britain, and Germany eschewed a genuine across-the-board arms production capability, fundamentally for political reasons' (Krause 1992, 129). Drawing on these considerations, I argue that Germany was a European second-tier states in the 80s, but it became a European first-tier arms-producer at the end of the 90s-2000s. This is due to two main reasons, which are related with the two main variables that help to determine the market size: defence spending and arms industry's position in the regional and global defence market. First, the integration of



East Germany after the Cold War has led to a substantial expansion of the domestic market and a net increase of defence spending. According to the SIPRI military database, in 1985 West Germany spent \$19.922 billion in defence. In 1992, after the unification, the German government spent \$41.966 billion (SIPRI 2018). Second, in the 90s, the German defence industry, in order to face European and extra-European competition, has carried out a process of internal consolidation in the land and naval sectors (Rheinmetall and ThyssenKrupp Marine Systems are two main examples). In the aerospace sector, Deutsche Aerospace Aktiengesellschaft (DASA) has merged with French and Spanish counterparts to create Airbus, one of the largest industrial groups in the world.

In this article, I focus on two different collaborative projects that have involved France, Germany and Italy: the Eurofighter and the A400M. I selected these case-studies for two main reasons: first, both projects pertain to the aerospace sector, where the high fixed development costs and decreased unit production as compared to other defence-related markets, make cooperation more appealing (Hartley and Braddon 2014, 537). Second, France, Germany and Italy were involved in the preliminary negotiations in both programmes, but they did not always participate in their development. A detailed investigation of European countries' preferences in the process of cooperation or defection from joint armaments programmes is therefore crucial to test my argument.

In order to make strong evidence-based inferences about these case-studies, I employ the process tracing method. This technique helps to consider alternative causal pathways that might have led to the outcome of interest. Therefore, my argument is tested against competing hypotheses. Indeed, some scholars highlight that despite possessing the full spectrum of technological capabilities by European standards, first-tier armaments producers need European collaboration to reach the necessary critical mass to compete at the global level (Jones 2007; Matlary 2009). Similarly, European second-tier states will pursue the same preferences in order to avoid marginalization in the defence-industrial panorama and to guarantee the survival of their domestic defence-industrial base (Mawdsley 2008). Process-tracing is operationalized through the triangulation of different sources. This article is extensively based on documents and reports produced by the French, German and Italian Ministries of Defence (MoDs), and an in-depth analysis of newspapers, specialized magazines and academic articles on armaments programmes. In order to enrich the empirical scope of this analysis, I also conducted 6 semi-structured interviews with 2 members of the French, 2 members of the Italian and 2 members of the German MoDs.

#### **1.4. The Eurofighter**

The Eurofighter is a two-engine multi-role fighter designed and built by a pan-European consortium. The Eurofighter's design began in the early 80s and was marked by extremely complicated phases. Indeed, European countries had very different preferences as to its precise role. The UK was seeking an interceptor with multi-mission capability for both ground attack and air superiority, while France preferred a ground-attack light-mobile aircraft (Keohane 2002, 23). France's desire for a lighter platform was as much shaped by industrial as military interests. Indeed, the desire to build a lighter aircraft was also linked to the fact that the *Société Nationale d'Etude et de Construction de Moteurs d'Aviation* (Snecma) did not possess the appropriate technological expertise to develop a power-

plant suitable for a plane in excess of nine tons (Cobble 2004, 189). Italy took a different position to that of the British and the French. According to the Italian armed forces, there was an absolute need to replace the F-104 S, which had been overtaken by the technological developments of the Eastern bloc weapons' counterparts. As reiterated by the two Italian armed forces' chief executives that were involved in the decision – Stelio Nardini and Adelchi Pillinini – the F 104-S was largely inadequate to the role it was supposed to play and was dangerously unsuited for even a simple monitoring role. The Italians' primary need was to fill this strategic gap in air defence through a fighter capable of interdiction and counter-aviation (Battistelli 1980).

In general, between 1979 and 1985, intergovernmental collaboration appeared promising. The French political leaders Mitterrand and Giscard d'Estaing were enthusiastic about developing a European combat aircraft. They considered these large collaborative armaments projects to be an essential step for the development of European defence. In this regard, Mitterrand argued that, 'if one wants to create Europe, it must be taken to define some unity of armament, otherwise the rest of the discussion will be pointless' (quoted in Cox 1987, 25). This enthusiasm was also shared by the French Air Forces, which considered a European cooperative effort the only way Paris would acquire a larger and more sophisticated aircraft than those historically built by the French defence industry (DeVore and Weiss 2014, 520). However, it was very difficult to reconcile French industrial requirements with their counterparts. French prime contractors strongly opposed any possibility of cooperation at the European level and extensively lobbied bureaucratic and political actors within the French defence establishment to promote a wholly *red, blue and white* project. Dassault Aviation, a family-run company, was particularly interested in developing a domestic-based military programme, as it was the only French company to possess the technological skills to embark on such a project. In the mid-80s, Dassault Aviation was worried about competition with the UK-based BAE, which had gained ground from both the technological and industrial points of view through the Tornado collaborative project. Dassault was particularly concerned about technology transfer to European rival industries, especially with regard to delta-wing fighter production, where the French firm was unquestionably the European technology leader. Dassault was further concerned about the possible involvement of partners such as Messerschmitt-Bölkow-Blohm GmbH (MBB) and BAE Systems, which could conceivably 'take the technology and run' to improve their competitive position in the European arms market. The French DGA and defence minister supported this view. The Defence Minister, Charles Hernu, declared that Paris must protect its 'essential interests' and could not sanction 'a poorly-protected transfer of high technology to its European allies' (quoted in Tucker 1991, 113).

After the successful cooperation with the UK and Italy for the Tornado, the German government was also strongly interested in developing a new fighter jet for the 90s (Tucker 1991, 112). Germany needed to replace its F-4 Phantom, overtaken by the technological development of the Soviet Union's air-capabilities, and its armed forces required a single heavy fighter jet to perform both ground-attack and air-superiority (Keohane 2002, 23). The role of Germany in the programme became very important when there were rumours about a possible French withdrawal from the Eurofighter. Indeed, during the negotiations, the German government and defence firms had the common goal to contrast any organizational structure in which France defence firms would have had real or implied project leadership. In this regard, the head of MBB's

Group, Carl Peter Fichtmuller, told to a reporter: 'We are committed to an organization that is based on true partnership. Not only the work must be shared but also the leadership and responsibilities' (quoted in *Aviation Week and Space Technology* 1984, 18). Similarly, according to a Dornier official, 'Dassault had by far the most qualified team in the EFA consortium, but they were not capable of creating an atmosphere in which everyone felt it was our aircraft. It was always a French aircraft' (quoted in Tucker 1991, 115). Indeed, an exclusive French-led programme was unacceptable for Germany, which preferred the establishment of a single joint military programme, based on a substantial division of costs, work-share and transfer of technological know-how. Manfred Wörner, German Defence Minister, in an attempt to break the impasse by restoring France to a position of equality, declared that Germany would only participate to the project if the entire fighter design was new rather than derived from an existing prototype (Moravcsik 1993, 141–142).

After the French decision to withdraw from the EFA consortium, the French Defence Minister Charles Hernu offered to West Germany the possibility to participate in the *Rafale* programme. In July 1985, French and German officials met in Paris to discuss which share of participation in a bilateral programme the French might have offered to the Germans in exchange for their withdrawal from the Eurofighter. Yet, Dassault continued to insist on a disproportionate share of the development work, leading Wörner to publicly complain stating that the French industry's demand for project leadership was 'inconsistent with the concept of partnership' (quoted in Tucker 1991, 115). Indeed, the German government was convinced that continuing to cooperate with British and Italian industries would have given greater guarantees in the acquisition of technological know-how, without surrendering to French industrial interests.

Similar considerations played also a crucial role for the Italian defence industry. Alenia Aeronautica<sup>3</sup> was responsible for the design and construction of the rear fuselage, the construction of the left wing and for maintenance and integration of the propulsive system. Italy's participation in the Eurofighter programme filled its alarming technological gap, which made Italian producers unable to provide innovative and diversified products when compared to international competitors and dangerously increased their dependence on foreign countries for core technologies (Parazzini 2003, 414). Italy was in fact traditionally dependent on US technology in the aerospace sector. The creation of Aeritalia, a joint venture with Fiat in 1969, represented the turning point for the Italian aeronautic industry. Through Aeritalia, Italy joined the Tornado military programme, launched in 1968. Despite Italy's limited participation, the Tornado project had important implications for Italian technological development. Moreover, participation in the Eurofighter consortium had a positive impact on the Italian defence industry's technological expertise, thanks to the parallel development of the fighter's engine. The EJ-2000 engine was designed, built and developed by the Eurojet Turbo GMBK consortium, consisting of Avio (Italy 21%), ITP (Spain 13%), MTU (Germany 33%) and Rolls Royce (UK 33%). For Fiat Avio, this was an opportunity to significantly expand its level of industrial and technological qualification.

Conversely, the development of the Eurofighter's engine was one of the main sources of friction between France and the other European partners. The French engine manufacturer (Snecma) wanted to lead the project despite the resistance of its British counterpart (Rolls Royce). Jacques Benichou, the CEO of Snecma, actively lobbied the French

authorities, emphasizing that both Snecma's survival as well broader French defence-industrial autonomy would be in danger if Rolls Royce became the primary contractor. Indeed, in the early 80s, Rolls Royce enjoyed a dominant position compared to Snecma due to both its participation in international consortia and its ability to operate in the civil sector. Paris' defection from the Eurofighter project reveals also the peculiar aspects of the relationship between state and defence industry in French defence-industrial policy-making. The Dassault Aviation case is emblematic in this regard. Family business-run Dassault Aviation escaped nationalization when the Socialists won the elections in 1981 by selling a significant portion of the company's shares to the French state (20%), while Serge Dassault nonetheless retained the majority in the general assembly. Dassault's monopoly of the aerospace industry therefore forced the DGA to repeatedly back the demands of its leading company in a sector considered strategic to the prestige of the French state. Personal relationships also played a decisive role in this affair. Both Emile Blanc (Director of the DGA) and Serge Dassault were graduates of the *Polytechnique* and the *Nationale Supérieure de l'Aéronautique* and they maintained a close personal relationship. The personal relationships between the DGA leadership and Snecma were even closer. At the end of this affair, Blanc bragged publicly that he had saved Snecma from bankruptcy. In what is unlikely to have been a coincidence, Blanc was named Snecma's managing director the year following France's withdrawal from the Eurofighter (Chambost 2007, 63–73). The government's role in these events remained surprisingly secondary throughout. In 1988, Mitterrand bitterly told an assembly of France's defence elite that the failure of negotiations for a European aircraft was 'largely the fault of [French] industries that were not inclined to reach an agreement' (Guisnel 1990, 218).

### 1.5. The A400M

The possibility of collaboratively procuring a military transport aircraft dates back to 1984, when several European countries, motivated by a shared willingness to renovate their transport capabilities, decided to join together to propose a common European aircraft.

The French Government had been the main supporter of the idea of pursuing a common European military aircraft. The French armed forces considered the tactical transport fleet, which consisted of C-160 Transall and Lockheed C-130 Hercules, inadequate to conduct operations in the post-Cold War scenario. Since the 80s, an operational working group, formed under the joint leadership of the Chief of the Army General Staff and the DGA, financed several studies on the possibility of procuring this type of weapon system. Military needs were reinforced by the pro-European political climate of the late 90s. President of the Republic Chirac and Prime Minister Jospin showed clear willingness to equip the European continent with integrated military tools. In 1998, the St Malo meeting between Chirac and Blair represented the founding stone of the European Security and Defence Policy (ESDP). The A400M was therefore considered the ESDP 'flagship' project, which would create the necessary interoperability to conduct joint military missions among diverse European armed forces (Mawdsley 2013, 19).

However, in order to understand the French commitment to the A400M, we must explore the role played by Airbus as the primary contractor on the project. The EADS was the largest stakeholder in the Airbus military company, with 80% of the equity shares. The EADS countries (France, Germany and Spain) would enjoy most of the technological

return from the project. Indeed, the French defence industry lobbied intensely for involvement in the A400M programme. The management of EADS France used their specialized 'political affairs' department to press the A400M's case. While national MPs were a major target for budgetary reasons, convincing the Ministry of Defence was ultimately more important (Joana and Smith 2006, 80). In other words, relations between the French Government, the DGA and the defence industry were decisive in deciding France's policy in this context. Moreover, the French defence industry was not concerned about competition from other European industries (Joana and Smith 2006, 85). The German defence industry was an integral part of the EADS project, while BAE Systems, France's largest competitor in the construction of fighter jets, was integrated into the Airbus consortium with a minority share.

The German case is interesting in this regard. Since the Defence White Paper of 1994, German armed forces needed to equip their new crisis reaction forces, particularly as equipment for aerial defence was considered insufficient. The highest priority was given to long-range transport capabilities. More precisely, the post-Cold War scenario required greater capabilities for humanitarian or peace keeping missions in remote territories (Hellmann 2006, 138). In order to meet these requirements, the German government initially considered the Antonov AN-70 model produced by a Russo-Ukraine industrial consortium as the best choice to satisfy armed forces' equipment gaps (Joana and Smith 2006, 75). The Russo-Ukrainian model, indeed, had a higher carrying capacity than the European and US counterparts and it had also a lower estimated acquisition cost. However, the preferences of the German defence firms were crucial to explain Berlin's choice to procure the A400M. Indeed, after the integration of its aerospace industry into the Airbus group, the German defence-industrial establishment had a clear interest in developing a project in which its defence firms could act as exclusive prime contractors. Moreover, Germany's defence industry was one of the main supporters of centralizing collaborative projects under a single European armaments organization, in order to mitigate the inefficiencies of previous multinational defence-industrial programmes and to exploit the Airbus leading position in aerospace (Ceccorulli 2008, 159). In this regard, Germany was the largest sponsor of OCCAR<sup>4</sup> and, not coincidentally, its headquarter was established in Bonn.

Italy was also included in the A400M military programme from the beginning. However, in 2001, Silvio Berlusconi's government decided to leave the program for 'technical-operational' reasons. The A400M affair received national and international attention and various interpretations of that decision were put forward. The first concerned the pro-Americanism of a large part of the Berlusconi government. The decision to favour the purchase of the American C130- J over the A400M was the result of the lack of pro-European enthusiasm in Berlusconi's government coalition (Crocì 2005, 12–13). The second explanation emphasized the armed forces' opposition to the programme. Defence Minister Antonio Martino advanced this argument in the Parliamentary hearing on the matter in order to justify the decision to leave the A400M consortium. According to Martino, the new military scenarios and new terrorist threats did not require transport capabilities but rather other competencies, such as aerial defence (Martino 2001, 58–59). Actually, neither of these two explanations are adequate to fully understand the decision-making dilemma of the Italian government in the A400M affair. Despite being an important element in assessing the Italian foreign policy of that period, the supposed pro-Americanism

of the Berlusconi government played a secondary role in the A400M case. Unlike with the Eurofighter, the US government supported the European choice to go ahead with a common European military aircraft. Even within the context of NATO, the EU states' decision regarding the A400M was intended to balance the burdens of the alliance and increase its possibility to intervene in out-of-area conflicts. In addition, the actual decision to buy the American C-130 J was made by the centre-left coalition. With regards to the preferences of the Italian armed forces, in 1996 Italy participated in the drafting of the European Staff Requirement that clarified the main characteristics of the aircraft, considering possible scenarios and missions. It is possible that Italy did not need the aircraft, as declared by the MoD. However, its participation in the first phases of the programme's development and its withdrawal afterwards seem to suggest that Italy was not satisfied with the returns conferred to its defence industry.

In the preliminary discussions, Alenia Aeronautica was in charge of developing the rear fuselage and other minor subsystems. These were technological fields in which Alenia did not need additional expertise or know-how, as it was one of the best industrial players in these particular areas. The 2001 Alenia Aeronautica report confirmed, 'under the simple industrial and technological profile, the program does not play a highly strategic role' (quoted in Patucchi 2001). Moreover, while the A400M was based on a commercial approach, the share of industrial production remained proportional to the orders placed by each of the nations. The industrial return for Italy was small, because it had ordered only 16 aircrafts. In contrast, management of the project was subcontracted to Airbus, meaning that France, Germany and Spain would enjoy most of the technological return. The Italian aerospace industry, on the other hand, would receive virtual leftovers and perceive little significant technological gain (Armani 2001, 69). Even during his hearing in the Italian Parliament, Defence Minister Martino pointed out that the Italian defence industry would have had a secondary role in comparison to other European defence industries (Martino 2001, 58–59). This decision clarifies that the first concern for Italian policy-makers were the relative industrial gains to be had, and that any potential agreement reached would have failed to satisfy Italian industrial interests (Nativi 2001). The government's decision to withdraw from the consortium rested primarily on the evolution of the business negotiations for a prospective joint venture of the defence branch of Finmeccanica. In April 2000, Finmeccanica seemed on the verge of establishing a joint venture with the EADS. In 2001, this prospect receded because of disagreements over financial issues, differences over work-sharing and an overlap in military transport programmes. In order to preserve the relative position of the Italian defence-industrial complex in the global market: 'Finmeccanica could never become an equal partner in a global alliance with EADS or BAE Systems. Only partnerships limited to specific sectors allow real co-decision. Finmeccanica therefore prefers to integrate its subsidiaries into bilateral 50:50 joint ventures' (Schmitt 2000, 155–156).

This is why it is important to underline the differences between larger and smaller market sizes. While France and Germany, principally through Airbus, aimed to develop an integrated industrial strategy that could achieve a primary role in all technological sectors, Italy, with its smaller domestic market, aimed to protect its position in strategic market sectors and to collaborate in those areas with higher technology specialization. The choice of the Italian defence industry was therefore to diversify strategies to protect export market *niches*. In the helicopter and aerospace sector, the alliance with the US for the



development of the C-27 J allowed Italy to build a barrier to the expansionist strategies of Airbus, which would have relegated the Italian industry to a marginal position. Finmeccanica's strategy was also strongly supported by the government. As a former Italian MoD official declared: 'Our priorities were to penetrate in the US and UK markets, mainly because of the Franco-German competition. The Italian government, regardless of its political ideology, openly supported this strategy'.<sup>5</sup> In particular, it is noteworthy that the Italian ambassador to the US, Giovanni Castellaneta, was appointed to Finmeccanica's board in 2003 while also taking charge of the Italian embassy in Washington D.C. Actually, an Italian firm participated in the co-development of some marginal parts of the aircraft. Because of its high technological expertise, Sirio Panel was selected to provide the integrated system in control patients (ICP) for the A400M fleet.

## 2. Conclusions

The increasing cost and technological complexity of armaments, the decline of defence spending and the globalization of weapons production have made defence-industrial cooperation a priority in the European context. However, despite these strong systemic incentives, European countries sometimes decide to cooperate with partners in the development of joint armaments programmes while mostly maintaining national defence procurement programmes. How to explain the persistence of both cooperative and competitive dynamics in the European defence-industrial panorama?

In contrast with both the Realist and Liberal focuses on systemic trends that lead towards greater cooperation, I argue that market size is a crucial variable to explain European preferences towards the joint development of armaments programmes. More precisely, market size suggests that countries with a larger defence-industrial market will be more concerned with maintaining technological capabilities at the domestic level so as to not jeopardise their position in the European arms market. Conversely, countries with a smaller defence-industrial market have an incentive to specialize in limited sectors of the arms market and will be favourably disposed toward cooperation when armaments projects entail a high degree of technological transfer. Therefore, this article aims to integrate the seminal work of Krause on different arms-producing tiers with the peculiarities of the semi-regionalized European defence-industrial market.

I tested the plausibility of this argument on two European aerospace projects, to investigate the factors that have driven French, German and Italian defence-industrial actors' preferences towards armaments (non)cooperation. The case studies confirm my hypotheses. Indeed, in the case of the Eurofighter, the French defence industry was concerned about its relative position in the European market and about a potentially dangerous transfer of technology to their regional competitors. By contrast, in Italy, the defence industry was in favour of the project, which it viewed as an opportunity to acquire technological know-how and reinforce its position in the European market. The A400M, on the other hand, created the opposite scenario. France was in favour of the programme, both because of the low transfer of technology entailed by the leading position of Airbus in the project's work-share. Italy, on the other hand, was worried that the Franco-German industrial axis could assume a leading position in the aerospace sector at the expense of the Italian industry. The Italian defence-industrial actors therefore preferred to find other partners (the US) in order to preserve Finmeccanica's comparative advantage in some

sectors of the market. The German case is very interesting: in the case of Eurofighter, Germany preferred to cooperate because its firms needed technological know-how. More precisely, the German government and industries were even more encouraged to collaborate because France withdrawn from the project and therefore they had the possibility to play a greater role in the project and to benefit from a significant transfer of technology from British prime contractors. In the case of the A400M, Germany cooperated, because, like France and unlike Italy, it had a clear interest in supporting Airbus as the unique prime contractor. This may be well explained by the fact that Germany was a second-tier arms producer in the 80s, but a European first-tier arms producer at the end of the 90s.

Besides its theoretical and empirical contribution, this article has also important political implications. Specifically, it shows that systemic incentives may not be enough to promote a more collaborative defence-industrial panorama. Intra-European comparative differences require greater consideration in this policy-domain, which is characterised by a complex balance between cooperation and competition. In future research endeavours, it would be interesting to test this argument also for current and future European armaments programmes. In 2019 France and Germany signed an agreement to develop the Future Combat Air System (FCAS) program, which covers both manned and unmanned aircraft. Even in this case, European countries were not able to develop a joint European procurement strategy, given that Italy and the UK (among others) are co-developing the F-35 with US industry and the UK (with the participation of Italy and Sweden) is leading a project for a sixth-generation fighter jet (the Tempest). Overall, Increasing the number of case studies and further investigating the ways in which defence firms in different domestic market sizes are responding to European and global arms market dynamics might significantly increase our understanding of the rapidly changing European defence-industrial panorama.

## Notes

1. In 2016, Finmeccanica changed its name to Leonardo.
2. With the partial exception of Airbus in which the German government owns roughly the 12% of the company's shares.
3. Alenia Aeronautica was created in 1990 by the merger of Aeritalia and Selenia. In 1996 it was re-named Alenia Aerospace and in 2000 Alenia Aeronautica.
4. From the french 'Organisation conjointe de coopération en matière d'armement'.
5. Interview with a former Italian MoD's official 03/10/2016.

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