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Making sense of European armaments policies: A liberal intergovernmentalist research agenda

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ABSTRACT

The European defense-industrial panorama is rapidly changing. Among all the initiatives conducted, the European Defense Fund (EDF) and the Permanent Structured Cooperation (PeSCo) in defense can be easily considered as proof of a revived interest in defense-industrial cooperation. Given this European activism, it is not surprising that the academic literature has focused on the main actors and the main strategic and economic drivers that have spurred European defense-industrial cooperation. However, the scholarly literature on the topic has erroneously over-emphasized the cooperative elements, while underestimating the peculiarities of a policy-field which remains characterized by both cooperative and competitive dynamics. Indeed, notwithstanding the presence of stable alliances, common regulations in defense procurement and a number of transnational business groups, the European defense-industrial field remains also fragmented in terms of both supply and demand. The article has two goals: first, it proposes a Liberal-Intergovernmentalist research agenda to explain the complex mix of cooperation and competition in this policy-field. Second, it aims to reflect on methodological issues in studying European armaments policies. Overall, the article wants to stimulate a constructive discussion, both from a theoretical and a methodological point of view, on a peculiar policy area that acts as an interface of industrial, technological and defense policies and lies at the intersection of International Relations (IR) traditional distinction between low and high politics.

Introduction

From 2016 to 2019, defense-industrial cooperation was at the center of the European public debate. Following the publication of the European Union (EU) Global Strategy in 2016,[1] the European Commission launched a European Defense Fund (EDF), to incentivize cooperation on defense capabilities development and acquisition.[2] Likewise, EU countries, under the impetus of the Franco-German political leadership, have relaunched the Permanent Structured Cooperation (PeSCo) in the defense sector, a binding framework of cooperation that allows member states to develop joint defense capabilities, to invest in shared projects and to strengthen the operational preparation of armed forces. These incentives, both from the financial and strategic-operational point of view, represent important turning points to develop the long-term plan of a "strategically autonomous" European Union.[3]

Given this European activism, it is not surprising that the academic literature has focused on the main actors and the main strategic and economic drivers that have spurred European defense-industrial cooperation. However, the scholarly literature on the topic has erroneously over-emphasized the cooperative elements, while underestimating the peculiarities of a policy-field

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which remains characterized by both cooperative and competitive dynamics. Indeed, notwithstanding the presence of stable alliances, common regulations in defense procurement and a number of transnational business groups, the European defense-industrial field remains fragmented in terms of both supply and demand. In light of these considerations, the article has two goals: first, it proposes a Liberal-Intergovernmentalist research agenda to explain the complex mix of cooperation and competition in this policy-field. Second, it aims also to reflect on methodological issues in analyzing the European defense-industrial panorama. In this regard, I argue that combining process-tracing with semi-structured interviews can help to investigate recent developments in European armaments policies.

The article gives three contributions to the academic literature on the topic. First, from a theoretical point of view, I argue that a research agenda inspired by the Liberal-Intergovernmentalist approach and, specifically, by the focus on domestic preferences and on European countries' relative power, helps to explain EU defense-industrial cooperative and competitive dynamics. Second, the article also focuses on the methodological aspects in investigating European armaments policies. The sensitivity and strategic importance of these issues for national governments and European institutions create a series of critical issues for researchers. Third, from an empirical point of view, investigating the industrial aspects of defense cooperation has important implications for the more general EU role in international affairs. The increase in costs for the production of armaments and their technological complexity make cooperation in this sector indispensable to sustain a competitive European defense industrial and technological base. More broadly, any discussion on European defense cannot ignore the defense-industrial aspects, given the inextricable link between economic wealth, production of weapons and military power. Overall, the article wants to stimulate a constructive discussion, both from a theoretical and a methodological point of view, on a peculiar policy area that acts as an interface of industrial, technological and defense policies and lies at the intersection of International Relations (IR) traditional distinction between low and high politics.

The article is structured as follows: in the first section, I will describe the main changes in the defense-industrial field since the 80s and the importance of this sector both from a military and from an economic point of view. In the second section, I will focus on how academic literature has explained these changes and how to develop new theoretical and conceptual tools to address these transformations. In the third section, I will highlight some methodological challenges related to the study of the defense-industrial sector. Finally, I will summarize the main arguments of the article and I will discuss some potentially fruitful research avenues for future works in this field.

A changing European defense-industrial panorama

The industrial production of armaments has always been defined as a strategic area for the independence and "prestige" of the nation-state. The sociologist Anthony Giddens noted that even before the emergence of nationalism, "it was war, and preparations for war, that provided the most potent energizing stimulus for the concentration of administrative resources and fiscal reorganization, consolidating state power and establishing its bureaucratic and territorial form that endures to this day".[4] As such, weapons production has been considered as the basis of national independence and for advancing state's interests. Therefore, arms-related procurement assumes peculiar characteristics that sets it aside from other economic and industrial sectors. National states, by holding the monopoly of force, are the only legal subjects authorized to buy war materials. The state is also the regulator of the defense industry because, through the legislation, controls and constraints the activities of the firms settled in its own national boundaries.[5] At the same time, the high financial, technological and knowledge-based entry barriers of the defense-industrial sector create an oligopolistic structure of the supply panorama, in which few firms in the market maintain a special relationship with the state. The defense sector is not a

perfectly competitive market, but rather a market characterized by *monopsony*, namely for the presence of a single buyer (the state).

However, in the 80s, the transformation and globalization of arms production challenged the European defense-industrial panorama, obliging policy-makers to acknowledge the futility of pursuing defense-industrial autonomy.[6] Four points deserve further attention in this regard.

First, armaments production is burdened by a constant and nearly inexorable rise in costs from one generation of weapon to another. Adam Smith once described this phenomenon as the "law of the increasing cost of war".[7] Similarly, with his "First Law of Impending Doom", Norman Augustine, former president of the Lockheed Martin Corporation, claimed in 1983 that if the current rate of cost increases in weapon systems would have continued, it would have soon consumed the entire US defense budget.[8] In the late 70s and early 80s, the advent of the "Revolution in Military Affairs" (RMA) has made this trend even more marked.[9] The diffusion of information and communication technology in the military field, stemming from the RMA, is further changing the defense-industrial business. The costs of new defense systems, such as, for instance, Unmanned Aerial Vehicles (UAVs), have risen so steeply that perhaps only the US can contemplate producing and buying all the latest military technologies.[10] The increase in costs in the production of weapons systems is certainly linked to the increasingly complexity of military technology. As recently highlighted by Andrea and Mauro Gilli, in the 1930s, a combat aircraft consisted of hundreds of components, a number that surged into the tens of thousands in the 1950s and to 300,000 in the 2010s. In other words, advancements in electronics, engineering, and material sciences have resulted in the components of major weapon systems becoming dramatically more sophisticated, leading military platforms to become "systems of systems".[11]

Second, budgetary pressures have massively impacted on European countries' defense-industrial activities. Several studies have analyzed data on European defense budgets, highlighting how, from the 80 s, they are experiencing a consistent contraction.[12] In the last decade, EU countries have reduced defense spending by almost 12% in real terms.[13] At present, the 28 member states spend a little over 1,34% of the total gross domestic product in defense. Without the United Kingdom, the rate would fall to 1.32%. Even if, according to 2016 data, European military spending increased by 5,7% in 2016 compared to the spending of the previous ten years, there are large differences within European countries. Military spending in Western Europe decreased by 6,2%, military spending in Central Europe increased by 4,2% and military spending in Eastern Europe increased by 78% between 2007 and 2016.[14] Moreover, most EU countries are increasingly under pressure, given that the US administration constantly emphasizes the negative effects of limited EU defense spending in the context of NATO. In this regard, at their 2014 Wales Summit, NATO governments agreed for the first time to specific defense spending guidelines. Beyond allies aiming to spend 2% of GDP on defense, they also agreed to allocate 20% of that defense spending to equipment modernization.[15]

Third, the combination of increasing arms' production costs, technological complexity and declining defense budgets across Europe, forced defense firms to restructure their governance structures and business strategies, as well as to embark in a process of privatization and internationalization of their industrial and financial activities. In particular, to compensate for the difficulties of producing sophisticated weapons in an exclusive domestic setting, arms producers were constrained to globalize their supply chains, obtaining components from a range of foreign suppliers.[16] As a consequence, a series of mergers and acquisitions have brought to the formation of a limited number of transnational defense corporations, especially in the aerospace, missile and defense-electronics sectors. In Europe, the gradual breakdown of national defense-industrial ownership patterns has led to the current defense-industrial panorama, built around four major groups - Airbus, BAE Systems, Leonardo and Thales - which have business interests in various European countries and compete in the global market with the US military corporations.[17]

Fourth, European governments attempted to improve the efficiency of defense-industrial cooperation through the creation of several armaments organizations, both within and outside the EU institutional context.[18] This process of institutionalization culminated in the creation of the European Defense Agency (EDA) in 2004, in order to promote standardization of procedures in armaments acquisition and, in general, to support EU member states in their effort to improve defense capabilities. At the supranational level, the European Commission's "defense package" has led to the adoption of two directives (2009/43EC and 2009/81/EC) which harmonize export control systems for intra-EU trade in defense equipment and provide procurement rules for defense and security markets. One of the most notable recent announcements is the EDF, which will consist of a research and a capability window. Contributions for these windows will mainly come from EU member states, but the program itself will co-finance part of the development costs. The windows will initially cover the years 2019–20, with a budget of €500 M ($563 M) spread over these two years. EU funds could support up to 10% of the costs of projects in developmental phases, but up to 20% for prototype costs.[19] On February 20, 2019, the draft of the European Commission was approved by the Council of the European Union and the European Parliament. In the next budgetary cycle, after 2020, the FED windows will provide €13B euros ($14.644B): €4.1B ($4.618B) will be allocated to research, while €8.9B ($10.025B) will co-finance capability-building initiatives. Additionally, the Coordinated Annual Review on Defense (CARD) is meant to institutionalize a systematic exchange among member states to help identify and close gaps in military resources. The last of these initiatives was the re-launch of PeSCo in late 2017. Unlike previous proposals to strengthen EU defense cooperation, PeSCo comes with regular assessments to make sure countries are hitting their pledged goals for investments in capability or capacity. Besides the regular assessment of these commitments, PeSCo will also house a number of concrete projects designed to sustain European capability development.

Cooperation and competition in the European defense-industrial panorama

Given these just mentioned developments in the European defense-industrial panorama, different approaches, rooted in different theoretical traditions, have advanced distinct explanations to "capture" these new dynamics.

Traditionally, the Realist approach in IR has been skeptical about the possibility of defense-industrial cooperation. Sovereign states are likely to pursue defense-industrial autonomy because the international system is anarchic and the future behavior of allies is unpredictable. Despite the European integration process is increasingly expanding in a number of economic and industrial sectors, the principle of national sovereignty will remain the member states' fundamental prerogative in defense-industrial issues.[20] However, another stand of Realist research has focused on European defense-industrial cooperation as a strategic move to "balance" the US' overwhelming political and military power and to create an autonomous EU defense stance at the international level.[21] According to this research strand, the development of a EU security and defense dimension has also generated incentives for a more structured defense-industrial policy, also to counterbalance the US influence in NATO.[22]

Given the now global nature of armament production, the Liberal approach, on the contrary, has mostly focused on how powerful transnational defense industries are transforming the traditionally protected defense markets and on how they are lobbying for more cooperation at the European level, in order to attract new funds for technologies and new markets for export activities.[23]. Britz, for instance, argues that Europeanization of armaments policy can be best explained as a process of "marketization", namely a convergence in national policies around liberal norms like privatization, cost-effective defense procurement and open defense markets.[24] Along these lines, Hoeffler noted a substantial convergence between governments and industries' preferences to promote market-oriented privatization and liberalization at the European level. In other words, she surmises that "arms

producing countries have promoted market-oriented procurement and liberalization at the European level as industrial strategies intended to support national and European firms".[25]

Finally, a number of scholars have focused on European institutions as the main driving force of defense-industrial cooperation. More specifically, scholars have highlighted the role of the European Commission as a "policy entrepreneur" in the defense-industrial policy domain.[26] Guay, for instance, argued that since the 1990s, the European Commission has played a growing role in the shaping of the defense market. According to the author, therefore, this can be conceptualized as a logical spillover effect, for which the European Commission's policy actions in one industrial area necessarily leads in time to a spillover in a different, but related, industrial sector.[27] More recently, Weiss and Blauberger (2016) have highlighted how the European Commission has intimidated the member states with the threat of the European Court of Justice (ECJ)—driven integration in the defense-industrial market. The Commission was able to cajole member states into accepting EU law through a dual process of "judicialized law-making" and "opportunistic enforcement".[28]

However, the recent literature on the European defense-industrial panorama tends to overestimate the cooperative patterns and, consequently, to underestimate the persistence of competition in this policy field. Indeed, weapons market liberalization has not been uniform and it has followed peculiar sequence of development across armaments segments. For instance, privatization has been wider in aerospace and defense electronics, while it has remained very limited in the naval and land sectors. Furthermore, several incongruences persist among European countries on how they have developed defense companies' governance structures.[29] If there have been countries that have completely privatized their defense industries (UK, Germany), other countries started this process much later and with a different magnitude (France, Italy). As regards the supposed trend towards a more structured defense-industrial cooperation in Europe, broader generalizations should be taken "with a pinch of salt". A study on the EU Commission Directive's 2009/81/CE implementation indicates that 80–90% of contracts continued to be awarded domestically.[30] For what concerns armaments programs, the problem of *juste retour*, which guarantee that a national defense industry must receive work worth the full amount of its government's financial contribution to a cooperative program, continue to the biggest obstacle to smoother cooperation on joint European projects.[31] The main problem remains the duplication among platforms and weapon systems currently in use and in production in Europe. In 2017, while the US used a total of 30 types of major weapon systems, EU members used 178, presenting major logistic challenges from training to spare parts and interoperability. For instance, in order to improve air-power capabilities, European states have produced three different multi-role combat aircraft, the Rafale (France), the Gripen (Sweden) and the multinational Eurofighter (Germany, Italy, Spain and the UK). Moreover, in 2019 France and Germany have signed an agreement to develop the Future Combat Air System (FCAS) program, which covers both manned and unmanned aircraft and it is designed to replace French Rafale fighters and Eurofighters currently flown by Germany. Even in this case, the European defense-industrial panorama has not been able to develop an integrated procurement strategy, given that Italy and the UK (among others) are co-developing the Lockheed Martin F-35 with US industry. In recent years there has also been a growing market competition between US and the EU firms. In 2017, the US accounted for the 34% of global arms transfer, confirming itself as the first arms exporter in the world.[32] Moreover, both EU and US governments and industries have to take into account market competition from strategic competitors such as Russia, as recently shown by Russian S-400 anti-aircraft missile system sale to an important NATO member as Turkey.

A liberal intergovernmentalist research agenda

The Liberal Intergovernmentalist approach has been originally designed to explain the major turning points in the history of EU integration, especially relating to the treaties' negotiations.[33] Liberal Intergovernmentalism is based on three main theoretical assumptions. First of all, national

governments are ultimately the most important actors steering the direction of the EU integration. Second, economic interests play a central role in determining national governments preferences. Third, relative power between governments is a key variable to understand how they have been developed political and institutional configurations of the EU. Following these assumptions, the Liberal Intergovernmentalist approach proposes a two stages research design.[34] In the first stage, researchers need to identify, through the tools provided by the comparative politics discipline, the domestic actors that are able to influence state's preferences. National preferences result from a domestic process of preference formation and are oriented towards increasing (and possibly maximizing) national welfare in the issue-area at hand. In the second step, given different cross-national preferences, the LI focuses on bargaining outcomes as a function of the distribution of interests and capabilities. In this regard, governments bargain with their peers to resolve distributional conflicts among competing domestic preferences.[35] Moravcsik specifically applied this framework to explain patterns of cooperation and non-cooperation in the development of European joint armaments programs. According to Moravcsik, defense firms' preferences are the key independent variable to explain why sometimes European countries decide to cooperate with their partners and while in other instances they decide to refrain from acting cooperatively. If the defense industry in a given country favors a cooperative effort, the government, in order to maintain the support of its domestic constituency, will be encouraged to cooperate and vice versa.[36] In other words, defense firms, thanks to their privileged relationship with the state, are able to convince political and bureaucratic actors to work collaboratively only when this collaboration can bring them industrial or technological benefits.

However, Moravcsik's argument on the European defense-industrial field, suffers from a crucial weakness. Indeed, the LI framework lacks a clear conceptual framework that takes into account the possibility of cross-case variation. Indeed, according to the LI, powerful domestic groups' preferences always determine why the state prefer to cooperate or not to cooperate in defense-industrial endeavors. In this regard, the LI model is interest-centric because it argues that the pursuit of "international objectives" depends meaningfully on domestic politics and economics.[37] If, for instance, firms' preferences are similar and the outcome is different, something must have happened in the bargaining process. Yet, armaments cooperation is permeated by both security and economic considerations. defense firms' interests are just one of the factors that deserve attention in analyzing states' preferences in this policy-domain. Other research efforts on the topic, for instance, have already highlighted how European governments and firms have often different economic, industrial and military preferences towards defense-industrial cooperation.[38] In other words, the impact of defense firms' preferences is mediated by their ability to influence the political sphere and, consequently, by the type of legal, administrative and institutional system in which they are embedded. There are institutional systems in which they have a greater ability to influence the decision-making process and other systems in which they do not possess a comparable ability. More broadly, this approach does not pay sufficiently attention to the complex relation between the state and the industry in the defense-industrial sector. Different institutional settings and different modes to organize state-industry relations crucially affect European countries' preferences in the defense-industrial field.

Given these considerations, I proposed to study whether the public or private governance of the industrial suppliers could account for when, why and how EU countries sometimes prefer to cooperate or not to cooperate in defense-industrial endeavors. Governance structures are the general rules that delineate how industries should be organized and manifested both in law and through informal institutional practices. Characterizing state-defense firms relations in terms of governance therefore provides a solid starting point for studies which explicitly integrate the political and economic dimensions of a strategic industrial field.[39] Drawing on comparative politics research, I derived three fundamental properties of state-defense industry relations: (a) the degree of protection by the government; (b) the degree of interpenetration between public and private

Table 1. How different governance settings of defense firms impact on state-defense industry relations.

	Public Governance Ecosystems	Private Governance Ecosystems
Degree of Protection by the Government	High	Low
Degree of Interpenetration between Public and Private Sector Elite Networks	Strong formal and informal networks between government and suppliers	Distant—little government role in internal workings of suppliers and vice versa
Status and autonomy of the Procurement Agency from Defense Industry's influence	Strong and dependent from its relations with defense industry	Independent Agency. Strength vis—à—vis defense industry

sectors elite network; and (c) the status and autonomy of the procurement agency from the defense industry's influence. Through these three properties, it is possible to compare different types of defense-industrial ecosystems and to analyze the degree of influence that corporate actors have over defense-industrial policy making. In this regard, I argued that in public governance ecosystems, arms industries are able to "capture" the state's decision-making processes to their own advantages. In private governance ecosystems, the state is relatively autonomous from defense industry's influence and able to pursue larger macro-economic and military benefits at the European level (Table 1).

However, after having identified domestic preferences, the LI model argues that the outcomes of negotiations reflect the intergovernmental constellation of bargaining power.[40] In this regard, in order to shed light on the second step of the LI approach, I argue that relative gains considerations are particularly important in the European defense-industrial panorama. Previous research has highlighted how states are more likely to overlook relative losses for the sake of absolute gains in the economic domain than in the security field.[41] Defense-industrial cooperation is a difficult case to handle with, because it is a policy area that acts as an interface of industrial, technological and defense policies. Intra-European relative gains decisively impact on European member states' preferences towards cooperation or non-cooperation. Defense firms tend to be concerned with their relative position in world markets—and thus with relative gains consideration, in terms of market position, from collaboration.[42] For instance, in the defense-industrial sector, states are hesitant in sharing defense technologies which have been developed with national resources and, at the same time, defense firms need to consider how technological transfer could strengthen rivals' position in the global market. Although all partners should theoretically profit from a well-managed collaborative project, the frequently uneven distribution of gains within a project provides rival firms with powerful incentives to pursue relative gains to their partners.[43] Some studies have already pointed out that collaboration in defense-industrial issues implies that actors have a mixture of common and conflicting interests: a mutual desire to combine their resources synergistically to increase absolute gains, yet divergent interests when deciding how the joint benefits from cooperation can be divided among them.[44]

Given space constraints, in the next section I will briefly present some previous scholarly works that have pointed out the importance of considering domestic preferences and the relative power of states in shaping collaborative European defense-industrial programs.

European defense-industrial cooperation

European defense-industrial cooperation has been driven to a large extent by big bilateral or multilateral armaments projects, which led to the development of a series of European armaments systems. The Tornado was the first non-bilateral program enacted by Europeans and the complexity of the project required an unprecedented negotiation to compromise the military and industrial needs of the participating countries. By 1968, four European countries signed an agreement to jointly develop an aircraft, and in 1969 Italy, West Germany, and the UK, inaugurated

the Multi-Role Combat Aircraft (MRCA) project, which was later re-named Tornado. Initially, France was also involved, but, given its willingness to have the leadership of the project, it decided to leave the consortium and develop an autonomous aircraft project.[45] In fact, intra-European rivalries have made the negotiations for the co-development of this project particularly complicated. On the one hand, French defense firms were concerned that a collaboration with British Aircraft Corporation (BAC) and Rolls Royce could have threatened their leadership position in the European defense-industrial market and that this would have relegated French industries in a more marginal position.[46] On the other hand, British industries were also initially opposed to cooperation. Specifically, In the 60s, the BAC attempted to convince the British government to finance an indigenous United Kingdom Variable Geometry (UKVG) aircraft.[47] Therefore, being able to find a compromise between the different needs of the governments and different preferences of the defense industries involved in cooperative endeavors has been from the beginning as the major obstacle for an efficient European defense industrial cooperation.

Similar issues were at stake for the development of the Eurofighter. The genesis of the Eurofighter can be traced back to the end of the 70s. In that period, there was in fact a common military requirement to improve European countries' aerial capabilities, primarily in order to counter the Soviet high-tech equipped fighter jets, such as the Mig-29 Fulcrum and the Su-27 Flanker. However, notwithstanding both Mitterrand and Giscard d'Estaing were enthusiastic about developing a truly European combat fighter, French defense firms strongly opposed any possibility of cooperation at the European level and extensively engaged in lobbying activities towards the French political establishment to promote a wholly "blue, white and red" project. In particular, Dassault Aviation was strongly interested to develop a domestic-based combat fighter, as it was the only French company to possess the technological skills to embark on a similar project.[48]

Intra-European rivalries were also at the center of the stage in the development of one of the most recent examples of the ambiguous results of multilateral defense cooperation: the A400M. This military transporter aircraft was considered to be a "flagship" European collaborative project and it was endorsed at the end of the 90s by the United Kingdom, France, Germany, Spain, Belgium, Luxembourg, Turkey, Italy and Portugal.[49] However, industrial rivalries led Italy to defect after its participation to the preliminary negotiations of the program.[50] Moreover, intra-European rivalries have also caused serious problems and delays in production. Overall, collaborating in defense-industrial issues is difficult because collaborative armaments programs are often product complex decisions made by actors with different preferences. For instance, if national governments compromise on strategic operational requirement, the result will be a product that cannot fully meet any participant's peculiar military needs.[51] Furthermore, national governments should balance military, industrial and economic considerations when they decide to embark in European defense-industrial cooperation. First, they need to take into account armed forces' military requirements. Overall, the priority for armed forces is to have the best possible military equipment for the development of their strategic and operational capabilities. It does not matter if military equipment is developed domestically, in cooperation with other partners or directly purchased from a third country. Actually, according to previous literature on the topic, armed forces have often preferred to import arms from foreign partners, rather than produce them in a domestic setting or through European co-development agreements.[52] Importing weaponry has the advantage that mature products can be comparatively tested, while domestic acquisition or co-development entails committing a state to lengthy and uncertain process of developing new products.[53] Second, governments should also take into account budget constraints and, ideally, they will be more inclined to reduce weapons' costs or—at least—to invoke economic efficiency in defense-industrial policies. However, in complex armaments programs, national governments have also to take into considerations the preferences of their defense firms. Ideally, firms prefer defense-industrial policies that protect domestic markets from foreign competition, while simultaneously promote arms exports abroad. Indeed, in arms manufacturing, defense firms uniformly

preferred national projects, in order to maintain technological and industrial capabilities, to prevent potential rival corporations from acquiring additional technology and to win more lucrative export contracts for their defense products. For these reasons, defense firms consistently tried to persuade governments to develop weapon programs at the domestic level.[54] If, for financial or technological reasons, it is not possible to develop domestic projects, firms prefer some forms of international cartels or consortium arrangements that guarantee them a share of the production work.[55] Recent analyses have also noted how often, in the European context, defense firms have contradictory preferences. On the one hand, they frequently called for greater political cooperation at the EU level in order to face declining defense budgets and competition with extra-EU firms in the global market. On the other hand, defense firms aim also to maintain privileged relations with their domestic political counterparts, in order to benefit from the protection via offsets, subsidies or guaranteed purchasing by national governments, making them fearful of potential supply-chain disruption and unfettered forces of competition.[56]

To further complicate this picture, in European defense-industrial endeavors, governments and firms have to engage in complex intergovernmental bargaining. This perfectly suits with the LI model, that holds that intergovernmental "negotiations" can be viewed as a cooperative game in which the level of cooperation reflects the patterns in the preferences of national governments.[57] According to Tucker for instance, when the disparity between two defense firms in industrial and technological capabilities is large, positional concerns play a relatively minor role and welfare concerns predominate, giving to the larger defense firm a strong incentive to collaborate. As the disparity diminishes, however, positional concerns become more prominent and reduce the stronger player's incentive to collaborate.[58] Drawing on this research strand, I highlighted how relative gains were crucial to explain British, French and Italian preferences towards four cooperative armaments programs: Tornado, Eurofighter, NH90 and A400M. More specifically, in the case of the Tornado and Eurofighter, French defense firms were concerned that a potential European collaboration could have favored British firms and would have relegated them to a marginal position. Moreover, especially in the case of the Tornado, industrial considerations were combined with political motivations, given that the penetration of British industries into the European market was seen as a way to alter the intra-European regional balance of power. In the case of the A400M, despite the strategic role of this weapon system for the development of a European security and defense policy, the Italian government preferred not to cooperate. This is because the Franco-German industrial conglomerate (Airbus) would have enjoyed most of the technological return and Italian industries would have been relegated in a marginal position at the European level.[59] In a recent work, Fiott has extensively drawn on LI to highlight how in the defense sector, the traditional economics may be intersect with consideration of national sovereignty, politico-military strategy and geopolitics like no other policy domain. Moreover, focusing on the intergovernmental negotiations to establish the EDA and on the European Commission's initiative "Defense Package", Fiott has shown how the bargaining phase has been decisive in explaining outcomes at the European level, especially for what concerns the role of negotiation and coalition formation strategies.[60]

To sum-up, a LI research agenda may well shed light on the cooperative and conflictual dynamics that characterize the European defense-industrial panorama, as well as it permits to disentangle the complex process of defense-industrial decision-making. In the conclusions, I will highlight how to extend these research trajectories. First, however, a careful methodological reflection is needed on how to investigate the defense-industrial landscape, especially given the difficulty in data gathering and the lack of transparency that has always characterized this sector.

How to investigate European armaments policies: Methodological concerns

After having presented a Liberal Intergovernmentalist research agenda to address the complexity of the European defense-industrial panorama, it is necessary to reflect on how to operationalize

this theoretical trajectory. More specifically, the goal of this section is to specify some of the problems that a researcher might encounter during his/her research, especially as it regards to data collection and the method to be used to gain evidences in the defense-industrial sector. Indeed, in any research project on defense-related issues an essential methodological problem quickly emerges: the access to data and documents. Defense policy, including its industrial dimension, is less transparent than other policy areas due to its intimate connection to national security and because of proprietary information and industry competition. Scholars and experts in this field have therefore often used a mix of quantitative and qualitative elements to conduct their research.

Quantitative methods have long played an important role in military research. This is particularly due to the influence of the US think tanks during the Cold War (for instance the RAND Corporation), which produced statistical analyses on national security issues, especially with regard to military capabilities and conflict analysis.[61] Even today, some fields of military research, such as civil war research, have remained predominantly quantitative in orientation. Popular sources, such as the Uppsala Conflict Data Program (which records data on armed conflicts) or the Correlates of War Project (which records data that may influence the outbreak of war) are considered the main datasets to conduct comparative research in the military field. Similarly, the Composite Indicator of National Capability (CINC), which combines data on military spending, troops, population, iron and steel production, has been used as proxy to measure different countries' economic and military assets.

However, using these existing datasets still generates a number of problems. Mawdsley (2016), in analyzing the Military Expenditure data (MILEX), noted that military expenditure reports vary on cross-national level, given that various countries use different indicators to measure their expenditures. Moreover, when overall military spending is broken down into sub-categories such as defense procurement or military research spending, differences between the way governments report accumulate. As regards the industrial production of weapons, there are several data points that are frequently used by researchers. On the one hand, there are international institutions such as the Organization for Economic Cooperation and Development (OECD), NATO and the EDA, that collect different data on defense-industrial issues. On the other hand, there are authoritative independent research institutes such as the International Institute for Strategic Studies (IISS) and the Stockholm International Peace Research Institute (SIPRI) who provide quantitative indicators on defense spending. Particularly important, as regards defense industries, is data published by SIPRI every year on top 100 arms producing and military services companies. Yet, exclusively relying on these sources can be risky for two reasons: first, this data is often inconsistent with each other, and uses a plethora of different variables of the composition of military expenditure or arms transfer. Second, data sets are often incomplete. In this regard, the numbers produced by the EDA are a case in point. Since 2012 it has not been possible to have a comprehensive picture of the total member states' expenditure on collaborative (including European collaboration) defense equipment procurement and R&T projects and programs, as several European member states were not in a position to provide these data.

Obviously, the choice of the method to be used and the sources and data to be consulted depends on the research questions that inform the research project. In the case of my previous research on the domestic determinants of European defense-industrial cooperation, I focused on the development of a small number of detailed qualitative case-studies. In regard to the research technique, I employed the method of historic process-tracing, to explore European countries decisions about whether or not to collaborate in defense-industrial activities.[62] Process-tracing aims to identify the intervening causal process—the causal chain and causal mechanisms—between an independent variable (or variables) and the outcome of the dependent variable. Recently, in the political economy literature the question of method is becoming of utmost importance, highlighting some of the weaknesses of the process tracing technique in comparative political economy

research designs.[63] Specifically, the main problem is to infer real actors' preferences, given that national governments and defense firms are often engaged in strategic contexts that provide incentives to misrepresent them. In this case, there is often the risk of "circularity", by inferring preferences separately from the behavioral choices that these preferences are supposed to explain. In order to overcome these challenges the only option is to infer preferences from an actor's earlier rhetoric and actions and use these to explain subsequent behavior, while also investigating the possibility that preferences may change over time through learning or other processes.

Despite these problems, process tracing helps to address some of the limits of the comparative method. The possible presence of "equifinality"—multiple paths to the same outcome—could threaten inferences based on comparisons of small numbers of cases. Process tracing can address this shortcoming by affirming particular paths as viable explanations in individual cases, even if the paths differ from one case to another. Process tracing on the independent variable that differs between the two cases can help determine if either or both help explain the differing outcomes in the two cases.[64] Moreover, through the process-tracing technique it is possible to investigate the alternative causal pathways through which the outcome of interest might have occurred. This method is suited for taking into account counterfactual reasoning. Indeed, it is important to examine process-tracing evidence not only on the hypotheses of interest, but also on alternative hypotheses that other scholars and policy experts have proposed.

Process-tracing generally entails an appropriate combination of primary and secondary sources, participant observation and document analysis.[65] For what concerns primary sources, other reflections on military-related research have highlighted the problem of access to internal documents, the so-called gray literature.[66] As emphasized by Mawdsley, for any military research working on recent or contemporary topics access to relevant government documents is likely to be heavily restricted.[67] In my case, given the comparative design of the research (based on France, Germany, Italy and the UK), a further difficulty was that of accessing documents in several countries, each with their own rules in terms of procedures and regulations. Access to parliamentary documents on defense-industrial decision-making was particularly difficult in the Italian and French cases, while in the UK and Germany the process of acquisition and development of armaments are scrutinized by parliaments and the documents are made public by national authorities. In order to overcome these barriers for data collection, I heavily relied on well-informed specialist magazines on military issues. Among them, the Jane's Defense Weekly, Defense News and Flight International have helped me reconstruct the decision-making process that characterizes my case studies. Specialized works produced by think thanks are a further good source of information in this context.

A separate consideration deserves another type of widely used source in military research, such as the military memoirs. Military memoirs have been written since ancient times [68] and represent an important source of information in historical process tracing. However, these sources do provide some methodological challenges. As emphasized by Kleinreesink and Soeters, "one might wonder about the 'truth' of these autobiographies and whether their content is affected by the fact that these books are prone to official censorship by the military in order to preserve national security".[69] We need to treat the military memoirs not as source of objective historical data, but instead as a rich source of socially constructed data. In this regard, it is crucial that the researcher cross-checks military memoirs with official documents and other primary sources.

Finally, qualitative interviews are a highly valuable information gathering resources. As Deschaux-Beaume argues, qualitative interviews can serve two purposes: obtaining first-hand information to the extent that most of the time the researcher does not have an extensive access to the gray literature or internal documents he or she would need, and having access to military actors in a research context where secrecy and the very specific military language constitute an issue for the analyst.[70] During the process of data collection for my research, I conducted several semi-structured interviews with representatives of the Ministries of Defense and military

companies in order to reconstruct the decision-making process of collaborative defense-industrial activities. As a first step, thus, I created a contact list. After a preliminary assessment, I interviewed the respondents and, according to the snowball technique I asked them to give me names of other people whom they thought of being potentially interested or involved in the armaments programs' decision-making. In this way, I set out to have a representative sample of individuals working in different defense ministries and industrial partners. I opted for a multiplication of interviews at different levels of the decision-making process (from the high-ranking officers and diplomats down to the executive actors) so as to avoid a unilateral and official discourse and to cross reference or check the collected data and sources.[71] In this regard, I interviewed a diverse group of people levels, each with their own interpretations, it helped me to produce a rich and holistic perspective. Furthermore, archived meeting minutes, parliamentary reports and paper articles were used as complementary resources for triangulation. This combination is believed to limit key informant bias.

As for the contents of the interviews, they were all semi-structured. For each interview, I relied on an interview protocol containing the main issues and questions to be addressed. I started all the interviews with general questions related to the institution or industry of which the respondent was a member, and his/her main tasks and responsibilities. From there, I went to the core topics where I was primarily interested in. In the case of state-defense industry relations, I asked them how they relate with their political, bureaucratic or industrial counterparts, as well as I wanted to know their main perceptions of this relationship. I also asked how they define state-defense industry relations in their own country and if they think there are differences with other European countries on the way to organize defense-industrial policy-making. As far as armaments projects are concerned, I asked respondents to describe the interests, goals and motivations to participate (or defect) from a collaborative program, the way in which decisions are made, the conflicts that may have occurred and the overall assessment of the performance of the program.

To sum-up, carrying out case-study comparative research on defense-industrial issues involve a high degree of methodological flexibility, as well as a reflexive attitude about the justification for the decisions being made during the process of data gathering.

Conclusions

As I shown in this analysis, defense-industrial issues are an interesting and fast-evolving topic for academic research. I argue that there is ample room for new theoretical arguments in order to account for the dynamics that characterized this complex and very sensitive field. In this regard, I presented a LI research agenda to explain the simultaneous presence of cooperation and competition in the European defense-industrial field.

This work contributes to refine the LI theoretical argument in relation to the peculiarities of the European defense-industrial field, with a specific focus on the sources of European countries' preferences towards defense-industrial cooperation. As highlighted, the analysis of state-defense firms relations explains why European countries' have different preferences on defense-industrial issues. Moreover, this article points out the importance of considering intra-European relative gains concerns. The defense-industrial policy of a country situated in the European context should take into account two contexts: on the one hand, there are international considerations, namely the position of the country in the global arena and the market competition both with allies (US) and strategic competitors (Russia for example). In this regard, Treacher has convincingly shown how the EU acts as a "power multiplier", strengthening the leverage of the European member states at the international level.[72] On the other hand, a European country needs also to take into account its relative position in the regional context *vis à vis* direct competitors in Europe.[73] In other words, collaboration in defense-industrial issues implies that actors have a mixture of common and conflicting interests: a mutual desire to combine their resources

to increase absolute gains, yet divergent interests when deciding how the joint benefits from cooperation are distributed among them.

Scholars and researchers could then expand these arguments in future research endeavors. For example, more work is needed to analyze the heterogeneous political-economic base of EU member states. I looked exclusively at the largest arms manufacturers in Europe, but it would be interesting to extend the number of case studies to other medium and small EU member states. Moreover, drawing on LI, future research projects should also focus on why and how different preferences result in varying outcomes (for instance form and membership of EU defense-industrial joint activities) and what actors "win" in these cooperation schemes.

In the second part of the article, I focused on the methodological aspects that a researcher should consider when investigating European armaments policies. Based on my previous research, I have shown the added-value of employing a process tracing technique for a small number comparative research design. Overall, greater attention to methodological issues in military research would certainly be beneficial to better investigate the peculiarities of the European defense-industrial panorama.

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