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German Political Decisions on Armament and Arms Exports examined under the Concept of the Military-Industrial Complex

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Abstract: The concept of the 'military-industrial complex'— which describes an alliance between a nation's military troops, its defense industry as its main supplier, and parts of the political apparatus — is already commonly used when speaking about the US situation. The paper investigates whether the use of this term can be justified in the context of Germany, focusing on the procurement practices of the German unified armed forces *(Bundeswehr)*, the arms exporting practices of German corporations, and the lobbying power of the German defense industry.

Keywords: Military-Industrial Complex, German defense industry, armament exports

JEL-Codes: F51, F52, K23

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1 INTRODUCTION

"The military-industrial complex is the biggest threat to world peace in our time."

Prof. Dr. Mohssen Massarrat, Prof. Emeritus, University of Osnabrück[1]

A majority of German citizens oppose weapon and armament exports. A survey conducted in 2016 has found that 83% of all respondents objected to the idea of German arms exports in general. This includes the majority of people who had voted the current government into power (TNS Emnid, 2016, p. 3 - 4). Moreover, only 5% of all respondents were convinced that Germany should increase its military budget (YouGov, 2021). Regardless of public opinion, however, the German military budget has been rising steadily since 2013, having reached its highest point in absolute terms since the end of the Cold War in 2021 (cf. BMF, 2021; Deutscher Bundestag, 2017a; see Figure 1). In 2019, the volume of German weapon exports has reached an all-time high, heading the general trend of increasing weapon exports over the past 20 years (cf. BMWi, 2009, 2020d).

This discrepancy raises the question of whether it is viable to speak of the existence of a so-called 'military-industrial complex' *(MIC)* in Germany, which describes an alliance between a nation's armed forces, the industries that supply them, and parts of the political apparatus, often operating beyond democratic control (cf. Schmidt, 2020). While it is generally agreed upon by researchers that such a complex exists in the US, the question has not been answered to a satisfying degree for the German case (cf. Kollmer, 2015a). Researchers have asked this question throughout various periods of history, yet there is no general consensus on the answer to this question for the German case, often to the extent of researchers partially contradicting each other (cf. Brzoska, 1989; Kollmer, 2015b, 2015c; Wette, 2019; Moegling, 2020; Schmidt, 2020). It is the aim of this paper to evaluate whether there is a case to be made for claiming the existence of a military-industrial complex in Germany. By doing so, the paper seeks to bring this question back to the academic agenda and to contribute to the ongoing discussion about the topic. This paper wants to fill the gap in the existing literature by highlighting the inconsistencies and open questions in the solutions produced by previous researchers, and by offering a new interpretation of the data that places a bigger focus on the issue of weapon exports

[1] cited in Wernicke, 2015

than has been done before. With activists and researchers alike arguing that the existence of a military-industrial complex is one of the biggest threats to world peace, the results of this research should be of particularly high interest to the German public, to identify reasons for discrepancies between public opinion and the actual political decisions being made.

The underlying definition of the MIC used to answer the research question of this paper has been provided by Dieter H. Kollmer, historian and researching professor at the Center for Military History and Social Sciences of the German Unified Armed Forces *(Zentrum für Militärgeschichte und Sozialwissenschaften der Bundeswehr, or ZMSBw*). Throughout the chapters of this paper, the respective criteria will be evaluated for the German case using qualitative, secondary data analysis of government documents, previous research papers on the matter, and reports of investigative journalists in cases where no academic sources are available. The conclusion will then sum up these findings. According to Kollmer (2015b, p. 4 - 5), the following criteria can be seen as evidence for the existence of a military-industrial complex in a given state:

- Strong cooperation between the military, its supplying national defense industry, and the parts of the political apparatus responsible for decisions concerning the military equipment of that nation's military forces
- Existence of a strong national defense industry, which is able to independently develop, produce, and supply, modern weapon systems (in some countries such industries may be partially state-owned)
- Small to no external control of the weapon buying process
- High defense budgets as part of the national budget
- A high mobility of people, information, money, and resources, between the institutions involved
- A strong lobbying power of the defense industry, facilitated by well-connected lobbyists with (almost) unrestricted access to decision-making processes
- Small or low restrictions for weapon exports to facilitate an 'economies of scale' effect to the national defense industry
- The fact that armament export policy is used as a political instrument in a nation's foreign and/or security policy

It is important to note, however, that the military-industrial complex is not to be understood as a single, homogeneous interest group that is conspiring to push its secret agenda. Rather, it must be understood as a complex system consisting of various independently operating interest groups. Sometimes those interests might align, while at other times the groups might stand in competition with each other. Nevertheless, this competition creates an overall dynamic, further pushing national militarization. The varying levels of cooperation between the different parts of the system increase the risk of industrial interest groups pushing their own agenda beyond public control (Feinstein, 2012, p. 367ff.).

2 THE GERMAN DEFENSE INDUSTRY

2.1. DELINEATION

Delineating the size of the German defense industry is a difficult task (Weingarten, Wilke & Wulf, 2015). Official statistics issued by the Federal Statistical Office of Germany *(Statistisches Bundesamt, or Destatis)* do not consider the defense industry as an individual sector. Companies operating in the defense sector are rather being counted into other subdivisions like 'steel industry' or 'engine building'. This might also be because it is not always clear which products to identify as military and which as civil goods (Weingarten et al., 2015, p. 49). While it is usually easy to identify products like tanks, automatic rifles, or aircraft carriers, as armament goods, the assignment becomes much harder for vehicles, medical products, or IT systems, that can be used both for military and civil purposes. Many firms active in the defense sector also use significant parts of their capacity for civil production (cf. SIPRI, 2019). In fact, there remain only a few firms in Germany that devote their entire capacity to the production of military goods. Some of the biggest players in the defense industries are corporations with a focus on civil production that also have departments active in the defense sector (cf. Kollmer, 2015c, 2017).

Throughout this paper, the German defense industry will be defined in line with the definition proposed by Fischer et al. (2015): *"[The German defense industry is defined as] the aggregate of all companies and corporate actors, with seat in Germany, producing goods and services intended for purely or partial military use. This includes corporate actors along the supply chain, including direct and indirect suppliers of military goods,*

parts to them and/or services that are substantial to the respective military product or the company considered." (p. 9)

The study of Fisher et al., which was published by the Federal Ministry of Economic Affairs and Energy *(Bundesministerium für Wirtschaft und Energie, or BMWi)* in 2015, will also be used as a data source for this chapter. The limitation of using this definition is that it excludes corporate actors —often attributed to the so-called 'security industry,' which is a market that is growing in importance for many corporations that are active in the defense industry (cf. Weingarten et. al., 2015).

2.2. ECONOMIC IMPORTANCE

With the abovementioned issue of delineating military from civil production comes the difficulty of estimating the number of firms active in the sector and the number of people that they employ. The BMWi estimates that the German defense industry directly employs about 65,700 employees in full-time equivalents in about 800 local branches. The number of people indirectly involved in the industry, i.e. working for suppliers, amounted to 46,300 full-time equivalents in 2014 (Fischer et al., 2015). Combining both numbers, this amounts to a total of about 0.28% of all employed workers in Germany in that year, or to 0.80% of all people employed in the manufacturing industry (Own calculations, based on O'Neill, 2021). About 300 - 400 firms exist in Germany that regularly earn part of their revenues by providing military-related goods or services (Weingarten et al., 2015, p. 51). Except for a few regions, for example the city of Bremen or the Tübingen area where the defense industry is responsible for about 6% of overall regional employment, the German defense industry is of rather small importance as an employer (cf. Fischer et al., 2015).

According to the BMWi estimates, the German defense industry generated revenues of approximately EUR20.4bn in 2014. The total value of production of the sector in the same year amounted to EUR24.5bn of which EUR14bn were made up by intermediate consumption, amounting to a gross value added *(GVA)* of EUR10.5bn (Fischer et al., 2015, p. 10). This means, that the German defense industry was responsible for the production of approximately 0.40% of the overall GVA of the German economy and for 1.56% of the overall GVA produced by the domestic manufacturing sector (see Table 1).

Table 1: The Economic Importance of the German Defense Industry at a Glance	
People directly & indirectly working in the German defense industry as a percentage of the total working population in Germany in 2014	0.28%
GVA produced by the German defense industry as a percentage of the overall GVA produced by the German economy in 2014	0.40%
GVA produced by the German defense industry as a percentage of the overall GVA produced by the German manufacturing industry (without construction) in Germany 2014	1.56%
Source: Own calculations, based on Fischer et al., 2015; Deutschland in Zahlen & Destatis, 2021b; Institut der Deutschen Wirtschaft, 2021	

The fact that large-scale enterprises generated about 96.8% of all revenues and employed about 94.6% of all workers in the industry shows that the industry is highly consolidated, with small-scale enterprises only playing a minor role (Fischer et al., 2015, p.18). To further illustrate this fact, it can be mentioned that the six biggest corporate actors in the sector employ about 30,000 people, which amounts to more than a third of all people employed in the sector (Weingarten et al., 2015, p. 58). The high level of consolidation can be traced back to the fact that the development and production of armament goods is an extremely capital-intensive area of business with high barriers to entry, which in turn allows for higher degrees of market monopolization. Especially the production of marine systems, tanks, and aircraft, are being counted among the most consolidated branches of the industry, while at the same time being the branches with the highest barriers to entry. At the same time, companies in the defense sector are often allowed to further consolidate in order to achieve presence on the highly competitive global market (Transparency International, 2020, p. 3).

While the overall economic significance of the industry might seem small, the industry is nevertheless being praised as a driver of innovation, creating technological spill-over effects on other branches of the German economy (cf. Deutscher Bundestag, 2011b). This notion has been contested by other researchers, however, citing the high standard of the machine-building industry in Germany to have spill-over effects on the defense industry, rather than the other way around (Brzoska, 1989).

The German defense industry can further be subdivided into different branches. This allows us to gain insights into the prevalence of certain technologies and their importance to the

overall industry. Table 2 shows the main branches of the German defense industry ranked in decreasing order of financial turnover and their respective biggest corporate actors.

Table 2: Subdivisions of the German Defense Industry (as of 2014)

Subdivision	Percentage of Total Industry Turnover	Percentage of Total Industry Employment	Biggest corporate actors
Aerospace	33.46%	24.23%	Airbus Defense and Space; Airbus Helicopters
Soft-Skin and Armoured Vehicle Manufacturing	18.50%	20.23%	Rheinmetall AG; Krauss-Maffei Wegmann GmbH & Co. KG; Daimler AG;
Electronics	13.65%	16.61%	Hensoldt AG
Naval and Shipbuilding Industries	14.43%	14.27%	ThyssenKrupp AG; Lürssen GmbH
Weapons and Ammunition	5.63%	11.82%	Heckler & Koch AG; Rheinmetall AG
Unmanned Aerial Vehicles (UAV) and Guided Missiles	5.63%	6.55%	Airbus Defense and Space; MBDA Deutschland GmbH; Diehl Defence GmbH
Miscalleneous	5.53%	6.29%	----
Total	100%	100.00%	----

Source: Own calculations, based on SIPRI, 2020; Fisher et al 2015, p.16; Weingarten et al., 2015, p. 59; Transparency International, 2020, p. 9

While of considerable importance, none of Germany's main defense industry firms rank among the world's top 10. The Trans-European company Airbus is the only exception to this fact, ranking on place seven (SIPRI, 2019; Transparency International, 2020, p. 9). The most recent data of the SIPRI Arms Industry Database shows that only four out of the world's 100 largest defense companies by volume of arms sales are German. The list includes: *Rheinmetall Group* (rank 22), *Krauss-Maffei Wegmann* (rank 55), *ThyssenKrupp* (rank 57), and *Hensoldt* (rank 77). The missile manufacturer *MBDA* (rank 23), is a joint project of the *Airbus group*, together with *BAE systems* and the *Leonardo*

group. *MBDA* also has a significant proportion of German operations and ownership (Transparency International, 2020, p. 9; MBDA Systems, 2021).

2.3. MARKET STRUCTURE (DOMESTIC VS. INTERNATIONAL MARKET IMPORTANCE)

The German market for armament products comprises few producers meeting few buyers, therefore constituting an imperfect market (Blum, 2019a, p. 34). The demand side of the German domestic market for armament products can be described as a monopsony, meaning a market structure in which several suppliers are faced with only a single customer, namely the Federal Ministry of Defense *(Bundesministerium der Verteidigung or BMVg)* (Blum, 2019a). Adding to that, the German federal government is the deciding authority on armament exports to foreign states (see Chapter 5). Foreign national defense ministries and their subordinated armies are the main recipients of German armament exports (cf. BMWi, 2021e).

The supply side is influenced by a strict legal framework, regulating the development, production, transport, and sales processes, of armament products. In line with the strict legal framework, high research & development costs and confidentiality agreements constitute high barriers to entry (Blum, 2019a, p. 34). Moreover, the high level of industry consolidation and extremely sophisticated product differentiation allows for monopolistic competition (cf. Glissmann & Horn, 1992). This leads to the fact of only few suppliers of armament products dominating the market (cf. Blum, 2019a). However, the BMVg can choose to import armament goods, i.e., by awarding contracts to international defense industry actors as a result of the required Europe-wide tendering process in efforts to equip the Bundeswehr (cf. Transparency International, 2020; see Chapter 5).

Blum (2019b) argues that, in the model of an open economy, the following formula should produce an equilibrium (p. 4):

"Domestic Arms Supply = Domestic Arms Demand + Arms Exports – Arms Imports"

The following chapters will explore whether arms procurement by the German state (symbolized by *Domestic Arms Demand*) or arms exports play a higher role in generating industry revenue (symbolized by *Domestic Arms Supply*).

The limiting factor to the applicability of the model is that the statistics on domestic military procurement and weapon exports published by the BMWi include a third category, comprising defense industry revenues that cannot clearly be traced back to a

distinctive group of customers (cf. Fischer et al., p. 27). This third category labeled ‘miscellaneous buyers’ comprises domestic sales that were not made by the Bundeswehr, as well as exports of goods that did not require official licensing. It is therefore impossible to distinguish between domestic sales and exports for that category, which in turn make the assessment of their respective importance to the German defense industry susceptible to inaccuracy. Between 2011 - 2014, 20.74% of all revenues were attributed to the category of ‘miscellaneous buyers’ (see Table 3). This limitation will have to be considered throughout the following argumentation. Moreover, the existence of such a third category implies that there are other domestic buyers of goods produced by the German defense industry, which are independent from the BMVg. An example for such an exception could be the German federal police *(Bundespolizei)* purchasing hand fire guns from German weapon producers. In 2019, *Heckler & Koch*, one of the leading manufacturers of small- and middle-sized hand firearms in Germany attributed 14% of all revenues generated by the company in that year to sales to the German federal police and 21% of all sales to the civil market (cf. Heckler & Koch AG, 2020, p. 10). Another example could be revenues of German weapon manufacturers generated in the highly regulated domestic hunting and sporting guns market. To intensify the focus of this research, these cases and sub-categories will be omitted from the following argumentation. The importance of revenues generated in those fields should be subject to further research efforts.

Table 3 shows the distribution of German defense industry revenues among domestic and international markets, using the sum of all revenues from the years to which the latest official government estimates exist. The data can be used to make conclusions on the relative importance of the BMVg as a buyer versus the relative importance of arms exports as a source of revenue. Between 2011 – 2014, 36.40% of total defense industry revenues could be traced back to military procurement contracts issued by the BMVg. This makes the BMVg the largest single buyer of armament products produced by the German defense industry (Fischer et al., 2015). The Bundeswehr is of high importance to the German defense industry, as it is largely responsible for generating and funding new research & development impulses by demanding modern weapon systems from the German defense industry (cf. Schubert & Knippel, 2012). Some researchers also assert that foreign militaries hesitate to order equipment that the supplier nation’s armed forces do not use themselves (Transparency International, 2020, p. 30).

Table 3: Distribution of German Defense Industry Revenues Between 2011 – 2014 (in Billion EUR)				
Total defense industry revenue	**Revenue generated from armament exports**		**Revenue generated from BMVg procurement contracts**	**Revenues generated from miscellaneous buyers**
80.5	34.5		29.3	16.7
	thereof exports to			
	Aligned States	**Non-aligned States**		
	23.6	10.9		
100%	*42.86%*		*36.40%*	*20.74%*
	29.32%	*13.54%*		
Source: Own calculations, based on Fischer et al. 2015, p. 27				

On the other hand, the German defense industry would not be able to sustain itself at the current levels if the BMVg would be its only customer. It is largely dependent on armament exports, which generated 42.86% of industry revenue between 2011 - 2014. The study of Blum (2019b) provides further evidence to the fact that the German defense industry relies heavily on exports (p. 26). Blum (2019b) suggests that the issuing of export licenses to domestic armament manufacturers may be seen as a sort of "subsidy, that the German government does not need to pay for" (p. 26). By authorizing armament exports, the German government aims to "ensure the survival of the German defense industry and its innovative capacity," The associated 'economies of scale' effect allows for lower prices in future military procurement endeavors (Blum, 2019b, p. 26).

Since the latest available estimates were published, the market for the German defense industry has been growing steadily. Both, the part of the national defense budget allocated for military procurement, as well as the total volume of weapon export licenses being issued, have been rising at comparable levels between 2014 and 2019 (see Figure 1 and 3 for further detail). According to the current data, exports to non-aligned countries have grown in importance ever since (see Chapter 5).

There is evidence to believe that the German government has an interest in protecting its national defense industry. By safeguarding the know-how in the country, it is less reliant on armament imports. This could be helpful in case of potential armed conflicts (cf. Blum, 2019a, p. 35). Nevertheless, the German Bundeswehr procures the majority of its military equipment from domestic suppliers. German armament products are being exported globally, being renowned for their high quality of production.

The national defense industry might therefore be evaluated strong enough to potentially facilitate the existence of a MIC in Germany in the sense of the underlying definition of the term used in this paper.

3 LOBBYING POWER OF THE GERMAN DEFENSE INDUSTRY

As of 2021, the registration of lobbyists is not fully mandatory, and thus, partially voluntary in German political institutions (cf. Transparency International, 2020, p. 1). According to government documents, the German defense industry had 13 officially registered lobby groups, holding a total of 22 unlimited-access entry cards to the German Bundestag and the offices of the members of parliament, as of 2019 (cf. Winter, 2019). The list of the most influential armament industry lobby groups includes: the Federation of German Security and Defense Industries *(BDSV)*, the German Association for Military Technology *(DWT)*, the Association of the German Army *(FKH)*, and the Community for Security Policy *(GSP)* (cf. Aktion Aufschrei, 2021). Some of the biggest corporate actors in the field, including *Rheinmetall AG*, *Airbus SE*, *KMW* and *Diehl Defence* also have their own offices in Berlin, often within direct reach of the German parliament and government buildings (cf. Deckwirth et al., 2015). Most of the corporate actors of the German defense industry also hold membership in other lobbying groups that unite the common interest of the metalworking industry on the federal or state level. An example for such a collaboration is the Association of the Bavarian metal- and electrical industry *(Verband der Bayerischen Metall- und Elektroindustrie e.V. or VBM)* which has more than 600 corporate members, including *Diehl Defence, KMW,* and *Airbus Helicopters GmbH* among others (cf. VBM, 2021).

The corporations and lobby groups mentioned above can take influence on political decision-making processes via various channels. Money is one of the main pathways for

the industry to influence political decision-making (cf. Tranparency International, 2020). Transparency International (2020) has characterized the legal framework regulating the flow of money into the German parliament to be very lax and in many cases non-binding (p. 13). Donations to political parties only need to be reported when exceeding EUR10,000 and are only made publicly available immediately when exceeding EUR50,000 (Lobbypedia, 2021b). The German Bundestag usually publishes the list of party donations with a two-year delay (cf. Deutscher Bundestag, 2021h). The wide range of donations from private individuals, or from cross-industrial interest groups, makes it hard to trace back the amounts that were directly donated by corporate actors of the German defense industry. Donations below EUR10,000 do not have to be registered with the President of the Parliament, even when exceeding this threshold throughout the course of the fiscal year (Lobbypedia, 2021b). This fact allows to conceal the exertion of influence via monetary donations (cf. Tranparency International, 2020, p. 14).

In 2021, Greenpeace published a study in which researchers summed up the amounts of officially published party donations of defense industry interest groups. According to the study, defense industry interest groups have donated more than EUR1.826m to political parties between 2005 - 2019. About 55% of this sum had been donated to the CSU/CDU, 30.4% to the SPD and 14.6% to the FDP (cf. Greenpeace, 2021, p. 4). Therefore, the defense industry only targeted those parties forming government coalitions within the given timeframe. During the timespan, the BMVg has consistently been headed by members of the Union parties of CDU/CSU, while the Federal Security Council (BSR) had consistently been headed by CDU-affiliated chancellor Angela Merkel. At the same time, CDU/CSU received the highest number of party donations from defense industry interest groups.

Members of parliament (MPs) are being granted similar freedoms under the legal framework which is made up of the Members of the Bundestag Act *(Gesetz über die Rechtsverhältnisse der Mitglieder des Deutschen Bundestages, or AbgG)* (Transparency International, 2020, p. 13). The Act, coupled with the provisions of the official Code of Conduct for Members of the Bundestag, does not require the reporting of donations below the threshold of EUR5,000 and generally allows MPs to receive donations, as long as they are not solely being granted in return of political favors (cf. AbgG §44a (1), 1977[2]

[2] Act on the Legal Status of Members of the German Bundestag of 18 February 1977 (Federal Law Gazette I, p. 297), in the version promulgated on 21 February 1996 (Federal Law

Deutscher Bundestag, 2021a, §4 (2)). This formulation leaves a wide space for interpretation. The case of Johannes Kahrs (SPD) can be seen as an example for the exploitation of the lax nature of the legal framework (Transparency International, 2020, p. 14). According to a newspaper report, he has received multiple direct donations from defense industry interest groups, all below the threshold of EUR10,000, but amounting to a total of more than EUR60,000 between 2005 - 2006 (Wehner, 2009). As a member of the budget committee, he has successively been involved in prolonging the procurement process of the *EAGLE IV* armored vehicle in favor of its German contestant, that had yet to be constructed (Wasserman, Goetz & Demmer, 2009). In 2011, he also voted against a proposed ban of weapon exports to Saudi Arabia as the only SPD member to do so (Deutscher Bundestag, 2011a).

Nevertheless, it is hard to provide evidence that, to a satisfying degree, proves a direct correlation between monetary donations and policy decisions. Many other factors, like personal opinion and/or ideology of the decision-makers, could play a role. Further research into this matter could potentially be of high value in answering the research question of this paper.

Money, however, is not the only pathway of industry influence, as it is also being taken via people, building a connection between private enterprise and political decision makers. The AbgG allows MPs to hold up to ten seats in advisory boards, besides their commitment as democratic representatives in the German Bundestag (cf. AbgG, 1977[2]). According to Transparency International (2020), this legal framework also allows for a large margin of individual discretion, merely requiring MPs to report conflicts of interest, however without enforcing prohibitions or legal punishments for a failure to do so (p. 13).

Furthermore, the existence of so-called ‘revolving door’ cases can be seen as an indicator of a high mobility of people between the state and a particular industry or interest group (cf. Wirsching, E. M. 2018). As a limiting factor, Wirsching (2018) mentions that “systematic evidence for the relation between public-private career linkages and public policy remains scarce” (p. 3). Regardless of the scarce evidence, however, a prevalence of ‘revolving door’ cases alludes to the existence of networks between the involved institutions, people, and corporate actors. This would facilitate a flow of money, ideas,

Gazette I, p. 326), last amended by Article 2 of the Act of 27 May 2020 (Federal Law Gazette I, p. 1161)

and people - the three main pathways of defense industry influence on political decision-making identified by Transparency International (cf. 2020, p. 1 - 2).

Lobby Control, an NGO committed to political transparency, regularly publishes and updates a list of 'revolving door' cases on its 'Lobbypedia' web domain[3] (cf. Lobbypedia, 2021c).

One especially remarkable 'revolving door' case is the one of Franz Joseph Jung. Having previously been parliamentary director of the CDU in the Hesse Landtag, he became leading minister of the BMVg in 2005 remaining in this position until 2009 (CDU/CSU Fraktion im Bundestag, 2021). His involvement as Federal Minister of Defense in the so-called 'Kunduz affair' lead him to resign from his new position as the Federal Minister of Labor and Social Affairs (Der Spiegel, 2009). In the affair, he took responsibility for the withholding and/or belated reporting of civilian deaths in a NATO air strike on two Bundeswehr road tankers, that had been hijacked by the Taliban (Der Spiegel, 2009). Nevertheless, he remained a member of the German Bundestag until 2017, holding a seat as deputy member of the VgA for his last 4 years of service (Deutscher Bundestag, 2021c, 2021g). In March 2017, while still holding this position, he became a member of the board of directors at *Rheinmetall AG*, constituting an overlap of the two positions for six months (Die Zeit, 2017). He still holds his position in the *Rheinmetall* board of directors as of 2021 (Rheinmetall AG, 2021c). His case illustrates a flow of personnel and information between industrial and political interest groups, alluding to the existence of well-connected networks. Further cases of 'revolving doors' do exist (see Table 4).

Besides the prominent examples of 'revolving door' cases, there are also a range of politicians, that are both members of the Bundestag, and defense industry lobbying groups at the same time (cf. Nagel, 2009). The VgA plays a big role in decisions about the German defense budget and military procurement by the German Bundeswehr, acting as the parliamentary counterpart to the BMVg (Sadlowski, 2018, p. 52).

[3] Accessible via: www.lobbypedia.de/wiki/Seitenwechsler_in_Deutschland_im_Überblick

Table 4: Selection of 'Revolving Door' Cases				
Person (Party Affiliation)	**Previous Positions**		**New Position**	
Franz Joseph Jung (CDU)[1,2,3]	**2005 – 2017** **2005 – 2009** **2009 (Sep.-Oct.)** **2013 – 2017**	Member of the Bundestag Federal Minister of Defense Federal Minster of Labor and Social Affairs Deputy Member of VgA in the German Bundestag	**Since 2017**	Member of the board of directors at *Rheinmetall AG*
Dirk Niebel (FDP)[4]	**2009 – 2013**	Federal Minister of Economic Cooperation and Development, thus member of BSR (deciding panel on the issuing of weapon export licenses)	**Since 2015**	Consultant at *Rheinmetall AG*, leader of global government relations panel
Georg W. Adamowitsch (SPD)	**2002 – 2006**	State Secretary of the Federal Ministry of Economics	**2011** – **2017**	General Manager of BDSV
Heinz Marzi (independent)	**2004 – 2009**	Deputy Inspector of the German Bundeswehr / Air Force Lieutenant General of the German Bundeswehr	**2010**	General Manager of BDSV (until prohibition in November 2010)
Thomas "Tom" Enders (independent)[5,7]	**1989 – 1991**	Member of the Planning office of the Federal Ministry of Defense in Bonn	**1991 – 1995** **2000 – 2005** **2012 – 2019** **Since 2019**	Marketing Manager at *MBB/DASA* Head of *EADS* Defense Division CEO of *Airbus SE* President of *DGAP*
Gerold Otten (AfD)[6]	**1997 – 2017**	Sales Manager at *Airbus Defense and Space*	**Since 2017**	Member of VgA

Source: Own depiction, based on Lobbypedia, 2021a, 2021c, other sources as indicated: (1) CDU/CSU Fraktion im Bundestag, 2021; (2+6) Deutscher Bundestag, 2021c, 2021g; (3) Rheinmetall AG, 2021c; (4) Manager Magazin, 2014; (5) DGAP, 2021; (7) Airbus SAS, 2021;

The committee acts as an advisor and controller to the decisions of the BMVg and has a veto right on decisions concerning military procurement and foreign deployment of the Bundeswehr, among others (Sadlowski, 2018, p. 52).

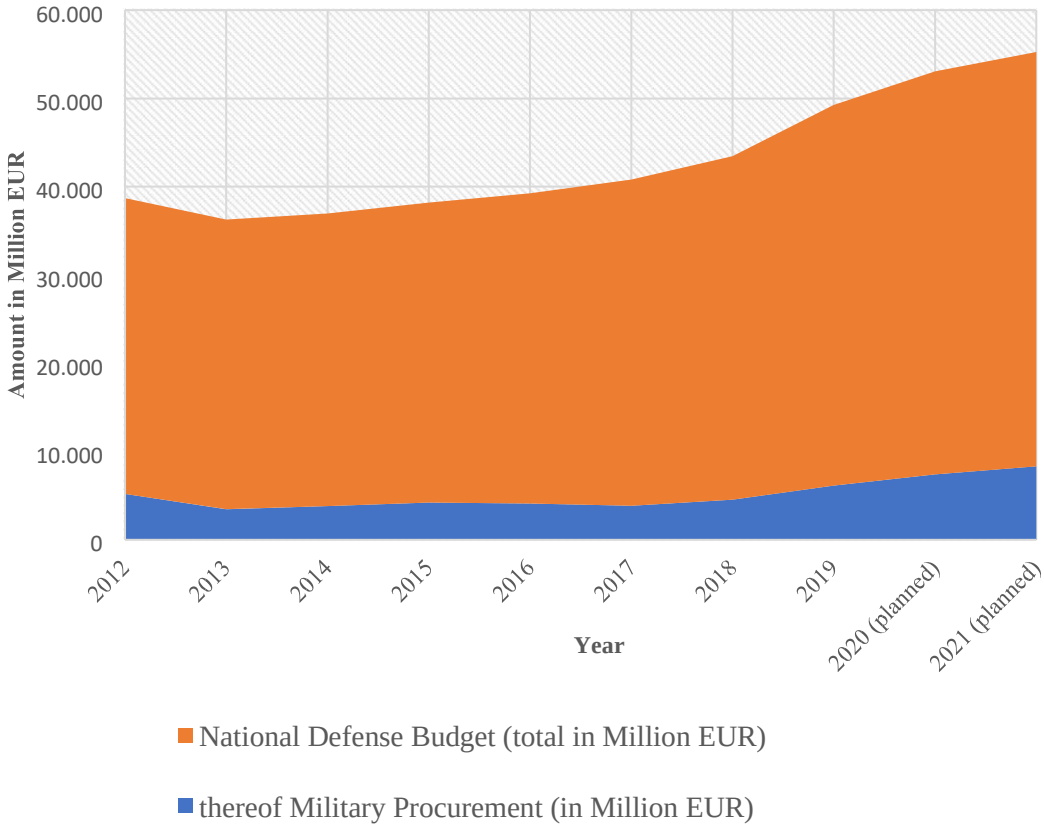
As of 2021, 13 of the 36 VgA members were affiliated in defense industry lobbying groups (see Table 5). Wolfgang Hellmich (SPD), the VgA chairman, is both a member of the FKH and the DMA/DMB (Deutscher Bundestag, 2021c, 2021g, see Table 5). Besides him, the majority of CDU/CSU- and SPD-affiliated VgA members held chair seats in at least one defense industry lobbying group (see Table 5). The DWT and the FKH often portray themselves as mere informative platforms, while citing their de-facto legal status as charitable associations (cf. DWT, 2021; FKH, 2021; Schweppe, 2015). Parliamentary members of the DWT can thus justify their memberships in those groups highlighting their need to acquire information in order to make well-informed decisions in their respective political positions (Schweppe, 2015). This claim is hard to disprove. Nevertheless, the lobbying groups play an active role in connecting defense industry representatives with politicians in decisive positions and with Bundeswehr officials (cf. Schweppe, 2015). The composition of the board of directors, especially of the DWT shows, how strong important decision-makers on all sides are connected with each other (cf. DWT, 2021). Moreover, reports have shown that the DWT is involved in the organization and hosting of informal meetings between industry representatives and political actors (Schweppe, 2015). Such informal meetings facilitate dialogues and negotiations between political decision makers and industry representatives beyond democratic scrutiny (Transparency International, 2020).

The findings illustrate a strong connectedness of industry representatives with a direct access to political decision-making processes, which is one of the characteristics of the MIC, as indicated by Kollmer (2017). However, evidence to cases in which the people in question might have made decisions influenced by their lobby group affiliations and/or monetary donations remains scarce. Investigative journalists and political activist groups play a big role in bringing such cases to public attention. Due to the poor data availability facilitated by various loopholes of the legal framework, it is impossible to make conclusions on the general frequency and significance of such cases, however. Further evidence of the concrete influence of monetary payments on political decision-making will have to be produced by future investigations into the matter.

Table 5: Lobby Group Affiliation of Defense Committee (VgA) Members, 19th Electoral Period (2017 – 2021)			
Politician (VgA Position)	**Party Affiliation**	**Lobby Group Membership**	**Position**
Otto Henning	CDU/CSU	Förderkreis Deutsches Heer e.V. (FKH)	Vice President
Bernd Siebert	CDU/CSU	Förderkreis Deutsches Heer e.V. (FKH)	Chairman
		Deutsche Gesellschaft für Wehrtechnik e.V. (DWT)	Chairman
Florian Hahn	CDU/CSU	Interessengemeinschaft Deutsche Luftwaffe e.V. (IDLw)	Vice President
Kerstin Vieregge	CDU/CSU	Deutsche Gesellschaft für Wehrtechnik e.V. (DWT)	Chairwoman(1)
Dr. Reinhard Brandl	CDU/CSU	Förderkreis Deutsches Heer e.V. (FKH)	Chairman
		Gesellschaft für Sicherheitspolitik e.V. (GSP)	Vice President
Ingo Gedächens	CDU/CSU	Deutsche Gesellschaft für Wehrtechnik e.V. (DWT)	Chairman
Gisela Manderla	CDU/CSU	Deutsche Gesellschaft für Wehrtechnik e.V. (DWT)	Vice President
Wolfgang Hellmich (VgA chairman)	SPD	Förderkreis Deutsches Heer e.V. (FKH)	Chairman
		Deutsche Maritime Akademie (DMA) / Deutscher Marinebund e.V. (DMB)	Advisory Council Member
Dr. Fritz Felgentreu	SPD	Förderkreis Deutsches Heer e.V. (FKH)	Chairman
Siemtje Möller	SPD	Gesellschaft für Sicherheitspolitik e.V. (GSP)	Vice President
Dirk Völpel	SPD	Deutsche Gesellschaft für Wehrtechnik e.V. (DWT)	Chairman
Dr. Karl-Heinz Brunner	SPD	Deutsche Gesellschaft für Wehrtechnik e.V. (DWT)	Chairman(2)
Dr. Marie-Agnes StrackZimmermann	FDP	Deutsche Gesellschaft für Wehrtechnik e.V. (DWT)	Chairwoman
		Förderkreis Deutsches Heer e.V. (FKH)	Chairwoman
Source: Own depiction, based on Deutscher Bundestag, 2021c, 2021g; FKH, 2021; DWT, 2021; DMB, 2021; IDLw, 2021.			
For (1+2) Information about the Lobby group affiliation did not appear in the official biography published on Deutscher Bundestag, 2021c, 2021g			

4 PROCUREMENT PRACTICES OF THE GERMAN FEDERAL MINISTRY OF DEFENSE

Figure 1: Government Spending on Defense Between 2012 - 2021 (in Million EUR)



Source: Own depiction, based on BMF, 2021

The state as a customer to the German defense industry is being represented by the Federal Ministry of Defense *(BMVg)* to which the national defense budget is being allocated on a yearly basis (cf. Sadlowski et al., 2018). The BMVg is responsible for managing the budget in order to ensure the continuous operation of the German Bundeswehr. In an effort to comply with NATO agreements, and following the self-proclaimed 'equipment trend reversal,' the German government did increase the amount allocated to the BMVg annually since 2013 (see Figure 1). In 2020, 8,98% of total government spending were dedicated to the German national defense budget (BMF, 2021). According to the data published annually by the SIPRI Military Expenditure Database, Germany was among the top 10 of countries with the highest military expenditures, ranking on place 7 (cf. SIPRI, 2021a). The 2020 German defense budget amounted to EUR45.65bn, equaling 2.7% of global military expenditure (cf. SIPRI, 2021a; BMF, 2021). In contrast, the US

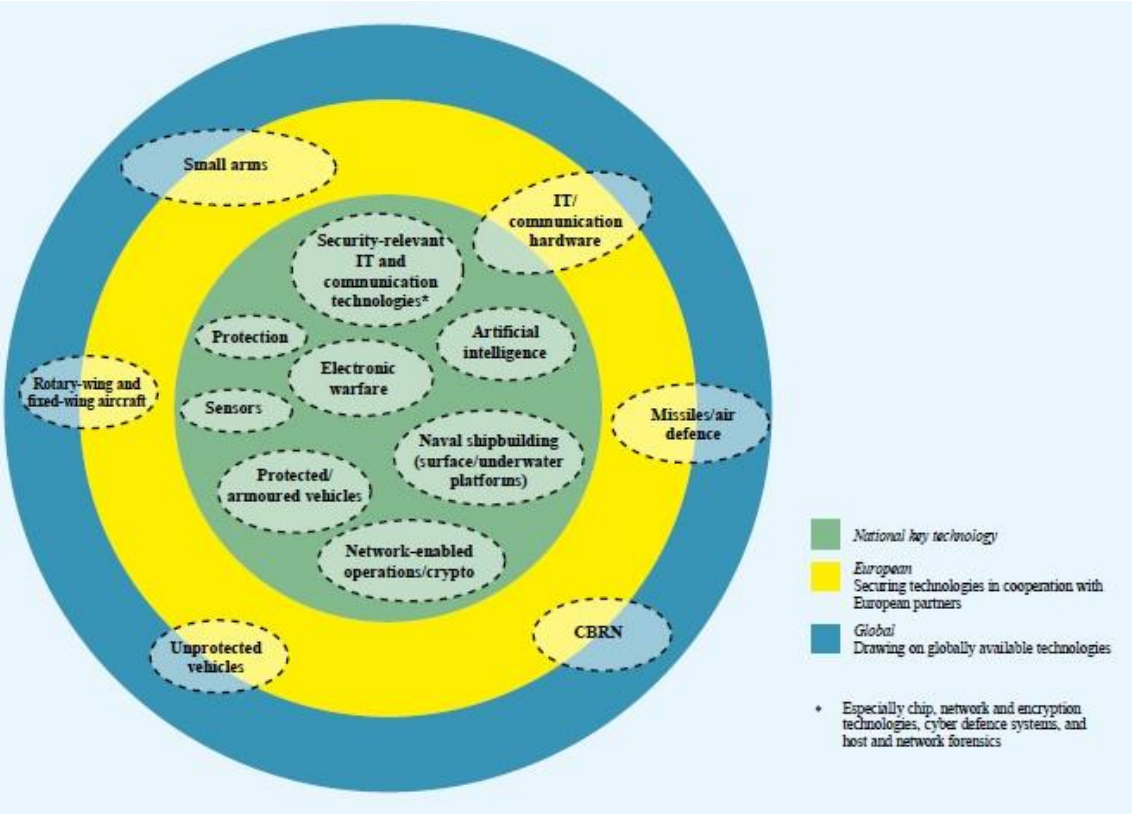
national defense budget represented about 39% of global military expenditure in the same year. This was more than the next 12 largest spenders combined (SIPRI, 2021a, p. 3). It is important to note, however, that the national defense budget in its entirety is not solely used for military procurement, as a significant part of it is used to pay for the housing and salaries of soldiers, military, and civil staff, amongst other categories. SIPRI does not make this distinction in its Military Expenditure Database. As of 2020, military procurement represented 16.24% of the German defense budget and 1.46% of total government spending. In the fiscal year of 2020, the German state spent about EUR89,32 per capita on military procurement[4] (Own calculations, based on BMF, 2021).

Being informed by Bundeswehr equipment experts, the BMVg is responsible for military equipment planning to ensure the readiness of the German army (cf. BMVg, 2021b, 2021c). Using the Bundeswehr 'wish list,' regularly published together with the Bundeswehr 'White Paper' as a framework, the BMVg can initiate a complex military procurement process (cf. Transparency International, 2020). Once initiated, the armament procurement process is under scrutiny by various institutions and panels, including Bundeswehr inspectors, the parliamentary defense committee *(Verteidigungsausschuss, or VgA)* alongside the budget committee *(Haushaltsausschuss)* and the federal court of auditors *(Bundesrechnungshof, or BRH)* (cf. Transparency International, 2020). Once the procurement proposal has been approved by the above-mentioned institutions and panels, the Bundeswehr equipment office *(Bundesamt für Ausrüstung, Informationstechnik und Nutzung der Bundeswehr, or BAAINBw)* is responsible for its implementation. While the existing legal framework requires Europe-wide tendering for military procurement contracts, exceptions can be made by the government when deemed in the interest of national security (Transparency International, 2020, p. 22). Between 2006 - 2016, roughly 30% of all contracts were issued through single-bidder processes. As an example, two thirds of all contracts received by *KMW* during this time span had been awarded through single-bidder processes (Transparency International, 2020, p. 27). Adding to that, the procurement process can be simplified when concerning procurement efforts below EUR500,000 or emergency procurements that are deemed urgent for operational reasons (Transparency International, 2020, p. 23). Georg Wilhelm Adamowitsch, former president of the BDSV, has stated that about 80% of all military procurement contracts issued by the BMVg end up being awarded to German suppliers (quoted in Klein, 2014).

[4] As of July 2021, the 2020 data still represents the planned expenditures.

Thus, the evidence seems to underline the argument brought forward by Blum (2019a) that governments prefer to source military goods used by national armed forces domestically to safeguard a certain level of sovereignty and autarky in the case of international armed conflicts (p. 35).

Figure 2: Key Security and Defense Technologies Identified by the German Federal Government



Source: Die Bundesregierung, 2020, p. 3

In its "Strategy Paper on Strengthening the Security and Defense Industry" the German federal government has identified certain key technologies whose suppliers it aims to protect and promote. It deems this to be in the best interest of national security because it safeguards a strategic independence from suppliers outside of Germany and/or Europe (cf. Die Bundesregierung, 2020). The identified key security and defense technologies that the German federal government wants to maintain on the national level include among others: naval shipbuilding, protected/armored vehicles, electronic warfare and sensors (see Figure 2).

Even though the document does not directly translate into actual policy decisions, and should rather be understood as a guideline, it is likely that the federal government will try to source technologies of the named sectors from national suppliers for the years to come. Coincidentally, weapon systems identified under 'national key technologies,' as for example protected/armored vehicles or naval shipbuilding, are at the same time one of the most highly monopolized within the German defense industry. In contrast, the BMVg always had a wider range of options to source small arms, for example. This fact seems to underline the argument brought forward by Schmidt (2020) that the strength of the ties of the German MIC differs across the different branches of the defense industry (cf. p. 637 - 638).

An effect of the reasoning to protect certain 'key technologies' is that the BMVg invests a part of its yearly budget into research & development *(R&D)* projects of future weapon systems. In 2021, the BMVg has planned to spend EUR1.556bn on military R& D (BMF, 2021). While parts of the R&D budget flow directly into projects like the Eurofighter, significant sums are being attributed to research institutes like the *Deutsches Zentrum für Luft- und Raumfahrtforschung e.V.* (EUR44.8m in 2021) or the *Fraunhofer*-community of applied research institutes (EUR76.2m in 2021) (cf. Bundeshaushaltsgesetz 2021, Einzelplan 14, 551-01[5]). The *Fraunhofer*-institutes rely on both public and private funding. This constitutes a link between state and industry in research affairs and allows for a flow of ideas between the sectors (Transparency International, 2020, p. 26). Because of private business contributions to the research community, defense industry representatives of *Hensoldt*, *Airbus Defense & Space*, *Rheinmetall*, *Diehl Defense*, and *MBDA*, among others are reserved a seat on the advisory board of *Fraunhofer IOSB* (cf. Fraunhofer IOSB, 2021). This allows defense industry actors to influence future military procurement options from the onset, and beyond public scrutiny (Transparency International, 2020, p. 26).

Another aspect that illustrates the strong interconnection between the German defense industry and the Bundeswehr is the increasing trend of outsourcing Bundeswehr functions to private business providers (cf. Transparency International, 2020; Fuchs & Friederichs, 2015). Some researchers go as far as stating, that without the support of private business contractors, the Bundeswehr would "not be deployable anymore" (cf. Mölling, cited in

[5] Haushaltsgesetz 2021 of December 21, 2020 (BGBl. I S. 3208), last amended by Article 1 (BGBl. I S. 1410) on June 3, 2021

Fuchs & Friederichs, 2015). As of 2015, 2500 private military & security firms were registered in Germany (Engartner, cited in Fuchs & Friederichs, 2015). Domestically, the Bundeswehr has outsourced functions like the guarding of military facilities, vehicle fleet maintenance and IT system services all the way to the operation of military training grounds (cf. Fuchs & Friederichs, 2015).

The combat training center 'Altmark' in Gardelegen is the biggest and most modern of its kind in Europe (Bundeswehr, 2021). Besides being used as a NATO combat training center, it is used as the main training center for Bundeswehr troops before their deployment in international missions. The combat center is run by a subsidiary of *Rheinmetall AG*, which manages all tasks concerning the combat simulation and IT system maintenance (cf. Fuchs & Friederichs, 2015). Officially, *Rheinmetall* is only allowed to provide services that do not belong to the military core segment. However, it is often difficult to draw the line between the various responsibilities, leading to several overlaps. Bundeswehr troops were involved in demonstrating the combat simulation system to the Russian minister of defense, which led to a purchase of such a system for a Russian military base in 2011. After the halt of arms exports in the wake of the Ukraine conflict in 2014, *Rheinmetall* sued the German government over EUR120m in compensation payments. It is unclear, however, if the company won the judicial proceeding, nor if the German federal government did transfer any compensation payments. In other cases, Bundeswehr soldiers were involved in training foreign troops in the usage of equipment, which was manufactured by German defense industry actors, thus, securing export deals for the involved firms (cf. Die Zeit, 2015).

Another sector in which outsourcing is prevalent is on-site security of military bases. As of 2015, private security firms were guarding 361 of 445 Bundeswehr facilities (cf. Fuchs & Friederichs, 2015, p. 19). This shows that the German military forces also closely cooperate with corporate actors from outside of the German defense industry, transferring responsibilities to the private sector.

The development can further be illustrated with the increasing frequency and wider ranging authorizations private consulting firms have become involved in the strategical planning of the BMVg. Over the course of several years, private consulting firms like *Accenture GmbH*, have directly been awarded consultancy contracts from the BMVg by circumventing the required tendering procedures. The contracts guaranteed high compensations for the consulting services, amounting to over EUR150m annually (cf.

Gebauer, 2018). In its investigations into the matter, the BRH has found that in about 80% of all cases the need for the consultancy services had not been determined clearly enough, neither had the contracts been questioned for their economic viability. The investigation committee initiated by the VgA in wake of public pressure has largely confirmed the BRH findings (cf. Becker, 2020). As of today, it remains unclear to what extent the findings will lead to wide-ranging internal reforms of the BMVg.

5 GERMAN ARMAMENT EXPORTING PRACTICE

The German policy on armament export is influenced by foreign political and security interest on the one hand, and by rules and norms on the other hand (Wisotzki, 2020, p. 5). The international legal framework is shaped by the Universal Declaration of Human Rights (UDHR), the public international law, the Geneva convention of 1949, the multilateral Arms Trade Treaty (ATT) and decisions about trade embargos imposed by institutions like the UN or other, regional entities. On the European level, the legally binding European Council Common Position 2008/944/CFSP of 8 December 2008 defines the common rules governing control of exports of military technology and equipment (European Council, 2008).

Domestically, the German basic law *(Grundgesetz / GG)* forbids any action that "may harm the peaceful coexistence of the nations" (GG Art. 26 (1))[6]. According to the GG, the German federal government is the only authorized institution for granting approvals to weapon exports (GG, Art. 26 (2)).

The federal laws that specify this provision are the war weapons control act *(Kriegswaffenkontrollgesetz/KrWaffKontrG)* and the foreign trade and payments act *(Außenwirtschaftsgesetz/AWG)*, along with the foreign trade and payments ordinance *(Außenwirtschaftsverordnung/ AWV)*.

The nature of the KrWaffKontrG can be described as "prohibiting unless allowed" (Nassauer & Steinmetz, 2005, p. 4). It demands approval on behalf of the BMWi for the production, the sale and the transportation of goods, substances and organisms that may

[6] German Basic Law in effect since 23.05.1949 (BGBl. S. 1), final amendment via Article 1 and 2 sentence 2 on September 29, 2020 (BGBl. I S. 2048))

be used in warfare. The KrWaffKontrG is tied to a regularly updated list of war weapons *(Kriegswaffenliste)* that fall under the provisions of the law.

The nature of the AWG on the other hand, can be described as "allowing unless prohibited," It constitutes an inverse logic to the KrWaffKontrG by securing an entitlement to approval to the exporting companies (cf. Nassauer & Steinmetz, 2005). Conventional armament goods, not mentioned in the war weapons list part B, as well as the so-called 'dual use'-goods, which can be used both for military and civil purposes, fall under the provisions of this law. The AWG demands exports that may harm "the peaceful coexistence of nations and/or the foreign relations of Germany" to be prohibited (AWG, §4 (1-2), 2013[7]).

As an interpretational code of practice, the German federal government has announced its own guidelines on the export of weapons and armament goods for the first time in 1971, which have been updated latest in 2019 (BMWi, 2019a). In its political guidelines, the German government claims to pursue an armament export policy, that is both "restrictive and responsible." (ibid.). Moreover, it vows to attach great importance on the human rights situation of potential armament transfer receivers and to tightly monitor the whereabouts of the delivered weapons. Nassauer & Steinmetz (2005) have argued that the mere formulation of such political guidelines can be seen as evidence to the fact, that the dual nature of both laws allows a significant scope for interpretation (p. 4).

The scope is widened by the fact that in many cases the direct legal classification of goods is problematic. Only a small part of armament components falls under the provision of the KrWaffKontrG. Such goods are incorporated into the war weapons list part B, including complete weapon systems, as well as cannon tubes, fuses, etc. The majority of armament goods, some of which may be equally vital for the functioning of weapon systems, fall under the provisions of the AWG. The list includes i.e., radar systems, night vision aids and the specific know-how related to the weapon systems (Nassauer & Steinmetz, 2005, p. 4). Shipments of components that contribute less than 20% to the final price of a weapon system are generally allowed to go forward.

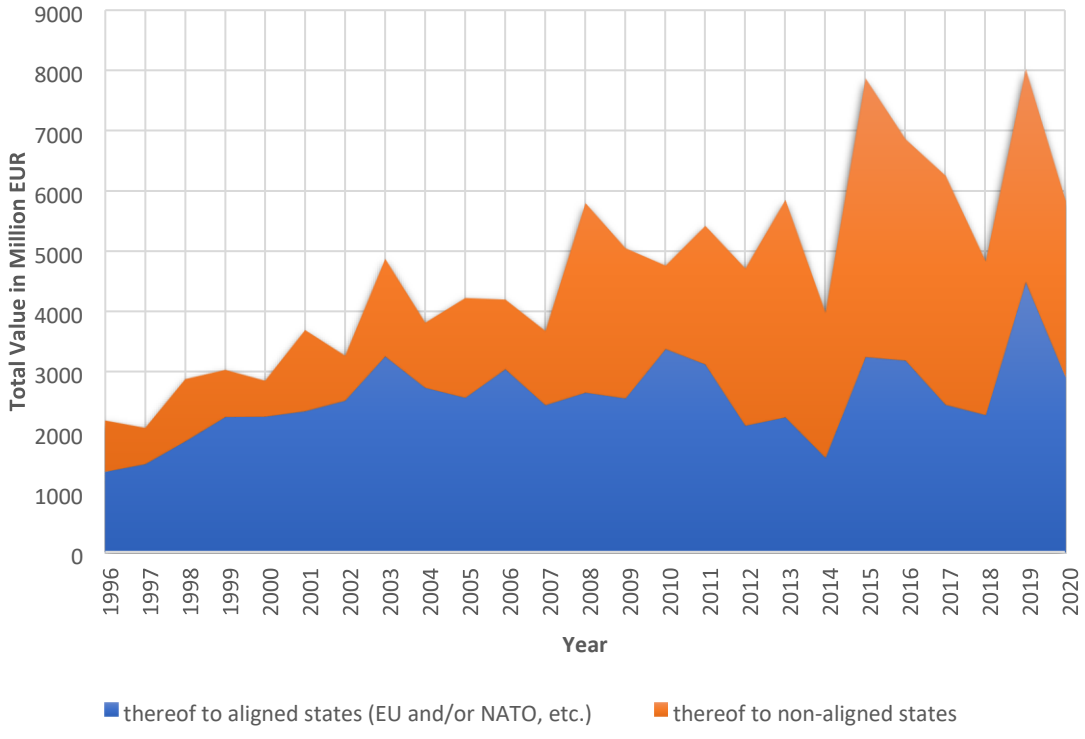
Some exporters take advantage of the dual nature of the laws by "downgrading" their products so that they may fall under the provision of the AWG, which requires an official

[7] Foreign Trade and Payments Act of 6 June 2013 (Federal Law Gazette I p. 1482), as last amended by Article 4 of the Act of 20 July 2017 (Federal Law Gazette I p. 2789)

explanation on behalf of the federal government in case of refusal. Helicopters and armored vehicles are examples for such goods that may be "downgraded," Moreover, products may be exported incomplete and retrofitted with critical components in the receiving countries (cf. Nassauer & Steinmetz, 2005).

On the other hand, the political guidelines on armament exports reflect the priority the German federal government gives to foreign and security policy considerations over its claims to pursue a restrictive export policy. For instance, it generally allows the export of armament goods to EU-, and/or NATO partners and other aligned states. The distinction between aligned and non-aligned states allows to further increase the scope of interpretation of the existing legal framework. Moreover, this can be underlined by the fact that the share of exports to non-aligned countries has increased significantly over the past 20 years. Between 2010 - 2020, 54.04% of all armament exports went to non-aligned countries on average (Own calculations, based on BMWi, 2021e). Figure 3 shows the combined volume of export licenses issued between 1996 - 2020, clearly demonstrating the increase in armament exports to non-aligned countries, as well as the increase of export licenses issued in general.

Figure 3: Combined Volume of Export Licenses Issued Between 1996 - 2020 (in Million EUR)



Source: Own depiction, based on BMWi 2009, 2020d, 2021e

On behalf of Greenpeace e.V., the Leibnitz-Institute Hessische Stiftung Friedens- und Konfliktforschung has conducted a study on the armament export practices of the federal government over the past 30 years. The study has found that the federal government has consistently violated its own political guidelines by exporting armament materials into countries involved in human rights abuses and/or violent conflicts. Moreover, it provided evidence, that in a range of cases, German arms were used by the receiving countries to suppress parts of their own population, as for example in the cases of Egypt, Brazil, and Turkey (cf. Wisotzki, 2020). This constitutes another serious violation of the political guidelines on arms exports. Furthermore, the study has found that in most cases, the German federal government did not monitor the whereabouts of exported weapons clearly enough (Wisotzki, 2020). According to official statements, the issuing authority of export licenses conducts ex-ante controls, in which it assesses the potential risk of armament shipments being transferred to parties that are not mentioned in the end-user certificates, which the importers need to sign beforehand (Maschnig, 2017). The federal government claims to deny export licenses in cases in which it assesses this risk to be high. However, the existing legal framework does not require exporters to assume liability in case of violations against the provisions of the end-user certificates (cf. Machnig, 2017). In March 2016, the federal government announced the introduction of post-shipment controls to secure the compliance with the end-user certificates. The law, which was introduced as an addition to the AWV authorizes the BAFA to conduct post-shipment controls, however not on a mandatory basis (cf. AWV §21, Abs. 4 – 5)[8]. In the first two years after the introduction of the post-shipment controls, only two such inspections had taken place (cf. Maschnig, 2017).

As opposed to the various restrictions and its vows to pursue a restrictive policy for armament exports, there are various ways in which the German government actively encourages weapon exports. This happens mainly by providing financial assistance to exporters. One way in which the federal government provides such assistance is by issuing export credit guarantees, which are a common instrument to promote foreign trade. The guarantees insure exporters against the risk of customers failing to pay their contracts, with the German federal government promising to pay the owed sum in such cases (Deutscher Bundestag, 2019c). The latest available data, which directly mentions export

[8] Foreign Trade and Payments Ordinance of 2 August 2013 (Federal Law Gazette [BGBl.] Part I p. 2865), as last amended by the Ordinance of 27April2021(BAnz AT 30.04.2021V1)

credit guarantees covering armament exports concerns the timespan between January 2017 and March 2018. During that time, the federal government has issued export credit guarantees totaling EUR1.134bn on submarines and aircraft, constituting 5.42% of all export credit guarantees issued during that time span (Own calculations, based on Dörr Voß, 2018). At the same time however, armament exports requiring approval only amounted to about 0.45% of total German exports (Own calculations, based on Observatory of Economic Complexity, 2021). It is questionable to what extent this fact might indicate that the federal government disproportionately favors the national defense industry over other exporting industries in Germany. The available data for 2020 show, that the federal government has issued export credit guarantees on naval vessel exports totaling EUR200m (Euler Hermes AG, 2021).

Another way, in which the German federal government encourages armament exports is by partially assuming payments of the owed sum of the importing trade partners. This was the case in 2017, for instance, when the German federal government contributed EUR540m to a procurement effort of the Israeli Navy, in which it had bought a fleet of submarines from Thyssen-Krupp Marine Systems (Handelsblatt, 2017; Deutscher Bundestag, 2017b, p. 57).

A process which has helped many firms to evade national restrictions on armament exports is the growing internationalization of the defense industry. This is partially being facilitated by Trans-European cooperation efforts (cf. Wisotzki, 2020). Common European projects, like the *Eurofighter Typhoon* are not being touched by German restrictions, because German firms only supply components to the project which contribute less than 20% to the final price of the product. With the *Eurofighter Typhoon* being assembled by BAE systems in the UK, it is being viewed as a British product under the provisions of the law. Therefore, the final product grows out of reach of the existing legal framework once the components have been used in production (cf. Nassauer & Steinmetz, 2005).

On the other hand, there is a growing number of German defense industry actors that operate subsidiaries in foreign countries. As an example, *Rheinmetall* has subsidiaries in Italy *(RWM Italia)* and in Austria *(RWM Arges)* which it uses to circumvent German armament export restrictions (Göpfert, 2017). In various cases, *Rheinmetall* is also known for having built entire production facilities in other countries, i.e. in Algeria or in Saudi Arabia (cf. Welt, 2014, 2016). This practice is made possible by existing loopholes of the

German legal framework, which does not properly address the transfer of know-how (Wisotzki, 2020). For instance, common European defense projects also do no fall under the provisions of the arms trade embargo the German government has introduced on exports to Saudi Arabia in 2018.

The German federal government clearly states that weapon exports are used as an instrument in Germany's foreign and security policy. It sees armament transfers to strategic partners to be in the interests of German and/or European security (cf. BMWi, 2021e, p. 6). A consequence of this reasoning is the general allowance of military exports to EU- and/or NATO partners, as well as other aligned states, i.e. Japan, Australia or Switzerland (cf. Transparency International, 2020, p. 11). The reasoning also allows for armament transfers into non-aligned countries, when deemed to be in the interests of German security policy (cf. BMWi, 2021e, p. 6). With its 'Enable and Enhance Initiative,' the German federal government wants to strengthen the military capacity of strategic partners, inter alia by transferring arms to them (BMVg & AA, 2019). In 2020, military equipment had been transferred within the framework of the initiative to Niger, Tunisia and Jordan, among other states (BMWi, 2021e, p. 7).

Nevertheless, arms transfers to third-party countries, including shipments into conflict zones are also being authorized in other contexts. An example for such a case was the export of 1800 tons of armament goods to Peshmerga forces fighting in northern Iraq, which had been authorized by the federal government in 2014 (cf. Backfisch & Kohnen, 2016). The federal government justified the armament shipment, claiming that the Peshmerga fighters would use the delivered weapons to quell the forces of the Islamic State of Iraq and Syria *(ISIS)* in the region. In another case, the authorization of an export of naval vessels to Saudi Arabia had been justified by the federal government, citing security interests (cf. Deutscher Bundestag, 2014a).

Kollmer (2017) claims the "restrictive nature" of the existing legal framework on armament exports to be a main argument against the existence of a MIC in Germany. However, the de-facto ineffectiveness of the legal framework aimed at restricting armament exports facilitates an 'economies of scale' effect to the national defense industry. Thus, constituting evidence to one of the characteristics of the MIC identified by Kollmer (2015b).

Kollmer (2015b, 2017) has also identified the fact that armament export policy is used as a political instrument in a nation's foreign and/or security policy to be one of the main

characteristics of the MIC. The German federal government clearly states that weapon exports are used as an instrument in Germany's foreign and security policy (cf. BMWi, 2021e). The 'Enable and Enhance Initiative' entails the authorization of armament transfers to strengthen the military capacity of strategic partners in various conflict zones around the world. The German government views this to be in the interest of German security (cf. BMVg & AA, 2019). This Chapter has explored various other occasions armament exports to non-aligned countries have been authorized citing security or foreign policy interests. Nevertheless, Germany is not in the position to enforce certain political decisions based on arms transferals. As there is a global market for armament materials, foreign governments have a variety of possible arms suppliers to buy from. From experience, foreign governments prefer to buy German armament products for the high quality attributed to them, and usually not out of a general dependency on them (cf. Kollmer, 2017). Therefore, it remains unclear to what extent this argument should be used as evidence to the existence of the MIC in Germany. Further research should be conducted into the matter.

6 CONCLUSION

6.1. CORE FINDINGS

To conclude, first and foremost it needs to be said that the state of the evidence which this paper has attempted to lay down does not allow for a definite answer to the research question on a "yes or no"-basis. This is mainly due to a number of limiting variables (see Chapter 6.2).

The evidence gathered throughout Chapters 2 - 5 make it justifiable to speak of the existence of a MIC in Germany to a certain degree. There is a strong case to be made for claiming the existence of an MIC in Germany considering the nature of armament exports, which are the main source of revenue of the German defense industry. The armament transfers are being facilitated by the wide interpretational scope that the existing legal framework leaves and also the low standards on transparency. The federal government, as the only issuing authority of export licenses, makes its decisions beyond parliamentary or public scrutiny. By classifying many of the details of the decisions on armament exports as 'confidential,' it largely fails to comply with transparency regulations. Table 6 shows the main findings of the previous chapters as well as their implications on the research question at a glance.

The concept is less suitable to describe the nature of the military procurement process of the German Bundeswehr. A dependency on German armament manufacturers does not manifest itself in the same way as it does in other countries, where regulations on armament imports are far stricter (see Chapter 6.2).

Table 6: Conclusions of the Research Findings at a Glance

MIC Characteristic	Findings of this Paper
Strong cooperation between the military, its supplying national defense industry, and the parts of the political apparatus responsible for decisions concerning the military equipment of that nation's military forces.	✓
Existence of a strong national defense industry, which is able to independently develop, produce and supply modern weapon systems.	✓
Small to no external control of the weapon buying process.	✓
However: small to no external control of the armament exporting process.	✓
High defense budgets as part of the national budget.	✓
High mobility of people, information, money & resources between the institutions involved.	✓
Strong lobbying power of the defense industry, facilitated by well-connected lobbyists with (almost) unrestricted access to decision-making processes.	✓
Small or low restrictions for weapon exports to facilitate an 'economies of scale' effect to the national defense industry.	✓
Armament export policy is used as a political instrument in a nation's foreign and/or security policy.	✓ ?

Legend

True: ✓; partially true: ✓; False: ✗; Not enough/ No data available: ?

Source: Own depiction, based on Kollmer (2015b)

The widespread trend of outsourcing BMVg functions to private contractors, however, has led to a transfer of know-how from military institutions to private businesses. In turn, this facilitates an increasing dependence of the BMVg on those contractors, which could potentially increase the extent of the German MIC.

The MIC in Germany is being facilitated by a legal framework that vows to be strict on the outside, but which also allows for a wide scope of interpretation. Military procurement efforts can be restricted to national providers, for instance, if deemed in the interest of national security by the German federal government (Transparency International, 2020, p. 22). At the same time, the German federal government authorizes exports of armament materials quoting 'security interests' (see Chapter 5). Consequently, this allows the interpretational scope of the legal frameworks to be exploited using narratives around 'national security' and 'national sovereignty.' The German defense industry has established a strong lobbying power building on personal networks, party donations, and access to decision-making processes in the form of registered lobbyists and/or MPs in strategic positions defending defense industry interests. Exertion of Influence also often takes the form of informal meetings between industry representatives and political decision-makers (see Chapter 3). The lax legal framework on the registration of lobbyists, monetary donations to political decision-makers and so on builds the breeding ground for this lobbying power.

Oppositional forces in the German parliament, non-governmental activist groups, as well as investigative journalists, play the most important part in collecting information about defense industry influence on political decision-making. Their efforts have helped to provide most of the information on which the research to this paper has been based. However, their efforts are being hampered by the overall legal framework significantly lacking in transparency. If possible, reporting should be increased in order to increase the pressure on lawmakers to introduce legislation facilitating factual transparency.

The German defense industry only plays a minor role in the overall German economy. Its contribution to the total GVA produced in Germany, as well as its share on overall exports from Germany continuously remain below 1% (see Chapter 2). With less than 65,700 people directly employed in the industry, it is questionable whether the strong support for the industry on behalf of the German federal government can be justified. Viable concepts for a conversion towards civil production do already exist, especially considering that the main corporate actors in the defense industry make significant shares of their revenues in

civil production anyway (cf. Bayer, 2012; Brandt & Peil, 2020). Funds now used to pay the research and development of new weapon systems could by diverted to research institutes like the BICC to refine the existing conversion concepts and make them applicable. A conversion to civil production, if applied in a way that considers the wellbeing of workers in the industry, would minimize the pressure on the German government to engage in costly military procurement deals or the authorization of weapon exports into conflict zones. This would allow the German federal government to finally adhere to the moral standards it has set itself in its political guidelines and which is expected from the majority of the German voters. To what degree the conversion might also help decrease the military burden on German taxpayers should be subject to further research.

6.2. LIMITATIONS AND FUTURE RESEARCH AREAS

The findings of this research paper have been subject to a number of limitations. The biggest limiting factor was that there is no generally agreed upon definition of the MIC. Throughout this paper, the definition and the characteristics of the MIC suggested by Kollmer (2015b) have been used to answer the research question. While having contributed extensively to the discussion about the MIC in Germany, his definition should by no means be regarded to be universally valid. Kollmer himself has pointed out that the definition and perception of the MIC varies greatly between different countries, cultures and/or historical eras and about which dimensions they take into account (cf. Kollmer, 2015b).

It is of utmost importance to understand the extent of the German MIC in relation to its US American counterpart. The German Bundeswehr is not entirely dependent on a single national supplier of military equipment, technically being able to import armament goods facilitated by Europe-wide tendering processes (see Chapter 4). In the US, there are high restrictions on armament imports which have been reinforced by the 'Berry Amendment' and the 'Buy American Act' signed in by Donald Trump during his presidency in 2017 (cf. Blum, 2019b, p. 7). Moreover, politicians in Germany have a wider range of economic control options besides the national defense budget. Members of the Bundestag therefore have a wider range of options to acquire investment options for their electoral districts other than through military projects. In the US, many members of Congress are dependent on armament contracts for their electoral districts (cf. Brzoska, 1989, p. 503). By spending 3.4% of its national GDP on defense in 2019, the US had the highest national defense

budget of any country world-wide (cf. SIPRI, 2020). Out of its military budget, the US government spent about USD375.67 per capita on military procurement in 2019, in Germany this figure was at EUR74.40 in the same year, more than four times smaller, using current exchange rates (Own calculations, based on BMF, 2021; US Department of Defense, 2019). In 2018, all of the Top 5 armament and military service producing companies with the highest total sales were from the US (cf. SIPRI, 2019). Using the hypothesis of Kollmer, that an MIC can only evolve in countries with a high national defense budget, it is clear to see that the US situation facilitates an MIC to a far bigger extent (cf. Kollmer, 2017; Brzoska, 1989).

The outcomes of the paper were subject to further limitations, given the limited selection of characteristics of the MIC used to answer the research question. For instance, the used dimensions of the MIC in this paper do not cover the socio-cultural implications of the concept that other researchers have pointed out (cf. Brummer, 2016). Brummer (2016) suggests that the entertainment industry plays a role in conditioning young people with movies and video games to increase public appreciation of the military. Further research should be conducted to gain deeper insight into the matter and also to understand these socio-cultural implications for the German case.

Another variable, that has been omitted from this study in order to increase focus, was the role that academics play in shaping the MIC. Kollmer (2015b) has pointed out, that in some countries academic institutions and think-tanks can be considered part of the MIC. During the research for this paper, it has been found that former *Airbus* CEO Thomas Enders is now serving as the president of the *DGAP*, a foreign policy think tank in Berlin with strong ties to the political environment of the city. Further research focusing on the influence of think tanks on the German MIC should be conducted, using this case, among others. Further research should also be conducted to what extent the universities of the Bundeswehr might play a part in a potential MIC in Germany, focusing on the funding of the universities by private corporate actors of the German defense industry.

As the facts laid out throughout the paper have shown, the defense industry is becoming increasingly internationalized. Therefore, it should be asked to what extent the idea of a solely national MIC falls short in describing the real-world situation. Further research should be conducted into the Trans-European connections of the defense industry, asking if there is a case to be made to speak of a MIC on the European level.

With the defense industry being hard to delineate and the prevailing practice of outsourcing industry functions to private business contractors, the real-world situation seems to transcend the confines of a strictly defense industry-based MIC. Further research should be conducted, analyzing the role civil private contractors play in militarization efforts.

By focusing mainly on the domestic implications of the MIC, the definition of Kollmer also ignored foreign army deployments as a potential characteristic of the MIC. Jarecki (2008) has argued that foreign military deployments might be used to test weapon systems and to create a continuous demand for armament materials. Further research should be conducted into the current deployments of the Bundeswehr and to what degree they might be influenced by the MIC.

The latest official dataset concerning the state of the German defense industry as a whole dates back to 2015 (cf. Fischer et al., 2015). Ever since then, significant changes have been taking place considering the tremendous increase in authorized armament exports and military procurement spending. Further research should be conducted into the effect the increase had on general defense industry profitability. Moreover, this fact indicates that the state of the defense industry should by no means be regarded as stagnant. Markets can change quickly due to changes in international foreign policy or a change in governmental orientation. The state of the MIC as explained throughout this paper should thus be understood as a temporary glimpse on the topic as of 2021. Researchers will have to continue to monitor future changes in order to better understand the underlying dynamics of the MIC.

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LIST OF ABBREVIATIONS

AA	Auswärtiges Amt *(Federal Foreign Office)*
AbgG	Abgeordnetengesetz *(Members of the Bundestag Act)*
AfD	Alternative für Deutschland *(Alternative for Germany)*
AWG	Außenwirtschaftsgesetz *(Foreign Trade and Payments Act)*
AWV	Außenwirtschaftsverordnung *(Foreign Trade and Payments Ordinance)*
BAFA	Bundesamt für Wirtschafts- und Ausfuhrkontrolle *(Federal Office for Economic Affairs and Export Control)*
BAE	British Aerospace Electronic Systems
BDSV	Bundesverband der Deutschen Sicherheits- und Verteidigungsindustrie e.V. *(Federation of German Security and Defence Industries)*
BICC	Bonn International Center for Conversion
BMF	Bundesministerium der Finanzen *(Federal Ministry of Finance)*
BMVg	Bundesministerium der Verteidigung *(Federal Ministry of Defense)*
BMWi	Bundeministerium für Wirtschaft und Energie *(Federal Ministry for Economic Affairs and Energy)*
BRH	Bundesrechnungshof *(Federal Court of Auditors)*
BSR	Bundessicherheitsrat *(Federal Security Council)*
Bundeswehr	Unified Armed Forces of Germany
CDU	Christlich Demokratische Union Deutschlands *(Christian-Democratic Union, Germany)*
CIA	Central Intelligence Agency
CSU	Christlich-Soziale Union in Bayern *(Christian-Social Union in Bavaria)*
Destatis	Statistisches Bundesamt *(Federal Statistical Office of Germany)*

DGAP	Deutsche Gesellschaft für Auswärtige Politik *(German Society for Foreign Policy)*
DWT	Deutsche Gesellschaft für Wehrtechnik *(German Association for Military Technology)*
EADS	European Aeronautic Defence and Space (since 2013: Airbus SE)
EU	European Union
EUR	Euro (Currency)
FAZ	Frankfurter Allgemeine Zeitung
FKH	Förderkreis Deutsches Heer e.V. *(Association of the German Army)*
FDP	Freie Demokratische Partei *(Free Democratic Party)*
GDP	Gross Domestic Product
GG	Grundgesetz *(German Basic Law)*
GSP	Gesellschaft für Sicherheitspolitik *(Society for Security Policy)*
GVA	Gross Value Added
H&K	Heckler & Koch AG
KMW	Krauss-Maffei Wegmann GmbH & Co.KG
KrWaffKontrG	Kriegswaffenkontrollgesetz *(War Weapons Control Act)*
MBDA	Matra BAe Dynamics Aérospatiale S.A.S.
MIC	Military-Industrial Complex
MP	Member of Parliament (*Mitglied des Bundestages, MdB*)
NATO	North Atlantic Treaty Organization
R&D	Research & Development
SAMI	Saudi Arabian Military Industries
SIPRI	Stockholm International Peace Research Institute
SPD	Sozialdemokratische Partei Deutschlands *(German Social Democratic Party)*
UN	United Nations

UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
US	United States (of America)
USD	United States Dollar (Currency)
USSR	Union of Soviet Socialist Republics
VgA	Verteidigungsauschuss *(Defense Committee)*
ZMSBw	Zentrum für Militärgeschichte und Sozialwissenschaften der Bundeswehr *(Centre of Military History and Social Sciences of the Unified Armed Forces of Germany)*

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