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The future of UK–Germany defence industrial cooperation

Introduction

Germany and the United Kingdom strive for closer military partnership, including defence industrial cooperation. Both countries mention the goal of more armament partnerships with European and transatlantic partners in their respective defence industrial strategies.[1] However, historical records of armament cooperation involving Germany and the UK show a mixed picture, with successes like the Eurofighter and the A400M, but also less fruitful projects like the original Boxer program, which the UK left. Traditionally, the aerospace sector was most open for cooperative armament projects, while the land and maritime sector remained more national.

Research suggests that political, operational, economic, industrial and technological motivations can lead to closer defence and especially armament cooperation.[2] Often, these cooperative endeavours entail a mutual interdependence between cooperating actors for the long in-service life of modern weapon systems, underlining the high political symbolic value of such cooperation. Yet, beyond armament cooperation, Germany and the United Kingdom also have to think about how collaboration can address structural factors shaping their defence industrial bases, from industrial capability retention, to technological advancement to supply chain dependencies. As both countries and their industrial bases face new geopolitical and geo-economic realities, cooperation might be one way to rise to the multitude of challenges.

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Industrial capabilities and structural factors

The interplay of structural forces such as transnational dependencies and international competition puts pressure on existing industrial capabilities and the respective national ambition to retain the industrial and technological base. While the latter ambition can trigger national responses, it can also be utilised for closer European industrial cooperation. German, continental European, and UK industrial bases are entangled and will remain mutually dependent for the foreseeable future.[3] Factors like IPRs, company subsidiaries,[4] and production and research facilities are likely to only unravel slowly, as

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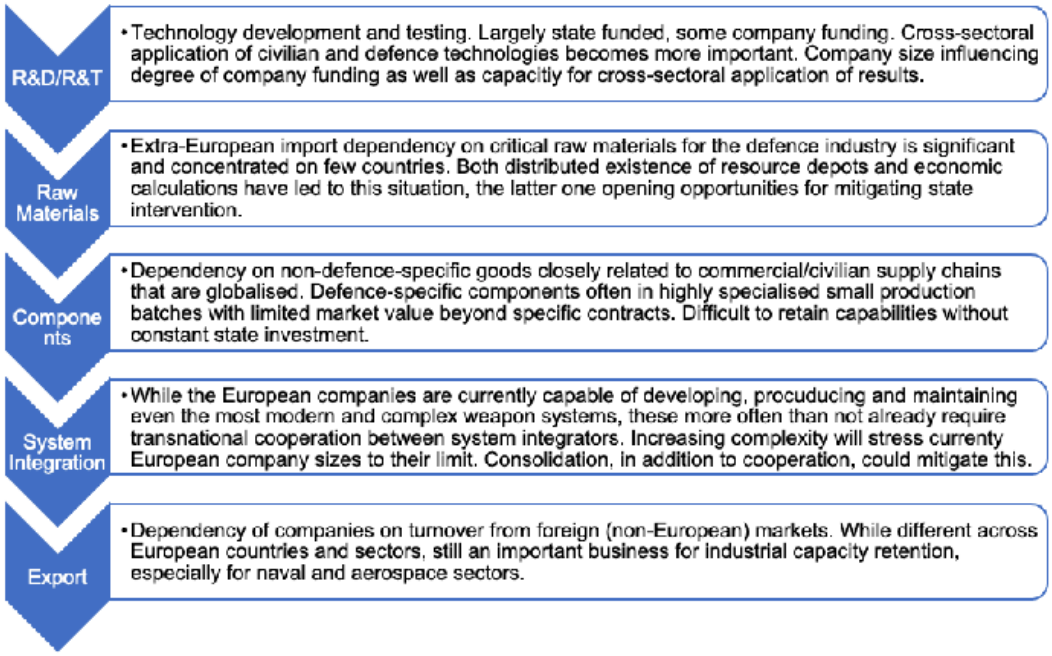
the defence business is quite long-term in its nature. This will remain true even in light of the growing threat of an disorderly Brexit. These intra-European factors are among those that will shape the defence industrial base in the coming years.

However, today, the European Defence and Technological Industrial Base (EDTIB) also shows significant extra-European dependencies across the supply chain it relies upon to deliver equipment to Europe's armed forces – from imported raw materials[5] all the way up to dependencies on weapon system exports to generate revenue.[6] Germany and the UK's approach to defence industrial cooperation should therefore also ask how it can contribute to alleviate these dependencies. At the very least, closer coordination could inform the respective partners on the degrees of dependence they deem acceptable in which area. This becomes even more important given that the UK and the EU will have to figure out how their respective industrial capabilities factor into the larger EDTIB picture and in a comparatively fast-changing international defence industrial landscape where supply chains globalise and new industrial competitors emerge.[7]

Structural factors and dependencies can be understood and aligned by looking vertically at the development and production process of defence goods, as Figure 1 depicts.

FIGURE 1: EUROPEAN DEFENCE INDUSTRIAL DEPENDENCIES AND STRUCTURAL FACTORS (ALIGNED VERTICALLY)



R&D/R&T: Beyond state funding and its importance for R&D in the defence sector, political support for industrial restructuring can increase the resilience of the sector to a downturn in state R&D funding. While larger defence companies are able to spend more of their own resources on R&D, smaller companies are more reliant on state funding. Most European defence companies, including national champions, are relatively small compared to their international rivals.[8] This reality limits their capacity to utilise cross-sectoral innovation and integrate commercial technologies, as well as their ability to invest their own money into R&D, and their access to capital.

As retention of the technological edge – or at least coming second behind the US – remains an important goal for European armed forces, European governments should be interested in measures to increase the R&D/R&T capabilities of the EDTIB, even if this might cut into purely national structures. Politically, this means that allowing, accompanying, or even promoting, European industrial consolidation could offer a path for governments to increase the R&D/R&T capabilities of the EDTIB without investing significantly more – which nevertheless remains central.

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Raw material dependencies: Europe is highly dependent on raw material imports; for 19 out of 39 materials important for the defence industrial production, European countries are totally dependent on suppliers from outside Europe.[9] Nearly three-quarters of the raw material imports are sourced from just six countries.[10] Creating economic incentives for the exploration and exploitation of European depots and build-up of domestic refining capacities by Western companies, regulatory reforms or resource partnerships with non-European partners are all areas which profit enormously from transnational action and collaboration. While the German position is likely covered by EU initiatives in this area, the UK could benefit from coordination with the EU and by facilitating further cooperation with international partners such as Australia.

Component production: Dependencies in component production and system integration are most likely difficult to mitigate as they touch the core of the defence industrial business and thus domestic political interest in Germany and the UK. Moreover, both countries likely have diverging views of the acceptable level of dependency in these areas, especially regarding components. Initiatives in Europe to use only ITAR-free components for example will not be shared by the UK and its close relation to the US and the entanglement of their defence industrial bases. Consequently, an effective handling of non-European dependencies in these life cycle steps would likely require a clearer picture as to what an EDTIB should be able to do and what not, together with the aforementioned industrial consolidation. The key here would be to answer the question what roles British and German industrial bases should play in retaining key industrial capabilities in the European portfolio.

Export: Lastly, export pressure on the industry due to overcapacities in Europe and thus dependencies on non-European demand can be reduced by consolidating supply and demand within Europe. As described above, this will require tailored and specific cooperation between the UK and Germany, but also with other European partners across the life cycle of defence products.

Cooperation across the life cycle

The different stages of the armament life cycle provide a helpful starting point to identify both challenges and opportunities. The sooner cooperation begins and the more consistent it is pursued through the course of a life cycle, the larger the potential benefits across the political, military-operational, and economic dimensions.

Phase I: R&D/R&T

Early collaboration can generate industrial and technological benefits even if it ultimately does not lead to jointly produced and fielded weapon systems. Historically,

joint research and development (R&D) programmes fed into different national successor programmes, increasing their respective technological sophistication.[11]

Consequently, Germany and the United Kingdom – in cooperation with additional European and transatlantic partners – should explore joint R&D and R&T opportunities in technological areas where all actors pursue future capabilities and armament programmes, even if these are not collaborative in nature. For potential joint efforts, these include technologies for medium-to-long-range strike and air defence purposes. New developments, e.g. in passive detection to new effectors like lasers or hypersonic missiles, all require further R&D and R&T before becoming useful for military applications. Examples where R&D and R&T collaboration could yield benefits – even if they lead to national programmes – include technologies for next generation combat aircraft like FCAS and Tempest (and uninhabited wingman) or armour and effectors for armoured vehicles.

> “While the development of concrete systems might prove too sensitive given persistent problems of information sharing even among allies, earlier technological development activities might be a good cooperation opportunity.”

Moreover, operationalising and realising European adaptation to the future of warfare will require significant investment, including in new technologies. As R&D/R&T in the defence sector is still very much dependent on state investment,[12] such activities would profit from European or at least bilateral collaboration. Most NATO members and EU allies share similar visions of how technology will influence the battlefield: characterised by information, its generation distribution and processing as the centre of future warfare.[13] While the development of concrete systems might prove too sensitive given persistent problems of information sharing even among allies, earlier technological development activities might be a good cooperation opportunity.

Phase II: procurement and operation & maintenance

System level

Looking at later stages of the life cycles of military equipment, such as procurement, operation and maintenance, UK-Germany industrial cooperation opportunities show a mixed picture. Unfortunately, the current UK-Germany armament cooperation on the system-level is limited and is likely to remain so for the foreseeable future given the diverging procurement preferences of both countries.[14] In simplified terms, the political and industrial preferences of the German and British government remain roughly constant, which means national or European procurement for Germany, national production or US imports for the UK. Hence, the focus on the system-level should lie on exploiting existing equipment commonalities in operation, maintenance and upgrading. Joint operations for Eurofighter at the Baltic Air Policing and the introduction of Boxer APCs into the British army seem promising to lay the foundations for such cooperation. In earlier stages, that is for development and joint procurement, however, newer, and smaller programs, without overwhelming political visibility, might offer good cooperation opportunities, like uninhabited systems.

Component cooperation

Components of weapon systems also constitute an important portion of the defence market. Short term opportunities here lie predominantly in munitions, as Germany, the UK and Europe as a whole retain a significant dependency on US products in certain domains. Moreover, closer integration of munitions into various systems enhances

European interoperability and might, in the end, be cheaper if ordered together. Since the European stocks for certain munitions are still way too small for high-end and even longer low-intensity conflicts, there is a clear need to take advantage of economies of scale. Moreover, German participation in the UK's complex weapon programme, which addresses some munition shortfalls, could also be an option.[15] Cooperation on procuring components, as well as their development, also makes sense for modular commonly used systems, e.g. new mission modules for the Boxer APC or electronic warfare equipment for the Eurofighter. Moreover, mid-lifetime upgrades for the big-ticket programmes of the last two decades like the Eurofighter or the A400M might offer cooperation opportunities.

Political Issues

Lastly, the political nature of defence industrial cooperation also entails contentious issues. These came to the forefront over the past five years with Brexit, a growing European Union defence industrial ambition and intensified debates about arms exports, especially into regions with active conflicts. All the above have some potential to disrupt or complicate defence industrial cooperation between Germany and continental Europe on the one side and the UK on the other.

While it is still too early to tell what the economic consequences of the Brexit will be in light of uncertainty about a deal, the current political climate between the UK and the EU certainly is not conducive to closer cooperation. For this very reason, defence cooperation, in which the interests of the UK and continental Europe still align, becomes even more important as a showcase for constructive relations across the English Channel.

Another factor that will likely complicate UK-Germany defence industrial cooperation above the component level is the question of dependency on US parts. As some actors in Europe are floating the idea of future "ITAR-free" armament projects,[16] this would likely be a step too far for the UK to follow – politically and industrially. Hence, future collaborative projects should either be in a sector where the EDTIB is already independent or where no fundamental European industrial interests are standing in the way of incorporating transatlantic components. This includes projects for equipment which the Europeans might plan to export to other international customers, which could be problematic if they incorporate ITAR-regulated components.

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Yet not only the US interest in the final destination of their exported components plays a role. The same is true for intra-European arms component trade, as the controversies around German components in products exported from the UK to Saudi Arabia during 2019 demonstrates.[17] Diverging export behaviour between European partners might grow into a factor structurally inhibiting cooperation or determining certain cooperative blocks within Europe. In turn, such a development would likely entail duplication in armament efforts, lead to non-strategic planning and reduce the chances to make the most of cooperation opportunities – that is decreasing costs and profiting from the broadest defence industrial know-how to get the best product.

Recommendations: exploit short term options – explore future opportunities

Right now, political motivation to bind the UK to European security beyond Brexit dominates the exploration of German-British defence industrial cooperation. At the same time, the UK and Germany have pursued different armament strategies. Bringing these two paths to converge is not an easy task in the short-term – especially not on defence, where procurement and lifecycles span over decades. However, the current situation offers some options.

> “For potential industrial cooperation, Germany and the UK have to systematically explore opportunities in operational, technological, industrial and economic dimensions.”

For potential industrial cooperation, Germany and the UK have to systematically explore opportunities in operational, technological, industrial and economic dimensions. This would provide solid reasoning for selecting respective cooperation projects. Doing so requires broadening the scope of cooperation beyond the “traditional” armament cooperation to include topics like mitigating industrial dependencies and developing a clearer transnational industrial ambition. Four steps could mark the start of such defence industrial cooperation:

1. Focus on equipment commonality and future technologies in armament cooperation: Germany and the UK could both benefit economically and operationally from further deepening defence industrial cooperation based on equipment commonalities by exploring future joint updates. Moreover, joint investment into R&D and R&T, especially in technology and product areas like robotics for uninhabited systems, smart munitions and digitisation, would offer future opportunities for joint procurements. At the very least, even if these collaborations fail to lead to joint armament projects, they could enhance the sophistication of future projects of both actors. As with the Franco-German armament projects, deciding on clear leads for each project would help mitigate requirement overloads. For example, in the case of uninhabited systems, both armed forces envision important roles for these types of systems, yet the UK appears to be further ahead in their integration. In turn, this would make a UK lead in such endeavours useful.

2. Manage resource dependencies: define and where necessary reduce, where possible cooperate. Reducing defence industrial dependencies or at least defining acceptable levels of dependence across the life cycle of products would enhance security of supply. Creating a raw material strategy for the UK and aligning[18] it with the EU’s strategy for critical raw materials would be a first step. Both could address standing weaknesses such as insufficient incentives for domestic production and refining capacities and insufficient supply chain diversification efforts.[19] The UK could also play a role in facilitating closer exchange between the EU and international partners such as the USA, and Commonwealth members. Among those, Australia and South Africa already are important raw material suppliers, but others also show potential.

3. Define transnational defence industrial capability ambitions: Even Brexit will not change the fact that the British DTIB is an important part of the EDTIB. Yet, in a changing international market with emerging competitors and an ever more crowded export market, industrial consolidation will once again become an important topic in Europe. Since further national consolidation is hardly recommendable in most European countries, governments should explore which transnational consolidations would fit both their national ambitions as well as the international competitiveness of the EDTIB

and its companies and nudge them towards that future. Developing such a transnational, European industrial agenda would likely alleviate extra-European dependencies on components and exports.

4. Clarify arms export positions: As the debates of 2019 have shown, European governments need to calibrate their arms export policies more jointly. This includes Germany and the United Kingdom. Both should explore options to emulate the Franco-German arms export control agreement from November 2019[20] for joint projects and especially component deliveries. This would increase mutual trust among companies, which in turn might contribute to positive attitudes towards further industrial consolidation.

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