About the Article

Should Germany pursue the ambition to build Europe's strongest conventional army given its economic costs and constraints? Rearmament can foster dual-use innovation, industrial restructuring, and strategic autonomy, but only if procurement is reformed, R&D is targeted, and financing becomes sustainable. The ambition is economically viable only under currently unmet conditions. Without reforms and sustainable funding, German rearmament risks becoming fiscally burdensome and ineffective.

About the Author

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1. Introduction

In light of the Russian invasion of Ukraine, the European post-Cold War security order has been upended. NATO's eastern flank is under pressure, prompting member states to increase their defence spending. Additionally, US reliance is increasingly questionable under Donald Trump. Under these circumstances, Germany has faced growing pressure to assume a greater role in European security. In February 2022, Chancellor Scholz announced the Zeitenwende, which represented the breakaway from Germany's post-WW2 military restraint. It underscored the fact that Europe's security environment changed irreversibly and that Germany's post-Cold War assumptions of peace and stability could no longer be sustained. In this context, Chancellor Merz announced his aim to develop the "strongest conventional army in Europe" (Inayatullah, 2025). This ambition carries implications well beyond the military domain. Rearmament at this scale requires enormous financial commitments, structural reforms and a shift in Germany's self-image. This essay examines whether Germany should pursue this ambition given its economic implications. It concentrates on three key dimensions for assessing the ambition's desirability: Germany's innovation and industrial transformation, its fiscal sustainability, and its implications for Europe's strategic-industrial autonomy. These dimensions capture the core economic considerations that, to a considerable extent, shape the desirability of the ambition. They do, however, not claim to offer a complete account of all relevant factors.

2. The Strategic Shift in German Security Policy

Since 1945, German security policy has been shaped by profound restraint. Germany's role was that of a 'reluctant power', avoiding military leadership and emphasising diplomacy, economic statecraft, and European integration as substitutes for hard power. This posture could also be seen through, on the one hand, the 'peace dividend', which shifted resources from defence to domestic priorities and, on the other hand, through the policy of engagement with Russia, which was based on the belief that economic ties and dialogue could foster cooperation and long-term stability. German strategy thus prioritised economic prosperity and stability over military assertiveness, a pattern of behaviour consistent with long-standing societal scepticism toward militarisation. Russia's full-scale invasion of Ukraine in February 2022 marked the collapse of these post-Cold War certainties. In his landmark speech, Chancellor Scholz declared a Zeitenwende, a turning point in German foreign and security policy. He pledged an immediate special fund to the Bundeswehr, ended resistance to long-standing reforms such as armed drones and confirmed Germany's commitment to NATO's nuclear sharing. The Zeitenwende signalled the definitive end of the previous strategy of engagement with Russia, recognising Russia as a threat to European security. The Zeitenwende thus functioned both as a rhetorical device and as a window of opportunity. Yet, lagged behind rhetoric, as chronic underfunding and bureaucratic procurement impeded the process. With the election of Chancellor Merz, Germany signalled a more ambitious break from past restraint. By exempting defence spending above 1% of GDP from the debt brake, the new government created fiscal space for rearmament. This is a remarkable step up from the Zeitenwende announcement of Scholz, which only involved 100 bn €. Merz's stated aim for creating the strongest European conventional army marks a departure from Scholz's cautious pragmatism, reframing rearmament as a bid for strategic leadership. This shift raises the central question of this paper: not whether Germany can achieve such a goal, but whether it should, given the profound economic requirements and consequences associated with innovation, industrial capacity, and long-term fiscal sustainability.

3. Innovation and Industrial Transformation

Merz's ambition cannot be measured only in terms of troop numbers or platforms. What matters economically is whether rearmament becomes a long-term fiscal burden or a catalyst for industrial and technological renewal. Importantly, while higher defence spending can stimulate industrial activity, the idea that military expenditure creates sustainable economic growth is contested. Empirical studies show that military outlays have weak or even negative effects on long-term GDP growth when measured purely through direct output (Dunne & Tian, 2016; Ilzetzki, 2025). Defence spending becomes economically meaningful primarily when indirect effects are considered, such as R&D spillovers, dual-use innovation and military-civilian technological spillovers (Lehmus et al., 2025). Thus, defence spending can generate positive effects when it is strategically spent and, under the right conditions, can contribute to productivity, technological sovereignty and broader economic competitiveness. The following section examines to what extent Germany's current rearmament approach aligns with these conditions.

Fiscal sustainability:
the ability to maintain higher defence spending over time without undermining long-term budget stability.

3.1 Dual-use Innovation

Value creation in the defence sector is undergoing a structural shift. From hardware like tanks and aircraft toward enabling technologies, such as sensors, data processing, artificial intelligence and secure communication. Industry leaders acknowledge this transition, as Hensoldt's CEO recently noted, the shell of a system matters less than the digital layer that gives it awareness and connectivity (Gebauer et al., 2025). This shift is reshaping market dynamics. Investment in start-ups such as Helsing, Anduril or Quantum Systems has skyrocketed in recent years, with valuations in some cases rivalling established players (Gebauer et al., 2025). Start-ups are moving fast in areas such as AI-enabled situational awareness and drone systems, often specialising in technologies that originated in civilian fields but are now rapidly adapted for defence. The Bundeswehr has recognised this potential: through its Cyber Innovation Hub and the in-house Platform 42 software factory, it actively tests civilian AI applications to assess their usefulness for military purposes (Gebauer et al., 2025). One successful example is the sensor-packed drones by a startup used for the civil purpose of examining earth layers for agricultural purposes, with which the army will be able to identify mines from a safe distance and analyse their placement patterns (Gebauer et al., 2025). Ukraine's experience also shows the payoff of such agility – civilian drone and software innovations were converted into battlefield assets within months (Sohn, 2025). This illustrates how dual-use innovation can accelerate military adaptation. To institutionalise this adaptability, several analysts propose establishing a national/ European DARPA-equivalent capable of funding high-risk, mission-oriented R&D in critical fields such as quantum computing, microelectronics, and cybersecurity (Marin, 2020; Matthews, 2025). Similar agencies in the US and UK have proven effective in translating defence research into broad technological spillovers (see e.g. Erken et al., 2025). For dual-use innovation to scale beyond individual projects, cooperation between defence start-ups and established companies becomes crucial. On the one hand, large firms offer industrial scale, established certification processes, and long-term production capacity, while on the other hand, start-ups bring speed, specialised software expertise and disruptive approaches (Sohn, 2025) (see figure 1). Hence, innovation should be a joint task (Gebauer et al., 2025), but tensions persist. Established companies often prefer proprietary systems, while younger firms advocate for open sources that would allow different systems to communicate seamlessly on the battlefield (Gebauer et al., 2025). The Bundeswehr has already signalled that future procurement will require such openness, but this represents a cultural break with the safeguarding

of expertise of the past (Gebauer et al., 2025). Effective cooperation supported by procurement rules that favour interoperability is a precondition for translating higher defence spending into genuine dual-use innovation. Quantum technologies provide another example of dual-use potential. Quantum computing, sensing, and communication have profound implications for both security and the economy. Given their dual-use characteristics, early and targeted investment in quantum R&D is desirable. However, the Bundeswehr remains unprepared for integration, and Germany's current innovation architecture is too bureaucratic and risk-averse (Steudle, 2025), particularly disadvantaging start-ups with a dual-use focus. This institutional inertia not only delays adoption but also creates security dependencies on third countries and large foreign technology firms (Steudle, 2025). Targeted quantum investment, combined with procurement reform and support for agile dual-use start-ups, could position Germany in a leading position in a critical future technology.

3.2 Industrial restructuring

Rearmament on the scale envisaged by the German government will inevitably reshape the country's industrial landscape. Whether this restructuring is economically desirable depends on whether defence demand can support struggling sectors, preserve high-value employment and enable productive reallocations, without creating rigidities or long-term inefficiency. Germany enters the rearmament phase amid industrial decline. According to recent analyses, the loss of production within Europe is most severe in Germany and Italy (Colliac & Barette, 2025). The decline particularly affects the automotive and energy-intensive sectors (Colliac & Barette, 2025). These sectors face not only cyclical challenges, but also structural headwinds arising from electrification, high energy prices and global overcapacity (Colliac & Barette, 2025). As demand stagnates, industrial excess creates economic and political pressure to find new production opportunities. The growing defence demand in Germany has already triggered factory conversions from civilian to military

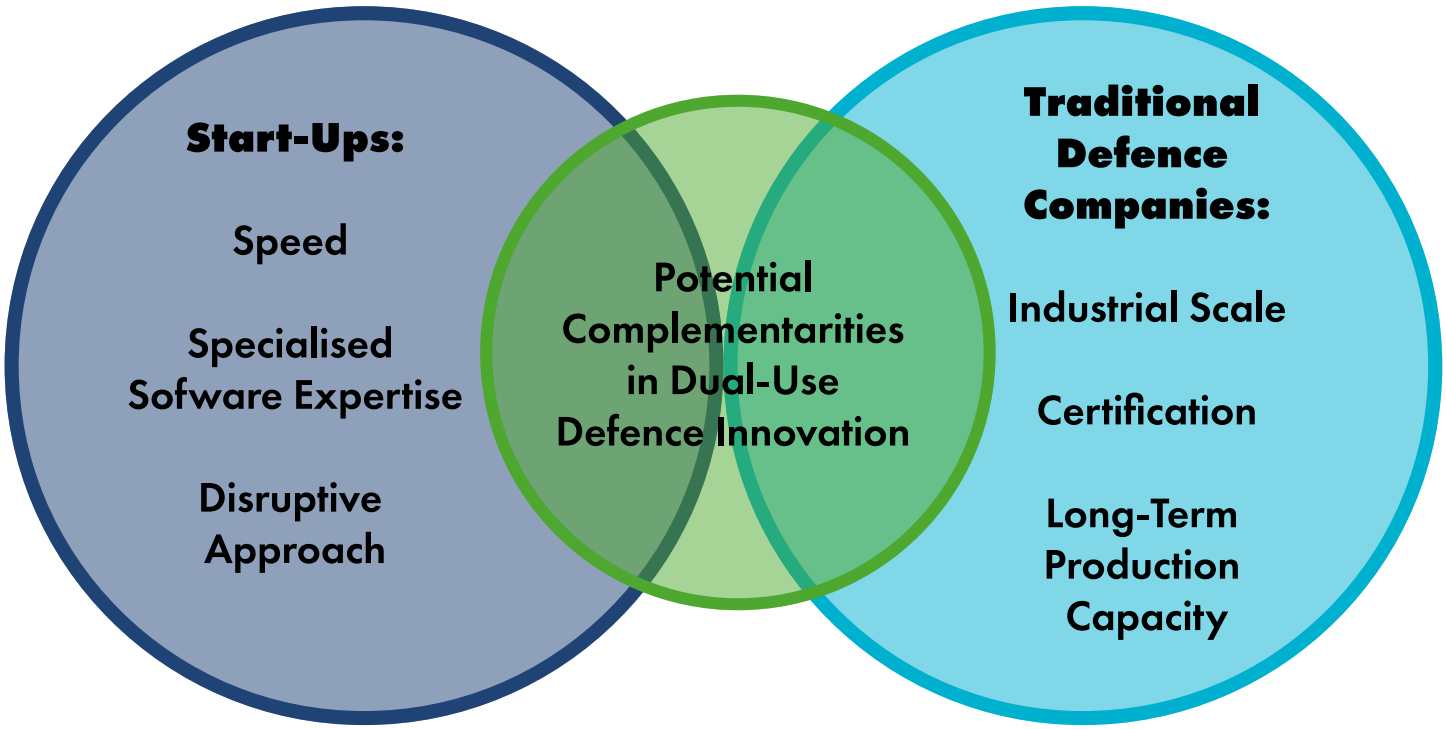

Figure 1: Potential complementarities in dual-use defence innovation

production (Colliac & Barette, 2025). Analysts note that additional industrial capacities could likely be reallocated to defence manufacturing, given that the decline in civilian demand appears at least partially structural (Colliac & Barette, 2025). One example is the automotive supplier Pierburg, which has increasingly redirected capabilities toward military equipment, helping stabilise employment in the sector otherwise exposed to layoffs (Küper et al, 2025). Another example is the company Germandrones, which first developed drones for the agricultural sector, and now mainly produces drones for Ukraine (Küper et al, 2025). However, converting civilian production to military output is neither frictionless nor universally feasible. Defence equipment requires different safety standards, highly specific materials, long certification procedures and distinct development cycles (Wolfenstein, 2025). Firms must navigate stringent export regulations, security clearances and procurement norms, meaning that the transition can be slow, capital-intensive and risky, particularly for companies lacking defence experience (Wolfenstein, 2025). This severely limits the extent to which defence production can offset structural decline in key industries. Taken together, the previous section underscores that economic gains depend on institutional reform, industrial adaptability and the ability to translate spending into productive outcomes. Yet, the factor of long-term fiscal sustainability for the required level of defence investment is equally crucial. The following section consequently turns to this question.

> **Dual-use innovation refers to defence-driven technologies that generate civilian spillovers, making military spending economically valuable only when it boosts broader productivity and competitiveness.**

4. Fiscal Sustainability

Whether Germany's ambition is economically desirable also depends on its long-term fiscal sustainability. At present, Germany meets NATO's 2% target only because of the 100€ billion *Sondervermögen*. By mid-2024, 47.8€billion had already been spent, and the remainder is already allocated and will likely be exhausted by 2027 (Besch, 2025). Germany's ability to maintain the 2% benchmark is therefore secure only as long as the special fund can fill structural gaps in the regular defence budget. After the depletion of the *Sondervermögen*, Germany faces an unresolved financing gap. Estimates suggest that from 2028 onward, the Bundeswehr will require at least 30€ billion per year in additional funding to maintain current plans, even before considering Merz's more ambitious goal (Matlé, 2025). This increase is currently not integrated into long-term budget planning. Covering such a gap would require either significant tax increases, which remain politically unpopular, or cuts in other major spending categories. At the same time, Germany's public debt ratio is projected to rise from 62.5% in 2024 to nearly 71% of GDP by 2030, reducing fiscal room for manoeuvre (Colliac & Barette, 2025). While this is a notable increase, it would still leave Germany's debt level well below that of other major economies (see figure 2). The more binding constraint is whether defence spending is efficient enough to support growth and revenues that can sustainably service higher interest costs. Germany is likely to benefit from a short-term economic stimulus due to higher military spending (Colliac & Barette, 2025), but maintaining this level of expenditure over time requires a credible and sustainable financing plan. Analyses show that temporary spending spikes can be debt-financed, but permanent increases ultimately require stable revenue streams or redistribution within the budget (Ilzetzki, 2025). Without such clarity, firms delay investment and production scaling, resulting in slower capacity growth and more fragile supply chains (Besch, 2025). So, despite the 2025 debt brake exemption and expanded export credit guarantees (Bundesministerium der Finanzen, 2025), these measures improve only short-term financing and do not sufficiently address the long-term structural funding gap.

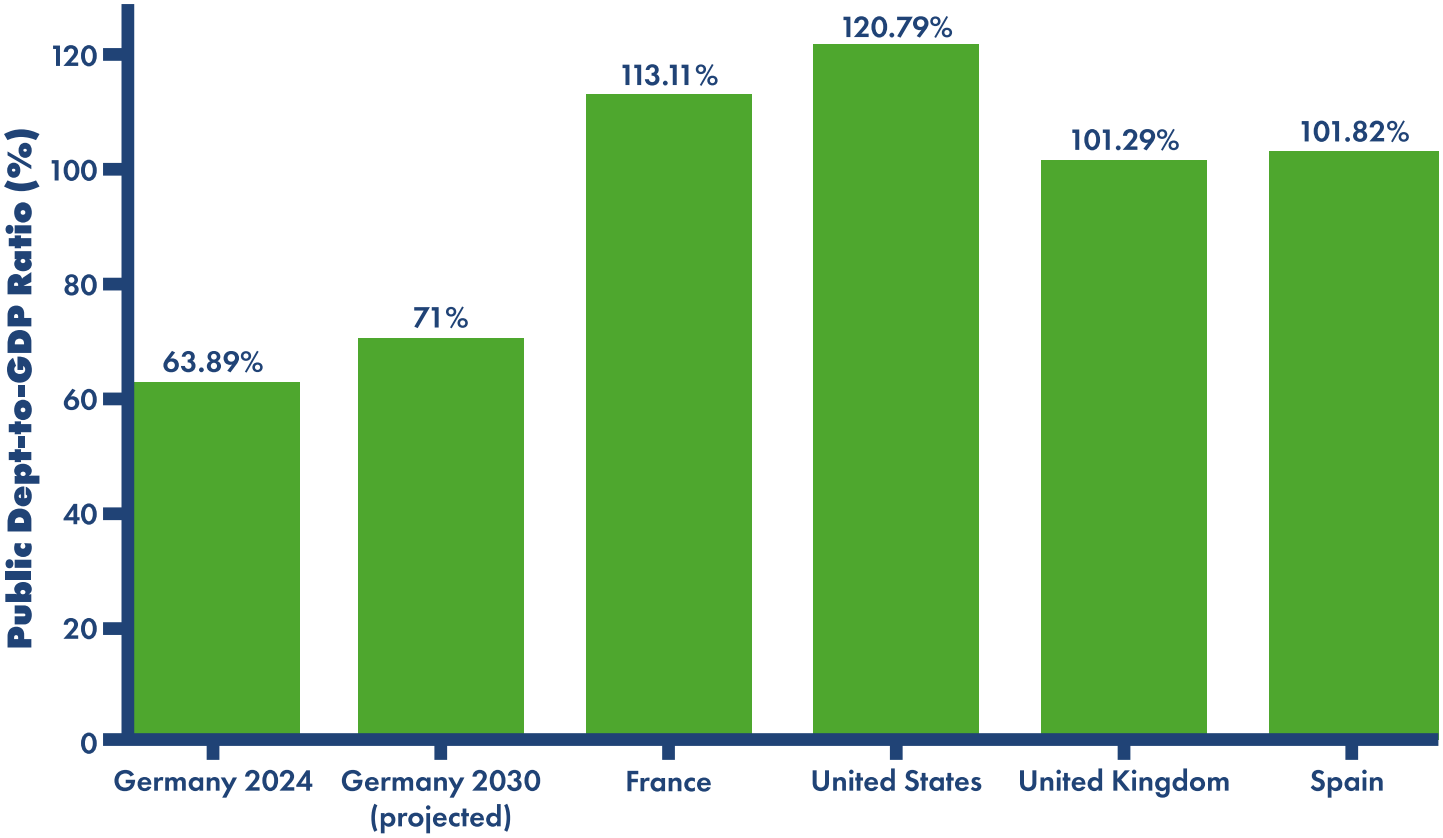

Figure 2: Government Debt Ratios: Germany in Context, Source: https://www.imf.org/external/datamapper/GG_DEBT_GDP@GDD/FRA/DEU/GBR/USA/ESP

5. Defence-Industrial Challenges and Strategic Autonomy

Even if rearmament efficiently generates and operationalises innovation and can be financed sustainably, its economic desirability also rests on whether defence spending can be converted into actual capability. This depends not only on Germany's national procurement structures but also on the broader, often fragmented, European defence-industrial landscape in which they operate. The aim here is not to argue for or against a deeper European coordination, but to assess how existing inefficiencies affect the economic desirability of Germany's ambition. Germany's procurement system remains a major hindrance. A long-standing lack of strategic focus on defence has produced an excessively bureaucratic procurement apparatus. This is not unique to defence, but its consequences are amplified in this sector (Besch, 2025). Even basic equipment shortfalls in the armed forces can be traced to a large part to procedural delays rather than technological limitations (Besch, 2025). To address this, the Bundestag passed a 2022 law to accelerate Bundeswehr procurement. The reform enables authorities to award contracts faster, for example, by speeding up review procedures (Bundesregierung, 2025). Yet firms still report prolonged security clearance processes, talent shortages and the burden of stringent EU procurement and environmental, social, and governance rules (Besch, 2025). As a result, procurement timelines remain misaligned with technological cycles, especially in fast-moving fields like AI and drones. Beyond national challenges, Germany operates within a fragmented European defence-industrial landscape, imposing additional economic constraints. Joint projects could, in theory, pool demand, reduce duplication and increase interoperability. But in practice, the current level of fragmentation produces several inefficiencies and progress is limited. Development cycles still span decades, member states are reluctant to pool sovereignty over key national technologies, and European mergers face political resistance. The Future Combat Air System (FCAS) illustrates how fragmentation affects the economic outcomes. Intended as a flagship Franco-German-Spanish project to develop a sixth-generation fighter and a system-of-systems architecture, FCAS has repeatedly stalled

due to disagreements over industrial leadership, intellectual property rights, workshare allocation and national strategic priorities (Franke, 2025). This illustrates a core dilemma: without political alignment and the willingness to share technological sovereignty, multinational programmes risk producing costly delays rather than capability gains. These challenges stand in stark contrast to models such as the US DARPA model, which achieves rapid development through small teams, agile decision-making and high-risk early-stage funding. This comparison highlights that European challenges are not merely underinvestment but a structural mismatch between fast-moving technological cycles and slow-moving procurement institutions. Without more flexible mechanisms that accelerate early development phases, Europe risks producing late and outdated systems despite high spending. Taken together, these dynamics show that the economic effectiveness of Germany's rearmament ambition depends also on reforming procurement and reducing industrial fragmentation, also in the European context, so that additional funding does not risk being lost to delays or duplication. Moreover, Germany has yet to decide whether to prioritise a more European or national industrial model, a strategic ambiguity that itself undermines efficiency and long-term investment.

6. Conclusion

Germany's ambition to build the strongest conventional army in Europe is economically desirable and feasible only under demanding and currently unmet conditions. The essay has shown that rearmament can support innovation, stabilise parts of the industrial base and strengthen strategic-industrial autonomy and efficiency, but these effects are highly conditional. First, the innovation depends on whether defence spending is directed toward dual-use technologies, agile R&D structures and interoperable systems. Second, fiscal sustainability remains uncertain, and after the depletion of the *Sondervermögen*, Germany faces a huge structural funding gap. Long-term sustainability requires a stable financing plan, which Germany has yet to articulate. Third, economic effectiveness is currently still constrained by slow procurement, regulatory obstacles and a fragmented defence-industrial landscape within Europe. Beyond these economic considerations, broader factors ultimately shape overall desirability, such as the feasibility of meeting personnel targets, the societal legitimacy of an expanded Bundeswehr and Germany's ability to articulate a coherent strategic direction. These lie outside the scope of this paper but remain essential for any long-term transformation. Generally, Germany could turn its rearmament ambition into an economically meaningful project, but only if it aligns spending with technology priorities, secures sustainable financing and reforms industrial structures. Without these steps, the ambition risks becoming fiscally burdensome and strategically ineffective.

References

Besch, S. (2025). A Zeitenwende for Germany's Defence Industry. In S. Bressan & O. Schmitt (Eds.), Germany's Zeitenwende: The domestic and international dimensions of a turning point (pp. 39–51). U.S. Army War College Press. https://press.armywarcollege.edu/cgi/viewcontent.cgi?article=1972&context=monographs.

Bundesministerium der Finanzen. (2025, July). Verbesserte Finanzierungsbedingungen für die Sicherheits- und Verteidigungsindustrie. Monatsbericht. https://www.bundesfinanzministerium.de/Monatsberichte/Ausgabe/2025/07/Inhalte/Kapitel-3-Analysen/3-3-finanzierungsbedingungen-svi.html.

Bundesregierung. (2025, July 23). Mehr Tempo für eine starke Bundeswehr. https://www.bundesregierung.de/breg-de/aktuelles/bundeswehrbeschaffung-2367110.

Colliac, S. & Barette, L. (2025). Rearm Europe: Turning the challenge of rearmament into an opportunity for European industry and growth. BNP Paribas Economic Research. https://economic-research.bnpparibas.com/html/en-US/Rearm-Europe-turning-challenge-rearmament-into-opportunity-European-industry-growth-6/25/2025,51670.

Dunne, J. P., & Tian, N. (2016). Military expenditure and economic growth: A survey. The Economics of Peace and Security Journal, 11(2), 5–14. https://doi.org/10.15355/epsj.11.2.5.

Erken, H., Every, M., & Remmen, W. (2025). The economic returns on defence R&D (SUERF Policy Brief No. 1087). SUERF – The European Money and Finance Forum. https://www.suerf.org/publications/suerf-policy-notes-and-briefs/the-economic-returns-on-defense-rd/.

Franke, U. (2025, December 1). The trouble with FCAS: Why Europe's fighter jet project is not taking off. European Council on Foreign Relations. https://ecfr.eu/article/the-trouble-with-fcas-why-europes-fighter-jet-project-is-not-taking-off/.

Gebauer, M., Hesse, M., Rosenbach, M., & Traufetter, G. (2025, February 2). Battlefield disruption: German military seeks to adapt as AI changes warfare. DER SPIEGEL. https://www.spiegel.de/international/germany/battlefield-disruption-german-military-seeks-to-adapt-as-ai-changes-warfare-a-ebb36190-8b79-4e85-bd21-e765a9fc9857.

Ilzetzki, E. (2025). Guns and growth: The economic consequences of defense buildups. Kiel Institute for the World Economy (IfW Kiel). https://www.ifw-kiel.de/publications/guns-and-growth-the-economic-consequences-of-defense-buildups-33747/.

Inayatullah, S. (2025, May 14). Germany aims to have the strongest military in Europe – Merz. Deutsche Welle. https://www.dw.com/en/germany-aims-to-have-strongest-military-in-europe-merz/a-72546478.

Küper, M., Pallokat, J., & Friedrich, D. (2025, August 12). Immer mehr Firmen in Berlin steigen in die Rüstungsproduktion ein. rbb24. https://www.rbb24.de/wirtschaft/beitrag/2025/08/krieg-ruestung-munition-waffen-ukraine-berlin-brandenburg.html.

Lehmus, M., Nelimarkka, J., & Vilmi, L. (2025). Will higher defence spending boost euro area growth? Bank of Finland Bulletin. https://www.bofbulletin.fi/en/2025/5/will-higher-defence-spending-boost-euro-area-growth/.

Marin, D. (2020, February 14). Europe needs a DARPA. Bruegel. https://www.bruegel.org/comment/europe-needs-darpa.

Matlé, A. (2025). German conventional defense capabilities and capacity. In S. Bressan & O. Schmitt (Eds.), Germany's Zeitenwende: The domestic and international dimensions of a turning point (pp. 29–37). U.S. Army War College Press. https://press.armywarcollege.edu/cgi/viewcontent.cgi?article=1972&context=monographs.

Matthews, D. (2025, January 30). Germany's SPRIND innovation agency: What works, what does not? Science|Business. https://sciencebusiness.net/news/research-and-innovation-gap/germanys-sprind-innovation-agency-what-works-what-does-not.

Sohn, G. (2025, July 31). Sicherheitsstrategie für Deutschland: Dual-Use und Innovationskraft in der Zeitenwende. Smarter Service. https://www.smarter-service.com/2025/07/31/sicherheitsstrategie-fuer-deutschland-dual%E2%80%91use-und-innovationskraft-in-der-zeitenwende/.

Steudle, M. (2025). Quantentechnologie und Deutschlands Sicherheitspolitik. Konrad-Adenauer-Stiftung. https://www.kas.de/documents/d/guest/quantentechnologie-und-deutschlands-sicherheitspolitik-1.

Wolfenstein, K. (2025, August 26). Dual-use-Güter als Hoffnungsträger: Wie Unternehmen von ziviler auf militärische Produktion umstellen können. Xpert.Digital. https://xpert.digital/dual-use-gueter-als-hoffnungstraeger/.