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Alliances and the arms industry in small states

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Takeaways

- **In asymmetric alliances, the nature of decision-making (coercive or liberal), shapes the possibilities for smaller states to develop their own defense industry.**
- **Liberal asymmetric alliances such as NATO create structural incentives for smaller states to invest in domestic arms industries by emphasizing interoperability, collaboration, and shared standards.**
- **Smaller states seeking to develop arms industries must navigate a complex interplay of international and domestic factors, balancing the opportunities provided by alliance membership with the challenges of competing in a globalized defense market.**
- **Smaller states must align domestic policies with alliance objectives to maximize the benefits of membership.**

INTRODUCTION

Developing an arms industry is costly, because of "the inescapable fact that greater autonomy can be bought only at the price of reduced efficiency in armament production" (Moravcsik 1991, 3). Indeed, building an arms industry requires significant economic resources, skilled labor, and technology. For small states with limited budgets and domestic markets, this endeavor can appear economically unfeasible. However, these investments are often driven by strategic considerations, such as achieving greater autonomy in defense production and reducing reliance on foreign suppliers. It is then worth exploring the paradox of why small states, despite their limited capabilities, invest in domestic arms industries.

In an academic article (Béraud-Sudreau and Schmitt 2024), Lucie Béraud-Sudreau and I propose that alliances, particularly the nature of

their decision-making, play a crucial role in determining whether smaller states pursue domestic arms industries. Coercive alliances, such as the Warsaw Pact, tend to suppress industrial autonomy by enforcing centralized control, while liberal alliances, like NATO, offer structural incentives for innovation and collaboration. We test these hypotheses through comparative case studies of Czechia and Estonia, examining how their arms industries evolved during their transition from the Warsaw Pact to NATO. By examining the interplay between alliance membership and industrial strategy, we shed light on the complex dynamics that shape the defense policies of smaller states.

ALLIANCES AND THE ARMS INDUSTRY

Fundamentally, we argue that a fundamental difference between alliances shape incentives for national arms production and build a distinction between coercive and liberal asymmetric alliances. These alliances differ in their management styles and the incentives they create for member states.

Coercive asymmetric alliances, such as the Warsaw Pact, are dominated by a hegemonic power that imposes its strategic priorities on smaller members. These alliances often suppress the industrial autonomy of smaller states by requiring them to conform to centralized defense strategies. For example, in the Warsaw Pact, member states like Czechoslovakia were tasked with producing military equipment according to Soviet designs, leaving little room for independent innovation. The primary goal of such alliances is to serve the strategic interests of the dominant power, often at the expense of smaller members' autonomy.

In contrast, liberal asymmetric alliances, such as NATO, operate on principles of cooperation and mutual benefit. These alliances allow smaller states to retain a degree of autonomy while encouraging them to align with broader alliance objectives. Liberal alliances emphasize interoperability, collaboration, and shared standards, creating opportunities for smaller states to develop niche capabilities and integrate into international supply chains. NATO's structure fosters innovation by providing access to advanced technologies and facilitating partnerships among member states.

We hypothesize that the type of alliance a state belongs to plays a decisive role in shaping its defense industrial policies. Coercive alliances suppress independent industrial development, while liberal alliances create structural incentives for smaller states to invest in domestic arms industries. We use Czechia and Estonia as case studies to explore these dynamics, analyzing how their arms industries evolved during their transition from the Warsaw Pact to NATO.

Czechia

Czechia's experience provides valuable insights into how alliance membership influences arms industry development. During the Cold War, Czechoslovakia was a key member of the Warsaw Pact and played a significant role in the Soviet military-industrial complex. The country's industrial capabilities were substantial, making it one of the leading arms producers in the Eastern Bloc. However, its role was primarily that of a subordinate supplier, producing equipment designed by the Soviet Union. The coercive nature of the alliance left little room for innovation or independent decision-making.

Under the Warsaw Pact, Czechoslovakia was integrated into the Soviet defense network. The country was tasked with manufacturing military equipment to support the USSR's strategic goals, including supplying weapons to Soviet-aligned states worldwide. While Czechoslovakia had considerable industrial expertise, its production was limited to older-generation weapons and outdated technologies. For example, the country produced T-55 tanks long after the Soviet Union had moved on to more advanced models like the T-80. This arrangement reflected the coercive nature of the alliance, which prioritized Soviet strategic interests over the autonomy of smaller members.

The collapse of the Soviet Union and the dissolution of the Warsaw Pact in 1991 marked a turning point for the Czech arms industry. The transition to a market economy, combined with the loss of Soviet markets, led to a dramatic decline in production and exports. Many state-owned enterprises faced bankruptcy, and the government ceased subsidizing the defense

sector. This period of crisis forced the Czech government to adopt a new approach to industrial policy, focusing on selective intervention and privatization.

NATO membership, achieved in 1999, provided a framework for rebuilding the Czech arms industry. The alignment with NATO standards facilitated partnerships with Western defense firms and opened up new markets for exports. One notable success was the collaboration between Aero Vodochody and General Dynamics, which led to the production of the Pandur II armored vehicle. The Czech arms industry also benefited from joint ventures and technology transfers, which enhanced its capabilities and competitiveness.

However, the transition was not without challenges. The failure of the L-159 aircraft project, a joint venture with Boeing, highlighted the risks of overreliance on foreign partners. Despite substantial investments, the project failed to achieve its objectives, leaving the Czech government to absorb significant losses. This experience underscored the need for a balanced approach to industrial development, one that combines international collaboration with domestic capacity-building.

By 2020, Czechia had established itself as a significant arms producer within NATO. The country's arms industry was characterized by a mix of traditional manufacturing and high-tech innovation, with over half of its exports destined for NATO countries. The shift from a coercive to a liberal alliance enabled Czechia to leverage its historical expertise while integrating into transatlantic supply chains. However, the experience also highlighted the challenges of navigating a competitive and complex defense market.

Estonia

Estonia's trajectory contrasts sharply with that of Czechia, reflecting its different historical and geopolitical context. Under Soviet rule, Estonia's industrial capacities were primarily directed toward serving the USSR, with limited focus on developing a domestic arms industry. Following the restauration of independence in 1991, the country faced the challenge of building an arms industry almost from scratch. Initial attempts to revive Soviet-era facilities, such as the state-owned E-Arsenal, were largely unsuccessful. The company struggled with inefficiency and financial losses, ultimately leading to its liquidation in 2012.

The establishment of the Estonian Defence Industry Association (EDIA) in 2009 marked a turning point. Recognizing the limitations of traditional manufacturing, Estonia adopted a strategy focused on innovation and niche markets. The country's small size and limited resources necessitated a focus on high-tech sectors, such as cyber defense, robotics, and unmanned systems. This approach aligned with NATO's emphasis on emerging technologies, making Estonia a valuable member of the alliance.

NATO membership, achieved in 2004, provided a framework for Estonia's defense strategy, but the role of the European Union in shaping its arms industry was equally significant. EU funding mechanisms, such as the European Defence Fund (EDF) and its predecessor instruments, supported the growth of Estonia's small and medium-sized enterprises. This financial support contributed to Estonian firms' competitiveness in international markets. Key companies like Milrem Robotics and Cybernetica emerged as leaders in their fields, producing unmanned ground vehicles and cybersecurity solutions, respectively.

While NATO provided strategic alignment, Estonia's arms industry remained driven by domestic innovation and export opportunities. By 2020, the sector had become a dynamic and export-oriented industry, with a strong focus on high-tech solutions. The interplay between NATO and EU incentives highlights the importance of considering multiple factors in shaping industrial development.

THE ROLE OF ALLIANCES IN DEVELOPING A DEFENCE INDUSTRY FOR SMALL STATES

The case studies of Czechia and Estonia reveal a nuanced relationship between alliance membership and arms industry development.

While alliance membership is a significant factor influencing industrial strategies, its im-

pact is mediated by historical, economic, and institutional contexts. The distinction between coercive and liberal alliances provides a useful framework for analyzing these dynamics, but the outcomes also depend on how states navigate the opportunities and constraints imposed by their alliances.

In coercive alliances, smaller states are often relegated to subordinate roles within a centralized framework. Their industrial capacities are directed toward serving the dominant power's strategic goals, leaving little room for independent decision-making or innovation. The Warsaw Pact exemplified this dynamic, as smaller members like Czechoslovakia were tasked with producing equipment designed by the Soviet Union, often at the expense of developing their own capabilities.

The transition to liberal alliances, such as NATO, offers a stark contrast. These alliances create structural incentives for smaller states to invest in domestic arms industries by emphasizing interoperability, collaboration, and shared standards. NATO's decentralized approach allows member states to pursue their own industrial priorities while aligning with broader alliance objectives. However, the benefits of liberal alliances are not automatic; they depend on how states leverage the opportunities provided by membership. As the case studies demonstrate, factors such as historical legacies, domestic policies, and the role of other international organizations like the European Union significantly shape the outcomes.

Czechia's experience illustrates how a transition from a coercive to a liberal alliance can facilitate the modernization of an established arms industry. By aligning with NATO standards and forging partnerships with Western defense firms, Czechia was able to integrate into transatlantic supply chains and develop new capabilities. However, the process was not without challenges, as the country faced significant setbacks in its efforts to rebuild its industry after the collapse of the Warsaw Pact.

In contrast, Estonia's experience highlights the potential for small states to carve out niche markets in high-tech sectors. Lacking the industrial infrastructure inherited by Czechia, Estonia focused on innovation and emerging technologies, such as cyber defense and robotics. While NATO membership provided a framework for strategic alignment, the European Union played a more direct role in supporting Estonia's industrial development through funding programs and incentives for small and medium-sized enterprises.

Overall, three broad topics emerge from the comparative analysis: the role of historical legacies, the interplay between NATO and EU policies, and the challenges and opportunities for small states.

First, historical legacies matter and shape the long-term opportunities of the arms industry. In the case of Czechia, the country inherited a substantial industrial base from its time as a member of the Warsaw Pact. While this legacy provided a foundation for rebuilding the arms industry after the collapse of the Soviet Union, it also posed challenges, as much of the infrastructure and expertise were geared toward producing outdated equipment for the Soviet military.

Estonia, on the other hand, faced a very different situation. Under Soviet rule, the country's industrial capacities were primarily directed toward serving the USSR, with little emphasis on developing a domestic arms industry. After gaining independence, Estonia had to build its defense sector from scratch, focusing on innovation and high-tech solutions to compensate for its lack of industrial infrastructure.

Hence, while historical legacies can provide a foundation for industrial development, they can also constrain innovation and adaptation to new alliance dynamics.

Another important theme is the interplay between NATO and EU policies in shaping defense industrial strategies. While NATO provides a framework for strategic alignment and interoperability, the European Union plays a more direct role in supporting industrial development through funding programs and incentives for small and medium-sized enterprises. This dual influence is particularly evident in the case of Estonia, where EU funding mechanisms, such as the European Defence Fund, have been instrumental in supporting the growth of high-tech sectors like cyber defense and robotics.

The European Union's emphasis on innovation and collaboration complements NATO's focus on strategic priorities, creating a multi-

dimensional framework for industrial development. However, the study also highlights the challenges of navigating the overlapping roles of these organizations, particularly in cases where their policies and priorities diverge. This interplay underscores the need for smaller states to adopt a strategic approach to alliance membership, aligning their policies with the objectives of both NATO and the European Union to maximize the benefits of membership.

Finally, this transition is a key challenge for small states. One of the key difficulties is the economic inefficiency associated with producing defense equipment on a small scale. For smaller states, the high costs of developing and maintaining an arms industry often outweigh the benefits, making it difficult to compete with larger producers in the global defense market.

However, small states can overcome these challenges by focusing on niche markets and high-tech sectors. Estonia's success in developing innovative solutions in areas like cyber defense and robotics provides a valuable example of how smaller states can leverage their strengths to carve out competitive niches. By focusing on emerging technologies and aligning with the strategic priorities of their alliances, small states can position themselves as valuable contributors to collective security while enhancing their industrial capabilities.

IMPLICATIONS FOR POLICY AND RESEARCH

The study's findings have several important implications for both policy and research. For policymakers, the article highlights the need to consider the role of alliances in shaping industrial strategies and defense policies. Smaller states seeking to develop arms industries must navigate a complex interplay of international and domestic factors, balancing the opportunities provided by alliance membership with the challenges of competing in a globalized defense market. This is particularly relevant in the case of NATO members, since Donald Trump's re-election casts important doubts on the ways the United States intends to manage the alliance in the future.

The study underscores the importance of aligning domestic policies with alliance objectives to maximize the benefits of membership. For example, Czechia's experience demonstrates the value of aligning industrial strategies with NATO standards and leveraging partnerships with Western defense firms. Similarly, Estonia's focus on high-tech sectors reflects the strategic priorities of both NATO and the European Union, allowing the country to carve out a competitive niche in the global defense market.

For researchers, the article opens up new avenues for exploring the relationship between alliance politics and industrial development. The distinction between coercive and liberal alliances provides a useful framework for analyzing these dynamics, but further research is needed to examine how different types of alliances influence industrial policies in diverse contexts. The study also highlights the need to consider the role of other international organizations, such as the European Union, in shaping defense industrial strategies. The interplay between NATO and EU policies, as seen in the case of Estonia, illustrates the importance of taking a multidimensional approach to understanding these dynamics.

Future research could also explore the experiences of other small states in different regional and historical contexts. For example, the expansion of NATO and the European Union to include countries like Finland and Sweden provides an opportunity to study how these alliances influence industrial strategies in new member states. Similarly, emerging alliances like AUKUS, which focus on high-tech collaboration among the United States, the United Kingdom, and Australia, offer a valuable case for examining the dynamics of liberal alliances in a contemporary setting.

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Photo: Poprad is a VSHORAD system produced by PGZ's PIT-Radwar. In total, 79 systems, equipped with Grom/Piorun missiles, were delivered, with the last batch handed over in 2021. Credit: Polish MoND