

Research & Development Spillovers in the Defense Sector

Outline for a Bachelor/Master thesis

Context For years, the so-called two-percent target has been an integral part of the debate in Germany on the equipment of the Bundeswehr. For a long time, this was at best an intention, but since Russia's attack on Ukraine, the need for a modern equipped Bundeswehr can no longer be denied. The target for new large-scale equipment including related research and development as a proportion of the defense budget is 20%.¹ Several times the discussion focused on various failed (or in the end much more expensive) arms projects, which (according to the critics) wasted a lot of taxpayers' money.

What is often neglected, however, is the impact of defence spending on the domestic economy; not only are weapons produced, but knowledge is also generated. The idea of joint-production goes back to Strihou (1967), concrete models come from Olson and Zeckhauser (1966) as well as Sandler and Hartley (2001).

Aspects of the thesis

1. A literature review on the theoretical frameworks for joint products, special application in the field of defense.
2. *Master only*: Development of model, which best describes the joint production and innovation process in the defense sector.
3. Critical reflection (ie. patents) of defense contractors; are patents applied / cited in other sectors as well? How do dynamics of patent application differ to other sectors?
4. How does this differ between countries? (US: payed in advance, Germany: pay on delivery - does this show any effect?)
5. Synthesis and discussion of results: what are the policy implications?

The thesis can be written in German or English.

Requirements Interest in the topic of innovation and game theory. Experience with SQL and data analysis skills are beneficiary.

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References

- Olson, Mancur and Richard Zeckhauser (1966). "An Economic Theory of Alliances". In: *The Review of Economics and Statistics* 48.3. Publisher: The MIT Press, pp. 266–279. doi: 10.2307/1927082.
- Sandler, Todd and Keith Hartley (Sept. 2001). "Economics of Alliances: The Lessons for Collective Action". In: *Journal of Economic Literature* 39.3, pp. 869–896. doi: 10.1257/jel.39.3.869.
- Strihou, Jacques van Ypersele de (1967). "Sharing the Defense Burden Among Western Allies". In: *The Review of Economics and Statistics* 49.4. Publisher: The MIT Press, pp. 527–536. doi: 10.2307/1928338.

¹<https://www.faz.net/aktuell/politik/ausland/verteidigungsausgaben-deutschland-verfehlt-nato-ziel-18765274.html>

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