
Private and Public Returns to Business R&D spending in Czechia²

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Summary

- This study presents the first estimates of the relationship between business R&D capital and value added by sector in Czechia. The goal is to assess both direct effects of R&D spending in respective industries, and indirect, spillover effects on the rest of economy. We apply well-established regression approaches, using sectoral data from manufacturing and selected service sectors from 1996 to 2015. Because R&D spending and public R&D subsidies have soared in recent years, such an analysis has been long overdue.
- The estimated return to private R&D capital is 50%, which means that an increase in private R&D capital by CZK 1 is associated with CZK 0.50 increase in value added. The return to public R&D capital is not statistically different from zero, but its indirect return to the economy is estimated to be almost 30%. Raising public R&D capital by CZK 1 in one particular sector therefore leads to an average CZK 0.30 increase in value added to all the other sectors. For comparison, we have also estimated the rate of return on ordinary fixed capital, which is approximately 8%. R&D capital clearly offers far greater returns.
- The results illustrate that R&D spending not only rewards those who actively engage in it, but is also a key driving factor in overall economic development. Whereas private R&D capital aims to increase the efficiency of the firm which makes the investment, public R&D capital should focus on projects with uncertain direct but promising societal returns. Our results reflect this logic. They are also in line with the estimates of other studies which have used data from different countries.

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- Assessing how R&D spending affects the economy requires estimation of both direct and spillover effects. Not taking spillover effects into account leads to imprecise estimates of the impact of public R&D spending, which may in turn lead to suboptimal related policies. Systematic data collection for the purpose of R&D program assessment as well as the possibility to link statistical and administrative firm-level data would also make such assessments more precise and reliable.