

Innovation Policy and Economic Growth

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Modern economic growth theory places a heavy emphasis on the role of ideas in generating growth. Empirical research has established that one may increase the number of ideas through education, and that R&D and productivity are linked. These links are important because it is well established that the main source of economic growth is through improvements in productivity. The question then is how government policy could enhance R&D investments of firms. A large empirical literature shows that, on average, R&D subsidies and R&D tax incentives lead firms to increase their R&D investments. There is far less literature looking at the welfare effects of such policy tools, but some recent research suggests caution in interpreting increases in private R&D to mean that government support to private R&D improves social welfare.

In the empirical part of the paper, we use Belgian and German firm level data to investigate whether subsidies for innovation projects stimulate R&D investment. As governments are assumed not to distribute grants for innovation projects randomly, but could for instance follow a “picking the winner” strategy, it is not possible to simply compare the investments of subsidy recipients and other firms. Our data structure leads to the application of matching estimators as the most appropriate choice among different methods for policy evaluation. Matching relies on the intuitive idea that one could compare subsidy recipients to very similar non-recipients. The key assumption is that firms that have very similar characteristics would have had the same chance to obtain a public R&D grant, but did not do so because of random reasons instead of structural characteristics.

Our results show additionality effects for both countries, that is, subsidized firms would have invested significantly less in R&D and innovation if they had not gotten a subsidy. The effects we find for the German sample are slightly higher than for the Belgian sample.

After establishing positive additionality effects of the innovation subsidies, we also investigate whether the estimated additionality differs with respect to firm characteristics, and indeed the analysis reveals heterogeneous treatment effects. Additionality is positively associated with the patent stock of firms, i.e. the higher the past innovation experience of firms, the higher is the investment in response to receiving public funds. Furthermore, firms with lower labor productivity tend to invest more than other firms. This could be interpreted as evidence that firms with lower labor productivity benefit more from subsidies than firms that are closer to the technological frontier. However, this does not rule out that subsidized R&D projects actually push the technological frontier upwards in the economy.

In conclusion, innovation policy is an important factor driving productivity growth through technological progress, the effects of subsidies are heterogeneous but significant and thus innovation policy should not be neglected as important brick building the future of the European economic area.