

What if Firms Want to Stand on The Shoulders of Giants? The effects of Basic Research on a Growing Economy

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Abstract: In an economy with a development-intensive industry and a basic research-intensive one, basic research is the intermediate output of the research process in its own industry. Basic research production is not inspired by the needs of any producer of goods. Output of research activity relying on basic research does not always translate into a new product, but when it does, it generates perpetual monopolistic payoffs. Basic research plays inter-sector and intra-sector positive externality effects on productivity. Development activity delivers new products with certainty, but it is subject to erosion of monopolistic power. A stable and unique interior solution is found where the scale effect is ruled out. Erosion of monopoly power has two main consequences: may lower the growth rate if the value of a new firm affected by erosion is relatively high and to this respect, creates market failure. Basic research as well as development productivities exert both positive and negative effects on growth. Then, the decentralized equilibrium is not Pareto optimal. Optimal fiscal tools concerning R&D are: support for basic-research-intensive industry and basic research in particular. Secrecy efforts enforced by firms may determine taxation, showing that it is good for the economy to spread fundamental knowledge even when performed by private firms.

Keywords: endogenous growth, expanding variety, R&D, basic research.

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