

HETEROGENEITY OF FIRM PERFORMANCE AND THE ELASTICITY OF KNOWLEDGE CAPITAL: INNOVATION STUDY AT FIRM LEVEL

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Recent studies has revealed a large amount of heterogeneity between firms within narrowly defined industries, even when controlling for type of output, size and capital intensity. This paper analyses the impact of innovation on heterogeneity. Particularly we study (i) the elasticity of innovation output with respect to innovation input and productivity (ii) the elasticity of productivity with respect to n innovation output and (ii) impact of innovation productivity, and (iii) the determinants to innovation efforts.

We use new econometric methods that can handle serious econometric problem with selectivity and simultaneity in this kind of study, and methods allowing feedback effects from firm performance to innovation. These econometric methods are applied on a new rich data set on innovation and innovative activities in 624 Swedish manufacturing firms.

When using a combination of probit and tobit estimates for correcting selectivity problem, and simultaneity biases taken into account by using instrument variables, and finally a simultaneous framework allowing feedback from productivity to innovation input, we find

(i) A two-way relationship between firm performance and knowledge capital, proxied by innovation commercialised on the market. Productivity growth increases with innovation output, even when controlling for human capital, type of output, firm size and capital intensity. We also find a positive feedback effect on innovation output from productivity growth.

(ii) Firm innovation output rises with innovation input.

(iii) Strong correlation between and innovation effort and economic performance. Profitability and growth is important for the willingness to invest in innovative activities.

Innovation is hence an import explanation for the occurrence of heterogeneity of performance between firms. Is there also a correlation between innovation and persistent heterogeneity? The paper finds some support for recent hypothesis on two different kinds of products created by innovative firms. The primary product is the innovation in itself. The secondary product is a process of transforming the firm's internal capacity to be more flexible, adaptable and productive for further innovative activities. This contributes to sustained high economic performance.