

ABSTRACT

This thesis analyses the role of consumer demand on technical change. Using a variety of techniques and approaches it discusses how successful innovations change consumers' options. While focusing on product innovation, the thesis is structured as four independent papers.

We initially reflect from a microeconomic perspective on the evolution of preferences over time. A microeconomic model is introduced in which the consumer maximizes utility, taking decisions in which new possibilities interact with earlier purchasing habits. Habit formation and the novelty associated with new goods are two concepts that explain this dynamic consumer behaviour. The model explains a situation in which technically good innovative products can fail due to a lack of novelty value.

Habit formation is analysed in a macroeconomic growth model. Working with non-homothetic preferences in a Dixit and Stiglitz framework, the model introduces creative destruction from the demand side. There are two sectors: a final goods sector and an R&D sector, the latter producing in each time period a blueprint for a new good which is superior to all existing previous ones in its capacity to generate habits. Each period's new good differs from all existing goods both vertically and horizontally. An interesting conclusion is that product innovation increases the marginal (and average) propensity to consume.

Demand is also studied from an evolutionary perspective by discussing its role in a National System of Innovations. Four dimensions of the system are quantified using composite indicators: creation of knowledge, human capital, and supply and demand innovation capacity. The innovation capacity relates to how well demand and supply are correlated with the other two dimensions. The evolution of fourteen European countries over ten years is discussed in an attempt to understand weak links in each country's system.

The last empirical chapter uses CIS data to determine whether government funding has any effect on the demand for new products. Using a minimum distance estimator, a system of simultaneous equations is created in which government funding affects the input side of innovation (R&D) and the output side of innovation (demand for new products). We find some positive effect between receiving government funding and the amount of R&D, however the effect of funding on demand for new products is much smaller, coming only indirectly through increased R&D.

The main objective of the thesis, by giving these four viewpoints, is to open new areas of discussion on the role of demand on technical change. The principal conclusion of the thesis is that we need to incorporate human needs and their demand for innovations when discussing the economics of technical change. This can only be done by introducing a dynamic view of demand.