

# Chapter 22

## Financial Needs for a Competitive Business Model in the Knowledge Society

**David Castillo-Merino**

*Open University of Catalonia, Spain*

**Dolors Plana-Erta**

*Open University of Catalonia, Spain*

### ABSTRACT

*This paper investigates the constraints for companies to innovate in order to be competitive in the knowledge society. Using a large and original data set of Catalan firms, the authors have conducted a micro econometric analysis following Henry et al.'s (1999) investment model and von Kalckreuth (2004) methodology empirically contrasting the relationship between firms' investment spread over time and their financial structure. Results show that it exists a positive and significant relationship between firms' investment shift and financial structure, emerging financial constraints for more innovative firms. Furthermore, these constraints are higher for micro companies and firms within the knowledge-advanced services' industry. Finally, the authors find that advanced ICT uses by more innovative firms allow them to reduce constraints of access to sources of finance.*

### INTRODUCTION

Under the assumption of imperfect capital markets, the access of firms to financial resources differs depending on the importance of information asymmetry, uncertainty and agency problems. These constraints generate a wedge between the costs of external finance and the opportunity costs

of internal resources (von Kalckreuth, 2003). A critical consequence of this fact is that sources of finance do not fit with the neo-classical hypothesis (Modigliani & Miller, 1958). As they are no longer perfect substitutes, the amount of internally generated funds may matter to the firm's investment decision.

Concerning investment behaviour in firms, there is an increasing number of works that give evidence about the existence of financial

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constraints for innovative firms<sup>1</sup>. This kind of constraints can be explained through the trade-off between the characteristics of investments in innovation, as they are risky, highly specific and showing cash flow returns in the long term, and the usual behaviour of financiers, which is characterised by a short term orientation and risk aversion. In addition, financial constraints are empowered by the existence of information asymmetries between managers and financing agents (Goodacre & Tonks, 1995). Despite of the empirical evidence available about the significant differences on the financial structure of innovative and non-innovative firms which explain that innovators are more likely to experience financial constraints (Fazzari et al., 1988), it has been demonstrated that successful innovative activity by firms allow them to obtain monopoly profits, which emerge as important internal resources avoiding firms' dependence of external financial sources and decreasing the scope of financial constraints (von Kalckreuth, 2004). Accordingly, firms' size and their adjustment capability (von Kalckreuth, 2006), the ownership of tangible assets, the existence of sustainable profitability rates, and their market position, can explain different intensity levels of financial constraints.

Within this framework, this paper aims to enlarge our understanding about the role of finance in the explanation of investment decisions in firms, the significant differences between financial structure of innovators and non-innovators, and the potential of ICT uses to overcome financial constraints inherent to innovative activities. To do that, we have divided the paper in four sections. Section II is focused on the literature review about the existent theoretical and empirical evidences in the relationship between innovation, finance and ICT uses. Section III presents the hypotheses, the methodology and the data set. Section IV contains our statistical test results. And, finally, Section V concludes the paper.

## **THEORETICAL FRAMEWORK: INNOVATION, FINANCE AND ICT USES**

Investment decisions in innovative firms are influenced by financial structure. Empirical literature results in this field show that there are important constraints for financing innovative investments among companies. These constraints emerge for the lack of equilibrium between the economic traits of innovation and the economic behaviour of finance agents. As financial resources are not perfectly allocated among firms, differences between external resources cost and the opportunity cost of internal resources emerge. The different theories that try to explain this relationship argue that a firms' profitability (Henry et al., 1999), the disposal of free internal cash flow and the cost of external resources affects significantly the decision of investment in innovation.

Theories of capital structure, although they do not tend to focus directly on firms' technological traits, but are useful to identify the causes that may explain why more innovative firms use to have a particular financial structure and favour some particular sources of finance (Aghion et al., 2004).

## **FINANCIAL CONSTRAINTS OF INNOVATORS' INVESTMENTS**

The causes of financial constraints for innovative firms have been explained in the international literature through different approaches.

One approach emphasises information asymmetries between investors and firms' managers. Difficulties in assessing future cash flows from innovative activity generates the emergence of this lack of equilibrium and it can result in some positive net present value investments not being financed (Goodacre & Tonks, 1995). This situation reflects the effects of short-termism in capital markets (Innovation Advisory Board, 1990) and it originates out of the interaction of financing and

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