Research Policy 44 (2015) 533–543

Contents lists available at ScienceDirect

Research Policy

journal homepage: www.elsevier.com/locate/respol

Corporate governance practices and companies' R&D intensity: Evidence from European countries

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ARTICLE INFO

Article history:
Received 3 December 2010
Received in revised form 8 October 2014
Accepted 26 October 2014
Available online 6 December 2014

JEL classification:
O31, O32, O33, G34

Keywords:
R&D intensity
Corporate governance
Remuneration
Shareholder rights

ABSTRACT

This paper empirically investigates whether corporate governance practices implemented to align shareholders' and managers' interests affect the resources firms devote to R&D. Two databases – one on governance ratings and one on R&D investment – are merged to obtain a multi-country, multi-sector sample of 177 European companies involved in R&D activities. The results suggest that limitations of anti-takeover devices and voting rights restrictions, a financial performance-based remuneration system for managers and a higher shareholders' consensus at the annual general assembly are all negatively correlated with R&D intensity. In other words, governance practices that are designed to respond to the short-term expectations of financial markets might prove to be detrimental to long-term R&D investments.

1. Introduction

Business R&D – the innovative efforts systematically funded and organised by firms – is a key ingredient for the introduction of new products and processes, a necessary condition for productivity growth and sustainability (Adams, 1990; Malecki, 1997; Guellec and van Pottelsberghe de la Potterie, 2004; Griliches, 2007). Since a dominant share of business R&D is performed by large publicly traded firms (cf. the ECJRCIPTS, 2007a), it is important to understand how these firms' governance influences their R&D spending. A growing stream of empirical research has assessed the effect of corporate governance practices on innovation, particularly focusing on what concerns firms' R&D intensity levels (Lee and O'Neil, 2003; Munari et al., 2010; Aghion et al., 2009; Driver and Coelho Guedes, 2012).

The theoretical arguments of this literature are traditionally rooted in agency theory as a company's investment in R&D is a decision that may induce manager–shareholders conflicts. In the standard agency theory, shareholders are modelled as risk-neutral because they can diversify their overall investment across many firms, while managers are modelled as risk-adverse because they can only put their effort into one job. Managers are, therefore, assumed to prefer short-term gains derived from efficiency-seeking strategies, which might dampen innovation and long-term returns. According to this view, then, effective corporate governance practices should seek to align the interests of shareholders and managers, ultimately having a positive impact on R&D investments.

A different perspective, still within the framework of agency theory, emphasizes information asymmetry between the shareholders and managers rather than differences in risk profile. This perspective views shareholders in general, and certain classes such as minority shareholders or short-term institutional investors in particular, as much less well-informed than managers about the quality and potential long-run effects of R&D investments on the performance of the firm (Laverty, 1996). On the other hand, they would be equally informed about the immediate costs of R&D to the firm and how these costs may affect the short-term earning goals of the company. Under this perspective, directly or indirectly, shareholders would tend to put pressure on managers to reduce R&D and instead invest in short-term activities. In this framework, the introduction of a set of governance practices that

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http://dx.doi.org/10.1016/j.respol.2014.10.016
0048-7333/

align managers' decisions to shareholders' interests might lead to a negative effect by more intensely subjecting management to the will of the shareholders and ultimately reinforcing the tendencies towards short-termism and discouraging R&D expenses.

The empirical evidence on this debate is still mixed and controversial. Initial empirical contributions have analysed the impact on R&D intensity of the degree of ownership concentration (Lee and O'Neil, 2003; Tribo et al., 2007), owner identity (Hoskisson et al., 2002; Kim et al., 2008; Munari et al., 2010) or the role and composition of the board of directors (Kor, 2006). More recent contributions have investigated the role of corporate governance practices, such as compensation schemes for CEOs, managers and directors (Barker and Mueller, 2002; Coles et al., 2006; Hoskisson et al., 2002), power separation between managers and board members (Driver and Coelho Guedes, 2012), and annual shareholders' meeting rules (Lhuillery, 2011). The advantage of these later constructs is that they reflect actual practices that have been designed and carried out within companies rather than board or shareholder compositions that might exist for historical reasons. This research trend has shown mixed results with a few of these relationships between corporate governance practices and R&D intensity turning out to be negative (Lhuillery, 2011; Driver and Coelho Guedes, 2012).

The present paper builds on this recent research trend by investigating the potential impact on a firm's R&D orientation of four practices derived from agency theory. More specifically, we investigate the impact of the limitation of anti-takeover devices and voting rights restrictions; of the shareholders' consensus at the annual general assembly; of the presence of financial performance-based remuneration schemes; and of the limitation of severance pay for managers. These four practices are focused on because they illustrate the tensions that occur between the two key actors at the centre of agency theory premises: the managers and the shareholders. Our exercise allows for discrimination between two broad sets of predictions. On the one hand, the predictions of standard agency theory assume that the adoption of governance practices that align managers' decisions to shareholders' interests should be associated with a higher level of R&D intensity. On the other hand, the predictions of a different perspective in the literature emphasize the importance of managerial security and autonomy for sustaining risky R&D projects, and contrast these with the short-term pressures from shareholders (Carpenter et al., 2003; Driver and Coelho Guedes, 2012; Lazonick and O'sullivan, 2000). This latter stream of the literature posits a negative effect by the abovementioned practices on R&D, as suggested by our hypotheses. These hypotheses are tested through a multi-country and multi-industry sample of 177 top R&D spending firms in Europe.

By taking this line of inquiry, this paper contributes to a growing literature emphasizing the controversial predictions of agency theory for R&D and innovation development. A detailed set of corporate governance provisions are analysed, rather than one single dimension, which allows the taking into account of several dimensions simultaneously. The focus on practices affecting the relationships between managers and shareholders allows the testing of the basic premises of agency theory, with respect to R&D. The paper provides empirical evidence on a multi-country sample of companies, thus complementing previous studies, which focused on single countries, such as France (Lhuillery, 2011), the United Kingdom (Driver and Coelho Guedes, 2012) or the United States (Becker-Blease, 2011). Addressing these issues is important because policies designed to improve shareholders' protection might actually have a negative impact on flexibility and risk-taking, as evidenced by recent studies on the consequences of the Sarbanes–Oxley Act in the United States (Bargeron et al., 2010; Cohen et al., 2009).

The remainder of the paper is structured as follows. Section 2 summarizes the existing literature on the effects of corporate governance provisions on firm performance and R&D investments and presents the research hypotheses that are to be tested. Section 3 describes the sample used for the quantitative analyses as well as the two main databases used in this study. Section 4 presents and interprets the econometric results. Section 5 provides a concluding summary and identifies areas for further research based on the limitations of the paper.

2. Theory and hypotheses

2.1. Corporate governance and R&D: A review

"Corporate governance" refers to the set of internal and external control mechanisms that minimize the conflicts of interest between managers and shareholders arising from the separation of ownership (by shareholders) and control (by managers) (Berle and Means, 1932; Baysinger and Hoskisson, 1990; Shleifer and Vishny, 1997)[1]. The different dimensions of corporate governance structures and instruments create a set of conditions that can profoundly affect the nature and direction of innovation activities.

In a nutshell, agency theory argues that two main conflicts can occur between shareholders and managers (Jensen, 1986; Eisenhardt, 1989) and can have implications for R&D. First, the shareholders' and managers' goals might differ and the risks they take to achieve these goals might differ too. Second, due to information asymmetries, it is difficult and costly for shareholders to learn and check what managers do. More specifically, it is assumed that the main goal of shareholders is to maximize the value of their investment in the firm, while the managers' goal is to keep their job and be well remunerated. Regarding their risk profile, the assumption at the basis of the standard agency perspective is that shareholders' are risk-neutral because they can diversify their overall investment across many firms, while managers are risk-adverse because they can only put their effort into one job. Managers are also assumed to prefer short-term gains derived from efficiency-seeking strategies, which might dampen long-term returns. Under this view, then, shareholders should promote corporate governance practices that incentivize managers to maximize the value of their investment (Baker et al., 1988; Agrawal and Knoeber, 1996). According to the standard agency theory view, such corporate governance practices should ultimately increase R&D intensity levels.

An alternative stream of the literature has challenged these assumptions, highlighting the "short-term" pressures exerted by shareholders (in particular minority shareholders and short-term institutional investors) and financial markets and the specific nature of R&D investments which calls for higher levels of managerial security and autonomy (Hitt et al., 1996; Laverty,

[1] The OECD (2004) provides a comprehensive definition of corporate governance: "Corporate governance involves a set of relationships between a company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined. Good corporate governance should provide proper incentives for the board and management to pursue objectives that are in the interests of the company and its shareholders and should facilitate effective monitoring" (, p. 11). One possible approach to the corporate governance problem emphasizes the roles of external institutions and laws in alleviating the agency costs arising from the specialization of management and finance, as in the case of legal protection given to investors from the risk of expropriation by managers (Shleifer and Vishny, 1997; La Porta et al., 1998). However, in this paper, we explicitly focus on the internal characteristics of a company's governance system, such as the board of directors, the audit committee and internal controls, the shareholders' role, and the monitoring and remuneration systems.