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Legal environment, government effectiveness and firms' innovation in China: Examining the moderating influence of government ownership

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ABSTRACT

Using the World Bank's data in China, we analyzed the behavior of Chinese firms to find out governance factors in innovation activities of these firms. The results suggest that in China, an emerging economy in Northeast Asia, the local legal environment has had a significantly positive effect on firms' product innovation, technological innovation, process innovation and management innovation. Government ownership positively moderates the relationship between the local legal environment and technological innovation. However, government ownership negatively moderates the relationship between the local legal environment and management innovation. Moreover, government effectiveness has also had a significantly positive effect on a firm's product innovation, technological innovation, process innovation and management innovation. In addition, government ownership negatively moderates the relationship between government effectiveness and management innovation. This study offers fresh insight on the role of governance factors of legal environment, government effectiveness and ownership in firms' innovation activities.

1. Introduction

According to the theory of organizational innovation, technological progress and innovation are the key factors for boosting economic growth (Bingham, 1976; Tornatzky and Klein, 1982; Butler, 1988; Romer, 1990; Jiao et al., 2013). Hekkert and Negro (2009) consider the many functions of innovation systems as an integrated framework for understanding sustainable technological change, technological transitions and the industrial pursuit of sustainability through the structural re-orientation of economic activity. Cultivating innovation has attracted the attention of scholars. For example, the technical-services institution (the intermediary organization) can promote the innovative activities of some enterprises through dual organizational structure design, specificity entry path and the adaptive transformation of functions (Wang and Yue, 2009). Qi and Zhang (2013) found that corporate life cycles have different impacts on innovation activities. A company is more likely to conduct market innovation and product innovation during the start-up and growth stages, but it pays more attention to management innovation in the mature and declining stages. However, these studies did not take into consideration the impact of legal environment and government effectiveness on different types of a firm's innovation activities together with quantitative analysis. This paper attempts to complement the current research by introducing a governance mechanism from this perspective.

This study aims to investigate how the legal environment and government effectiveness promote a firm's level of innovation. According to Damanpour (1991), an innovation can be a new product or service, a new production process technology, a new structure or administrative system, a new plan or a program

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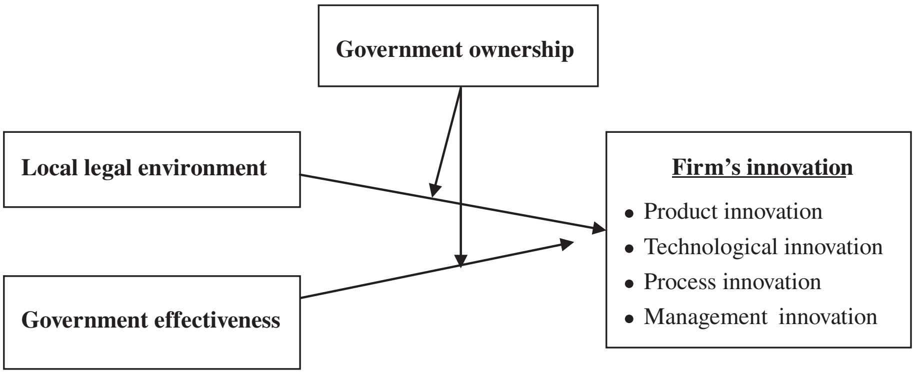

Fig. 1. Conceptual model.

pertaining to organizational members. Therefore, we divide a firm's innovation into product innovation, technological innovation, process innovation and management innovation and we discuss the governance mechanism of the legal environment and government effectiveness on different kinds of innovation (Damanpour and Gopalakrishnan, 2001). Moreover, we want to test whether the proportion of a government-owned share has a moderating effect among these relationships. In order to test these relationships, we employ the Chinese data collected by the World Bank. The survey data covers the enterprise age, enterprise ownership, the business association members, the technical level, the convenience degree of financing, the product sales ratio of enterprise in the separated market, and the corporate research and innovation.

According to the results of empirical analysis, a firm's engagement in innovation activities, such as product innovation, technological innovation, process innovation and management innovation is influenced by the local legal environment, government effectiveness and government ownership. We find that the legal environment and government effectiveness can significantly promote the development of the firm's innovation, including product innovation, technological innovation, process innovation and management innovation. Furthermore, government ownership positively moderates the relationship between local legal environments and technological innovation. However, government ownership negatively moderates the relationship between the local legal environment and management innovation. Finally, government ownership negatively moderates the relationship between government effectiveness and management innovation.

The structure of this paper is as follows: after the Introduction, Section 2 reviews the literature and develops the research hypotheses. Section 3 describes the research methodology, including the data source, sample selection, measurement and econometric models. Section 4 discusses description analysis and empirical results, and the paper concludes with contributions and implications.

2. Literature review and hypothesis

2.1. Factors influencing a firm's innovation

Various factors can affect a firm's innovation, such as the degree of a country's openness, social and cultural values, national support for research and development (R&D), the coordination of industry associations and other macroeconomic factors. The ownership structure, governance structure, strategic planning direction and configuration capabilities of the enterprise can also make a difference. For example, Fan et al. (2008) have studied the FDI impact on innovation and found that a company's investment into R&D is reduced when foreign investment introduced increases. Wang et al. (2010) found that international trade and licensing have played a positive role in the technological innovation activities of Chinese enterprises. An et al. (2009) discovered that the government's R&D subsidies can encourage innovation and can be used as a key policy.

Moreover, corporate strategy and internal capacity will have an influence on a firm's innovation. An (2003) studied Chinese enterprises with regard to technological selection, technological innovation and the strategy factors of R&D. He has found that among the variables in technology selection, corporate ambition—an important element in any corporate-level strategy—occupies an important position. The companies with magnificent technological ambition and development prospects will be motivated to perform the R&D activities much more thoroughly and with a sense of originality. Xie and his partners (2007) found that a firm's learning–orientation will promote technological innovation and management innovation. Qian et al. (2010) found that the enterprise, which is in a collaborative, innovation network center and, which occupies rich structural holes, can effectively promote innovative performance through knowledge acquisition, assimilation, and transformation capabilities. Zhang and Duan (2010) found that an ambidextrous market orientation can have a positive impact on innovation performance for manufacturing enterprises. The different corporate financing strategies adopted will affect innovative activities.

Finally, corporate senior management will affect innovation activities. To some degree, the action of the senior managers is particularly important. Hall and Jones (1999) have found that human resources have an important impact on the speed of innovation. Wright (1983) has found that incentives from top management are necessary to improve a firm's innovation. Lin et al. (2009) found that the incentive mechanism for managers can promote innovation in a private company too. Li and Song (2010) expanded upon the study of Lin et al (2009), and investigated salary incentives for managers and the resulting innovation inputs and outputs under different ownership structures. They found that public enterprises have more innovation inputs and outputs. The CEO's salary incentives