Government Intervention, Internal Control Quality, and Enterprise Technological Innovation

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Abstract. In the context of China's implementation of an innovation-driven development strategy, the improvement of corporate competitiveness is increasingly dependent on technological innovation capabilities. The Chinese government has also issued a series of policies to promote the R&D activities of enterprises. Through combing and summarizing a large number of relevant literature, it is found that the existing literature has not yet reached a unified conclusion on the effect of government intervention on enterprise technological innovation, and few kinds of literature have conducted research on the relationship between internal control quality and enterprise technological innovation. Meanwhile, there is almost no literature to explore the moderating effect of internal control quality on the correlation between government intervention and enterprise technological innovation. Based on this, to study the influence mechanism and effect among government intervention, internal control quality and enterprise technological innovation paves the way for subsequent research and provides a useful perspective for guiding enterprises to strengthen technology innovation and improvement of industrial structure upgrade.

1. Introduction

Innovation is the soul of national progress and the primary driving force for the development of a country. In his report to the 19th National Congress of the Communist Party of China, President Xi Ji pointed out that "accelerating the construction of an innovative country", so innovation capability is playing an increasingly important role in an overall national strength competition. Since the reform and opening up, China's economy has developed rapidly, with an average annual GDP growth rate of 9.5%, which is much higher than the average annual growth rate of the world economy of 2.9% during the same period. In recent years, although the GDP index has increased from 1712.8 in 2008 to 3677.2 in 2018 (1978 = 100), its annual growth rate has dropped from 9.7% to 6.6%, China's economic growth has gradually slowed down. Therefore, to strengthen the sustainable development of our economy, we must transform the economic development model from a labor and resource-driven strategy to an innovation-driven strategy. Recently, China has increased its emphasis on technological innovation and increased investment in R&D. The total expenditure on R&D has increased from 461.602 billion yuan in 2008 to 1967.793 billion yuan in 2018, increasing its share of GDP from 1.45% to 2.14%. Among them, enterprise R&D expenditures increased from 338.173 billion yuan in 2008 to 15.233372 billion yuan in 2018, which accounted for an average of more than 75% of China’s total R&D expenditures, indicating that...
companies are in a dominant position in implementing innovation-driven strategies. The proportion of China’s enterprises engaged in technological innovation activities in all enterprises has also increased year by year, from 6.5% in 2008 to 28% in 2018, with an average annual growth rate of 1.95%, but there are still some companies that are not engaged in R&D activities. Among the companies that carry out technological innovation activities, different companies have different levels of innovation investment. From 2008 to 2017, China's R&D investment accounted for an average of 2.15% of GDP, which is far from the level of about 3% in Western developed countries. So in order to alleviate this problem, a series of policies and laws have been introduced to promote enterprises to carry out R&D activities, aiming to reduce the risks and costs of enterprises innovation by tax exemptions and scientific and technological project subsidies to encourage enterprises to carry out innovation activities, but the result is counterproductive, not all enterprises will take action, resulting in China's R&D investment level has not been greatly improved.

However, some scholars have put forward the opposite view that government intervention won’t promote enterprises' investment in technological innovation. They believe that the various elements of the market, including price, supply and demand, and competition, are mutually restrictive and work together. The existence of market competition mechanisms can make companies realize that technological innovation is an effective way to improve competitiveness. Due to the high uncertainty of R&D activities, when succeeding, other imitators in the industry don’t need to invest in the same original R&D work again. A high degree of market competition stimulates companies to invest in R&D to enhance their core competitiveness (Ji Xiaoli, 2011). There are two main views on the influence of government intervention on enterprise technological innovation in academic circles, namely, promotion theory and inhibition theory. So how exactly does government intervention affect enterprise technological innovation?

Since the outbreak of the Enron incident, internal control has gradually gained wide attention from the world. One of its goals is improving the efficiency and effectiveness of business operations, which is inseparable from technological innovation. Existing research shows that internal control has the characteristics of heterogeneous resources that cannot be imitated. When an enterprise is making innovative decisions and cannot accurately recognize future economic conditions, the system can point out a clear direction and provide suggestions to reduce the risks of technological innovation. By alleviating the problems of agency and information asymmetry, enterprises can be encouraged to increase their R&D investment. However, there are other voices that internal control may make managers prefer risk aversion, thereby reducing the investment. Institutional constraints of internal control will bring a sense of restraint to employees and affect employees' enthusiasm for innovation, hence the low level of technological innovation. Currently, the views of the academic community haven’t been unified, and the mechanism of its impact on enterprise technological innovation still needs to be explored in more depth. So in the context of China's current vigorous promotion of the "mass entrepreneurship and innovation" strategy, which role does internal control play in the R&D activities? What is the common effect of internal control quality and external factors of government intervention on enterprise technological innovation?

Based on this, this paper combines and summarizes a large number of relevant literature to analyze the relationship between government intervention and enterprise technological innovation, and the regulating effect of the internal control quality on them. The research contributions of this paper are mainly as follows: (1) Jointly explore enterprise technological innovation from the aspects of enterprise external factors government intervention and internal factors internal control quality
The influencing factors (2) The research in this paper is helpful for a more systematic understanding of the impact of government intervention and internal control quality on enterprise technological innovation in the process of enterprise transformation and upgrading. And a more accurate understanding of the role of internal control in the enterprise provides important implications.

2. Literature Review

2.1. Government Intervention and Enterprise Technological Innovation

Nowadays, the important role of technological innovation in promoting economic growth has been widely recognized. Because technological innovation activities have external effects, public goods and other characteristics, it is difficult to be carried out under pure market regulation, thus affecting the effect of enterprise technological innovation. Therefore, the role of the government in promoting technological innovation of enterprises cannot be ignored (Ma Aimin and Li Zhixiang, 2011). Since the end of the US economic crisis in 1933, the Keynesian theory has been widely accepted and used by governments of various countries. The market model of "market adjustment and macro-control" has become a necessary condition for promoting social and economic development. Governments of various countries intervene in the economy through various means to achieve national prosperity. The most representative ones include monetary policy, financial subsidies, and market access mechanisms (Zhang Jianhua and Yang Xiaohao, 2018). So far, there are still differences in the relationship between government intervention and enterprise technological innovation, and they are divided into promotion school and inhibition school.

The former believes that government intervention as a positive signal conveys the intention of encouraging enterprises to carry out technological innovation activities and breakthroughs, thereby encouraging enterprises to engage in R&D activities (Motohashi and Yun, 2007)[1]. Czarnitzki and Licht(2006) pointed out that government subsidies reduce the costs and risks of technological innovation, thereby making R&D profitable, thereby stimulating R&D investment of enterprises. Since technological innovation activities are highly uncertain and have long revenue cycles, the government's policy orientation and financial subsidies will help companies efficiently allocate innovation resources. The government intervenes in enterprise R&D activities, mainly through the formulation of fiscal and financial policies to provide support and adopt government subsidies, tax incentives and other policy tools (Yang Yang et al., 2015). Zhu Yunhuan and Zhang Mingxi (2010) found that the financial subsidies have reduced the cost and risks brought by the externalities of corporate R&D innovation to a certain extent by exploring the impact of financial subsidies on corporate R&D, and thus have an incentive effect on corporate R&D innovation[2]. Gao Shanxing et al. (2013) pointed out that the preferential taxation system can help companies overcome barriers to investment in innovation and R&D and promote technological innovation activities.

However, the latter has found that certain government actions are transboundary and deprive enterprises of their autonomy in technology development. Liu Yunguo and Liu Wen (2007) believe that reducing government intervention will help increase the company's R&D investment level. Ma Zhong and Liu Yu (2010) found that with the increase in the degree of government intervention, some companies' long-term investment tends to decrease, such as improving R&D capabilities and marketing capabilities[3]. Through empirical research on non-financial insurance A-share listed companies from 2006 to 2010, Zuo Jingjing et al. (2016) found that reducing government intervention and the extra-tax burden of enterprises can help promote Chinese companies' R&D and
innovation activities. Zhang Jianhua and Yang Xiaohao (2018) established a manufacturer innovation model with financial mismatches, and introduced government intervention into the model, and found that administrative intervention would inhibit corporate technological innovation[4]. With the promulgation and implementation of certain policies, the entry barriers of certain industries have increased. Due to the lack of new entrants, the incentive for enterprises to carry out innovation activities is greatly reduced, thereby inhibiting the degree of technological innovation. Xu Lingling (2018) pointed out that in regions with a better institutional environment, enterprises have the right to operate freely, and can use their strength to obtain innovation resources and convert technological innovation achievements into economic value. In regions with poor institutional environments, government intervention in business operations prevents companies from obtaining high-quality resources through their strength, but chooses to seek government protection through informal means such as rent-seeking or political connections instead, resulting in an extremely big waste of resources[5].

So how does government intervention affect the technological innovation of enterprises, has a positive or negative effect on the technological innovation of enterprises? Regarding the mechanism of the influence of government intervention on enterprise technological innovation, the academic community has not reached a consensus yet, so further research and discussion are needed.

2.2. Internal Control Quality and Enterprise Technological Innovation

With the existence of information asymmetry between agents and principals in modern corporate enterprises, the “principal-agent problem” has influenced greatly corporate governance (Lan and Heracleous, 2010). Since technological innovation activities are characterized by high risks, large investments, and long payback periods, they will have a significant impact on corporate stakeholders (Han Shaozhen et al., 2015). To satisfy selfish desires, the senior management of enterprises with the right to allocate resources will override their personal interests over the overall interests of the company (Li Wanfu et al., 2011). The study found that internal control can significantly promote an enterprise's ability to innovate, and the company's investment in innovation increases as the degree of internal control increases (Zhang Xiaohong et al., 2017). Practicing an effective internal control system can supervise the self-interested behavior of corporate managers (Xu Yu and Feng Junke, 2017), and effectively alleviate information asymmetry and entrusted agency issues in the operational level of corporate R&D activities (Fang Hongxing and Jin Yuna, 2013)[6]. As an institutional arrangement, internal control affects managers' decisions on innovative activities through the use of corporate funds and the control of risks (Yang Qingxiang and Liao Tiantian, 2017). At the same time, the construction of internal control is conducive to reducing the risks of enterprise innovation investment. Internal control establishes effective measures and adjusts response strategies by identifying R&D risks and possible negative effects of R&D failures ensuring the sustainability of innovation investment, and enabling enterprises to form a virtuous circle of innovation activities (Han Lianlan, 2018)[7].

However, the basis of internal control is institutional constraints, which is used as a means of governance throughout the company's normative policies. Therefore, the normative nature of internal control systems inevitably conflicts with the flexibility of technological innovation (Ribstein, 2002)[8]. Bargeron (2010) believes that the SOX Act inhibits corporate R&D activities because strict internal control is bound to reduce the chances of corporate speculation by senior management. Based on the high risks of innovation, the company's senior managers usually have a
risk aversion preference and are reluctant to bear the consequences of R&D failure, resulting in a reduction in the investment in innovation. Enterprises that pay attention to financial control will evaluate employees through objective financial indicators, like ROI, causing employees to focus on the realization of short-term benefits, and give up projects with longer payback periods such as technological innovation (Li Yuan et al., 2009), which seriously hinders the improvement of technological innovation ability and reduces their competitive advantage. Zhang (2007) found that internal control leads to an increase in the risk exposure of corporate managers, which reduces their hidden income and severely weakens managers' innovation motivation. Internal control will inhibit entrepreneurs' risk-taking spirit and consciousness, and thus hinder innovation investment (Wu Ning et al., 2015). Zhang Juan and Huang Zhizhong (2016) through group analysis found that in companies with a high level of technological innovation, internal control has a weaker role in promoting innovation input; in companies with an average level, the strengthening of internal control harms innovation input, and in companies with a negative technological innovation, internal control hasn’t had a significant effect on innovation investment. Therefore, it is particularly important to study the strength of internal control for enterprise technological innovation.

Through combing and summarizing massive related literature, it is found that existing literature has rich research results about the influence of government intervention on enterprise technological innovation, but few kinds of literature have studied the relationship between internal control quality and enterprise technological innovation, and almost there is no literature to explore the impact of internal control quality on the correlation between government intervention and enterprise technological innovation. Based on this, studying the influence mechanism and effect among government intervention, internal control quality and enterprise technological innovation is beneficial for guiding enterprises to strengthen technological innovation and perfecting the upgrading of industrial structure.

3. Conclusion

By summarizing and combing the literature, this article discusses the relationship between government intervention, internal control quality and enterprise technological innovation. We believe that:

1. Government intervention can restrain the enterprise technological innovation

   Government intervention has provided enterprises with political resources and other "helping hands", enabling enterprises to maintain normal business operations by adopting rent-seeking and other methods. Therefore, they will not use high-risk and high-uncertain technological innovation activities to improve enterprise benefits. At the same time, government intervention may bring pressures such as political indicators to companies, causing companies to focus on the realization of short-term goals and neglect the development of their long-term strategies, thereby inhibiting their technological innovation.

2. High-quality internal control inhibits the technological innovation activities of enterprises

   As an institutional means of corporate governance, internal control undoubtedly plays a vital role in the internal environment of the enterprise and authorization procedures. Internal control may create a sense of restraint in the company. In order to strictly abide by the system, employees work in a fixed pattern and follow the rules. This sense of restraint will greatly reduce the possibility of
employee innovation. An enterprise's innovation project may also miss the opportunity for innovation due to the long approval cycle, thereby affecting the enterprise's innovation activities.

3. The moderating effect of internal control on the influence of government intervention on enterprise technological innovation

The quality of internal control plays the role of regulation in the relationship between the two, that is, high internal control quality does not bring the enterprise system resource advantage, but restricts the enterprise's technological innovation. When an enterprise is under excessive government intervention and control, the enterprise will fall into fetters. Therefore, the high-quality internal control within the enterprise once again brings constraints to the enterprise and seriously inhibits the enterprise technological innovation.

References


