

Incentive System Innovation Based on the View of the Government

Ren Yan, Qiu Lisheng

Economics and Management School, Wuhan University, Wuhan, P.R.China, 430072
(E-mail:renyan403@yahoo.com.cn,rgb-qiu@126.com)

Abstract This paper puts forward that the powerful innovation incentive system is the fundamental guarantee to strengthening the independent innovation capacity. In recent years, China has started to introduce and implement innovation incentive policy. But as a whole, it is still at primary phase, and there is an obvious gap between our country and the developed countries. This article adopts the system approach to construct the independent innovation incentive system and informal social culture incentive system. Then it concludes that provide a powerful force source to improve the ability of independent innovation.

Key words Independent innovation; Incentive system; Institutional innovation; Government

1 Introduction

"A nation without technology independence, will not have economic independence or political independence." If the technology is still attached to the other, it will be difficult to get rid of being led by the nose, and to obtain integrated political and economic independence. Yet, independent innovation is the only way to realize the complete technology independence.

Nations stand in great numbers in the world, with the very rich and the very poor, and the gap between them is further widening. If comparing a room to a country, one with the wise to arrange the system, and the other with relatives and friends of the authorities to design the system, the former will be richer than the latter under the same other conditions. History also proved this point. In the early years of the 19th century, China had a population of about one-third of the globe's, and produced about one-third of the global GDP. The establishment and improvement of the imperial examination system is the key reason for China to keep rich and an important position in feudal times. It established a good selection mechanism, which provided quality and efficiency for the government bureaucracy system. At the contemporary times, European countries appointed people by favoritism are. Under the circumstance that market and government were both backward in the worldwide, system breakthrough provided a booster for China's leading economy. However, its defect was also so obvious that seriously hindered the innovative thinking. It was hard to ensure a long-term dynamic state, and finally led to Chinese feudalism falling apart. Meanwhile, the implementation of the politically neutral modern civil service system brought about system transcendence in western countries.

The fundamental determining factor resulted in the rich and the poor lies in the system, and the system innovation is the way to wealth. BMW hypothesis put forward in the book "The way to wealth" by FuJun points out that the wealth of a nation is determined by the longitudinal bureaucracy system and the transverse market system in a certain historical period, whether the arrangements of the two institution groups are reasonable determines the national wealth will be sustainable. China should gradually establish and perfect political system guided by talents, based on laws and aimed at supporting the market longitudinally. In horizontal, China should gradually establish and consummate the market system based on the fine incentive and property protection and connected with the world economy. This two systems create environmental advantages. This paper focuses on analyses on the incentive system innovation of independent innovation.

2 Related Concepts and Independent Innovation's Importance and Current Situation

2.1 Concepts

Independent innovation is a kind of creation activities compared to the technology import and the imitation. It refers to the new product value realization process based on the unique core technology with independent intellectual property rights. Independent innovation is the way to a powerful nation, and is guaranteed by the institutional innovation. Institutional Innovation refers to realize the social sustainable development by creating new and more effective incentive systems and regulations under people's existing producing and living conditions.

2.2 Importance

Independent innovation incentive system innovation will greatly promote scientific and technological personnel's innovation activities from the microscopic aspect. From the macroscopic

aspect, it will change the extensive growth mode consuming a lot of natural resources, and lead to the new road of industrialization getting rid of resource constraints. It will optimize the industrial structure and promote the industrial upgrading by improving the technology intensive industries proportion and reform the traditional industries by hi-tech. It will also improve our trade conditions and reduce dependence on foreign technology so as to obtain high added value in the international labor division.

2.3 Current situation

Long-term since, the United States government has formed a set of scientific management systems that fit with its "separation of the three powers" regime. The federal government effectively improve the social environment for innovative activities and thereby promote them through taxation, patents and government procurement policies and by establishing and perfecting various laws and regulations with regard to technical innovation, technology diffusion and patents. The United Kingdom maintains its leading position in technology field in the world with far less research funds than America for its unrestricted and globalization talent flow policies. Japan benefits from the institutional environment which encourages cooperation among organizations during the innovation process so as to take the lead in many areas of science and technology in the world. Such practices create more favorable external system environment for enterprise innovation diffusion and speed it up faster than the U.S. limited by antitrust laws. Taiwan's semiconductor industry ranks second not mainly on account of its vast territory and abundant resources, but lies in its respect for the market, profession and system. Independent innovation system arrangement has been the successful experience for the leading countries and regions for a long time.

There is an obvious gap in independent innovation capacity between China and the developed countries. China's independent innovation ability is insufficient, and the core technology is controlled by others. The United States and Japan take up 90% patents of the world, and other countries, including China, only possess about 10%. Specifically speaking, the problems are as follows: The digestion and renovations ability of the introduced technology is weak, for it has not been combined with the improvement of the industry competitiveness. Technology innovation system is with the enterprises as the main body, and featured by the combination of producing, learning and studying has not been formed. Human, financial, and material investment are seriously insufficient.

3 Independent Innovation Incentive System Constructions

More innovative elements and more resources do not necessarily bring about large-scale innovation activities. The key lies in the innovation incentives environment construction. Such as Shenzhen, it took the lead in establishing the market economy system framework by combining reform and opening up together. It integrated the innovative elements one step ahead and soon became the paradise for high technology enterprises. In 2008, Shenzhen's hi-tech production value reached 870 billion Yuan, accounting for more than half of the total industrial output. More importantly, 59 percent of the output value possessed independent intellectual property rights, and this ratio was far ahead of the nation. Advantages of Shenzhen's independent innovation incentives environment embodies in the following aspects: Its policies are aimed at the major problems reflected in the innovation practice, based on which to propose the solutions and science and technology policies and regulations. Such as the technology shares, it arose in the early 1990s to resolve the interests distribution conflicts among scientific and technological personnel who come to Shenzhen to do business. Another example is the system design for an important aspect of the intellectual property right. The intangible asset appraisal management regulations provided for the foreign joint venture and science and technology personnel creation with important system support.

3.1 Increasing government support and perfecting the venture capital market mechanism

Our country's risk investment market system and mechanism has not taken shape. It is hard to combine the innovative technology and venture capital effectively. Risk investment is the key link to promote high-tech industrialization. The problems the innovative enterprises will be faced with include the follows: financing difficulties, lack of effective exit mechanism for risk funds, insufficient risk investment institutions, small-scale risk investment. China has more than 20 thousand high-tech achievements each year above the provincial and ministerial level, and less than 15% of them are truly translated into practical productivity. Among the scientific and technological achievements that have realized transformation, 56% were self-financing, 26.8% got loans from the state, and only 2.3% obtained risk investment. The scale of China's risk capital is generally small currently and it can not absorb social capital, so it can only support some short term, rapid and small investment projects. Research-production

transformation cycle can be shortened from 20 years to 10 years if there is venture capital participation in the early stages of scientific research. China should construct the multi-level financial system, and establish risk compensation mechanism in commercial banks for loans offered to enterprise independent R&D innovation activities, and make good use of policy financial tools such as fiscal interest subsidies, and meanwhile relax restrictions on venture capital sources.

3.2 Constructing new tax system to support enterprises' independent innovation

Our innovative and supportive taxation system has not been established. It remains to improve the policy effectiveness. Currently high-tech enterprises generally belongs to manufacturing industry and being implemented by production-based value-added tax, which is unfavorable for R&D enterprises which mainly depend on labors and the raw materials costs of which are only less than 30%. Our country should use the taxation policies as a lever to increase R&D investment, and at the same time carry out fair taxation so as to encourage the domestic enterprises to develop independent brand products.

3.3 Setting standards to promote enterprises' innovation

At present standards in various fields have not been set. Standards are an important factor to influence technology supplies and demands. Standards for energy, environmental protection, healthy and consumer protection, etc, in developed countries are higher and higher, which urges enterprises to adopt new technology. It is mainly embodied in as follows: Technical standards are more and more detailed. The number of the technical indexes and formulations for products in European Union that enter the EU market has reached more than 100 thousand. The coverage is more and more wide. "Electronic waste disposal method" in 2004 in EU implied that the environmental protection standards have extended from production to sales and then to service, namely the whole life cycle.

3.4 Increasing the government procurement on self-directed innovation achievements

According to the international experience, the government procurement will promote more innovation than R&D subsidies do in many areas. The government purchasing expenditure averagely accounts for about 30% of the expenditure budget, and about 10% of the GDP, while the government procurement expenditure account for less than 2% of the GDP in China. Therefore, our country's government procurement potentials are great. We should earnestly implement the government procurement law, and add the "domestic products" clauses, and increase the government procurement on self-directed innovation products and services to change the situation that foreign brands dominate in our country's government procurement, which will guarantee that domestic enterprises will benefit from it.

Relevant international research shows that innovative products in energy-saving, environment protection and resource comprehensive utilization fields are the major areas of the government procurement. The government procurement on innovative products will provide a market guide for the new technology and encourage enterprises to increase R&D investment. From the long-term view, it will reduce the government expenditure and create opportunities to improve the quality and efficiency of public service for the "whole life cycle cost" pricing mechanism. The innovation-oriented government procurement focuses on strategic technology. For example, the United States government concentrates on national defense and space flight and aviation industry. Countries in the EU center on key fields, including electronics, medical treatment, pharmaceutical, logistics, environment, energy and safety industries, etc. South Korea regards the information communication technology as the key.

3.5 Setting up incentive compensation mechanism based on intellectual property protection and utilization

Our talent incentive system has not been established yet. High-tech brain drain remains serious. In order to make the employee behavior can help enterprises to achieve the goals of innovation, it must ensure the interests of intellectual innovators, and the key is to build a incentive compensation mechanism based on intellectual property protection and utilization.

3.6 Matching the formal and informal institution

As for intellectual property infringement, it will be punished by the formal system, but be regarded as the most economic and effective way by the informal system, which leads to the proliferation of piracy. So if the formal system and the informal system can not be coordinated well with each other, it will be hard for the intellectual property rights incentive system to play a role. Creative-oriented consuming culture should be advocated and be guided by the government. The measures mainly refer to restrictive provisions, publicity and behavior modeling, etc, which steers for the construction of innovative consuming culture through sending innovation pursuit signal.

4 Conclusions

Based on the above analysis, the government should give more support to construct the independent innovation incentive system comprehensively from the following several aspects: perfecting the venture capital market mechanism, building a supportive tax system, establishing the innovation standards, increasing the innovation-oriented government procurement, setting up incentive compensation mechanism based on intellectual property protection and utilization, matching the formal and informal institution, so as to provide a powerful force source to improve self-directed innovation capability.

References

- [1] Jiancheng Guan, Kaihua Chen. Measuring the Innovation Production Process: a Cross-Region Empirical Study of China's High-Tech Innovations[J]. Technovation, Volume 30, Issues 5-6, May-June 2010:348-358 (In Chinese)
- [2] Xibao Li. China's Regional Innovation Capacity in Transition: an Empirical Approach[J]. Research Policy, Volume 38, Issue 2, March 2009:338-357 (In Chinese)
- [3] X. Li. Regional Innovation Performance: Evidence From Domestic Patenting in China[J]. Innovation: Management, Policy & Practice 8 (1/2) (2006):171-192(In Chinese)