

The Activation of Technology Finance through Support for Small and Medium-Sized Enterprises in Korea

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Abstract

As the economy transitions to a knowledge-based paradigm, small and medium-sized enterprises can become more competitive by securing greater technological power, coupled with excellent innovation and flexibility. Thus, the objective of this paper is to gain a better understanding of the current situations of Small and medium-sized enterprises in Korea, and to discuss on the activation of technology finance provision systems.

Keywords: Small and medium-sized enterprise, Technology finance, Ventures

1. Introduction

The Korean economy grew rapidly until the mid-1990s. Such rapid economic growth was promoted in an economic structure in which large enterprises, rather than small and medium-sized enterprises, were the top priority. However, advanced countries must maintain a high-speed industrial structure based on up-to-date technology and high added value, and such structure must be considered subservient to the development of small and medium-sized enterprises characterized by excellent technology innovation and flexibility.

In the past, policies and systems designed to support the technological development of small and medium-sized enterprises were not constructed in a generally efficient and organic manner, but were rather pursued in a very complex and makeshift way, in efforts to quickly address changing situations. Beginning in the mid-1990s, Korean economic growth was led by knowledge-based industries, which expanded over a short period of time, during which a great deal of support was provided to small and medium-sized enterprises in order to nurture knowledge-based enterprises and activate ventures according to the degree of firm growth. Such policies also contributed greatly to price and employment stability, as well as improved international payment balance. However, despite the rapid growth of knowledge-based industries, the majority of technology-driven enterprises in Korea suffer from fund-raising difficulties.

Under the present global economic regime, the development of national industries requires the fostering of ventures and the strengthening of their competitiveness based on their technologies and intellectual property rights. In this age of globalization, in which technology finance is becoming increasingly important, the purpose of this paper is to determine the current state of small and medium-sized enterprises, as well as the actual conditions of technology finance support systems in Korea.

2. The Characteristics and Current Situation of Small and Medium-Sized Enterprises in Korea

The scale of small and medium-sized enterprises is relatively small as compared to large enterprises. In other words, small and medium-sized enterprises in an economic regime tend to have less capital, technology, and management ability than large enterprises (Jeong, 2009; Moon, 2000). In our world, small and medium-sized enterprises play such a significant role in a national economy and have so great a political and social impact on the country that the position of small and medium-sized enterprises must be considered of great value to a country's economic stability and growth. Generally, small and medium-sized enterprises perform a positive role in establishing the foundation for the stability of the national economy, activating the development of the economy, expanding the export base, advancing the industrial structure, achieving balanced growth, enhancing the country's ability to meet economic challenges, improving the balance of international payments, diversifying consumer choices, innovating relevant technologies, and activating local economies (Friedman et al., 2000; Kim, 1993).

Small and medium-sized enterprises in Korea are facing substantial troubles, both at home and abroad. Their external problems include industrial adjustment-associated restructuring, while their internal problems include a rapidly changing international environment, including evolving international political conditions. The Gyeonggi Small and Medium Business Center monitored the on-site difficulties faced by small and medium-sized enterprises, and identified their most prominent problem as financial difficulty, followed by difficulties associated with manpower, rising costs, and markets (including domestic demand and exports). Table 1 below lists these difficulties, which can be considered the top priorities.

<Insert Table 1 Here>

According to ‘the survey results of the lack of small and medium-sized enterprises funds in 2004’ published by the Korean Federation of Small and Medium Business, the top difficulty experienced recently by small and medium-sized enterprises is that associated with the supply of and demand for raw materials (66.4%), followed by declining sales (47.4%), delays in collecting money for sales (34.2%), and reductions in delivery prices (29.8%). With regard to the difficulty associated with the supply of and demand for raw materials, 10.1% more small-sized enterprises experienced a problem than mid-sized ones (68.9% of small enterprises and 58.8% of middle enterprises faced the difficulty). 49.5% of small and medium-sized enterprises reported that it was “difficult” for them to take out a loan from technology financing institutions, which insisted on secured loans and tightened loan examinations, whereas only 5.7% replied it was “not difficult” for them to secure a loan. This illustrates the urgent need for improvements in loaning systems, such that relevant funds may be supplied to small and medium-sized enterprises in a timely manner. This can be achieved via the activation of guarantee loaning systems that differ from existing systems, allowing money to be lent to small and medium-sized enterprises, and considerably simplifying and reducing a variety of technology financing procedures.

In 2008, small and medium-sized enterprises had less ability to pay because of increases in the prices of crude oil, iron and steel, and other raw materials, coupled with weaker demand in the international market. Additionally, technology finance instability originating in the USA resulted in the spread of technology finance and object economy crises and credit crunches all over the world, which in turn caused a substantial deterioration in the finances of small and medium-sized enterprises, which have lower credit ratings than large enterprises. In particular, the number of new small and medium-sized enterprises in existence has decreased rapidly since October 2008, when unfavorable technology finance conditions seriously aggravated global credit crises and a depression in domestic markets.

<Insert Table 2 Here>

As can be observed in the data presented above, small and medium-sized enterprises in Korea are relatively small-scale and profoundly affected by both internal and external factors. Therefore, in order to achieve competitive superiority in this age of internationalization, the enterprises should, first of all, rearrange and reform their systems to promote more efficient technological development, followed by attempts to secure both tangible and intangible technological power.

3. Support for Small and Medium-Sized Enterprises in Korea: The Case of Firm K

We consider here the current condition of technology financing support for small and medium-sized enterprises in Korea, with focus placed on a guaranteeing firm (K), which is a semi-governmental organization. K is a fund that has established a comprehensive support system for technology finance, and that leads in technology finance (here, technology finance refers to the demand for and supply of funds required for the technology innovation process, which includes R&D, technology founding, and technology business). Firm K was established in 1989 and has, for the past 19 years, provided technology guarantees worth a total of 149 trillion won to small and medium-sized enterprises with excellent technology and marketability, so as to improve their technological competitiveness and activate their technology financing.

In particular, firm K has established the foundation of a comprehensive support system for technology finance by means of identifying such ventures and inno-biz enterprises with high growth potential and expanding support for them, and by offering those entities a variety of services connected with technology appraisal. On the basis of the experts’ appraisal of the enterprises’ technological power, support has largely been provided to companies with weak financial structures, but superior technological power (57.7% of the firms to which technology appraisal guarantees were offered in 2008 did not have a good financial rating); additionally, appraisal models for the support of company establishments have been developed in order to create jobs, to lay foundations for future growth, and to strengthen support for new technological enterprises. Support for R&D technology finance has also been incrementally expanded in an effort to foster investments in technological development, so as to promote the technological competitiveness of small and medium-sized enterprises and to create new growth

motive powers in the national economy. In order to address the lack of flexibility of small and medium-sized enterprises, an issue which was exacerbated by the economic downturn resulting from the tech finance crisis in the USA, a variety of systems have been employed to expand technology guarantees; all such schemes were mobilized expressly to overcome this unprecedented economic crisis. Firm K plays a leading role as a comprehensive technology finance provider by offering intensive support to efforts to establish technology innovation enterprises such as ventures, inno-biz enterprises, and technological enterprises, allowing for the creation of new economic growth motive powers for the economy, the continual expansion of technology appraisal guarantees, and the active identification and support of innovative small and medium-sized enterprises.

In 2008, firm K selected and concentrated technological enterprises and ventures that might prove to be future growth motive powers of the national economy and thus might efficiently create jobs. In that year, 10.9594 trillion won (87.2% of the total guarantee support) was provided to technology innovation enterprises (small and medium-sized enterprises equipped with technological powers), representing a 1.7710 trillion won increase over the 9.1884 trillion won (82.9% of the total guarantee support) spent in 2007. The figure of 10.9594 trillion won was 87.7% of the total guarantee balance at the end of 2008, and 82.8% of that in 2007. For the exclusive use of ventures, firm K provided 7.6444 trillion won in 2008 (60.9% of the total guarantee support), representing an increase of 1.5537 trillion won (54.9% of the total guarantee support) over the 6.907 trillion won spent in 2007, and will have provided 8.3000 trillion won (53.2% of the total guarantee support) in 2009. Additionally, with regard to the guarantees provided by firm K to inno-biz enterprises, 2008 saw a figure of 6.6783 trillion won (53.2% of the total guarantee support), a 1.5888 trillion won increase as compared to the 5.895 trillion won (45.9% of the total guarantee support) provided in 2007; 8.6000 trillion won (55.1% of the total guarantee support) will have been provided in 2009. In continually guaranteeing new technology businesses that had been established less than five years ago, so as to vitalize the national economy as well as activating the foundation of small and medium-sized enterprises and creating jobs, firm K provided 3.3872 trillion won in 2007 and 4.4378 trillion won in 2008, and will have offered more than 5.3000 trillion won in 2009. After having firmly constructed an appraisal system optimized for the provision of technology finance to technology innovation enterprises, a core factor in technology finance, firm K provided technology innovation enterprises with technology appraisal guarantees worth 8.9859 trillion won, representing a 47.2% increase over the amount provided in the previous year (6.1052 trillion won) and 71.3% of the total guarantee balance.

Recently, a survey was conducted with the guaranteed enterprises, and it was revealed that 55% of the respondents actually utilized the guarantee to employ 1~3 workers, and 21% employed 4~6 workers: a total of 90% employed additional workers. It was also demonstrated that the respondents demanded several policies for small and medium-sized enterprises, most notably the multiplication of policy funds and guarantee support. Furthermore, the majority of the respondents clearly recognized "technology finance" as a future efficient means for supporting small and medium-sized enterprises.

With regard to our findings concerning K's technology guarantees, the company has generally played a leading role in strengthening the competitiveness of small and medium-sized enterprises via the intensive activation of technology finance, the selection and concentration of technological innovation enterprises (small and medium-sized enterprises with technological powers), and the consolidation of support for the flexibility of technology-based enterprises.

4. Conclusion

Technology finance refers to the demand for and supply of funds required in the technology innovation process, including R&D, technology founding, and technology business. Technology finance is clearly a necessary process, as intangible assets such as technology and knowledge have become increasingly important factors in the competitiveness of enterprises as the knowledge-based economy has deepened, and technology finance should be increasingly allocated to technology innovation-type small and medium-sized enterprises, the central axes of the knowledge-based economy, in order to strengthen their innovation capabilities when R&D investments are made primarily by large enterprises.

Consequently, the rapidly evolving internal and external management environments require small and medium-sized enterprises to substantially adjust the fundamentals of their existence. Speaking from a microscopic viewpoint, important demand variables include the high-grade and diversified domestic demands created by economic development and improved income levels, whereas those of supply include rising raw materials prices, difficulty in securing technicians, and skyrocketing labor costs. These changes in management environments are a necessary emerging phenomenon in the process of transitioning into an advanced economy; small and medium-sized enterprises can survive such environmental changes only in cases in which they are able

to secure their own technological competitiveness. It is expected, then, in this present age in which a knowledge-based economic paradigm predominates, that intangible technology assets will create more value than will tangible assets.

Comprehensively considering the above-mentioned entirety, the Korean government—when assessing the future of its national economy—should be ready to make a concerted and continuous effort to foster and unsparingly support innovation-type small and medium-sized enterprises.

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Table 1. Business needs survey index

Title	BNSI							
	Total	Funding	Domestic sales	export	Human	Technology	Location	Cost raising
2004' BNSI(during the first half)	123	134	131	111	123	107	106	149
Needs Survey Index Ranking		2	3	5	4	6	7	1

* BNSI(Business Needs Survey Index)= {(‘very highly’ answer number×200)+(‘highly’ answer number×150)+(‘normal’ answer number×100)+(‘lower’ answer number×50)+(‘very lower’×0)}/ total answer number

**source: Korea Federation of Small and Medium Business (2003). *Survey report on difficulties of SME*. Korea Federation of Small and Medium Business (2004). *The survey results and policy challenges of the lack of SME funds*.

Table 2. Small and medium-sized sized businesses in Korean major index

Title	2003	2004	2005	2006	2007	2008
Production Index (%)	94.6	98.2	100	101.8	105.8	104.7
Average operation rate (%)	68.8	68.2	69.9	70.4	71.0	69.3
Establishment corporation number (monthly average)	52,739 (4,396)	48,585 (4,049)	52,587 (4,382)	50,512 (4,209)	53,483 (4,457)	50,855 (4,238)
Bankruptcy corporation number(monthly average)	5,308 (192)	4,445 (370)	3,416 (285)	2,529 (210)	2,301 (191)	2,735 (228)
The bill of dishonor rate (%)	0.08	0.06	0.04	0.02	0.02	0.02

* The production index is based on the 2005 year (set as 100).

**source: Kibo Technology Fund, Small and Medium Business Administration, The Bank of Korea, Statistics Korea.