# GOVERNMENT-BACKED PATENT FUNDS IN CHINA

## THEIR ROLE AS POLICY TOOLS TO PROMOTE INNOVATION BY SMEs

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## Abstract

In recent years, the Chinese central and local governments have issued series of policies, especially the patent fund policy, to support the technological innovations by SMEs. Although there is still a need of specific evidence to show the direct link between government's patent fund policies and SME's innovations, we can observe their relation from the growth of patent applications filed and granted, and the investment of R&D in these enterprises. The empirical data and case studies on the patent fund policies in Beijing and Shanghai show their positive and negative effects on innovations. It, therefore, recommends reforms on such kind of government-backed patent policy, among others, to prioritize funding for SMEs.

## Introduction

Since the Reform and Opening-up policy in 1978, China has experienced three decades of sustained, strong annual economic growth, currently being the world's second largest economy, in which small and medium-sized enterprises (SMEs) are considered as one of the most important driving factors. As in the end of 2011, there were 316,642 registered industrial SMEs in China, accounting for over 97.2% of Chinese industrial enterprises in total, producing 58.4% of Gross Industrial Output Value.[1] From the perspective of innovation, SMEs provide more than 65% of total invention patent applications and over 80% of new products development. In the High-Technology Industrial Parks around the country, over 70% of total amount enterprises are SMEs.[2]

However, due to the limited capital resources and poor research capacity, although SMEs have a huge amount of patent applications, the grant ratio is still at a low level, and the majority of their patents are utility model patent and design patents, the percentage of invention patents with core competence in industry need to be further increased.

Realizing the importance technological innovation by SMEs, Chinese central and local governments have issued series of supporting policies, one of which is the patent fund policy. From the high level as the National Intellectual Property Strategy to the lower level as similar strategy in a small enterprise, obtaining and operating of intellectual property, especially patent have been taken as a useful tool to protect and promote innovation. So far, there is no specific evidence to show the direct link between government's patent fund policies and SME's innovations, although we can observe their relation from the growth of patent applications filed and granted, and the investment of R&D in these enterprises. This paper explores this problem both from the general description and case study. It provides the contents and practices of patent fund policies in China's most advanced areas, such as Beijing and Shanghai, and makes analysis on the positive and negative effects of such policies on innovations. There's a need to improve the government-backed patent policy and it, therefore, provides some recommendations as conclusion of this paper.

## Policies and practices on government-backed patent funds in China

### The national intellectual property strategy

On June 5, 2008, The State Council of China issued the Outline of the National Intellectual Property Strategy ("Strategy Outline")[3], which made intellectual property issue one of the basic national strategies for China's overall social and economic development.

In the Strategy Outline, "to encourage enterprises to become the major force in creating and utilizing intellectual property" is one of the strategic emphases. To enhance the capacity to create intellectual property, Section 40 of the Strategy Outline is related to the enterprises, saying that "we should establish a market-oriented system for the creation of independent intellectual property, in which enterprises act as the main bodies. We should support enterprises to form intellectual property through original innovations, integrated innovations and secondary innovations and enhance their capacity to transform the innovative achievements into intellectual property. We should support enterprises to obtain intellectual property abroad. We should direct

[1] See *Chinese Statistical Yearbook 2012*, P501.
[2] See China's Ministry of Industry and Information (MIIT), *The Twelfth Five-Year Plan for SMEs*, available at www.miit.gov.cn/n11293472/n11293832/n11293907/n11368223/14178245.html
[3] The State Council of China, Doc. No. 18 [2008].

enterprises to change their competition mode, intensify technological innovations, and enhance the quality of their products and services." For purpose of implementing the strategy and building China into an innovation-oriented country, the central and local governments of China have issued a series of policies to support SMEs to gain more high-quality original patents, by giving them financial support for patent application, prosecution and maintenance, which is discussed in the following sections.

### China's patent fund policies

We could summarize the current patent fund policies into two modes: One is the general preferential policy, which has been executed since the establishment of patent law system in China since 1985. According to the preferential policy, any patent applicants and patentees, who are, indeed, in difficulties to pay for the patent fees, have the right to apply to the State Intellectual Property Office for reduced or postponed patent fees. The patent charge standard of SIPO can be reduced by an amount of 70%–85% depending on whether the applicant is an individual or enterprise.[4] The SMEs who face the financial difficulties during its patent application can seek the help from such policy.

The other one is the patent fund supported by local governments, providing cash subsidies for patent applicants and patentees gratuitously. Since Shanghai firstly issued the patent fund policy in 1999, local governments in China have formulated policies according to their own economic strengths and levels of technological development. Under the National Intellectual Property Strategy, all local governments at province level have issued such patent fund policies, although the detailed data is not available so far. This paper will provide two examples in Beijing and Shanghai in the following part.

Moreover, as for international patent applications, in order to encourage domestic applicants, which shall be mainly limited to domestic SMEs to actively apply for patents abroad, the Chinese Ministry of Finance has set up special funds for subsidizing foreign patent applications since 2009.[5] The special funds shall greatly help to make up the capital shortage for SMEs when applying international patents through the Patent Cooperation Treaty (PCT) and the Paris Convention on the Protection of Industrial Property (Paris Convention), improving ingenious innovation capabilities of SMEs and their competitiveness with foreign counterparts.

## Patent funds from local governments: With examples of Beijing and Shanghai

Currently the majority of patent fund is financially supported by local governments. For lack of the nationwide data, we would take Beijing and Shanghai as two specific samples, learning policies and practices in these two regions in detail.

### Subsidizing target and scope

According to the patent fund policy in Shanghai[6], subsidizing patent applicants include all enterprises, public institutions, organs of government, and social organizations, which are registered in Shanghai, and individuals who are registered permanent residents or with residence permit in Shanghai. All the qualified patent applicants shall apply for the same subsidizing standard. The patent fund covers domestic and foreign patent applications, with the focus on invention patents and patents from strategic emerging industries.

While according to policy in Beijing[7], locally registered enterprises and individuals are divided into three categories with various qualifications: patent experimental enterprises, patent model enterprises, and other enterprises and individuals. In addition, following patent applications would be subsidized preferentially: (i) projects which are listed in Beijing's key development plan; (ii) high-tech and technical transformation projects; (iii) projects by patent model enterprises and patent experimental enterprises; and (iv) invention patent applications.

### Subsidizing standard for domestic applications

Shanghai's patent fund policy adopts the method based on the actual costs on patent applications, that is, to set different percentage of subsidizing standards for three kinds of patent application: invention, utility model and design patent.[8]

Beijing's patent funds policy is based on the fixed amount for three kinds of patent applications and various categories of enterprises. In addition to the division according to three kinds of patents, different group of applicants shall also apply for different subsidizing standards[9] (Table 1).

Moreover, as Beijing policy shows, in order to encourage more invention patent applications, if an applicant fills more than 100 invention patent applications within one year, from the 101th application, each piece of invention patent application within the same year shall be given an extra subsidy of 1000 yuan (amount to US$ 160), each piece of granted invention patent within the same year shall be given an extra subsidy of CNY 1500.

### Subsidizing standard for international patent applications

In Shanghai, for international applications, a subsidy of no more than CNY 30,000 shall be given to each invention patent application for each country, with up to five countries allowed to be supported for each patent project; a subsidy of no more than CNY 3,000 shall be given to each design patent application for each country, with up to three countries allowed to be supported for each patent project. In addition, each applicant could receive a maximum of CNY 1,000,000 international patent funds per year.

[4] Data is available on the official website of China's State Intellectual Property Office (SIPO), http://www.sipo.gov.cn/zlsqzn/sqq/zlfy/200905/t20090515_460473.html

[5] The Ministry of Finance, Doc. No. 147 [2012].

[6] Shanghai Finance Bureau and Shanghai Intellectual Property Office, Doc. No. [2012] 106.

[7] Beijing Finance Bureau and Beijing Intellectual Property Office, Doc. No. [2006] 3101.

[8] Full text of this policy is available on the website of Shanghai Intellectual Property Office, www.sipa.gov.cn/gb/zscq/node3/node34/userobject1ai9492.html.

[9] Full text of this policy is available on the website of Beijing Intellectual Property Office, www.bjipo.gov.cn/zcfg/zcwj/201106/t20110614_18077.html.

**Table 1: Subsidizing standards for domestic patent application in Shanghai (SH) and Beijing (BJ)**

| | | Domestic invention patent application | Domestic utility model patent application | Domestic design patent application |
|---|---|---|---|---|
| SH | All the qualified applicants | 1. 80% of actually paid application fees[10] is subsidized after the application being accepted.<br>2. 100% of actually paid Substantive Examination fees and grant fees[11] is subsidized after the patent being granted.<br>3. 80% of the annual maintenance fee for the second and third year, from the patent is granted, is subsidized.<br>4. Patent agency fee is subsidized after the patent is granted and the maximum amount is 2000 yuan per piece. | 50% of actually paid application fee and grant fee is subsidized after the patent being granted. | 60% of actually paid application fee and grant fee is subsidized after the patent being granted. |
| BJ | Patent model enterprises | 1. The maximum subsidizing amount is CNY 5000, of which CNY 950 for application fee, CNY 2500 for substantive Examination fee, the rest for annual maintenance fee, stamp duties, registration fee, etc.<br>2. 100% of actually paid additional charge[12] is subsidized. | The maximum subsidizing amount is CNY 500.[13] | The maximum subsidizing amount is CNY 500. |
| BJ | Patent experimental enterprises | 1. The maximum subsidizing amount is CNY 950 for application fee and CNY 2500 for substantive Examination fee.<br>2. 100% of actually paid additional charge is subsidized. | The maximum subsidizing amount is CNY 500. | The maximum subsidizing amount is CNY 500. |
| BJ | Other enterprises and individuals | 1. The maximum subsidizing amount is CNY 950 for application fee and CNY 1200 for substantive Examination fee.<br>2. 50% of actually paid additional charge is subsidized. | The maximum subsidizing amount is CNY 150. | The maximum subsidizing amount is CNY 150. |

In Beijing, for applicants applying patents abroad through PCT, a subsidy of CNY 10,000 shall be given in the international stage and CNY 10,000 shall be given in the domestic stage of foreign country; for applicants applying patents abroad through other approaches, a total subsidy of CNY 20,000 shall be given. It is limited that, for each patent project, applications for up to five countries are allowed to be supported; for each applicant, a maximum of CNY 500,000 international patent funds shall be received within one year. In addition, if an applicant fills more than 10 international patent applications within one year, from the 11th application, each piece of granted invention patent within this year shall be given an extra subsidy of CNY 10,000.

## Some observations on the role of government-backed patent fund policy

### Growth of patent applications and patents granted in China

According to WIPO, US, China, Japan, Republic of Korea and Germany are the top five countries on patent applications. Figure 1 shows worldwide patent applications from the five countries of origin between 1997 and 2011.

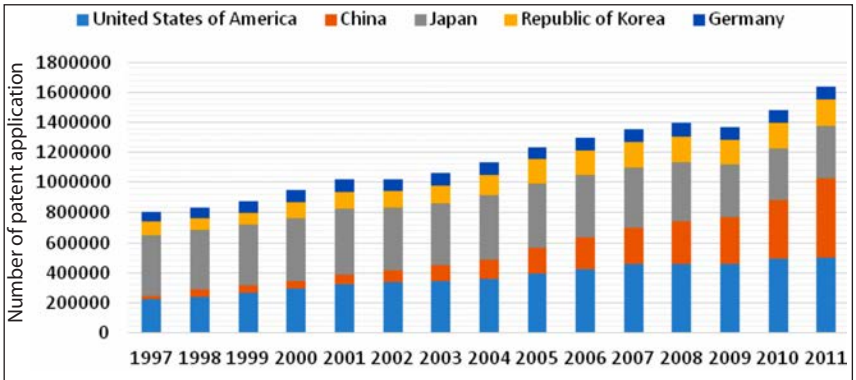
As the WIPO report published in 2012 stated, "China's patent office received more applications than any other country's in 2011. China received 526,412 applications, exceeding those to America and Japan. Globally filings rose by 7.8% last year, breaking the two million mark. Growth was over 7% for the second year running, thanks largely to another surge in China (which has accounted for 72% of the world's patent-filing growth between 2009 and 2011; America contributed 16%)."[14] It should be noted that the number on China is limited to the invention patent applications in the SIPO. The other

[10] Application fees include application filing fees, application additional fees, and priority fees.
[11] Grant fees include patent registration fees, announcement printing fees, and the annual fees for the first year.
[12] Additional charge includes charge for specification and claims.
[13] If actual expenditure is less than 500 yuan, the subsidizing amount shall be equal to the actual expenditure.
[14] *Economist* 20121215, http://www.economist.com/news/economic-and-financial-indicators/21568402-patent-applications.

index shows that there's a large room for China to improve the quality of patent applications. According to this report, in almost one million patents granted in 2011, Japan approved the most. But America has the most patents in force: more than 2.1 millions out of an estimated 7.9 millions worldwide.

Figure 2 shows the general description of patent activities in China, including the total patent applications, the resident applications and the applications filed by industrial enterprises. It also shows patent grants ratio by industrial enterprises. From 1995 to 2001, patent filing number went up at a modest rate, while after 2001 China saw a high growth rate in patent application. And domestic application has accounted for the most part all the time.

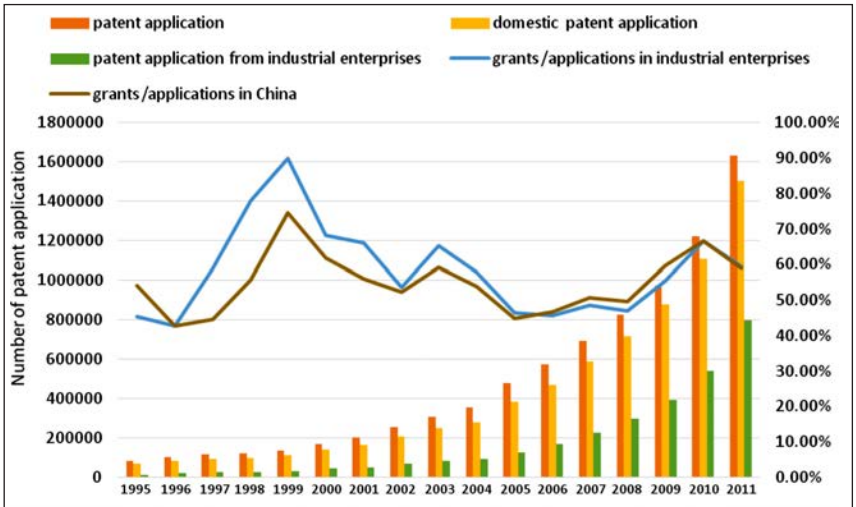
Since 1997 the proportion of industrial enterprises' application has increased from 14.28% (1995) to 48.94% (2011). In 2011, the SIPO granted 960,513 applications for the three kinds of patents. 474,787 were from industrial enterprises. Industrial enterprises play a predominate role in patent application, which is widely accepted as an indicator of innovation and technology development. The patent grant ratio of industrial enterprise kept floating, basically higher than the average grant ratio in China. However between 2006 and 2010, the grant ratio of industrial enterprise was lower than the average partly due to the so-called "junk patent" caused by patent fund. The good news is that the ratio has rebounded in 2011, higher than the average level.




Note: Application numbers are a sum of direct filings and PCT national phase entries received by offices. All statics relate only to patent of invention.

*Source: Wipo statistics database, 05/2013.*

**Figure 1: Patent applications from top five origins**




Note: The statics relate to three kinds of patent: Invention, unility model and design.

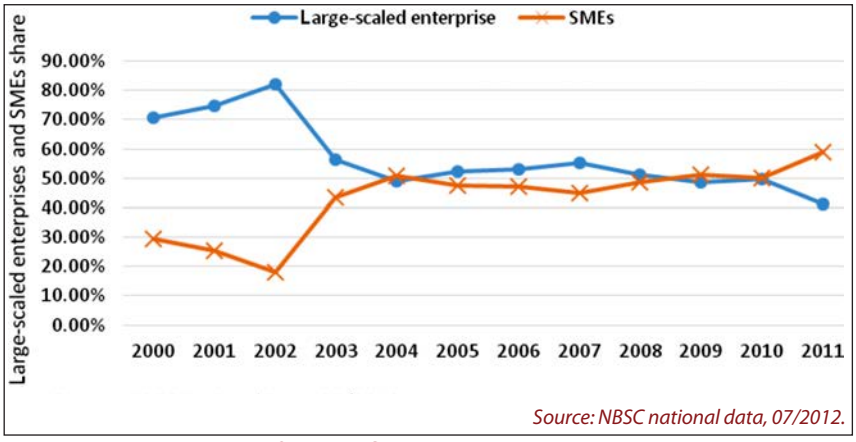
*Source: NBSC national data, 07/2012.*

**Figure 2: Patent applications in China**

## Patenting activities of SMEs in China

### Comparing the patenting activities between SMEs and large-scaled enterprises

SMEs are regarded as a main contributor to the whole industrial enterprises' patent activities. Figure 3 presents the distribution of total patent filing by SMEs and large-scaled enterprises. Over the past decade, there has been a significant increase in the share of SMEs patent applications. SMEs have surpassed large-scaled enterprises in 2009. In 2011, the share of SMEs patent filings accounted for 58.8% of the total filing,




*Source: NBSC national data, 07/2012.*

**Figure 3: Distribution of patent filing by SMEs and large-scaled enterprises**

**Table 2: Number of SMEs' patent applications and abroad invention patents in force**

| Year | Number of patent application by SMEs | Share of SMEs' patent application in the total industrial enterprises' patent application (%) | Number of abroad invention patent in force held by SMEs | Share of SMEs' abroad invention patent in force held by SMEs in the total industrial enterprises (%) |
|---|---|---|---|---|
| 2005 | 26328 | 47.63 | — | — |
| 2006 | 32404 | 46.96 | — | — |
| 2007 | 43010 | 44.85 | — | — |
| 2008 | 59517 | 48.75 | — | — |
| 2009 | 85575 | 51.32 | 37100 | 45.47 |
| 2010 | 99733 | 50.14 | 49529 | 43.80 |
| 2011 | 227014 | 58.80 | 102786 | 51.11 |

*Source: Statics Yearbook on Science and Technology Activities of Industrial Enterprises, Eds. 2006 through 2012.*

representing a 29.32% point increase from that in the year of 2000. At the same time, the share of large-scaled enterprises' patent application has dropped from 70.52% to 41.20% (Table 2).

In 2011, the government has proclaimed the new definition of SMEs which replaced the former higher standards in 2003. Table 3 shows the current conditions qualified for SMEs are the half of the former one, whether from maximum employee numbers or sales amount. As a result, considerable enterprises have been excluded from the list of SMEs. Yet the number of patent applications by SMEs has increased dramatically rather than decreasing. It indicates that innovation capacity of SMEs has been strengthened and SMEs pay more efforts to patent applications. It should be noted that the patent applications of SMEs may decrease as the new standards for SMEs implemented further in the following years.

Domestic industrial enterprises' invention patents abroad keep growing steadily mostly attributed to applications of large-scale enterprises, which indicates that more Chinese large-scaled enterprises have joined in the global economic competition and trade while SMEs are still domestic-oriented. The share of SMEs in total valid invention patents abroad has remained below 30%, accounting for 22.10%, 25.57% and 22.15% in 2009 through 2011 respectively. It can be explained that the patent applications abroad require high costs which SMEs cannot afford. The patent process is also more complicated and patent examination is stricter than the direct domestic application. The SIPO has issued a policy of providing special government-backed funds to individuals or enterprises who file international patent applications. Some local governments, such as Beijing and Shanghai, also provide similar funds to encourage international patent applications. SMEs have priority to get subsidy during their international applications.

## Increasing R&D investment of SMEs

In recent years, large number of researchers and huge research and development expenditure make SMEs' patent applications continue to rise.

Table 4 shows the number of SMEs has a sudden and dramatic decrease in 2011 due to the new definition of SME in China (Table 3). However in 2011, the number of SMEs' researchers and R&D expenditure has rapidly grown with a rate of 47.78% and 40.30% respectively from previous year. It means that more SMEs are now willing to invest in R&D activities.

However, when considering the R&D total expenditures per main business revenue of SMEs, the ratio is kept lower if compared to that of developed countries. What's more, this ratio has decreased from 2.29% to 1.14% between 2009 and 2011. Although SMEs' patenting activities have been improved in last few years, the R&D investment is not enough compared to the main business revenue. Each enterprise should increase R&D investment as innovation is a fundamental element in the development of enterprises. There is a big space for government-backed funds to make contributions during this process.

## Patent funds as incentive to file patent application *per se*

Government-backed patent funds aimed at promoting individuals' or enterprises' passionate innovative behaves, but it also performed as an incentive to file more patent applications. Some enterprises apply patents just to get the patent subsidy from local government based on patent applications *per se*. There is a notable case, *Shanghai Sidi Enterprise Management Consulting Co., Ltd. vs. Shanghai Municipal Intellectual Property Office*.[15]

On September 16th, 2004, Shanghai Sidi Enterprise Management Consulting Co., Ltd. (Sidi Co.), became one of the patent pilot enterprises. According to the relevant regulations of Shanghai IPO, patent pilot enterprises who applied for design patents can receive special financial assistance for patent fees-500 yuan for each design patent. July 2005, Sidi Co. filed administrative case against Shanghai IPO before the court for the later denied to pay CNY 609,000 as patent funding for its 1218 design patent applications

[15] Chinalwainfo, citation code: CLI.C.127394.

**Table 3: Standards qualified for SMEs (2003, 2011)**

| Rules on the standards of SMEs | Effective date | Issuing authorities | The standards for industrial SMEs |
|---|---|---|---|
| **Interim provisions on the standards for small and medium-sized enterprises** | 02-19-2003 | • State Economic and Trade Commission.<br>• State Development and Reform Commission (incl. Former State Development Planning Commission).<br>• Ministry of Finance, National Bureau of Statistics. | SMEs must meet the following conditions: less than 2000 employees, or sales amount of less than CNY 300 million, or total amount of assets of less than CNY 400 million. Among which, medium-sized enterprises must concurrently meet these conditions: 300 employees or more, sales amount of CNY 30 million or more, and total amount of assets of CNY 40 million or more; and the rest are small enterprises. |
| **Provisions on the standards for small and medium-sized enterprises** | 06-18-2011 | • Ministry of Industry and Information Technology.<br>• National Bureau of Statistics.<br>• National Development and Reform Commission.<br>• Ministry of Finance. | SMEs must meet the following conditions: less than 1000 employees, or sales amount of less than CNY 400 million.<br>Among which, medium-sized enterprises must concurrently meet these conditions: 300 employees or more, sales amount of CNY 20 million or more; small enterprises must meet these conditions: 20 employees or more, sales amount of CNY 3 million or more; and the rest are micro enterprises. |

between May and June in 2005. Because of the exceptionally large number of applications, Shanghai IPO made an investigation on Sidi Co. and found that this company filed design patent applications on behalf of the other company who finished the concerned subject matters and became patent owner at all. Shanghai IPO considered Sidi Co.'s patent application as fraudulent behavior and decided to remove this company from the list of patent pilot enterprises and refused to provide patent subsidy for all its patent applications. The court held that Sidi Co.'s behavior is an act of fraud and far deviated from the purpose of the patent special fund. It therefore upheld the decision of Shanghai IPO.

## Double-edged effects of government-backed patent funds in China

### Promoting innovations

As data stated above, China's patent applications have been continually surging these years. Since the announcement of Patent Law in 1985, it took almost 15 years for China to achieve its first 100,000 patent applications, then only about four years for the second 100,000, and about two years for the third 100,000. Until 2012, the total amount of patent applications in China is 526,412, ranking the first around the world. Undoubtedly, patent fund by government is one of the vital drives for China's patent surge.

On one hand, by lowering application cost and risk, patent fund policy effectively stimulates patent output, which would further increase utilization of patent system, provide market incentives, and promote diffusion of technological innovation. On the other hand, by subsidizing key developing areas preferentially, the policy also helps to optimize patent structure and to lead technological innovation resource into the strategic key fields.

In a word, patent fund policy indeed has its great positive impacts on promoting innovation in China.

### Holding back innovations

However, we should also consider its negative side. The above case is one example,

**Table 4: R&D indicators of SMEs**

| Year | Number of SMEs | Number of SMEs with R&D activities | Number of SMEs' researchers | R&D total expenditure of SMEs (Billion Yuan) | Main business revenue of SMEs (Billion Yuan) | R&D total expenditure/ main business revenue |
|---|---|---|---|---|---|---|
| 2009 | 434400 | 10437 | 248659 | 352.43 | 15364.02 | 2.29% |
| 2010 | 452900 | 10683 | 250687 | 395.59 | 19991.61 | 1.98% |
| **2011** | **325600** | **33025** | **370444** | **555.03** | **48506.17** | **1.14%** |

*Source: Statics Yearbook on Science and Technology Activities of Industrial Enterprises, Edition 2010–2012. China Industry Economy Statistical Yearbook, Edition 2010–2012.*

and the negative impacts could also be reflected by a criminal case happened in Shanghai as well. Since June 2012, Wu downloaded the publications of granted patents from the website of SIPO, made non-substantive adaptations for them, such as changed patent names, added or deleted some dependent claims, etc., then applied for new patents with these superficial changes. In this way, Wu had filed 206 patent applications in SIPO through patent agencies. After his applications being granted, with receipts for the patent agency fees, Wu applied for patent subsidizing fund in Shanghai IPO and successfully received a total subsidy of CNY 206,000. In the end, his criminal behavior was detected and prosecuted. He was sentenced to seven years imprisonment, with fine of CNY 10,000, and to return the entire subsidy he's got.[16]

Although such cases happened very exceptionally, the possibly negative impacts of current patent system and patent fund policies are partially exposed. First, the patent fund policy, paying generalized subsidy without quality control, may induce junk patents. In China's patent system, preliminary examination (formal examination) is widely used. Substantive examination is only required by invention patent applications, not by utility model and design patent applications, which account for a majority of China's patent applications in total. Preliminary examination would save examination cost and raise examination speed, but it would also lower the quality of patents, making it possible for many superficially different patents being granted repeatedly. However, current patent fund policies, ignoring these examination shortcomings and qualities of patents, would further mislead applicants into a numerical trap, blindly pursuing fast growth of application number, inevitably inducing a huge amount of junk patents.[17]

Second, the patent subsidizing amount is overly high compared with the overly simple application and examination procedure, which would distort the original intention of patentees and lure speculators to abuse the patent fund as a means to get a quick profit. It would hinder effective distribution of public resource, causing a huge waste, holding back technological innovation.

## Recommendations on Chinese government-backed patent funds policy

The Chinese government has built a structural incentive system together by intervening in the technology and science area with the patent subsidy policy. Such policy has positive effects on the increase of patent applications and R&D investments for all enterprises, including SMEs. However the systematic loopholes are also obvious. First, local IPOs do not care much about the patents as long as the patentees have prepared the required files-identity documents, copy of patent certificate and application form. Much subsidies are paid for a great number of low-tech utility model and design patents. Second, the policies have not guided the individuals' or enterprises' innovation to develop toward promising technology areas. The policies have done nothing in adjusting the structure of patent, in other words, the trends of technology.[18] The thing became worse when there have been cases on enterprises tricking out patent subsidies from local IPO as shown above. We, therefore, put forward some recommendations to make the patent subsidy policy function better as innovation incentive and avoid its negative effect as much as possible.

### Prioritize funding for SMEs

The experiences from developed countries show this point apparently. For example, the United States Patent and Trademark Office (USPTO) has offered a small entity discount of 50 percent on many patent fees. The America Invents Act (AIA) of 2011 allows the USPTO to offer a 75 percent discount for qualifying micro entities on fees for filing, searching, examining, issuing, appealing, and maintaining patent applications and patents. The Japanese Patent Office (JPO) is working to provide a much more user-friendly IP System for a wide range of entities such as SMEs and universities.[19] Although China has specific law and regulations to promote the development of SMEs, the local and regional patent subsidy policies don't take SMEs as prior applicants. The reality is that the large enterprises and major projects, most of them state-owned enterprises, are apt to receive government patent fund. On the contrary, the SMEs and individuals will sometimes have to give up applying patent because of the patent costs and fees.

### Make use of patent assessment report

The Chinese patent law provides that after patents for utility model or design are granted, the patentees can ask the SIPO to make a patent assessment report. In practice, this assessment report is often used as a proof for patent infringement dispute. But such kind of reports can also be introduced in the process of patent funding at the time of evaluation of authenticity and patentability. Local IPOs can evaluate the innovative and novelty of the patent through such report before paying patent funds.

### Combine patent funding and patent consultation

The Korean Intellectual Property Office (KIPO) has established 31 regional IP centers nationwide where patent, brand, and design experts provide consultations on various IP issues up to 2011. In addition, the KIPO provided 176 sessions of IPR training for 3,740 people in 2011 to foster IP manpower at SMEs. China can set up similar institutions not only to help SMEs to apply patent financial assistance but also to provide consultation on IPR.

### Build a database to track funded patents

To avoid duplicate funding and patent disputes, local authorities should establish a database for the funded patents to track these patents' life cycle and industrialization after these patents are funded. According to statistical data, regional IPOs can adjust subsidy policy timely to foster the industrialization of subsidized patents. ■

[16] Chinalwainfo, citation code: CLI.C.120054.
[17] Mark Liang, Chinese Patent Quality: Running the Numbers and Possible Remedies, 11 *J. Marshall Rev. Intell. Prop. L.* 478 (2012).
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