Financing Channels and the Performance of Chinese Small and Medium High-Tech Enterprises

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China's astonishing economic growth in recent years has attracted many research interests. It is well documented that small and medium-sized enterprises have become a major driving force making China's economic miracle. Financing is critical to small business; however, there are limited studies on financing sources for Chinese small business and how different financing sources affect the performance of small business. This paper investigates the influence of different financing channels on the performance of Chinese small and medium sized high-tech enterprises. We find that small firms in China rely heavily on individual financing due to the difficulty in obtaining external financing. Our results show that individual financing is negatively related to the firm performance measured by operating revenues. In contrast, firms with foreign financing have better performance. However, one should be cautious to interpret the influence of foreign financing on firm performance. Our results also indicate that foreign financing is positively related to the probability of a firm incurring loss. On one hand, foreign ownership brings in advanced management skills and better corporate governance and thus produces high operating revenues. However, on the other hand, foreign ownership results in high operating costs due to cultural difference and adjustments to China's business environment. When costs associated with foreign financing

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outweigh the benefits it bring in, the firm with foreign financing will have higher probability to incur loss compared to firms financed by other channels.

1. Introduction

The lack of detailed data on small businesses as well as the funds they raise in private equity and debt markets is likely a major reason why until very recently small business finance has been one of the most under-studied areas in finance (Berger and Udell 1998). Studies on financing sources for Small and Medium-sized Enterprises (SMEs) have important economic and policy implications given the large number of SMEs and their contribution to job creation and their impacts on economic growth.[1] However, unlike listed companies who can raise capital from public sources, SMEs are usually not publicly traded therefore are difficult to raise funds from public sources. Since the funding sources for SMEs are limited, it is important to study the effects of different financing channels on firm performance and how to allocate scarce resources in a more efficient way. However, the existent literature on financing sources for small and medium-size enterprises is short and mainly focuses on SMEs in the developed countries. (Craig et al, 2007; Berger and Udell, 1998; Cole, 2008).

The lack of studies on SMEs is largely due to the scarce of data. Unlike listed companies that disclose financial data regularly to the public, small enterprises are generally not publicly traded therefore are not required to disclose financial information to the public. As a result, most studies on SMEs use data from proprietary sources, for example, data collected on lending by financial institutions like commercial banks and credit unions. There are also few surveys conducted on small businesses, but these data were not widely accessible to researchers.

In their seminal paper, Rajan and Zingales (1998) show a relation between external financing and firm performance. Using a large sample of countries over the 1980's, they find that the financial development and thus the availability of external financing have a significant supportive influence on the rate of economic growth. Similarly, Craig et al (2007) find a positive and significant relationship between the relative levels of U.S. Small Business Administration (SBA) guaranteed lending in a local market and the future per capita income growth. In a Recent study, Beck et al (2008) use a firm-level survey data to investigate how financial and institutional developments affect financing of large and small companies. Their findings suggest that small companies and companies in countries with poor institutions use less external financing. The lack of access to external finance for small firms is primarily due to the market imperfection and information asymmetry.

Stimulated by China's astonishing economic growth in recent years, many researchers showed great interests in studies on financing sources of China's enterprises. Using a sample of Chinese state-owned enterprises covering from 1980 to 1994, Cull and Xu (2003) find that bank finance is positively associated to firm profitability. However, this association between bank finance and profitability weakened in the 1990s. They also find that direct government transfers were not significantly associated with profitability.

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[1] In China, for example, there are less than 2,000 firms that issue publicly traded stocks (As of March 2009, there are 864 companies listed on Shanghai Stock Exchange, and 738 companies listed on Shenzhen Stock Exchange. Total number of listed companies in mainland China is 1,602.), yet there are approximately 7 million business entities in China. According to Mckinsey&Company (2006), privately held firms are vital to the Chinese economy, producing as much as 75% of all job opportunities and account for 55% of GDP.

Although Cull and Xu (2003) did not find statistically significant association between government transfers and profitability of state-owned enterprises, other researchers show that government supports indeed play a significant role in promoting the development of small business in China. For instance, Li and Matlay (2006) point out that support from local government is crucial to the development of Chinese small business. Wu (2002) shows a series of entrepreneurial activities initiated by Shanghai municipal government.

Noticing the large percentage of legal person ownership in China's public companies, Delios and Wu (2005) investigate the relationship between the concentration of legal person shareholding and firm performance for China's listed companies. They use Tobin's Q as the measure of firm performance. Their finding shows that legal person ownership and firm performance have a complicated relation. When the level of legal person ownership is high, legal person ownership has a positive relationship with firm performance; however, this relationship does not hold when the legal person ownership is low. In another study, Wei et al. (2005) find a significant negative relation between firms' Tobin's Q and the ownership stake of the government and legal institutions (non-tradable shares), while foreign ownership is significantly positively related to Tobin's Q. Similarly, Bai et al. (2004) show that issuing shares to foreign investors is associated with higher market valuation and better firm performance.

More recently, Li et al. (2007) use a firm-level dataset to investigate the role of ownership and institutional development in debt financing of private firms in China. Their findings show that firms with high foreign ownership are less leveraged compared to their Chinese-owned counterparts. They also find that state owned banks have high tendencies to grant long-term loans only to state-owned firms.

Most of above studies focus on either listed or large companies; therefore, even the small companies in their samples are relatively large. Given the important role that SMEs play in the economic growth and job creation, better understanding of the financing sources for SMEs and how they affect firms' performance have important policy and resource implications.

In this study, we use a firm-level dataset to investigate the effects of financing sources on the performance of small and medium-sized firms in a metropolitan area in China. In order to promote the development of high-tech companies, the local government enacted a series of tax breaks and tax reduction policies to support the growth of high-tech companies in the region. Qualified high-tech companies are certified by the local government to be exempted from certain taxes for a period of 2 years. The dataset includes all high-tech companies applied for tax exemption programs initiated by the metropolitan government in 2004 and 2005. One of the strengths of this dataset is that it covers primarily small and medium sized firms with detailed financing source information. The dataset also includes registered capital, operating revenues, net income and other related financial information.

Our results show that SMEs in China finance a large portion of their capital using individual sources. However, our regression model indicates that individual financing is negatively related to the operating revenue, meaning that firms primarily financed by individuals will result in lower economic outputs, all else equal. The large portion of individual financing indicates the market inefficiency and SMEs have to rely heavily on personal or individual relationship to obtain funding. By dividing our dataset into smaller and larger sub-samples, we find that smaller firms finance their capital significantly more from individuals but less from government compared to that of larger firms despite the fact that

smaller firms need more help from government to obtain funding due to information asymmetry in the capital market. These findings unveil the small firms' limited access to the external financing sources in China, and the alternative financing source for them is primarily from individuals.

This study also shows a positive relationship between the foreign financing and operating revenues. SMEs with foreign ownership are more likely to have higher operating revenues, all else equal. However, we need to be cautious to interpret this result. The logit model indicates that foreign financing is positively related to the probability of loss occurrence, meaning that the probability of getting a loss is high for SMEs with foreign ownership. One possible explanation for these seemingly contradictory results is that although foreign ownership brings in capital, technology, modern management and better corporate government and thus produces higher revenues, at the same time, SMEs with large portion of foreign ownership may incur significantly higher operating costs associated with cultural difference and business environment adjustments. If the costs associated with foreign financing outweigh the benefits that it might bring in, firms rely on foreign financing might have higher probability to incur loss compared to firms primarily financed by other channels. However, we only have one firm-year data, it is impossible for us to investigate the performance of SMEs in the long run. It will be more informative if we had time series data to test the profitability of SMEs in the long run.

Our paper contributes to the literature in three ways. First, we use a new dataset to investigate the effects of different financing sources on the performance of Chinese SMEs. Second, to our best knowledge, this is the first study to show that although foreign ownership will bring in higher economic outputs, SMEs rely on foreign financing are more likely to incur loss due to higher operating expenses associated with culture difference and business environment adjustments. Third, this paper provides new empirical evidence to the existent literature.

The rest of the paper is organized as follows. The next section introduces the data and descriptive statistics. Section 3 states our hypotheses and model specification. Section 4 presents results, and Section 5 concludes the paper.

2. Data and Descriptive Statistics

We use a unique dataset to analyze SMEs' financing sources and their impacts on firm performance in a metropolitan area in China. SMEs in China are defined as enterprises with between 8 and 2,000 employees, less than US $50 million assets, and less than US $37 million sales (Mckinsey&Company, 2006). The development of SMEs has significant impact on the socio-economic transition in China. It is well documented that small and medium-sized enterprises have become a major driving force in China's astonishing economic growth, and turned China from a relatively closed and stagnating economy into a sustainable growth and dynamic industrial expansion (Li and Matlay, 2006; Li, 2002; Byrd and Lin, 1990; Oi, 1992).

In order to sustain its astonishing GDP growth and improve the quality of its economy, the Chinese government has implemented a set of schemes to support the development of SMEs. Among such efforts, the metropolitan government in our study enacted a series of tax relief and tax reduction policies to support the growth of high- and new- tech companies in the region. Tax relief is a frequently used incentive to encourage investments in certain economic development zones and high-tech development districts in China. Wu et al (2007)

show that tax incentives play a major role in attracting business and influencing business investment decisions.

To apply for the tax exemption programs, high-tech companies are required to provide certain financial information such as the financing sources, registered capitals, operating revenues and net incomes to the local authorities. Once approved, these high-tech companies are certified by the local government to be exempted from certain taxes for a period of 2 years. Our dataset includes all high-tech companies certified by the local government for the tax exemption purpose in 2004 and 2005. Using this dataset, we investigate the financing sources of Chinese high-tech SMEs and how different financing sources affect SMEs' performance. To be included in this study, companies must have information on financing sources. This results in 1519 companies in the dataset. However, some of these companies do not have necessary financial data such as registered capital, operating revenues, and net income. After removing companies without necessary financial information, the final dataset contains 679 companies. There are 325 companies in 2004, accounting for 47.86% of total firms, and there are 354 companies in 2005, representing 52.14% of total firms. Since the tax relief certification is valid for 2 years, the companies in 2004 and 2005 are not recurring. In our study, we do not have information on the amount of debt or total assets. However, we know the amount of capital financed from a particular source.

Table 1 gives the size of firms in the dataset measured by registered capital and operating revenues[2]. The mean (median) size of the firm is $1,941,632 ($290,206) measured by the registered capital. If measured by operating revenues, the mean (median) size of the firm is $7,453,386 ($614,268). We can see from Table 1 that the majority of firms in the dataset are small and medium-size firms.

The companies in the dataset represent 11 high-tech industries. Table 2 summarizes the companies' industry distribution. The most frequent industry is Electronic and Information Technology industry, which includes 301 companies, accounting for 44.59% of total observations, followed by the New Materials and Applied Technology industry, which includes 95 companies, representing 14.07% of total observations in the dataset.

Financing sources of Chinese SMEs could be broadly categorized into six major groups: 1) financing from government; 2) financing from collective sources; 3) financing from legal person[3]; 4) financing from individuals; 5) financing from Hong Kong, Macao and Taiwan (HMT)[4] investors; and 6) financing from foreign investors. Among these financing sources, financing from individuals is usually considered as informal financing (Ayyagari 2008). Table 3 gives summaries on companies' financing sources.

The number of companies that received funding from individuals is 440, the highest number among all the financing sources, accounting for 51% of total observations. This indicates that the majority of Chinese SMEs receive funding from individual sources. The second most frequent financing source is from the legal person. 235 firms received funding from legal person, accounting for 27.3% of total observations. The number (percentage) of

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[2] We do not have information on total assets, a frequently used measurement for firm size in the literature. We have detailed information on the registered capital and the sources of capital.

[3] As Ayyagari et al (2008) pointed out that legal Person shareholders are unique to China and are analogous to institutional shareholders in western economies except that they tend to have strong state linkages and are not widely held as in western economies.

[4] Some literature refers Hongkong, Macao, Taiwan as ethnic Chinese (i.e. Allen et al 2007).

companies receive financing from foreign investors, government, collective sources and ethnic Chinese investors is 66 (7.7%), 56 (6.5%), 37 (4.3%) and 28 (3.2%) respectively.

In terms of dollar amount, the largest financing source is from legal person, accounting for 38.4% of total financing amount. Foreign investment consists of 24.4% of total financing sources. The average financing size is $4,873,400 for foreign investments, the highest among all average financing sizes. The second highest average financing source is from government, which is $2,754,200. The average financing size from legal person is $2,154,500 and average funding from HMT is $1,408,900. The average financing from individuals and collective sources are among the lowest ones, namely, $633,700 and $484,300 respectively. For comparison purpose, Table 3 also gives the average financing amount for all financing sources, which is $1,529,400. Although the majority of Chinese SMEs receive funding from individual sources, the average size of individual financing is small compared to that of other financing sources.

We can further divide all firms into two groups by the size of operating revenue. One group has all the firms with operating revenue less than the median operating revenue, and we call this group the smaller size group. Another group has all the firms with operating revenues greater than or equal to the median operating revenues, and we call this group the larger size group. Table 4 gives the summary of financing sources for smaller and larger size firms. The average (median) operating revenue for smaller firm is $206,385 ($169,891), and the average (median) operating revenue for larger firm is $14,679,069 ($2,497,134).

It is quite interesting to observe that for the smaller size group, among all financing channels, the financing from individual source is dominant, accounting for 49.5% of total financing amounts. However, for larger size group, the percentage of individual financing accounts for only 17.27% of total financing amounts. This interesting observation indicates that the main financing channel for smaller firms is individual financing. This empirical finding confirms Beck et al. (2008)'s conclusion that small companies use less external financing. Another interesting observation is that the financing from foreign investors for larger firms is significantly higher than that for smaller firms. The percentage of foreign financing to total financing for larger firm is 27.12%; however this number is only 4.5% for smaller firms. The percentage of government financing to total financing for larger firms is 12.28%, which is also much larger than that of smaller firms. For smaller firms, that number is only 7.48%. For comparison purpose, Table 4 also gives the average amount of various financing channels for all firms. Above observations clearly show that smaller firms mainly obtain financing from informal channel such as individuals. It is difficult for smaller firms to obtain financing from external channels. Since SMEs are the potential driving force for economic growth in China, and supports from external financing are crucial to the healthy development of small business (Li and Matlay 2006; Wu 2002), Chinese government should promote supporting policies to facilitate small firms to obtain external financing. These supporting policies include increasing lending to SMEs and improving market efficiency. Studies have shown that guaranteed lending from government is positively associated to the future income growth (Craig 2007).

There are four different financing types in our sample: 1) cash; 2) real assets; 3) land possession rights; and 4) technology transfer. Table 5 summarizes the amounts and the percentage of each financing type. Table 5 shows that cash is the primary financing instrument. Cash financing consists of 81.54% of total financing amounts, followed by real assets investment, which accounts for 12.61% of total financing amounts. Technology

transfer and Land possession right account for 4.24% and 1.6% of total financing amounts, respectively. In terms of number (percentage) of firms supported by each financing type, 596 (97.23%) firms receive cash financing, and 123 (20.07%) firms receive financing from real assets investment. Only a small number (percentage) of firms receive financing by means of technology transfer and land possession right, namely, 48 (7.83%) and 8 (1.31%) respectively.

3. Hypothesis Development and Model Specification

Since the monitoring and enforcement mechanisms of informal financial system are not properly equipped, it is difficult for informal financial system to scale up and meet the needs of the higher end of the market (Ayyagari et al 2008). Ayyagari et al (2008) show that firms which rely on informal financing have lower profit reinvestment rates and do not grow faster or have higher productivity growth than firms that are bank financed. As a typical form of informal financing, individual financing is usually associated with poor professional management and weak corporate governance. As a result, companies rely on individual financing are difficult to achieve economy of scale and faster growth. Operating revenue is a natural measure of firm's economic output and is frequently used in the literature as a measure of firm performance. Based on above argument, we hypothesize that the individual financing source is negatively associated with the operating revenue.

In contrast, foreign ownership brings in not only capital and technology but also modern management and better governance practices. Effective management and government are essential for achieving economic growth and business development. Moreover, foreign-owned firms are subject to lower corporate tax rates than their domestically-owned counterparts[5]. Therefore, we hypothesize that foreign financing source is positively related to the operating revenue.

Based on the above arguments, our first hypothesis is stated as following:

H1a: Individual financing is negatively related to the operating revenue. Companies rely on individual financing will have lower revenues, ceteris paribus.

H1b: Foreign financing is positively related to the operating revenue. Foreign ownership will produce higher operating revenues, ceteris paribus.

The following OLS model is employed to evaluate above Hypotheses:

$$Log(\text{Re}venue) = \beta_0 + \beta_1 Log(Capital) + \beta_2 Dumgov + \beta_3 Dumper + \beta_4 Du\min d \\ + \beta_5 Dumhmt + \beta_6 Dumfor + \beta_7 Dum04 + \varepsilon \tag{1}$$

Where *log(Revenue)* is the natural logarithm of operating revenues in the fiscal year; *log(Capital)* is the natural logarithm of registered capital; *Dumgov* is a dummy variable which equals 1 if the firm receives financing from government; *Dumper* is a dummy variable which equals 1 if the firm receives financing from legal persons; *Dumind* is a dummy variable which equals 1 if the firm receives financing from individuals; *Dumhmt* is a dummy variable which equals 1 if the firm receives financing from Hongkong, Macao or Taiwan; *Dumfor* is a

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[5] A foreign investment company's profits are subject to Foreign Enterprise Income Tax. It can generally be reduced from 33% to 24% (or further to 15%), when the company operates in coastal cities etc.

dummy variable which equals 1 if the firm receives financing from foreign investors; and *Dum04* is a dummy variable which equals 1 if the firm is in 2004.

While we hypothesize that foreign financing is positively related to the operating revenue, we want to further investigate the influence of different financing sources on the firm's profitability. Since we do not have information on common profitability measurements used in the literature such as return on assets and return on equity, in stead, we use the likelihood of a firm making profit or incurring loss as our measure of firm profitability. As noted earlier, foreign ownership could bring in advanced management skills and better corporate governance. However, foreign ownership also needs to overcome cultural differences and adjust to different business environments and legal settings. The costs of such adjustments are not trivial, especially to relatively new foreign investments entering into China's market. The influence of unique Chinese culture and business environment on firm behaviors is reported by many researchers. For example, Siu (2005) found that under the influence of indigenous Chinese cultural values, SMEs are more likely to adopt a relation-oriented marketing approach and place emphasis on building relations with media, rather than advertising. Allen et al. (2005) point out that alternative financing channel based on reputation and relationships is critical to support the growth of private sectors in China.

The firms included in our dataset are high- and new-technology firms. Therefore, most firms in our dataset are relatively young, especially firms with foreign financing given the nature of high-tech industry and China's recent opening to foreign investments. Young firms usually need a high amount of fixed investment to set up the operation. In addition, foreign financing is usually associated with relatively large investments. As Table 3 illustrates, in terms of average financing size, foreign investment is the highest among all financing channels. Based on above discussion, we expect that the operating cost associated with foreign financing is high as well. In another word, the operating expenses for firms with foreign ownership will be higher.

On the one hand, high-tech firms with foreign investments will have potential high operating revenues because of better management skills and corporate governance associated with foreign ownership. On the other hand, most high-tech firms with financing from foreign investors are relatively young in our dataset, resulting in high operating expenses and high costs to adjust to China's cultural difference and unique business environment. Above arguments give mixed signals to the direction of impact of foreign financing on the firm's profitability. Therefore, we state our second hypothesis in the null form:

H2: Foreign financing has no relationship with the probability of firm having a negative income. Firms with foreign financing do not have higher probability to incur loss or make profit, ceteris paribus.

We use a logit model to evaluate this Hypothesis.

$$Loss = \beta_0 + \beta_1 Log(\text{Re}venue) + \beta_2 Log(Capital) + \beta_3 Dumgov + \beta_4 Dumper$$
$$+ \beta_5 Du\min d + \beta_6 Dumhmt + \beta_7 Dumfor + \beta_8 Dum04 + \varepsilon \tag{2}$$

Where loss is a dummy variable equals 1 if the firm incurs loss (net income is negative), and 0 otherwise. Other variables in the model are defined earlier. The model calculates the probability that the firm experiences loss during the fiscal year.

Table 6 summarizes descriptive statistics on variables and Table 7 gives correlation matrix.

4. Results

The results from OLS model are given in Table 8. The results support our Hypothesis 1a and 1b. Individual financing (Dumind) is negatively related to the operating revenue, and this relationship is statistically significant at 95% level. This finding confirms results of Ayyagari et al. (2008), which concludes that financing from informal sources such as individuals, family members and friends is not associated with faster firm growth. In contrast, Foreign financing (Dumfor) is positively associated with the operating revenue, and the association is statistically significant at 95% level. Similar to previous findings (Wei et al. 2005, Bai et al. 2004), we find that firms with foreign ownership have better performance in terms of overall economic outputs. The regression results show that government financing and legal person financing are not significantly related to firm performance. The R square is 0.4, meaning that 40% dependent variables can be explained by independent variables.

As mentioned earlier, we also investigate how different funding sources affect a firm's profitability measured by the probability of loss occurrence. Table 9 presents the result from the logit model.

From Table 9 we can see that the dummy variable representing foreign financing (dumfor) is positively related to loss, and this relationship is statistically significant at 99% level. Firms that rely on foreign financing are more likely to incur negative income. It is interesting to observe that the dummy variable for Hong Kong, Macao or Taiwan financing (dumhmt, i.e. ethnic Chinese) is negatively and significantly related to loss. This indicates that firms with ethnic Chinese financing are less likely to incur loss while operating in China. This finding actually strengthens our Hypothesis 2. Similarly to foreign ownership, ethnic Chinese ownership could bring in advanced management skills and better corporate governance; however, different from foreign investors, ethnic Chinese investors have a closer exposure to China's business environment and better understanding of Chinese culture. Therefore, the costs for ethnic Chinese investors to adjust to China's business environment are less compared to those for foreign investors. As a result, firms with HMT ownership will be less likely to incur loss in China.

Another interesting observation is that dummy variable for 2004 (dum04) is positively and significantly related to loss. Compared to firms in 2004, firms in 2005 are less likely to incur loss. One possible explanation is that the general business environment for high-tech industries in 2005 was better than that of previous year. Actually, there was a series of supporting policies and tax reliefs enacted by the municipal government to enhance the development of high-tech companies in the 2000s. We expect a gradually better business environment for the SMEs in China.

Our results are not limited by the specification of financing sources. Instead of dummy variables, we also tried to use the percentage of each financing source in terms of total capital as explanatory variables, and we obtain qualitatively similar results. We also separate the data set by years into 2004 and 2005 data, and we still obtain qualitatively similar results. Our results are robust across different years.

5. Conclusion and Further Research

In this paper, we investigate how different financing sources affect high-tech firms' performance in a metropolitan area in China. We find that individual financing is negatively related to the operating revenue; that is, firms rely on individual financing will have less

economic output, *ceteris paribus*. We also find that foreign financing is positively related to the operating revenue, implying that firms with foreign financing will likely to have higher economic output. However, due to the high costs associated with foreign ownership, the operating expenses associated with foreign financing are likely to be higher as well. Those expenses may be caused by such adjustments as to fusion into China's social culture and business environment. As a result, although foreign ownership could bring in advanced management skills and better corporate governance and thus make higher revenues, the costs associated with foreign financing are high as well. Our analyses show that firms with foreign financing are more likely to experience operating loss, indicating that the costs associated with adjustments to an unfamiliar business environment might outweigh the benefits brought by foreign ownership.

Our analyses also show that for smaller and larger SMEs in China, the financing channels are quite different. For smaller firms, financing source is primarily from individuals. However, for larger size firms, financing sources are more diversified. The institutional ownership such as ownerships by legal person, government and foreign investors are higher for larger firms. Given the important role that external financing plays in the financial market, it will be very helpful for the healthy development of Chinese SMEs if government could facilitate them to obtain external financing.

We only have one firm-year data in this study. It will be very interesting to investigate the time series behavior of those firms in our dataset. Further research can utilize time-series data to investigate the impacts of financing sources on the performance of Chinese SMEs in the long run.

In summary, our findings show that financing channels have significant impacts on the performance of Chinese SMEs. The policy implication that we can draw from our findings is that Chinese government should encourage foreign investments and at the same time to help foreign investors better adjust to Chinese business environment and thus reduce their operating costs.

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Table 1

Summary on Firm Sizes (in US$000)

Measurements	Minimum	Q1	Mean	Median	Q3	Maximum	Std. Dev.
Registered Capital	3.6	84.6	1,941.6	290.2	1,209.2	241,838	10,312.8
Operating Revenue	0.25	169.9	7,453.4	614.3	2,527.5	1,643,546	71,247.9

Table 2

Industry Distribution

Industry code	Frequency	Percent (%)	Cumulative Frequency	Cumulative Percent (%)
1	301	44.59	301	44.59
2	95	14.07	396	58.67
3	37	5.48	433	64.15
4	75	11.11	508	75.26
5	78	11.56	586	86.81
6	18	2.67	604	89.48
7	41	6.07	645	95.56
8	5	0.74	650	96.3
9	3	0.44	653	96.74
10	1	0.15	654	96.89
19	21	3.11	675	100

Note 1: Industry Code: 1: Electronic and Information Technology; 2: New Materials and Applied Technology; 3: New Energy and Energy Saving Technology; 4: Advanced Manufacturing Technology; 5: Biological Engineering and New Pharmaceutical Technology; 6: Modern Agricultural Technology; 7: Innovative Environmental Conservation Technology; 8: Applied Nuclear Technology; 9: Aeronautic and Astronautic Technology; 10: Oceanic Engineering and Technology; 19: Others

Note 2: There are four companies with missing industry information.

Table 3

Summary of Financing Sources ($ amount in 000)

Financing Source	Financing Amounts (US$000)	Percentage by Amounts	# of firms supported by the financing source	% by # of firms supported	Average financing Amounts (US$000)
Government	154,237.6	11.7%	56	6.5%	2,754.2
Collective	17,920	1.4%	37	4.3%	484.3
Legal Person	506,298.1	38.4%	235	27.3%	2,154.5
Individual	278,819.5	21.2%	440	51%	633.7
HMT	39,448.1	3%	28	3.2%	1,408.9
Foreign	321,646.4	24.4%	66	7.7%	4,873.4
Total	1,318,369.8	100.00%	862	100%	1,529.4

Note: Some companies have multiple financing sources, for example, companies financed by both legal person and individuals.

Table 4

Financing Sources for Smaller and Larger Firms

	Government	Collective	Legal Person	Individual	HMT	Foreign	sum
Smaller (%)	7.48%	1.40%	36.71%	49.50%	0.41%	4.50%	100.00%
($000)	11,871.8	2,218.3	58,280.2	78,572.2	653	7,150.3	158,745.8
Larger (%)	12.28%	1.35%	38.63%	17.27%	3.35%	27.12%	100.00%
($000)	142,365.8	15,701.8	448,017.9	200,247.4	38,794.5	314,496	1,159,623.4
All firms (%)	11.70%	1.36%	38.40%	21.15%	2.99%	24.40%	100.00%
($000)	154,237.6	17,920	506,298.2	278,819.5	39,448.1	321,646.4	1,318,370

Table 5

Summary of Financing Types

Financing Type	Average ($000)	Sum ($000)	Percent (%)	Number of firms	Percentage by number of firms
Cash	1,566.9	960,525.1	81.54%	596	97.23%
Real Assets Investment	242.4	148,568.1	12.61%	123	20.07%
Land Possession Right	30.8	18,903.7	1.60%	8	1.31%
Technology Transfer	81.5	49,942.1	4.24%	48	7.83%

Note 1: some companies have multiple financing types.
Note 2: there are 66 companies with missing financing type information, and those companies are not included in the Table.

Table 6

Descriptive Statistics (# of observations=679)

Variable	Minimum	Mean	Median	Maximum	Std Dev
logrev	5.5370581	13.33124	13.3281873	21.22012	2.0457538
logcap	8.1963182	12.76654	12.5783448	19.30378	1.7323766
govfund	0	227154.1	0	17291415	1355376.6
colfund	0	26391.79	0	4232164	214510.48
entfund	0	745652.6	0	60459492	3893653.8
indfund	0	410632.6	60459.49	21172914	1419577.6
hmtfund	0	58097.28	0	15870617	698079.7
forfund	0	473706	0	2.42E+08	9333264.5
dumgov	0	0.0825	0	1	0.275
dumcol	0	0.0545	0	1	0.227
dument	0	0.346	0	1	0.476
dumind	0	0.648	1	1	0.478
dumhmt	0	0.0412	0	1	0.199
dumfor	0	0.133	0	1	0.339
loss	0	0.207658	0	1	0.4059298

Notes: logrev= log of operating revenues; logcap=log of capitals; govfund: amount of financing from government; colfund: amount of financing from collective sources; entfund: amount of financing from legal persons; indfund: amount of financing from individuals; hmtfund: amount of financing from Hong Kong, Macao or Taiwan; forfund: amount of financing from foreign investments; dumgov: a dummy variable =1 if the firm receives financing from government; dumcol: a dummy variable =1 if the firm receives financing from collective sources; dument: a dummy variable =1 if the firm receives financing from legal persons; dumind: a dummy variable =1 if the firm receives financing from individuals; dumhmt: a dummy variable =1 if the firm receives financing from Hongkong, Macao or Taiwan; dumfor: a dummy variable =1 if the firm receives financing from foreign investors; loss: a dummy variable =1 if the firm incurs loss during the fiscal year.

Table 7

Correlation Matrix

	logrev	logcap	govfund	colfund	entfund	indfund	hmtfund	forfund
logrev	1	0.5764	0.19262	0.08278	0.19747	0.16016	0.10579	0.0515
logcap	0.5764	1	0.2926	0.11922	0.38019	0.33404	0.14461	0.16384
govfund	0.19262	0.2926	1	0.17914	-0.00373	0.01693	-0.01388	-0.00783
colfund	0.08278	0.11922	0.17914	1	-0.02261	-0.03361	-0.00958	-0.00594
entfund	0.19747	0.38019	-0.00373	-0.02261	1	0.04445	0.07859	-0.00766
indfund	0.16016	0.33404	0.01693	-0.03361	0.04445	1	-0.02062	-0.0147
hmtfund	0.10579	0.14461	-0.01388	-0.00958	0.07859	-0.02062	1	-0.00419
forfund	0.0515	0.16384	-0.00783	-0.00594	-0.00766	-0.0147	-0.00419	1

Notes: logrev= log of operating revenues; logcap=log of capitals; govfund: amount of financing from government; colfund: amount of financing from collective sources; entfund: amount of financing from legal persons; indfund: amount of financing from individuals; hmtfund: amount of financing from Hong Kong, Macao or Taiwan; forfund: amount of financing from foreign investments;

Table 8

OLS Regression Results (# of observations=679)

Dependent variable = log of operating revenues

Variable	Estimate	t Value	Pr
Intercept	5.291	10.440	<.0001
Logcap	0.625	16.620	<.0001
Dumgov	0.415	1.620	0.107
Dumper	0.033	0.230	0.820
Dumind	**-0.413**	**-2.360**	**0.019**
Dumfor	**1.025**	**4.130**	**<.0001**
dumhmt	0.189	0.520	0.603
dum04	0.293	2.380	0.018

Note 1: logcap: log of registered capital; dumgov: a dummy variable =1 if the firm receives financing from government; dumcol: a dummy variable =1 if the firm receives financing from collective sources; dument: a dummy variable =1 if the firm receives financing from legal persons; dumind: a dummy variable =1 if the firm receives financing from individuals; dumhmt: a dummy variable =1 if the firm receives financing from Hongkong, Macao or Taiwan; dumfor: a dummy variable =1 if the firm receives financing from foreign investors; Dum04 is a dummy variable which equals 1 if the firm is in 2004.

Note 2: R-square=0.4, and adjusted R-square=0.395. F Value=64.12, which is significant at 0.001 level.

Table 9

Logit Model Result

Dependent Variable: Loss (dummy variable =1 if the company incur loss)

Parameter	Estimate	Chi-Square	Pr > ChiSq
Intercept	4.0346	17.359	<.0001
logrev	-0.5917	66.9298	<.0001
logcap	**0.1431**	**3.7345**	**0.0533**
dumgov	0.5501	1.5703	0.2102
dumper	0.2464	0.9998	0.3174
dumind	-0.00454	0.0002	0.9879
dumfor	**1.2266**	**9.2088**	**0.0024**
dumhmt	**-1.5446**	**3.4641**	**0.0627**
dum04	**0.3933**	**3.505**	**0.0612**

Note 1: logrev: log of operating revenue; logcap: log of registered capital. See Table 7 for definition for other variables.

Note 2: likelihood ratio=100.3, which is statistically significant at 99% level.