A Study of Auto Parts Industry Absorbing Funds from Venture Capital

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Abstract. Auto parts industry has become a new focus with the development of new energy vehicles and electronic technology. And venture capitals provide enterprises with foundations, resources of management and technology. This paper aimed to discuss the attraction between venture capital and auto parts industry, to further promote the development of the auto parts industry. This paper analyzed the correlation and elastic relationship between venture capital and automotive parts industry in Hubei province by Pearson correlation coefficient and the regression equation. Through qualitative analysis and quantitative analysis methods, the paper draws a conclusion that the development of venture capital has a role in promoting the development of the auto parts industry. And auto parts industry should seize the opportunity by some methods.

Introduction

Reasons such as overcapacity and overheated in automobile industry made it once rejected by venture capital. But with the development of China's auto market from 2007, automotive industry has become the focus of the venture capital, e.g., Tianjin Motor Dies Co., LTD. received SAIF Growth and other fund companies a total of 60 million yuan, as well as Wonder Auto Group Co., Ltd. obtained venture capital and listed on NASDAQ. In recent years, venture firms had entered all aspects of the automobile industry chain, including auto parts industry, after-sales service, car insurance, second-hand car, car service website, and new energy vehicles. For example, among the projects held by Shenzhen Capital Group Co., LTD., 16 projects were related to automobile industry. Pearl Hydrogen Technology Co., Ltd., engaged in researching and producing new energy productions, had received seven or eight "olive branches" from different venture capital firms.

It is the inevitable trend of the development of automobile industry, the inevitable choice of the benign circulation of China's components industry and the participation in the international competition to follow the technology-intensive and capital-intensive path. Attracting venture capital is undoubtedly an important way to combine innovative technology and financial capital, and will bring new opportunities for the development of auto parts industry.1,2 At the same time auto parts enterprises are supposed to fully understand the interaction between auto parts industry and venture capital, and introduce risk investment actively.

The Interactive Relationship between Auto Parts Industry and Venture Capital

General Relationship between Auto Parts Industry and Venture Capital

The key relationships between auto parts industry and venture capital demonstrates in two aspects: capital flows and research & development technology. For the auto parts enterprises, the most important is the choice between equity capital and debt capital.3 It is not necessary for enterprises to mortgage liquid assets by means of equity investment (a type of venture capital), instead, they have direct access to the equity of auto parts enterprises and become a shareholder.4 (Figure1).
The acquisition of equity capital means the ventral capital enterprises become parts of partners. The ventral capital enterprises focus on auto parts enterprise management situation, and have a strong information symmetry requirements for auto parts enterprises. Thus, venture capital enterprises pay attention to the growth of auto parts enterprises and technical barriers. (Figure 2).

**Figure 1. Venture Capital Operation Chart.**

**Figure 2. R&D Technology Development Graph.**

**Auto Parts Industry’s Investing Attraction to Venture Capital**

Venture capital significantly has increased investment in auto parts industry in 2007-2011, for its broad development prospects and the fact that auto parts industry has made higher profitability than automotive industry since 2006. Based on the advantages of raw material, manufacturing equipment and labor cost and other aspects, Chinese enterprises had the potential to develop by leaps and bounds in new energy vehicles.

For venture capital, the industry's broad prospects for investment is the main reason to attract investment behavior:

**Huge market potential.** "Ownership + vehicle age" leads to the high-speed growth of auto parts industry requirement. Car ownership has maintained 15% annual compound growth in recent 8 years (to 2014) and the future growth space of car ownership in China is very large. By the end of 2014, China's car ownership had reached 154 million, a preliminary estimate of 2015,2016,2020 ownership will reach 1.71,1.88,2.55 million vehicles. [5]

**Great possibility of technology capitalization.**[6] The auto parts industry technical requirements have been getting higher. After nearly a decade of development, auto parts R & D investment has gradually increased (Table1). However, in 2011, China's auto parts enterprises R & D investment accounted for only 2.52% of the operating income, far below the multinationals average of 5%. According to incomplete statistics, 90% of the auto parts enterprises in our country produce low-end products. In the search of technological breakthroughs in China's auto parts industry, the possibility of venture capital industry bringing more investment returns are also becoming larger;
Table 1. 2003-2011 Auto Parts R&D Spending and the Percentage of Operating Income.

<table>
<thead>
<tr>
<th>Year</th>
<th>Automotive &amp; Motorcycle Accessories</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R&amp;D Spending(K)</td>
<td>Operating Income(L)</td>
<td>K/L(%)</td>
</tr>
<tr>
<td>2004</td>
<td>30.0</td>
<td>1960.6</td>
<td>1.53</td>
</tr>
<tr>
<td>2005</td>
<td>46.7</td>
<td>2633.6</td>
<td>1.77</td>
</tr>
<tr>
<td>2006</td>
<td>81.5</td>
<td>4122.2</td>
<td>1.98</td>
</tr>
<tr>
<td>2007</td>
<td>93.4</td>
<td>4901.8</td>
<td>1.90</td>
</tr>
<tr>
<td>2008</td>
<td>111.5</td>
<td>5153.5</td>
<td>2.16</td>
</tr>
<tr>
<td>2009</td>
<td>132.5</td>
<td>5739.1</td>
<td>2.31</td>
</tr>
<tr>
<td>2010</td>
<td>163.4</td>
<td>7710.8</td>
<td>2.12</td>
</tr>
<tr>
<td>2011</td>
<td>203.2</td>
<td>8062.0</td>
<td>2.52</td>
</tr>
</tbody>
</table>


Optimization of supply chain collaboration. The focus of auto industry development has shifted to the auto parts industry, the status of spare parts factories has been strengthened, and supply chain collaboration has gradually changed to cooperative relationship \(^5\), with the reengineering of business processes and the outsourcing of non-key businesses in international automobile enterprises, since 1990s.

The Role of Venture Capital in Automobile Parts Industry

Listed companies wealth demonstration effect has appeared continuously, the community gradually has increased the recognition of venture capital, which has made it become the magnet of social investment. Under the macro background of innovation and entrepreneurship, venture capital institutions have entered the investment “Frenetic period”, and the investment phase has been increasingly forward \(^7\). For enterprises, it is undoubtedly the best time for a financing(Figure3). At the same time, industry’s attraction to venture capital has been increasing recent years. From Table 2 we can see that China’s venture capital investment cases in the automotive industry reduced in 2011-2014, the total investment reduced to 117.72 US$M in 2011-2013, and increased to 339.62 US$M in 2014. Possible reasons were that automotive industry developed fast in 2006-2010, so the market gradually saturated state in 2011 and the auto industry slowed the pace. Auto market get into a new developing period because of vehicle life cycle in 2014.

![Figure 3. 2004-2014 Comparison of Total Investment in Venture Capital Market in China.](data:image/png;base64,iVBORw0KGgoAAAANSUhEUgAAB7AAAABeCAYAAAA9XnxhAAAABGdBTUEAALGPC/xhBQAAAAF0lEQVQI12AS1fT1IAAAABkQbFbFBAAAAC/AAAAAAAgAAADAAAADAAAAAD AAA

Figure 3. 2004-2014 Comparison of Total Investment in Venture Capital Market in China.
Table 2. China’s Venture Capital Investment in the Automotive Industry in 2011-2014.

<table>
<thead>
<tr>
<th>Year</th>
<th>Quantity</th>
<th>Investment Amount(US$M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>31</td>
<td>315.48</td>
</tr>
<tr>
<td>2012</td>
<td>31</td>
<td>219.05</td>
</tr>
<tr>
<td>2013</td>
<td>11</td>
<td>117.72</td>
</tr>
<tr>
<td>2014</td>
<td>9</td>
<td>339.62</td>
</tr>
</tbody>
</table>


As the improvement of venture capital’s attention towards auto industry, the main promoting effects of venture capital lie in following aspects:

- **Provide financial support for auto parts industry.** Venture capital mainly choose equity investment way, which don’t need a mortgage, to invest in enterprises. In this way, auto parts enterprises can get sufficient funds to operate and turnover. The auto parts enterprises’ long cash flow period is an important obstacle to the development of auto parts industry, venture capitals’ financial support for the auto parts industry promotes its development;

- **Improve the auto parts industry credit.** Credit is one of the important assessment criteria for venture capital choosing enterprises. A eminent financial system will add points for enterprises. Venture capital’s favor of the auto parts industry has brought more resources available and at the same time, greatly enhanced the auto parts industry credit;

- **Provide management resources for auto parts enterprises.** Venture capital can not only provide funds to auto parts enterprises, but also the accumulated knowledge and experience. Venture capital can give risk managers guide and auxiliary in technology management, capital operation, marketing channel, enterprise management and other aspects;

- **Provide information docking for auto parts industry automobile enterprises.** Venture capital enterprises invest extensively, including vehicle, electrical system, etc. And their rich network resources will bring great benefits for auto parts business;

- **Promote the adjustment of business model and improve business planning.** Venture capital enterprises can actively participate in the management of auto parts enterprises, including the transformation of organizational structure, formulate business direction and other aspects, to make adjustments to improve enterprise management planning.

**Model Based on the General Relationship between Auto Parts Industry and Venture Capital**

**The establishment of the model**

**Correlation test**

In order to further analyze the correlation between venture capital and auto parts industry, Pearson correlation analysis was chosen to show that the correlation degree of the two was a linear correlation coefficient. Pearson correlation coefficient is a statistics used to reflect the two variables linear correlation degree. Correlation test was conducted between venture management capital and auto parts industry product sales revenue. \( X \) denoted the amount of venture capital management capital; \( Y \) denoted the total output value of the auto parts industry, and \( i \) denoted years.

\[
 r = \frac{\frac{1}{N} \sum x_i y_i - \frac{1}{N} \sum x_i \frac{1}{N} \sum y_i}{\sqrt{\frac{1}{N} \sum x_i^2 - \left(\frac{1}{N} \sum x_i\right)^2} \sqrt{\frac{1}{N} \sum y_i^2 - \left(\frac{1}{N} \sum y_i\right)^2}}
\]

(1)

\( r \) referred to the Pearson correlation coefficient of risk management capital and the sales income of auto parts industry products, the value was taken as an absolute number. The correlation coefficient was stronger when it was closer to 1 or -1. The correlation coefficient was weaker when it was closer to 0.

Following values ranges were used to judge relative intensity of variables, as shown in Table3.
Table 3. Decision table of Pearson Correlation Coefficient.

<table>
<thead>
<tr>
<th>R value range</th>
<th>0.0-0.2</th>
<th>0.2-0.4</th>
<th>0.4-0.6</th>
<th>0.6-0.8</th>
<th>0.8-1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>X, Y relative intensity</td>
<td>Very weak or no correlated</td>
<td>Weak correlated</td>
<td>Moderate correlated</td>
<td>Strong correlated</td>
<td>Highly correlated</td>
</tr>
</tbody>
</table>

Elastic analysis

Elastic analysis was performed on risk management capital and sales income of auto parts industry products, using logistic regression models: risk management capital was the independent variable, sales income of auto parts industry products was the dependent variable. In order to explain the elasticity of venture capital on the development of auto parts industry, as shown in type (2), among them, X, Y were as defined above.

\[ \log y = a + b \log x \]  

(2)

Empirical Analysis

Sample selection and data sources

Hubei province, the backbone of the automobile industry cluster in central, has 29 recorded venture capital institutions. And auto parts industry is one of the main industry of Hubei province. The good environment and the development situation of venture capital enterprises and auto parts industry, make it representative to take Hubei province’s venture capital industry and auto parts industry in 2006-2014 as a sample.

The data of the risk management capital and the sales income of auto parts industry in Hubei province from 2006 to 2014 were derived from the China Automotive Industry Yearbook\(^9\) and Zero2IPO Database\(^10\).

Data of Venture Capital and Auto Parts Industry in Hubei province

① Data of Venture Capital in Hubei province

With the establishment of the first venture capital company——Wuhan High-tech Investment Guarantee Co., Ltd., a number of venture capital firms had been set up in Hubei Province, so was investment management consulting companies and venture capital funds. According to the statistics, there were 33 professional firms engaged in venture capital in Hubei Province, with total registered capital of about 3.4 billion yuan (Table4). The main sources of funds included government special funds, enterprises or public funds and foreign capital.


<table>
<thead>
<tr>
<th>Years</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>total amount</td>
<td>23</td>
<td>26.5</td>
<td>33.3</td>
<td>37.4</td>
<td>39.8</td>
<td>40.0</td>
<td>41.3</td>
<td>42.8</td>
<td>103.87</td>
</tr>
</tbody>
</table>

Data sources: Zero2IPO Database.

Most venture capital companies in Hubei province were established in the form of limited liability company. Investment projects were operated by equity management or commissioned management that set up fund and fund management companies respectively. There were three kinds of formation modes in Hubei Province, namely, public capital leading venture capital firms, university background venture capital companies and science and technology venture capital firms.

At present, the macro management institutions of venture capital in Hubei province included: Science and Technology Department of Hubei Province, Wuhan East Lake Development Zone Administrative Committee and Hubei Venture Capital Association. In specific practice, Hubei province and Wuhan Municipal Government jointly established the East Lake Development Zone High-tech Venture Funds, which strengthened the management of venture capital industry. And it had played a role in conducting industry self-discipline management, industry researches, information exchanges and advisory services, etc. Particularly, the trade association drafted the Hubei Province Provisional Regulations to Promote the Development of Venture Capital and other regulations.
Auto parts industry-related data in Hubei province

Hubei is a big province of automobile, in which automobile industry is an important pillar industry. Wuhan, Xiaogan, Suizhou, Xiangyang, Shiyan and Yichang, Jingzhou, Wuhan consisted of two "Hubei Car Corridors" covered a large number of cars, Auto parts and related industrial clusters, and had a pivotal position in province's national economic development.

The development of Auto parts industry based on automobile enterprise. Automobile spare parts industry in Hubei province had formed the industrial cluster, under the lead of Dongfeng motor co. It had brought unprecedented opportunities to Hubei auto parts industry that Dongfeng realized comprehensive long-term cooperation with Nissan, and promoted the cooperation with France's PSA group. Dongfeng motor co., LTD., jointly set up by Dongfeng and Nissan brought 32 billion yuan to Hubei auto share annually, which made Hubei province gained incomparable advantages to other provinces and cities; at the same time, it would be a tough challenge for Hubei auto parts enterprises to carry out a globally oriented parts purchasing system and standards. Auto parts industrial products sales income in Hubei province in 2006-2014 was shown in Table 4.2.

Table 5. Auto parts industrial products sales income in Hubei province in 2006-2014.

<table>
<thead>
<tr>
<th>Years</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>sales</td>
<td>income</td>
<td>23.90</td>
<td>68.5</td>
<td>168.0</td>
<td>140.7</td>
<td>181.2</td>
<td>1195.4</td>
<td>956.7</td>
<td>1234.0</td>
</tr>
</tbody>
</table>


Model testing

Data in Table 4.1 and Table 4.2 were taken into equation(1),i=2006,2007,...,2014. Calculated as $r = 0.723043799$. According to Pearson correlation coefficient of decision table (Table3), it was concluded that risk investment management products and auto parts industry sales revenue were capitalization related. Took the logarithm of the management of capital and sales, then calculated the logarithmic regression equation:

$$\log y = -1.603024647 + 2.539010028 \log x$$

The regression equation showed that 1% growth in venture capital, auto parts industry grew 2.54%. Venture capital management capital was chosen in venture capital data, thence, it also showed that Hubei venture capital and auto parts industry had great relevance, but the elastic effect was not very significant.

Suggestions on Developing Auto Parts Industry by Venture Capital

Strengthen effective communication with venture capital enterprises

The efficiency of communication between venture capital and enterprises is a important factors for auto parts enterprises to get venture capital. Venture capital investment team may lack of experts in the auto parts industry. Therefore, as the invested enterprises, be sure to provide enough material, data and time for venture investment enterprises. At the same time, the intermediary institutions, government agencies should speed up the efficiency of communication between venture capital and enterprises.

The segmentation of auto parts enterprises development goals

Venture capital is a long-term investment which is usually more than 10 years, with the ultimate goal of becoming listed companies, the needs of capital market become the ultimate goal of auto parts enterprises. The clearer the target is, the more investors will be attracted. At the same time, the auto parts enterprises should have a full understanding of related listed conditions, grasp the market changes on the whole. All of the above measures are advantageous to the enterprise long-term development plan.
Relevant planning of introduction venture capital

In the introduction of risk investment, lacking of corporate capital will reduce their bargaining position and increase the risk of investment, while proving the existence of defects in financial management. The lack of funds will also reduce the degree of credit when venture capital enterprises choose auto parts enterprises. And for auto parts enterprises, the overlong capital turnover period is always one of the constraints of development. In financing, relevant planning, such as when and in what stage the enterprises should introduce risk investment, should be made.

Conclusion

Innovation

(1) Auto Parts Industry has become a new territory for the venture capital industry because of its requirement of new technologies and funds as well as its high profitability. This article took this as the breakthrough point and carried on the empirical analysis of recent development status of venture capital and auto parts industry in Hubei province;

(2) It is of explaining significance using Pearson correlation coefficient to measure the role venture capital played in the auto parts industry. At the same time, logistic regression equation was used to explain the elastic relationship between venture capital and the auto parts industry.

Main findings

The development of venture capital and auto parts industry in Hubei province has shown an interactive trend of strengthening. At the same time, the auto parts industry investment from venture capitals who has been focused on technology development has gradually increased, and the relationship between the auto parts industry and venture capital industry has become more and more closely. Developing risk investment, from policy, law and various aspects to promote venture capital in auto parts industry, forming a positive interactive developing relationship of venture capital and auto parts industry, has far-reaching significance on the economic development of the areas that take the auto industry as main economic industry.

References


