



Research on the Influencing Factors of Equity Financing Preference of Manufacturing Companies under the Background of Supply Side Structural Reform

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Abstract: With the rapid development of China and the improved of civil living consumption level, the products that are manufactured by the existing manufacturing industries have gradually failed to meet the daily needs of consumers. And the manufacturing industries that play an important role in the national economy have been affected firstly. Therefore, the factors that affect its equity financing preferences have also changed. It is urgent to carry out the supply-side structural reforms. First and foremost, these theoretical researches that drives from domestic and abroad offers the factual basis to the theoretical analysis and research hypotheses of this paper. Secondly, the author relates the characteristics of the supply-side structural reforms to the equity financing preferences and researches them to obtain the relationship between them. Finally, by adopting logit regression model and researching hypotheses and data, the author draws the conclusion that the main reasons that affect the equity financing preference of listed companies in the Chinese manufacturing industry are the productive investment and the financing environment. All in all, the purpose of this paper is designed to provide reasonable choices for investors of many listed manufacturing companies in China and offer the development modes, so that they can avoid risks effectively.

Keywords: *Supply-side structural reforms; Equity financing; Manufacturing industries*

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1 Introduction

Since the reform and opening up, China's economy has been in a state of rapid growth. Until 2007, China gradually developed from a production-oriented country to an economic powered country. The high-speed growth route that has been in use has no longer been applied. At this time, the term "new normal" was proposed, and its main feature was that the economic growth rate gradually slowed down. Until 2016, China's economy entered another new state: overcapacity, consumer outflows, and supply-side structural reforms also appeared in the public eye. The structural reform on the supply side is mainly aimed at changing the structure of supply and weakening the stagnant state of economic development, and manufacturing is the top priority of reform. The prosperity or decline of manufacturing in a country is a major factor in measuring the extent of the country's economic development, and it can basically be equated with the strength of its own economy. Therefore, on the big stage of supply-side structural reform, how to allocate more funds to maintain the key sectors and shortcomings of sustainable development of manufacturing industry in accordance with the spirit of 19th CPC National Congress, and promote the transformation of imitation manufacturing to innovation creation, the speed first changes to the quality assurance, is a major problem facing our country entering a new era and improving the quality of the economic system. At the same time, in China equity finance is one of the most important methods of corporate capital aggregation, so it is necessary to study what factors will be affected by a series of policies under the supply-side reform that will affect the equity financing preferences of manufac-

turing industry companies already listed in China.

2 Theoretical Analysis and Research Assumptions

2.1 Development Characteristics and Financing Characteristics of Manufacturing Industry Under the Background of Supply Side Structural Reform

Manufacturing has always been the mainstay of guaranteeing the high-quality development of China's economy, and China's manufacturing industry is closely related to supply-side structural reforms in the new economic environment. Linking the supply-side structural reforms to China's manufacturing industry chain to achieve China's manufacturing industry's vigorous and sustainable development is the most important goal at the moment. Since the reform and opening, China's economy has developed rapidly, production capacity has become excessive, leverage and manufacturing costs have remained high, and labor shortages have become increasingly prominent. Manufacturing is an important component of China's national economy. With the development of supply-side reforms, the original manufacturing operation model has become obsolete and cannot fully adapt to the current new trend of China's economic development. The transformation and upgrading has become an urgent task. The change of the original capital structure of the manufacturing industry is the main goal of the reform of the supply-side structure. First, the structural change of manufacturing equity and the rationalization of manufacturing production, innovation will become the primary goal of supply-side structural reform. Secondly, while the economic growth rate is gradually slowing down, the total economic volume will not decline. In terms of production, it pays more attention to quality assurance rather than pursuing production. Finally, the effective supply ratio of labor, capital, innovation and land, the factors required by the supply side also have a great impact on the daily production and basic operations of the manufacturing industry, and the supply efficiency of the products will also be due to the manufacturing status of the manufacturing industry. Changed differently. In the labor aspect of one of China's manufacturing supply-side structural reforms, rising labor costs have become a major force constraining the development of manufacturing industries, and an important driving force for promoting the upgrade of manufacturing structure, vig-

orously developing capital-intensive manufacturing and technology-intensive manufacturing. Industry, becoming the main trend of China's manufacturing industry in the future. Since the manufacturing industry advocated high-speed production before the reform, it caused the current situation of production capacity and inventory redundancy. This has led to companies that have already listed their own manufacturing industries and have not prioritized the conversion of excess earnings retained within the company as a source of funding for the company's financing, as evidenced by the theory of superior financing. And because of these problems, the result is that if a large debt financing ratio will increase the manufacturing cost of the enterprise, it means that the listed companies in the manufacturing industry will still not choose debt financing.

In summary, listed companies in the manufacturing industry will be more inclined to choose to issue additional shares of the company or transfer their own shares to raise funds needed for the company's daily operations. The study of factors affecting the financing preferences of its shareholders is also a major task that is urgently needed to complete the supply-side structural reform.

2.2 The Influence Mechanism of Supply Side Structure Reform Background on Equity Financing Preference of Manufacturing Enterprises

2.2.1 Financing Environment

From the perspective of China, since the financial crisis in 2008, the government, finance, and corporate debt ratios have been in a continuous upward trend. Excessive leverage also means excessive asset-liability ratios, which will also lead to serious risks to these institutions and their operations and operations. The debt ratio is also the ratio of debt to income. This can also be used to measure the leverage of manufacturing listed companies. So how to deleverage is obvious. Generally, it is to reduce the debt or increase the income. We can reduce debt through equity financing, debt-to-equity swaps, etc., and the denominator can be achieved by high-quality production, scale-up and scientific sales. From this we can clearly see the close relationship between supply-side structural reform and deleverage, and on the other hand, leverage is also inextricably linked to equity financing. Therefore, studying the equity financing preference in the deleveraging environment has become an urgent task for implementing supply-side reform. In-

creasing the percentage of financing by manufacturing listed companies through equity financing to the total number of financing is also an effective measure to reduce the debt leverage of enterprises. In short, under the general environment of supply-side structural reform, the financing method that can fully deleverage becomes extremely important, which is also the top priority of China's sustained and stable economic development during the 13th Five-Year Plan period. This means that debt financing as a second option for manufacturing listed companies is also not desirable due to the existence of a deleveraging financing environment. In addition, most enterprises have chosen the "debt-to-equity swap" approach to adapt to the deleveraging financing environment. Equity financing has also become the preferred mode of raising funds for listed companies in China's manufacturing industry under the environment of supply-side structural reform. The existence of a deleveraging financing environment has also become an important reason for the tendency of listed companies in these manufacturing industries to form equity financing.

2.2.2 Investment

Along with the rapid development of China's economy, the traditional manufacturing industry is facing a severe test: The demand for domestic consumers has become extremely demanding, and the consumption structure has undergone tremendous changes. The low-end and low-end products that are cheap or even unqualified have gradually failed to satisfy consumers' appetite. As the total supply side of the national economic management, the supply side is self-evident in changing the status of the consumption structure.

In recent years, with the profound changes in the international economy, trade and investment environment, the manufacturing industry is becoming a cornerstone for some big countries to participate in the global industrial division of labor, compete for the industrial chain, and the high end of the value chain. Last year, China announced its action plan "Made in China 2025" to promote industrial upgrading. China has proposed in the new five-year plan again that budgets and talents will be invested in key areas such as industrial robotics, information technology and aerospace for the implementation of the action plan. Therefore, in order to comply with this reform, the country will gradually move towards the direction of investment in manufacturing enterprises. This will affect some potential investors in the

market and will follow the direction of government investment to change their investment preferences. They will adapt to the changes in policies and the economic environment, and choose the company that is most beneficial to them in the enterprises that attract investment through different financing methods, and strive to maximize their own interests. In addition, among the inherent financing methods, only equity financing may significantly change the composition of the company's internal controllers and will allow new shareholders to obtain greater returns. This has led to the fact that these investors tend to give priority to manufacturing listed companies that have a shareholding or a share placement.

In summary, in the context of supply-side structural reforms, in order to comply with this investment tendency of the government and individual investors, manufacturing listed companies tend to prefer equity financing as a financing method.

Based on the above analysis, this paper proposes three hypotheses:

Hypo.1: Since the supply-side structural reform, listed companies have tended to equity financing.

Hypo.2: Productive investment has a positive effect on equity financing preferences.

Hypo.3: Debt financing costs have a positive effect on equity financing preferences.

3 Research Design

3.1 Sample Selection and Data Source

Based on the Guotaian database (CSMAR), this paper collects the complete raw data, and manually collects some data that cannot be obtained at one time and the missing data, and selects all the manufacturing in China during the 2008-2017 period. Listed companies as research objects, and made the following screening:

- (1)Excluding ST/PT, ST/PT refers to a listed company that is specially treated. The financing structure and ownership structure of such companies usually have large defects, which will cause large deviations in the model and cannot accurately reflect the actual situation;
- (2)Eliminate listed companies that have unusual data, are missing, and cannot be manually collected
- (3)Excluding companies listed after 2008

After screening, 725 companies were obtained. These data were then collated with Excel 2010. After sorting the data, the data was analyzed and analyzed using Stata15.

3.2 Model Design

For Hypothesis 1, this paper tests the trend of the average asset-liability ratio of listed companies in the manufacturing industry from 2008 to 2017. If the asset-liability ratio tends to decline, it indicates that the equity financing preference behavior is strengthened.

For hypothesis 2 and hypothesis 3, the logit regression model is used to test. The dependent variable is the adjustment direction of the asset-liability ratio, that is, based on the average of the three-year asset-liability ratio in 2012-2014, the average asset-liability ratio for 2015-2017 is subtracted. The benchmark value is used as the asset-liability ratio adjustment value. If the adjustment value is greater than 0, it is a positive adjustment. If the adjustment value is less than 0, it is a negative adjustment. Through logit regression, the opportunity ratio of the listed company's positive and negative adjustment of asset-liability ratio is obtained. The influence of explanatory variables on equity financing preference behavior is also obtained. The model forms are:

$$\ln\left(\frac{p}{1-p}\right) = \alpha + \beta_1 inv + \beta_2 size + \beta_3 pro + \beta_4 tbinq + \varepsilon \quad (1)$$

$$\ln\left(\frac{p}{1-p}\right) = c + c_1 cca + c_2 size + c_3 pro + c_4 tbinq + \varepsilon \quad (2)$$

In order to understand more comprehensively the impact of investment and financing environment on the financing behavior of listed companies in the manufacturing industry, this paper also investigates the investment and financing environment variables into the model. The model form is as follows:

$$\ln\left(\frac{p}{1-p}\right) = d + d_1 inv + d_1 cca + d_3 size + d_4 pro + d_5 tbinq + \varepsilon \quad (3)$$

3.3 Variable Definitions

Table1. Variable definition table

Variable name	Variable symbol	Measurement method
Asset-liability ratio adjustment	ε	The value of the asset-liability ratio of each year after the supply-side reform is compared with the average of the asset-liability ratio of the year before the supply-side reform.
New investment	inv	(Cash for the purchase and construction of fixed assets, intangible assets and other long-term assets in the current year - processing of fixed assets, intangible assets and other long-term assets recovered in cash) / total assets

Variable name	Variable symbol	Measurement method
Debt capital cost	cca	Financial expenses / (long-term borrowing + short-term borrowing)
Business scale	size	Logarithm of total assets
ROTA	pro	Net profit / average total assets
Tobin's Q	tbinq	(Equity market value + net debt market value) / (total assets - net intangible assets)

Source: Data collected by WIND Information Database

4 Empirical Analysis

4.1 Equity Financing Tendency of Listed Companies

Listed manufacturing companies that have been listed in 2008 and have not yet delisted in 2017 (725 in total) the trend of the asset-liability ratio in 2008-2017 is shown in Figure 1.

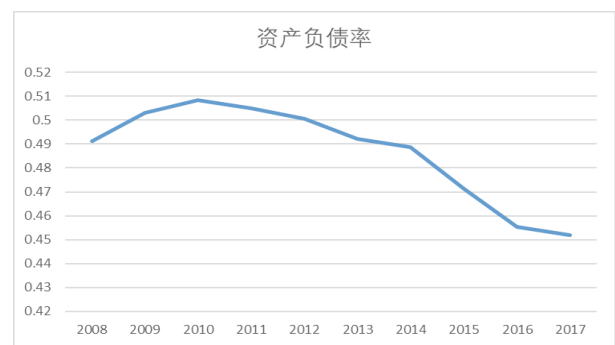


Figure 1. Trends in the average gearing ratio of listed companies in the manufacturing industry from 2008 to 2017

It can be seen from the figure that from 2008 to 2010, the average asset-liability ratio of listed companies in the manufacturing industry gradually increased. At this stage, due to the financial crisis, the debt scale of listed companies gradually increased, resulting in a gradual increase in the asset-liability ratio. After 2011, until 2017, the average asset-liability ratio of listed companies in the manufacturing industry gradually declined, and there was a clear preference for equity financing. Especially after 2015, the asset-liability ratio declined more obviously, indicating that the supply-side structural reform began. In the future, the equity financing preference behavior of listed companies in the manufacturing industry is strengthened. This data result is basically consistent with Hypothesis 1.

4.2 Regression Result Analysis

The regression results of the investment and financing

environment on the adjustment of the asset-liability ratio of listed companies in the manufacturing industry are shown in Table 2.

Table 2. Regression results for models 1, 2, and 3

Variable	Model 1	Model 2	Model 3
inv	3.41 (1.93)		3.57(2.01)
cca		0.55(1.86)	0.57(1.94)
size	2.75(3.53)	0.25(3.25)	0.28(3.56)
pro	-7.6 (-3.53)	-6.87(-3.24)	-7.6(-3.52)
tbinq	-0.046 (-0.85)	-0.055(-1.02)	-0.05(-0.92)
cons	-6.36(-3.61)	-5.8(-3.36)	-6.4(-3.64)
N	555	555	555
F(value)	24	24.01	28.17
R ²	0.0329	0.0327	0.0383

Source: Data collected by WIND Information Database

It can be seen from Table 2 that the regression coefficient of the investment in Model 1 is 3.41, and the significance test with a level of 0.05 indicates that the more investment increases, the more the listed companies in the manufacturing industry tend to adjust the asset-liability ratio positively, means increase debt financing. According to the investigation of the change in new investment, it is found that since 2015, the newly-added investment of listed companies in the manufacturing industry has generally shown a negative downward trend, which means that since the supply-side structural reform, under the influence of the DE-capacity policy, the manufacturing industry The newly added investment of listed companies has gradually decreased, which in turn has led to a negative adjustment of the asset-liability ratio, that is, corporate financing preferences have been strengthened. In Model 2, the regression coefficient of the financing environment is 0.55, and the significance test with a level of 0.1 indicates that the financing environment is approaching and the financing cost is increasing. The possibility of positive adjustment of the asset-liability ratio of listed companies in the manufacturing industry is increased, that is, equity financing the preference behavior is weakened. According to the change in debt capital cost, since 2015, the debt capital cost has generally shown an upward trend, which means that the debt financing environment tends to be tight, and the asset-liability ratio of listed companies tends to be positively adjusted, that is, the debt financing is increased. And reducing equity financing, which is inconsistent with Hypothesis 3. This shows that under the background of the supply-side structural reform, under the effect of tightening monetary policy, the cost of debt capital

of listed companies in manufacturing has generally increased. However, the tightening monetary policy has led to an increase in corporate financial tension. Therefore, the listing formula still hopes solve funding problems by increasing debt financing. In particular, the implementation time of supply-side structural reforms is still relatively short, and it is difficult for listed companies to conduct equity financing in a short period of time. Therefore, they can only solve the funding problem by increasing debt financing. Therefore, although the regression results do not directly support Hypothesis 3, they do not deny Hypothesis 3. In order to obtain a more stable research conclusion, it is required to continue to follow and observe the changing trend of financing behavior of listed companies in the future. The research conclusions of Model 3 are basically consistent with the first two models.

5 Conclusion

This paper selects the data of 725 companies that have been listed in the manufacturing industry in 2008-2017, adopts the logit regression model, and based on the hypothesis of the theory of priority financing, the theory of equity redistribution effect and the theory of agency cost, etc. The following conclusions are made.

First of all, through the changes in the asset-liability ratio, it can be clearly seen that since the supply-side structural reform, the listed companies have a clear preference for equity financing. Secondly, in the context of supply-side structural reform, The new investment activities caused by the production capacity have become less, which has led to the strengthening of the preference of the listed companies for equity financing. Finally, after the impact of tight monetary policy in the context of supply-side structural reforms, manufacturing companies have become hoping to increase corporate capital through debt financing, but they have not denied corporate preference for equity financing. Therefore, the impact of the financing environment on equity financing preferences still requires long-term research in order to make it more rigorous.

The policy implications of this paper are as follows: First, in the context of supply-side structural reforms, the government should revise policies and regulations on stock markets to prevent excessive preference for manufacturing companies for stock financing. Second, further improve the binding mechanism for listed companies to issue additional shares, simplify the approval process, and the binding mechanism should enable

listed companies to understand that the issuance is not applicable to all companies. To make rational decisions, it is necessary to consider their own actual situation. Third, the government should follow the pace of reform and provide a series of new investment opportunities for its manufacturing industry, which in turn will affect its financing tendency.

Of course, there are some limitations in the research of this paper, such as: (1) Due to the limitation of data, this paper only studies several factors that affect the equity financing preference of listed companies in the manufacturing sector under structural reform, and for technology research and development, The impact of taxation system and risk appetite on equity financing preferences has not been considered, which has affected the explanatory power of the model. (2) Due to the limitation of data, only 725 data of fully qualified manufacturing listed companies have been selected since the supply-side structural reform, resulting in a certain degree of data loss, which has affected the explanatory power of the model. How much of these effects are and how they will affect further evidence.

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