

Drinking dove to quench thirst: Research on cross-contagion risk measurement and control mechanism of investment and financing term mismatch of small and micro enterprises in China

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Abstract: In recent years, more and more enterprises use a large amount of short-term funds for long-term investment, and this phenomenon of “maturity mismatch” not only increases the risk of enterprises but also brings great impact on the real economy. Based on the quantitative and qualitative data of new third edition listed small micro enterprises, this paper uses two-stage interpretative mixed research method to measure the cross-contagion risk of investment and financing term mismatch of small micro enterprises in our country, and refers to foreign experience, and puts forward countermeasures and suggestions on how to build the dynamic control mechanism of investment and financing term mismatch of small micro enterprises in our country.

Key words: small and micro enterprises; Investment and financing term mismatch; Cross-infection risk; Measurement; Control mechanism

1. Introduction

The risks of economic sectors will be transmitted among residents, enterprises, financial and government departments through the balance sheet. The first stage of the risk transmission mechanism is the enterprise. Under the pressure of structural adjustment in the transition period or external shocks, the stock risks of enterprises will continue to accumulate, which may be transformed into short-term liquidity risks and solvency risks. Among them, debt financing (especially the maturity mismatch of investment and financing) is an important aspect reflecting the above risks. At present, China’s enterprises generally exist the phenomenon of investment and financing term mismatch. According to the statistics of the State Administration for Industry and Commerce in 2014, there are 15.28 million enterprises of all kinds in the country, of which small and micro enterprises account for 93.99%. Therefore, effectively preventing and resolving the risk of cross-infection of investment and financing term mismatch of small and micro enterprises is of great significance for preventing and resolving major risks.

2. Literature review

The research shows that the maturity mismatch of investment and financing is widespread in most enterprises in China (Wang Yun and He Xiang, 2022), and is more serious in state-owned enterprises, among which the maturity mismatch of small and micro enterprises is on the rise in recent years. Most scholars believe that the maturity mismatch of investment and financing of Chinese enterprises is mainly caused by the defects of the financial system. Due to the demand of banks for risk control and reduction of operational risks, they tend to issue short-term loans, resulting in the short-term financing of enterprises (Wang et al., 2021). Therefore, inadequate financing is the root cause of maturity mismatch in investment and financing for enterprises (Acharya et al. 2011; Habib and Costa, 2021), and it is also a temporary solution for managers to deal with the long-term shortage of capital supply. However, these studies are all based on the assumption of “rational person” of managers. Therefore, other scholars believe that in addition to institutional incentives, “artificial incentives” will also encourage enterprises to choose investment and financing maturity mismatch. Actors tend to be irrational when making decisions, and managers’ irrational behaviors will affect enterprises’ business decisions, especially managers’ overconfidence (Maimendier et al., 2008). Overconfident managers tend to over-invest in investment, prefer debt financing in financing, and prefer short-term debt from the perspective of fund maturity structure, thus exacerbating the mismatch of investment and financing maturity.

Early research results believe that investment and financing term mismatch is beneficial, which can promote long-term investment and meet investors’ liquidity needs (Diamond et al., 1983), reduce the financing cost of enterprises to a certain extent, and deliver a positive signal of high-quality development of enterprises to the market (Flannery, 1986). However, the financial crises in 1997 and 2008 showed that maturity mismatch could easily lead to systemic liquidity crisis and have a negative impact on economic growth, which led scholars to explore the negative consequences of maturity mismatch. Some scholars believe that when enterprises use short-term funds for long-term investment, although the financial pressure of investment may be alleviated, it is more likely that enterprises cannot raise sufficient funds in the short term to pay off debts, and the liquidity risk of enterprises will be exacerbated (Dang et al., 2018).

To sum up, although domestic and foreign scholars have made certain achievements in the research on maturity mismatch of investment and financing, which is worth learning and reference, the existing research still needs to be further enriched: First, most of the literature on maturity mismatch only stays at the research on the formation causes and influencing factors of maturity mismatch, with many homogeneous studies and repeated contents. Second, the research methods are weak. Most studies on maturity mismatch focus on theoretical analysis. In recent years, there have been some empirical studies, and the combination of quantitative and qualitative analysis is still rare. Third, existing scholars have noticed the economic consequences of maturity mismatch. Although the research is also conducted from the perspective of enterprises, most of them focus on medium and large enterprises and ignore the correlation between enterprises.

Based on this, this topic uses the quantitative and qualitative data of the new third edition of listed small and micro enterprises, and adopts the two-stage interpretative mixed research method to explore the investment and financing maturity mismatch and cross-contagion risk of small and micro enterprises in China. At present, mixed method research has become the third management research paradigm, among which interpretative sequential design is one of the most commonly used mixed method design. Its characteristics and advantages lie in the use of qualitative data to explain quantitative results, making “dry” quantitative findings give birth to “flesh and blood” and enrich them (Bryman, 2006). It is more suitable for the current situation that significant (insignificant) results, extreme results or unexpected results need to be explained by qualitative data in the current research on investment and financing maturity mismatch of small and micro enterprises in China (Morse, 1991).

3. Comprehensive measurement of cross-contagion risk of investment and financing term mismatch for small and micro enterprises in China

1. The connotation and characterization dimension of cross-infection risk of mismatched investment and financing term of small and micro enterprises

The connotation of cross-infection risk of mismatched investment and financing term of small and micro enterprises is rich, which is obviously different from the risk of mismatched investment and financing term of enterprises and the risk of mismatched infection of enterprise investment and financing term of enterprises. It is a complex and important issue to accurately describe the connotation of cross-infection risk of mismatched investment and financing term of small and micro enterprises. Despite the efforts made by many parties, it is still difficult to obtain relevant literature. Therefore, based on the reference to the research results of investment risk and financing risk and consultation with relevant experts, this paper obtains three dimensions of business cross-relationship, equity relationship and financing guarantee relationship to describe the cross-infection risk of investment and financing maturity mismatch of small and micro enterprises after repeated discussions.

2. Descriptive evaluation index system of cross-contagion risk of investment and financing term mismatch of small and micro enterprises

When constructing the evaluation index system of investment and financing term mismatch cross-infection risk of small and micro enterprises, the analytic hierarchy process (AHP) is mainly used to obtain the weight of each index. According to the analytic hierarchy process, each dimension and specific index are evaluated and scored, and according to the functional relationship between each dimension and index and the cross-infection risk of mismatched investment and financing term of small and micro enterprises, the total value of the cross-infection risk index of mismatched investment and financing term of small and micro enterprises in the statistical year is finally calculated. See Table 1 for the weights of all indicators in the index system.

Table 1 Descriptive evaluation index weights of cross-contagion risk of investment and financing term mismatch of small and micro enterprises

Target layer (A)	Guideline Layer (B)	Scheme Layer (C)
Risk index of cross-infection due to maturity mismatch of investment and financing for small and micro enterprises (A=1.000)	Business cross-relationship (B ₁ =0.483)	Average associated business volume per unit (C ₁ =0.283)
		Average associated business per unit as a percentage of average associated business per unit (C ₂ =0.072)
	Equity relationship (B ₂ =0.396)	The average percentage of equity owned by firms in other businesses (C ₃ =0.042)
		The proportion of enterprises holding shares in other enterprises to the total number of enterprises (C ₄ =0.062)
	Financing guarantee relationship (B ₃ =0.076)	Proportion of average unit guarantee business to total guarantee business (C ₅ =0.038)
		Proportion of average guaranteed balance per unit to total guaranteed balance (C ₆ =0.039)

3. Comprehensive measurement of cross-contagion risk of investment and financing maturity mismatch of small and micro enterprises in China

What is the reality of the cross-contagion risk of mismatching investment and financing term of small and micro enterprises in China? On the basis of the constructed descriptive evaluation index system and the weight value of each index, with the help of relevant statistical data, the current situation of cross-infection risk of investment and financing term mismatch of small and micro enterprises in China can be measured. According to the data of small and micro enterprises listed on China’s New Third Board from 2014 to 2022, the actual values of various indicators are sorted out, and the total value of the cross-contagion risk index of small and micro enterprises with mismatched investment and financing terms in each year is calculated, as shown in Table 2.

Table 2 Descriptive evaluation index weights of cross-contagion risk of mismatched investment and financing term of small and micro enterprises

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022
Index	0.134	0.176	0.288	0.291	0.241	0.244	0.318	0.334	0.371

As can be seen from the table, the overall trend of the cross-infection risk index of investment and financing maturity mismatch of small and micro enterprises in China from 2014 to 2022 continues to rise, reaching 0.371 points by 2022.

IV. Multi-case analysis of cross-infection risk of investment and financing term mismatch of small and micro enterprises in China

In this paper, 16 key figures from 10 small and micro enterprises were selected for semi-structured interviews to collect qualitative data. In order to ensure the reliability and validity of the study, the research data mainly came from semi-structured interviews, archival materials and secondary materials. Firstly, 20 semi-structured interviews were conducted with 16 key people from 10 small and micro enterprises. Secondly, 48 internal materials provided by 10 small and micro enterprises were obtained, as well as other archival materials such as public speeches written by managers of small and micro enterprises. Finally, secondary materials such as business models, development history and representative projects, journal articles and mainstream financial media of these 10 small and micro enterprises were collected.

After the analysis and research of relevant qualitative data, it is found that the investment and financing management level of most cases is low, and extensive and empirical management is the main reason leading to the risk of cross-infection of investment and financing maturity mismatch. Some small and micro enterprises over-rely on short-term funds, and the efficiency of capital use is low, so it is still necessary to further improve the calculation and determination of long-term and short-term funds. Medium - and long-term funding plans still need to be improved.

4. Learn from foreign experience in preventing and defusing the risk of cross-infection caused by maturity mismatch in investment and financing

Enterprise self-control and government supervision are effective ways to control the cross-contagion risk of investment and financing term mismatch for small and micro enterprises. By giving full play to the functions of enterprise self-control and government supervision, Brazil, Russia and other BRICS countries encourage multiple parties to participate in risk co-governance and control key links of risks, providing experience and reference for the control of cross-contagion risks of investment and financing maturity mismatch of small and micro enterprises in China. On the one hand, the synergistic effect between enterprises and government. Foreign enterprises' investment and financing maturity mismatch cross-contagion risk control play a synergistic role between enterprises and the government. On the one hand, through the self-inspection of enterprises, enhance the self-prevention awareness of enterprises, and promote the timely detection and control of cross-infection risks of investment and financing term mismatch; On the other hand, the government guides enterprises to pay attention to the cross-contagion risk of investment and financing term mismatch, so as to avoid turning potential risks into real hazards.

5. The establishment of China's small and micro enterprises investment and financing term mismatch dynamic control mechanism of countermeasures and suggestions

Based on the research on the cross-infection risk of investment and financing term mismatch of small and micro enterprises, we should build a targeted and focused dynamic control mechanism of investment and financing term mismatch of small and micro enterprises with our country's characteristics to crack the cross-infection risk. (1) According to different stages of risk: grasp the changing characteristics of risk and take dynamic management measures. The risk of cross-infection due to the mismatching of investment and financing term of small and micro enterprises will experience the incubation period, the outbreak period and the stable period. According to different stages, we should establish a dynamic control of the leading coordination mechanism, dynamic control of the organization guarantee mechanism, dynamic control of the material guarantee mechanism, dynamic control of the information communication mechanism, dynamic control of the supervision and assessment mechanism. (2) Risk control strategy: improve the dynamic control mechanism at all levels by category, and respond to control risks in a timely manner. Under the risk situation, the cross-infection frequency of investment and financing term mismatch is high and the impact is great. However, due to the lack of emergency dynamic control plan and insufficient response speed and control accuracy, small and micro enterprises are easily transformed into real hazards.

Reference:

- [1] Meijuan Guo. Company performance and stock price collapse risk [J]. Guangdong Sericulture, 2019, 53(1):2. (in Chinese)
- [2] Jiexian Liu. Corporate debt maturity structure selection based on information asymmetry [J]. Journal of Jilin Business and Technology University, 2018, 34(4):4.
- [3] Yun Wang,Xiang He. How does the mismatching of investment and financing term affect the performance of enterprises? [J]. Scientific Decision,2022(10):95-110.

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