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Analysis of Characteristics of Inter-enterprise Related Credit Risk

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ABSTRACT

Various economic and financial crises have occurred occasionally in recent years, usually caused or brought by related credit risks. The credit correlation is the source of derived related credit risks. This paper explores the contagion effect, delayed effect, immunity and other characteristics of related credit risks and analyzes the causes in depth.

Keywords: Related Credit Risks; Contagion Effect; Delayed Effect; Immunity

1. Introduction

Modern market economy is credit economy, which makes various enterprises closely connected by complicated credit relationships via shares, guarantee or mutual insurance, connected transaction, financial derivatives, supply chain relationship and multiple identities of the management. It is the basic condition for every enterprise's normal operation to build a good credit relationship. With the global economic integration and further development of intensive market economy reform in China, various enterprises are more closely connected via credit relationship and the continuously developed and expanded credit relationship also promote the rapid development of various enterprises. Meanwhile, greater uncertainties are also brought to various enterprises by the credit relationship, namely, the economic instability is exacerbated by credit risk via credit relationship.

In recent years, there have been more and more frequent financial crises across the world, greatly affecting the global economic prosperity and development. During financial crises, many related enterprises many have very serious financial problems at the same time and their normal operations and solvency would be seriously affected by the dramatically increased bad assets, which further affect the asset liquidity of other credit-

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related enterprises and aggravate the frequency and degree of related credit losses, casting a shadow over the recovery of related enterprises. In actual economic life, it is not uncommon that crises occur to a series of related enterprises resulting from sudden credit risk. For instance, in recent years, crises like "connected credit" "guarantee chain" and "mutual crises" have frequently occurred among enterprises in China mainly due to the credit risks related via connected guarantee assets. The risks rapidly spread among various types of enterprises and to the upstream and downstream of enterprises, seriously affecting the development of local economy. These economic phenomena show that the bankruptcy or business distress of one enterprise may result in the business distress or close-down of its credit related enterprises and even the depression of the entire regional economy. In other words, the credit risk of one enterprise may cause the revaluation of assets of its related enterprises and result in default risk of related enterprises.

With increasingly elaborate division of labor, enterprises are no more independent individuals in the social economy. They are interdependent via credit relationship by intricate ways of correlation and form a diversified, multi-target, networked and complicate dynamical system. The related enterprises in the system have various correlations and various credit correlations not only contribute to the healthy development of related enterprises, but also have a risk-sharing effect when credit risk occurs[1] (Allen and Gale, 1998), and accordingly delay further expansion of credit risk. Meanwhile, the credit correlation among related enterprises is an important link of normal operation of enterprises and also a key factor causing credit risk[2] (Allen and Gale, 2000). Among enterprises with certain credit relationship, in the event of default or credit quality decline of one or more enterprises, other related enterprises may default or the default probability increases, which is called the related credit risk among related enterprises. In the dynamical system formed by related enterprise via credit correlation, there is possibility and uncertainty that related credit risk may occur in every related enterprise due to the uncertainties of each enterprise's management capability and financial situation, industrial development, macroeconomic environment change and other factors.

New challenges are brought by the complicated and changeable credit correlations, forcing the industry and scholars to reexamine the previous credit risk management theories and highly value the influence and effect of correlation on credit risk. Particularly, the status of related credit risk in various important enterprise-concerned risks has become increasingly prominent, which has made the industry and theoretical circle attach great importance to related credit risk management. For this reason, this paper mainly explores the related credit risk's characteristics like contagion effect, delayed effect and immunity as well as the causes.

2. Contagion Effect of Related Credit Risk

The characteristics of related credit risk are constantly varied with the change in economic environment and time. Taking the correlation as a medium, related credit risk has ways of movement like contagion, expansion and evolution. If one or more enterprises suffer from credit risk impact and have overflow effect on other related enterprises and when the impact is heavy enough to cause default or shut-down of related enterprises, the impact will further spread to other related enterprises, resulting in a series of chain reactions.

Various systems are formed by related enterprises via various correlations and correlations among related enterprises therein are complicated and diversified. Especially nowadays, under the social context of increasingly related and interdependent enterprises, more intense competition and rapid capital flow, the social harm caused by related credit risk with such spreading way and speed will be unprecedented. Meanwhile, related enterprise is an intricate and interdependent member in the social economy, which makes the correlations among related enterprises more intricate and interdependent. Particularly, the related credit risk occurs in related enterprise system always triggers the contagion effect of related credit risk and causes related credit risk spreading in many secondary and derived related enterprises, which will produce a “domino effect” that the risk will spread to the entire social economy and endanger the healthy development of social economy.

If related credit risk occurs in one or more related enterprises, other related enterprises and even the entire related enterprise system will be affected via the interaction of correlations among related enterprises. The concrete manifestation of the contagion effect of related credit risk is that: the sudden related credit risk of one or more enterprises breaks the correlations among enterprises, causes loss to related enterprises and further strikes the entire related enterprise system. Consequently, the chain reaction or domino effect is triggered in the entire related enterprise system, which makes many related enterprises suffer heavy losses and even affects the stability of the regional or even global economy.

The contagion effect of related credit risk is affected by multiple reasons, which can be mainly summarized into three aspects: first, the interaction of correlations among related enterprises and characteristics of internal correlation structure. The correlation among related enterprises is the path and link for related credit risk contagion. The credit risk generated in one related enterprise can spread to other related enterprises via specific path and then affect the stability and credit quality of the entire related enterprise system. Second, influence of external environment, mainly including the related enterprises’ macroeconomic environment, political factors, industrial factors, geographical position, etc. For instance, the credit level of certain related enterprise may be affected by macroeconomic change and the credit quality may be changed by the strength of political support for related enterprise. Third, related enterprise’s risk control capacity, which can change the intensity and range of related credit risk and is also the determinant for the contagion source of related credit risk.

3. Delayed Effect of Related Credit Risk

In the related enterprise system, it is uncertain that when related credit risk occurs in related enterprise. There is a probability that related credit risk occurs in related enterprise, but the related credit risk occurrence may be delayed due to interference of other factors. The connotation and affecting factors of delay effect of related credit risk will be explored and analyzed below on the basis of the definition of related credit risk delay.

Based on the inspiration from multidisciplinary thoughts summarized and extracted about delay, the delay effect of related credit risk herein refers to the course from that the risk is relieved or covered by measures adopted by the related enterprise suffering related credit risk and other related enterprises till the exposure of related credit risk. That is to say, when one or more related enterprises fall into credit crisis, related enterprises may reduce or delay their possible credit risk by multiple means to affect the related enterprises’ management capabilities by various factors, and accordingly reduce the occurrence possibility of related credit risk. In other words, related credit risks usually have delayed effect. For instance, there are various correlations among member enterprises of an enterprise group and once one member enterprise has credit default, this member enterprise will adopt self-relief measures and at the same time, other related member enterprises will take relief measures to avoid further exacerbation of the member enterprise, and accordingly, the related credit risk has a delayed effect.

From the description about delayed effect of related credit risk, there is a concept of time in the delayed effect of related credit risk herein, namely, there may a backward delay in the occurrence time of related credit risk. Meanwhile, the delay of related credit risk is the result of both related enterprise' internal factors and external environment. The related enterprise's internal factors refer to factors such as the organization structure and management level, while the external environment refers to all circumstances except for the internal factors of related enterprise, such as macro economy, industry attributes and politics. Under the interplay of the two, the related credit risk is delayed or transferred, and hence the related credit risk has a delayed effect.

Related enterprises are intertwined and closely connected by multiple correlations, forming various types of related enterprise system. In the related enterprise system, every related enterprise seeks its maximum profit, so it establishes relationship with other related enterprises from its own interests and tries to gain more benefits from the relationship. However, when a related enterprise finds the risk of its bankruptcy, it will conceal its actual situation at initial stage and maintain or establish more new relationships to maintain its operation, resulting in risk concealment or transfer. Therefore, there are many reasons for the delay of related credit risk. The factors affecting the delay of related credit risk will be discussed below from aspects of related enterprise's factors, characteristics of correlation among related enterprises and macro environment.

(1) Various factors of related enterprise. The occurrence of related credit risk is affected by the organization structure, financial situation, management strategy, staff's quality and other factors of related enterprise. A reasonable, effective and standard organization structure is the foundation for normal operation of related enterprise and also the prerequisite for related credit risk prevention; the financial situation is the material foundation for related enterprise to delay the occurrence of related credit risk; related credit risks of enterprise can be effectively managed by optimized management strategy; and reasonable management strategy can be effectively and rapidly implemented when related credit risks are coped with by high-quality staff. These factors are interactional, interconnected, mutually superimposed and integral, which are at different stages of the life of related enterprise and have decisive effect on the delay of related credit risk. If a related credit risk may occur in a related enterprise, the related enterprise shall firstly find out the risk cause by using its various advantages and improve the business decision and management method to try its best to avoid failing into a credit crisis, so as to delay the occurrence of related credit crisis.

(2) Correlation among related enterprises. Related enterprises establish relationship with other related enterprises to gain greater benefits. Therefore, once one or more related enterprises have credit crises, other related enterprises will make corresponding judgments and decisions based on their own interests, and they may take relief measures for the related enterprise in credit crisis if it is favorable for their development and they can gain more benefits, and hence the related credit crisis is delayed. Comparatively speaking, if a related enterprise's related credit crisis will have different impacts on other related enterprises, related enterprises that will suffer severer damages are more likely to take active relief measures, while other related enterprises may not take measures. At that time, there is great uncertainty whether related credit risk will occur in the related enterprise network. The correlation among related enterprises is the external force for the delay effect of related credit risk and also the basis for related enterprise to make judgment about the hazard of its related credit risk and decision about its own benefit.

(3) Change in external macro economy and macroeconomic policy. When macro economy slumps into recession, some related enterprises in a related enterprise network may be affected and appear related credit risk. If these related enterprises play important roles in the related enterprise network, their bankruptcy may cause greater crisis and then threaten the stability of regional or national economy. At that time, the government may issue relevant macroeconomic policy or take other measures to avoid

the close-down of these related enterprises, resulting in delayed effect of related credit risk. During the prosperous development period of macro economy, if one or more related enterprises may encounter related credit risk due to internal reasons, the critical crisis situation of these related enterprises may be covered by the prosperous performance of macro economy, resulting in delay of related credit risk. In a word, both the change in macro economy or economic policy and special measures adopted by the government may lead to the delayed effect of related credit risk.

In short, there are a variety of reasons for delay of related credit risk, which are interlinked, interconnected and interactional and can provide favorable opportunity for sustainable development of related enterprises. However, after the delay of a related credit risk, if related enterprises do not attach enough importance to the risk and cannot find a method to completely eliminate the risk, the reoccurrence of the risk will bring greater damage to the related enterprise network and the impact scope will be expanded. Therefore, the delay of related credit risk is only to provide more time for related enterprise to improve its management strategy and provide chance to completely eliminate the related credit crisis. Meanwhile, it also makes some related enterprises to cut off the source of the related credit risk by severing or transferring the relationship.

4. Immunity of Related Credit Risk

In the view of Inasiti and Levien (2004)[3], an enterprise is a complex living organism and exists direct or indirect dependency relationship with other enterprises like living organism, and then forms an enterprise ecosystem. Therefore, as a member in the enterprise ecosystem, enterprise is like a living organism. The healthy and long survival of many enterprises indicates that these enterprises have their own immune systems like living organism. Based on the internal mechanism of related enterprise system and biological immune theory, the immunity of related credit risk herein refers to the ability of related enterprise to effectively identify, dispose or reduce the threat brought by related credit risks by reasonably using all resources and governing measures when facing possible default or downgraded credit, so as to ensure the related enterprise's ability of healthy and sustainable development.

In the related enterprise system, all factors and behaviors that may affect the healthy development of related enterprises are the objects of related credit risk management and also primary concerns for related credit risk management. The nature of related credit risk management activity is to timely find out and dispose the variable factors triggering related credit risk of the related enterprise and other related enterprises. In other words, related enterprise is immune to related credit risk to a certain degree. There are lots of factors affecting the related credit risk immunity and the reasons for affecting the related credit risk immunity will be analyzed mainly from two aspects below: related enterprise's own factors and external environment.

First, related enterprise's own factors. The related enterprise's organization structure, material conditions, scientific and technological level, culture and other internal environment are the material bases and conditions for related credit risk immunity. Particularly, during the development of related enterprise, the good risk management culture formed is the basis for the survival and development of related enterprise, embodiment of the related enterprise's spirit and values and also manifestation of the related credit risk immunity. Meanwhile, the prevention, identification and disposal of related credit risk need to be implemented by the staff of related enterprise, so the implementation effect of related credit risk management is determined by the staff's quality of the related enterprise. Therefore, the high-quality staff of related enterprise can enhance the related credit risk immunity and provide driving force for the efficiency improvement and development of related enterprise. In short, related enterprise uses its various conditions and takes all measures to avoid default risk, and tries its best to achieve the related credit risk immunity to ensure normal and healthy development of related enterprise.

Second, the related credit risk immunity is affected by external environment impact. The external environment for the production and operation of related enterprise is similar to the natural living environment of organisms, which is of complexity, uncertainty and unpredictability, while related credit risk has the characteristics of biological virus, which is destructive to related enterprise and also is contagious. If not taken seriously, the expected effect of related credit risk immunity of related enterprise can't be achieved, and accordingly the operating capacity of related enterprise will be seriously damaged, leading to heavy loss or even contagion effect of related credit risk in the related enterprise system. In case of change in macroeconomic environment, industry and policy, related enterprise must change its business strategy to cope with the impact. Hence the relationship among related enterprises is changed, resulting in the uncertainty of related credit risk immunity. Especially during economic depression, the uncertainty of and change in macro economy will have greater impact on related credit risk immunity, which may have serious impact on the stability of related enterprise system, resulting in more related enterprises falling into crises. Therefore, despite of whatever change in external environment of related enterprises, the related credit risk management shall be highly valued to enhance the effectiveness of related credit risk immunity of related enterprise.

In conclusion, during the effect of related credit risk immunity, the related credit risk immunity is not always effective due to the influence of multiple factors such as external environment and related enterprise itself. Meanwhile, the related credit risk immunity is not always immutable. Instead, it varies according to the change in external and internal environment, which makes the related credit risk immunity have characteristics of complexity, variability and uncertainty.

4. Conclusion

With China's economy entering the medium-to-high speed growth stage, further optimization and adjustment of industrial structure and further establishment of market position, credit economy has been gradually becoming the leading force for the development of China's economy. Besides, in the integration trend of global economic and financial development, the credit transactions among enterprises are increasingly frequent. Among many risks faced by enterprises, the related credit risk has gradually become the research emphasis and hotspot of scholars. The contagion effect, delayed effect and immunity of related credit risk are discussed in the paper and the affecting factors are analyzed. The risk management of the related enterprises is an open dynamic system , especially the complexity and significance of related credit risk management in the system. Therefore, this paper discusses major characteristics of related credit risk in depth, which is in favor of the governance strategy of related enterprise and is of important positive realistic and theoretical significance.

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