Problems And Solutions Of China's Credit Rating Industry Under The Background Of Big Data

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Abstract. Customer credit rating adopts scientific methods and standardized procedures to investigate, analyze, evaluate, measure and review the ability of rating objects. The objective of the system is to fulfill corresponding economic commitments. Today, big data enriches the data source of credit data that surpasses that of traditional financial data. This paper starts with the concept of enterprise credit rating system, through the understanding of credit rating system and the combination with big data, to understand the existing problems and the causes of the current credit rating system in China.

1. Introduction
For a long time, China’s capital has been experiencing soaring corporate and personal debts based on an inefficient credit rating system. Presently, the nation divides the enterprise credit rating into industrial and commercial enterprises, financial as well as public institutions. Using the existing credit rating standards to evaluate creative enterprises, often cause unfair, objective, unscientific results that lack credibility. Therefore, the enterprise credit rating needs to consider the particularity of industry and enterprise. The development of China's credit rating industry is secondary to that of foreign countries in rating technology and market demand. Similarly, there lacks proper positioning of rating agencies and national credit system construction and management. This paper starts with the concept of enterprise credit rating system, through the understanding of credit rating system and the combination with big data, finds out the existing problems and the causes of the current credit rating system in China.

2. Literature review/ Related work
A majority of Chinese individuals lack faith in the integrity of the government due to years of environmental disaster, Ponzi schemes, and food scares[2]. Critics believe that the system has the ability to minimize the freedom of speech since the government will be able to control the credit score[2]. China lacks a common regulatory body for the credit rating system. There are more than 100 credit rating agencies in China, which are far higher than the average level of developed countries in Europe and the United States[4]. The high number increases competition in the industry, causing a lack of coordination. The Chinese researchers have always had an issue in finding independent and reliable data. The issue is due to the government’s stance on researching sensitive topics, which is a punishable offense[3]. The systematic nature of the social credit system in China means the lack of infrastructure to ensure reliability of the data. The inadequate collection of data will cause an issue...
with scoring patterns and the role of the judiciary. Hence, the government requires adequate infrastructure to ensure proper collection of data to enable an operational and effective system.

3. Theoretical basis and research hypothesis
The theoretical basis focusses on the developments in the credit scoring ecosystem. The new forms of credit agencies are experiencing resistance from already established ones. Until 2011, more than 460 million Chinese citizens lacked a credit history or bank account an occurrence that prompted the creation of credit agencies[5]. Additionally, companies have been defaulting payments for the past decade, which negatively affects the Chinese economy. According to data by Bloomberg (2019), Chinese firms defaulted on over 39 billion yuan of domestic bonds in the initial four months of 2019, which is 3 times that of 2018 [1]. When compared to previous years, the rate of default is more than triple, which shows the need for a functional credit system to avoid higher figures in 2020. The statistic led to the development of agencies that did not just measure credit scores, but evaluated social credit scores.

![Figure 1. Missed bond payments quadrupled in 2018 (Bloomberg, 2019)](image)

4. Credit evaluation model of Chinese companies
While most people believe the government controls the credit system, the current system involves several public and private agencies. The success of the new credit system compelled the government to include private agencies as a way of expanding nationwide scoring. However, the establishment of this environment is affected by competition. For instance, Alibaba and Tencent cannot disclose their operations under Baihang. When the Chinese government was recognizing eight private companies to initiate social credit operations in 2015, Alibaba’s Ant Financial decided to exploit the license by establishing Zhima Credit (Sesame Credit)[5]. Sesame Credit has over 520 million users. Similarly, in 2017, Tencent established Tencent Credit to cater for an approximate 800 million monthly active WeChat users[5]. The emergence of these new agencies were met with the demand for increased safeguarding of user data and privacy for e-commerce. However, the inclusion of private and public agencies created conflict based on company policies. Tencent and Alibaba are hesitant to share their data with the government agencies because of their consumer privacy concerns and fear of providing the government with control over valuable consumer information [6]. The issue associated with data is due to the different operations of the new forms of financial credit systems function.
4.1. Sesame credit
From the perspective of the credit system constructed by Sesame credit, the credit score of the company is obtained after processing, sorting and calculating. The standard score range is 350 to 950 and represents the credit level, whereby a good one is a result of a higher score. The dimensions that determine the operations at Sesame credit include credit history that involves past credit account repayment records and credit account history, behavior preference that focuses on the preference and stability in shopping, payment, transfer, financial management to identify the job and social role of the individual, performance ability that includes enjoying all kinds of credit services and ensuring timely performance, such as whether car rental is returned on time, or the timely payment of water, electricity and gas, Identity characteristics that includes sufficient and reliable basic personal information left during the use of relevant services and relationship that includes the identity characteristics of friends and the degree of interaction with friends. Transfer relationship and alumni relationship are regarded as one of the bases to judging personal credit.

4.2. 51 credit card
51 credit card is mainly based on the historical analysis of users' credit card e-bills, strong cross validation of e-commerce and social relations. Cross validation of multi-dimensional information is used to determine the user's risk level and whether to loan to the user. The data is obtained according to the user's credit card data, the purchase behavior corresponding to the e-commerce data open to the platform, the phone operator's call situation, registration information, among others. 51 credit card risk level consists of five dimensions: bill management time, bill performance, time limit for mobile access, operator to judge the user's own reliability through the effective call records in recent 4 months and whether there are negative contacts in the address book and Taobao to investigates whether the commonly used name and telephone number are consistent with the reserved number of the applicant.

5. Problems in the Development of China's Credit Rating Industry

5.1. Lack of coordination in credit rating industry
Presently, various departments offer some requirements for credit rating from the perspective of their business supervision. However, they do not adhere to any laws and regulations set for the credit industry. The lack of coordination exists between institutions like the CIRC, the CSRC, and the People’s Bank of China. For instance, while the CIRC accredits five rating agencies, the People's Bank of China identifies nine rating agencies that are eligible for bond rating. Therefore, the current system lacks a competent authority for credit rating agencies; hence, an ineffective regulatory system.

5.2. Lack of regulation
The system lacks relevant business norms, rating procedures and methods of rating agencies. Rating results are very different, which affects the standard criteria for determining scores. There is also a lack of unified review and supervision agencies for the rating results nationwide, which makes many credit rating agencies strive for the rating business at the expense of the evaluation quality. The occurrence seriously affects the healthy development of the credit rating industry.

5.3. Lack of basic market access restrictions
In the management of market access, each department only accepts the rating results of several rating agencies. This approach establishes market access only from the perspective of the target rated, rather than from the overall perspective of rating agencies to conduct a comprehensive analysis. Currently, there is no competent authority to conduct a more comprehensive industry access review and annual business activity review for rating agencies. The Chinese onshore bond market is completely different from that of developed markets. The difference affects investors that desire to access sections of the onshore markets past the ones included in the extensive global benchmarks. In China, some credit rating agencies rated AAA or AA are not recognized outside China, but issue bonds at high percentages [7].

5.4. Unhealthy competition
The underdeveloped bond market in China means the issuing interest rate of corporate bonds is not linked to the credit rating of bonds. The stipulation cannot exceed 40% of the fixed deposit interest rate of banks in the same period. The importance of credit rating is not significant. This makes the overall rating market demand too small, narrow business scope. As the market demand is too small,
dozens of rating agencies, large and small, compete for market share and launch vicious competition. The direct consequence of vicious competition is that it seriously damages the image of the rating industry and affects the authoritativeness of the rating results.

6. Solutions of China's Credit Rating Industry

6.1. Establish a rating licensing system
The credit rating industry is still new in China and lacks any form of regulatory system that can assist in creating order. Credit rating agencies are competing unfairly and the system does not adhere to global standards when compared with the west. Therefore, it is necessary to implement a government-led licensing or accreditation system of credit rating business in the initial stage of the development of the credit rating industry to ensure the quality of credit rating. There are two ways: first, the relevant departments issue licenses to rating agencies for certain rating business; second, the relevant regulatory authorities, as users of credit rating results, approve the rating results of certain rating agencies.

6.2. Establish a "delisting" system for rating agencies
In order to effectively supervise the credit rating agencies, authorities must establish a system of reviewing and evaluating the rating results, and formulate a corresponding "delisting" system. By investigating the default rate of rating results and other indicators, on the one hand, the rating agencies with high default rate of rating results and irregular operation ought to be disqualified from their rating business. On the other hand, the evaluation companies with high rating quality must be encouraged to become large rating companies nationwide as soon as possible, so as to ensure that the relative concentration of the rating market is based on high-quality rating results.

6.3. Establish daily management systems
The government should draft and formulate basic regulations on the management of the rating market and clarify the conditions for the establishment of credit rating agencies. Furthermore, the administration should approve procedures, business rules, prohibitions and penalties.

6.4. Coordinated action and unified supervision of all departments
Considering that the Ministry of Finance participates in the construction and development of various fields of finance as a macroeconomic department, there is no conflict of interest in the field of rating business. Additionally, the rating work is closely related to the accounting, auditing, asset evaluation and other business under the supervision of the Ministry of Finance. Therefore, the Ministry of Finance can facilitate coordination by establishing a small joint work with the People's Bank of China, the Development and Reform Commission, the Banking Regulatory Commission, the Securities Regulatory Commission and the Insurance Regulatory Commission. Group B shall establish a coordination mechanism to unify the management of the rating industry in all aspects. Moreover, it can jointly determine the norms in the field of rating business and the qualification certification of the agencies, and jointly evaluate the rating work of the rating agencies. The Joint Working Group confirmed that member departments could issue licenses to credit rating agencies for certain types of rating business, or users as credit rating results could endorse the rating results of certain rating agencies. On the basis of sufficient coordination, the member departments of the joint group can also formulate their respective management measures, rules and regulations. The department can also constantly improve the regulatory system of China's rating market, so as to make the operation of credit rating agencies legal and rule-based.

7. Conclusions and future work
China’s recent development of its credit rating industry has been exposed to diverse obstacles associated with both public and private institutions. Before the restructuring of the credit system,
China had a large number of defaulting companies and individuals. However, the advent of technology and popularity of big data compelled the Chinese government to identify ways of improving credit scores. However, the rating system experiences immense internal competition, lack of infrastructure for research, lack of regulation, and lack of basic market access restrictions. The government should vigorously promote the development of China’s credit rating industry by establishing a rating licensing system, a rating agency delisting system and a daily management system. Credit investigation is the cornerstone of the society, it also needs infrastructure, such as a sound legal system and clear regulatory policies. The development also requires proper coordination between the government and the private sector. Private companies need to liaise with public ones to provide consumer data that will assist in calculating credit scores. It is hoped that all parties concerned will pay close attention to the problems existing in China’s credit rating industry and formulate countermeasures to improve the nation’s credit rating system.

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