A Study on the Measurement of China's Financial Development Level

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Abstract. Based on the theory of financial development and the current situation of China's financial development, building a new index system based on the existing, then this paper uses the method of entropy weight to measure and analyze the level of China’s financial development from 2007 to 2017. The results show that the overall level of financial development in China is gradually rising, with a slow development in 2008 and a rapid development after 2014. The securities and insurance markets need to be further developed and the financing structure needs to be changed.

Introduction

In recent years, with the deepening of financial reform, China's financial industry is also developing, the types and number of financial institutions are increasing, the number of employment is increasing, and the total assets of institutions are expanding. What is the changing trend of China's financial development level? What is the impact of major events or innovations in financial markets on the level of financial development? Has the internal structure of the financial system changed? Combining the above questions, this paper constructs an index system for measuring the level of financial development, studies the level of China’s financial development, provides reasonable suggestions for promoting the overall development of China's finance, and also provides reference for follow-up research.

Literature Review

Goldsmith (1969) in the study of financial structure and economic development, put forward the Financial Interrelations Ratio (FIR), that is, the ratio of all financial assets to all physical assets[1]. King and Levine (1993) constructed four financial development indicators: financial depth index, BANK index, PRIVATE index and PRIVY index, which are more accurate than Goldsmith's indicators[2]. Martin et al (2012) constructed evaluation index system from four dimensions of depth, access, efficiency and stability[3]. Robert and Madhavi (2015) constructed an index system from depth, access and efficiency to analyze the financial development level of 23 Asian economies[4].

Domestic research started relatively late. Bei duoguang (1988) simplified the financial related proportion of Goldsmith and applied it to our country. Wang Zhiqiang and Sun Gang (2003), Xia Xiangqian (2014) all choose to construct the index system from the three dimensions of aggregate, structure and efficiency[5,6]. Xiong Xueping and Tan Lin (2016) constructed the index system from four dimensions of depth, width, efficiency and financial ecological environment when measuring the level of regional financial development in China[7].

Establishment of Index System

On the basis of "financial structure theory" and "financial sustainable development theory", this paper constructs a comprehensive index system from four dimensions: scale, structure, efficiency and ecological environment of financial development, as shown in Table 1 below.
Table 1. Index System Construction Table.

| First level index | Second level index                                                                 |
|-------------------|--------------------------------------------------------------------------------------|
| **Scale**         | Financial development level                                                          |
|                   | Number of listed companies per 10000 people                                          |
|                   | Proportion of financial employees                                                    |
|                   | Financial depth                                                                      |
|                   | Per capita deposit                                                                   |
|                   | Per capita loan                                                                      |
|                   | Proportion of premium income to GDP                                                  |
|                   | Proportion of stock market value to GDP                                               |
|                   | Proportion of total assets of banking financial institutions to GDP                   |
| **Structure**     | Financial related ratio                                                              |
|                   | Proportion of stock market financing                                                 |
|                   | Proportion of bond financing                                                         |
|                   | Proportion of increase in bank loans                                                 |
|                   | Ratio of direct financing to indirect financing                                      |
|                   | Proportion of added value of financial industry                                      |
| **Efficiency**    | Added value of financial industry per capita                                          |
|                   | Loan to deposit ratio                                                                |
| **Ecological**    | Per capita GDP                                                                       |
| environment       | Urbanization process                                                                 |
|                   | Government funding                                                                  |

**Data and Methods**

This paper selects the data from 2007 to 2017. The data sources mainly include statistical yearbook of each year, financial operation report, national economic and social development statistical bulletin, and statistical database of National Bureau of statistics.

This paper chooses the method of entropy weight to measure. First, standardize the data. Then calculate the information entropy of each index and get the weight of each index. Finally, calculate the financial development index and compared.

**Analysis**

According to the index data of each year, use SPSSAU software to carry out entropy weight analysis, and get the financial development index of China. Based on the results, a chart of financial development trends is drawn, as shown in Figure 1 below. In addition, based on the proportion of total assets of banking financial institutions, stock market value and premium income in GDP, observe the changes of three major markets in China, as shown in Figure 2 below. In addition, this paper also studies the changes of China’s financing structure, as shown in Figure 3 below.
Figure 1. China's Financial Development Trend.

Figure 2. Development of Banking, Securities and Insurance Markets.

Figure 3. Change of Financing Structure.
Conclusion

By analyzing the national financial development index, China's financial development has been on the rise. From 2007 to 2008, the growth rate was relatively fast. After 2008, the growth rate declined. By 2014, there was a significant increase. After 2014, the development was relatively stable. The reason is that in 2014, China's economy has undergone great changes, and the financial sector is also undergoing profound changes. Strengthen supervision and the opening of the pilot "Shanghai and Hong Kong Stock Market Exchange Mechanism" is more conducive to the development of Finance.

The scale of assets of banking financial institutions in China has gradually increased, far exceeding the development of securities and insurance industries. The banking financial institutions have developed rapidly, and the securities and insurance markets have not developed enough.

The financing structure of China's financial market has not changed significantly. Indirect financing, such as bank loans, is still the mainstream, while direct financing, such as bond market financing and stock market financing, accounts for a small proportion. From 2007 to 2009, the amount of stock market financing declined, which may be attributed to the impact of the 2008 financial crisis. From 2013 to 2015, the amount of direct financing increased, indirect financing decreased, stock financing and bond financing increased, and the securities market was more active. The reason may be that China expanded the opening of the financial industry to the outside world, such as the opening of the pilot "Shanghai-Hong Kong Stock Market Exchange Mechanism" in 2014, which promoted the internationalization of the capital market. In 2016, indirect financing increased, direct financing decreased, stock financing changed slightly, bond financing declined sharply, and credit risk events occurred in the bond market in 2016, which caused market fluctuations and decreased bond issuance.

The global financial crisis broke out in 2008, many developed countries have suffered huge losses, but our country has been less affected. Specifically, the growth rate of China's financial development level has declined slightly, but it is still on the rise. The development of the stock market has declined slightly. The stock market value has declined by 62.9% compared with 2007. The interbank market and the insurance market are still developing continuously. The amount of stock market financing has declined, but the amount of bond financing is increasing, and the change of direct financing is very small. After the financial crisis, China pays more attention to the stability of the financial market, improves various financial laws and regulations, speeds up the process of RMB internationalization, the rapid development of domestic financial products, promotes the process of financial marketization, and promotes the development of the financial industry.

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