

Visual Analysis of the Local Finance Research Trend and Development Trend in China

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Abstract. Based on the relevant data retrieved by CNKI from 1992 to 2020, the key word LLR clustering and Brust detection were conducted by CiteSpace literature metrology software, and the knowledge map was drawn. The research finds that the hot topics of local finance research focus on four clusters: local finance risk, tax reform, fiscal expenditure and local finance analysis model;"Soft budget constraint" and "local government debt" will be the focus of local finance research in the future.

Keywords:Local finance; Literature metrology; Knowledge map.

1. Introduction

Nearly 30 years in the past, although the local fiscal boost to China's economic growth, it also exited some problems, which attracted much attention of academic circles, so that theoretical and empirical studies were carried out to sort out the development process of Local finance in China and identified its most active research frontiers and development trends, which could provide theoretical support and policy reference for the research and development of local finance.In view of this, this study uses CITESPACE software and bibliometric analysis method to draw the map of local financial knowledge in China from the aspects of spatio-temporal distribution, keyword clustering, hot word emergence and so on, and display the relationship between local financial research contents through the visual map.

2. Data Sources and Research Tools

2.1 Data Source and Processing

The data retrieval source of this study is CNKI, which collects data through the "Advanced Retrieval" in "Journal Retrieval", enter search criteria: Title = "place" and include "finance". Source journals were selected as "all", and the time span was = 1992-2020 for accurate retrieval, a total of 6318 results were retrieved. In order to improve the quality of the study and ensure the accuracy of the study, a secondary retrieval was conducted for this study, journal sources were selected as "CSSCI", "core Journal" and "CSCD", and a total of 2517 results were retrieved.

2.2 Research Tools and Methods

Cite Space is a scientific literature data mining and visualization analysis software developed by Chaomei Chen, a tenured professor at Drexel University [1]. Through the clustering of relevant information, we can understand and predict relevant research hotspots, frontiers, unknown fields

and cross-disciplines, so as to fully reveal the development of scientific knowledge in this field. In this study, CiteSpace software was used to visually display the spatial and temporal distribution, research hotspots and development trends of local fiscal research in China through the analysis of institutions, keyword clustering and hot word emergence.

3. Construction of Knowledge Map of Local Finance Research in China

3.1 Analysis of Hot Spot of Local Finance Research

By using CiteSpace V software and selecting "Cluster", the co-word map is obtained with 386 network nodes and 911 connections, the network density is 0.0123. The Modularity Q value is 0.8738, which is greater than the critical value "0.3", indicating that the community structure of co-word network is very significant and the result of clustering is very good. The Mean Silhouette value is 0.4413, which is greater than the critical value 0.4, indicating that the clustering results are also reasonable. By adopting the Log Likelihood Ratio (LLR) algorithm, a total of 21 clusters are derived, as shown in Figure 1. In order to enable the knowledge graph to display important information more clearly, clusters #4 and #17 with discrete or small number of nodes are hidden in FIG. 2, forming 17 large clusters including "local debt risk", "fiscal decentralization", "fiscal expenditure", "fiscal risk", and #9 "regional economic difference" and "transfer payment". In addition, the clustering with coverage relationship or similar meaning is integrated, such as combining #1 local debt risk and #16 local government debt and so on, finally forming five clusters, which reflect the main content of domestic local finance research.

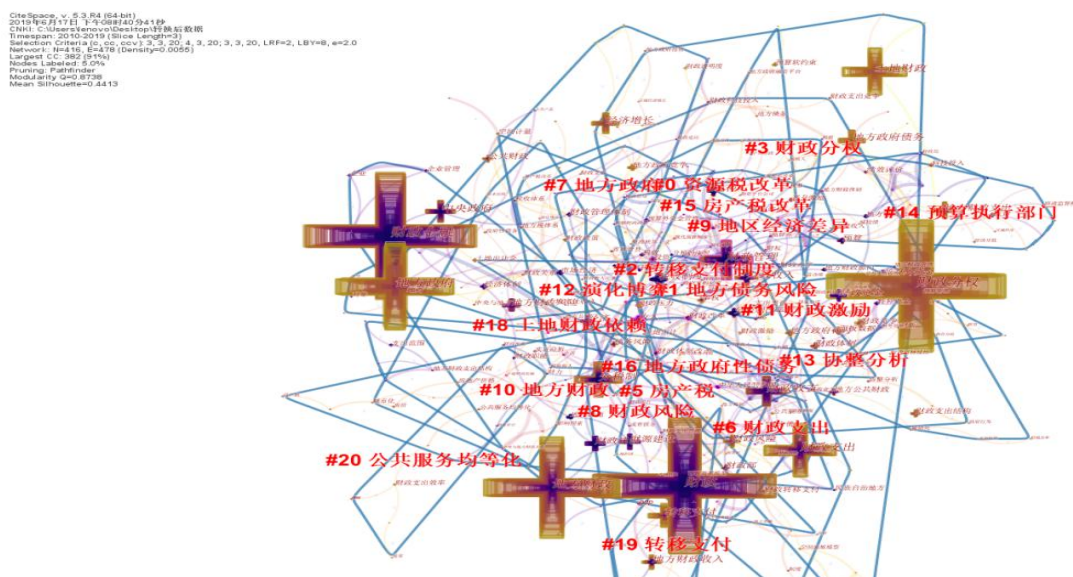


Fig. 1 Clustering of hot words in local fiscal research

3.1.1 Cluster I: Research on local government debt risk

Local government debt plays an important role in social and economic development, improvement of people's livelihood and acceleration of infrastructure construction, which has a direct impact on the success or failure of the prevention and control of major risks and the construction of national governance capacity. Relevant scholars have studied the debt risks of local governments from different perspectives. At present, local government debt risk in China is in the

controllable range, but the remaining debt space is not large, parts of the debt paying ability is obviously insufficient. Therefore, measures to response local debt risks including hardening budget constraint, improving the credit rating, strengthening risk monitoring and establishing strict liability system for debt collection and so on become the focal point of study, which provides theoretical support for perfecting the systematization of local government debt risk management.

3.1.2 Cluster II : Research on tax reform

The tax system in China has made great achievements after 70 years of construction, reform and development. "From an incomplete tax system as one of the ways of fiscal revenue under the planned economy, gradually evolves into a comprehensive tax system which is basically adapted to the socialist market economy and can serve as the main way of fiscal revenue, and then develops into a modern tax system adapting to the modernization of national governance system and governance capacity in the new era " [2]. Therefore, the research and revision of modern fiscal system, fiscal and tax system reform and modern tax system should be guided by improving national governance capacity, and gradually improve tax reform in high-quality development. In addition, as the level of opening up to the outside world is improved comprehensively and the process of globalization is deepened continuously in China, tax reform plays a vital positive role in promoting the development of foreign trade, especially in the face of the ravaging of the novel coronavirus epidemic, the escalation of trade friction and the impact of anti-globalization, China should optimize the tax business environment as the premise, establish a sound modern tax system with international competitiveness, and promote the construction of a global tax governance system.

3.1.3 Cluster III : Research on fiscal expenditure

Under the background of fiscal decentralization and local government competition based on performance appraisal, the distorted situation has formed that fiscal expenditure in some regions attaches more importance to infrastructure construction than to public services. Therefore, the relationship between fiscal expenditure and decentralization has become the focus of scholars' attention. Hu Jia et al. incorporated fiscal decentralization and expenditure behavior into an analytical framework, constructed a dynamic panel regression model, and conducted an empirical test on the impact of fiscal decentralization and local government fiscal expenditure behavior on urban-rural income gap [3]. It is not difficult to find that scholars' research on fiscal expenditure has gradually shifted from fiscal expenditure and decentralization to transfer payment.

3.1.4 Cluster IV : Research on local finance analysis model

Data models have been widely used in local financial analysis models. Feng CAI et al. used provincial panel data and put forward suggestions on regional industrial structure development planning in combination with bidirectional fixed effect models [4], which had both theoretical value and practical significance. In addition to panel data models, "evolutionary game" and "co-integration analysis" are also frequently used in fiscal research. The extensive research and application of financial data model has provided technical support and scientific basis for decision-making, and it is of vital practical significance to improve the quality of financial decision-making, correctly handle the relationship between economic development and financial development and promote the healthy and sustainable development of local finance.

3.2 Local Finance Research Trend Analysis

Figure 2 lists the top 15 Burst words for Strength, which are "soft budget constraint", "fiscal pressure", "local government debt", "fiscal incentive", "tax sharing reform", etc. Among them, the

key words in the last 5 years and lasting at least 3 years are "soft budget constraint", "fiscal pressure", "fiscal transparency", "spatial spillover effect", "expenditure responsibility", "threshold effect", "local debt", "fiscal expenditure efficiency". These keywords are the frontier topics of local finance research in China, which mainly focuses on two aspects, one is the debt problem of local finance and constraint supervision research; the other is the efficiency effect and responsibility of fiscal expenditure. The research on local finance gradually turns to "soft budget constraint", "fiscal pressure", "local government debt", "fiscal incentive", "tax sharing reform" and "fiscal expenditure efficiency".



Fig. 2 Key words emergent intensity ranking of local finance research

3.2.1 The Strongest Pop Word: "Soft Budget Constraints"

The breakthrough word "soft budget constraint" had the highest mutation intensity (9.38322). The term "soft budget constraint" was first put forward by Hungarian economist Kornai in the late 1970s to describe an economic relationship between the central government and state-owned enterprises in socialist countries. Domestic researches on soft budget constraint mainly use two paradigms [5]: One takes soft budget constraint as exogenous variable to analyze the impact of soft budget constraint. For example, Yu Jinliang et al. found that soft budget constraint significantly reduced the degree of fiscal efforts of local governments in general budget caliber, and the difference in official promotion mechanism with GDP as the main assessment indicator and institutional constraint environment was the main reason for this phenomenon [6]. Guo Ping, Jiang Shanshan et al proposed that the impact of soft budget constraint on the debt scale of local governments was based on the double threshold effect of fiscal decentralization [7]. In short, the negative effect of soft budget constraint has been generally recognized by the academic community. In the process of promoting budget reform, we should promote the transparency and openness of financial information, strengthen budget supervision and management, so as to reduce the negative impact of budget constraint.

3.2.2 Longest-lasting Pop Word: "Local Government Debt"

From the definition of local government debt, academia believes that local government debt is the debt issued or borrowed by the local government directly with property and government credit guarantee. From the perspective of local debt risk prevention, scholars have extensively studied the countermeasures to resolve and prevent local government debt risks, including improving the assessment mechanism of government officials, deepening the distribution mechanism of power and

financial power of reform, standardizing the financing channels of local governments and promoting the construction of local financial transparency. The future research on local government debt should pay attention to the combination of theory and demonstration to provide a scientific and reasonable optimization path for resolving and preventing local government debt risks.

4 The Research Conclusion

At present, local fiscal research in China mainly focuses on the topic of local fiscal risk research, tax reform research, fiscal expenditure research and local fiscal analysis model research and so on, the future research fields tend to be local fiscal debt problems, constraint supervision research and fiscal expenditure efficiency and responsibility research, etc, the focus of local fiscal research has gradually shifted to "soft budget constraint", "fiscal pressure", "local government debt", "fiscal incentive", "tax sharing reform" and "fiscal expenditure efficiency".

Local finance research should be strengthened in the following aspects in the future: First, based on the existing research on local finance, empirical quantitative analysis should be strengthened in the future, the research methods of local finance should be enriched, and the scientific analysis and reliability of research results should be enhanced. Secondly, the study of local finance should go beyond the study of economics as the main subject, and strengthen the interdisciplinary integration to realize the integrated study of local finance issues, which is also the inevitable trend of scientific development and technological progress. Finally, just strengthen the coordinated development of local finance, and accelerate the establishment of modern financial system, so as to promote the high-quality development of local finance.

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