

Citation Analysis of the State Owned Commercial Banks Research Field Based on Histcite

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Abstract

Multiple of empirical researchers have found that State-owned commercial banks in various countries have positive effect on the economic growth and financial stability. This paper studies the research literature related to the state owned banks using an online subscription based scientific citation indexing. Wed of Science database is explored for the core data collection for the state-owned banks research literatures and its historical context, using bibliometric analysis software "Histcite" to converts bibliographic collections into generate sequences, transforming the non-numerical data into a graphic format, pointing out the important achievements and development trend of the related fields of state-owned banks.

Keywords: State-Owned Commercial Banks; Bibliometric; Histcite's Citation Analysis.

1. Introduction

State-owned commercial banks (SOCBs) also called Government owned commercial banks in many published papers have played the importance part for the governments in financial and economic development. This government owned banks address coordination problems in socially beneficial investment, they would be more effective in saving than private banks. A growing number of studies have shown that state owned banks are positively related to the process of economic growth in various countries (Svetlana, Panicos, Anja,2012; Pizzna, 2013)^[1].

This paper studies the SOCBs relevant research literature from 1994-2017 in an online subscription-based scientific citation indexing, like Wed of Science database, using bibliometric analysis software "Histcite" to converts bibliographies into historiography, to show the most influential articles in the SOCBs research field, the growing number research literatures with indicated direction of core collection for the SOCBs related filed and its historical context. In willing to accurate review of SOCBs research literatures around the world and founding how research filed development and the important result of the studies pointed out the development trends of the SOCBs research, which is value for to the extension research and the latter reference for research innovation.

2. Method and Data

The samples of literature papers were collected from Web of Science (formerly Web of knowledge), selecting a core collection database, that includes Social Sciences Citation Index (SSCI), Science Citation Index (SCI), Science Citation Index Expanded (SCIE), Conference Proceedings Citation Index- Science (CPCI-S), and Current Chemical Reactions (CCR)^[2]. The citation analyses is carried out in Hiscite software to conduct bibliometric analysis with cartography analysis and information visualization (Apriliyanti and Alon, 2017). Hiscite processed the bibliographic collections to generate chronological to trace historical development, and then created tables for carrying out the most-cited works and historiography making co-citation analysis and visualizing citation linkage to identify the highlight in this research field^{[3][4]}. The data filtered words using "State-owned commercial bank", "Government Owned commercial bank", "State-owned bank", "Government-Owned bank" by using "OR" term at adding another field, setting research term as "Topic", "All Years", following by "SSCI", total of retrieved 936 papers published between 1994 and 2017.

Hiscite was created by famous American Intelligence and Scientometrics scientist Eugene Garfield, who invented SCI and founded bibliometric and scientometrics. Hiscite software is a good tool for citation analyzing by using bibliometric and scientometrics function for creating historiography, and visualizing linkages between citations of two or more papers (Garfeild,2002). The data imported would be able to rank the articles, journals, authors, published institution and words, at the same times the output records representing a knowledge domain (Garfeild, 2006), the output also used for analyzing the knowledge basement and development track, detected SOCBs researching trend and developments by times.

The knowledge domain of related articles would be investigated by their references and citations, which analyzing through frequency citation scores, such as the local citation score (LCS), which shown how many times the paper has been cited within the field of SOCBs in Wos collection. GLC means Global Citation Score presented the total citations number per paper from all field within Wos (Lgoumenou et al., 2014), TLCS- Total Local Citation Scores mean all local citation times within SOCBs collection, TGCS - Total Global Citation Scores, Recs mean number of papers (Records) which published in the Year, CR means Cited Reference.

3. Bibliometric Analysis of SOCBs Collections

3.1 Records Output and Citation Analysis

The bibliometric analysis would carrier out when 936 downloading data of SOCBs collections were imported to Hiscite software. Analyses index displays 936 published records which have been written by 1872 authors, from 915 Institutions, published in 560 journals, with 28872 cited references and 2441 words. The number of SOCBs published papers keeps increasing each year from 1 paper in 1994 to highest records 92 papers in 2016 (Fig.1). Many studies have found that after the Asian financial crisis in 1997, the publication number of SOCBs related research papers began to increase. The 2007-2008 financial crisis had begun in The United State then spread over the world. When this global financial crisis ended in June 2009, many articles analyzed the crisis and lessons learned from that period, that is reason TGCS and TLCS almost reach the highest peak. As shown in Fig.2, TGCS and TLCS reach highest peak in 2005, this period the studies focus to banks ownership reform, cause the performance and effects of bank industry, as well as enterprises in China and emerging economic countries have changed.

Figure 1: The Number of SOCBs Published Papers Each Year From 1994 To 2016.

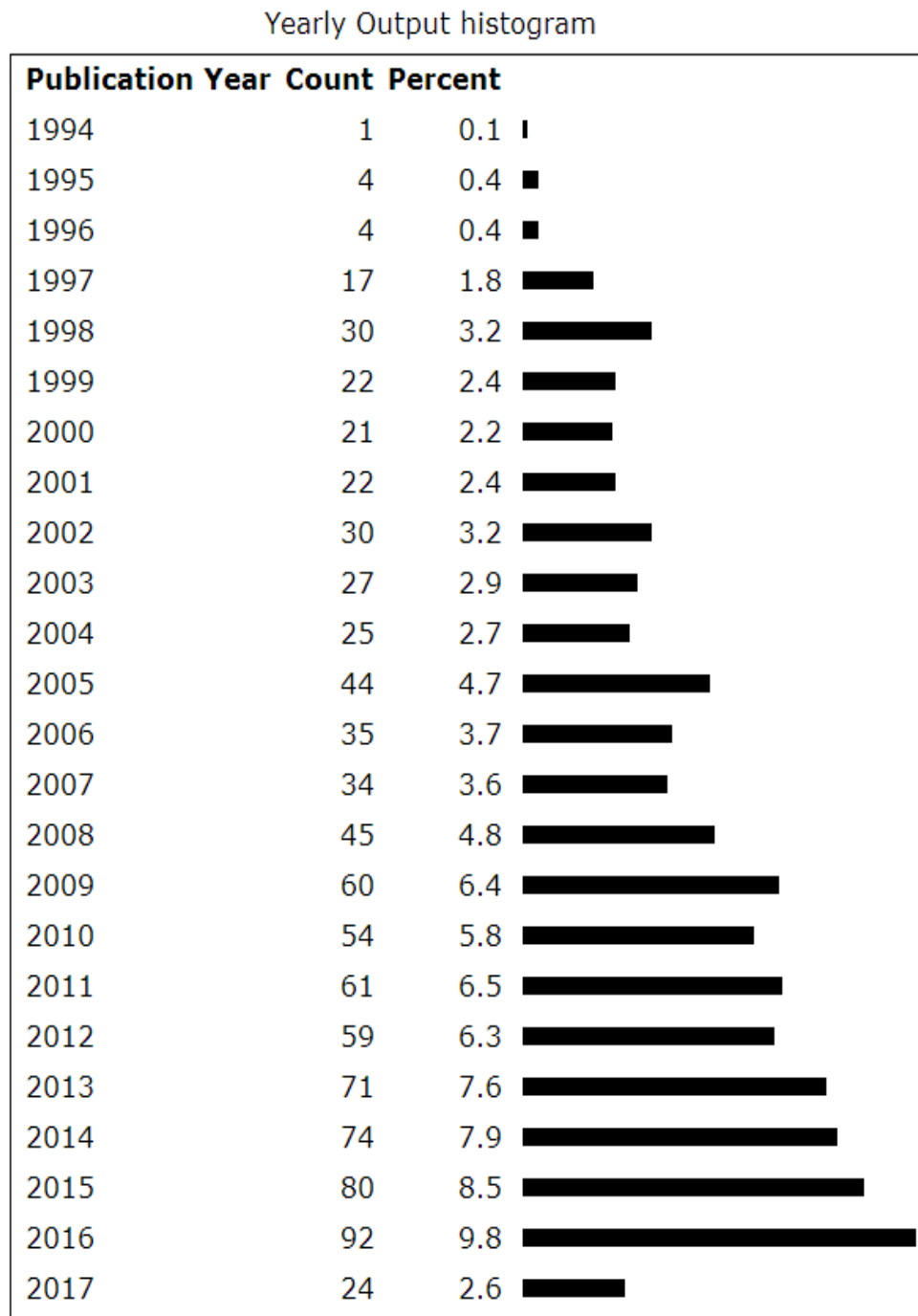
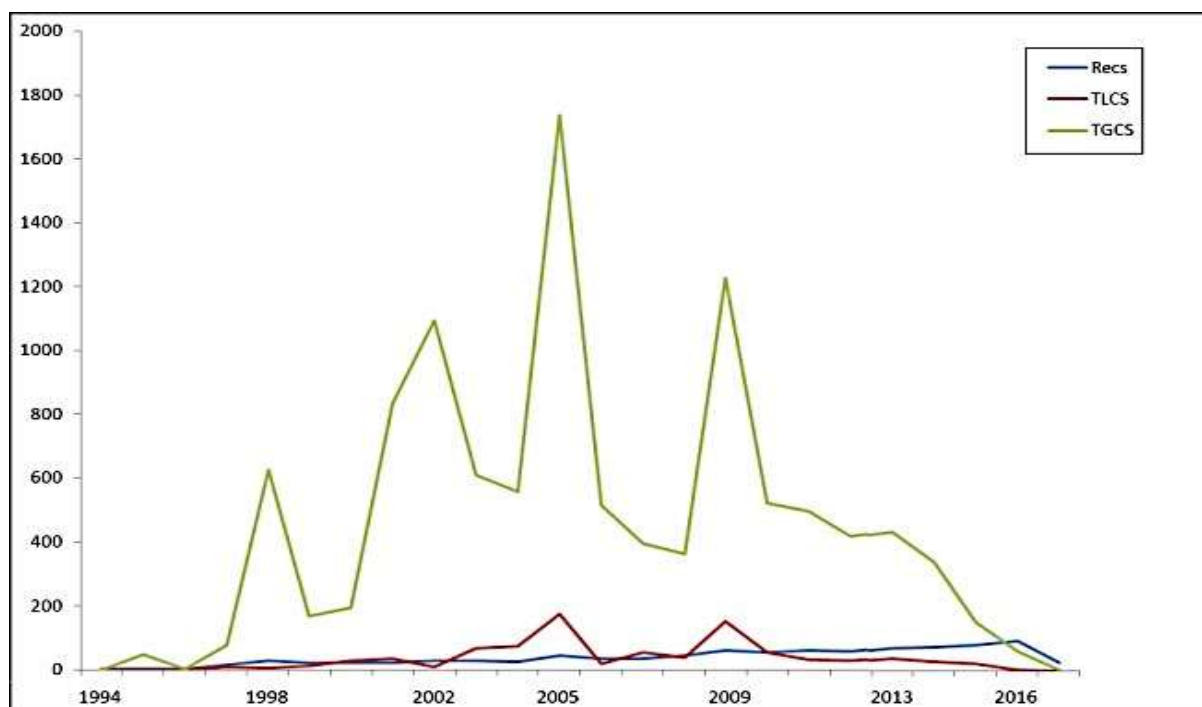


Figure 2: The Comparison of Number of Publications About TGCS and TLCS.



3.2 Importance Authors of SOCBs

The ranking of core authors is sorted by Recs or TLCS rates^[4]. Recs has been used for productive author rank. In the other hands, using TLCS which mean Total citations in the collection to the author. Higher scores of TLCS represented the publications of the author are higher quality, with more innovative and effects on SOCBs research field. TLC scores perfectly pointed out importance authors from 1872 authors in total (see Table 1).

In Table 1, the core authors in top 10 ranking are presented, and 6 authors are from the the famous American research institutions. The first authors is Robert Cull or Cull R, who works in the World Bank's Development Research Group as a leader of the Financial and Private Sector Development researching Team. In recent year, he has been doing research about the performance of microfinance institutions, Chinese finance and firm's performance, financial development in developing countries, and the effects of the global financial crisis on developing economies in multi countries etc. He has published more than thirty articles in peer-reviewed academic journals which include eleven articles in core collection journal of WOS such as Journal of Development Economics, Journal of Banking and Financial, Journal of corporate finance and World Development etc. He is the author and editor of multiple books, and one of his co-edited book "Banking the World: Empirical Foundations of Financial Inclusion" has been published by MIT Press January, 2013. The second author Xu LC, who is a fellow in research team of the World Bank's Development Research Group have co-published 5 papers in the SOCBs collection, 3 papers among them belong to to the top 10 of the highest cited ranking.

Table 1: Ranking of Top 10 Authors

#	Author	Recs	TLCS	TGCS
1	Cull R	11	141	608
2	Xu LC	0 8	99	430

3	Berger AN	0 5	81	533
4	Sapienza P	0 1	61	221
5	Hasan I	0 4	47	213
6	Zhou MM	0 2	42	195
7	Udell GF	0 3	39	297
8	Micco A	0 3	38	171
9	Panizza U	0 2	37	165
10	Clarke GRG	0 3	32	124

Allen N. Berger is Carolina distinguished Professor at University of South Carolina. He also works as the professor of Banking and Finance at Department of Finance in the Darla Moore School of Business. At the same time, he is a senior fellow at Wharton Financial Institutions Center, a fellow at European banking center. He was an economist at the Board of Governors in the Federal Reserve System in 1982-1989 and published more than 100 articles in refereed journals, including in top of finance, economic and business journal. In year of 2001, 2005, and 2009, Berger AN co-published articles with Cull R, Hasan I, Zhou MMa, and Udell GF.

The fourth author Sapienza P real name is Paola Sapienza. She was electing director of The American Finance Association in 2011-2013 and a director in board of AFFECT in 2016. She has been a professor of Finance at Kellogg School of Management in Northwest University, at the same time being a chair in consumer Finance at HSBC from 2014. Her research papers in the core collections of WOS such as the Journal of Finance, The American Economic Review, the Journal of Financial Economics, and Science etc. Sapienza P won the Smith Breeden Distinguished Paper Award in 2009. In 2014-2016, she has been listed in the Most Influential Scientific Minds based on top cited papers in economics by Thompson Reuter, which include only 24 faculties worldwide.

3.3 The Most Influences and Trending Articles

Influential articles of SOCBs research field sorted by the scores of LCS, which shows the number of citations to each article from within the SOCBs collection in WOS. Higher scores of LCS presents the quality of the papers, reflecting the concern of other authors to the article. Top 10 of most influential articles in SOCBs record sorted in Tables 2:

Tables 2: Top 10 Core Articles Of Socbs Ranking By Local Citation Scores.					
#	Date / Author / Journal	LCS	GCS	LCR	CR
1	192 Sapienza P The effects of government ownership on bank lending JOURNAL OF FINANCIAL ECONOMICS. 2004 MAY; 72 (2): 357-384	61	221	0	32
2	173 Cull R, Xu LXC Who gets credit? The behavior of bureaucrats and state banks in allocating credit to Chinese state-owned enterprises, JOURNAL OF DEVELOPMENT ECONOMICS. 2003 AUG; 71 (2): 533-559	44	84	0	27

3	397 Berger AN, Hasan I, Zhou MM Bank ownership and efficiency in China: What will happen in the world's largest nation? JOURNAL OF BANKING & FINANCE. 2009 JAN; 33 (1): 113-130	42	195	4	52
4	395 Lin XC, Zhang Y Bank ownership reform and bank performance in China JOURNAL OF BANKING & FINANCE. 2009 JAN; 33 (1): 20-29	30	90	7	27
5	232 Berger AN, Clarke GRG, Cull R, Klapper L, Udell GF Corporate governance and bank performance: A joint analysis of the static, selection, and dynamic effects of domestic, foreign, and state ownership JOURNAL OF BANKING & FINANCE. 2005 AUG-SEP; 29 (8-9): 2179-2221	29	108	3	51
6	236 Dinc IS Politicians and banks: Political influences on government-owned banks in emerging markets, JOURNAL OF FINANCIAL ECONOMICS. 2005 AUG; 77 (2): 453-479	29	144	1	34
7	87 Cull R, Xu LC Bureaucrats, state banks, and the efficiency of credit allocation: The experience of Chinese state-owned enterprises, JOURNAL OF COMPARATIVE ECONOMICS. 2000 MAR; 28 (1): 1-31	25	66	2	66
8	299 Micco A, Panizza U, Yanez M Bank ownership and performance. Does politics matter? JOURNAL OF BANKING & FINANCE. 2007 JAN; 31 (1): 219-241	24	129	2	32
9	218 Fries S, Taci A Cost efficiency of banks in transition: Evidence from 289 banks in 15 post-communist countries JOURNAL OF BANKING & FINANCE. 2005 JAN; 29 (1): 55-81	23	192	2	19
10	228 Cull R, Xu LC Institutions, ownership, and finance: the determinants of profit reinvestment among Chinese firms, JOURNAL OF FINANCIAL ECONOMICS. 2005 JUL; 77 (1): 117-146	23	192	2	37

In top 10 highest number of citation articles, 7 papers have been published by core authors of SOCBs research field, their papers sorted from the first, second, third, fifth, seventh, eighth and tenth at the ranking of influential articles (table 2). The list above shows trending of SOCBs studies divided into two directions: the first is SOCBs ownership, performance and efficiency research; the second studies SOCBs loan effect to the enterprises. The first article "The effects of government ownership on bank lending" has been published at JOURNAL OF FINANCIAL ECONOMIC in May 2004 by author Sapienza P. This paper studied the effect of government ownership on bank lending behavior. Sapienza

suggested that comparing to private banks, state-owned banks charge lower interest rates to similar or identical enterprises. In her views State-owned banks favor lending to large or located in depressed areas enterprises. state-owned banks lending behavior present by lower the interest rates charged to enterprises, which stronger political party in the locate of borrowing.

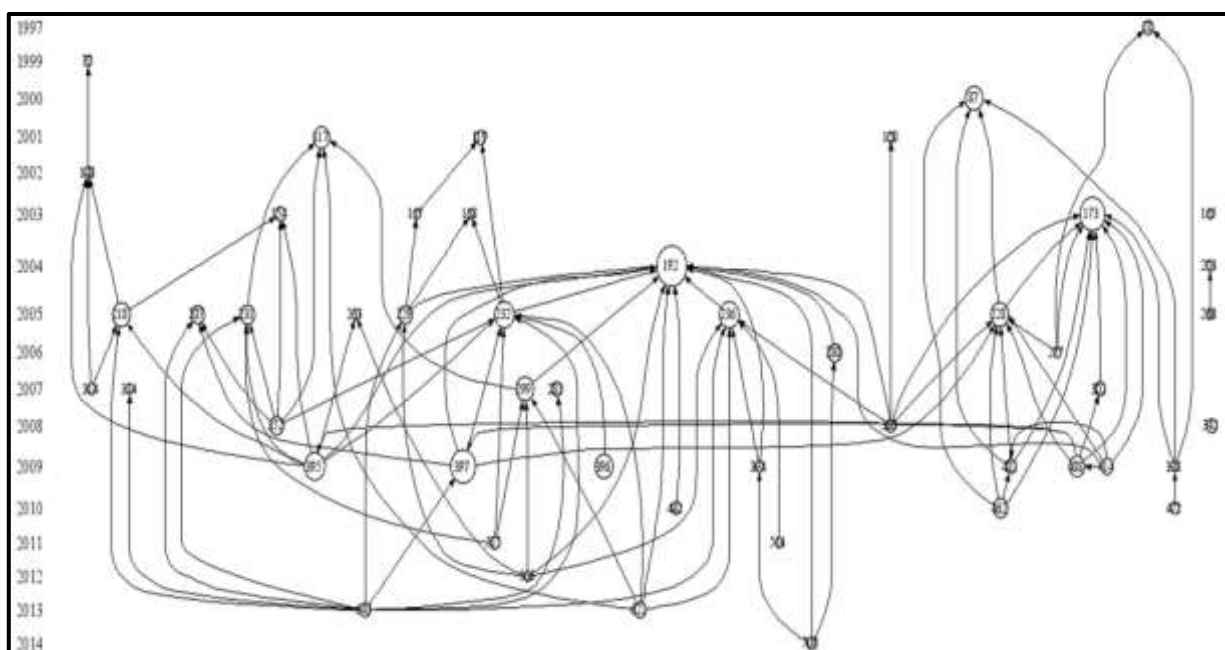
The second, seventh and tenth articles have been published by the most productive and highest local citation scores Cull R and Xu LXC. They were common published "Who gets credit? The behavior of bureaucrats and state banks in allocating credit to Chinese state-owned enterprises", 《Bureaucrats, state banks, and the efficiency of credit allocation: The experience of Chinese state-owned enterprises》 and 《Institutions, ownership, and finance: the determinants of profit reinvestment among Chinese firms》 at 《JOURNAL OF DEVELOPMENT ECONOMICS》, 《JOURNAL OF COMPARATIVE ECONOMICS》and《JOURNAL OF FINANCIAL ECONOMICS》 in year of 2003, 2000, 2005. These three articles studies in efficiency on banks' lending to the enterprises.

4. Citation Network Analysis of SOCBs

The Historiography of SOCBs most-cited articles was created by graph making, which is a special function in Histcite. The output graph provides shortcut for the evolution of topic and highlight literatures within the collection, historiograph shows citation links between articles in chronological citation network. We chose "Graph Maker" in Histcite's tool, using LCS as selection criteria with limit 50 articles for better showing the most important citation links.

In Fig.3, each node shows the number of article, if lot of arrows pointing to a bigger node circle represents that the article has been more-cited, higher LCS, which reflected how influences of an article in SOCBs area. The author suggested to separate a big cluster of the historiograph in Fig.3 into two parts from their research streams: the first part is left side of the graph, its research stream related to government ownership in bank, the transform of bank ownership, bank performance and bank lending, which including 34 nodes (192, 232, 236, 395, 396, 397 and etc.); the second part setting in right side with 12 nodes(173, 228, 408, 462, 87, etc.), their research trend focus on Chinese bank lending and enterprises development. The other 4 articles number 165, 203, 230, 342 are free spots which not linked to citation network. From Fig.3 indicated that there are no top fifty high cited articles after 2014. However, number of articles keep increasing every years, relating to recent year publishing and articles diversity were cause of cited frequency quite low.

Fig. 3: Historiography of SOCBs most-cited papers



The early high cited article, node 87 lies in second top of the right cluster which was published in year of 2000 by Cull and Xu which already described on headline 3.3. The important paper published in 2001 is node 117 "Bank ownership and efficiency" was published by Altunbas Y, Evans L and Molyneux P on "JOURNAL OF MONEY CREDIT AND BANKING", this paper ranked in Twelfth on top highest cited by getting LCS:20 and GCS:143; node 119 "The ability of banks to lend to informationally opaque small businesses" was published by two of top ten core authors as Berger AN, Klapper LF, Udell GF on "JOURNAL OF BANKING & FINANCE", this paper got 178 of GCS but got low LCS, which shown that this paper influence in the other research field. Most high cited article in 2003 is node 173 "Who gets credit? The behavior of bureaucrats and state banks in allocating credit to Chinese state-owned enterprises" which published by Cull R, Xu LXC, this article was the Second of highest LCS in headline 3.3. In 2004, the most important article in SOCBs field appear in the middle of the historiography as the biggest node 192 "The effects of government ownership on bank lending" that reviewed in 3.3.

In 2005, nine nodes were found, the importance articles and number of cited nodes increased. Four high cited articles in top tenth influence ranking such as 218, 228, 232, and 236 were published (described in 3.3). Node 207 was Sixteenth of top influence ranking with LCS:14 and GCS:84, this article topic: "Banking efficiency in China: Application of DEA to pre- and post- deregulation eras: 1993-2000" was published by Chen XG, Skully M, Brown K on "CHINA ECONOMIC REVIEW". Node 229 "The economics of bank privatization" got LCS: 14, GCS: 60 ranked the seventeenth in influence list. Node 231 "Financial liberalization, crisis, and restructuring: A comparative study of bank performance and bank governance in South East Asia" was published by Williams J and Nguyen N in " JOURNAL OF BANKING & FINANCE", this paper ranked the fourteenth on influence list with LCS:17 and GCS:82.

Node 280 "Bank ownership and lending behavior" was published in 2006 by Micco A and Panizza U on "ECONOMIC MATTERS" and getting LCS:13, GCS:36. In 2007, there were five nodes appearance, the important node is number 299 "Bank ownership and performance. Does politics matter?" (Described in table 2). In 2008, lying in the left of cluster was node 352 "Cost and profit efficiency of Chinese banks: A non-parametric analysis" written by Ariff M and Can L, they published on "CHINA ECONOMIC REVIEW".

In Fig.3 appeared 8 nodes on 2009, high cited nodes increased again after 2005. Node 395 and 397 were review in Table.2, their research trends on bank ownership and efficiency in China. Node 396 "The effect of ownership on the prudential behavior of banks - The case of China" published by Jia CX on "JOURNAL OF BANKING & FINANCE", this article was ranking as the top eleventh of influential article list, which studied about the ownership effecting to prudential behavior of banks in China. Another high cited node 408 "Inside the black box: Bank credit allocation in China's private sector" placing in the right of cluster which published on "JOURNAL OF BANKING & FINANCE" by Firth M, Lin C, Liu P, Wong SML.

In 2010-2014, founding nine nodes. During 2010, node 462 "Formal versus Informal Finance: Evidence from China " was published in "REVIEW OF FINANCIAL STUDIES" by author Ayyagari M, Demircuc-Kunt A, Maksimovic V. In 2011, node 515 "Ownership structure and risk in publicly held and privately owned banks" was published. Node 566 "Why government banks underperform: A political interference view" published in 2012. Node 622 "The impact of government ownership on bank risk" was published on "JOURNAL OF FINANCIAL INTERMEDIATION" by Iannotta G, Nocera G and Sironi A in 2013, they using cross countries data of the government ownership impacted to bank risk in large European banks. Node 700 "The Real Effects of Government-Owned Banks: Evidence from an Emerging Market " published on 2014.

5. Conclusion

This context using Histcite program to conduct bibliometric analysis for 936 articles related to SOCBs studies which searched from WOS core collection as the samples, creating historiography for founding importance result of the SOCBs

studies and the development of research trends. In this context, the bibliometric analyzing shown that high cited articles were most frequency found in JOURNAL OF BANKING & FINANCE and JOURNAL OF FINANCIAL ECONOMICS. A lot of literatures focus on Chinese SOCBs, especially when Chinese SOCBs fulfill the transformation in 2005 and during the end of Global Financial Crisis in 2009.

In additional, the result of bibliometric and historiography analysis of SOCBs by Histcite, demonstrating that the number of papers were increasing in recent years, but local citation score and global citation score were decreasing. This result could not represent that SOCBs research field fewer attractive than last decade, moreover, if examination on the recent published articles could found that research trend was diversify and more finely divided, even they related to SOCBs, but many article concentrated to research on banking institutions, enterprises, government policies, etc. Roughly biased towards macroeconomic research direction. High-cited of SOCBs papers published in last three years focus on bank risk, bank lending and effecting, bank performance, ownership of SOCBs and their development in China and other emerging market economies, fewer research of less developed countries. Therefore, studies of SOCBs in less developing countries are imperative, which providing the research of SOCBs development efficiency, with the lesson learned from China and emerging economic to make a great contribution for those countries in the prospect of financial and banking development in the future.

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