

What Are the Determinants of China's Export Growth?—A Systematic Review of Chinese Literature (1997-2016)

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The purpose of this review is to communicate the research results of Chinese academia in this field to interested scholars in Western academia. Our review question is: What were the factors that positively or negatively influenced China's export? We designed a systematic review protocol and then conducted a seven-round in-depth search. After the searching and checking process, a database of 620 academic journal articles was created. Altogether, we find 269 factors have boosted or hindered China's export. Majority of researches focused on macro level factors. Very few papers studied the firm level or individual level factors. Based on our database, several most frequently studied factors that affect China's export are identified. In the end, a future research direction is proposed.

Keywords: China, export growth determinants, systematic review, Chinese literature

Introduction

Since the implementation of reform and open policy in 1978, China's export volume had grown tremendously from 27.36 billion US dollars in 1985 to 2,209.6 billion US dollars in 2013 (see Figure 1). The average yearly export growth rate between 1985 and 2013 was 17%. Meanwhile, the world market export share of China also increased constantly since 1978, which took the first place in 2010 surpassing Germany and USA (Husted & Nishioka, 2013, p. 568).

In the English literature, different factors that influenced China's export were presented. For example, it was mentioned that China's export performance was better than the rest of the world during and after the financial crisis because its lower price strategy (Gao, Whalley, & Ren, 2014). It was also found that quality upgrading explained most of the increase of export quantity in existing market (Tian, Hu, Wang, & Huang, 2016). Some factors that influenced China's export negatively were also identified. For example, trade barriers are a hindrance to China's export (Zhao, Liu, Pu, & Yang, 2013). Increase of minimum wage also caused decline in firm export volume (Gan, Hernandez, & Ma, 2016). In addition, Yamashita and Jayasuriya (2013, p. 329) pointed out that a Chinese nominal exchange rate appreciation relative to exchange rates of its major export destination will have only a limited impact on Chinese manufactured exports. The weak management

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skills and a lack of knowledge of international finance hindered international expansion of Ningxia's SMEs (Cardoza & Fornes, 2011).

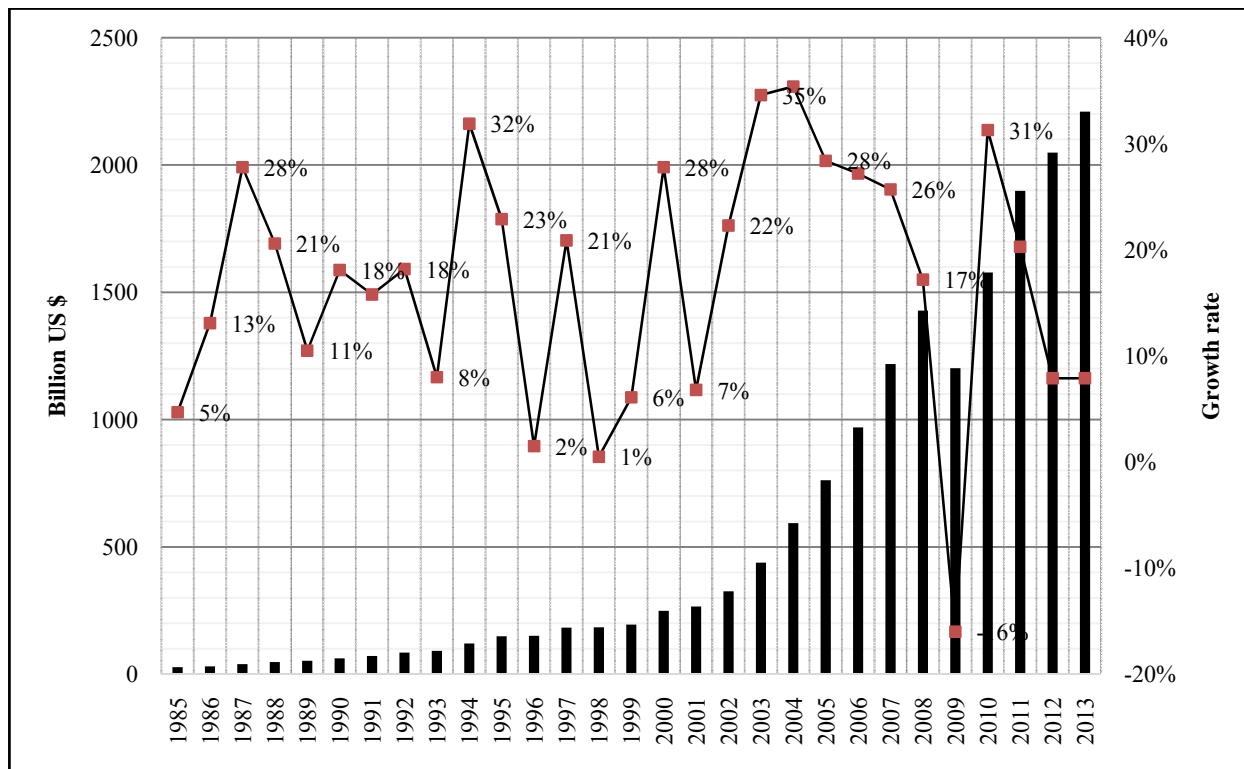


Figure 1. China's export volume and export growth rate 1985-2013. Source: National Bureau of Statistics of China, <http://www.stats.gov.cn>.¹

On the other side, White, Liu, and Xie (2001) argued that, to consider only the English literature has its limitation, while local researchers in the region who publish in Chinese could have contributed numerous too (as cited in Peng, Lu, Shenkar, & Wang, 2001). In fact, we did find a huge number of studies in Chinese language literature, which focused on the factors that influenced China's export. These researches should not be ignored in order to gain a complete understanding of China's extraordinary export performances.

In order to gain an overview of the study in this research field in the Chinese academia, a primary review of the Chinese language literature was conducted from January 2017 to February 2017. In this primary review, 780 journal papers², which studied the determinants of China's export growth, were identified. Similar to the English literature, majority of the existing researches studied the impact of macro level factors on China's export. After the primary review, it became clear that an overall picture is needed to guide future research efforts because the huge number of articles makes it difficult to know what exactly the critical factors are. In such situation, according to Petticrew and Roberts (2008), a systematic review will be useful. The Chinese language is usually a lion in the way for those Western scholars who are interested in the Chinese academia. A review of Chinese literature in this topic can also serve as a valuable communication channel between Chinese academia and those interested western scholars in this field.

¹ This figure only presents the data from 1985-2013 because the official statistics from 1978 to 1984 as well as 2014-2016 were only presented in RMB.

² In the primary review, quality standard was not set to control the quality of found papers.

Method

Data Collecting Principle

The huge number of studies in Chinese language literature that were found in the primary review is included in 320 Chinese journals. However, these journals vary in quality. The goal of this review is to: (1) include qualified and reliable Chinese language academic journal papers; and (2) make review process transparent to western scholars so that the review process can be repeated and examined. To reach these goals, a searching protocol was designed for this review (see Figure 2), in which a quality standard is set to ensure the quality of found papers.

Review Protocol

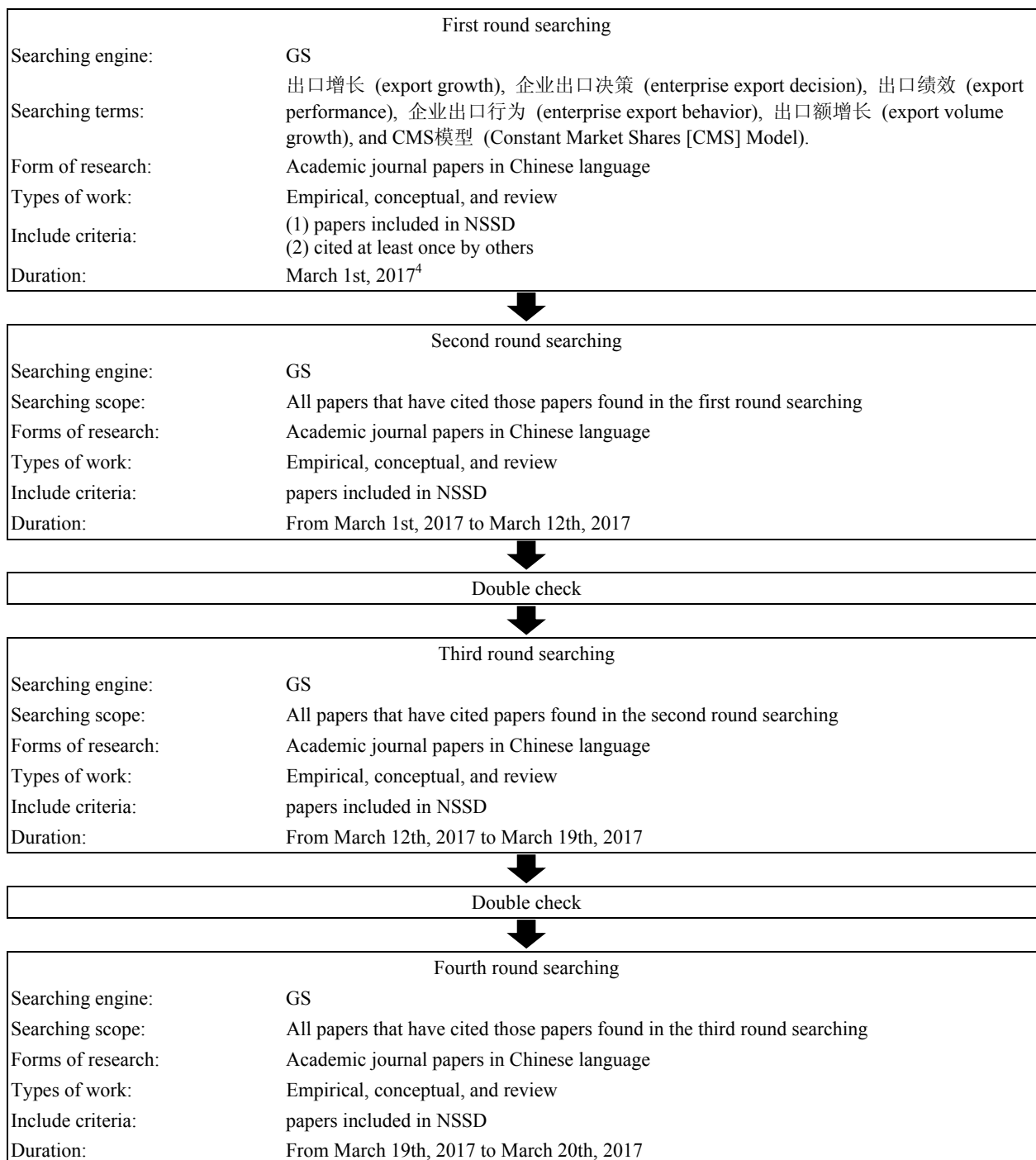
This review first uses a classical search method. Key words are used to identify target studies. Then, a “down-stream” in-depth searching was conducted to identify relevant papers in each research stream. In this way, those high-quality Chinese academic journal papers, which were published recently, could also be identified. For example, if a paper that studies the influence of foreign direct investment (FDI) on China's overall export growth was found, maybe there are some latter studies that have cited that paper to study how FDI influences the export of China's certain province. Therefore, after relevant papers have been found through using key words, those articles that have cited those found papers were also checked to identify target papers. Besides, the searching process focuses on academic journal papers because journal articles are considered to be validated knowledge (P. M. Podsakoff, MacKenzie, Bachrach, & N. P. Podsakoff, 2005). Empirical, conceptual, and review researches were all included. In order to gain high-quality articles, only those papers that were listed by National Social Science Database (NSSD)³ were included. The whole searching process used Google Scholar (GS) search engine.

Each round of searching follows several steps. The first-round search used six key words in Chinese language: 出口增长 (export growth), 企业出口决策 (enterprise export decision), 出口绩效 (export performance), 企业出口行为 (enterprise export behavior), 出口额增长 (export volume growth), and CMS 模型 (Constant Market Shares [CMS] Model). In the first-round searching, only those academic journal papers that have been cited by other studies at least once were included. The reason for doing this is that GS presents all studies that have something to do with the key word. As a result, there were an enormous number of results listed in each every search. For example, after one search with the key word 出口增长 (export growth), GS lists about 634,000 results (Result on March 22nd, 2017). It is unrealistic to skim all of them to identify relevant papers. Besides, we found that the majority of listed results have not been cited at all. Usually, each time of search with one of those key words, 500 to 1,000 articles have been cited at least once among all found results showed by GS.

In the first round search, this review only checks those articles that had been cited at least once by others. There are three reasons for doing this. First, the workload becomes reasonable. Second, this standard serves as a quality standard to make sure the found papers have roused a certain awareness in the academia. Third, the less a study is cited by others, the later GS lists it on the results pages. We found that it was much more difficult to find any relevant paper even among those articles that were cited once or twice by others. Of course, those

³ NSSD is China's largest public social science database built by the Chinese government. Its mission is to include those best social science journal papers. NSSD has included over 600 high-quality academic journals with nearly three million articles, which include over 500 key Chinese journals from three major academic evaluation systems.

studies that were cited once or twice were also listed in the later pages compared with those studies that were cited many times. Therefore, it seems to be more unlikely to find any relevant article among listed results that were not cited at all by others. Using this searching method, our first-round classical searching resulted in a database of 223 articles.



⁴ The first-round search was based on the primary search results. The only task was to check whether those found papers were included in NSSD. Therefore, it could be done within one working day.

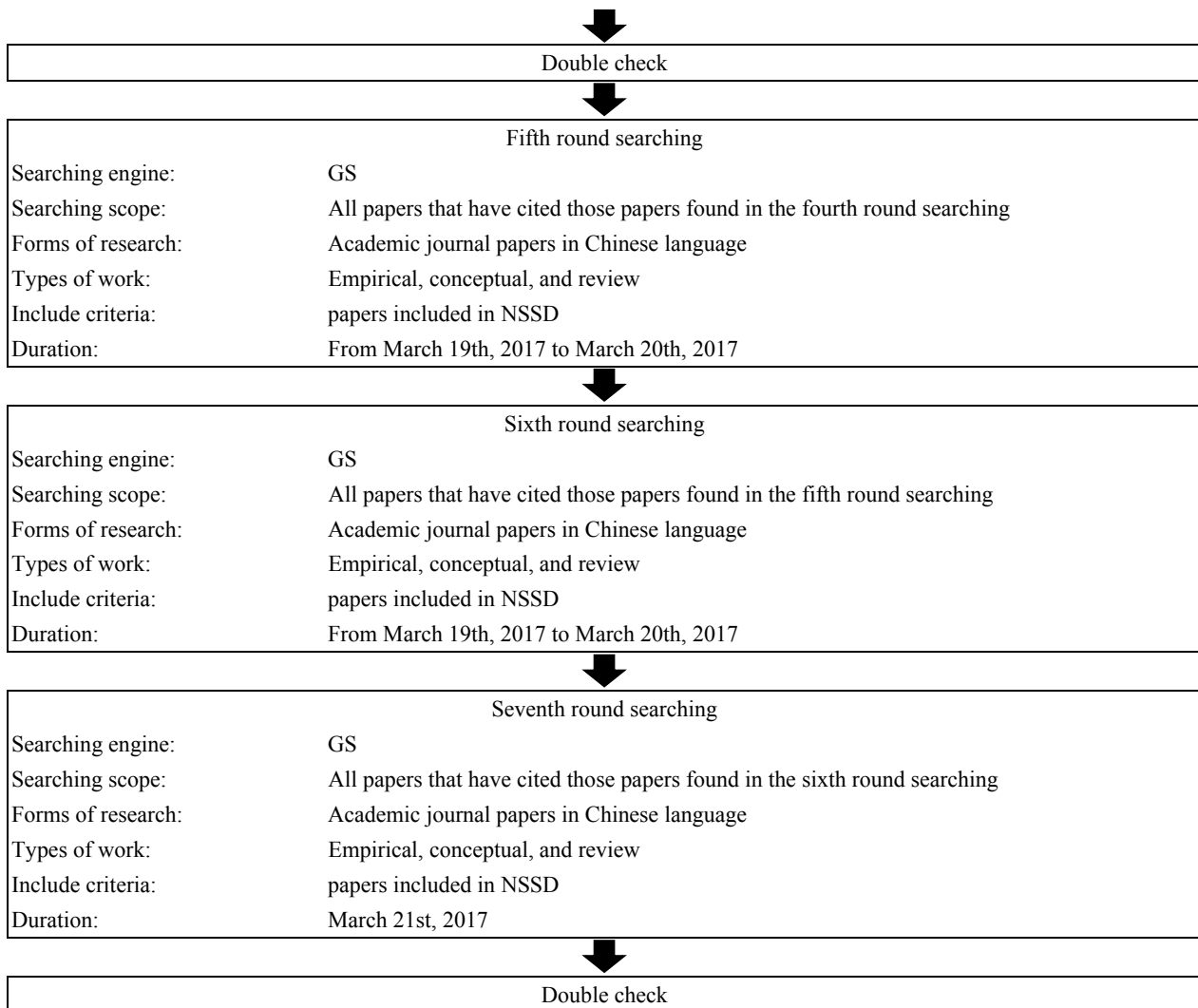


Figure 2. Searching protocol.

Based on the first-round search result, we conducted the second round searching to check all the papers that have cited those 223 articles. The goal was to find academic article in Chinese language that provides answers to the review question. Again, only those articles, which had been included by NSSD, were considered. Relevant empirical, conceptual, or review paper were included in our search results. After the second-round searching, a double check was done to make sure that the papers found were not included by our database repeatedly. After the double check, it was confirmed that another 217 articles were found.

After the second-round searching, the third-round searching was conducted to check all the papers that have cited those 217 articles found in the second round. The searching conditions were the same as the second round. After the third-round searching, a double check was done again to make sure that the papers found do not be included repeatedly. Another 120 articles were identified this time. Following the same steps, the fourth-round searching was conducted to check all the papers that have cited those 120 articles. After the double check, another 35 articles were found. Again, following the same steps in the fourth round, the fifth, the sixth, and the seventh round searching were conducted until all articles that have cited all found papers have been checked. The number of papers found in the last three rounds was relatively small. Therefore,

there was one double check for the last three rounds. After the double check, it was confirmed that another 25 articles were found. After seven rounds of searching, among those papers that have cited those selected articles, no more relevant study could be found. The whole searching process resulted in a database of 620 articles.

Review Protocol Effectiveness

To test the completeness of searching result, this research also compared the number of papers in our database with the number of studies that the five other reviews in Chinese language have cited. Those five review papers were identified through our search process and they have also been included as searching results of our review. To make the results comparable, there are some preconditions. First, in comparison with our review, all those reviews have more narrowed down review focuses. For example, the research question of Zhu (2004) was how inward foreign direct investment (iFDI) influenced China's export. Therefore, only the numbers of papers that deal with the *same specific review question* in our database were counted. Second, only those cited papers that are included in NSSD were counted to ensure the quality. Third, only those articles that have been published earlier than those reviews are counted. Fourth, only articles in Chinese language are used for comparison because those five reviews may also have cited researches from literature in English language. Therefore, the number of articles used for comparison is usually much smaller than the total number of studies that each of those review papers has actually cited. The result of comparison shows that, in all five cases, the numbers of papers in our database are larger. It means that our database is more complete than that of the other five reviews and the review protocol of this research works effectively.

The research question of Zhu (2004) was how iFDI influenced China's export. Among those studies that Zhu (2004) has cited, 11 NSSD included studies have a focus on impact of iFDI on export. The number of papers, which provided answers to that research question, in our database is 13. Tu and Fu (2008) reviewed the impact of Renminbi (RMB) exchange rate on China's export in general. Chen's (2009) focus was how RMB exchange rate affected China's agricultural industry export, which is even more narrow-down than the review of Tu and Fu (2008). The numbers of papers in our database are much larger than that they have cited. The review question of Huang and Sun (2007) was how technology innovation influences export. Most of their citations were from English language literature. Therefore, no Chinese language NSSD included paper is found in their reference. However, our database indicates that, before their study was published, there were already five papers in Chinese language that researched how technology innovation influenced China's export. Last but importantly, the review of Huang, Zhong, and Zhang (2015) was product-oriented, instead of focusing on the factors that affect the export of all kinds of products. Their research question was what influenced China's aquatic products export. They have cited 10 Chinese language NSSD included studies. In our database, however, there are 12 of such publications.

Data Analysis

This research has tabulated the key information of those 620 found articles for further analysis. First, every article is coded with a number from 1 to 620. For each article, 10 types of information, which include title, year of publication, type of research, type of data, source of data, unit of analysis, geographical unit of analysis, method of reasoning, sampling, and conclusions, are noted down. Sometimes, in one single research, the geographical unit of analysis is larger than China. Such articles are included, if they also provided conclusions related to what influenced China's export. Sometimes, a single paper studies both China's export and import.

Such cases were also included in our list. However, only the export related conclusions were noted down for analysis.

Data Overview

All 620 found articles were included in 188 Chinese academic journals. The number of papers included in each of those 188 journals was counted. We found that 124 of those 188 journals had included only one or two found papers. About 30% of all found papers were included in eight Chinese academic journals (see Table 1). Among all 188 journals, *国际贸易问题* (*Journal of International Trade*) had included 85 found articles, which has the largest number of all.

Table 1

Journals That Included Large Numbers of Found Papers

Journal name	Number of articles included
国际贸易问题 (Journal of International Trade)	85
国际经贸探索 (International Economics and Trade Research)	28
世界经济 (The Journal of World Economy)	17
管理世界 (Management World)	14
世界农业 (World Agriculture)	12
经济研究导刊 (Economic Research Guide)	12
统计与决策 (Statistics & Decision)	10
财经研究 (Journal of Finance and Economics)	10

Although the determinants of China's export growth is an extremely popular research topic in Chinese academia, this type of research in the Chinese language literature started relatively late. Our database shows that the first of such type of study was from Yu and Zhang (1997), who studied the factors that hindered China's electromechanical products export. Between 1997 and 2006, after Yu and Zhang (1997), there were altogether 76 papers, which represents about 12% of all the found papers (see Figure 3). Most of them, about 88%, emerged in 10 years between 2007 and 2016.

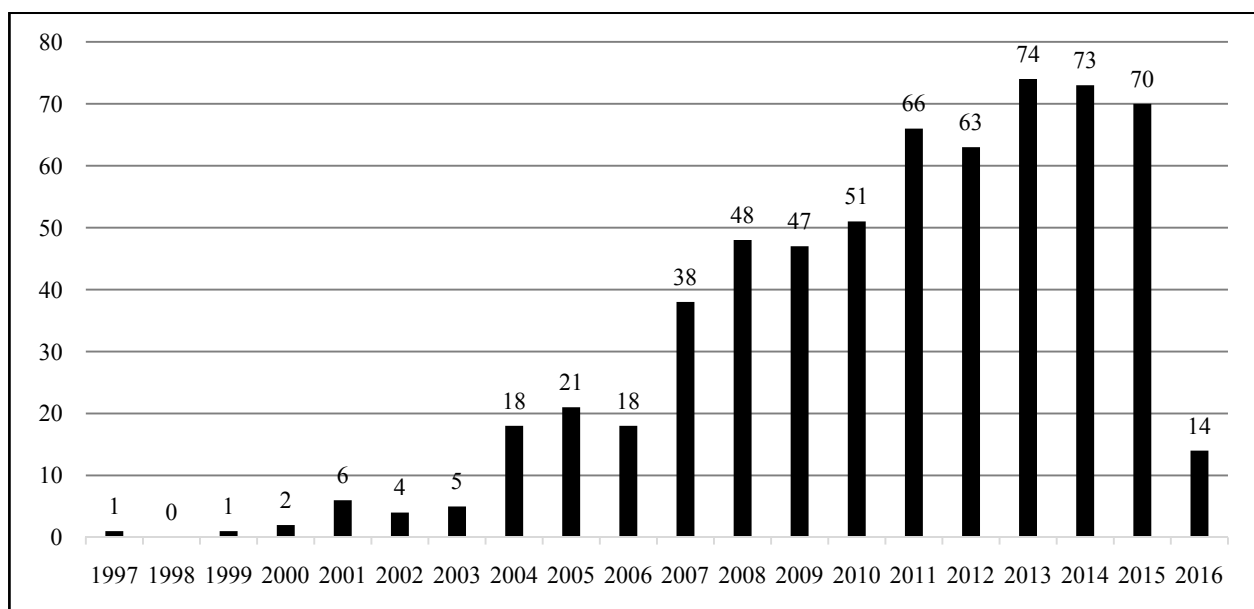


Figure 3. Year of emerging for all found papers.

About 84% of the 620 papers were empirical researches that tested existing models or revised models in the Chinese context. Almost 15% of them have used inductive approach to find out the determinants of China's export growth by using statistic proves and qualitative cases in their arguments. Five hundred and twenty-one empirical articles used quantitative data to test existing theories. However, only 12 of them, which represent only about 2% of all empirical papers, have collected their own first-hand data for analysis. 98% of them used secondary data, such as statistics from Chinese government or other organizations, to test their models. Following the searching criteria, five reviews are included in our database.

Majority of papers in our database had very broad units of analysis. About 47% of all found articles took all kinds of exported products as unit of analysis. Another 48% of them took multiple types of exported products as their units of analysis. Only about 4% of them narrowed down to a single type of product. There are seven papers (about 1%), which narrowed down their unit of analysis to either all exported products of small and middle-sized enterprises (SMEs) or multiple types of exported products of SMEs.

Most of papers in our database had very broad geographic units of analysis too. About 80% of them analyzed export of China or even that of several countries, which include China. Around 7% of them analyzed export on multi-provincial level. Approximately 11% of them analyzed export on the provincial level. Only about 2% of the papers studied export of a single city. Four review papers did not specify the geographic units of analysis.

Synthesis of Factors Influenced China's Export

This research follows the principle of "vote counting" (Petticrew & Roberts, 2008) to synthesize the conclusions of those reviewed articles. First, the factors that influenced China's export from each article have been identified and tabulated. Second, the frequency of each factor is counted, which shows the popularity of those factors in Chinese academia. Many researches have studied several factors that influenced China's export. All those factors, which were found to influence export either positively or negatively, have been counted. In the process of counting, we avoid to interpret or generalize those factors so that the *original* situation can be presented because the purpose of our review is to serve as a communication channel between East and West.

Results

Altogether 269 factors have influenced China's export (see Table 2). All these factors can be categorized into four aggregation levels, which are international level, domestic level, firm level, and individual level. There are 98 international level factors and 132 domestic level factors. The number of firm level factor is 26 and that of individual level factor is only 13. It indicates that most of the articles in Chinese language literature have focused on studying the influence of those macro level factors. Somehow, the role of export firms and those individuals who work in those firms did not attract much attention. On the other side, these factors vary in popularity because their frequency of appearance is very different. Considering the huge number of factors, this study only presents detailed information about those highly popular factors that appeared no less than 30 times in the conclusions of all articles in our database. These factors include iFDI, RMB exchange rate, importer's market demand, product competitiveness, barrier to trade (BT), 2008 financial crises, and importer's GDP. In addition, we also present how the micro level factors influence China's export, which received little attention from the Chinese academia.

Table 2

Factors Influenced China's Export

Aggregation level	Category	Factor	Frequency
		1997 Asia financial crisis	4
		2008 financial crisis	34
		European debt crisis	12
		Exchange rate of importer's currency to US dollar	1
		Export price index/import price index	1
		GDP per capita difference (China-importer)	1
		GDP similarity index (China-importer)	1
		Importer's average salary index/China's average salary	1
		Importer's business environment	1
		Importer's consumer price index	1
		Importer's demand (structure effect)	80
		Importer's GDP	34
		Importer's GDP per capita	5
		Importer's GDP \times China's GDP	1
		Importer's GDP/China's GDP	2
		Importer's GNP per capita	2
	Macroeconomic factors [33]	Importer's income	5
		Importer's income per capita	2
		Importer's industrial production index	1
		Importer's price	1
		Importer's producer price index	1
		Importer's production	1
		Importer's productivity	1
		Importer's quantitative ease	2
		International division of labor	2
		International oil price	1
		International raw material price	1
		inward foreign direct investment	160
		outward foreign direct investment	13
		RMB Exchange rate (REER, EER, and NEER)	94
		US debt crisis	1
		World GDP	6
		World GDP per capita	1
		Comparative advantage	3
		Competitiveness of export firms	1
		Competitiveness of industry	2
	International competition [7]	Competitiveness of product	73
		Multilateral resistance	5
		Trade liberalization between China and its importer	1
		Trade liberalization between China's importer with competitors	1
		China's embassy and consulate in foreign countries	1
	International politics [7]	Importer's custom tariff	1
		Importer's governance inefficiency	1
		Importer's import process standardization	1

(Table 2 to be continued)

International level [98]	International politics [7]	Importer's political environment	4
		Political system difference between China and importer	1
		Trade diversion effect	1
	Trade cooperation [5]	China's integration into global supply chain	11
		China's WTO membership	9
		Degree of trade liberalization	1
		Free trade zone and trade agreement	18
		Importer's WTO membership	2
	Trade conflict [6]	Anti-dumping and countervailing	10
		Barrier to trade including TBT and EBT	64
		Import quotas	2
		Importer's quality and safety standard	7
		Sanitary and phytosanitary	16
	Geography and culture [6]	Social Accountability 8000 International Standard	1
		Consumer awareness of environmental protection	1
		Cultural distance between China and importer	4
		Distance between China and importer	23
		Geographic and cultural factor	1
		Shared territorial boundary	6
	Demography [4]	Stream of organic food consumption	1
		Immigration to importer	1
		Importer's population	4
		Importer's population × China's population	1
	Trade cost [10]	Importer's population intensity	1
		Bilateral trade cost	1
		Changeable trade cost	4
		Container cost	1
		Custom clearance cost	2
		Fixed trade cost	7
		Import cost	1
		Import process duration	2
		Trade contract complexity	1
		Transportation cost	2
	Warehouse cost	1	
	Importer trade facilitation [5]	Business environment	2
		Importer's financing cost	1
		Infrastructure	4
		Overall trade facilitation	1
		Transportation infrastructure investment	1
	Logistics performance index [6]	Ability to track and trace consignments	1
		Delivery punctuality	1
		Efficiency of customs clearance	1
		International transportation facilitation	1
		Quality of logistics services	1
	Legal [1]	Quality of trade and transportation infrastructure	1
	Trade effect [8]	Execution ability of law	1
		Cyclical effect	1
		Export of a certain type of products	3

(Table 2 to be continued)

		Import of a certain type of products	3
		Import volume	10
International level [98]	Trade effect [8]	Import volume of raw materials	1
		Previous export	1
		Trade volume	1
		Trade volume/GDP	1
		Accumulation of Factors of production	1
		Average capital investment per project	1
		Capital accumulation	1
		Capital allocation efficiency	1
		Capital intensity	1
		Capital investment	8
		Capital/labor	3
		Educational investment	1
		Final consumption	1
		GDP	26
		GDP of non-state owned sector	1
		GDP per capita	6
		GDP/area	1
		GNP per capita	2
		Gross industrial output value	1
		Home market effect	18
	Economic factors [33]	House price	2
		Human capital	12
		Human capital investment	1
		Income	1
Domestic level [132]		Income per capita	2
		Industrialization	1
		material capital	2
		Percentage of import in GDP	1
		Percentage of trade in GDP	3
		Private-owned capital	1
		Producer price index	1
		Producer service	1
		Product price	10
		State-owned capital	1
		Technical human capital	1
		Total factor productivity	4
		Transaction value in technical market	1
		Administrative reform	1
		Bribery	1
		Credit scale	1
	Politics [21]	Decentralization export rebate burden to local government	1
		Decentralization of trade administration	1
		Economic reform	4
		Environmental regulation	5
		Export qualification standard	1

(Table 2 to be continued)

	Export rebate	27
	Factors price distortion	4
	Financial power centralization	1
	Financial power decentralization	2
	Governance inefficiency	4
	Government relationship	1
Politics [21]	Political institution quality	1
	Preferential policy	19
	Product quality and safety standard	11
	Social security expenditure	1
	Subsidy	6
	Tax receipt	1
	Trade permission to private owned firms	2
	E-commerce	1
	Incomplete infrastructure	2
	Information and Communication Technology (ICT) infrastructure	2
	Infrastructure investment	1
Trade facilitation [10]	International market information channel	1
	Logistics advantage	1
	Overall trade facilitation	1
	Trading efficiency	1
	Transportation infrastructure	2
Domestic level [132]	Utilization of internet	1
	Bank credit	4
	Business credit	2
	Commercial credit	1
	Financial development	12
	Financial intermediation	1
Financing & accounting [11]	Financial restrain	12
	Financial support from mother company	1
	Fixed asset	1
	Fixed asset investment	8
	Fixed asset investment per employee	1
	Internal savings	1
	Competition among local governments	2
	Competition in domestic market	2
Domestic competition [5]	Disorderly competition	1
	Local market protections	2
	Virulent price competition	2
	Demographic dividend	2
	Employed population	1
	Flowability of talent	1
Demography [7]	Labor force	17
	Labor force of certain industry/total labor force	1
	Labor intensity	3
	Population	1

(Table 2 to be continued)

		Average salary	1
		Custom tariff	2
		Domestic market entry cost	1
		Financing cost	1
	Cost [9]	Labor cost	12
		Legal minimum wage	2
		Marginal cost	1
		Production cost	5
		Raw material cost	1
		Biased technical improvement	2
		Import of advanced production equipment	1
		Information technology resource	1
		Informatization intensity	1
		Innovation capability	4
		Number of patent	7
		Number of R & D employee	1
		R&D investment	15
	Science & technology [17]	R&D investment/Sales volume	2
		Science and technology employee/total employee	1
		Science and technology investment	3
		Scientific research	1
		Scientific research investment	1
	Domestic level [132]	Technology complexity	1
		Technology improvement	9
		Technology Innovation	4
		Technology Know-How	2
		Export intensity	1
		Industry cluster	8
	Industry related [5]	Industry structure	2
		Number of enterprise export to a certain importer	1
		Vertical integration	1
		Export product diversity	3
	Product [3]	Overall product quality and safety	5
		Product commercialization	1
		Energy consumption	2
		Information service outsourcing	1
		Manufacturing ability	1
	Production [8]	Processing capability	2
		Product related resource	1
		Production quantity	8
		Productivity	11
		Supply ability	4
		Illegal trade	1
	Legal [3]	Intellectual property protection (IPP)	3
		Intellectual property rights trading center	1
		'Guanxi' with intermediate supplier	1
Firm level [26]	External relationship [9]	Commitment between exporter and intermediate trader	1

(Table 2 to be continued)

		Communication quality between exporter and intermediate trader	1
		Distribution channel	1
		Distribution channel outcome control	1
	External relationship [9]	Information sharing between exporter and intermediate trader	1
		International outsourcing	1
		Raw material problem	1
		Trust between exporter and intermediate trader	1
		Export destination strategy	1
		Firm age	1
		Innovation capability	1
		Innovative organization culture	1
Firm level [26]		International market development	1
		Marketing promotion	2
		Membership of commercial association	1
		Norm-based mechanism of governance	1
	Internal factors [17]	Price differentiation strategy	2
		Product branding	1
		Product differentiation strategy	2
		Product price	1
		Product quality	1
		Promotion differentiation strategy	1
		Short-term view of resource intensive firms	1
		Size of enterprise	3
		Technology innovation	2
		Employee personal 'Guanxi'	1
		Entrepreneurship spirit	1
		Export market orientation	1
		Flexibility	2
		Intercultural competence	1
		International experience	1
Individual level [13]	Manager characteristics [13]	Knowledge of China's international trade policy and regulation	1
		Knowledge of international settlement	1
		Perception of uncertainty	1
		Personal relationship with the government	1
		Pro-active market orientation	1
		Reactive market orientation	1
		Risk orientation	1

Inward Foreign Direct Investment

iFDI influenced China's export was mentioned 160 times, which makes iFDI the most discussed factor. However, Chinese authors did not reach a perfect consensus in terms of how iFDI affects export. Most of the studies concluded that iFDI influenced China's export positively. Eight studies concluded that iFDI was not the reason for export. Two studied even found that iFDI influenced export negatively (Zhou & He, 2008; Cui & Chen, 2012). There are also studies that mentioned that iFDI has a lag effect on export. For example, Zhong and Ma (2010) concluded that iFDI boosted China's export with a lag phase of two to three years. Besides,

some articles focused on the short-term and long-term effect of iFDI. For example, Y. M. Liu, Y. F. Liu, and Huang (2012) found that, in a long term, China's iFDI boosted its export volume, but iFDI decreased export in a short term.

Renminbi Exchange Rate

The second most discussed factor is the RMB exchange rate. Ninety-four papers concluded that it had an impact on export. Among those 94 articles, most of the studies confirmed that a negative correlation between RMB exchange rate and China's export. However, a few counterviews also appeared. For example, Kong and Li (2008) found that appreciation of RMB had no impact on China's agricultural products export. Wang and Huang (2009) also concluded that there was no cause and effect relationship between exchange rate and China's export to Russia. Meanwhile, Wang and Zhao (2009) also found that fluctuation of RMB exchange rate did not cause export growth.

Among those who found RMB exchange rate does affect export, there are also some different views regarding *how* RMB exchange rate affects export. For example, Zhang and Xu (2014) concluded that long-term continuous appreciation of RMB boosted China's export. Zhang and Du (2014) found that, in long term, appreciation of RMB boosted China's export by improving export product structure. Sun and Song (2008) found that RMB exchange rates to different currencies brought different impact on export. For example, RMB exchange rate to US dollars had no remarkable influence on China's export. RMB exchange rate to Euro had very small impact on China's export to European Union. However, appreciation of RMB to Japanese Yen decreased China's export to Japan significantly. Contrary to Sun and Song (2008), Kang and Lu (2007) concluded that depreciation RMB to US dollars boosted export of Henan province. It shows that changes of RMB exchange rate probably bring different influences on different provinces. By analyzing China's export data with 147 countries from 2000 to 2011, Zhang and Tian (2014) concluded that the level of appreciation of RMB played a role. They found that: (1) significant appreciation of RMB hindered China's export; and (2) slight appreciation of RMB boosted China's export.

International Market Demand

Eighty articles confirmed that international market demand has influenced China's export. In the Chinese language literature, the high frequency of this factor derives from the frequent use of constant market share (CMS) model from Tyszynski (1951). About 53 out of those 80 articles have used either CMS model directly or its modified versions in their specific research contexts. In fact, most of the researches confirmed that international market demand was positively correlated to China's export. Among those 80 studies, only Qiao and Yi (2010) mentioned that, before China joined WTO from 1996 to 2000, demand influenced China's export negatively.

Product Competitiveness

Product competitiveness is the fourth most frequent studied factor that influences China's export. Seventy-three articles have concluded that how it affected export. Our database shows that product competitiveness plays a critical role in China's export. We observed that many articles mentioned that product competitiveness was the "main reason" that drove China's export. Qi (2009) as well as Gao and Wang (2010) are two examples. In addition, Yan and Qi (2013) mentioned that product competitiveness is a "critical reason" for China's export. In particular, Wang (2014) used "most important reason" to describe the role of product competitiveness in China's export. There are only three papers (Yang & Zhang, 2015; Jin & Yang, 2014; Huo, 2011), which have mentioned that product competitiveness had little or low influence on export.

Barrier to Trade

BT is also one of most popular factors that have been studied in Chinese language literature. BT includes technical barrier to trade (TBT) and environmental barrier to trade (EBT). Sixty-four articles have made conclusions on how BT affected China's export. Most of them studied either how TBT or EBT affected China's export. Four articles (Liu & Wu, 2015; Tang, Song, Li, & Fu, 2013; Zhan, 2013; Gu & Liang, 2016) studied how BT in general influenced China's export. Articles in our database show that usually BT negatively influenced China's export. However, a few studies argued that BT can also contribute to China's export positively. For example, Bao and Zhu (2015) mentioned that, after China joined WTO, in long term, TBT brought positive impact on China's export because: (1) the improvement of both productivity and government management efficiency decreased the negative influence of TBT; and (2) China has improved its ability of dealing with TBT. Similarly, Qin and Qi (2008) as well as Wang (2011) concluded that TBT positively affected China's export in a long term. The reason for the positive influence was that, according to Yang (2014), TBT triggered China's technology improvement.

2008 Financial Crisis

Thirty-two articles in our database have mentioned that 2008 financial crisis has affected China's export. In fact, they have reached the consensus that 2008 financial crisis decreased export. However, one should not only see the negative side of financial crisis. Xiang (2011) mentioned that 2008 financial crisis has increased the number of types of new products that China has exported because financial crisis pushed technology innovation and reformation of economic structure.

Importer's GDP

Another 30 articles in our database concluded that importer's GDP has influenced China's export. Most of them mentioned that importer's GDP correlated to China's export positively. Only two papers had a different view. Zhu, Tian, and Wang (2006) concluded that, in most of the cases, neither Japan's GDP nor China's GDP had any significant impact on China's export to Japan. Liu and Li (2010) found that importer's GDP even negatively correlated to China's honey export.

Micro level Factors Overlooked

Somehow, micro level factors that influenced export have attracted very little attention in the Chinese academia. There are altogether five articles out 620, which is less than 1%, had addressed the micro level factors. Thirty-nine micro level factors appeared in the conclusions of those five articles. Among those micro level factors, there are only 13 individual factors. Most of them appeared only once in the conclusions.

Discussion

Our database indicates that most of found studies have a broad geographical unit of analysis. For example, many articles attempted to identify which factors have affected export of the whole China. Using broad geographical unit of analysis has its challenge because different provinces in China experienced very imbalanced development. The provinces in east coast area are generally more developed in terms of economic indicators. For example, the total export volume of Zhejiang province in 2015 was more than 276.3 billion US dollars. The export volume per capita was about 5669.6 US dollars (Zhejiang Statistical Bureau, 2016). In comparison, the total export volume of Xinjiang province in northwest China was only about 17.5 billion US dollars. The export volume per capita of Xinjiang was about 741.6 US dollars (Xinjiang Statistical Bureau,

2016). In addition to that, the goods manufacturing and business in Zhejiang was prosperous in ancient China and due to the geographic location, the people in Zhejiang started international handcraft goods trade with Japan or Britain in Qing dynasty about 100 years ago (Andersson, Danilovic, & Huang, 2015). In terms of both export volume and business culture perspective, Zhejiang is much more developed than Xinjiang. Therefore, a factor that has brought much benefit for export of east coast provinces may not work the same in the middle or western provinces. Therefore, specific factors that bring significant positive or negative influence on certain provincial context should be recognized by focusing on smaller geographical units of analysis.

Another characteristic of the past researches in Chinese language literature is a broad unit of analysis. The challenge of applying a broad unit of analysis is that the contributions that different sources, for example, different industries, have brought to China's export vary in significance. Again, take Zhejiang province for example, its private owned enterprises (POEs) have played an increasingly important role in its export growth in recent years (see Figure 4). POEs have made a much more significant contribution than that of state-owned enterprises (SOEs). In 2015, the export volume of Zhejiang's POEs was more than 11 times of that of SOEs. In this case, a more narrowed down unit of analysis is necessary because macro level factors are the same for both POEs and SOEs. Only those macro level factors are not able to explain why there is a huge difference between these two types of enterprises. Therefore, instead of studying how a certain factor influences Zhejiang's export in general, it is critical to find out: (1) the unique factor that affected export of POEs; and (2) how such a factor works.

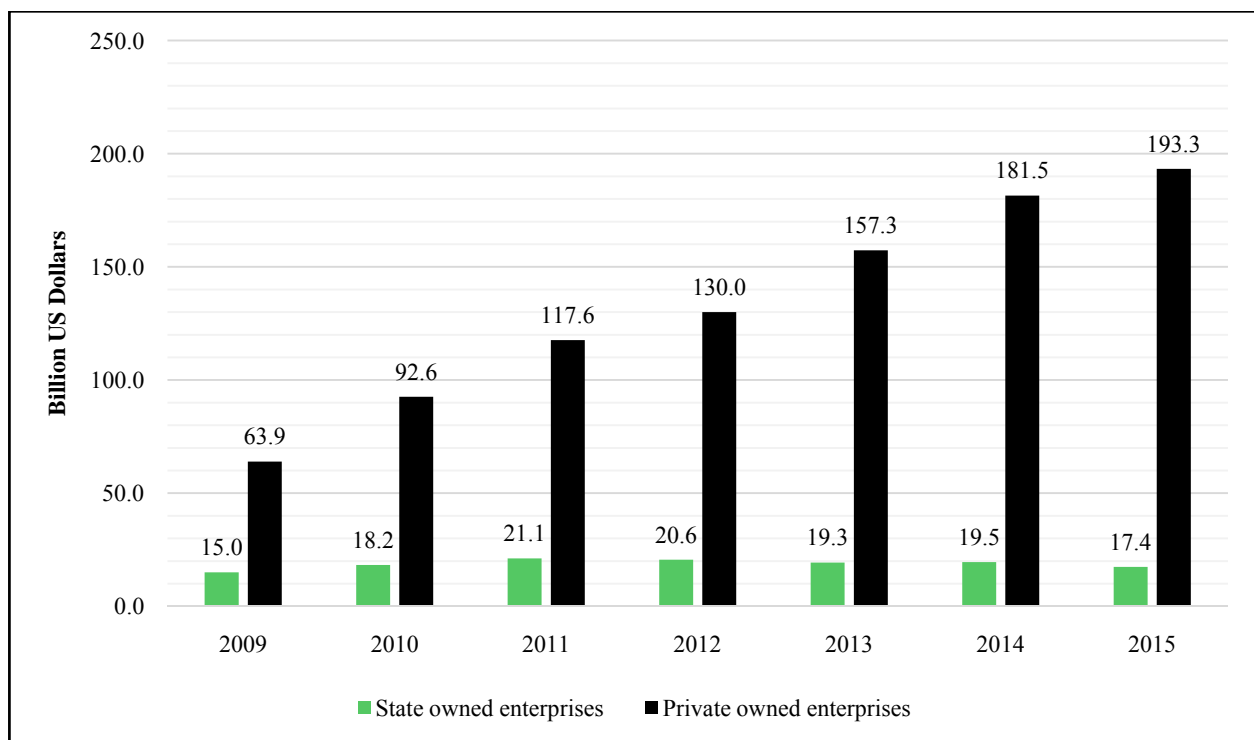


Figure 4. Export volumes of SOEs and POEs in Zhejiang. Source: Zhejiang Statistical Yearbook (2016).

On the other side, English language literature revealed that the individual level factors play a critical role in export. For example, Reid (1981) mentioned that decision-makers are primary determinants in firms engaging in foreign market. Gray (1997) also mentioned that company performance is likely to be highly

correlated with key decision-makers and critical exporting decisions, such as market selection, entry and penetration decisions are likely to influence levels of internationalization and performance. Key export decision-makers are a critical factor which determines the export potential of a firm (Ibeh & Young, 2001) and decision-makers of SMEs have a significant influence on the initiation of exports (Ellis & Pecotich, 2001) as well as their export behavior (Reid, 1981). Andersson (2000) also mentioned that there were strong indications that these individuals influenced the firms' international processes in various ways. However, our review database shows that most of the past researches in Chinese language literature paid much attention to the macro level factors that influenced China's export. Individual level factors were overlooked. Among all 620 articles, there are only five papers shed light on how characteristics of individuals who work in the firms influenced export. In particular, our database shows that no research in the Chinese language literature had studied whether and how decision-making of Chinese entrepreneurs affected export growth.

Conclusion

This paper systematically reviews the Chinese articles that studied the determinants of China's export. One of the characteristics of found papers is "broad". Most of the articles have broad product units of analysis and broad geographical units of analysis. Another characteristic is "hot". Nearly 90% of all 620 articles appeared in the recent 10 years. Besides, research articles in Chinese language literature heavily relied on secondary data. We also found the scarcity of researches, which have focused on the micro level factors that influenced China's export.

Our review has identified that iFDI, RMB exchange rate, importer's market demand, product competitiveness, BT, 2008 financial crisis, and importer's GDP are the most popular influence factors that have affected China's export. In fact, our database shows that iFDI usually affected China's export positively. In most of the cases, RMB exchange rate correlated to China's export negatively. Appreciation of RMB decreased export. In addition, most of the researches confirmed that international market demand, product competitiveness and importer's GDP positively correlated to China's export. Furthermore, most of scholars confirmed the negative influence of BT. Finally, 2008 financial crisis decreased China's export.

Based on the review results, we propose more narrow-down units of analysis for future researches. We also noticed that those macro level factors mentioned by past researches could not explain some specific export growth phenomenon in China. Our review together with the evidences from internationalization decision literature suggest that to study the micro level factors, for example, how the decision-making of those entrepreneurs and managers who make export decisions in Chinese firms influences export performance is probably a promising direction to gain a more complete picture of the driving forces of China's outstanding export performance.

Limitation

To our best knowledge, with 620 academic journal papers being selected and reviewed, our review probably has the largest database among those reviews that focused on what factors influence China's export. On the other side, in two cases, the percentages of papers that are found in both previous reviews and our database are relatively small. For example, among those 11 articles in NSSD that Zhu (2004) has cited, only three are included in our database. It indicates that our database can still be expanded, although it is already more complete than existing reviews. Our review has used a "down-stream" searching strategy. An initial

database was first created by searching target papers with key words. After that, those papers that have cited the studies in our initial database were checked to search more target papers. Future review can also use an additional “up-stream” strategy by checking the references of those found papers to make the database become more complete.

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