Hao Wei[1]

COMPARATIVE ADVANTAGES OF IMPORTING MANUFACTURES AT CHINESE MARKET [*]

Based on 230 types of manufactures classified according to technological contents, this paper analyzes the comparative advantages of various types of goods imported into China from 14 countries and regions. Furthermore, this paper investigates changes in these advantages between 2000 and 2011. The results show that from 2000 to 2011, the types of imported goods with a comparative advantage at Chinese market dropped from 80 in 2000 to 58 in 2011, and the RCA indices of the imported products declined overall. The comparative advantage level (RCA index) of low- and medium-tech industrial products dropped particularly sharply. Imported products with a comparative advantage at Chinese market vary: automatic equipment (MT1) imported from Germany, primary manufactures (PM) and resource-based manufactures (RB) from Australia, and resource-based manufactures from Brazil, India and Russia offer a significant comparative advantage (RCA > 3). RCA indices for imported goods from the remaining countries are less than 3.

Keywords: *imports; Chinese market; comparative advantage; RCA index.*

Хао Веї

ПОРІВНЯЛЬНІ ПЕРЕВАГИ ІМПОРТОВАНИХ ТОВАРІВ НА КИТАЙСЬКОМУ РИНКУ

У статті проаналізовано порівняльні переваги товарів, що імпортуються до Китаю з 14 країн та регіонів на підставі їх розподілу на 230 типів у залежності від технологічного вмісту імпорту. Порівняння проведено за період 2000–2011 років. За цей час кількість типів імпортованих товарів з порівняльною перевагою на китайському ринку знизилась з 80 до 58, та й в цілому індекс порівняльної переваги (ІПП) значно впав. Особливо відчутним було падіння для категорій низько- та середньотехнологічних товарів. Найбільш значні ІПП на ринку КНР мають наступні категорії імпорту: автоматизоване обладнання з Німеччини, сировина та ресурси з Австралії, товари первинного виробництва з Бразилії, Індії та Росії. Індекси для інших типів імпортованих товарів були значно нижче.

Ключові слова: *імпорт; китайський ринок; порівняльна перевага; індекс виявленої порівняльної переваги.*

Форм. 1. Табл. 6. Літ. 15.

Хао Веи

СРАВНИТЕЛЬНЫЕ ПРЕИМУЩЕСТВА ИМПОРТИРУЕМЫХ ТОВАРОВ НА КИТАЙСКОМ РЫНКЕ

В статье проанализированы сравнительные преимущества товаров, импортируемых в Китай из 14 стран и регионов на основании их разделения на 230 типов в зависимости от технологического содержания импорта. Сравнение проведено за период 2000–2011 годов. За этот временной отрезок количество типов импортируемых товаров со сравнительными преимуществами на китайском рынке упало с 80 до 58, и в целом индекс сравнительного преимущества (ИСП) значительно упал. Особенно ощутимо ИСП упал для категории низко- и среднетехнологичных продуктов. Наиболее значительные ИСП на рынке КНР имеют следующие категории импорта: автоматизированное оборудование из Германии, сырьё и ресурсы из Австралии, товары первичного производства

[1] Business School, Beijing Normal University, P.R. China.

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из Бразилии, Индии и России. Индексы по другим типам импортируемых товаров значительно ниже.
Ключевые слова: *импорт; китайский рынок; сравнительное преимущество; индекс выявленного сравнительного преимущества.*

Introduction. Since joining the WTO in 2001, China has witnessed substantial import growth. The United Nations statistics shows that from 2000 to 2011, China's gross import value rose from 225 bln USD in 2000 to 1.7434 trln USD in 2011, thus making a 7.75 times increase. The share of Chinese imports in the total global imports rose from 3.43% in 2000 to 9.53% in 2011, with the annual import growth rate of 22.53% and the overall increase of 6.10%. China's import volume grew from the 8th position in the world in 2000 to 2nd in 2011.

China's import growth is attributed to its rapid economic development and foreign trade policy changes. There is no doubt that with further opening up of China and growing domestic market demand, China will develop into a leading trade and economic power, bringing additional import growth. To discover the future development directions of China's import market, an indepth research on the competitiveness of different types of imported goods at Chinese market needs to be conducted.

Therefore, based on 230 types of manufactures classified according to their technological contents, this paper conducts a statistical analysis of comparative advantages of various types of commodities imported to China from 2000 to 2011. It also researches the comparative advantages of different types of products from 14 countries and regions at Chinese market.

Literature review. Richardson (1999) calculated the RCA (regional revealed advantage) index and RRCA index (regional revealed comparative advantage index) of manufactures from 15 EU countries using time-series and cross-sectional data. Bender (2001) conducted a comparative analysis on the RCA of manufactures exported from East Asian and Latin American countries at the world market. Lall (2002) primarily analyzed the exports of Chinese products with different technology contents in 1985 and 1998. Mehdi Shafaeddin (2007) calculated the RCA indices of capital (technology) intensive goods exported from various markets to China and Mexico. Jing Ma (2010) calculated the RCA index of Norwegian salmon at Chinese market and conducted a comparative analysis between Norway and its major competitors at Chinese salmon market. Monzur Morshed (2012) launched an indepth analysis of Chinese exports of lychee and longan using RCA indices. Manoj Siwach (2012) calculated the RCA indices of Indian exported products at global markets and the RCA indices of its exported products to the US at the North American market between 2006 and 2010.

Guan Zhixiong (2002) analyzed the competitiveness of Chinese IT products from 1990 to 2000. Fu Chaoyang and Chen Yu (2006) calculated the RCA index and net export ratio index of Chinese export products. Wei Hao et al. (2011) analyzed the comparative advantages of Chinese exported manufactures between 1999 and 2009. In addition, Zheng Mingshen (2005) conducted an empirical study on international competitiveness of Chinese IT industry. Song Hong (2008) studied the impact of external markets upon industries with comparative advantages, using Chinese textile and apparel industries as examples. Cheng Baodong (2010) measured the comparative and competitive advantages of Chinese timber industry. Li Yumei (2011) studied

the comparative advantage of Chinese tea at the world market. Liuqing Bo and Liu Jun Chang (2012) analyzed the comparative advantage of Chinese chestnuts.

In general, influenced by the mercantilist philosophy and the trends in national policy, the research of both Chinese and foreign scholars centers on the RCA index of Chinese exports at the world market or on particular countries and regions. Unfortunately, there is a lack of research on the RCA indices of products imported into China from various countries and from China's major trading partners in particular. With China's opening up, the country has begun putting equal emphasis on imports and exports, on introducing foreign capital and on investing in foreign countries. It is therefore particularly crucial to obtain a detailed study on comparative advantages of Chinese imported manufactures from around the world, including all major countries, for further promotion of Chinese imports. To this end, this paper calculated changes in comparative advantages of Chinese importis from the world market and various countries or regions in China using data from 2000 to 2011; these data are classified according to the criteria proposed by Oxford University professor Sanjaya Lall.

Classification of manufactures, evaluation indicators and data sources.

1. Classification of manufactures. The paper classifies manufactures primarily based on the classification method used by Sanjaya Lall for his study on the competitiveness of manufactures produced by developing countries. The total of 230 types of finished products, constituting an overwhelming majority of China's manufactures trade, were divided into 5 major categories according to the technological contents and subsequently into additional 9 categories. This method classifies manufactured goods into different groups and takes the conditions of developing countries into consideration. Table 1 illustrates the Sanjaya Lall's classification method.

Table 1. **Classification of Manufactures**

Classification of Manufactures	English Code	Quantity of Products	Representative Products
primary manufactures	PM	48	copper, iron, zinc
resource-oriented manufactures	RB	62	
agriculture-based manufactures	RB1	35	beverages, wood products, edible oil
other products	RB2	27	oil/rubber products, cement, stones, glass
low-tech manufactures	LT	44	
textiles, clothing, and footwear	LT1	20	textiles, clothing, hats, leather, travel goods
other products	LT2	24	porcelain, simple metal parts, toys, plastic products
medium-tech manufactures	MT	58	
automation equipment	MT1	5	commercial and passenger vehicles, motorcycles and parts
processing manufactures	MT2	22	synthetic fibers, chemicals, dyes, fertilizers, rigid/iron pipe
engineering manufactures	MT3	31	engines, industrial machinery, vessels, pumps, watches
high-tech manufactures	HT	18	
electronic and electrical manufactures	HT1	11	office/data processing/telecom equipment, transistors, power generation equipment
other products	HT2	7	pharmaceutical products, aviation products, optical/measuring equipment

Source: based on the relevant classification criteria proposed by Sanjaya Lall (2000).

2. Evaluation indicators. The RCA index is widely used to measure the comparative export advantage of a nation in foreign business. The index was first proposed by Balassa in 1965/1977 and later widely applied in comparative advantage calculations, with a variety of extensions created. Fundamentally, comparative advantage is measured using the index as a product's share in a country's exports in relation to its share in the world trade. The RCA index of an exported product can be calculated using this formula:

$$RCA_{ij} = (x_{ij} / x_{it}) / (x_{nj} / x_{nt}). \quad (1)$$

Variable x in the equation is export value, which refers to different scopes and categories of products depending on the research. In light of the current literature, the RCA index can be divided into 3 categories: (1) the comparative advantage of a country's product in the world market, such as that of Chinese textiles at the global market; (2) the comparative advantage of a country's product at a regional market, such as that of Chinese textiles at the EU market; (3) the comparative advantage of a country's product at another world market, such as that of Chinese textiles at the US market.

In general, (1) is called the Revealed Comparative Advantage Index (RCA index), while (2) and (3) are called the Regional Revealed Comparative Advantage Index (RRCA index). The RRCA index is aimed at examining the comparative advantage of particular goods at the markets of major trading partners, but both RRCA and RCA identify advantages and disadvantages of particular products. Comparative advantage is determined by the value of the RCA index. A product has a comparative advantage if this value is greater than 1 and a comparative disadvantage if this value is less than 1.

3. Data sources. This paper focuses on the overall structure of Chinese imported manufactures from 1995 to 2011 and changes in China's imports from its major trading partners. The data used in the paper is extracted from the National Bureau of Statistics database.

First, the 16 largest importing countries and regions for China are selected by volume, and the acquired relevant data are combined. This paper then chooses different types of importing countries or regions as the study objects. Data are obtained for 14 selected countries: (1) developed countries: United States, Japan, Germany, South Korea and Australia; (2) major developing countries: Brazil, Russia, India and South Africa; (3) other neighboring countries and regions: Singapore, Thailand, Malaysia, Indonesia and Taiwan.

Comparative advantages of imported manufactures at Chinese market.

1. Distribution of comparative advantages of imported manufactures at Chinese market. Table 2 shows the distribution of comparative advantages of various impor-ted manufactures at Chinese market in 2011. Among 230 types of imported manufactures at Chinese market, 37 have a general comparative advantage ($1 < RCA \leq 2$), 7 have a strong comparative advantage ($2 < RCA \leq 3$), and 14 have a significant comparative advantage ($RCA > 3$). The grand total of 58 types have a comparative advantage ($RCA > 1$), accounting for 25.22% of 230 types of imported manufactures. Therefore, one quarter of imported goods have a comparative advantage at Chinese market.

Among 48 types of primary manufactures, 13 have a comparative advantage at Chinese market, including raw fur (212), synthetic and recycling rubber scrap (232),

sawdust, shavings and wood waste (246), crude oil (333), stone, sand and gravel (273), copper (682), nickel (683), hides (except fur skins) (211), oil seeds and oleaginous fruits (222), iron sulfide (274), cotton (263), wool and other animal hair (268), and briquettes, lignite and peat (322). Briquettes, lignite and peat (322) has the highest RCA, with the value of 5.303. The average RCA index of primary manufactures is 1.110.

Table 2. **Distribution of RCA between Imported Manufactures at Chinese Market, 2011**

	1 < RCA ≤ 2	2 < RCA ≤ 3	RCA > 3	Max	Average	%
PM	212 232 246 333	273 682 683	211 222 274 263 268 322	5.303	1.110	27.08
RB						
RB1	248	621	247 251 265	5.409	0.747	14.28
RB2	335 516 592	511	281 287 288	6.495	1.204	25.93
LT						
LT1	611 613 651 654 851			1.863	0.570	25.00
LT2	898			1.140	0.380	4.17
MT						
MT1				0.677	0.336	0
MT2	266 267 513 582 598 671 882	512 572		2.728	0.957	40.91
MT3	724 725 726 728 737 749 763 772 884			1.977	0.792	29.03
HT						
HT1	718 759 771 774 778		776	3.131	1.145	54.55
HT2	874 881		871	6.430	1.620	42.86

Note: % refers to the share of the import value of manufactures whose RCA is greater than 1 in the total import value of manufactures for the corresponding category.

62 types of resource-based manufactures (RB) include 35 types of agriculture-based manufactures (RB1) and 27 types of other resource-based manufactures (RB2). Specifically, (1) among the RB1 products, 5 types have a comparative advantage, including molded timber and railroad ties (248), rubber material (621), logs or roughly squared wood (247), pulp and paper scrap (251) and fibers in vegetables, cotton, and jute (265). Cotton and jute (265) have the greatest RCA among the RB1 products, with the RCA index of 5.409. The average RCA index of RB1 products is 0.747. Furthermore, (2) among the RB2 products, 7 types present a comparative advantage, including waste petroleum products (335), other organic chemicals (516), starch, inulin and wheat gluten (592), hydrocarbons and derivatives (511), iron ore and its concentrates (281), base metal ore and its concentrates (287) and non-ferrous metal scrap (288). Iron ore and its concentrates (281) has the highest RCA index – 6.495. The average RCA index of RB2 products is 1.204.

42 types of low-tech manufactures (LT) include 20 types of textiles, clothing, footwear (LT1) and another 24 types of low-tech manufactures (LT2). Specifically, (1) among 20 types of LT1 products, 5 have a general comparative advantage, including leather (611), tanned or dressed furskins (613), textile yarn (651), other textile fabrics (654) and footwear (851). Among these products, leather (611) has the greatest RCA index of 1.863. The average RCA index of all LT1 products is 0.570.

However, (2) among 24 types of LT2 products, musical instruments and parts and accessories (898) is the only type that has a general comparative advantage.

58 types of medium-tech manufactures (MT) consist of 5 types of automation manufactures (MT1), 22 types of processing manufactures (MT2), and 31 types of engineering manufactures (MT3). Specifically, (1) among 5 types of MT1 products, none has a comparative advantage. The maximum RCA index of MT1 products is 0.677, and the average RCA index is 0.336. Next, (2) among 22 types of MT2 products, 9 have a comparative advantage. Ethanol and phenol (512) and explosives (572) have a strong comparative advantage. Synthetic fibers suitable for spinning (266), other man-made fibers (267), carboxylic acid (513), concentrated products (582), miscellaneous chemicals (598), cast iron (671) and photographic or cinematographic goods (882) have a general comparative advantage. Phenol (512) has the highest RCA index value of 2.728. The average RCA index of MT2 products is 0.957. Finally, (3) among 31 types of engineering manufactures, 9 have a comparative advantage, including textiles, leather machinery and corresponding parts (724), paper mill and pulp mill machinery (725), printing and book binding machinery and corresponding parts (726), other specialized industry-specific machinery and equipment (728), metalworking machinery (except machine tools) (737), non-electrical machinery parts and accessories (749), sound recording or reproducing machines (763), switching equipment and parts (772) and optical goods (884). The maximum RCA index is 1.977 (optical goods – 884). The average RCA index of engineering manufactures is 0.792.

18 types of high-tech manufactures (HT) include 11 electronic and electric power manufactures (HT1) and 7 other high-tech products (HT2). Specifically, (1) among 11 types of electronic and electric power manufactures (HT1), 6 have a comparative advantage. Other power generating machinery and parts (718), parts and accessories for office machines (759), electrical machinery and corresponding parts (771), electrical diagnostic apparatus and radiation apparatus (774) and electrical machinery and apparatus (778) have a general comparative advantage. Thermionic tubes and cold cathode tubes (776) have a significant comparative advantage. The average value for the RCA index of HT1 products is 1.145, and the maximum value is 3.131 (thermionic tubes and cold cathode tubes (776)). Furthermore, (2) among 7 types of other high-tech manufactures (HT2), 3 have a comparative advantage. Measuring and controlling instruments and apparatus (874) and photographic apparatus and equipment (881) have a general comparative advantage, while optical instruments and apparatus (871) has a significant comparative advantage. The maximum RCA index value of HT2 products is 6.430 (optical instruments and apparatus (871)), and the average RCA index is 1.620.

2. Changes in the comparative advantages of imported goods at Chinese market. Among 230 types of imported manufactures in 2000 in China, 80 have a comparative advantage (RCA > 1), accounting for 37.38% in total. 20 have a significant comparative advantage (RCA > 3), 25 have a strong comparative advantage ($2 < RCA \leq 3$), and 35 have a general comparative advantage ($1 < RCA \leq 2$). It can be concluded that imported goods enjoy a particular degree of competitiveness at Chinese market. In addition, among 80 types of products with a comparative advantage, there are 24 medium-tech manufactures, 15 primary manufactures, 17 resource-based manufac-

tures, 12 low-tech finished products and 12 high-tech manufactured products (Table 3).

Table 3. **Changes of RCA of Imported Goods at Chinese Market, 2000 to 2011,** *compiled by the author*

Year	Types of Manufactures	RCA > 1	1 < RCA ≤ 2	2 < RCA ≤ 3	RCA > 3
2000	48 primary manufactures	15	6	4	5
	62 resource-based manufactures	17	9	4	4
	44 low-tech manufactures	12	0	10	2
	58 medium-tech manufactures	24	11	6	7
	18 high-tech manufactures	12	9	1	2
	Total	**80**	**35**	**25**	**20**
2011	48 primary manufactures	13	4	3	6
	62 resource-based manufactures	12	4	2	6
	44 low-tech manufactures	6	6	0	0
	58 medium-tech manufactures	18	16	2	0
	18 high-tech manufactures	9	7	0	2
	Total	**58**	**37**	**7**	**14**

By 2011, great changes had taken place in the comparative advantages of imported goods at Chinese market. The types of products with a comparative advantage (RCA > 1) decreased by 22 types compared to 2000, to the total of 58, accounting for 27.10% of the total. Types of products with a strong comparative advantage (2 < RCA ≤ 3) reduced by 18 compared to 2000, to the total of 7; types of products with a significant comparative advantage (RCA > 3) declined by 6 compared to 2000, to the total of 14; and the quantity of all products with a comparative advantage declined slightly. Examining the composition of products, medium-tech manufactures dropped the most, from 24 types in 2000 to 18 in 2011; primary manufactures reduced by 2 types, from 15 in 2000 to 13 in 2011; resource-based manufactures decreased by 5 types, from 17 in 2000 to 12 in 2011; low-tech manufactures reduced by 6 types, from 12 in 2000 to 6 in 2011; and high-tech manufactures declined by 3 types, from 12 in 2000 to 9 in 2011 (Table 3).

The following deserves special attention: the comparative advantage (RCA index) of low- and medium-tech industrial products declined rapidly over the studied period. The number of low-tech industrial products with the RCA index greater than 2 dropped from 12 in 2000 to 0 in 2011; the number of medium-tech industrial products with the RCA greater than 2 declined from 13 in 2000 to 2 in 2011. This change indicates that China's low- and medium-tech manufactures are growing increasingly competitive.

3. Top 20 types of manufactures importing to China based on the RCA indices for 2000 and 2011. Overall, types and categories of products with a comparative advantage have undergone some structural changes. For the top 20 list in 2011, 9 types were on the list in 2000, while the remaining 11 are new. Among 20 types of commodities with the greatest comparative advantage in 2000, 5 are primary manufactures, 4 are resource-based manufactures, 2 are low-tech manufactures, 7 are medium-tech manufactures, and 2 are high-tech manufactured goods. In 2011, primary manufactures increased to 9 types, resource-based manufactures rose to 7, medium-tech manufactures dropped to 2, high-tech manufactures remained the same at 2, and

low-tech manufactures dropped to 0. 2 types of medium-tech manufactures are optical instruments and apparatus (HT2) and thermionic tubes and cold cathode tubes (HT1). 2 types of high-tech manufactures are ethanol and phenol (MT2) and explosives and fireworks (MT2). It is clear that the overall competitiveness of primary and resource-based manufactures at Chinese market has increased.

The comparative advantages of China's major trading partners at Chinese market.

1. Comparative advantages of developed countries at Chinese market. As shown in Table 4, at Chinese market German automation equipment (MT1) and Australian primary manufactures (PB) and resource-based manufactures (RB) have a significant comparative advantage (RCA > 3), while the RCA index of other commodities are less than 3. Specifically, America's agriculture-based manufactures (RB1) have a strong comparative advantage ($2 < RCA \leq 3$) at Chinese market and its medium-tech manufactures (MT) and other high-tech manufactures (HT2) have a general comparative advantage ($1 < RCA \leq 2$); Japan's medium-tech manufactures (MT) and other low-tech manufactures (LT2) have a strong comparative advantage, and its high-tech manufactures (HT) have a general comparative advantage; German medium-tech manufactures (MT) possess the greatest advantage. Automation equipment (MT1) imported to China from Germany has a significant comparative advantage, with the RCA index of 6.456. Engineering manufactures (MT3) have a strong comparative advantage, and other low-tech manufactures (LT2) and other high-tech manufactures (HT2) have a general comparative advantage. South Korean other high-tech manufactures (HT2) have a strong comparative advantage at Chinese market, while its low-tech manufactures (LT), processing manufactures (MT2), engineering manufactures (MT3) and electronic and electrical manufactures (HT1) have a general comparative advantage. Australian primary manufactures (PM) and resource-based manufactures (RB) have a significant comparative advantage; other resource-based manufactures (RB2) are particularly competitive, with the RCA index as high as 40.752. However, Australian technical manufactures do not have a comparative advantage.

Table 4. **The RCA Index of Imported Manufactures from Developed Countries in 2011,** *calculated by the author*

	USA	Japan	Germany	S. Korea	Australia
PM	0.976	0.193	0.091	0.174	4.542
RB	1.080	0.494	0.342	0.805	33.912
RB1	2.403	0.370	0.381	0.156	3.376
RB2	0.784	0.522	0.333	0.951	40.752
LT	**0.929**	**2.098**	**1.174**	**1.412**	**0.516**
LT1	0.577	0.952	0.317	1.018	0.627
LT2	1.090	2.621	1.566	1.592	0.465
MT	**1.258**	**2.086**	**2.947**	**1.216**	**0.496**
MT1	1.433	2.304	6.456	0.820	0.098
MT2	1.249	1.493	0.881	1.544	0.706
MT3	1.199	2.291	2.671	1.202	0.540
HT	**0.796**	**1.082**	**0.693**	**1.777**	**0.117**
HT1	0.554	1.055	0.444	1.579	0.089
HT2	1.669	1.181	1.594	2.494	0.218

2. The comparative advantage of major developing countries at Chinese market. As shown in Table 5, at Chinese market, Brazilian, Indian and Russian resource-based

manufactures (RB) have a significant comparative advantage, while the comparative advantage of other types of goods is relatively insignificant. Specifically, Brazilian other resource-based manufactures (RB2) have a significant comparative advantage, agriculture-based manufactures (RB1) have a strong comparative advantage, and primary manufactures (PM) have a general comparative advantage. Russian agriculture-based finished goods (RB1) have a significant comparative advantage, primary manufactures (PM) have a strong comparative advantage, and other resource-based manufactures (RB2) have a general comparative advantage. Indian other resource-based manufactures (RB2) have a significant comparative advantage, textiles, clothing and footwear (LT1) have a strong comparative advantage, and primary manufactures (PM) have a general comparative advantage at Chinese market. South African other resource-based manufactures (RB2) have a strong comparative advantage, but other types of commodities have no comparative advantage.

Table 5. **The RCA Indices of Imported Manufactures from Developing Countries, 2011,** *calculated by the author*

	Brazil	Russia	India	South Africa
PM	1.794	2.843	1.393	0.419
RB	3.211	1.831	2.980	1.828
RB1	2.297	3.432	0.111	0.218
RB2	3.416	1.473	3.623	2.188
LT	**0.254**	**0.062**	**1.272**	**0.094**
LT1	0.700	0.029	2.986	0.034
LT2	0.050	0.077	0.489	0.121
MT	**0.124**	**0.236**	**0.307**	**0.250**
MT1	0.013		0.075	0.019
MT2	0.346	0.862	0.757	0.907
MT3	0.057	0.020	0.174	0.017
HT	**0.064**	**0.014**	**0.092**	**0.004**
HT1	0.008	0.006	0.092	0.002
HT2	0.263	0.041	0.094	0.008

3. The Comparative Advantage of China's neighboring regions in the Chinese Market. As shown in Table 6, at Chinese market, no product types from any neighboring countries have a significant comparative advantage. Specifically, in the case of Singapore, other low-tech manufactures (LT2) have a strong comparative advantage, and other resource-based manufactures (RB2), processing manufactures (MT2), engineering manufactures (MT3) and electronic and electrical manufactures (HT1) have a general comparative advantage. Thai agriculture-based manufactures (RB1) and electronic and electrical manufactures (HT1) have a strong comparative advantage, and Thai processing manufactures (MT2) have a general comparative advantage. Malaysian electronic and electrical manufactures (HT1) have a strong comparative advantage and agriculture-based manufactures (RB1) have a general comparative advantage. Indonesian agriculture-based manufactures (RB1) have a strong comparative advantage, while other products have no comparative advantage. Taiwan's processing manufactures (MT2) and high-tech manufactures (HT) have a strong comparative advantage, while low-tech manufactures (LT) have a general comparative advantage.

Table 6. **The RCA Indices of Imported Manufactures from Neighboring Countries, 2011,** *calculated by the author*

	Singapore	Thailand	Malaysia	Indonesia	Taiwan
PM	0.039	0.392	0.191	0.804	0.152
RB	1.431	0.886	0.827	0.978	0.303
RB1	0.493	2.345	1.306	2.506	0.161
RB2	1.641	0.559	0.720	0.636	0.334
LT	**1.740**	**0.562**	**0.240**	**0.405**	**1.521**
LT1	0.094	0.984	0.232	0.958	1.597
LT2	2.491	0.369	0.244	0.153	1.485
MT	**1.046**	**0.595**	**0.296**	**0.239**	**1.100**
MT1	0.089	0.092	0.052	0.084	0.082
MT2	1.666	1.035	0.608	0.575	2.263
MT3	1.095	0.566	0.235	0.133	0.910
HT	**1.290**	**1.613**	**2.376**	**0.225**	**2.177**
HT1	1.519	2.010	2.963	0.279	2.115
HT2	0.465	0.174	0.254	0.028	2.402

Conclusions and suggestions.

1. Conclusions:

(1) In 2011, 37 out of 230 types of imported manufactures had a general comparative advantage ($1 < RCA \leq 2$), 7 had a strong comparative advantage ($2 < RCA \leq 3$), and 14 had a significant comparative advantage ($RCA > 3$) at Chinese market. The total of 58 types had a comparative advantage ($RCA > 1$), accounting for 25.22% of all 230 types of imported manufactures. Therefore, one quarter of imported goods have a comparative advantage at Chinese market.

(2) From 2000 to 2011, types of imported goods with a comparative advantage at Chinese market dropped from 80 in 2000 to 58 in 2011, and the RCA indices of imported products dropped as a whole. The level of comparative advantage (the RCA index) for low- and medium-tech manufactures declined rapidly. Types of low-tech industrial products with the RCA indices less than 2 dropped from 12 in 2000 to 0 in 2011, and types of medium-tech industrial products with the RCA indices less than 2 dropped from 13 in 2000 to 2 in 2011. Among 20 types of goods with the greatest comparative advantage, the number of low-tech manufactures declined while that of primary manufactures and resource-based manufactures increased.

(3) At Chinese market, German automation equipment (MT1), Australian primary manufactures (PM) and resource-based manufactures (RB), Brazilian, Indian, and Russian resource-based manufactures (RB) have significant comparative advantages ($RCA > 3$), while the RCA indices for the products from other countries are less than 3. Overall, products with comparative advantages include some primary manufactures (PM) and resource-based manufactures (RB) from Australia, Brazil, Russia, India and other countries; agriculture-based manufactures (RB2) from Thailand, Malaysia and Indonesia; low-tech manufactures from Japan, Germany, Korea, India, Singapore, Taiwan and other regions; some medium-tech manufactures from Japan, Germany, South Korea, the United States, Singapore, Taiwan and other regions; some electronics and electrical manufactures (HT1) from Malaysia, Taiwan, Korea, Thailand and other regions; and some other high-tech products (HT2) from Japan, Germany, South Korea, United States, Taiwan and other regions.

2. Suggestions. This paper shows that the number of imported good types with comparative advantages in the Chinese market has declined, which represents a structural change. The level of comparative advantage for imported low- and medium-tech industrial products dropped rapidly, while the overall competitiveness of imported primary finished products and resource-based manufactures at Chinese market increased. This change is consistent with other recent trends in China. In recent years, China has vigorously developed its processing industry and advanced manufacturing and transformed its traditional manufacturing using advanced technologies. Transformations and upgrading of Chinese manufacturing has been relatively rapid, with low- and medium-tech industrial products making China's the key exporter of commodities. In 2011, medium-tech industrial products were China's largest export commodities, accounting for 40.64% of China's total exports. Low-tech manufactures were China's second largest export, accounting for 23.34% of China's total exports. The development of medium-tech industrial sectors will bring fierce competition to the domestic market, which in turn will reduce the competitiveness of imported manufactures. At the same time, the rapid development of Chinese industry will dramatically increase resource and energy demand and, hence, the import of primary manufactures and resource-based manufactures will increase. These products are highly reliant on natural resources; therefore, international suppliers who control the supply of these commodities will demonstrate the characteristics of a monopoly. Consequently, the competitiveness of these products will increase at Chinese market.

China primarily imported technical products from developed countries, resources and energy commodities – from major developing countries, and various other products from its neighboring Asia-Pacific nations. China's import growth increased the exports of various types of commodities from many different countries and regions. For China, increasing imports makes full use of resources from different countries and regions. This increase reflects the integration of international resources to develop Chinese economy. Meanwhile, types of imported goods with a comparative advantage at Chinese market vary; thus, attention must be paid to the effects of importing countries and regions on the development of Chinese industries as well as to these products' degree of monopoly in China in order to prevent import risks.

In terms of the imported products with comparative advantages that show the characteristics of monopoly, China must take advantage of the attractiveness and influence of Chinese market to diversify their sources of import, regulate imports, improve their price negotiating power, and enhance import initiatives. From 2000 to 2011, the share of imported high-tech manufactures in China's imports has increased and then decreased, growing from 32.54% in 2000 to 38.27% in 2007, and then decreasing to 29.80% in 2011. Therefore, in the future, it is important to improve the structure of imports, increase the proportion of imported high-tech industrial products, and especially increase direct imports from the United States, Germany and other major industrial nations.

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