# CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

# Faculty of Economics and Management Department of Economics



# **BACHELOR THESIS**

# **Commodity Structure of Chinese Export**

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## CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

**Department of Economics** 

Faculty of Economics and Management

# **BACHELOR THESIS ASSIGNMENT**

Shichang Zhu

**Economics and Management** 

Thesis title

Commodity structure of chinese export

**Objectives of thesis** 

The aim of the thesis is ato analyze the chinese export of goods and services.

Methodology

Comparative and descriptive methods with be used in the thesis.

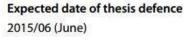
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#### The proposed extent of the thesis

35 to 50 pages

#### Recommended information sources

Analysis for Financial Management (Mcgraw-Hill/Irwin Series in Finance, Insurance, and Real Estate) by Robert Higgins (Dec 2, 2011)



The Bachelor Thesis Supervisor doc. Ing. Mansoor Maitah, Ph.D. et Ph.D.

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#### Declaration

I declare I have worked on the Bachelor thesis of Commodity Structure of Chinese Export by myself. All quotations and resources of information which I used, are quoted and listed by the norm in the references.

Prague, the 5th March 2015

.....

### Acknowledgement

I would like to thank Assoc. Prof. Ing. Mansoor Maitah, Ph.D. et Ph.D. as my supervisor of this thesis for his valuable advices, guidance and assistance in writing this thesis.

# Komoditní struktura čínského v ývozu

# **Commodity Structure of Chinese Export**

#### Souhrn:

Bakalářská práce analyzuje zbožovou strukturu Číny. Práce zkoumá jak strukturu, tak objem vývozu obchodu Číny. Komodity jsou charakterizovány na základě Standardní klasifikace mezinárodního obchodu. V práci jsem též věnovala teorii mezinárodního obchodu. Kromě toho, změna struktury světového obchodu se surovinami a jeho vývoj je zkoumána. Za to, že tato práce zkoumala současný stav zbožové struktuře čínského exportu a pak, je studie o rozd lu mezi aktuálním stavu zbožové struktuře čínského vývozu a Japonska. Konečně, komoditn í struktura porovnávat mezi Japonskem a Čínou je vyroben tak, abychom mohli zkoumat problém čínského zbožové struktury. A co v ć, baklaářská práce poskytuje způsob, jak optimalizovat Komoditn í strukturu čínského vývozu.

#### Klíčová slova:

## Komoditní struktura, Export, čínština, Japonsko, Zahraniční obchod, Komoditn í Trade

#### Summary

The bachelor thesis analyses commodity structure in china. There is examined the structure and volume of trade of China. Commodities are characterized on basis of Standard International Trade Classification in digit one. There also studied Trade theories. Besides, the change of world trade commodity structure and its development is researched. After that, the paper investigated the Current Status of the Commodity Structure of Chinese Export .And then, there is a study about the difference between the Current Status of the Commodity Structure of Chinese Export and Japan's. At last, commodity structure compare between Japan and China is made so that we can research the problem of Chinese commodity structure. What's more, the diploma thesis gives the way to optimize Chinese export commodity structure.

#### **Key Words:**

Commodity Structure, Export, Chinese, Japan, Foreign trade, Commodity Trade

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### **1. Introduction**

China has made remarkable achievements in the field of foreign trade in the last 30 years since reforming and opening up. Export trade volume increased from 19.33 billion to 1.5779 trillion during 1980 to 2010. The ranking rise from 26th to 2nd and became a veritable trading power in the world. And, with the continuous expansion of China's foreign trade goods, export commodity structure also optimized accordingly. Primary products exports declined gradually and the industrial goods exports rise. At the time we celebrate our progress for the country's prosperity, we should understand that the big volume is not the same as trading powers. To become a country with trading power, China has a long way to go.

So what is the difference? What is the gap between China and trading power countries? The country with big trade volume refers to the production of the quantity is very big, but it may not have necessary competitive products. While trading power country refers to the production of good quality and these countries have market competitiveness. For example, China's steel production is one of the largest productions in the world. While the high quality steel still need to be imported from Japan, so the country is not steel superpower country but steel power country. Compared with other trading powers, the country also has the obvious gap between the following four aspects: first, growth mode is relatively extensive trade. To further improve the quality and benefit. In the total import and export in China, more than half are processing trade. Second, the core competitiveness is not strong; the lack of its own brand and marketing network, products with independent intellectual property rights and core technology is relatively less. Third, the low level of export products, many products are still at the low end of the value chain of international division of labor, value-added is not high. Fourth, has not yet formed a large number of high management level, strong comprehensive strength, and depth of participation in international competition and cooperation of enterprises. Thus, China's export commodity structure in recent years, although is improving, but still there are a lot of

problems.

A country's export commodity structure determines its status in the international division of labor, reflecting the country's level of productivity development. The reasonable structure of export commodities will be on a country's economic growth plays a big role. And the present stage our country export commodities structure still exists export commodity structure, low product added value, this will be conducive to the sustainable development of foreign trade of our country, is not conducive to effective play to export-led growth. Therefore, we must speed up the transformation of the mode of foreign trade growth, optimize the structure of export commodities, encourage high-tech products and mechanical and electrical products exports, and continue to limit resources, energy-consuming, high pollution products export, improve the quality of foreign capital utilization, to promote domestic industrial upgrading. Ultimately achieve the goal that improves the quality and efficiency of foreign trade, make our country really is in the world economy dominated trading powers.

## 2. Objectives of thesis and Methodology

#### 2.1 Objective

The goal of this thesis is to characterize commodity foreign trade structure in China. And to analyze the development of the regions of China, Evaluate the impact of the global economic on the economic position of the regions of China. Predict the future development of regional economy. There will be theory describe the traditional and modern trade which will mention in literature review, flow by competitiveness of economics. This thesis from the perspective of international trade commodity structure changes and development of the China makes a detailed analysis of the commodity structure of export industries of China and Japan, focuses on the one class problem, provides a new perspective from the micro analysis of export trade issues in order to make related trade structure theory much rich. It is of practical significance of the topic of interaction for the export commodity structure and the economic development of China.

#### 2.2 Methodology

As a methodology, initial point was to investigate the secondary data collected in mentioned literature, articles, reports and internet resources. Literature review will be conducted using methods of synthesis, introduction, deduction and extraction. Analytical section will be done using qualitative and quantitative methods such as regression analysis.

With the background of global economic integration, the thesis finds the existing problem in Chinese export commodity structure by the comparison of the various data and the current situation of foreign and Chinese export commodity structure. The counter measures for the optimization of China's export commodity structure will be put forward according to the successful experience of foreign optimization of export commodities structure. The thesis will make collection, collation and analysis of the related data. Access to research data and the papers related to the thesis and select the essential to provide theoretical reference for the study.

### **3.** Literature Review

#### 3.1 Trade theories on the trade structure decision

Forms of international trade structure refer to the structure form of international trade between a country and other countries. A country's export commodity structure is determined by the country's economic development level, development level of science and technology especially the industrial structure. Therefore, it can reflect the country's economic development level and its commodity competitiveness in international market.<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> JipengJun & Wu Guiying & ZhangZhang. (2000). Capital formation, empirical research investment efficiency and economic growth. National Social Science Foundation of China.

#### **3.1.1** The traditional trade theory

#### Adam Smith (1723 - 1790) and theory of absolute advantage

According to Adam Smith's absolute advantage principle, when two countries produce the same kind of product using the same kind of production factor- labor, if country A's labor productivity is high, country B's labor productivity is low, and then country A has the absolute advantage. (Jinghui, 2011) According to their respective absolute advantage, the two countries conducted specialized production and participate in trade and both benefit from it. This trade benefit from the improvement of labor productivity promoted by the specialized production<sup>2</sup>.

If one country has the absolute superiority in the production of one product, namely the actual cost of the labor cost is absolutely less than other countries .They should export this goods; if one country has absolute inferiority in the production of one goods, you should import the goods.<sup>3</sup> If every country specially focuses on the domestic advantages of goods, and to form the international division of labor, as result, the traders' resources can have the most efficient use, and thus get more benefit than closed, labor productivity was improved, the material products and national wealth will increase. (Guo, 2012)

#### David Ricardo (1772-1823) and theory of comparative advantage

David Ricardo explains that the generation of international trade by introducing labor productivity. The production of wine and cloth all lag behind but the relative labor productivity of wine is higher than that of cloth, so they produce wine and import cloth<sup>4</sup>.

If the opportunity cost of producing a product (measured by other products) is lower than it in other countries, then this country has comparative advantages on the production of this kind of product<sup>5</sup>. If each country can specially produce and export products with comparative advantage, international trade can make the world output

<sup>&</sup>lt;sup>2</sup> Das, Monica: Absolute and Comparative Advantage, International Encyclopaedia of Social Sciences, 2<sup>nd</sup> edition

<sup>&</sup>lt;sup>3</sup> LIUNeng-kai. (2002). Comparative Advantage, Absolute Advantage, and Economic Development.

 $<sup>^4\</sup> Mansoor\ Maitah.\ Foreign\ trade\ theories.\ http://maitah.\ com/FT/Foreign\%20Trade\%20Theories.pdf$ 

<sup>&</sup>lt;sup>5</sup> Lauren F. Landsburg, Library of economics and liberty, 1999-2007

growing, and eventually benefit all countries. By the riparian model, we assume there are (domestic and foreign) two products (cheese C and wine W C) in the economy. In this economy, also assumes that: (1) the labor is the only factors of production. (2) Labor supply in the two countries is fixed. (3) The labor productivity of production of each item is fixed. (4) Market structure is fully competition. (5) Factors of production in the international can't flow. (a LW means unit of labor input in wine production, a LC means unit of labor input in cheese production, PC express the price of cheese, PW means the price of wine, the total economic resources is L, and the total labor supply. (Porter, 2005)

#### **Compare between Absolute Advantage and Comparative Advantage**

The theory of comparative advantage is the labor productivity of two products is both higher than that of another country, on the basis of the two theories to explain the international division of labor. B: Different comparison contents and methods: absolute difference theory is to directly select the good and bad, but the theory of comparative advantage is to choose the better one when both are good. C: Scope of application: absolute difference theory can explain respectively in one or a few products on the production of labor productivity are higher than other countries forming the labor division. But the comparative advantage theory can also explain when the labor productivity of all products in a country are higher than that of other countries which take into account the relative technical advantages, but at the same time it also has its own limitations, because this theory is based on the assumption that only considering productivity of inputs, and that the transfer of labor is constant, and considering the international division of labor from the static Angle. D: Once there is absolute advantage, there is comparative advantage. But the existence of comparative advantage doesn't mean there is absolute advantage. Absolute advantage is the strength of the same products in one country to another country, is endogenous, but the theory of comparative advantage is exogenous.

#### The Heckscher-Ohlin Theorem and trade structure decision

The Theory of H-O, on the objective basis of element distribution, emphasis on different factor endowments in each country and region and the decisive role of different production function of commodity to trade. An element of collaborative FDI is the extension of theory, and its basic principle is to shift to the combination of flow elements and immobile elements, improving the utilization efficiency of all kinds of factors of production. Factor endowment refers to the total amount and structure of the elements a country (or region) owned<sup>6</sup>.

They think that, because different products require different inputs of capital and labor in the production process, and the relative amount of these two kinds of resources in different countries are different, therefore with the condition of invariable technique, ther countries with abundant capital must have a comparative advantage in capital intensive products, that is the relatively low cost of production. A nation will export the commodity whose production requires the intensive use of the nation's relatively abundant and cheap factor and import the commodity whose production requires the intensive use of the nation's relatively scare and expensive factor<sup>7</sup>. Or the relatively labor-rich nation exports the relatively labor-intensive commodity and imports the relatively capital -intensive commodity.

Similarly, the countries with abundant labor will have a comparative advantage in labour intensive products, that is the relatively low cost of production. So each country should export the products of intensive use of their relatively abundant factor, while imports the products of use of their relatively scarce factors.

#### 3.1.1 Modern trade theory

#### Factors of production ratio theory

Ohlin A comprehensive consider the land, labor and capital factor. Such like Australia produce wheat because they have plenty of lands. While Japanese produces electronics grows, because they have furious labor resource but scarce land. (Yuee,

<sup>&</sup>lt;sup>6</sup> Arnold Kling, Library of Economics and Liberty, 2008

<sup>&</sup>lt;sup>7</sup> Mansoor Maitah. Foreign trade theorise.

#### Technical differences and product life cycle theory

Regarding to the technology, as one of the factors of production, technology developed country hold an advantage in international trade. The above five kinds of theory ignores the country and the government role in the international trade and see the natural conditions and economic conditions as isolated conditions.

The product life cycle theory explains the continuous adjustment process of continuous conversion between the advanced industrial countries and backward country's comparative advantage and industrial structure from one side. Advanced industrial countries of the industrial transfer has not only promoted the industry lags behind the industrialization, but also led to the change of comparative advantage and trade structure between each other. From the intensive product elements, in different stages of product life cycle, the proportion of the factors of production can be changed; from different countries, in each stage of product life cycle, its comparative advantage will be from a country to another country<sup>8</sup>.

#### **3.2** The trade protection theory

The German economist Lester (List) in 1841 published his representative works "*the national system of political economy*", criticizes the classical school of free trade theory, put forward the theory of protection of infant industry. (FriedrichList, 2009) Lester opposed the "comparative cost theory" about when foreign can lower the cost of production and export of some products. When the country, need not produce the products, but by foreign trade, both sides can benefit from trade claim. Because of the trade is established in the distribution of wealth, although it makes a country to obtain the short-term gains from trade, but the loss of the production of long-term interests. From foreign imports of cheap goods, the surface looks cheaper, but the impact of the

<sup>&</sup>lt;sup>8</sup> LUVerna. (2008). Creative Process and Product Life Cycle of High-Tech Firms.

development of national industry, so that in the backward and the attachment position. If to implement protective tariff policy of infant industries, although the beginning of domestic industrial product cost to be higher, consumers have to pay a higher price, but after a period of time, not only the local industry can obtain the full development, and productivity will improve, commodity costs will be reduced, commodity prices will decline.

The assumption of the condition of incomplete competitive trade theory -- the theory of intra-industry trade is based on increasing returns to scale and market. Because of the competition of returns to scale and market hypothesis is different, the two theory into a completely different nature of international trade theory. Of course, the intra-industry trade theory does not mean that the alternative to the comparative cost complementary in explaining the theory. In fact, these two theories are real trade phenomenon, they explain each other could not explain international trade type and the resulting related problems. Can think, the technology gap or factor endowment differences between countries is more big, the trade between them more likely is the vertical inter industry trade; if the difference of the technology gap between countries or factor endowment is small, the trade between them is more likely is the level of intra industry trade, we will be able to explain trade and its structure forms the basis for this type of problem by using the theory of intra-industry trade.

Differences in the technology gap between countries or factor endowment is the premise of North South trade, or it is a prerequisite for the development of trade structure in the form of decision problem of Chinese family, factor endowment model of Ricardo's theory of technological gap model and the Heckscher Ohlin still has good theoretical and practical persuasion <sup>9</sup>. In this study, discussion and empirical is the developing country trade structure in the form of decision and dynamic change, so the theory study and empirical analysis of this study is to modified Ricardo model and Heckscher Ohlin model as the starting

<sup>&</sup>lt;sup>9</sup> Qiannianshanzizhai. (2011). On the theory of international trade protection.

point of the theory analysis.

#### 3.3 The motivation of foreign trade

In the motivation of foreign trade in China, there are 3 main importance things that need to consider first of all, is the absolute lack of resources. First is due to the lack of certain resources in some countries, the international trade comes into being. Such as South Korea don't plant banana so they import it from other countries. Secondly is the relative lack of resources. Acceding to Adam Smith said: "*regional division of labor*" and "*the wealth of nations*" reckoned the natural resources have divided the labor of each country naturally. The relative scarcity of natural resources led to the international trade. Such as: the French grape resources are rich and rice resources are relatively scarce, so they export grape wine and import rice. Last but not least is the national interdependence theory. Modern international trade theory reckoned that factors of production is not only a national differences, countries should develop coordinately. (Kling, 2008)

#### 3.4 The Competitiveness of Economics

If one country has the absolute superiority in the production of one product, namely the actual cost of the labor cost is absolutely less than other countries .They should export this goods; if one country has absolute inferiority in the production of one goods, you should import the goods. If every country specially focuses on the domestic advantages of goods, and to form the international division of labor, as result, the traders' resources can have the most efficient use, and thus get more benefit than closed, labor productivity was improved, the material products and national wealth will increase. (Bei, 2003)

#### **3.5** The entry modes of international business

Entering the international market model refers to the foreign enterprises to enter and participate in the international marketing market product sales to choose from. Sum up, there are including three categories: the export, domestic production and foreign sales. It is a kind of traditional, simple, lowest risk entry way. Into the second is contract, also known as the equity. It has a variety of specific forms and full of flexibility and practicability of the larger. Third, it is known as the foreign direct investment which also known as equity. This means that the enterprise direct invest in the target market countries<sup>10</sup>.

#### The classification of the export commodity structure

According to the standard international trade classification, manufactured products are divided into chemical products, textile, rubber, and mining and metallurgy products and related products, machinery and transport equipment, and other miscellaneous products unclassified products, among which, chemical products and machinery and transport equipment can be classified into capital and technology-intensive products, while other products can be classified into labor and resource intensive products<sup>11</sup>.

Manufactured goods exports structure changes mainly for capital and technology intensive products, and other products can be classified into labor and resource intensive products. Labor-intensive product is also known as labor intensive product which means the production requires a lot of labor. That is to say, the labor cost accounts for a large proportion of the product.

#### **3.6** The effect of currency to the foreign trade and its development.

#### **3.6.1** The concept of the currency in foreign trade

#### Mercantilism

The theory that the exchange rate movements would impact the international trade balance can be traced back to the earliest mercantilist school related papers. Mercantilism<sup>12</sup> thinks that money is the only wealth and thinks that the amount of money is the measure of a country's wealth. Mercantilism advocated that the reward

<sup>&</sup>lt;sup>10</sup> RootRFranklin. (2010). Entry strategies for international markets (Revised and Expanded).

<sup>&</sup>lt;sup>11</sup> yiranWu. (2011). ANALYSIS ON EVOLUTION OF CHINA'S EXPORT COMMODITY STRUCTURE.

<sup>&</sup>lt;sup>12</sup> yali, L. (2012). Mercantilism and its Impact. Retrieved 11 17, 2014, Available: http://www.docin.com/p-212363879.html

export restrictions could increase the money inflows which further could increase the total wealth of society<sup>13</sup>.

As one of mercantilism's outstanding representative Thomas meng, he pointed out that exchange rate changes will also affect the change of the balance of trade, "The remittance would weaken our enemy and benefit ourselves." In 1752, the British scholar David Hume puts forward the "commodity prices and cash flow mechanism" in the trade balance to prove that mercantilists believed country can achieve the restrictions to accumulate gold idea by encouraging export is wrong.

Hume pointed out that when a country's trade balance of payments is surplus, the country's international reserves increase and so the money supply also increases accordingly which finally causes the domestic price rise. Then reduce the competitiveness of their products, the exports will fall and imports would increase. He thinks that the rise of domestic price would not been finished before the trade surplus is eliminated. (Maith, 2011)

Under the price standard by gold, the adjustment also depends on the deficit and import and export price elasticity. Under the condition of paper money circulation, a country's balance of payments has been unable to use gold and automatic adjustment. However, in the market system of machine, it has still certain effect under the "inner stabilizer" of economic. For example, the balance of payments deficit causes the supply of foreign exchange prompting their currencies down and then relative to raise the import prices and declines the export prices. Finally, it would raise the volume of exports and decline the volume of imports which thus improved international payments.

#### **3.7** The benefits of foreign trade

#### **3.7.1** Promoting the usage of production elements

The distribution of labor, capital, land, technology and other factors of production elements in various countries are often not balanced. The distribution of some country

<sup>&</sup>lt;sup>13</sup>yali, L. (2012). Mercantilism and its Impact. Retrieved

has surplus labor and has capital shortage. Some countries have abundant capital and land is insufficient. Some countries have vast land and farming technology lag behind. If there is no international trade, these countries domestic production scale and the development of social productive forces will be restricted by the shortage of production factors and part of the factors of production will be idle or waste<sup>14</sup>.

The production potential will be limited. Through international trade, international service trade has been used in America in the 20th century to achieve the capital transfer, land leasing and technology trade. They made the domestic surplus exchange with domestic shortage of factors with other countries, so that the shortage of the restriction of production factors will be alleviate or eliminate. They made full use of the major production factors to expand the scale of production and to accelerate economic development. (MAITAH, et al., 2009)

#### 3.7.2 Strengthen the comparative advantage

To improve the efficiency of production, countries' participating in the international trade is important to the basis of comparative advantage and advantage benefits. In 20 century, American did international division of labor and international trade based on the use of comparative advantage and comparative benefits which can expand commodity productions reduce disadvantage products production and export advantage products in return for its weaker commodity from abroad. And these can be on the premise of social productivity to constantly improve the efficiency of production factors and improve the production efficiency, which would gain greater economic benefits<sup>15</sup>.

<sup>&</sup>lt;sup>14</sup> Cui, L. and M.H. Syed, 2007. The Shifting Structure of China's Trade and Production. International Monetary Fund.

<sup>&</sup>lt;sup>15</sup> Xiao-ling xu. 2006 (10), China's export commodity structure and competitiveness analysis Productivity research,: pag. 124-125.

# 3.7.3 Improve the level of production technology and optimize the structure of industry

In the 20th century, the united States improve the level of domestic productivity and speed up the economic development through the international trade and the introduction of advanced science and technology equipment. At the same time, the governments adjusted the domestic industrial structure coordination and improve step by step through the international trade to promote the coordinated development of national economy.

#### 3.7.4 Increase the fiscal revenue

Improving national welfare level of international trade development and increasing the fiscal revenue may create a source of revenue for a government. The governments can tariffs from the past close condition of the goods to tax the domestic goods both from import and export. Also, they provide various services for transit goods to gain a lot of finance income. At the early stage of the United States established the federal government, the tariff income has accounted for 90% of federal revenues. Nowadays, tariffs and foreign-related tax are still in some countries. Especially, it happened a lot in developing countries which is an important source of revenue. International trade can also improve the level of national welfare.

# **3.8** Technology trade developing rapidly, and will be dominant in the world trade.

With the continuous development and progress of human science and technology, technology has become an increasingly important role in the national trade development.

Electronics industry, marine, and microbial technology, space technology, environmental protection technology, new materials and new and high technology industries and high technology content product weight in world trade has soared, and the commodity structure changed. Ignore technology trade growth in countries at the same time, the content of the technical trade has also changed, tilt toward the

17

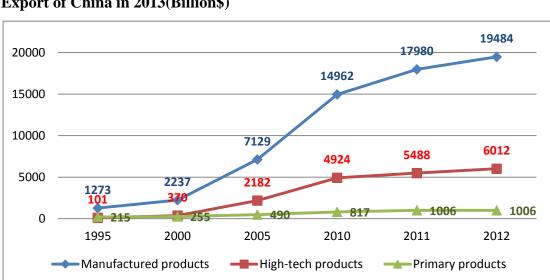
knowledge-based and informational software technology, such as microelectronics technology, its products and associated office of public information equipment goods was up to 26% growth in 1996, exceeding the all along leading role like chemical industry, automobile, textile, clothing and other main export commodities<sup>16</sup>.

# 4. The Current Status of the Commodity Structure of Chinese Export

China's rapid GDP growth in recent decades has been impressive, averaging 9.8% per year from 1978 to 2007. However, China's growth trajectory poses a number of serious problems including environmental destruction, rising inequality, a high degree of exploitation of the migrant labor force, and weak oversight of product safety. (Amiti, et al., 2007)

In recent years, Chinese foreign trade has developed profoundly. The export commodity structure also has significant improvement which mainly reflects in the following aspects: the export commodity structure is changing from labor-intensive to capital-intensive and technology-intensive rapidly; the proportion of primary products is falling and the proportion of high-tech products is increasing.

<sup>&</sup>lt;sup>16</sup> Jichen Li. 2007, Technology progress, industrial structure adjustment and innovation. Journal of enterprise civilization,



Figuer 1. Manufactured products, High-tech products and Primary products Export of China in 2013(Billion\$)

As shown in Figure 1 the Primary products is falling but the proportion of high- tech products and Manufactured product is increasing<sup>17</sup>. But China is still a large trading country but not power trading country, we need to constantly optimize the structure of export commodities, improve the added value of export goods and technology content, to realize the sustainable development of China's export trade.

#### 4.1 Discussion about "Made in China"

The word "made in China" is reminiscent of cheap shoes, plastic toys, and in the factory of foxconn's huge assembly of electronic products. In light industry and electronic industry, China built up a powerful export sector over the past 30 years of which growth 17%. However, this kind of situation is rapidly changing.

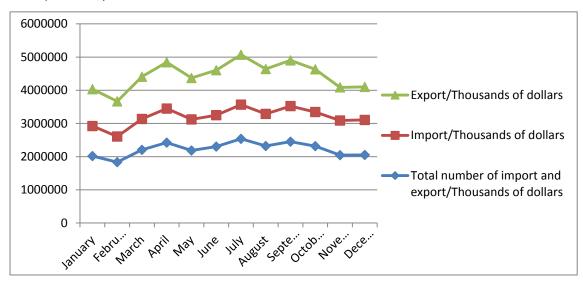
According to the London-based Clarkson shipping company shipping Service Company, the ship made in China was dominant in the global market. Last year's market share reached 41% which was far more than South Korea and Japan. Federal

Source: China Statistical office

<sup>&</sup>lt;sup>17</sup> Andy C. C & KwanJohn A. (1991). Cotsomitis. Economic Growth and the Expanding Export Sector: China 1952-1985, International Economic Journal.

agency of the United Nations and the world trade organization international trade center of the data also shows that China's railway locomotive and trucks, machinery and industrial boiler in terms of global market share has improved significantly<sup>18</sup>. Policymakers have to upgrade industries as a national priority. Equipment manufacturing, shipbuilding and automotive industries will get government \$2.5 billion this year to improve technology and product quality. Domestic and foreign mergers and acquisitions are also encouraged.

Figure 2.The trends of Chinese today trade in goods import and export in 2013(dollars\$)



Source: UN, International Trade Statistics

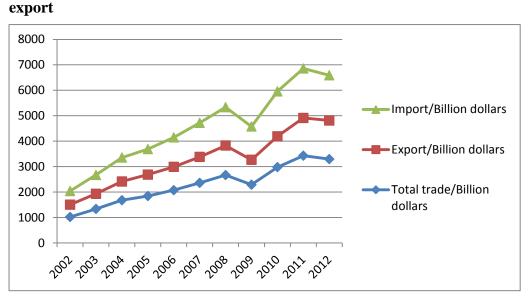
As in figure 3, the trends of Chinese today trade in goods import and export in 2013 from September to December. Rising Labor costs (15% a year since 2005) and currency appreciation bring new pressure to China's cheap manufacturing mode. Textiles footwear and garment factories closed or moved to Vietnam, Cambodia and Bangladesh.

<sup>&</sup>lt;sup>18</sup> Cheung, Yin-Wong, Menzie Chin, and Eiji Fujii (2010), "China's Current Account and Exchange Rate," in China's Growing Role in World Trade, editors Robert C. Feenstra and Shang-Jin Wei, University of Chicago Press.

#### 4.2 The research to the Chinese Export.

According to the data to heavy industry from Dragonomics in Beijing, a consulting firm, the ratio of the heavy industry accounted for about two-thirds for the proportion of China's exports has risen from 29% in 2001 to 38.7% last year. Way more than it is in the light industry and electronic. Andrew batson, research director at the company said: the higher they are manufacturing technology, the more money they could make in different products. He estimates that by 2020, the new industry can help China in its share of global exports from 10% to 15%.

Figure 3. The trends of 2002-2012 years Chinese today trade in goods import and



Source: UN comtrade

According to the report, China is still the largest export market of Europe struggled to cope with its debt crisis. China's machinery manufacturers are aiming to India, South America and the Middle East. Global institute in Hong Kong, Louis kuijs, an economist said last year; Europe, America and Japan accounted for 48% of China's total exports, down from 56.1% in 2003, while developing countries accounted for the majority

#### 4.3 China's external trade developments

During most of the past decade where the growth rates of imports and exports tended

to move together. Imports of intermediate goods slowed the most, with parts and components and semi-finished goods accounting for almost half of the slowdown in import growth between 2003 and 2006. This slowdown has had a direct impact on China's trade with the rest of Asia and may be altering its role in regional production chains. While its trade surplus with the U.S. and the EU continues to grow, its trade deficit with the rest of Asia, traditionally an offset, has shrunk over the last two years. This has raised concerns in some Asian economies, especially those where exports to China have been an important driver of recent economic growth. (Feenstra, et al.)

Year	Export	Import	Trade surplus
1998	1837.1	1402.4	434.7
1999	1919.3	1657.0	292.3
2000	2492.0	2250.9	241.1
2001	2661.0	2435.5	225.5
2002	3256.0	2951.7	304.3
2003	4383.7	4128.4	255.3
2004	5934.0	5614.0	320.0
2005	7620.0	6601.0	1019.0
2006	9690.8	7916.1	1774.0
2007	12118.0	9558.2	2621.9

 Table 1. China's import and export value in the decade (billion\$)

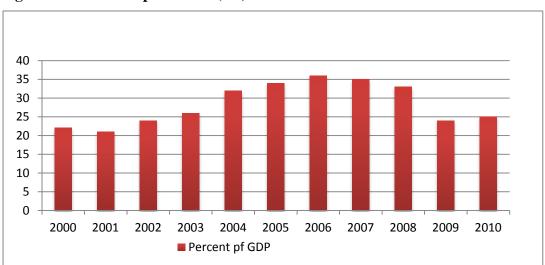
Source: China statistical

China's trade surplus has expanded sharply recently—during the past five years, the trade surplus has grown over 5 folds in dollar terms and more than tripled as a percent of GDP. Today, China has become a "export machine": Accounting to the Table2, from 1998 to 2007, China's total imports and exports increased by nearly seven-fold, is annual reaching \$ 2,173,830 billion, the trade surplus from \$ 43.47 billion increase to \$ 262.19 billion in 2007 and 2008. In 2004, total imports and exports are reached

\$ 1.1547 billion, is up 35.7% over the previous year. <sup>19</sup>The exports totaled are \$593.4 billion, is up 35.4%, and imports totaled are \$ 561.4 billion, is increase of 36%, the annual trade surplus are \$32 billion, is expand the \$ 6.5 billion than the previous year.

#### 4.4 Export commodities structure analysis

In the 30 years since economic reforms were enacted in the late 1970s, China has experienced a remarkable period of continued powerful economic growth, with real GDP increasing 23-fold since 1977. After years of painstaking efforts, the scale of China's foreign trade has been a great change. <sup>20</sup>The end of 2004, China's import and export value has exceeded hundreds of millions of U.S. dollars. In 2007, China import and export volume reached \$ 2,173,830,000,000, has ranked third for six consecutive years, become the world's major trading power. China has developed into the world trade power, but it is not really a world trade power, compared with the world trade power, there is still a big gap. (Chongli, 2000)





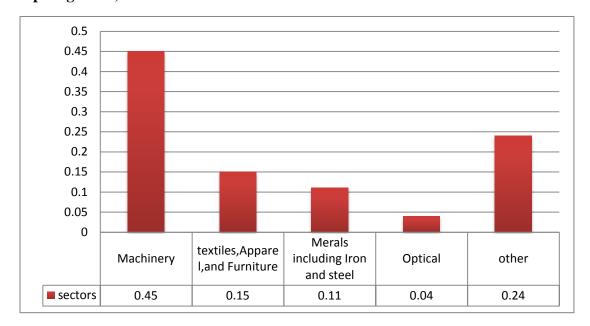
Between 2000 and 2007, the value of Chinese exports more than quadrupled and rose

Source: China National Bureau of Statistics.

<sup>&</sup>lt;sup>19</sup> Ahmed, Shaghil (2009), "Are Chinese Exports Sensitive to Changes in the Exchange Rate?" International Finance Discussion Papers, 987.

<sup>&</sup>lt;sup>20</sup> Exports and GDP measured in U.S. dollars at market exchange rates.

from 20 percent to 35 percent of GDP (Figure 4). Imports failed to keep pace and the Chinese economy became more dependent on external demand. The value of Chinese exports more than Quadrupled between 2000 and 2007. And between 2000 and 2006, exports as a fraction of GDP rose 15 percentage points.





Source: China Customs (from CEIC) and U.S. Census Bureau.

Figure 5 showed that Chinese exports growth was relatively focus in a few sectors. China's trade boom is dominated by a few classes of goods. This growth was dominated first and foremost by machinery exports<sup>21</sup>, which accounted for about 45 percent of export growth. Textiles/furniture and metals accounted for 15 percent and 11 percent, respectively.

#### 4.4.1 Most of product is labor-intensive

The mainly export type are still the labor-intensive products. The added value of this kind of product is generally not high and export earnings are low. Although the

<sup>&</sup>lt;sup>21</sup> This section includes HS categories 42, 51, 52, 58, 60, 61, 62, 63, 64, 94

high-tech products export proportion has increased in recent years, compared with developed countries there is a certain gap which means China also lack certain strength in technical exports. Although China is a manufacturing powerful country, the products contained generally low technical content where most enterprises only transform labor-intensive production of in capital and technology-intensive products labor-intensive production process. The added value of products and profitability is no fundamental change. Low-end exports are still in the industrial chain, the position in the international division of labor is low. There are few influential brands in the world. Those Chinese products are easily affected by cost factors such as international exchange rate changes and difficult to deal with the fierce competition in the international trade.

Name	Amount (million\$)		
Mechanical and electrical products	22745671.8		
Textile	2332085.5		
Agriculture product	1633194		
Plastic Products	731765.5		
Furniture and furniture parts	597930		
Toys	597930		
Shoes	535606.2		
Container	38412.4		

 Table 2. Chinese exports of labor-intensive products (million\$)

Source: China Statistical

According to the Table 2, is showed in the top ten amount of exports, the mechanical and electrical products, textile, agricultural products, furniture and furniture parts, toys and shoes are belong to labor-intensive goods. In the export of labor-intensive products trade and amounts the both occupies a large proportion.

Chinese export commodity structure are imbalance, the labor-intensive, low-tech

products and resource consuming products account for a large proportion among export commodities. Like toy, data processing equipment, apparel, textiles, iron, steel, disposable chopsticks and so on. These primary commodities, which lack of competitive power, to bring some profit in the short term, but will do much harm in the long term this is not sustainable<sup>22</sup>.

#### 4.4.2 Low value-added processing trade

Low value-added processing and trade protection serious processing trade occupies a large part of the total foreign trade in our country which is the main source of export commodities in China. It can not only solve the problem of a large number of employments, but also be able to pull the growth of foreign trade in China which was an irreplaceable role in national economy. Recent years, processing trade in China despite a certain improvement, part of the enterprise began gradually in the capital intensive product processing. However, the labor intensity is high and the product technology content is relatively low. The proportion of high value-added and high technology content of products is still low and large processing enterprises just earn a little at the end of the international division of labor chain.

In a lot of processing trade, well-funded foreign companies control the core technology of the products and sales channels. Processing enterprises of China play a role of processing factories and manufacturing base which could only attend simple processing. What's worse, there are still processing would cause the energy-consuming, high pollution, resource waste, high-energy-consuming and resource-dependent) products. Although there are certain foreign exchange income, the fact that the environmental pollution consume energy, resources and ecological damage, could restrict the sustainable development of the economy. And the benign development of processing trade will affect the country's economic security.

<sup>&</sup>lt;sup>22</sup> ray Beijing ming-yong lai. 2000 (5). Chinese manufactured goods export effect on economic growth empirical research and several thinking. Journal of statistical research.

#### 4.4.3 The proportion of trade in services has increased

Since the 80 s, with the development of information and communication technology and the rising of information industry, Chinese export commodity structure changed rapidly. The development of world trade in services is significantly faster than trade in goods, the average annual growth of 5%, higher than the average annual growth for world merchandise trade growth of 2.5%.

Category	Export and import	Export	Import	
Total	3159.3	1627.7	1693.7	
Shipping	974.7	342.1	632.6	
Tourism	1006.9	458.1	548.8	
Communication Services	23.6	12.2	11.4	
Construction Services	195.7	144.9	50.7	
Insurance Services	174.8	17.3	157.5	
Financial Services	133.8	204.6	91.2	
Information Technology	122.2	92.6	29.7	
Other	527.6	355.9	171.8	

 Table 3.The development of China trade in services in 2010 (billion\$)

Source: Ministry of commerce of the people's republic of China Comprehensive Department

Accounting to the table3, services are mainly concentrated in ocean shipping, tourism and other traditional service industry. Although the service had made a great improvement and development, China found its weakness in the consulting, insurance, finance, post and telecommunications technology intensive and knowledge intensive service industry. Although the proportion of service trade has grown steadily in recent years, but the service is still relatively low technical content which mainly engaged in some simple labor-intensive services such as online trading platform, cross-border payment, payment and settlement of trade in services such as e-commerce mode. The proportion of trade in services has increased, but the technology services are still not enough. Service industry referred to as "smokeless industry", which offers a large capacity of employment. And the advantages are also including the less environmental pollution and less resource consumption. The development of trade in services can effectively relieve the contradiction between economic development and environment, resources. Nowadays, the service trade brought to more and more attention all over the world. Service trade of China starts relatively late mainly contains consumer services and other services which had complementary structure development.

### 5. Commodity Structure Compare among Japan, China

#### 5.1 The current status of the Japanese Export

Since the 80 s, the Japanese economy entered a stage of rapid development. Because that the area is small and its resource is poor, the economic trade is as "alternative" export, the change of its export commodity structure as shown in Table4

Japan	Food	Textile	Chemical	Steel	Mechanical	Mineral	Others
			Product	Product			
1960	6.6	30.2	4.2	13.8	25.3	3.6	16.4
1970	3.5	12.5	6.4	19.7	46.3	1.9	9.8
1980	1.2	4.8	5.2	16.4	62.8	1.4	8.1
1999	0.5	1.9	7.4	5.7	73.4	1.1	10
2000	0.4	1.8	7.4	5.5	74.3	1.2	9.5
2001	0.7	1.9	7.6	5.9	72.6	1.2	10.1

 Table 4. The change of Japanese export commodity structure (%)

Source : Japan Almanac 2003, The Asahi Shimbun Company

Japan's export commodity structure changes show the different stages of economic

development: the first stage, after the Second World War in the 1960 s, due to the war wounds, Japanese coupled with its own resource constraints, so the labor intensive exports such as textiles and less resource consumption of products. By 1960, textile exports accounted for 30.2% of total exports and the mechanical equipment accounted for 25.3%; The second phase, 60-80 s of the 20th century, mechanical products export growth by 1970 to 46.3% and 62.8% in 1980; The third stage, the end of the 20th century to the early 21st century, industrial transformation was basically completed and the products are exported to maintain the relatively stable level. The export of machinery and equipment basic remain at around 74% in 1999-2001.

#### 5.2 The Japanese Export compare to China

Japan exports machinery and equipment<sup>23</sup> to \$67.2 billion and accounts for 20.0% of its total exports, an increase of 9.1%. Among these, the printing machine and auxiliary machine export growth are very obvious. The amount of these two exports was \$8.26 billion, an 841.5% rocket rise. In the same period, the electrical and electronic products exports were \$62.65 billion and accounts for 18.6% of its total exports, an increase of 4.7%. Among semiconductors, integrated circuit, the microelectronic components and the semiconductor devices are the most amounts among exports which amounts are \$15.92 billion and \$4.99 billion respectively in the first half of the year<sup>24</sup>.

<sup>&</sup>lt;sup>23</sup> The machinery section includes HS categories 84 and 85.

<sup>&</sup>lt;sup>24</sup> Wood, Adrian and Mayer, Jorg (2001): "South Asia's Exports in a Comparative Perspective", Oxford, Development Studies, 29(1).

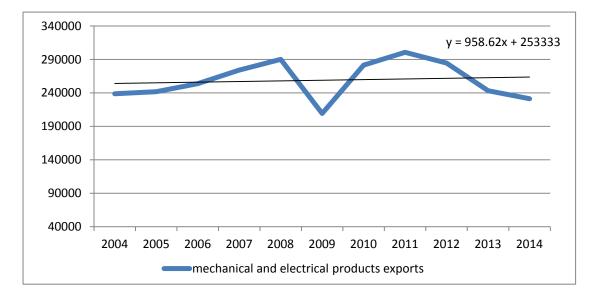
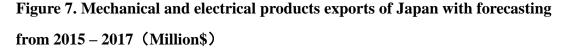
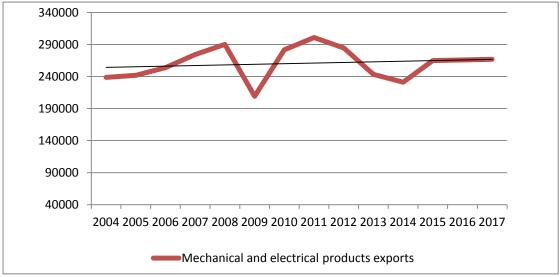


Figure 6. Mechanical and electrical products exports of Japan in 2004 – 2014 (Million\$)

Source: country report,

In this figure6 it showed the Japan mechanical and electrical products export value from year 2004 to 2014, it showed that according to global crises in the period of 2009, it made the Japan export decreased from \$29.0132 million in 2008 to \$20.9251 million in 2009.





Source: own calculation

The main products of Japanese exports to China are mechanical and electrical products, metals products and transportation equipment, Japan exports machinery and equipment to \$67.2 billion and accounts for 20.0% of its total exports, an increase of 9.1%<sup>25</sup>. Among these, the printing machine and auxiliary machines export growth are very obvious. The amount of these two exports was \$8.26 billion, an 841.5% rocket rise. In the same period, the electrical and electronic products exports were \$62.65 billion and accounts for 18.6% of its total exports, an increase of 4.7%. This kind of products in Japan is mainly exported to China and the United States which has maintained a rapid growth for Chinese exports. But exports to the United States showed a trend of gradual decline. From the point of specific goods, the most important product categories are including semiconductor; Video, audio equipment and electrical and electronic products for nearly half of the total amount of the this kind of product.

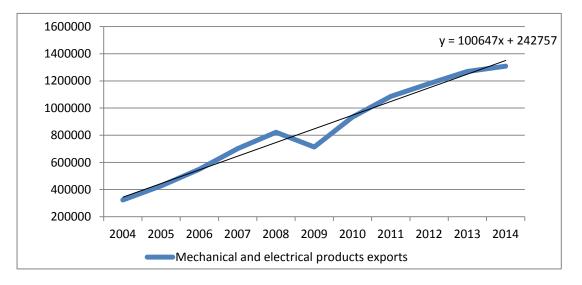


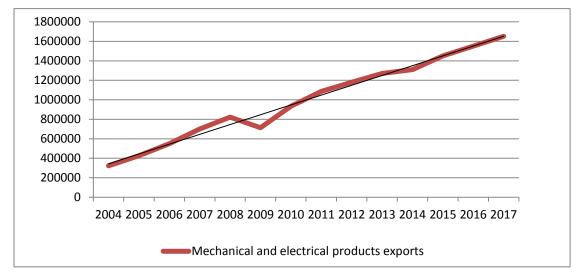
Figure 8. Mechanical and electrical products of China in 2004 – 2014 (Million\$)

Source: country report.

In this graph it showed the China export mechanical and electrical products from year 2004 to 2014, it showed that from 2012 to 2014 the China exports of is increasing.

<sup>&</sup>lt;sup>25</sup> Lo, Dic and Thomas M. H. Chan,(1998) "Machinery and China's nexus of foreign trade and economic growth," Journal of International Development, 10(6), 733-749.

Figure 9. Mechanical and electrical products of China with forecasting form 2015 – 2017 (Million\$)



Source: own calculation

In 2009, China became the largest global exporter and in 2010 passed Japan as the second largest economy in the world. The Figure7 and Figure9 author take the result to calculate the forecasting from 2015 to 2017, is showed that the cause of global recession hit the economy in the period of 2009, it made the export decreased in 2008 to 2009 in China and Japan. According to the forecasting result, China will increasing export more than Japan in 2015 to 2017.

### 6. The way to optimize Chinese export commodity

#### structure

At present, Chinese foreign trade export commodity structure faces a major decision, if they don't increase the high technology content of the export commodity and improve a high level industrial structure, they will lose the momentum of rapid development of foreign trade and their products will lose competitiveness in the international market<sup>26</sup>.

In order to establish international competitiveness in terms of high technology

<sup>&</sup>lt;sup>26</sup> World Bank: 1993. The East Asian Miracle—Economic Growth and Public Policy. OXFORD University Press,

industry in the next 5 to 10 years, and at meantime continually maintain and create competitive advantage in the field of labor-intensive products, improving the structure of export commodities has become the key of the reform of China's foreign trade.

#### 6.1 Make the Commodity Structure more reasonable.

One of the main characteristics of Chinese production factors is that the labor force of the country is very rich. Especially, the supply of the unskilled labor force greatly exceeds the demand of the human resource market. The employment of labor has become an important issue on social and economic development.

In the near future, in order to solve the labor employment and promote the development of the economy as a whole, our country export commodities structure rationalization of labor-intensive industry development must be considered and the importance of the export of labor-intensive products.

In the process of production of labor-intensive products, the improvement still could be completed by the "intensive cultivation" and strengthening the management on the grade of the product quality. Be realistic, scientific and reasonable to establish the pillar of export products to make its forming products group and become the life-blood of export. Make the combination among the traditional products, leading products and strategic products to make a transformation of the commodity structure from low-level-period to the high-level-period<sup>27</sup>.

# 6.1.1 Increase the technology of the traditional exported commodities like agriculture and textile industries.

At present, the resource-intensive and labor-intensive products account for more than 70% of the proportion of export which is China's main export commodities. And because of the disadvantages of the China's capital, technology and production level, there will be quite a long time in the future that these traditional products will continue to be a main product of our country's export.

<sup>&</sup>lt;sup>27</sup> Xiaojuan Wang. 2007, The decision of the our country export commodities structure factors and changing trends. Economic research.

But to keep traditional advantages, we must adapt to the development trend of 28 trade. international economy and Apart from eliminating the losing-cost-commodities whose international market demand are kept decreasing and cost of swapping are kept increasing, at the same time, Chinese government and enterprises should penetrate the technology, new material or new energy into other traditional industry. Another action must be done is that they should improve the degree of traditional products processing, product quality and grade to another level that these technologies contain higher technical content, deeper processing and higher value-added new products. At the same time, through the technical input and the change of the elements of the output elasticity of demand, China's resources and labor-intensive products could be cultivated from owning the comparative advantage into competitive advantage in the international markets. Such as the development of "green food" and "black food", the development of efficient agriculture and foreign exchange earning agricultural make pure resources and labor-intensive products into high value-added new technology products.

#### 6.1.2 Develop the machinery and electronics products as the leading products

The characteristics of the mechanical and electrical products are including technology-intensive and high value-added. The most important thing is that they get the large capacity of the international market. From the current situation in China, although the export shares of mechanical and electrical products continue to increase, a significant number of the products technology level is not high enough, price competition are not strong<sup>29</sup>.

If China wants to overcome these shortcomings, it will give full use of the good

<sup>&</sup>lt;sup>28</sup> Li Jichen. 2007,Advances in technology innovation and industrial restructuring. Journal of enterprise civilization.

<sup>&</sup>lt;sup>29</sup> Jichen Li. 2007 ,Technology progress, industrial structure adjustment and innovation. Journal of enterprise civilization.

foundation and improve this area knowledge to develop a perfect research targets. The specific targets are as followed: one is that gradually achieving the quality of export products to upgrade; another is that based on the science and technology, use the international standard; the other is to establish a number of major projects to make it become the leading products of China's exports, such as automotive cars, home appliances, chemical, machine tool equipment, computer software, automatic control system, etc., all of which would make a big transformation of the mechanical and electrical products gradually from the low technology content to high technology content.

#### 6.1.3 Focus on the development of the high technology products.

Having been readjusting the structure of products, at the same time, Chinese government should focus on the future world and use the technology progress to promote efficiency and elements changed. Thus, the creating new comparative advantage could be set up. A batch of new high-tech projects like aerospace science and technology, optical fiber communications, microelectronics, biological engineering must been cultivated with purposes and plan. All of these projects and industries could be the main export strategy in the future. China should achieve the export commodities structure upgrade to completely change the disadvantage position in the international division of labor in our country. (Lall, 2001)

#### 6.1.4 Focus on the development of the new-coming service industries.

Service industries like tourist information, consulting, technical industry, legal and accounting services must be emphasized to develop to another new higher step. The IT service industries need to be extremely paid attention on, because it is the foundation and base of all the new service industry. The revitalization of the IT industry will greatly improve the overall quality of the economy in our country and enhance China's comprehensive national strength and also effectively improve the international competitive force of China's service trade. Expand and consolidate the position in world service in China market.

#### 6.2 Promote the use of the international standard of the trading

Under the background of economic globalization, the international standard should be the best reference frame for the enterprise and government business. Chinese enterprises cannot ignore the important trend and with a positive attitude to participate in this important trend. Enhance competitiveness by international standards. Otherwise the market space will be smaller and smaller, export growth will not be able to continue.

# 6.3 Establish an effective incentive mechanism to cultivating domestic brand products.

The improvement of the export trade structure must be the results of the production technology and human resources investment and development. At the same time, it could not be completed totally without the effective incentive mechanism. Chinese government should fully develop the human resources and actively realize system innovation and technological innovation. In terms of system innovation, it needs to actively push forward the reform of foreign trade system in China.<sup>30</sup> Meanwhile, foreign trade companies need to enlarge its size and power to a larger group and achieve the specialization and diversification in the field of the trade skills. In terms of technology innovation, the technology of the exported products should be enhanced and continuously upgrade the products. Increase the content of science and technology and active research and development of new products. At the same time, we need to change the pattern of management which could encourage their cultivating own brand products and improve product quality and reputation and extensive mode of operation for the intensive management.

### 7. Conclusion

The aim of this thesis was optimize Chinese export commodity structure. Due to

<sup>&</sup>lt;sup>30</sup> Huan Chen, (2009) A Literature Review on the Relationship between Foreign Trade and Economic Growth

establish international competitiveness, China should focus on many aspects in terms of high technology industry in the next 5 to 10 years. And at the same time they should continually maintain to build competitive advantage in the area of labor-intensive products and improving the structure of export commodities which had lead the key factor of the reform and development of China's export structure<sup>31</sup>.

As for China, it should learn from Japan, gain the useful experience. First, China should make the commodity structure more reasonable. One of the main characteristics of Chinese production factors is that the labor force of the country is very rich. Especially, the supply of the unskilled labor force greatly exceeds the demand of the human resource market. The employment of labor has become an important issue on social and economic development. Besides, China should develop the machinery and electronics products as the leading products.

Second, the characteristics of the mechanical and electrical products are including technology-intensive and high value-added. The most important thing is that they get the large capacity of the international market. From the current situation in China, although the export shares of mechanical and electrical products continue to increase, a significant number of the products technology level is not high enough, price competition are not strong. If China wants to overcome these shortcomings, it will give full use of the good foundation and improve this area knowledge to develop a perfect research targets. At last, China needs to focus on the development of the high technology products and the development of the new-coming service industries. Second, China should promote the use of the international standard of the trading.

Third, China needs to establish an effective incentive mechanism to cultivating domestic brand products. In terms of system innovation, it needs to actively push forward the reform of foreign trade system in China. Meanwhile, foreign trade companies need to enlarge its size and power to a larger group and achieve the specialization and diversification in the field of the trade skills. Through these adepts, China's competition will improve greatly.

<sup>&</sup>lt;sup>31</sup> Xiaojuan Wang. 2007, 5. The decision of the our country export commodities structure factors and changing trends. Economic research,

China's export structure has stepped into a new stage in the short 20 year, which made export trade volumes grown so fast. however, we must realize the current situation, adjust punctually and have our export commodity structure updated and promotes. Only by these means, can we not only constantly improve our export industry and international competitiveness, but also ensure the continues developmen of the foreign trade export

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