

Research on the Economic Environment of China, Europe and America

Yue Hu

Warwick university, England, CV4 8UW, Britain

Abstract: In the current severe domestic economic environment, the economic differences between China and developed countries in Europe and America are analyzed from five perspectives: China's industrial production model, national demand, household income, industrial structure, and economic development momentum. According to the features of large capacity economy, strong acceptance, and emphasis on product quality in the European and American economic markets, China should establish a path to adjust industrial structure in order to shorten the economic differences between China and European and American countries.

Keywords: World; Economy; Environment

1. Introduction

1.1. Composition of Exporting Manufactures for China, the US and the EU

Since China surpassed the US in 2009 as the world's largest exporter of industrial goods, there are lot of debating voice about Chinese manufacturers are directly com-

peting with the US and the EU in the global market. The tables provided below are presented as the comparison between the product composition of manufactures exports from China and the US & EU to explain the existing similarities and differences.

Table 1. Percentage of manufacturing exports of China, US and EU (2014)

	Year					
	2014		2014		2014	
	Bn\$	%	Bn\$	%	Bn\$	%
	China		US		EU	
Manufactures	2,201,646	100%	1,163,890	100%	4,718,096	100%
Iron and steel	72,262	3.28%	19,993	1.72%	169394	3.59%
Chemicals	134,481	6.11%	211,682	18.19%	1003754	21.27%
Pharmaceuticals	13,362	-	48,689	-	357429	-
Machinery & transport equipment	1,071,808	48.68%	664,939	57.13%	2,283,274	48.39%
Office and telecom equipment	595,359	-	145,105	-	352,090	-
EDP and office equipment	225,666	-	50,339	-	132,008	-
Telecommunications equipment	276,280	-	52,483	-	169,038	-
Integrated circuits	93,412	-	42,281	-	51,044	-
Transport equipment	118,003	-	287,843	-	985,995	-
Automotive products	50,901	-	138,070	-	695,259	-
Other transport equipment	N/A	N/A	N/A	N/A	N/A	N/A
Other machinery	N/A	N/A	N/A	N/A	N/A	N/A
Power generating machinery	N/A	N/A	N/A	N/A	N/A	N/A
Non-electrical machinery	N/A	N/A	N/A	N/A	N/A	N/A
Electrical machinery	N/A	N/A	N/A	N/A	N/A	N/A
Textiles	111,661	5.07%	14,373	1.23%	74,827	1.59%
Clothing	186,607	8.48%	6,108	0.52%	126,587	2.68%
Other manufactures	624,827	28.38%	246,795	21.20%	1,060,260	22.47%
Personal & household goods	N/A	N/A	N/A	N/A	N/A	N/A
Scientific & controlling instruments	N/A	N/A	N/A	N/A	N/A	N/A
Miscellaneous manufactures	N/A	N/A	N/A	N/A	N/A	N/A

This table contains the percentage of the manufacturing exports composition of China, the US and the EU in 6

sectors: (1) Iron & Steel (2) Chemicals (3) Machinery & Transport Equipment (4) Textiles (5) Clothing (6) Other Manufactures.

Table 2. Percentage of Composition of Manufacture Export in Machinery and Transport Equipment for China, US and EU (2014)

	Year					
	2014		2014		2014	
	Bn\$	%	Bn\$	%	Bn\$	%
	China		US		EU	
Machinery and transport equipment	1,071,808	100.00%	664,939	100.00%	2,283,274	100.00%
Office & telecomequipment	595,359	55.55%	145,105	21.82%	352,090	15.42%
EDP and office equipment	225,666	21.05%	50,339	7.57%	132,008	5.78%
Telecom equipment	276,280	25.78%	52,483	7.89%	169,038	7.40%
Integrated circuits	93,412	8.72%	42,281	6.36%	51,044	2.24%
Transport equipment	118,003	11.01%	287,843	43.29%	985,995	43.18%
Automotive products	50,901	4.75%	138,070	20.76%	695,259	30.45%
Other transport equipment	67,102	6.26%	149,773	22.52%	290,736	12.73%
Other machinery	358,446	33.44%	231,991	34.89%	945,189	41.40%
Power generating machinery	N/A	N/A	N/A	N/A	N/A	N/A
Non-electrical machinery	N/A	N/A	N/A	N/A	N/A	N/A
Electrical machinery	N/A	N/A	N/A	N/A	N/A	N/A

This table is more detailed about the sub sector of products under the heading Machinery and Transport Equipment including office and telecom equipment, transport equipment and other machinery for China, US and EU.

2. Identify the Major Difference of the Product Composition of Manufacture Export Between China and The US & EU

Table 3. Summary of Table 1

	Year					
	2014		2014		2014	
	Bn\$	%	Bn\$	%	Bn\$	%
	China		US		EU	
Manufactures	2,201,646	100%	1,163,890	100%	4,718,096	100%
(1)Iron & Steel	72,262	3.28%	19,993	1.72%	169,394	3.59%
(2)Chemicals	134,481	6.11%	211,682	18.19%	1,003,754	21.27%
(3)Machinery & Transport Equipment	1,071,808	48.68%	664,939	57.13%	2,283,274	48.39%
(4)Textiles	111,661	5.07%	14,373	1.23%	74,827	1.59%
(5)Clothing	186,607	8.48%	6,108	0.52%	126,587	2.68%
(6)Other manufactures	624,827	28.38%	246,795	21.20%	1,060,260	22.47%

This table shows the percentage of the six sectors of manufacture exports for China, the US and the EU mentioned in Part I table 1.

For China the manufacture export with the highest percentage is machinery & transport equipment, which takes up nearly half of all their manufacture exports at a massive 48.68% and amounts to a staggering \$1,071,808 billion, making machinery & transport equipment China's most important manufacture export. China's second biggest manufacture export is 'other manufactures' which amount to more than a quarter of their manufactures exports at 28.38%. Third is Clothing which makes up considerably less of the manufacture exports in comparison to the 2 previously mentioned, accounting for 8.48% of the exports. 4th is Chemicals which makes up 6.11%, 5th is textiles with 5.07% and last at 6th place,

making up the lowest percentage of China's manufacture exports is iron and steel at 3.28%.

For the US, their manufacture export with the highest percentage, making up over half of the countries manufacture exports in total is their machinery and transport equipment industry with a huge 57.13%, and is valued at \$664,939 billion. Second, accounting for just over a fifth of the manufacture exports at 21.20% is 'other manufactures,' and a close 3rd making up just under a fifth of the manufacture exports is chemicals with 18.19% of total exports. 4th is iron at steel, which compared to the three previously mentioned manufacture exports makes up a very small amount of total manufacture exports at just 1.72%, 5th is textiles with 1.23% and 6th, accounting for less than 1% of the US's total manufacture exports, and their smallest industry is clothing, at just 0.52%.

For the EU, the manufacture export that accounts the highest percentage of the EU’s total manufacture export industry is the machinery and transport equipment industry, at 48.39% and with the massive worth of \$2,283, 274 billion. In second place, taking up just over a 5th of the total manufacture exports is ‘other manufactures’ with 22.47%, and in extremely close third place, again accounting for just over a fifth of the total exports of the EU is the chemical industry, at 21.27%. 4th is the iron and steel industry which at 3.59% of the total manufacture exports is fairly low compared to the top 3 exports however is in no way considered a small industry, worth \$169,394 billion. 5th is clothing with 2.68% and last, in 6th place is textiles at 1.59% of total manufacture exports.

2.1. Analysis in accordance to the table above

From the summarization above, for all China, the US and EU, machinery and transport equipment and other manufactures contribute a huge proportion of the exporting list.

It seems that according to the figures showed above the dominant volume and capability of exporting in machinery and transport equipment industry makes the competition among the three economic units very intensive, but due to the category of machinery is too wide, a more detailed analysis will be carried out in the next table. However, when it comes to chemicals industry, the less competency of China exposed to the US and EU. For both percentage and volume perspective, in Chemical products exporting, China is no match for the US and EU let alone the business competition with them. Nonetheless, comparing to the US and EU, China holds an overwhelmingly greater proportion in clothing and textile exporting. This indicates that there are hardly competition between China and the US & EU. Apart from this, it is obvious that the US & EU rely on the iron and steel export more than China does as iron and steel accounts the lowest percentage of the export list.

Table 4. Summary of Table 2

	Year					
	2014		2014		2014	
	Bn\$	%	Bn\$	%	Bn\$	%
	China		US		EU	
Machinery and transport equipment	1,071,808	100.00%	664,939	100.00%	2,283,274	100.00%
Office & telecom equipment	595,359	55.55%	145,105	21.82%	352,090	15.42%
EDP & office equipment	225,666	21.05%	50,339	7.57%	132,008	5.78%
Telecom equipment	276,280	25.78%	52,483	7.89%	169,038	7.40%
Integrated circuits	93,412	8.72%	42,281	6.36%	51,044	2.24%
Transport equipment	118,003	11.01%	287,843	43.29%	985,995	43.18%
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Other machinery	358,446	33.44%	231,991	34.89%	945,189	41.40%
Power generating machinery	N/A	N/A	N/A	N/A	N/A	N/A
Non-electrical machinery	N/A	N/A	N/A	N/A	N/A	N/A
Electrical machinery	N/A	N/A	N/A	N/A	N/A	N/A

In order to analyze in depth about the machinery and transport equipment between China and the US &EU, a summary of table 2 is carried above.

For China, it relies more on office and telecom equipment, which account 55.55% while transport equipment only accounts 11.01%. Oppositely, transport equipment occupies the most proportion for both the US and the EU (43.29% and 43.18% respectively) and as for office and telecom equipment, it only accounts for 21.82% and 15.42% respectively.

More precisely for China, EDP & office equipment account for 21.05% out of 55.55% while telecom equipment and integrated circuit account for 25.78% and

8.72% correspondingly. As for automotive product, it only accounts 4.75% and the other product accounts 6.26%.

For the US, the EDP &office equipment take 7.75% and telecom equipment and integrated circuit take 7.89% and 6.36% respectively. While for automotive the contrast figure raised to 20.76% and the other product for transport is 22.52%.

Similar the US, the EU’s export for EDP & office equipment, telecom equipment and integrated circuit account for 5.78%, 7.4% and 2.24% correspondingly and for the automotive product and other transport product, a huge turn around shows 30.45% and 12.73% respectively.

2.2. Briefly for the Machinery and Transport Equipment

From the table and summarization above, despite that China and the US & EU all have large portion in exporting machinery and transport equipment. However, when it comes to detailed category, China is more focusing on the office and telecom equipment whilst the US and EU putting more devotion in exporting transports equipment. Based on this fact, the competition of machinery and transport equipment between China and the US & EU seems could not hold very well, and it is more likely to see there are more competition between US and EU in lots of aspects.

3. Explanation of the Existing Difference

The reason why the exports of manufacture from China differ from the US and the EU can be linked to each country's comparative advantage. In the globalized world, the international trading happens is due to in each different country, the nation has been able to produce more goods and services than its domestic demands. Since then, the international trading can help find opportunities to sell the excessive production. It can also be prompted by the capital flowing due to the differences of price varying among different countries (Heller, 1976).

According to the factor endowment theory, different countries hold different abundant types of resources. In order to distribute the resources, the comparative advantage occurs among countries (Rybczynski, 1955). In this case, for example, China has heavily endowed in the labor cost, in other word, China has lower capital to labor ratio so the products in terms of light industry accounts higher proportion (Hyun & Hong, 2011).

The paragraph below has listed the difference in terms of several different types of goods to explain the existence of manufacturing exports between China and US&EU.

3.1. Office and Telecom Equipment

As a developing country, China has lower capital to labor ratio than the western developed countries and hence the lower labor cost provides the comparative advantage in light industry products. Besides, as Hao & Zhao (2012) stated, the growing innovation inside China fostered the improvement of technology, however China is still less competitive in terms of certain industries that requires high technology (Wysokinska, 1998), thus China is capable of producing medium low to medium technology product. For example, companies as Foxconn manufactures and assembles the majority amount of smartphones worldwide. The reason why Foxconn is capable is because of the relative cheaper labor cost and reliable technology. As the current states, China in the long run will dominant the world exporting market in terms of the low to medium technology products.

Apart from that, due to the geographic factors, China benefits from the trading intercourse with Korean and Japan, which are the two technology giant nations in the world. As neighboring countries and the members in APEC (Asia-Pacific Economic Cooperation), the trade contacts between China and Korean-Japan enable Chinese companies to improve their research and development capability.

Based on the reasons, China has the comparative advantage in producing office and telecom equipment due to the lower labor cost and moderate technology capability. Plus the APEC policies as well as the trade contract with neighboring countries. These make China more capable in the international market comparing with the US and EU. Contrary to that, in the US and EU, the high labor cost and high capital labor ratio make them less competitive in the low to medium technology required market.

3.2. Chemicals

As the chemical products are not only defined in commercial pharmaceutical product but also highly refined prescriptive products, it requires high technology and innovation as well as high-qualified skillful labor force. These factors are not possessed by China but by the US and EU. Due to the US and EU are more developed economic units than China, they have better facilities and institutes to ensure they are capable in manufacturing chemical products. That is why the remarkable and acknowledged chemical producers are mainly located in the European countries. For instance, the world largest chemical product producer BASF is sited in Germany and the European and American chemical brands are recognized as the best quality product in the world (Roberts, 1994). Apart from that, there are more chemical buyers in the western society in terms of consumer goods, automotive, construction, energy, health care and agriculture that directly prompt the growth and development of the chemical industry (Darkow & Von, 2013). Comparing to EU and US, the start of the R&D in the chemical industry is later than the US and EU, and the conscious of the use of high knowledge required chemical products are still lower, plus the far-behind technology and the short of qualified human capital are the reasons that enable China being less competitive. Therefore, China has much lower portion and volumes of chemical exporting comparing to the US and EU.

3.3. Textiles and Clothing

Similar to the office and telecom products, textiles and clothing products require less skilled labor force and less advanced technology. As Kilduff and Ting (2007) addressed, textile and clothing industries are highly labor-intensive industries. Early in the 1990's, the cheap labor cost and the large population in China has already attracted piles of orders from oversea textile and clothing

companies' attention (Hyun& Hong, 2011). As the growing and developing of textile and clothing industries, China has become the predominant nation in producing textile and clothing and has become an overarching role in exporting textile and clothing product.

On the contrast, the expensive labor cost in the US and EU force the clothing companies to seek for the cheaper cost territory to lower their cost in order to stay sustainability. It is rational to purchase products from a cheaper buyer since producing on its own is more costly. This is the result of natural international capital flow, which enables China to be more competitive in this industry, and it makes more sense why China has higher proportion and volume of exporting textile and clothing

3.4. Transport Equipment

As is known to all that transport equipment requires high technology and qualified working force. That's the reason why in the global stage, the US and EU are playing the dominant role in exporting transport equipment. The EU and US has started to researching and developing high technology required transport equipment more than five decades ago. Tracing back to the first industrial revolution, the western has already undertaken the development of transport equipment while the Chinese was still dealing with the last feudal dynasty. Despite the late start for China, the rapid growth makes China less weak in manufacturing transport equipment, but to catch up with the western, according to Xodo (2011), it will still need to take years. At the moment, in the global market, the best selling transport equipment are ensured by the best qualities. China is short of the European and American technology, which unquestionably makes it less competitive than the US and EU.

3.5. Other factors

Apart from the above, the difference of manufactures exporting between each country is theoretically due to the factor endowment. At the global stage, each nation is more like an individual; it has the specialization and also comes with the weakness in manufacturing or producing products. To balance the supply and demand relation, international trade helps. In the theory, the assumption is made, as the world is perfect market. The capital can flow freely across the boundaries (Jackson, 1997). Different nations have different endowment in resource, so the international trade can perfect balance the abundance and scarcity among the world. However, economy can never be operated without politics. In reality, the regulation and legislation has set barriers for the implementation of the theory.

In the real world, the regulation will be levied to against the foreign exporters for the purpose of protecting domestic producers. For China, since China joined WTO (World Trade Organization) in 2002, lots of new regula-

tions have emerged both in favor and against China. For instance, the textile industry, it enables China to have more channels to convert the excessive labor force into GDP and at the same time it managed foreign manufacturers to lower theirs cost. But for the transport equipment product industry, China has put a high tariff on the import vehicles. The reason for this is to protect the domestic automobile manufacturers from the outside high quality products. Beside that, automobile joint ventures have been established in China. This cannot only reduce the dependence of importing, but also can learn new advanced technology from the foreign companies.

Also, it is a fact that China is highly endowed in nature resources in terms of raw iron mine. Every year, China can produce millions of tons of steel and it is way excess the domestic demand. In order to get rid of the inventory, China is trying to sell the surplus steel oversea to the western by low price. At the western's perspective, the benefits of the domestic steel producers will facing threaten so the high tariff will be set against China as the form of anti-dumping policy. This would effectively limit the export of Chinese steel exporting volume and maintain the international steel price stable.

Additionally, the exchange rate in different nations affects the trading. Due to the financial issue, still for China, the appreciation of the Chinese Yuan would bring negative impact on exporting as for the oversea buyers it will increase the cost for them. Vice versa.

At last, the geographic factors play important role in international trading. Still for China, to export the same product, it is obviously more costly to sell one product in the UK than Japan due to the shipping cost. So for the same product, the difference of the price in two countries will occur and the premium of cost will be charged to the buyers thus incur the imbalance and affect the exporting volume by the butterfly effect (Torello& Dalton, 2010).

4. Conclusion

According to the factor endowment theory, under the perfect market, the free flowing of capital will eventually balance the abundance and scarcity of the nations' endowment. But however in reality no country would be willing to suffer from the downside of the balancing process for the short term due to political and human rational issues. Thus the difference between each country's import and export occurs.

As the global economy cannot be played without politics, in lot of situations, the global trading will be used as political and financial tool.

In this case, China at the current state is not identified as competing with the US and EU due to the analysis above, but as time passing by and the developing continues, the disparities between China and the US & EU will gradually fade. By that time, China would be more competitive in the exporting market against the US and EU.

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