Competitive Research on the Bilateral Trade between China and Nigeria ——Based on Data Empirical of Imported Countries such as Europe and the United States

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ABSTRACT: Nigeria is the biggest economy in western Africa, and economic growth in Nigeria remains above 7% for years. The first economic status in Africa has been hard to shake. Nigeria is the biggest export markets in Africa for our country, and China's exporting in Nigeria also promoted the rapid development of its economy. Bilateral economic and trade relations is very important for economic development in both countries. Having collected data of Nigeria's foreign trade, this paper analyzed the status quo and the structure of Nigeria's export. Taking Europe and the United States market as the target countries, this paper used Click – Rose's calculation and analyzed the competitive relations of bilateral economic and trade. At last, this article got the result that the trade competitiveness of China and Nigeria in major countries of Europe and America in general is small, while there is evident competition between China and Nigeria in fuel output industry. The research has a great help to the readers to understand the status of the export trade in Nigeria. It also provides some reference to enterprises to solve export competitiveness problems especially in the European and American countries.

KEYWORD: Nigeria; export trade; trade competitiveness

Nigeria is the biggest economy in western Africa, with abundant natural resources and huge economic potential. China has signed agreements with Nigeria, committing a trade, economy, technology, science and technology cooperation and investment protection, with the economic and trade commission. Nigeria is China's fourth largest trading partner in Africa, the second largest export market, and China's major investment destination. According to Chinese customs statistics, in the first half of 2014, the bilateral trade volume of China and Nigeria is $8.66 billion, with an increase of 43.8% from a year earlier. Among them, China's export to Nigeria reached $6.99 billion, with an increase of 28.9%. China's import from Nigeria reached $1.66 billion, which is much more than the whole volume of last year, with an increase of 180.3%. Better than South Africa, Nigeria is temporarily Africa's largest export market for China. With a comprehensive consideration of import and export, Nigeria is still in the third largest trade partner for China. Therefore, Nigeria is China's important trade partners, and the research of Nigeria's trade and the economic and trade relations with China is very necessary.

1 THE CURRENT SITUATION OF THE NIGERIA'S EXPORT TRADE DEVELOPMENT

As the biggest economy in western Africa, Nigeria has abundant natural resources and huge economic potential. Affected by the atrophy of oil and gas industry, these industries other than oil and gas have become the main driver of economic development in Nigeria. Telecom services, infrastructure construction and the foreign trade industry are developing with a particularly eye-catching performance. In recent years, Nigeria's agricultural output increased year by year. There is a prediction that agriculture development trend will remain steady in Nigeria in the next period of time. The growth of industries except oil and gas is expected to be moderate, thanks to the development of infrastructure construction. The related industries such as cement industry will develop owing to the same reason.
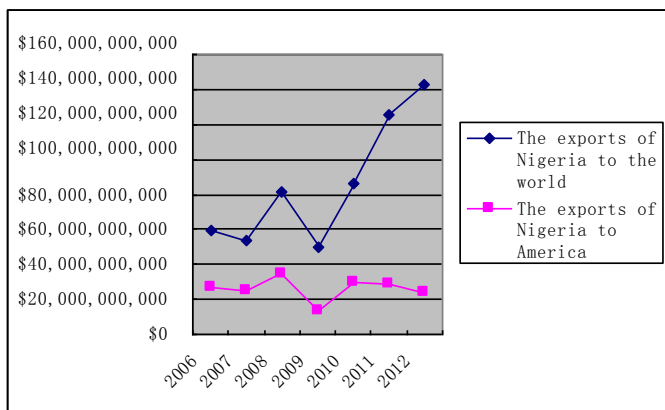
Figure 1 Nigeria's export development schedule

The Figure above shows the export movement of Nigeria since 2006. It can be seen in the figure that Nigeria's total exports volume has maintained good growth trend, and the exports to the United States remained stable.

2 THE STRUCTURE ANALYSIS OF NIGERIA'S EXPORT TRADE DEVELOPMENT:

According to Nigeria's media reports, in 2013, industry related to food products accounted for the vast majority in exports other than the oil and gas industry, with the exports volume reaching $2.97 billion, which include cocoa. Cocoa products accounted for 26% of the total amount of exports other than oil and gas, with exports of $759 million. Other export agricultural products include sheep, goat leather, leather products, sesame seed, rubber, tobacco products, dairy products, and cashew nuts, shrimp, shrimp products, fish, shellfish aquatic products, noodles, biscuits, tomato paste, fruit juice, etc. According to statistics, manufacturing industry's contribution to GDP increased to 9% in 2013. The overall growth rate of manufacturing is 22%, and food manufacturing has an increase of 12% among them. With the increase of the electric power industry investment in southwest, manufacturing is expected to maintain a strong growth momentum. The food industry's leading enterprises in Nigeria include Dangote flour mills, Honeywell, Cadbury, Unilever, Nestle, beer company in Nigeria, Guinness beer. Another statistics according to central bank shows that Friesland Wamco, Dansa food, Starlink Global and AIS also have a good performance in food exports. The quality of food in Nigeria is gaining more and more international competitiveness.

The Figure 2 shows that fuel export occupies the absolute advantage in the export of Nigeria, followed by food and raw materials, etc.
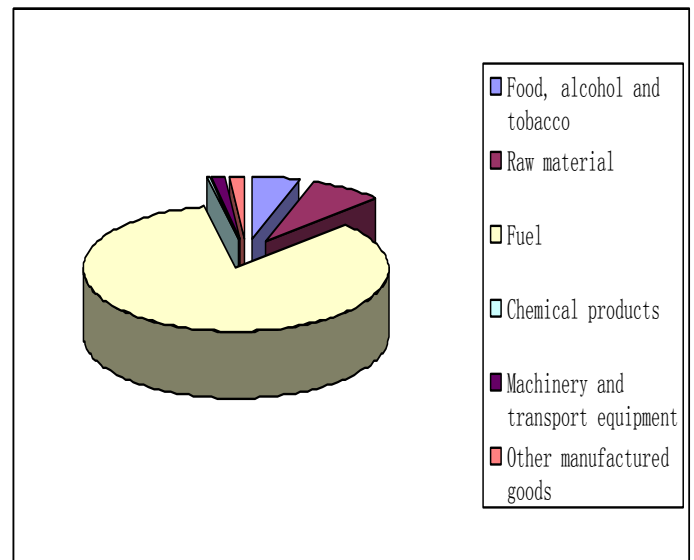

Figure 2 Nigeria's export structure in 2012

3 THE ANALYSIS OF TRADE COMPETITIVENESS BETWEEN BILATERAL COUNTRIES

This paper uses the export similarity index to measure the degree of trade competition between China and Nigeria. Export similarity index can be measure in two different domains, the commodity and market domains (export destination).

4 THE MEASURE OF THE EXPORT SIMILARITY INDEX IN THE MARKET DOMAIN

Finger and Kreinin first puts forward the measure of export similarity index in commodity domain, however, Glick and Rose [1] use the export similarity index in market domain. Click – Rose's calculation of the export similarity index can be described by the following formula:

Table1 The measure result of the export similarity index in the market domain

	2006	2007	2008	2009	2010	2011	2012
America	14.24	11.79	11.14	15.06	13.62	15.01	17
Canada	1.01	1.41	1.39	0.91	0.97	1.22	1.31
England	0.09	0.02	1.95	2.31	1.80	1.40	1.33
Spain	0.41	1.34	0.93	0.55	0.65	0.40	0.33
Italy	1.36	1.31	1.40	1.02	1.47	1.02	0.53
Brazil	0.29	0.30	0.53	0.37	0.67	0.64	0.72

Formula one:

$$S_{ih} = \sum \left\{ \left[\frac{X_{ik} + X_{hk}}{X_i + X_h} \right] \left[1 - \left| \frac{(X_{ik}/X_i) - (X_{hk}/X_h)}{(X_{ik}/X_i) + (X_{hk}/X_h)} \right| \right] \right\} \times 100 \quad (1)$$

This formula has measured the commodity similarity of export of country-i and country-h in country-k. X said exports, i and h exporter, k said export destination, Xi said exports of country-i, Xik said exports of country-i to country-k. Export similarity index reflects the export competitive level between the two countries.

$$0 \le S_{ih} \le 100 \quad (2)$$

If the commodities exported from country-i and country-h to country-k are exactly the same, then the index is 100. On the other side, if the commodities are completely different, then the index is 0.

By using this formula to measure competitiveness between China and Nigeria in the main European and American countries, the following results can be obtained. The result is showed on table 1.

According to the table, the trade competitiveness of China and Nigeria in major countries of Europe and America in general is small, meaning there is no obvious competition. From longitudinal results, comparing trade competitive results in the European and American countries, it can be seen that competitiveness are relatively high in the United States. From the result of lateral, the competitiveness of China and Nigeria on the market in Europe and the United States has a tendency to rise in recent years.

Table 2 The measure result of the export similarity index in the commodity domain

	2006	2007	2008	2009	2010	2011	2012
0+1	0.05	1.4	1.1	2.85	2.59	1.48	2.67
2+4	0.37	0.77	0.83	0.35	0.76	0.82	0.73
3	1.83	1.64	1.14	1.7	1.69	1.7	1.51
5	0.13	0.29	1.39	0.6	0.39	0.23	0.23
6+8	0.85	1.87	1.74	2.05	5.74	1.39	1.7
7	0.85	0.44	2.64	1.11	1.19	1.16	1.33

5 THE MEASURE OF THE EXPORT SIMILARITY INDEX IN THE COMMODITY DOMAIN

To analyze the competitiveness in niche product, we need a formula can be applied to highly decomposed products data. Then the above index Sih will be further adapted to the formula below:
Formula two:

$$S_{(ih,k)} = \sum \left\{ \left[\frac{(X^1_{ik}/X_{ik}) + (X^1_{hk}/X_{hk})}{2} \right] \left[1 - \left| \frac{(X^1_{ik}/X_{ik}) - (X^1_{hk}/X_{hk})}{(X^1_{ik}/X_{ik}) + (X^1_{hk}/X_{hk})} \right| \right] \right\} \times 100$$

$$(3)$$

The superscript l said the first kind of commodities, and Xlik/Xik said the share of the first kind of commodity exported from country-I to country-k in the total amount of all the goods. If the index to rise over time, the index indicates the export structure of the two countries move towards convergence, which also means that the two countries are facing increasingly fierce competition in the third market.

In the following measure, according to Eurostat's statistical caliber, 0 ~ 8 products can be divided into: 0 + 1 food, alcohol and tobacco, beverage, 2 + 4 raw materials, 3 fuel, 5 chemical products, 7 machinery and transport equipment, 6 + 8 other manufactured goods.

By using this formula to measure competitiveness of different commodities between China and Nigeria in the main European and American countries, the results on table 2 can be obtained.

The following can be seen from the results. From the longitudinal comparison, goods with relative competitiveness exported from China and Nigeria to Europe and America market are mainly fuel. Nigeria is a big oil exporter, so there is evident competition between China and Nigeria in fuel output industry. Transverse results comparison shows that the food industry of China in a gradually intensifying competition relations with Nigeria, it is closely linked with the agricultural development in Nigeria.

6 ACKNOWLEDGEMENTS

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[1] Glick Reuven, Andrew K Rose. Contagion and Trade: Why Are Currency Crises Region? NBER Working Paper, NO 6806, 1989.