Analysis on the International Competitiveness of China's Service Trade Exports

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Abstract—This paper analyzes the development status of China's service trade by using the international market share Index, TC index and RCA index, and makes relevant international comparisons. The research shows that: first, the growth rate of China's goods trade and the growth rate of service trade do not match, compared with the trade in goods, the scale of trade in services is relatively small; second, China's service trade development and developed countries exist a certain gap; third, China's Construction services export comparative advantage is strong, with a certain potential for development.

Keywords—international competitiveness, TC index, RCA index

I. LITERATURE REVIEW

A. Trade in Services

The studies of Deardoff (1985) and Melvin (1989) are the most representative, evaluating the factor intensity of various sectors of service trade through the contribution of various elements to trade in services, and studying the influence of factor endowment on the comparative advantage of a country's trade in services.

Krugman (1991) Through the study of the specialization of enterprises and the specific needs of consumers, it is concluded that enterprises in the face of fixed costs, if entering a larger market, with a larger scale of production, its average cost will be lower.

B. China's Trade in Services

Li Yang (2008) This paper analyzes the development factors of China's service trade by using the least squares method, and points out that the development of domestic services, the development of international service and the development of trade in goods are positively correlated. Zhang (2016) A comparative analysis of China and the United States found that China's trade in services is growing rapidly, but the foundation of development is weak, and the trade deficit of China's services is increasing year by year, and the United States has a huge advantage in the trade surplus of services.

C. Competitiveness of China's service trade

Chen Hong (2010) The development status of China's service trade is analyzed by using international market share, TC Index and RCA index. The results show that the overall international competitiveness of China's service trade is low, but it has increased in recent years. Wangdeng (2016) to conduct a more study of China and the BRICS countries, it is concluded that the competitiveness of China's services trade is weaker than that of other countries, and the market share of insurance services is slightly higher than that of other countries.

II. ANALYSIS OF THE CURRENT SITUATION OF CHINA'S SERVICE TRADE COMPETITIVENESS

The common evaluation method of service international trade competitiveness is to make use of international market share Index, TC Index and RCA index. These coefficients are diverse and can reflect the competitiveness of service trade from many angles. Below we use the relevant index to analyze China's service trade export competitiveness.

A. Analysis of the Overall Competitiveness of China's Service Trade

According to the data of the China Statistical Yearbook, China's total trade in services in 2016 was $657.5 billion, total exports of trade in services amounted to $208.3 billion, total imports amounted to $449.2 billion, and the trade deficit in services had reached $240.9 billion, an increase of 11.84% over 2015. Figure 1 shows the import and export status of China's trade in services in 2005-2016. As can be seen in the figure, China's service trade deficit is increasing in size, from $15.5 billion in 2009 to $240.9 billion in 2016.

In addition, the growth rate of China's trade in goods and the growth rate of trade in services do not match, compared to trade in goods, the scale of trade in services is relatively small.

In absolute terms, China's trade in goods exports in the past 12 years has been far greater than the volume of trade in services exports, and this gap has been widening, from 2005 the difference between 678.2 billion dollars to 2016 difference of 1.8893 trillion U.S. dollars, trade in services as a proportion of trade in goods changed little, remained at about 0.1%.
Fig.1. 2005-2016 Import and export status of China's service trade (in billions of US dollars)

### Table I. 2005-2016 China's Trade in Services and Exports of Goods (in billions of US dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>Export of services</th>
<th>Export of goods</th>
<th>services/goods</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>838</td>
<td>7620</td>
<td>0.11</td>
</tr>
<tr>
<td>2006</td>
<td>2014</td>
<td>9690</td>
<td>0.21</td>
</tr>
<tr>
<td>2007</td>
<td>1348</td>
<td>12205</td>
<td>0.11</td>
</tr>
<tr>
<td>2008</td>
<td>1626</td>
<td>14307</td>
<td>0.11</td>
</tr>
<tr>
<td>2009</td>
<td>1426</td>
<td>12016</td>
<td>0.11</td>
</tr>
<tr>
<td>2010</td>
<td>1774</td>
<td>15778</td>
<td>0.11</td>
</tr>
<tr>
<td>2011</td>
<td>2003</td>
<td>18984</td>
<td>0.11</td>
</tr>
<tr>
<td>2012</td>
<td>2006</td>
<td>20487</td>
<td>0.10</td>
</tr>
<tr>
<td>2013</td>
<td>2058</td>
<td>22090</td>
<td>0.09</td>
</tr>
<tr>
<td>2014</td>
<td>2181</td>
<td>23423</td>
<td>0.09</td>
</tr>
<tr>
<td>2015</td>
<td>2176</td>
<td>22735</td>
<td>0.10</td>
</tr>
<tr>
<td>2016</td>
<td>2083</td>
<td>20976</td>
<td>0.10</td>
</tr>
</tbody>
</table>

B. Analysis of International Market Share of China's Service Trade

Table II shows the changes in total exports of China's services trade over the past 12 years. According to the data, the total export of world trade in services has maintained a growth trend in the past 12 years, increasing by $1.3356 trillion and growing at an average annual rate of 15.93% per cent, while the growth in China's trade in services increased from $83.8 billion in 2005 to $208.3 billion in 2016, with a total increase of $124.6 billion, The average annual growth rate was 13.51% per 2.42% lower than the total exports of world trade in services over the same period. China's international market share of service trade has seen a trend of first growth and then decline, with little overall change (except 2006), which remains at around 4%.

### Table II. 2005-2016 Changes in China's Services Trade Exports (in billions of US dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total export of China's service trade</th>
<th>Total exports of world trade in services</th>
<th>International market share of China's service trade (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>838</td>
<td>25127</td>
<td>3.34</td>
</tr>
<tr>
<td>2006</td>
<td>2014</td>
<td>28418</td>
<td>7.09</td>
</tr>
<tr>
<td>2007</td>
<td>1348</td>
<td>34203</td>
<td>3.94</td>
</tr>
<tr>
<td>2008</td>
<td>1626</td>
<td>38464</td>
<td>4.23</td>
</tr>
<tr>
<td>2009</td>
<td>1426</td>
<td>34973</td>
<td>4.08</td>
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<tr>
<td>2010</td>
<td>1774</td>
<td>38434</td>
<td>4.62</td>
</tr>
<tr>
<td>2011</td>
<td>2003</td>
<td>42780</td>
<td>4.68</td>
</tr>
<tr>
<td>2012</td>
<td>2006</td>
<td>43469</td>
<td>4.61</td>
</tr>
<tr>
<td>2013</td>
<td>2058</td>
<td>46250</td>
<td>4.45</td>
</tr>
<tr>
<td>2014</td>
<td>2181</td>
<td>48615</td>
<td>4.49</td>
</tr>
<tr>
<td>2015</td>
<td>2176</td>
<td>51413</td>
<td>4.23</td>
</tr>
<tr>
<td>2016</td>
<td>2083</td>
<td>54372</td>
<td>3.83</td>
</tr>
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</table>

C. Analysis of TC Index of China's Service Trade

TC Index is the competitive Advantage index, also known as the Trade Competitiveness Index, refers to a country's import and export trade balance accounted for the proportion of its total import and export trade. It is generally believed that the closer the index is to 1, the greater the competitiveness, equal to 1, indicating that the industry only exports do not import; The closer the index is to 1, the weaker the competitiveness, equal to 1, indicating that the industry is only imported and not exported; equal to 0 indicates that the competitiveness of the industry is at the intermediate level. The specific formulas are as follows:

\[
TC\ index = \frac{(Export-Import)}{(export + Import)} \quad (1)
\]
D. Analysis of RCA Index of China’s service trade

In 1965, American economist Balassa proposed using the RCA index (a display comparative advantage) to measure the comparative advantage of a particular commodity in a country or region. The index can eliminate the effects of national and world aggregate fluctuations and can better reflect the comparative advantage of a particular commodity export in a country or region compared with the world average export level. The specific formulas are as follows:

\[
\text{RCA}_{ij} = \frac{x_{ij}/x_{ij}}{x_{iav}/x_{j}}
\]  

The data in Table III show the TC index of China's trade in services and its comparison with the international. First of all, China's 2015 TC index is negative, from 2005-0.060 to 2014-0.290, indicating that China has been a net importer of trade in services, in the international disadvantaged position, but in the past two years there has been improvement. The TC index in China's 2015 TC index is negative, from 2005-0.060 to 2014-0.290, indicating that China has been a net importer of trade in services, in the international disadvantaged position, but in the past two years there has been improvement. The TC index in China's 2015 TC index is negative, from 2005-0.060 to 2014-0.290, indicating that China has been a net importer of trade in services, in the international disadvantaged position, but in the past two years there has been improvement. The TC index in China's 2015 TC index is negative, from 2005-0.060 to 2014-0.290, indicating that China has been a net importer of trade in services, in the international disadvantaged position, but in the past two years there has been improvement. The TC index in China's 2015 TC index is negative, from 2005-0.060 to 2014-0.290, indicating that China has been a net importer of trade in services, in the international disadvantaged position, but in the past two years there has been improvement. The TC index in China's 2015 TC index is negative, from 2005-0.060 to 2014-0.290, indicating that China has been a net importer of trade in services, in the international disadvantaged position, but in the past two years there has been improvement. The TC index in China's 2015 TC index is negative, from 2005-0.060 to 2014-0.290, indicating that China has been a net importer of trade in services, in the international disadvantaged position, but in the past two years there has been improvement.

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In 1965, American economist Balassa proposed using the RCA index (a display comparative advantage) to measure the comparative advantage of a particular commodity in a country or region. The index can eliminate the effects of national and world aggregate fluctuations and can better reflect the comparative advantage of a particular commodity export in a country or region compared with the world average export level. The specific formulas are as follows:

\[
\text{RCA}_{ij} = \frac{x_{ij}/x_{ij}}{x_{iav}/x_{j}}
\]  

The above is from the overall analysis of China's services trade exports of international competitiveness, through analysis found that China's trade in services, the overall international competitiveness is weak, but specific to the trade in services, the international competitiveness of its various industries are different. Next, it analyzes the export status of various industries of China's service trade in 2012-2016 (as shown in table V).
values, such as computers and information services, the international competitiveness is weakening. Category 3: Changing from positive indices are negative, such as transport, travel, insurance services, financial services, proprietary royalties and royalties and and continues to decline over the years. The comparative advantage of personal, cultural and recreational services and government services exports not mentioned elsewhere is weaker, but the index is gradually rising.

Table VI depicts the TC index for various industries of service trade in China. The research shows that the TC index of construction services, construction services and other commercial services, the competitiveness of communications services has increased weakly, the other two categories have declined. Category 2: TC indices are negative, such as transport, travel, insurance services, financial services, proprietary royalties and royalties and personal, cultural and recreational services, and are less competitive. Category 3: Changing from positive values to negative values, such as computers and information services, the international competitiveness is weakening.

Table VII depicts the RCA index for various industries of service trade in China. The research shows that the RCA index of construction service is always more than 1.25 during the research period, and has a strong export comparative advantage. Travel RCA index 2012-2014 are more than 0.8, with a certain export comparative advantage. The export comparative advantage of communications services, insurance services, financial services and proprietary royalties and royalties is weaker and continues to decline over the years. The comparative advantage of personal, cultural and recreational services and government services exports not mentioned elsewhere is weaker, but the index is gradually rising.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Transportation</td>
<td>38912165</td>
<td>37645660</td>
<td>38242780</td>
<td>38594332</td>
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<tr>
<td>Travel</td>
<td>50028000</td>
<td>51664000</td>
<td>56913000</td>
<td>114109397</td>
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<td>Communications services</td>
<td>1793361</td>
<td>2200261</td>
<td>2699483</td>
<td>3311974</td>
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<td>10663040</td>
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<td>Insurance services</td>
<td>3329230</td>
<td>3996167</td>
<td>4574146</td>
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<tr>
<td>Financial services</td>
<td>1885974</td>
<td>3185081</td>
<td>4530916</td>
<td>2334406</td>
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<tr>
<td>Computer and information services</td>
<td>14453508</td>
<td>17098440</td>
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<td>Royalties and license fees</td>
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<td>66622537</td>
<td>57235010</td>
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<td>Personal, cultural, and recreational services</td>
<td>125579</td>
<td>147159</td>
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<td>731421</td>
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<td>990043</td>
<td>1227632</td>
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<tbody>
<tr>
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<td>-0.376</td>
<td>-0.429</td>
<td>-0.431</td>
<td>-0.324</td>
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<td>-0.342</td>
<td>-0.427</td>
<td>-0.487</td>
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<tr>
<td>Communications services</td>
<td>0.042</td>
<td>0.047</td>
<td>0.052</td>
<td>0.057</td>
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<td>Construction services</td>
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<td>0.465</td>
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<tr>
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<td>-0.694</td>
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<td>-0.010</td>
<td>-0.074</td>
<td>-0.043</td>
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<td>Computer and information services</td>
<td>0.580</td>
<td>0.383</td>
<td>0.305</td>
<td>0.133</td>
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<tr>
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<td>0.095</td>
<td>0.127</td>
<td>0.193</td>
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<td>Personal, cultural, and recreational services</td>
<td>-0.636</td>
<td>-0.683</td>
<td>-0.666</td>
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<td>Government services, n.i.e.</td>
<td>-0.025</td>
<td>0.016</td>
<td>-0.316</td>
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<td>Other business services</td>
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<td>1.104</td>
<td>0.484</td>
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<td>Personal, cultural, and recreational services</td>
<td>0.062</td>
<td>0.073</td>
<td>0.073</td>
<td>0.160</td>
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<tr>
<td>Government services, n.i.e.</td>
<td>0.276</td>
<td>0.386</td>
<td>0.303</td>
<td>0.155</td>
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III. CONCLUSIONS AND RECOMMENDATIONS

This paper analyzes the development status of China's service trade by using the international market share Index, TC Index and RCA index, and makes the relevant international comparison. The research shows that: first, the growth rate of China's goods trade and the growth rate of service trade do not match, compared with the trade in goods, the scale of trade in services is relatively small; second, the development of China's service trade and developed countries exist a certain gap; third, China's Construction services export comparative advantage is strong, the development potential is huge.

Generally speaking, China's service trade should be used rationally to optimize the factors of service production, actively explore domestic and foreign markets, strengthen the coordination and support role of related industries in the Department of Service trade, adjust the management structure of service enterprises, implement scientific management strategy, adjust the flow of foreign capital, improve the utilization rate of foreign capital, and actively play the role of government.

REFERENCES