The Influencing Factors Study of the Electronic Information Manufacturing Industry export-added value In China

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Abstract. Based on the WIOD input-output database, the KPWW method is used to estimate the export-added value of China's electronic information manufacturing. Besides, the SDA structural decomposition method is used to research the influencing factors of the export-added value of the sector. The results show that the growth rate of the export-added value of the sector is faster than other sample countries, but it’s still in the low end of the global value chain; The supporting from global electronic information manufacturing industry for China is far than Chinese pulling for the global industry. It also found the main factors affecting the export added value in the industry. At present, the leading factor affecting the growth of export added value in China's electronic information manufacturing industry has been changed from the correlation degree of forward industry to the source scale of added value. This article will study export trade added value of this industry in the global value chain perspective, which helps to develop the industry strategy, to promote the industry to the global high-end chain of value chain.

1. Introduction
At present, the production and management activities of transnational corporations have spread all over the world, from procurement to consumption is distributed through different countries and regions. Final goods from a country (or area, countries below mentioned refer to countries or regions) contains a large number of intermediate products. Traditional statistical methods of international trade count the value of the product in the whole process of international trade, which statistical caliber is "commodity value" as index of a country or region's trade benefit. In recent years, "trade-added value" has attracted much attention due to the fact that it has made up for the deficiency of the traditional methods of trade accounting and reflects the trade situation of a country more accurately. Hummels, Ishii and Yi (2001) put forward the method of input-output method to calculate the trade-added value of a country for the first time. The results show that the degree of international division of labor is increasing, especially in the manufacturing of machinery equipment. Koopman, Powers, Wang and Wei (2010) (KPWW) presented that the added-value statistics and traditional trade statistics method can be integrated to establish a global multi-sectoral input-output database.

At the same time, the domestic research on value-added based on SDA in China is less than foreign research. Wei Rui (2015) calculated the changes of added-value export in China, and analyzed its 9 influencing factors based on the SDA method. Since then, Jiang Yanshu and He Sihao (2016) have used the SDA method to study the impact of structural factors on the added value export of China's textile and garment industry. There is no relevant research on the structural analysis of the value-added trade impact of the electronic information industry. Using the WIOD input-output table in the year form 2000 to 2014, the paper calculates the value-added trade of the sector in China and the sample countries under the multiregional input-output framework. On the basis of SDA method, various structural factors impact on the value-added trade of the electronic information industry in China is analyzed in the perspective of global value chain and compared in phases.
2. Methodology and Data
In the WIOD input-output table, the information and communications technology sector includes manufacture of computer, electronic and optical products, information and communications technology trade and information and communications technology services. Manufacture of computer, electronic and optical products including electronic components and electronic board production, computer and peripheral equipment manufacturing, communications equipment manufacturing, consumer electronics manufacturing, magnetic medium and optical media manufacturing.

2.1. Input-output Model
In the input-output table composed of m countries, intermediate inputs are divided into domestic intermediate inputs and imported intermediate inputs, and the products are divided into intermediate and final products. The object of this paper is value added in China’s export of manufacture of computer, electronic and optical products based on intra-industry trade. Assume zero intermediate inputs from other industries.

The outputs of manufacture of computer, electronic and optical products that country i’s exports to country j, \( X_{ij} \) (\( i=1,2,\ldots,m; j=1,2,\ldots,m \)), which indicates country j’s demand for country i’s outputs of the industry. \( X_{m \times m} \) is the total output matrix. According to this, the direct consumption coefficient matrix, \( A_{m \times m} \), can be calculated form the intermediate domestic intermediate inputs and imported intermediate inputs. Matrix elements, \( a_{ij} \) (\( i \neq j \)), represents the structure of intermediate product inputs form country i to country j and \( a_{ii} \) represents intermediate product inputs from country i itself.

According to the WIOD input-output table, the calculation added final consumption expenditure by households, final consumption expenditure by non-profit organizations serving households, final consumption expenditure by government, gross fixed capital formation and changes in inventories and valuables to get the sum for the final consumption. Then the manufacture of computer, electronic and optical products in m countries is choose from the table to make up the final consumption matrix \( Y_{m \times m} \) consisting of \( Y_{ij} \) (\( i \neq j \)) which indicates the final product country i exports to country j and \( Y_{ii} \) which indicates country i’s final consumption products from country i itself.

According to the input-output equilibrium formula (1)

\[
AX + Y = X \quad (1)
\]

Formula (2) can be obtained

\[
X = (1 - A)^{-1} \quad (2)
\]

According to the final consumption matrix Y and Leontief inverse matrix \((1 - A)^{-1}\), \( X_{m \times m} \) matrix can be calculated. The Leontief inverse matrix reflects the total output increase per unit of the final demand.

\[
\begin{bmatrix}
A_{11} & \cdots & A_{1m} & A_{11} & \cdots & A_{1m} \\
\vdots & \ddots & \vdots & \vdots & \ddots & \vdots \\
A_{m1} & \cdots & A_{mm} & A_{m1} & \cdots & A_{mm} \\
\end{bmatrix}
\begin{bmatrix}
X_{i1} \\
\vdots \\
X_{im} \\
\end{bmatrix}
+ 
\begin{bmatrix}
Y_{i1} \\
\vdots \\
Y_{im} \\
\end{bmatrix}
= 
\begin{bmatrix}
X_{i1} \\
\vdots \\
X_{im} \\
\end{bmatrix}
\]

\( X_{ij} \) is the output of manufacture of computer, electronic and optical products from country i caused by country j’s demand. Break it down:

\[
X_{ij} = A_{ii}X_{ij} + \sum_{i \neq j} A_{i}X_{ij} + Y_{ij}; (j \neq i) \quad (3)
\]

\[
\sum_{j} X_{ij} = (1 - A_{ii})^{-1} \sum_{j} \sum_{i} A_{ij}X_{ij} + \sum_{j} Y_{ij} \quad (4)
\]

\( X_{i} \) is the output of manufacture of computer, electronic and optical products from country i caused by country j’s demand. Break it down:

\[
X_{i} = B_{ii} \sum_{j \neq i} Y_{ij} + B_{ii} \sum_{j \neq i} A_{ij}X_{ij} + B_{ii}A_{ii}X_{ii} + B_{ii}Y_{ii} \quad (5)
\]

\( B_{ii} = (1 - A_{ii})^{-1} \) is the Leontief inverse matrix, \( X_{ij} \), as the output of manufacture of computer, electronic
and optical products caused by country j’s demand, can be divided into the intermediate products output and final products output from country i, intermediate products and final products directly exported to foreign domestic and intermediate products and final products indirectly exported to foreign domestic. X_{ij} is the total output of country i, which can be divided into domestic and exported intermediate products and the final product of country i, except the duplicated counting parts, \( \sum_j X_{ij} \).

As a result, the exported intermediate and final products from country i to foreign countries are \( E_i \).

\[
E_i = B_{ii} \sum_{j=1}^{m} Y_{ij} + B_{ii} \sum_{j=1}^{m} A_{ij} X_{jj}
\]

(6)

\( V_{m \times m} \) is the diagonal matrix of the added value coefficient of the sector in countries. And \( V_{ii} \) represents the average value added coefficient of the sector in country i.

\[
V_{m \times m} = \begin{bmatrix}
    v_{11} & 0 & \cdots & 0 \\
    0 & v_{22} & \cdots & 0 \\
    \vdots & \vdots & \ddots & \vdots \\
    0 & 0 & \cdots & v_{mm}
\end{bmatrix}
\]

(7)

The domestic added value of China's export commodities can be gotten by the export vector multiplying by the coefficient, so that the value added in country i’s export is \( D_V S \).

\[
D_{VS} = V \times X
\]

(8)

2.2. the SDA Structural Decomposition Model

In order to further explore factors impacting on the electronic information industry exports, the electronic information industry export value added changes in decomposition for the forward international industry linkage, the backward international industry linkage, the domestic industry linkage, added value coefficient, the structure of foreign final demand and the foreign final demand expansion. And calculate the contribution degree of each factor by Shpley.

The forward international industry linkage is using the designated national electronic information industry induction coefficient. The backward international industry linkage is using the influence coefficient of the designated national electronic information industry. The domestic industry linkage is using in the domestic industry induction coefficient. Added value coefficient is using the added value coefficient of designated national electronic information manufacturing industry. The structure of foreign final demand is using the ratio of the sum of the final consumption and the total output of designated national electronic information manufacturing industry. The foreign final demand expansion is using the statistics of national electronic information industry's total output.

\[
D_V S = V \times X
\]

(9)

\( D_V S \) represents the added value matrix, \( V \) is the added value coefficient matrix, and \( X \) is the total output matrix. Decomposition of \( X \), \( X=BY \) (4), where \( X \) is the total output matrix, \( Y \) is the final consumption matrix, \( B \) is the Leontief inverse matrix. Decomposition of \( Y \), \( Y=RS \), where \( R \) is the structure of foreign final demand using the ratio of the sum of the final consumption and the total output of designated national electronic information manufacturing industry, \( S \) is the foreign final demand expansion using the statistics of national electronic information industry's total output.

\[
D_V S = VBRS
\]

\[
\Delta D_V S = \Delta V B + \Delta B R S
\]

(10)

And \( \Delta B = B \Delta A \). The \( A \) is divided into three parts, respectively \( A = A_d + A_{m} + A_{m*} \). \( A_d \) is the direct consumption coefficient matrix of each domestic industry, which designates the domestic industry linkage, \( A_{m} \) is the direct consumption coefficient matrix of imported intermediate input in the sector, which designates the forward international industry linkage, \( A_{m*} \) is the remaining part of the value, which designates The backward international industry linkage.

Therefore, the formula (7) can be further decomposed into:

\[
\Delta D_V S = a \Delta V + b_1 \Delta A_d + b_2 \Delta A_{m} + b_3 \Delta A_{m*} + c \Delta R + d \Delta S
\]

(14)
In this way, the change of value added in the electronic information industry’s export can be decomposed into the six factors.

2.3. Data Sources
The data used by this paper is from the input-output database in the world (WIOD), the database includes the input-output tables of 43 countries in 2000-2014 and the ROW region composed of other countries and regions, while each country or region consists of 56 departments. The input-output table reflects the flow of intermediate and final products among different sectors and different economy. This paper chooses the sector as the research target. Therefore, in combination with the WIOD input-output table, the data from manufacture of computer, electronic and optical products is choose as the data source of this article.

3 Results

3.1. The Situation of Export-added Value of the Sector at Home and Abroad
On the basis of the world input-output table, this paper calculates the added value in export of China's electronic information manufacturing industry to other countries in the past 2000-2014 years. Among them, in the year of 2014, the added value in export of China's electronic information manufacturing industry to other countries, which are: the United States ($21.96 billion), Japan ($11.17 billion), Germany ($4.59 billion), Holland ($2.94 billion), South Korea ($2.93 billion), Australia ($2.13 billion), Brazil ($2.03 billion), the UK ($2.02 billion) India ($1.99 billion), Canada ($1.98 billion), France ($1.66 billion), Turkey ($1.40 billion), Mexico ($1.32 billion), Indonesia ($1.32 billion), Taiwan ($1.03 billion). After comparison and selection, this section analyzes the United States, Japan, Germany, South Korea and Taiwan as the reference countries of China's electronic information manufacturing industry.

From Figure 1, from a whole point of view from 2000 to 2014, China's electronic information manufacturing export growth in the fastest growth rate, and has the largest total in all sample countries, from 10 billion to 10.25 billion. In addition to the impact of the 2008 financial crisis, the domestic export-added value in 2009 declined significantly, while the rest of the year basically showed an upward trend. In addition, in addition to Britain and Japan, the decline rate of 40.54% and 13.57%, respectively, the other countries in the sample countries, the domestic export-added value of electronic information manufacturing industry has increased. Among them, the domestic export-added value of South Korea's electronic information industry rose the most, up to 156.11%.
Taiwan, up to 82.04%. The domestic export-added value of Germany and the United States increased slightly, respectively 54.87% and 14.98%.

Figure 2 combines the exports of electronic information from different countries (excluding exports to other sectors of other countries) and calculates the rate of the domestic export-added value in China and the sample countries. The rate of the domestic export-added value in the United States, Britain, Germany and Japan were 45.90%, 44.17%, 39.71% and 32.94% respectively. As the "Four Asian Tigers“, South Korea and Taiwan, the rate of the domestic export-added value is low, 27.01% and 18.68% respectively. Among them, the British domestic export-added value has dropped, and the American domestic export-added value has risen slightly, but the rate of the two countries’ domestic export-added value has been rising rapidly. In contrast, although the export-added value of China's electronic information industry has increased rapidly, the rate of export-added value declined slightly compared with 2010. In 2014, the export-added value of China's electronic information manufacturing industry increased by only 22.57%. As you can see from Figure 2, there is still a big gap between China's electronic information manufacturing industry and developed countries, which reflects China's benefit from international trade in the industry limitedly. China's electronic information industry still has a low value-added problem.

3.2 Interaction Analysis of the Electronic Information manufacturing in China and Other Countries

This paper studies the interaction between China and other countries in the field of electronic information manufacturing by calculating the influence coefficient and the induction coefficient. As to the index of the backward international industry linkage, influence coefficient reflects the China electronic information industry, as a foreign buyers of intermediate product, increases one unit of final consumption, which exert influence on other countries. The higher the influence coefficient, the greater the pulling function that China electronic information manufacturing industry pulling effect on the other country's electronic information industry. Generally speaking, the influence coefficient and the induction coefficient are calculated:

- The influence coefficient: \[ \delta_j = \frac{1}{\sum b_{ij}} \sum b_{ij} (j = 1, 2, \ldots, n). \]

- The induction coefficient: \[ \theta_j = \frac{1}{\sum b_{ij}} \sum b_{ij} (j = 1, 2, \ldots, n). \]

The \[ B = (I - A)^{-1} \], B is the Leontief inverse matrix. its elements are \[ b_{ij}. \]

However, because of the different size of the various departments, the denominator is arithmetic mean, which cannot measure the effect on the global sector very well when the sector increases a unit of the end product. This paper draws on the improved method of Liu Qiyun (2002), which takes the weighted average number instead of the denominator to reflect the influence of a department in a country on the whole sector.

The weighted average number is \[ \alpha_j = \frac{y_j}{y_{0}} = \frac{y_j}{\sum y_j} (j = 1, 2, \ldots, n). \]

\[ y_j —— Output of the final product in electronic information manufacturing industry of country j; y_{0} —— the final product of total global electronic information manufacturing; \alpha_j —— the proportion of output of the final product in the sector of country j in the global electronic information industry, there is \[ \sum \alpha_j = 1. \]

Thus, the denominator is calculated: \[ \sum b_{j} / \alpha_j. \]

At this time, the influence coefficient: \[ \delta_j = \frac{b_{ij}}{\sum b_{j} / \alpha_j} (j = 1, 2, \ldots, n). \]
In this paper, the influence coefficient and the induction coefficient are used as indexes to measure the forward international industry linkage, the backward international industry linkage. Figures 3, 4 are the changes in the influence coefficient and the induction coefficient of the sector in China and the sample countries in 2000-2014.

2011-2014, the influence coefficient of Chinese electronic information industry is greater than 1, which shows China electronic information manufacturing industry’s level is higher influential than the international average level. The relatively stable change is in the range of 1.14696-1.09187. Other countries are on the downward trend. From 2000 to 2003, the influence coefficient China's electronic information manufacturing industry is third in the sample countries, Taiwan and South Korea is higher, other countries are lower than china. In 2004, China's influence coefficient exceeded Taiwan, becoming the first in the sample area. At present, sorted by size of the influence coefficient: China, Taiwan, Korea, Japan, the United Kingdom, Germany, the United states. China has been growing rapidly from 2000 to 2011, and has surpassed the United States in 2004 and is larger than the world average level. Then it has a slight decline after 2011. Overall trends in other regions are on the decline. At present, sorted by size of the induction coefficient: China, Korea, Germany, Taiwan, Japan, the United States, the United Kingdom. In terms of horizontal comparison, the induction coefficient of China is greater than the influence coefficient of China. The trade-added value of electronic information manufacturing trade in other countries has a greater impact on the trade-added value of China's electronic information manufacturing industry. As an important exporter of electronic information manufacturing, the dependence of world's electronic information manufacturing industry on China is more than the driving force of electronic information manufacturing industry on the global division of labor.

3.3. the SDA Decomposition of the Export-Added Value of China’s Electronic Information Manufacturing

According to the results of the third part, this paper adopts six indicators, the forward international industry linkage, the backward international industry linkage, the domestic industry linkage, added value coefficient, the structure of foreign final demand and the foreign final demand expansion, as to be decomposed the export-added value of electronic information manufacturing in China in 2000-2014 by SDA structure decomposition.
Table 1  The Contribution of Each Factor to the Export-added Value of the Industry

| Changes of the export-added value | The structure of foreign final demand | The foreign final demand expansion | Added value coefficient | the forward international industry linkage | the backward international industry linkage | the domestic industry linkage |
|----------------------------------|-------------------------------------|-----------------------------------|-------------------------|------------------------------------------|-------------------------------------------|-----------------------------|
| 2000-2001 6.55%                 | -286.38%                            | -763.54%                          | 61.94%                  | 536.10%                                  | 49.09%                                    | 125.00%                     |
| 2001-2002 31.41%                 | 8.85%                               | -49.38%                           | -7.92%                  | 173.13%                                  | -5.32%                                    | 39.67%                      |
| 2002-2003 59.60%                 | 9.02%                               | 40.33%                            | -35.68%                 | 82.92%                                   | 8.61%                                     | -5.37%                      |
| 2003-2004 44.52%                 | 34.06%                              | 70.04%                            | -44.56%                 | 36.61%                                   | 3.93%                                     |                             |
| 2004-2005 19.21%                 | 62.27%                              | 81.83%                            | -149.13%                | 82.01%                                   | -0.18%                                    | -3.75%                      |
| 2005-2006 27.34%                 | 11.74%                              | 47.54%                            | 11.90%                  | 41.04%                                   | -2.24%                                    | 3.29%                       |
| 2006-2007 13.57%                 | -13.25%                             | 70.27%                            | 20.62%                  | 6.53%                                    | -5.10%                                    | 12.76%                      |
| 2007-2008 9.89%                  | -5.93%                              | 46.68%                            | 2.60%                   | 48.96%                                   | -5.56%                                    | -5.42%                      |
| 2008-2009 -10.06%                | -30.17%                             | 155.40%                           | -1.19%                  | -54.31%                                  | 2.82%                                     | -7.81%                      |
| 2009-2010 53.26%                 | 23.11%                              | 48.56%                            | -0.36%                  | 6.93%                                    | 1.02%                                     | 6.72%                       |
| 2010-2011 2.14%                  | 86.29%                              | 406.57%                           | -77.64%                 | 43.99%                                   | 0.93%                                     | 11.18%                      |
| 2011-2012 12.42%                 | 20.28%                              | 19.48%                            | 13.22%                  | -5.41%                                   | -1.62%                                    | -3.32%                      |
| 2012-2013 -3.43%                 | -59.16%                             | -73.24%                           | 43.06%                  | 44.23%                                   | 5.83%                                     | 21.97%                      |
| 2013-2014 4.32%                  | 10.20%                              | 55.58%                            | 0.00%                   | -11.28%                                  | -6.56%                                    | -5.16%                      |

Note: percentage refers to the contribution rate of the factors affecting the export-added value of China's electronic information manufacturing industry in a certain period. The following table.

After China's accession to the WTO, the export-added value of the electronic information manufacturing industry increased rapidly from 2001 to 2004. Then the growth rate of value added showed a downward trend from 2004 to 2008. In 2008, the financial crisis broke out, and the export-added value of China's electronic information manufacturing industry decreased by 10%. Since then, the global economy has entered a recovery stage, and the export-added value of the sector has fluctuated slightly. After the decomposition of SDA, the forward international industry linkage, the backward international industry linkage, the domestic industry linkage, added value coefficient, the structure of foreign final demand and the foreign final demand expansion, the factors to increase value changes with different contribution rate.

The subprime mortgage crisis in 2008. The fifty years ,2000-2014,is divided into three periods by 2007 and 2009: 2000-2007,2007-2009 and 2009-2014, and in order to determine the dominant factors effecting the export-added value changes of The sector in the different stages.

Table 2  The Export-added Value Changes and its Influence factors in different phases

| Changes of the export-added value | The structure of foreign final demand | The foreign final demand expansion | Added value coefficient | the forward international industry linkage | the backward international industry linkage | the domestic industry linkage |
|----------------------------------|-------------------------------------|-----------------------------------|-------------------------|------------------------------------------|-------------------------------------------|-----------------------------|
| 2000-2007 456.81%                | -7.63%                              | 49.81%                            | -19.96%                 | 78.71%                                   | 2.68%                                     | 48.84%                      |
| 2007-2009 -1.16%                 | -1.86%                              | -12.62%                           | 0.39%                   | 8.95%                                    | -1.95%                                    | 1.96%                       |
| 2009-2014 77.28%                 | -15.98%                             | 58.48%                            | -2.72%                  | 0.44%                                    | -0.59%                                    | 9.25%                       |

By calculation, after joining the WTO, the export-added value of China’s electronic information industry has entered a phase of accelerated growth, while in the subprime crisis, the export-added value of The sector has a negative increase. When the world recovered from the subprime crisis, the export-added value of the sector entered a new stage, and a high rate of growth achieved. In the period of 2000-2007,2007-2009 and 2009-2014, the composite growth rate of the export-added value of the sector in three economic cycles was 23.94%, -3.90% and 10.01% respectively.
Table 3 The Contribution of Each Factor to the Export-added Value Changes in Different Phases

| Phases            | the structure of foreign final demand | the foreign final demand expansion | added value coefficient |
|-------------------|--------------------------------------|-----------------------------------|-------------------------|
| 2000-2007         | 14.84%                                | 40.35%                            | -30.43%                 |
| 2007-2010         | -236.15%                              | 1079.11%                          | -33.36%                 |
| 2010-2014         | 30.28%                                | 66.62%                            | -3.57%                  |
|                   | the forward international industry linkage | the backward international industry linkage | the domestic industry linkage |
| 2000-2007         | 65.05%                                | 1.40%                             | 6.68%                   |
| 2007-2010         | -931.74%                              | 73.96%                            | -28.19%                 |
| 2010-2014         | 0.76%                                 | -0.33%                            | 2.06%                   |

In the period of 2000-2007, the export-added value of the electronic information manufacturing industry grew rapidly at an annual CAGR of 23.94%. According to the contribution rate from high to low, the influence factors effecting the export-added value are arranged: the forward international industry linkage(65.05%), the foreign final demand expansion(40.35%), added value coefficient(-30.43%), the structure of foreign final demand(14.84%), the backward international industry linkage(1.40%) and the domestic industry linkage(6.68%).

After entering the WTO, the rapid increase of the export-added value is mainly due to the rapid increase in exports and a substantial increase in the size of the global electronic information manufacturing industry, namely the contribution of the forward international industry linkage and the foreign final demand expansion play a key role. At the same time, the added value of this stage has not improved significantly with the expansion of the scale, which shows the decline of the added value coefficient.

In the period of 2007-2009, the export-added value of the electronic information manufacturing industry has declined because of the subprime mortgage crisis, and its compound growth rate has been -3.90%. According the contribution rate from high to low, the influence factors effecting the export-added value are arranged: the foreign final demand expansion(1079.11%), the forward international industry linkage(-931.74%), the structure of foreign final demand(-236.15%), the backward international industry linkage(73.96%), added value coefficient(-33.36%) and the domestic industry linkage(-28.19%).

Due to the outbreak of the financial crisis, the global economy suffered, leading to global electronic information manufacturing industry production scale has shrunk, and transfer to the Chinese: the export-added value of the electronic information industry in China experienced the negative growth at this stage, whose reason is that the foreign final demand expansion hindered export-added value. At the same time, the factors that the decline of the export-added value did not go so far is the slight increase in support of three factors: the forward international industry linkage, the structure of foreign final demand and added value coefficient. But the support from these three factors is insufficient.

In the period of 2009-2014, the export-added value of the electronic information manufacturing sector grew at an annual compound growth rate of 10.01%. According the contribution rate from high to low, the influence factors effecting the export-added value are arranged: the foreign final demand expansion(66.62%), the structure of foreign final demand(30.28%), the domestic industry linkage(-2.06%), the forward international industry linkage(0.76%), the backward international industry linkage and added value coefficient has negative influence.

In 2009-2014, the main contribution of the export-added value increase is from the international electronic information industry recovery. The industrial production scale and final demand recovered the rebound, and the foreign final demand expansion and the structure of foreign final demand had an upward trend. China's domestic market still lacks domestic demand. A decrease in the added value coefficient makes it a small contribution to the export-added value. The increase of the export-added value of China's electronic information manufacturing is still dependent on the international market. In contrast, the contribution of the added value coefficient got much lower during the period, indicating that the value-added of China's electronic information manufacturing industry is still low.

The three economic cycle comparison can be found that in 2000-2007, the forward international industry linkage is the main factor to the export-added value increase, while added value coefficient is the main factor restricting the growth of the export-added value. In the period of 2007-2009, the most important hindering factor of the decline in the export-added value of the sector is still the forward international industry linkage, and the decline of the foreign final demand expansion is the main reason for the decline. In the period of 2009-2014, the
dominant factor in enhancing the export-added value of the sector became the foreign final demand expansion, and the decline in the added value coefficient became the major constraint.

4. Conclusion
First, in 2000-2014, the export-added value of China’s electronic information manufacturing industry increased rapidly with 16.4% compound annual growth rate, but the added value coefficient decreased from 0.212 in 2000 to 0.165 in 2014, falling instead of rising, which means that China's electronic information industry in the global value chain position does not improve effectively.

Second, driving growth factors of the export-added value have been changed, from the forward international industry linkage to the foreign final demand expansion, which means the "middle product supplier" driving force has been insufficient and need to expand the global industrial production scale to achieve the growth.

Third, the compound annual growth rate of The sector has been from the 23.94% in 2000-2007 to 10.01% in 2008-2014. And there are obvious signs that compound annual growth rate of the sector will be double-digit.

Fourth, global economy is growing at a slower pace and there is little possibility that the sector has a significant expansion of production capacity. The expansion of The sector can only achieved by added value coefficient and the structure of foreign final demand, which means that improving the value-added rate of products and realizing the reasonable structure of the final consumer products and intermediate products.

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