Exploring the Chinese Import Policy on the Low-technology Manufactures of Garment, Textile and Footwear

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Abstract. Using annual trade data from 1987 to 2016, this study focuses on the Chinese import trade patterns in garment, textile and footwear. We employ the indicators of net exports and revealed symmetric comparative advantage to generate H index to assess the divergence of the import policy. Our findings imply that 1) China has been comparative dis-advantageous in the imports of the low-technology garment, textile and footwear, and 2) the Chinese trade policy has been persistently restrictive towards the imports of the products. We document that the Chinese government may restrict the imports to improve the domestic employment.

Introduction

China is a country with comparative advantage in her textile products. This traditional wisdom has risen from the fact that China has had rich endowment in labor, especially since the 1980s when China carried out an outstanding economic structural change. The Chinese rural labor had begun to have more freedom to migrate, supplying more industrial workers for the Chinese labor-intensive industries including the garment and textile industry [1].

Some scholars document that the demographic dividend has driven China to facilitate the exports of the labor-intensive industries. In the views of free trade theories, an economy may specialize in and export the products which it has comparative advantages, and import those with comparative dis-advantages [2]. The specialization pattern and trade pattern guarantee that following the principles of free trade, all participants may gain trade benefits in trade. A logical inference of Ricardian free trade theories is that the higher the comparative advantage a country has in a certain product, the more exports it will achieve. The opposite also holds: the lower the comparative advantage (or the higher dis-advantage), the more imports a country will have [3].

Pang and Hong (2010) argued that the equilibrium condition for free trade is the net export capability equals to the comparative advantage in a certain product [4]. Hong, Guan and Su (2013) studied the Chinese trade patterns in goods and called the difference between the net export capability and the comparative advantage "H-index", which reflects how much the trade patterns diverge from equilibrium. More literatures assessed the Chinese trade patterns in commodity trade [5][6][7] and trade in services [8]. Their findings show that China tends to have a export facilitating trade policy. However, the Chinese export facilitating has little effect in the improvement of the Chinese comparative advantages. With regard to the imports, Hong and Hong (2016) [9], Hong, Sun and Mu (2016) [10] focused on the Japanese imports of agricultural products, while Hong, Shao and Mu (2016) investigated the Korean imports of primary agricultures [11] to assess the import policies.

This study examines the divergence of the Chinese import patterns in the low-technology manufactures of garment, textile and footwear. More specifically, we are interested in the question: is the Chinese import policy of this product category restrictive?

Methodology and Data

Measurements

Previous literatures use the "revealed comparative advantage index" (RCA) to capture the comparative advantage revealed in the exports [12][13].

$$RCA_{ik} = (X_{ik} / X_i)/(X_{wk} / X_w)$$ (1)

where X_{ik} represents the exports of product k by country i, X_i stands for country i's total exports, X_{wk} is the world exports of product k, and X_w shows world exports. The range of RCA varies from 0 to infinity (or X_w/X_{wk} accurately) with a median of 1. $RCA_{ik} >1$ expresses that compared with the world average, country i is more specialized in product k. To address the problem of asymmetric distribution of RCA [14], we use the logarithmic transformation as supposed by Dalum, Laursen, and Villumsen (1998) [15]:

$$RSCA_{ik} = (RCA_{ik} - 1)/(RCA_{ik} + 1)$$ (2)

where $RSCA_{ik}$ refers to the revealed symmetric comparative advantage index. The range of $RSCA_{ik}$ is [-1, 1] with zero mean. $RSCA_{ik}>0$ is equivalent to $RCA_{ik}>1$ and implies revealed comparative advantage. Because this study targets at the imports, we employ

$$RCA_{ik}^M = (M_{ik} / M_i)/(M_{wk} / M_w)$$ (3)

where M stands for the amount of the imports, to capture the comparative advantage revealed in the trade and employ

$$RSCA_{ik}^M = -(RCA_{ik}^M - 1)/(RCA_{ik}^M + 1)$$ (4)

to measure the symmetric comparative advantage index. There is a negative sign because the more product k country i imports, the less the comparative advantage country i has.

We address the export capabilities by

$$NX_{ik} = (X_{ik} - M_{ik})/(X_{ik} + M_{ik})$$ (5)

where NX_{ik} is the ratio of net exports or international competitiveness of product k by country i. The value interval is [-1, 1] with a mean of zero, which is identical to that of $RSCA_{ik}$.

If the free trade equilibrium condition of $NX_{ik}= RSCA_{ik}^M$ holds, the equation of

$$h_{ik} = NX_{ik} - RSCA_{ik}^M$$ (6)

must holds as well. h_{ik} index has range of [-1, 1]. The mean of zero suggests that the imports policy of product k by country i is free-trade. $h_{ik}>0$ implies that country i tends to restrict the imports while $h_{ik}<0$ reveals another story of imports encouragement.

Weighting is necessary when multiple products involve in. The weights for the $RSCA_{ik}$, NX_{ik} and h_{ik} indicators are different [16][17]. Considering $RSCA_{ik}$ indicator involves only imports

$$RSCA_{ij} = \sum_{k=1}^{n} (RSCA_{ik} \cdot w_{ik}^{RSCA}), (k \in j)$$ (7)

$$w_{ik} = M_{ik} / \sum_{k=1}^{n} M_{ik}$$ (8)

is employed in this study. In other words, the weight of $RSCA_{ik}$ is the percentage of product k in country i's total imports of product category j. Because the NX_{ik} and h_{ik} indicators involves both imports and exports, an adequate method of weighting should be:

$$NX_{ij} = \sum_{k=1}^{n} (NX_{ik} \cdot w_{ik}^{NX}), (k \in j) \tag{9}$$

$$H_{ij} = \sum_{k=1}^{n} (h_{ik} \cdot w_{ik}^{H}), (k \in j) \tag{10}$$

$$w_{ik}^{NX} = w_{ik}^{H} = (X_{ik} + M_{ik}) / \sum_{k=1}^{n} (X_{ik} + M_{ik}) \tag{11}$$

Data

We use annual SITC Rev.2 three-digit level trade data from UN Comtrade Database from 1987 to 2016, with China as the reporter. Lall (2000) proposed a technological structure based classification for SITC Rev.2 products [18]. In his work, Lall (2000) called the category of garment, textile and footwear LT1, which constitute a large part of low-technology manufactures. Following his original intention, we identified 20 products of Garment, Textile and Footwear that China has imported. The total amount of world imports for each three-digit SITC product (M_{wk}) is obtained by summing up that of each individual country. Table 1 gives the SITC codes of the 20 products.

Table 1. SITC Rev.2 Three-digit Garment, Textile and Footwear (20 products).

611, 612, 613, 651, 652, 654, 655, 656, 657, 658, 659, 831, 842, 843, 844, 845, 846, 847, 848, 851

Empirical Results

Fig. 1 gives the changes of the weighted NX_{ij}, $RSCA_{ij}$, and H_{ij} of the Chinese low-technology category of garment, textile and footwear, during the period of 1987 to 2016.

The weighted net export capability indicator (NX_{ij}) has been persistently larger than 0.5, indicating that China has considerably large trade surplus in the category of garment, textile and footwear. The weighted revealed symmetric comparative advantage of imports ($RSCA_{ij}$) has been below NX_{ij}. Particularly, $RSCA_{ij}$ has had never been positive until the year of 2008, indicating that China has had been comparative dis-advantaged in this product category when scrutinizing the imports. The two import pattern indicators give result to a perpetual positive H_{ij}, with an average of 0.234, implying that China has adopted a restrictive policy towards the imports of the products of garment, textile and footwear.
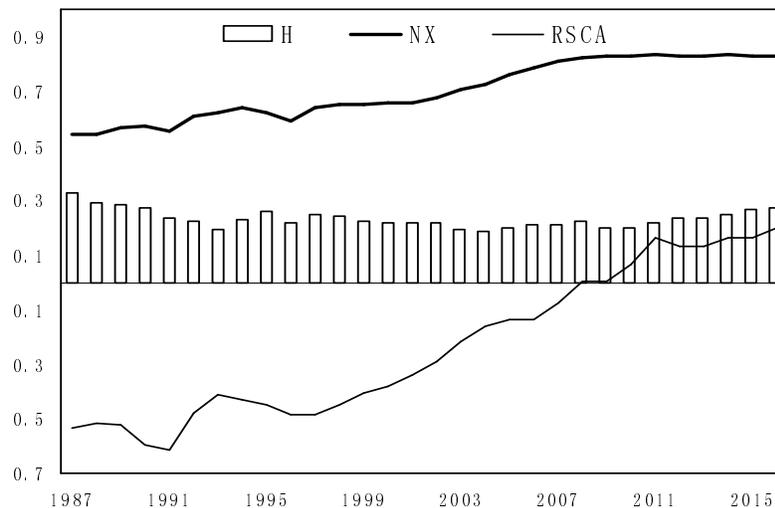

Figure 1. Import patterns of the Chinese imports of garment, textile and footwear.

Conclusion

This study investigates the import trade patterns of the Chinese garment, textile and footwear. Our findings challenge the popular and traditional wisdom in two aspects:

   1) China has had not been comparative advantageous in the garment, textile and footwear products when viewing the imports until 2008. This may imply that the actual composition of the exports and the imports are differentiated products. The domestic demand and supply for these products has long been mismatching, and

   2) China may have adopted a trade policy of import restriction on the products in garment, textile and footwear, even if she has comparative advantages in the products. A possible explanation is that the Chinese government employs the trade policy as a tool to reduce the pressure of the domestic employment as a result of the structural reform in the late 1970s.

Acknowledgements

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