

The impact of Japanese FDI to China on the Dynamics and Structure of the Bilateral Trade

In absolute terms, the Sino-Japanese trade has a great weight in the world economy: in 2015, the trade turnover between the two countries amounted to about 270 billion dollars, which was less only than the merchandise trade between the US and China, the US and Canada, the US and Mexico.

The Japanese-Chinese trade rapidly expanded in the first decade of the 21st century. High average annual growth rate between 2000 and 2008 (17.2 per cent) is comparable only to the same indicator for the 1970s, when, after the establishment of diplomatic relations and the conclusion of a number of international agreements between Japan and the PRC, their trade turnover increased on average by 27.4 per cent per year [3]. The trade growth at the beginning of the 21st century occurred against the backdrop of the gradual restructuring of the two economies and changes in the patterns of their foreign trade.

Foreign direct investment in the Chinese economy ensured a general improvement in the skills of the local workforce, an increase in the share of medium-technology products in the Chinese exports, technology transfer and, as a consequence, the growth of the technological level of Chinese companies. The growing competition between China and other East Asian countries in the production of cheap finished goods forced Japanese companies to focus on the development and production of finished and intermediate products with high value added. The most labor- and resource-intensive stages of production remained outside Japan. The changes in the export specializations of Japan and China created the prerequisites for accelerating the growth of merchandise trade between them.

At the same time, only the activities of Japanese companies in China made it actually possible to achieve such a high growth rate of the Sino-Japanese trade. While Japanese companies were expanding their business to China, opening local affiliations and establishing contacts with Chinese firms, the supply of products from China to Japan and from Japan to China was increasing dramatically. If we compare the annual flows of Japanese FDI to China and the trade turnover, we will discover similar trends. The growth of both indicators since 2000; then the slowdown in FDI growth in the second half of the 2000s and the decline in the trade turnover in 2009; the return to pre-crisis levels by the end of the decade; and finally the reduction in the investment and turnover after 2011 (see Figures 1, 2). The correlation coefficient between the growth rates of these two indicators has a positive sign, and its value is 0.51.

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Figure 1

Sino-Japanese merchandise trade, million dollars, 2000–2015 [3]

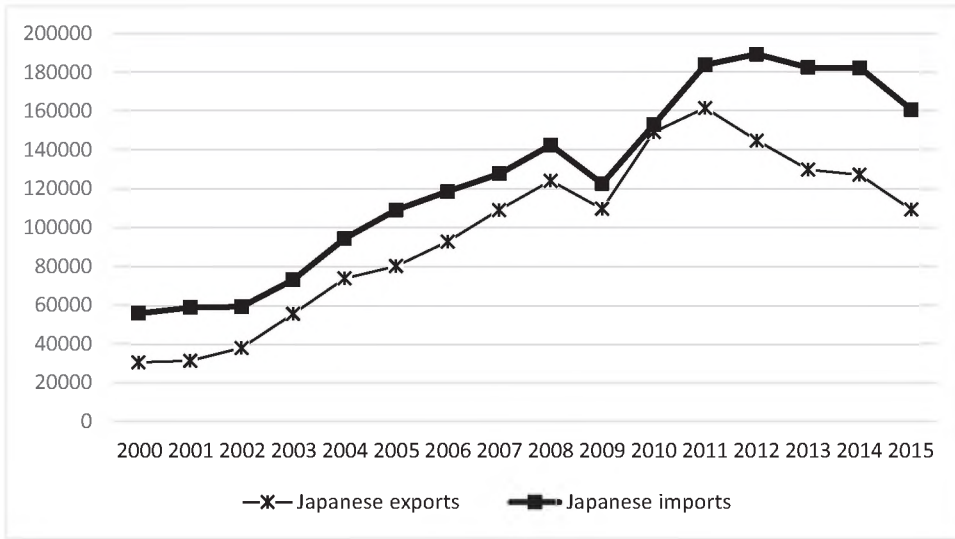
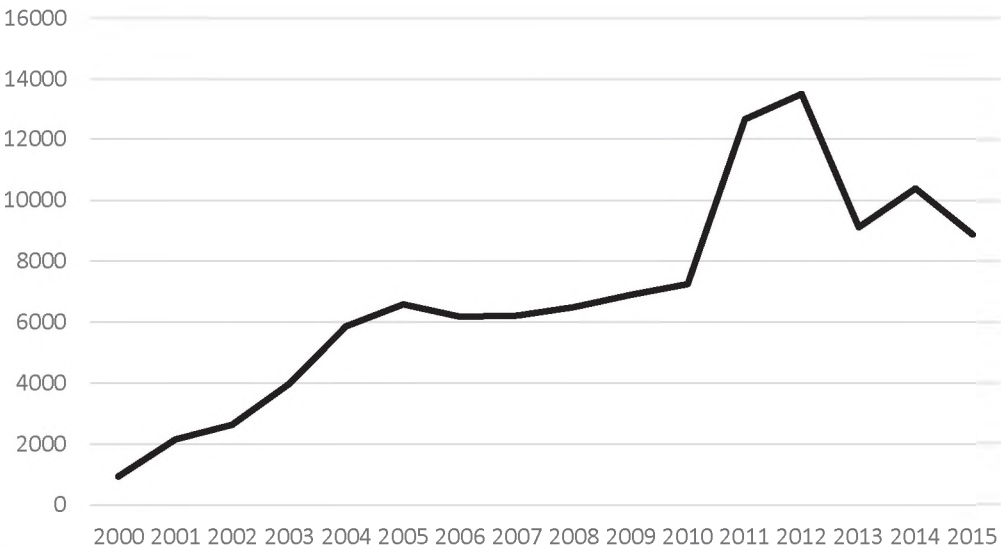


Figure 2

Japanese FDI flows to China, million dollars, 2000–2015 [3]



The structure of the Sino-Japanese trade in the 2000s also shows that the growth of the bilateral trade is primarily due to the activities of Japanese companies

in China. The Japanese exports were dominated by capital and intermediate goods (more than 80 per cent in 2009 [2, p. 88]), sent to equip and supply Japanese affiliates in China. Consumer goods, including durable goods, produced by Japanese factories in China, covered the largest share in Japanese imports.

Based on the assumption that in the past decade Japanese FDI to China determined the upward trend of the bilateral trade, this paper suggests using the latest statistics on Japanese FDI to China to predict the dynamics of the trade turnover in the short and medium term.

The statistics shows that from 2013 until present Japanese investments in the Chinese economy have declined in absolute and relative terms, and in 2015 their value fell to \$8.9 billion, which is only 6.8 per cent of all outward Japanese FDI flows against 12.7 per cent in 2010 [3]. In 2013 Japanese FDI to ASEAN countries were 2.5 times more expensive than Japanese FDI to China, for the first time in the last decade, and in 2014 this gap had even increased [3].

Moreover, since the mid-2000s the sectoral structure of Japanese FDI to mainland China has changed. The amount of investments in the non-production sector has been growing rapidly; finance and insurance, wholesale and retail has become extremely attractive for Japanese investors.

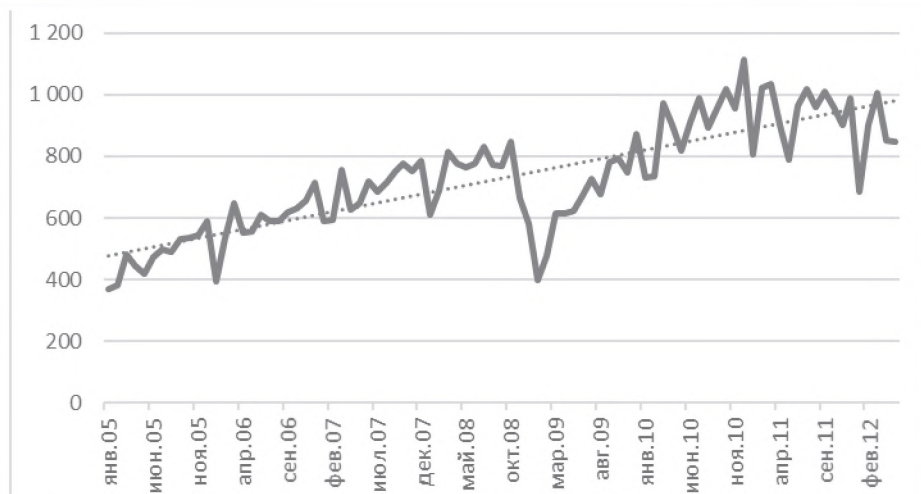
The decrease in Japanese FDI flows to China is expected to have a deterrent effect on the dynamics of the bilateral trade. The shifts in the sectoral structure of Japanese investment to China in favor of the tertiary sector will also constrain the growth of the merchandise trade, as most of the enterprises aimed at providing various services for the Chinese, unlike manufacturing enterprises, do not need regular large supplies from Japan.

On the other hand, the impressive amount of Japanese FDI stock in the industrial sector of the Chinese economy (\$72.4 billion in 2015 [1]) and a large number of Japanese manufacturing affiliates in China require supplies of capital and intermediate products from Japan. Therefore, the probability of sharp falls in bilateral trade is reduced, all other things being equal. For the same reason, even if the Sino-Japanese trade shrinks due to the negative impact of exogenous crises, the recovery is quick enough and the graph of the bilateral merchandise trade resembles a U-shaped curve.

To illustrate this statement: in the large-scale demand crisis of 2008–2009 Japanese exports to China in real terms recovered in a much shorter period than global Japanese exports (see Figures 3, 4). The exports of key product groups (chemicals, general machinery, electronics and electrical equipment, automobiles) from Japan to China in constant prices reached a local minimum in January 2009 and returned to pre-crisis levels in December of the same year. In the meanwhile, Japan's real exports to the world recovered only in mid-2012 after the minimum recorded in January 2009. Such a rapid rebound of Japanese real exports to China is due to the fact that affiliates of Japanese companies in Japan and China form international production networks with established channels of procurement and supply, and therefore the trade between these firms is easy to freeze and to resume.

Figure 3

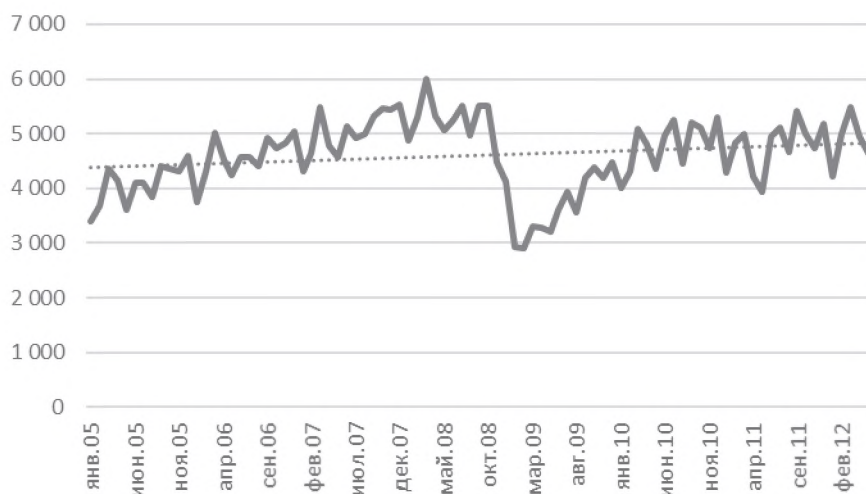
Japanese real exports to China (in 2005 prices), billion yen, Jan. 2005 – May 2012.



Source: author's calculations based on [3], [1].

Figure 4

Japanese real exports to the world (in 2005 prices), billion yen, Jan. 2005 – May 2012¹.



Source: author's calculations based on [3], [1].

¹ Note: when compiling Figures 4, 5, real exports were calculated for 4 main product groups: chemicals, general machinery, electronics and electrical equipment, automobiles. These product groups account for about two thirds of Japanese exports to China. The relevant export price index was used for each product group.

The vigorous activities of Japanese companies in China combined with the Chinese technological catching-up not only affects the dynamics of the bilateral trade, but also leads to qualitative changes. Previously, before the beginning of the 2000s, Japan sold high-tech manufactured products (mainly general machinery) to China, and in return received raw materials, materials that had undergone only initial processing, and products of labor-intensive industries, which means that the bilateral trade was based on the classical Heckscher-Ohlin theory. However, at the present stage, both Japan and China supply each other with high-tech finished products (for example, electrical equipment, pharmaceuticals, medical equipment, musical and recording equipment) and medium-tech intermediate products. Countries are increasingly exchanging products of the same industries, which is reflected in the growth of Grubel-Lloyd index. The Grubel-Lloyd index is calculated by the formula:

$$B_j = \frac{(\sum(X_i + M_i) - \sum|X_i - M_i|) \times 100}{\sum(X_i + M_i)}$$

where X_i and M_i denote the export and import of commodity i respectively. If the index is equal to 100, then the level of intra-industry trade is maximal; if the index is equal to 0, then countries buy from each other those goods that do not export themselves, which shows an inter-industry trade pattern [4]. In the case of Japan and China, the level of intra-industry trade is growing: Grubel-Lloyd index² was 31.7 in 2000, 37.3 in 2010, and as high as 43.7 in 2015 [5]. These changes can be explained by a number of reasons.

Firstly, the growth in the level of intra-industry trade between the two countries is largely due to the activities of Japanese manufacturing affiliates in China; most of the international trade appears to be intra-firm trade, and subsidiaries of one parent company in two countries exchange technologically heterogeneous products of the same industry. Quite often, the following strategy is used. Components with high value added (for example, monolithic integrated circuits or automobile transmissions) are delivered from Japan to the plants in China, and after the assembly, finished products are exported back to Japan. According to a number of international classifications, technologically complex components and finished products belong to the same industry, and therefore statistics reveal intra-industry trade.

Secondly, raw materials and low-technology goods from China are losing their price competitiveness, while semi-finished products are of sufficient quality, which makes interested Japanese producers seek to reduce their costs. In the first decade of the 21st century, the share of technologically advanced parts and components in the Chinese exports has increased significantly: from 30 per cent in 2000 to about 50 per cent in 2009 [2, p.88]. This factor, combined with the previous one, leads to an unprecedented increase in trade in intermediate products

² 3-digit commodity codes of the UN Standard International Trade Classification (SITC) Rev.1 were used to calculate the index.

between Japan and China. According to IDE-JETRO, in 2009, intermediate products accounted for more than two thirds of Japanese exports to China and more than a third of Chinese exports to Japan [2, p. 89].

Thirdly, the standard of living in China has risen, and now high-quality Japanese products are affordable to many Chinese. This explains the growing volume of consumer goods exported from Japan. So far, their share in the Japanese exports to China is very small (not more than 5 per cent in 2009 [2, p. 89]), but we can expect it to increase due to the growing prosperity and individualization of Chinese population preferences. In the largest cities of China – such as Shenzhen, Guangzhou, Tianjin, Shanghai, Beijing, Wuhan – per capita income already exceeds 10 thousand dollars, and people are accustomed to a high standard of living and are interested in expensive luxury goods.

Based on this new model of the bilateral trade one can anticipate further expansion in the exchange of products of the same industries as the technological level of China rises. Just for comparison: Grubel-Lloyd index for Japanese-Korean trade was 54.2, for Japanese trade with Singapore – 60.1 in 2015.

So, taking into account the changes in the investment strategy of Japanese companies in China, in the medium term one can expect the preservation of real trade values at the current high level without significant fluctuations, even under exogenous shocks, as well as an increase in the share of technologically heterogeneous products of the same industries in the merchandise trade.

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