

The Market Integration of Beijing, Tianjin and Hebei: A Generalized Discussion*

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Abstract

By summarizing the existing literature of the market integration of Beijing, Tianjin and Hebei, this paper concludes the status quo of the market integration as the following: First, the integration of commodity market and factor market in the region of Beijing, Tianjin and Hebei is improving gradually and has reached a certain height. Second, the degree of market integration in the region of Beijing, Tianjin and Hebei is unbalanced, but there is no consistent conclusion about which market has a higher degree of integration. Third, in the same range, the market integration process of different industries and different factors is also not uniform. About the research method, the common method for empirical research on commodity market is relative price method, most of research on factor market are theoretical analysis and the empirical researches are very few, so this might be a good innovation point in the future research.

1. Introduction

In 1982, the concept of integration of Beijing, Tianjin and Hebei was been first proposed in the overall plan of Beijing urban construction. This plan clearly put forward to build a double ‘metropolitan area’. Recently, in order to coordinate the economic development of the entire region, and promote the overall regional cooperation and win-win, China’s central government formulated a strategic plan at the national level—to build a ‘capital economic circle’. The market integration is one of sub-process of the integration of Beijing, Tianjin and Hebei, and the market integration refers to the free movement of products and production factors according to the same rules between different regions and different industries, and then in this common market, the price is reasonable and resources are used efficiently. Summarizing the existing literature of the market integration of Beijing, Tianjin and Hebe till to 2014, the economists have pointed out main four aspects below.

2. Theoretical basis of market integration

The market integration refers to the free movement of products and production factors according to the same rules between different regions and different industries, and then in this common market, the price is reasonable and resources are used efficiently. To analyze the market integration, we may need to use the following theories.

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2.1 Transaction cost theory

The idea of market integration can be tracked back to the period of classical economics. Adam Smith raised the theorem that the degree of division of labor is determined by the scope of market and the scope of market is determined by the transport efficiency. This theorem implies the thinking that market integration is beneficial to deepen division of labor and improve the efficiency. At that time, transportation is the key factor affecting the market scope. Besides Adam Smith, other economists also did some extensive research on international trade and the international trade is exactly the prototype of integration of international commodity market.

In 1937, the representative scholar of Chicago School-----Ronald Coase put forward a very important theory which belongs to new institutional economics: transaction cost theory. This theory has a close relation with market integration and Smith theorem. Transaction cost theory points out that using the mechanism of price has costs, and from this, we can infer that market integration is conducive to decrease these costs as much as possible so as to save resources.

2.2 The economic effect of market integration

In the new classical economics, the market is an abstract concept, and transaction is completed in abstract, so it would not discuss the meanings of integration of real market. However, all kinds of economic effects the new classical economics clarified can be used as the theoretical basis of market integration, Such as the economy of scale and the economy of scope which brought by free movement of commodity, the agglomeration economy which brought by free movement of production factors and so on.

2.3 The theory of international economic integration

In 1930s, the concept of economic integration was used in Europe for the first time. In 1950, American economist Jacob Vaina published his book <Customs Union>, and this book is considered as the symbol of formal formation of the economic theory of international economic integration. He raised the trade creation effect (one member country will stop producing inefficient products and import the same kind of high efficiency products from other member countries) and trade transfer effect (due to difference in tariffs, one member country will stop import high efficiency products from other non-member countries and import inefficiency products from other member countries) to weigh the pros and cons of a country's entry into a customs union.

After that, a large number of economists have further studies economic integration and developed these theories, such as integration of factor market, integration of policy and complete economic integration and so on, which enriched and improved the content of international economic integration. But because these theories involve a lot of concepts of international trade, such as tariffs and exchange rate, their impacts

on the integration of Beijing, Tianjin and Hebei are limited.

3. The concept of integration of Beijing, Tianjin and Hebei

In 1970s, the concept ‘industrial base of Beijing, Tianjin and Tangshan’ was put forward and the geographic region of Beijing, Tianjin and Hebei began to be regarded as a whole. The reasons why these three areas can be regarded as a whole are that they have a lot of aspects in common: all of them have a relative high level of infrastructure construction, their transportation are convenient, they have many colleges and universities, their mineral resources are rich, and the number of population in these areas are large. The above similarities are also the advantages of the region, so a large number of enterprises gathered on this region and then it became one of four major industrial bases in China. We can find the concept of ‘industrial bases of Beijing, Tianjin and Hebei’ mainly focused on industry, and it was reasonable in last century under the policy circumstance of paying more attention economic growth.

However, with the development of Beijing, Tianjin and Hebei, even the whole country, knowing this region only from the perspective of industry was outdated. Dadao Lu pointed out four problems of this regional development which would be brought by expanding cities’ scale unlimitedly: a large number of suburban farmlands were occupied; the water shortage appeared in urban, suburban and rural areas with dense population; the transportation burden in internal and external of big cities became more and more heavy; and serious environmental pollution (Dadao Lu, 1985). These four problems could not be solved from the angle of industry, but had to be regulated in a higher level. In this regard, Dadao Lu gave three suggestions from the point of spatial structure: exploiting the coastal zone, developing the eastern region of Hebei, and developing outer suburb small cities and towns. In the following years, these four problems Dadao Lu raised had not been solved and even they had the potential to deteriorate gradually. These problems of traffic jams of capital, environmental pollution in this region and so on have become the social hot issues, and then caused the concern of political and academic circles.

In 1982, the concept of integration of Beijing, Tianjin and Hebei was been proposed in <the overall plan of Beijing urban construction>. This plan clearly put forward to build a double ‘metropolitan area’. In 1996, the concept of ‘capital economic circle’ was introduced by <Beijing Economic Development Strategic Research Report>, and this report further highlighted the dual core status of Beijing and Tianjin. Since 2000, the planning of integration of Beijing, Tianjin and Hebei construction accelerated. In 2004, these three areas reached a ‘Langfang Consensus’, and formally determined the development strategy of integration. In same year, the national development and reform commission launched <Beijing, Tianjin and Hebei metropolitan area planning>, and then integration was not only the regional planning, but also the national-level planning.

In the fourth session of the Eleventh National People's Congress held in March 2011, 'Promoting the development of regional economic integration of Beijing, Tianjin and Hebei, building the capital economic circle' was explicitly written into the national '12th Five Year' plan, the planning work subsequently were put on the agenda.

In February 26, 2014, general secretary Jinping Xi listened to work report of the integration development of Beijing, Tianjin and Hebei, and stressed that achieving the collaborative development of these three areas is a major national strategy, and these three areas should adhere to use each comparative advantage, accelerate the development by using a scientific and sustainable way. In March 5, 2014, Chinese premier Keqiang Li pointed out that the region of Beijing, Tianjin and Hebei need to strengthen the economic cooperation when he made the government work report. So far, the concept of integration of Beijing, Tianjin and Hebei took place of other economic concept about this region and become a national strategy.

There are two angles to understand 'integration', the first one is a state, and the second one is a process. For the integration of Beijing, Tianjin and Hebei, it more likes a process, because the degree of integration is still not very high. The market integration is one of sub-process of integration of Beijing, Tianjin and Hebei, and its tasks are breaking down market barriers, exchanging commodities, and forming a rational market structure. The market of Beijing, Tianjin and Hebei can be divided into two markets: commodity market and factor market.

4. The market integration of Beijing, Tianjin and Hebei

4.1 Commodity market

Currently, the empirical research on commodity market in the region of Beijing, Tianjin and Hebei is mainly about the research on the integration level. In regional economics, there are three methods to study the integration of regional segmental economy.

First, the trade flow method. McCallum proposed that regional trade flow is related to regional GDP, the distance between different regions, and the boundary effect based on gravity model (McCallum, 1995). It means the increased trade flow strengthens the market integration level if other conditions remain unchanged. McCallum measured the market integration level of Canada by using Canadian provincial data and international trade flow data.

Second, the production method. Some scholars measured the degree of integration in China's domestic market by means of output structure, production efficiency and so on. Xinpeng Xu decomposed the influence factors of actual industrial economic growth of each province into the state's macro impact, industry's impact and the province's impact by using the error-components model (Xinpeng Xu, 2002). Xinpeng Xu pointed out that in the long term, the industry's impact on industrial actual economic growth accounts for 94%, and in the short term, the industry's impact

accounts for 48% and the province's impact account for 35% based on the analysis of data from 1991 to 1998. So, even though from the long-term view, provincial economy in China is regional integration, but it is still low level.

Last but not least, the relative price method. This method is the most common method which has been used for studying the degree of commodity market integration in the region of Beijing, Tianjin and Hebei. The basic idea of this method is that if a few local markets are integrated, then the price of these markets should be consistent. Its theoretical basis is the iceberg cost model raised by Samuelson in 1954 and this model shows the price of i market and j market can rise and fall synchronously or not, as long as the relative price value does not exceed a certain range, we can say the market i and market j are integrated.

This method is widely used in many countries. Qihan gui used this method to study the integration of China's domestic commodity market (Qihan gui, 2006). This study changed the form of relative price P_i/P_j , and used the first order differential form:

$$\Delta Q_{ijt}^k = \ln\left(\frac{P_{jt}^k}{P_{jt}^k}\right) - \ln\left(\frac{P_{it-1}^k}{P_{it-1}^k}\right) = \ln\left(\frac{P_{it}^k}{P_{it-1}^k}\right) - \ln(P_{jt}^k/P_{jt-1}^k)$$

Then this study used 9 categories of goods (k) of 61 adjacent provinces (i, j) for 17 years to get the time series of variance $|\Delta Q_{ijk}^k|$, and investigated whether markets are integrated by the price consistency. This method still is used in the following research of the degree of commodity market integration in the region of Beijing, Tianjin and Hebei.

Hongxia Chen, Guoping Li chose panel data of relative price of 9 major categories commodities in the region of Beijing, Tianjin and Hebei from 1985 to 2007, and used the model mentioned above to study the degree of regional commodity market integration (Hongxia Chen, Guoping Li, 2009). They found that the trend of market integration degree in this region was stable---ups and downs---stable during the 23 years. But overall, although the level of regional integration was improved, the integration degree in this region is not balanced, especially the market integration degree of Beijing and Tianjin, Beijing and Hebei, Tianjin and Hebei were inconsistent. The highest level of market integration was Beijing and Tianjin, the last one was Tianjin and Hebei.

Xiaoxia Wu and other scholars did the similar research, but the range of data was updated. According to the commodity retail price index of Beijing, Tianjin and Hebei from 1985 to 2012, they constructed the index of market integration to measure the degree of market integration in these three areas (Xiaoxia Wu, 2014). They concluded that the market integration of Beijing, Tianjin and Hebei experienced three development stages: the initial stable (1985-1988) ---the medium-term fluctuations (1989-1997) ---the latter stable (1998). The market integration trend of Beijing, Tianjin and Hebei was more consistent with the market integration trend of Tianjin

and Hebei, and Beijing and Hebei. The differences of market integration degree in adjacent province and cities were large, and the highest level of market integration was Beijing and Tianjin.

Manqi Jiang and Shan Xie used the data from 1995 to 2013 to prove that the market segmental degree in the region of Beijing, Tianjin and Hebei was gradually converging (Manqi Jiang and Shan Xie, 2015). This paper has some innovative points: it includes the study of segmental degree between cities of Hebei and it studies the integration process of every pair cities in the region. This paper found the market integration of Beijing and Tianjin is most stable and the fluctuation of market integration of Beijing and Hebei is biggest and the market integration process of Tianjin and Hebei is the fastest. What the difference between this paper and previous paper is this paper believes the market integration level of Tianjin and Hebei is the highest in this region.

In the aspect of theoretical research on the commodity market integration, most studies are likely with Dadao Lu's research. They analyze the existing problem qualitatively and explore the causes and then become normative research and give some suggestions. Jingnan Gao pointed out that the economic barriers of Beijing, Tianjin and Hebei still exist, and the market segmentation is serious (Jingnan Gao, 2009). The reasons for these two problems includes three points: the power of intervening economy by using administrative means is too big; the speed of developing private economy is too slow; the current tax system intensify the fragmentation phenomenon. Jingnan Gao proposed that governments' function should be transformed, and service-oriented governments should be constructed and regional economic benefit coordination mechanism should be established.

4.2 Factor market

Xuezhen Dai pointed out that the factor market of Beijing and Tianjin had four major barriers: (1) Financial barriers. Due to local governments pursued of complete industry categories, a large number of industrial constructions of different areas were duplicated, and this could not only play their comparative advantage, but also exacerbated their own disadvantages. (2) Property transaction barriers. The local government didn't permit nonlocal enterprises to cooperate with or merge local enterprises and didn't allow local enterprises to move out and cooperate with or merge other areas' enterprises freely and even let local backbone enterprises cooperated with local inefficiency enterprises. (3) Talent barriers. These regulations of the file, the wages and personnel relations, the organization relations and the household register bound people to stay the local area, and limited the movement of talents. Although these problems were raised in the study of the market integration of Beijing and Tianjin, but these three barriers were still appropriate for studying the market integration of Beijing, Tianjin and Hebei and became a hot topic (Xuezhen Dai, 2002).

Dianwei Lv carried out the empirical research on labor market and financial market in the region of Beijing, Tianjin and Hebei. He adopted the relative price method to measure the degree of labor market integration, while he introduced the Moran's index to test whether the correlation of on-the-job worker's average wage in the geographic area existed. He found that the on-the-job worker's average wage in the region of Beijing, Tianjin and Hebei was not convergence in last ten years, and the average wage was randomly distributed from 1999 to 2006, then average wage began to have agglomeration phenomenon from 2007 to 2008. Also, Dianwei Lv measured capital flows by using the Feldstein and Horioka test model and found that the correlation of the deposit and loan rate in each city had weakened, that is, the liquidity of credit funds had increased (Dianwei Lv, 2011).

In the face of above problems, these scholars put forward some suggestions which could be summarized as: to enhance the overall awareness, to break the barriers, and to strengthen market dominance. In fact, these suggestions are similar to these measures which used for strengthening the integration of commodity market.

4.2.1 Labor market

China is a populous country, while urban and rural issues are very prominent. In the region of Beijing, Tianjin and Hebei, the contrast between urban and rural areas is obvious. So in the study of factor markets, a large part is the research on labor market. About labor market, the empirical analysis is less and the theoretical analysis is mainly concerned with the problem of labor flow.

Zhicheng Ren and Chaojun Zhang had been concerned about the necessity of establishing a unified labor market in the region of Beijing, Tianjin and Hebei. They found that there were a lot of confusion and disorder phenomenon when a large number of labor force moved from Hebei to Beijing and Tianjin, these phenomenon mainly included two points: first, the infrastructure was chaotic; second, lack of management services (Zhicheng Ren and Chaojun Zhang, 1995).

Xiying Li and Qiufang Wang and Wenlu Wang focused on the obstacles that labor market was facing in the region of Beijing, Tianjin and Hebei. These obstacles could be summarized to that the oversupply of labor, low quality, lack of information, lack of legal protection and low degree of market. Also they gave some suggestions, such as improving the quality of labor force and establishing the mechanism to protect migrant workers' rights and interests (Xiying Li and Qiufang Wang, 2005; Wenlu Wang, 2008).

4.2.2 Financial market

The earliest idea of integration of financial market was raised by Ziping Duan and Kekuan Li to establish a regional bank (Ziping Duan, 1995; Kekuan Li, 1997). Their research belonged to the standard analysis and had drawn up a series of plans, such as the principle, the property right structure, the organization, the operation mode and

the supporting measures. In 2007, Wenzhe Li believed that the breakthrough of regional financial cooperation was the bank settlement services, and the core content was the cross-regional market liquidity. The policy advantage of Tianjin Binhai New area provided condition for exploring the financial cooperation in the region of Beijing, Tianjin and Hebei. In 2010, Xianglin Meng further enriched this idea and proposed that it was necessary to establish a regional bank of Beijing, Tianjin and Hebei, and bank of Hebei in Hebei province. To construct financial system, something must be guaranteed: three areas were equal, the system should be extended to rural areas and people took part in the construction of financial system.

In the aspect of the integration of financial market, Husen An and Guie Peng believed that the process of integration was still lagged, the utilization rate of capital was still not high and the linkage efficiency was still very low. Therefore, they put forward the parallel development mode (Husen An and Guie Peng, 2008). Wenzeng Li, Yan Wang and Xin Zhang thought that there were several problems existed in the integration of financial market, for instance, the functions of cities were positioned wrong and the financial development was unbalanced in the region. For these problems, Wenzeng Li believed that it is crucial to establish coordination and consultation mechanisms, and Yan Wang and Xin Zhang believed the most important thing was positing the function of each city clearly (Wenzeng Li, Yan Wang and Xin Zhang, 2014). Dexu He and Jie Dong thought the key reason for the slow integration of financial market was that the interests and objectives of each area were inconsistent and based on the experience of Yangtze River Delta and Pearl River Delta, they believed the integration of financial market in the region of Beijing, Tianjin and Hebei should be promoted by governments at first and then driven by market (Dexu He and Jie Dong, 2015).

The empirical research on the integration of financial market mainly focused on capital flow and its relationship with economic development. Fangchao Liu measured the strength of capital flow of Beijing, Tianjin, Hebei and the entire region by using the FH model, and the results found that the liquidity of Hebei capital was the strongest, the liquidity of Tianjin was the weakest, and the liquidity of the entire region was slightly worse than Hebei's. At the same time, Fangchao Liu investigated the flow of fixed asset, government budget funds, bank funds and foreign investment, then he found the former two were not enough freedom. In the analysis of their impacts on economic development, it was found that the impact of financial institutions was small and introducing foreign investment lead to vicious competition (Fangchao Liu, 2013). Hongwei Dai and Yanhui Zhang studied the integration of financial market in the region of Beijing, Tianjin and Hebei by using ADF test, Johansen cointegration test, Granger causality test and impulse response model based on the data from 1990 to 2009. The results found that finance development in this region was supply oriented, economic growth of Hebei expanded its financial scale and the financial structure promoted the economic growth of Hebei. In addition, financial scale played a positive role in economic development of three areas, and financial efficiency in three areas was high. But, the insurance industry's effects on

the economic development in Tianjin and Hebei were limited (Hongwei Dai and Yanhui Zhang, 2013).

5. The relationship between markets of Beijing, Tianjin and Hebei

According to above analysis, we have already known that all kinds of markets in the region of Beijing, Tianjin and Hebei are separated with different degrees. Ruijia Sun analyzed the driving relationship between markets in the region of Beijing, Tianjin and Hebei and the integration degree of different industries by using the data of regional trade flows, relative output, relative distance, relative location and relative price. First, Ruijia Sun believed that the ability to development independently of Beijing was strong and other two areas' abilities were weak. The self-sufficiency ability and the ability to meet intermediate demand were both weak in three areas. Especially the ability of Beijing to drive external economy was weak, but its demand of external products and resources were high, so it had a 'suction effect'. Second, Ruijia Sun believed that the boundary effects of mining, manufacturing, agriculture, finance were small and degree of trade protection was also small while the boundary effects of construction, transportation, storage and postal services, electricity and heat and water production were big and the degree of trade protection was high (Ruijia Sun, 2012).

6. Conclusions

After summarizing the existing literature of the market integration of Beijing, Tianjin and Hebei, the status quo of the market integration in this region can be concludes as the following:

First, the integration of commodity market and factor market in the region of Beijing, Tianjin and Hebei is improving gradually and has reached a certain height.

Second, the degree of market integration in the region of Beijing, Tianjin and Hebei is unbalanced. There is no consistent conclusion about which market has a higher degree of integration.

Third, in the same range, the market integration process of different industries and different factors is also not uniform.

For the region of Beijing, Tianjin and Hebei, the problems of market integration are also the problems of economic integration. The most serious problem is the unequal status of three areas which caused by political factors. The main factor that affects the integration is administrative intervention which driven by the conflicts of interests between local governments or local governments and central government. Hence, in order to solve these problems, it is crucial for local governments to negotiate, coordinate and ensure the related policy to be implemented smoothly.

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