Manufacturing Industry Transformation, External Dependence and Innovation

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Abstract. China’s manufacturing industry is facing challenges because of digital revolution of global manufacturing industry and imbalance of payments. China’s manufacturing imbalances are reflected in the balance of payments surplus. Double “external dependence” on export and foreign investment is the reason of its difficult transformation. The formation of this difficulty includes both policy factors and structural factors during the process of its participating in the division of global value chain. Solution to this problem lies in the changes of policy ideas, establishment of the policy environment for fair competition and encouragement in innovation.

1. Introduction

As part of the global product value chain, China’s manufacturing industry has been affected by the digital revolution of the manufacturing industry, while at the same time, it’s also faced with its own structural imbalance and transition dilemma. To this end, it is necessary to analyze the structural and institutional factors that cause the “external dependence” of the manufacturing industry. We believe that this is the result of China’s participation in the specific division of global product value chain and is further consolidated under the effect of long-term outward oriented policy. In order to get out of the manufacturing industry transformation dilemma, the government needs to change its policy thinking, cancel the policies inclining towards foreign investments, create a policy environment for fair competition for private enterprises, state-owned enterprises and foreign-funded enterprises. The government also needs to strive to cultivate human capital and protect intellectual property rights.

2. Digital Revolution and Its Challenges

2.1 The trends of manufacturing industry digital revolution

Every major technological change in human history has brought about profound changes in the industry. Since 2000, the manufacturing industry has entered a new stage of development driven by computer aided design software, new materials and new technological progress advancement. The following trends have been shown for the manufacturing industry development. The first one is the trend of individualized mass production. The second one is the miniaturization trend of enterprise organization form. The third one is the production and consumption localization trend. The fourth one is the manufacturing and service industry fuzzification trend.

2.2 Digital revolution and China’s manufacturing industry transformation

The above trends will challenge China’s manufacturing industry in three directions. First, the loss of comparative low cost advantage. Today, China’s labor costs have been in the rising channel, raw materials are heavily dependent on imports, environmental pressure cannot be ignored. The future development of the manufacturing industry will largely get rid of the workshop and the production line restrictions, and will not go through the complex forging process which is first processed and then assembled.

Second, the disadvantage of lack of design and innovation is more prominent. China’s manufacturing industry is in the “processing” and “assembly” links in global value chain division,
the core added-value part of this chain is not finished by Chinese producers, and thus its disadvantages are obvious. Digital revolution has further reinforced this.

Third, it’s more difficult to achieve intellectual property management. The future of China’s manufacturing industry is decided by innovative human capital. Future manufacturing is more dependent on intellectual property rights protection, and this task is even more arduous in the era of individualized customization. When consumers are all involved in the product design, to whom will the ultimate design ownership belong? In addition, how to define the ownership of the “collective cooperation” manufacturing which is discussed on the online exchange platform in every moment? How to avoid that the enterprise online resources are not stolen freely? These problems will be more prominent.

Although lots of disadvantages exist, the manufacturing industry will reduce its dependence on raw materials and become more energy-saving, efficient and environmentally friendly, which are all characteristics in line with China’s status quo. China’s huge domestic market size is one of the advantages cannot be ignored. Production organization miniaturization trend means that SMEs will have more opportunities. Many robust local enterprises have shown excellent learning ability and entrepreneurial spirit, which will be the new forces of China’s manufacturing industry transformation.

3. China’s Manufacturing Industry’s “External Dependence”

China’s manufacturing industry’s problems are reflected intensively in the imbalance of international payments. The “double surplus” in the current account and capital account are both from manufacturing industry’s “external dependence”.

3.1 The source of the imbalance of international payments

China’s manufacturing industry is heavily dependent on exports and foreign investment, which is intensively demonstrated by the “double surplus” of China’s balance of international payments. According to the definition of balance of international payments, when a country’s current account is in surplus, its capital account should be in deficit. Or vice versa, in the case of surplus in capital account the current account should be in deficit to keep the balance of international payments. However, our current account and (Private) capital account are in long “double surplus”, resulting in the balance of payments surplus, the RMB bears the pressure of appreciation. Thus a large-scale foreign exchange reserve was formed in order to make the international payments in balance.

The current account surplus shows that China’s national savings are higher than domestic investment, and thus flows abroad. The surplus of the current account shows that there is a surplus in the national savings, and the surplus of the capital account shows that we are using foreign capital. Under the condition of market economy, the outflow and inflow of assets are normal. The problem is that China’s balance of payments continues to be surplus, so China’s foreign exchange reserves have surged greatly. Moreover, there is a huge difference in the yield rates of the outflow and inflow of assets. As a large developing country with long-term economic growth, capital should be scarce resources, the investment rate of return should be higher. However, the national savings are not effectively converted into domestic investment, but circuitously invested abroad through the government in the form of foreign exchange reserves, mainly for the purchase of US Treasury bonds, becoming the largest US Treasury holdings. In the case of the dollar depreciation, China’s debt will be brought into a situation of lower yield and higher risk.

At the same time, we are largely taking advantage of foreign investments. This shows China’s macroeconomic structural imbalance. Much domestic manufacturing industry is facing a serious overcapacity, so it seems that investment is surplus. While at the same time a large number of foreign investments have entered into China, which is obviously not because of China’s shortage of funds. Foreign companies get high rate of return on investment, which also shows that its behavior is inherently rational. But why are there quite different investment decisions? In this regard, some scholars have made explanations from the perspectives of policy orientation and inadequate growth capability of local enterprises [2]. They believe that “capacity gap” is the micro-foundation of the
imbalance in China’s economic structure. In other words, foreign business managers have a stronger ability to organize resources, so as to achieve higher labor productivity. On why China will insist on the introduction of foreign investment, the explanation they give is that this is the results of adhering to the “market for technology” concept. And what this article is concerned is that whether there are any institutional reasons for China’s manufacturing industry’s suffering from “external dependence”. Why introduction of foreign capital is still the policy priority of all levels of governments even though countless facts have proved that it’s impossible to achieve “market for technology” in this way? This article argues that the “foreign preference” policy choice is the result of institutional incentives.

3.2 The inner link of “double surplus”

China’s international payments account “double surplus” has an inner link, which is the root cause of both the policy and structural factors strength and cause each other. Through the previous analysis of the development trend of China’s manufacturing industry, we could see that, China’s manufacturing industry’s active participation in the globalization starts in the phases of “processing” and “assembly”, which happens to be the end of the multinational global value chain. Under the situation of great labor costs and reduced transportation costs, this kind of intra-production division is bound to happen as long as China sticks to the policy of opening up, even if there is not any preferential introduction policy. Therefore, only under the circumstances that the multinationals put their whole industry chains in China, it is possible to realize the goal of “market for technology”. Rather than introducing foreign investments through buying technology or indirect financing, our country’s main measures for foreign investments introduction are setting up factories or mergers and acquisitions (holding controlling stake). This makes the decision-making power of foreign-funded enterprises (including joint ventures) not within the control of local partners, so it is impossible for them to decide independently whether or not to introduce technologies. The purpose of multinationals’ layout of value chain is to enter Chinese market and make it as “export” base, which has been reflected on its high contribution rate to Chinese export. Therefore, there is inevitable link between foreign investments introduction and trade surplus.

In addition, according to the data released by the Ministry of Commerce, between 1990 and 2003, the proportion of industrial output value of foreign-invested enterprises to the national industrial output value has risen from 2.28% to 33.37%. In 2005, foreign enterprises (including Hong Kong, Macao and Taiwan investment enterprises) accounted for 28.6% of the country’s industrial added value, their total imports and exports accounted for 58.5% of the country. According to the latest data of the Ministry of Commerce, in January 2014, the proportion of foreign-invested enterprises’ total trade value to the national level had been up to 43.94%. It can be seen that the foreign investment has achieved their goal of acquiring Chinese market. But all these are industrial pressure and strong competition for Chinese local private and state-owned enterprises.

4. The Institutional Source for China’s Manufacturing Industry’s “External Dependence”

The direct source of China’s financial and capital account surplus is foreign direct investment. The preferential policies of investment and the many restrictions on private enterprises investments are the institutional roots. The domestic financial market mechanism is not perfect and this constitutes a structural hurdle that the domestic high savings cannot be transformed into effective investment.

4.1 The internal impulse of local governments’ “business and investment attractions”

In China, business and investment introduction (mainly foreign investment) has a special institutional reason, local official’s performance and GDP are closely related, therefore, they are striving hard to stimulate local GDP through business and investment introduction. Local government officials themselves are “agents” of state-owned assets. In case of the absence of state-owned and collective landowners, local governments will then switch agricultural and forestry funds to infrastructure construction, and even provide foreign investment with land with lower than
market prices. In addition, local government’s favor of foreign capital has also circuitously further reduced the living environment of China’s local manufacturing industry. From the perspective of international payments account, the direct result of foreign direct investment and current account surplus is the rapid growth of China’s foreign exchange reserves, foreign exchange reserves surge exacerbated the domestic pressure of RMB inflation, boosted the real estate prices, led large volume of capital into real estate market, these have all made private manufacturing enterprise in a situation of lacking capital. From an international perspective, this has led to a decline in the domestic purchasing power of RMB, thereby reduced the level of US debt to China. On the one hand, we retain huge foreign exchange reserves and, on the other hand, we are using a large number of preferential facilities and tax relief policies to attract foreign investment (mainly foreign direct investment). It is extremely difficult for plenty of informal economic sectors (including many small and medium-sized enterprises engaged in processing manufacturing) to maintain a modest profit by undertaking orders from multinational companies. Policy inclination exacerbates the latter’s disadvantage in the global value chain and also solidifies this structure, which makes manufacturing transformation more in a dilemma.

4.2 Misleading short-term goal of “export for employment”

Due to the profound changes in the manufacturing sector, the current account surplus is largely a “misleading” indicator. In recent years, the structure of foreign direct investment has changed greatly from the past investment for setting up factories into mergers and acquisitions, therefore, what have been changed are only the ownership and controlling power of the enterprises. It will not change the capital amount of acquired enterprises and is also difficult to significantly enhance the original local enterprises production capacity and increase employment.

5. Implications

5.1 Changing policy concept and abolishing outward oriented special policy

What we need to be clear is that the digital revolution of manufacturing industry has brought profound changes to global value chain, which has led to changes in the organizational form of the companies, especially after the 2008 financial crisis, the development way of “encourage exports to support employment” has lost its foundation.

It is both costly and of little significance to maintain the current account surplus. As we all know, in recent years due to large-scale trade surplus, China’s foreign trade environment has deteriorated seriously. We are also suffering from trade disputes and protectionism, and these have led to macroeconomic imbalances. Under the intra-product division and global trade model, China’s large processing trade is bound to produce a surplus [1], which does not represent the strength of “Made in China”. In the digital era of manufacturing industry, it is unwise to make policy decisions based solely on trade data.

At present, China’s labor costs have been rising, and the space of creating employment through continuously increasing exports has been greatly compressed. At this moment, if don’t making adjustment to policy timely, we will miss the opportunity to promote China’s manufacturing industry upgrade. If we make trade decisions according to the conventional thinking of “driving employment through exports”, this will make the majority of Chinese workers be caught into a low wage cycle and it is also difficult to accumulate human capital.

Cancelling the special policy will not “scare away” foreign investments, but can help sift high-quality resources. In reality, the unified, fair, competitive policy environment for both domestic and foreign enterprises has not yet formed: First, the tax burden for domestic and foreign enterprises is still not unanimous. In the economic development zones in some provinces and cities or the fields of high-tech manufacturing industry with state focus, the tax rate for foreign-funded enterprises is still much lower than that of domestic enterprises. In addition, there still exist a lot of management and procedural differences for local governments’ treatment of registered “foreign companies” and “mainland companies”. Second, since 2008, the export tax rebate preferential
policies, for which we have adjusted several times, are to a large extent enjoyed by foreign investors. Again, implicit policy differences are still playing a role. Activities of business and investment introduction are still important performance and assessment indicators of government officials, implicit subsidies and policy incline still exists in the areas of local tax returns within the system, land use, water use, electricity use, office demand, transport conditions, communication facilities and other public facilities services, loan priority conditions, low standards for environmental pollution, default for the lack of protection for non-formal employment, etc.

Even if the “preferential era” of tax policy for foreign investment has ended, its advantages in technology, capital and brand have been established. The pattern of domination of Chinese manufacturing industry by foreign enterprises has been formed. In the fields of daily make ups, home appliances, pharmaceuticals, electronics and many other areas, the phenomena of foreign holdings of Chinese enterprises are very serious and widespread, which has greatly limited the policy space for governments to support local enterprises.

Therefore, our proposal is that the central and local governments should abolish preferential policies for foreign investment, especially at the industrial level, and the guidance of foreign investment should be refined into the global value chain. To be specific, in the high-end manufacturing industry, high-tech industry, modern service industry, new energy and energy saving and environmental protection industry, which are all the key areas of government support, we cannot fully encourage the introduction of foreign investment (see State Council [2010] No. 9 document). We need to refine the policy, encourage its investment in technology and R&D, and encourage its transfer of technology and advanced equipment or technical cooperation with domestic enterprises. Otherwise, even if foreign investments are introduced into these industries with state focus, they will still concentrate in the low-cost processing and manufacturing sectors, their innovation and design links which can create core values are still remain in their mainland and only the environmental pollution costs are transferred to China, because foreign companies in the high-end of value chain will not take the initiative to bear the responsibility to monitor its suppliers (foundries). So the industry-level guidance policy cannot achieve the purpose of realizing the transformation and upgrading of China’s manufacturing industry.

5.2 Reforming intellectual property rights protection system

The lack of intellectual property rights protection has not only limited the foreign-funded enterprises’ technology transfer to China’s, but also brought serious blow to the entrepreneur’s innovation incentives. We must improve the intellectual property rights protection system around intellectual capital to make it adapt to the needs of product differentiation. An important reason for the weak protection of intellectual property rights in China is that the cost of infringement is too low. In the digital context, the new question also includes the difficulty of identification: how much of the difference is counted as “innovation” rather than “imitation”? This requires the government to maintain a more prudent attitude in patent identification, make full use of the network platform to timely disclose infringing information, conduct public supervision of intellectual property rights system using online media, and strive to improve the cost of infringement.

5.3 Creating a policy environment in which all kinds of enterprises can compete fairly

First of all, the goal of policy development should be to cultivate the competitiveness of Chinese enterprises, and the implementation of policies should be put into the enterprise level, domestic enterprises must also be consistent in applying policies. For example, according to a latest survey on the salaries of state-owned enterprises and private enterprises in 2014, the former’s average wage is 3.8 times the latter’s. Although this comparison is relatively rough, the wide difference for the two in education level, nature of the industry and industry differences and so on are also enough to make us think about: it is difficult for private enterprises to compete with state-owned enterprises in access to talents, investments, resources, and many other areas. It is also hard to obtain a good explanation by the “higher productivity” for the high wages of state-owned enterprises. The reason why the wage gap is so large is also closely related to the special monopoly status, policy and resource advantages of state-owned enterprises.
Second, make great efforts to improve the regulatory environment. Although in recent years, domestic enterprises costs in the setting up firms and applying for construction permits and other regulatory procedures continue to be lowered, according to the World Bank 2013 “Business Environment Report”, China ranked No. 91 in 185 economy entities in terms of the index of “business convenience degree”.

It should be pointed out that this article advocates the abolition of the special policy for foreign investment instead of adopting “discriminatory” or “closed” measures to foreign investment, but advocates the transformation of foreign investment introduction mode. These are the proposals aimed at management system levels, which are the necessary conditions to promote the transformation of China’s manufacturing industry and are also measures relatively easy to take. Besides, the transformation of the manufacturing industry also needs to at least cultivate human capital and conduct education reform, which are extremely significant issues.

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