

Impact of Foreign Exchange on Supply Chain of the Logistics Industry

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Abstract. China is the world's largest manufacturing country, the most important link in the global industrial chain, and the world's second largest consumer market after the United States. China's manufacturing industry has also been affected by the epidemic, and its transformation and upgrading have been affected. China's total manufacturing industry has occupied the world's top position for many years in a row, becoming an indispensable link in the global production chain. In the situation of global manufacturing shift, some labor-intensive industries are gradually moving out of China as the cost of labor factors rises. The new epidemic has further accelerated the outward migration, especially in the pharmaceutical and medical device sectors, where many countries are concerned about the security of their supply chains due to their over-dependence on China, and some overseas countries have widely raised the slogan of "de-Chinaization". With the normalization of the epidemic, the acceleration of the reverse globalization process and the rise of trade protectionism, the position of Chinese manufacturing in the global value chain will be affected. According to the data, it can be found that the first thing that affects the Chinese manufacturing industry is the import and export, like Brazil, which has frequent trade with China, has a higher dependence on rubber and plastic manufacturing and a more pronounced dependence on chemical and pharmaceutical manufacturing in terms of imports. The international competitiveness of China's major manufacturing industries is analyzed using the RCA-VA index. Finally, specific solutions are proposed to address the risks posed by the epidemic.

Keywords: Outbreak; automotive manufacturing; parts and components; complete vehicles.

1. Introduction

China's manufacturing industry has also been affected by the epidemic, and its transformation and upgrading have been affected. China's total manufacturing industry has occupied the world's top position for many years in a row, becoming an indispensable link in the global production chain. In the situation of global manufacturing shift, some labor-intensive industries are gradually moving out of China as the cost of labor factors rises. The new epidemic has further accelerated the outward migration, especially in the pharmaceutical and medical device sectors, where many countries are concerned about the security of their supply chains due to their over-dependence on China, and some overseas countries have widely raised the slogan of "de-Chinaization". With the normalization of the epidemic, the acceleration of the reverse globalization process and the rise of trade protectionism, the position of Chinese manufacturing in the global value chain will be affected [1].

Finally, specific solutions are proposed to address the risks posed by the epidemic. Hypotheses and models are also used to analyze how multinational companies can move overseas through outsourcing and thus compare the advantages of China with other developing countries, and then the hypotheses and models are used to prove this. Based on intuitive inferences, it is concluded that international transport costs increase, weighted transaction costs increase, and trade costs increase, and then based on a comparison of O and T structures, it is concluded that China and developed countries will have an advantage in the O structure of the entire production value chain. The mathematical model is then used to simulate and predict that the smaller local market demand cannot meet the fixed inputs or cheaper production costs of cross-border production [2]. The second graph shows the cost of transporting the higher-intensive value chain links, and the third graph shows the reduced incentive for multinational companies to invest. In the fourth graph the incentive for TNCs to invest is increased. The conclusion is that epidemics lead to higher costs, with vertical production

structures requiring a higher advantage in terms of lower factor endowments and market size in the host country, and a significantly reduced scope for survival, while integrated production structures extend the cost advantage but still require a certain level of higher factor endowments and market size in the host country. The most obvious of these is that the integrated production structure of local production and local distribution will probably be adopted by more and more multinational companies, showing a trend towards shorter global value chains and a "decentralized" layout of the world production structure. This is why the decoupling theory has been refuted. Foreign investment will not be divested, but the production structure needs to be changed to take advantage of the large-scale market, so we need to expand domestic demand and develop the market potential. This article is analyzed in the context of a scenario of fluctuations and reconfiguration of global industrial chains, in which in general foreign capital will not withdraw from China but may restructure production. The New Crown epidemic has only exacerbated the challenges to the international production system posed by economic nationalism and the trade war between China and the US. The rise in transaction costs at various points in the global value chain triggered by these challenges will prompt multinational companies to adjust the global production structure, including China. The potential for a reduction in efficiency-seeking investment and an increase in market-seeking investment. Therefore, China must continue to expand domestic demand, break down regional barriers and develop the potential of the domestic market internally, while promoting economic cooperation and integrating the scale of the regional market externally through free trade agreements.

In the 2020 issue, it is explained that manufacturing companies will pay more attention to the management of HSE (Health, Safety and Environment). It is also explained that Chinese manufacturing companies will be more pragmatic in promoting smart manufacturing. The life science industry will see huge development opportunities Chinese manufacturing companies will embrace digital transformation more proactively [3]. These six aspects are analyzed and their own recommendations and future directions are presented.

In the March 2020 issue of Special Report, the author explains that the article stands at the forefront of China's machine tool industry and takes the manufacturing industry as a perspective, giving comprehensive and detailed thoughts on the future impact of the epidemic on China's machine tool manufacturing industry, suggesting that the market will present a scene of a million horses running when it is booming, and there will definitely be companies that will be at the forefront of the struggle when it is in crisis [4]. At this time, the competition is the internal strength of enterprises and the wisdom and determination of enterprise leaders. Every crisis is an opportunity to change the industry landscape. As many people are disappointed with the future as there are hopeful ones. It is also proposed that the epidemic will change the strategic rhythm and mobility of machine tool manufacturing enterprises The machine tool manufacturing industry is capital-intensive and talent-intensive, and due to irresistible factors, the cash flow of machine tool manufacturing enterprises will undergo a huge test... The epidemic restricts the flow of population and accelerates the automation of machine tools. With the disappearance of the demographic dividend, the increasing cost of labour, and the rapid development of electronics, information technology and cost reduction, the epidemic will undoubtedly accelerate the market demand for automated, intelligent machine tools to get rid of the over-reliance on labour. Deciding the future survival of machine tool manufacturing enterprises is the inherent foundation of the enterprise's development ultimately to return to follow the laws of market development, the inherent foundation of the enterprise is commonly known as the "internal strength of China's machine tool manufacturing industry can win the core of the future is the brand the so-called brand is the user's recognition, the market recognition. Only the brand is recognized, the flow of products may get continuous orders, brand power to enhance the flow of products for the conversion power, brand strength to bring the product's premium capacity.

The epidemic has also had an impact on the top 500 companies in China's manufacturing industry. The epidemic had a significant negative impact on the production and operation of enterprises in the first quarter of 2020 [5]. Nearly half of the enterprises recorded a significant reduction in operating revenue in the first quarter. More than 80% of enterprises saw their operating costs increase [6].

Corporate earnings declined across the board. More than 60% of enterprises employed fewer workers to varying degrees in the first quarter. Nearly 80% of enterprises saw their investment in fixed assets decreases to varying degrees in the first quarter. About 30% of enterprises experienced a significant decrease in exports. Increased uncertainty in international orders. Enterprise production and operation will improve overall in the second quarter. About three-quarters of enterprises will see an improvement in operating income. There is disagreement over whether operating costs will fall back. Most companies expect earnings to stop falling and pick up. Employment will improve for most companies. Most companies will see an improvement in fixed asset investment. Exports will improve for most enterprises. Firm confidence and proactive response to the impact of the epidemic. About three-quarters of enterprises were confident of achieving their annual operating targets.

Overall have confidence. And they have proposed measures to address the situation by adjusting their production plans, making good follow-up arrangements and doing their best to catch up with the production schedule after the epidemic is over. The company also put forward measures to address the situation by adjusting production plans, making follow-up arrangements and making every effort to catch up with the production after the epidemic. Innovative service, sales and management methods. Seek policy and financial support. Increase efforts to reduce taxes and fees. Reduce the cost of financing for enterprises. Strengthen public health protection and improve the national emergency management system.

2. The impact of exchange rate fluctuations on the automotive chain

2.1 Impact on the scale of China's complete vehicle exports

Because the auto industry chain is affected by the epidemic, so the first auto parts will be affected first. Especially like the export of auto parts like Acuity, Fuyao glass, on the sound electronic, Burtons, Top Group, Wencan shares, etc.; currently there are many auto parts enterprises with low profit margins, micro-profit enterprises accounted for a large proportion. According to some export enterprises in the auto parts industry, the current international market demand is still in the weak, steel, rubber and other raw material prices, employees to work capital, should pay a variety of social costs increase (such as pension insurance, etc.), some products due to foreign anti-dumping and export hindrance, such as the European Union on China's exports of standard fasteners imposed anti-dumping duties (2009 standard fastener exports fell 46.2% year-on-year) 46.2%, etc [7]. Some enterprises reflected that if the appreciation of RMB is large, the products cannot be exported. The situation is grim. The world economy in general will be constantly fluctuating and gradually rebounding trend, the economic situation of Europe, the United States, Japan and other developed economies began to slowly improve, China's enterprises in the development of other potential markets to achieve results (such as India, ASEAN, etc.), demand will increase. Our government will continue to take a number of policy measures to increase macro-control efforts and stabilise export tax rebate policies; improve export credit insurance policies, increase export credit insurance coverage and reduce insurance premium rates; actively create conditions for the development of large-scale complete project exports through international economic cooperation and preferential loans from our government (buyer's credit or seller's credit); vigorously address and expand foreign trade financing guarantees for small and medium-sized enterprises. The implementation of the pilot RMB settlement of trade in goods; support for enterprises of all types of ownership to "go global" to drive exports, etc. As for the whole car, the impact on new energy vehicles is weak, especially in the case of resumption of work car sales are rising [8].

2.2 The depreciation of the RMB favors low import dependence and affects the scale of China's complete vehicle exports.

The study shows that RMB appreciation has a catalytic effect on imports and FDI in China's automotive industry and a depressing effect on exports in China's automotive industry [9]. However, after taking into account the moderating effect of foreign direct investment, the negative impact of

RMB appreciation on the exports of the automobile industry is reduced. Finally, on the basis of the empirical study, and taking into account the problems left behind in the development of China's auto industry, the article puts forward relevant suggestions such as continuing to continuously expand the scale of utilizing foreign investment, accelerating the pace of opening up China's auto industry and improving the quality of introducing foreign direct investment; while expanding the utilization of foreign investment, formulating and improving relevant laws and regulations, so that foreign enterprises can implement technological research and development in China.

This paper draws on the common research methods and mainstream research results of experts and scholars at home and abroad on the relationship between exchange rate changes and import and export, and after theoretical analysis, it also selects data on exchange rate changes in China during the eight years from 2010 to 2017 and data on exports of automotive products by category and different export objects [10]. The data were rearranged according to the research methods of other economists to make the study more reasonable, and then descriptive statistics and correlation analysis were conducted. The dependent variables were regressed on three samples: the export value of complete vehicles, the number of complete vehicles exported, and the export value of the automobile industry, and the results of the empirical analysis were finally evaluated. After multiple regressions, it is concluded that RMB appreciation has a significant negative impact on China's auto exports, the extent of which varies according to the sample size, sample type and control variables [11-12]. The paper concludes with some suggestions for improvement, taking into account the experiences of developed countries' automotive industries in coping with exchange rate changes and China's own situation. At the government level, the quality of foreign investment should be improved, the mode of cooperation should be changed to technology and management, and the efficiency of resource use should be enhanced; the application of financial instruments should be promoted to enhance the ability of the automotive industry to withstand risks; and relevant laws and regulations and industry regulatory systems should be improved to enhance the image of Chinese brands. At the enterprise level, enterprises should take the initiative to strengthen technological research and complete technological innovation and upgrade; follow the policy guidelines, grasp the political and economic dynamics of the international market to reduce enterprise risks; improve the quality of automotive products and services to increase the international competitiveness of Chinese exports [13].

This paper establishes a choice analysis framework to qualitatively analyze the exchange rate risk management approaches at each stage of overseas M&A in the context of Geely's acquisition of Volvo Cars, and to explore the management approaches suitable for Chinese automotive enterprises. Firstly, we identify the exchange rate risks based on two perspectives: the causes of exchange rate risk formation and the timing of exchange rate risk triggering; secondly, we select three representative indicators, namely the amount of foreign currency settlement and the scale of impact on Chinese vehicle exports, to explore the selection mechanism of exchange rate risk management methods; finally, we explain the advantages, disadvantages and effects of exchange rate risk management measures at each stage. The paper finds that Geely's use of non-derivative instruments ultimately resulted in a saving of US\$300 million in M&A costs, but the measures taken by Geely were based on the assumption that the US dollar and the euro would continue to depreciate, which would expose Geely to a large exchange rate risk exposure if the prediction was wrong. This paper concludes that, based on the phased characteristics of overseas M&A exchange rate risk for Chinese automotive enterprises, the management approach can be synchronized into phases; the choice of the exchange rate risk management approach is influenced by currency and time factors; the exchange rate risk management measures before the M&A transaction is carried out are biased towards risk avoidance through the design of non-derivative instruments such as M&A solutions, and the management approach shifts to the use of financial derivatives after the M&A transaction is completed. After the completion of the M&A transaction, the management approach shifts to the use of financial derivatives [14]. Finally, the paper provides specific management recommendations to enable Chinese automotive companies to have a clearer idea of exchange rate risk management when conducting overseas M&A.

2.3 The impact of exchange rate fluctuations on the automotive chain

Firstly, the structure of imported vehicles has led to a low exchange rate pass-through effect. The structure of imported cars in China is divided into three main categories: specialized vehicles, automotive parts and components, and medium- and high-grade cars.

At present, China's imports mainly rely on Germany and the United States; automotive parts and components, especially some core technology original parts in the domestic research and development and foreign countries still have a large gap; and China's entire import of small cars and medium and high-end, luxury cars as the main. The domestic demand for the above three types of imported cars is rigid in the long run, but at the same time, due to the lack of technology and the development of independent car brands, domestic cars and spare parts are not able to meet the domestic market demand, i.e. they cannot provide a close substitute, so the imported car market has a high degree of external dependence.

The empirical results show that price fluctuations in China's automobile industry are more unusual. Using the industrial prosperity index method, Kong Xianli and He Guangjian found that monetary policy, taxation and financial policy all affect the prices of China's automobile industry [15]. In their study of price volatility in China's auto industry, Cao Wei and Chen Xiao found that there is a certain negative correlation between the RMB exchange rate and the price of imported cars, but this effect is generally small. A study found that macroeconomic variables such as the RMB exchange rate and money supply had a significant effect on stock prices in some industries [16]. Using the Translog function, Chen studied the price elasticity of the Chinese automotive industry and found that changes in the prices of automotive production factors can have a significant effect on the prices of the automotive industry.

3. Conclusion

The epidemic had both advantages and disadvantages for the automotive supply chain. For the auto parts industry, it affected exports and sales, especially in areas where the epidemic was severe. However, the resumption of production improved the domestic market competitiveness of independent parts companies and increased export sales. For the auto sales industry, both production and sales decreased after the epidemic, especially the impact on the sales side was greater than the supply side, and the impact on commercial vehicles was greater than that on passenger cars. However, there was less impact on new energy vehicles, which continued their rapid growth momentum, and sales then declined compared to before. When the resumption of production, sales increased significantly which plug-in hybrid car production and sales growth rate is more obvious, but production fell significantly. The limitation is that it is difficult to find specific data and financial statements on the auto industry's parts and auto sales, which are basically analyses by experts and professors based on big data and forecasts for the future. This paper believes that the automotive industry, especially new energy vehicles, will have great prospects for growth.

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