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The Impact of Exchange Rate Changes on China's Imports and Exports Under the Epidemic

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ABSTRACT
Affected by the COVID-19, the Federal Reserve System adopt monetary policies to ease the economic crisis. The resulting changes in exchange rates will have an impact on China's import and export trade. In this paper, data on exchange rate movements and imports and exports after the outbreak are selected to analyze the impact on imports and exports in terms of quantitative easing, policy effects, import and export controls, and shipping prices. It also observes whether exchange rate and import/export movements show a J-curve in the short and long run due to contractual effects. Based on the perspective of global value chains, this article makes recommendations on the future trend of the CNY exchange rate which suggests that China needs to actively respond to the spread of the global epidemic and look for a way out rather than waiting for the epidemic to change.

Keywords: *Exchange rate, COVID-19, Import, Export.*

1. INTRODUCTION

Since the outbreak of COVID-19, the economies of all countries have been hit to a certain extent. As exchange rates fluctuate between different currencies, international trade suffers from turbulence. Therefore, this paper through in-depth analysis and research to understand four current situations of the CNY exchange rate, import and export trade, shipping prices, and the market; The impacts of exchange rate changes are shown as follows: the impact of quantitative easing in the United States on CNY exchange rate and China's import and export; the impact of policy changes on foreign trade under the epidemic; the impact of exchange rate changes on China's import and export control; Further analysis of the three causes are: the U.S. government uses quantitative easing policy caused the appreciation of CNY exchange rate, the effect of international trade contracts, shipping prices caused exchange rate fluctuations; At the end of this paper, it introduces some prospects and suggestions on exchange rate changes for Chinese merchants from the perspective of the global value chain.

Feng et al. used systematic GMM estimation to study the impact of the COVID-19 epidemic and relevant government response policies on exchange rate fluctuations in each country from January 13, 2020 to July 21, 2020. Therefore, it is concluded that the increase in confirmed cases does significantly increase the volatility of the exchange rate to some extent. The government has taken measures to curb exchange rate fluctuations, such as school closures, restrictions on internal mobility, and propaganda campaigns [1]. Wang collects recent sale accounts, changes of structure of export products, changes in exchanges rates of CNY in recent years, China's inflation rate, China's GDP in recent years, and other information for analysis of the significant changes in CNY between 2020 and 2021. What's more, the research result in China is gradually recovering from the impact of the new crown epidemic. With the development of a sustained and stable economy, demand in production and consumption is gradually being released [2]. Li et al. provided first-hand firm-level information on Chinese exporters' reaction to CNY exchange rate fluctuation. The research used the data to investigate the relationship between the CNY exchange rate and export. Therefore, the relatively high exchange rate will be transformed into foreign currency denominated prices, and the trading volume response is mild but significant. Otherwise, exporters with higher productivity tend to push prices to the market, although the delivery rate is still high. Other sources of the variate, such as import intensity, distribution costs, income levels in destination countries, and foreign ownership, are also important [3].

Wang examined how the use of imported intermediate inputs affects the exchange rate elasticity of export prices. The research firstly constructs a theoretical model to explain that the change of import input cost and exchange rate affect the export price through two different channels: Marginal cost channel directly changes the marginal cost of export products and indirectly changes the motivation of exporters to upgrade or downgrade export products. Quality change channels affect the export price through product quality. These two channels have opposite effects on the exchange rate elasticity of export prices. This document is conducive to the study of the interaction between the global value chain and exchange rate variation [4]. Liu researches the trend of the global economy after the epidemic. Because of the sudden outbreak of the epidemic, the global economy was slowed down for a long time. However, in order to stimulate the economy to recover well, many countries have taken measures. The research analyzes the measures and influence of the United States and China on the global economy after the outbreak and found that the key factor impacting the direction of economic globalization is the policy choices developing between China and US [5]. Zhou and Mo's research used the GARCH model and VAR model to analyze the CNY exchange rate fluctuation on import price, which implied the balance of payments also being influenced. It found that CNY exchange rate risk directly affects the import price index, which means that the greater the volatility of the exchange rate, the greater its elastic change to the import price, leading to a decline in the international trade exchanges [6].

Li et al. found through regression analysis that the following factors affect the CNY exchange rate against the U.S. dollar: GDP, foreign exchange reserve, commodity price, inflation rate, and balance of payment. What we should do first is to identify the root cause of currency fluctuation of CNY from the above factors when the CNY exchange rate fluctuates significantly [7]. Yu selected data from June 2009-2014 as the study sample and used empirical analysis to analyze the impact of CNY exchange rate changes on China's balance of payments. The empirical results show that a stable long-term relationship exists between the CNY real effective exchange rate and the balance of payments and that China's exchange rate leads to changes in the balance of payments [8]. Guan pointed out the post-epidemic situation and analyzed the reasons from three perspectives. The first is that the epidemic situation in China is well controlled and the outbreak has not continued. The second reason is that the CNY exchange rate against the US dollar has risen in the era of the Chinese economy, and the degree of recovery is better than expected, and the development is full of resilience, and the third reason is that the dollar index is accelerating downward [9]. Wu pointed out that since the outbreak of the COVID-19 epidemic in early 2020, due to different countries' control of the epidemic, global economic uncertainty has increased. The exchange rate of the CNY presents a two-way fluctuation trend of first devaluation and then appreciation. Based on the two-way fluctuation of the CNY exchange rate, Wu Min analyzed how the exchange rate affects interest rates and tried to predict the central bank's response policies [10].

This paper explores the impact of exchange rate fluctuations and further analysis of its causes, in order to provide certain theoretical supports for the import and export trade strategies of Chinese merchants in the future.

2. CURRENT SITUATION

2.1. Exchange rates and the status of imports and exports

In 2021, the repeated overseas epidemics continued to support the CNY exchange rate, with the CNY spot exchange rate becoming less volatile and continuing its strong performance relative to the USD and major non-US currencies. Throughout the year, the CNY spot exchange rate against the USD fluctuated in both directions around the range of 6.35 to 6.58. after the data released by the Bureau of Foreign Exchange, in the first three quarters of 2021, China's current account surplus was US$202.8 billion, up 35% year-on-year. Besides, according to data from China's Ministry of Commerce, in the first 11 months of this year, China's total imports and exports reached US$5.48 trillion, up 31.3% year-on-year. In the first three quarters, net exports of goods and services contributed 19.5% to gross domestic product (GDP), boosting GDP growth by 2 percentage points. However, the impact of the epidemic, the slower recovery of the world economy, the weak growth in external demand, the cost of raw materials, the price of energy resources, and the rise in the exchange rate of the CNY pose challenges to China's future imports and exports.

2.2. Sea freight prices and market status

Many countries have implemented Non-Pharmaceutical Intervention (NPI) to reduce the severe spread of COVID-19. However, these NPI include many restrictions about international traveling, business closures, and prohibitions of public gatherings, which caused many negative influences on domestic production and the international output of Chinese companies [11]. The shipping price especially the oil price is significantly affected by the fluctuation of the Chinese Marco-economy. Under the COVID-19 epidemic, the sharp fluctuation of shipping price can relate to the influence of the Baltic Dry Index (BDI), which is an international index for shipping conditions [12]. Therefore, the upward trend of the Chinese shipping market is dampened under the strike of COVID-19.

3. IMPACT OF CHANGES IN EXCHANGE RATES

3.1. The impact of US QE on exchange rates and China's imports and exports

Facing a sudden outbreak of the COVID-19 pandemic, the U.S. Congress has approved three rounds of fiscal stimulus packages, implementing unlimited quantitative easing at the same time. As the largest economy, its economic policy changes also significantly affect the macroeconomic trends of countries around the world, and China's imports and exports are also greatly affected. At the supply and demand level, expansionary fiscal and monetary policies in the US have significantly energized economic growth. And other major economies tend to follow the US in implementing expansionary policies, which in turn drive up demand for commodities globally. Due to the constraints of the epidemic, global commodity supply growth has been relatively slow, leading to an imbalance between supply and demand, which forms the basis for commodity price increases. From a global perspective, China has controlled the epidemic better, resumed work and production earlier. And with its strong manufacturing production advantage, has taken on the demand for commodities from most countries in the world, with rapid growth in foreign exports. Although, in theory, the implementation of quantitative easing in the US would lead to a continued appreciation of the CNY, increasing imports and discouraging exports. However, based on the background of the epidemic, China's foreign exports are still on an upward trend from an overall perspective.

3.2. The impact of policies on foreign trade under the epidemic

On May 5, 2019, the US government announced an additional 25% tariff on some imported products from China, which caused an increase in export costs and a negative impact on China's industrial chain, and greatly impacted the foreign trade market. The two sides reached a consensus through consultation and signed the Economic and Trade Agreement phase I at the White House on January 5, 2020. But not for long, at the beginning of the New Year in 2020, the epidemic spread rapidly to all parts of China. Even after the Spring Festival holiday, Chinese enterprises were still in a state of production and shut down. According to the National Bureau of Statistics, in the contrast, China's GDP is 18.4 trillion yuan in the first quarter of 2020, down 6.83 percent year-on-year from 2019 [13].

3.3. Import and export controls due to changes in exchange rates

In the face of the outbreak of the epidemic, China has carried out stricter control on import and export trade. To prevent the severity of the epidemic, China closed the borders in time and strictly controlled the entry and exit of aviation and shipping [13]. After the outbreak of the epidemic in various countries around the world, all the nationalities have taken strict measures to prevent and control the epidemic. With the outbreak of the second quarter, the year-on-year growth rate of imports and exports is likely to increase significantly. This uncertainty has led to a severe impact on China's foreign trade and import industries. Under the impact of the epidemic, domestic factories and workers will be idle and external demand will not be able to respond. It will also reduce the supporting role of foreign exchange settlement by importers and exporters for the CNY exchange rate and have a certain impact on the CNY exchange rate [14].

4. CAUSE ANALYSIS

4.1. Reasons for US QE under the epidemic

In response to blow to the US economy from the pandemic of COVID-19, the US has continued to raise interest rates and implement quantitative easing. The Fed's loose monetary policy has prompted an outflow of US dollars and an increase in the exchange rate of the CNY, with a constant trend towards appreciation. As the Federal Reserve gradually released more liquidity into the market, the US dollar began to flow back into emerging markets on a large scale. As the outbreak in China was first effectively contained, most other emerging economies experienced multiple rounds of the outbreak. In contrast, China's economic growth prospects were more optimistic. In addition, China's monetary policy has remained relatively restrained and has not been as vigorous as before, buying up US debt when the dollar raises its notes. As a result, we did not lose out when the dollar depreciated in relative terms. On the contrary, China has taken advantage of its unique position as the most attractive emerging market country for foreign investment, which is more conducive to commercial imports and exports.

4.2. International trade contract effects - exchange rates, long and short term effects

There are short-term and long-term effects of exchange rate changes on the trade balance. Instead of reducing the trade balance in the short term, a currency appreciation may further increase the trade surplus. In the long run, currency depreciation can promote exports and reduce imports, so that the trade balance can be improved; currency appreciation can reduce exports and promote imports. However, as the short-term price elasticity of demand is low and the long-term price elasticity of demand is high, a depreciation of the currency may lead to a fall in the trade balance and then a rise in the trade balance, while an appreciation of the currency may lead to a rise in the trade balance and then a fall in the trade balance. This phenomenon is therefore known as the J-curve effect of exchange rate changes on the trade balance. Even if The Marshall-Lerner Condition is met, currency devaluation does not immediately improve the trade balance. On the contrary, the initial period of exchange rate depreciation may also produce a deterioration in the trade balance, mainly because of the duration of trade contracts, the time lag in the process of awareness, decision-making, information transmission, and production changes. The exchange rate of the CNY against the USD has decreased from 7.168¥/$ to around 6.369¥/$ since May 2020, while the current account of China remains positive. But the monthly value of foreign trade cargo throughput has experienced a decline from March 2021 to July 2021. Although the current account of China is still positive during this period, the year-on-year growth rates of imports exceeded that of exports, which may mean that the volume effect is beginning to take effect.

Although the internal and external risks and challenges to international trade increased significantly, China’s foreign trade has shown a pleasing quality of growth. According to customs statistics, with an increase of 3.4% over 2018, the total value of China’s import and export trade has reached 31.54 trillion yuan, including 14.31 trillion yuan of import, an increase of 1.6%; 17.23 trillion yuan of export, an increase of 5%; and 2.92 trillion yuan of trade surplus, an increase of 25.4%. Against the backdrop of prolonged and complex trade friction between China and the United States, China's foreign trade development is facing greater resistance. Since China was one of the first countries affected by the epidemic, it also indirectly led to a decline in the exchange rate of the CNY against the U.S. dollar [15]. From the perspective of China's economic fundamentals, although it will be affected by the epidemic phase in the short term, the long-term upward trend will not change.

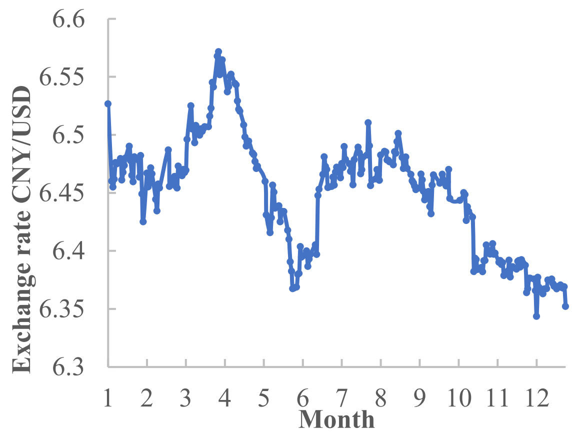

Figure 1 The monthly exchange rates of CNY against USD in 2021.

4.3. How sea freight prices affect exchange rates

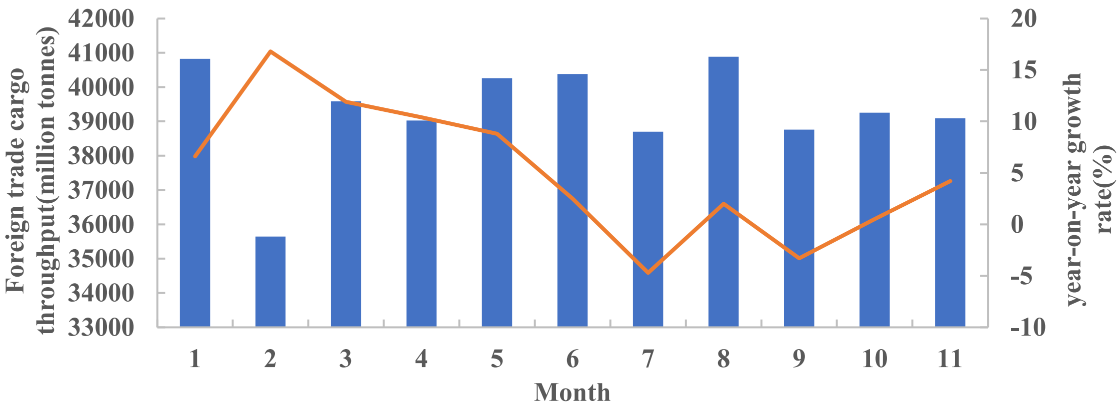

Figure 2 The monthly value of foreign trade cargo throughput (million tons) and its year-on-year growth rates.

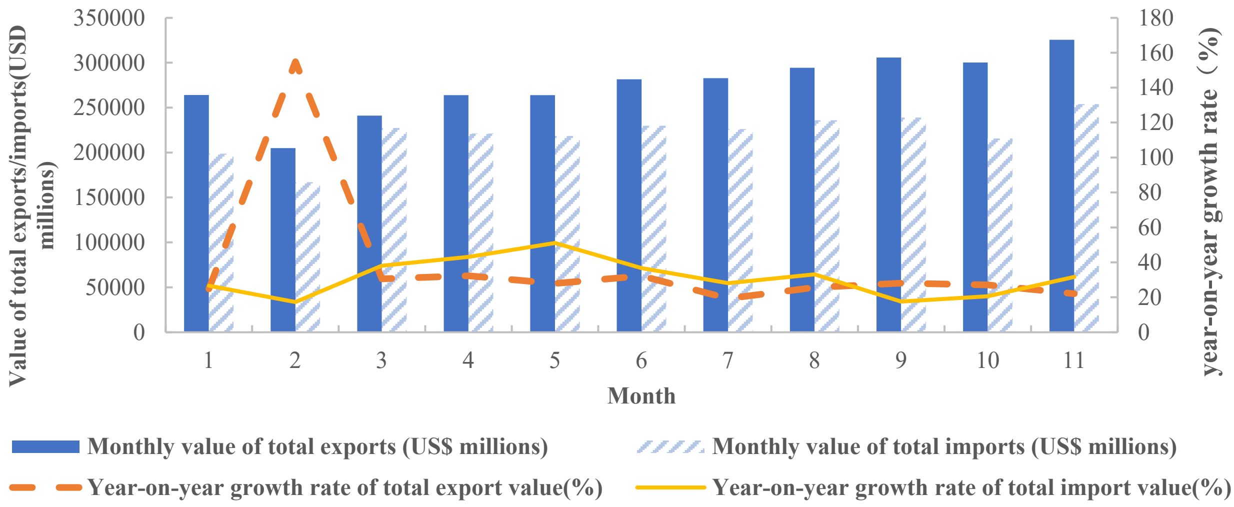

Figure 3 The monthly value of total exports and imports (USD millions) of China in 2021 and their year-on-year growth rates.

5. SOME PERSPECTIVES AND SUGGESTIONS FOR EXCHANGE RATE CHANGES IN A VALUE CHAIN PERSPECTIVE

5.1. Global Value Chains

With the development of globalization, the domestic industrial chain has gradually broken through the national scope and formed a global value chain (GVC) [16]. In this system, the production process of a product is dispersed to various countries which make most of them circulate among importers and exporters in the form of "imported intermediate goods".

5.2. The Impact of CNY Exchange Rate Fluctuations on Imports and Exports from a Value Chain Perspective

In the literature of recent years, several researchers have focused on the impact of exchange rates on imports and exports of intermediate goods. Ahmed (2016) points out the export trade of companies with a high proportion of intermediate imports is significantly less affected by changes in the exchange rate. Specifically, when the appreciation of the domestic currency leads to a fall in demand due to higher export prices, it also reduces the price of intermediate input imports as the exporter can absorb more of the cost of appreciation to partially offset the fall in demand [17]. As a result, participating in the global value chain has advantages in reducing the variation effect of the exchange rate.

However, the Chinese participation in GVC has been interrupted by the pandemic of COVID-19. In terms of different industries, the impact of the epidemic on most industries' global value chain is negative, but the degree of impact is different. Agriculture, mining, service, and manufacturing industry are negatively affected, especially the labor-intensive manufacturing industry, which is directly impacted by the epidemic. This phenomenon might come from the epidemic that directly restricts the large-scale labor flow, leading to great losses in the labor force market.

Considering the positive effect of the global value chain on the import and export, the Chinese participation degree in the global value chain decreased also can increase the exchange rate effect on Chinese import and export. It's a vicious circle that needs to find a way out instead of just waiting for the global pandemic to come to an end.

5.3. Some Suggestions for Increasing Global Value Chain Participation under Pandemic

As joining in the global value chain can buffer the impact of CNY exchange rate fluctuations on import and export, it is important to increase Chinese participation in the global value chain.

(1) Ensure unimpeded export of small and medium-sized enterprises. The COVID-19 has caused a certain impact on China's participation in the global value chain. Therefore, the government should support export-oriented enterprises and promote the smooth mechanism of export enterprises suppliers and the foreign demand side.

(2) Promote domestic interregional trade and consumption. In the context of the spread of the epidemic in the world, even if China tries to promote the resumption of work and production, it will still be affected by the interruption of international upstream and downstream suppliers. Therefore, strengthening the promotion of domestic interregional trade may help to alleviate the impact of the epidemic on the global value chain to a certain extent.

(3) Accelerate the digital transformation and upgrading of enterprises. COVID-19 has been like a raging fire in the digital economy. New consumption patterns such as cloud supermarkets, cloud shopping, and cloud shopping have been born. The outbreak of the epidemic has increased people's high dependence on the Internet and forced Chinese enterprises to transform and upgrade to digitization and intelligence.

6. CONCLUSION

This paper has comprehensively analyzed the exchange rate changes of CNY against the U.S. dollar under COVID-19 and analyzed the impact of exchange rate changes from China's policy changes, import and export controls, and U.S. QE under the epidemic. It also analyzes the reasons for the fluctuation of the CNY exchange rate from the perspective of U.S. QE, the effect of international trade contracts, and the shipping market and provides figures of exchange rates and E/I value. Finally, from the perspective of the global value chain, this study proposes suggestions on the future trend of the CNY exchange rate. Simply put, if the appreciation of the CNY leads to an increase in export prices and a decrease in export demand, it will also lead to a decrease in the import prices of intermediate inputs, so the global value chain will reduce the advantages brought by exchange rate changes. Overall, there is a positive trend for the CNY exchange rate as the main recipient of COVID-19 has shifted from China. It suggests that China needs to actively respond to the spread of the global epidemic and actively find a way out, rather than waiting for the epidemic to change.

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