The Multidimensional Impact of Exchange Rate Fluctuations on International Trade Competitiveness within the Framework of Purchasing Power Parity Theory

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Abstract: Taking into account of the Purchasing Power Parity theory, this paper establishes an three-dimensions analytical framework to explore the influence of exchange rate fluctuation on international trade competitiveness with regard to three aspects: export price competitiveness, import substitution and industrial chain capital cost. The research results indicate that the exchange rate stability can significantly enhance the foreign trade performance of firms, advance industrial upgrading and strengthen the national competitive advantages. This research provides theoretical support and empirical reference for policy formulation.

***Keywords*:** exchange rate fluctuations, purchasing power parity, international trade competitiveness, industrial structure adjustment

1. Introduction

As an important variable in international economic relations, the exchange rate fluctuation not only affects the structure of trade and capital, but also influences the competitiveness of industries. Purchasing Power Parity theory provides theoretical basis for the analysis of long-term equilibrium of exchange rate. Under the global value chain linkage, analyzing the comprehensive impact of exchange rate movement on international trade competitiveness systematically helps us to understand the direction of adjustment of national economy, thereby improving the anticipation and effectiveness of policy-making.

2. Theoretical Foundation

The theory of Purchasing Power Parity (PPP) was put forward by the classical economist Gustav Cassel in 1918. It argues that in a perfectly competitive market, the exchange rate between the currencies of two countries should be equal to the ratio of price levels of goods in the two countries[1]. The theory assumes the free flow of goods and absence of trade barriers, and further implies that the exchange rate movement reflects the differential inflation degree between the two countries. Therefore, the theory offers an important reference for explaining the long-term behavior of exchange rate. Based on the theory of Purchasing Power Parity, this paper establishes a three-dimensional theoretical model to explore the effects of exchange rate fluctuation on international trade competitiveness. The three dimensions are: Dimension One, the change in price competitiveness of exported goods; Dimension Two, the import substitution and domestic market response mechanism; Dimension Three, the cross-related relationship between the external dependency in industrial chain and fluctuation of capital cost. The model has strong logical and practical rationality in both theoretical research and practical application, and can effectively reveal the cross-linkage path of international trade competitiveness affected by exchange rate fluctuation.

3. Changes in Export Price Competitiveness

3.1The Amplifying Effect of Exchange Rate Depreciation on Export Pricing Advantage

Exchange rate depreciation lowers the price of export products in the international market by lowering the price of the foreign currency in terms of the domestic currency[2]. Therefore, the price competitiveness of the export product increases in the international market in the short run. For export firms that depend on price as their competitive tool, exchange rate depreciation increases their range of price advantage, and this, in turn, enables them to expand their share of the foreign market. If the degree of trade elasticity is high, an increase in their share of the foreign market will lead to an increase in external demand. The profit rates of the export firms have greater flexibility in terms of exporting. These firms can lower their prices slightly without hurting quality, and this, in turn, enhances their export performance. Therefore, the flexibility in profit rates provides an opportunity for these firms to maintain their competitive position in the foreign market.

3.2 Structural Benefits for Price-Sensitive Industries

Compared with other industries, how much advantage can price-sensitive industries get from RMB depreciation?Price-sensitive industries are more obviously benefited from the exchange rate depreciation. What are these kinds of industries? Generally speaking, price-sensitive industries include textiles, furniture, light manufacturing industries, whose products are more sensitive to price change in international market. The demand of these products are more elastic. In other words, the price change will have a more direct impact on the demand. Once the exchange rate depreciates, the final price of these exported goods in foreign currency will decrease when customers buy them. The demand in the foreign country will increase. The order quantity and export volume will increase greatly. The price advantage will promote the increase of profit margin in the industry. The competitive advantage of all the firms in the industry will improve in the short term. The competitive advantage of industrial clusters with high dependence on foreign trade is more evident. Usually, the growth of these industries is mostly driven by export demand. These industries will present an outward-oriented development, which is driven by competitive price.

4. Import Substitution and Domestic Market Response Mechanisms

4.1 The Expansion of Imported Goods' Advantage under Exchange Rate Appreciation

When the exchange rate appreciates, the final price of imported products denominated in local currency becomes more reasonable, which improves the price competitiveness of imported products in the local market[3]. The relatively cheaper import prices also better demonstrate the price and quality competitiveness of imported products in the local market. Therefore, importers of such products, especially in consumer electronics, daily consumer goods and high-end manufacturing industries, will see an increased market share. For local industries producing similar products, appreciation of the currency will increase the price pressure from these imported products. The price competitiveness of local industries will be weakened, especially for those with low technological entry thresholds and little differentiation in their products. This will further impact their market share and profits. These changes will have a significant impact on the operations of some local industries.

4.2 Domestic Firms' Substitution Responses and Innovation Incentives

In response to the threat of competition from exchange rate appreciation and the increased abundance of imported goods, local companies strengthen their own ability to substitute imported goods and increase their rate of technological innovation in order to withstand competition. When the exchange rate appreciation weakens the space for price advantage, firms have no choice but to improve product quality and differentiate their products in order to compete against imports. In this regard, many firms also increase investment in research and development to enhance production efficiency and update their technology, thereby enhancing the value of their products and reducing reliance on competition based on low prices. This endogenous adjustment to competition from abroad promotes the development of a competition model based on innovation. The entire industry's ability to sustain competition and development improves. Therefore, although competition increases in the industry in the short term due to exchange rate appreciation, it simultaneously provides an external variable that compels domestic enterprises to transform and upgrade in order to enhance their long-term competitiveness.

5. Industrial Chain Dependency and Capital Cost Linkage Effects

5.1 Dependency on Intermediate Products and Cost Fluctuation Risks

Exchange rate depreciation causes intermediate products priced in foreign currencies to have higher procurement costs for manufacturing industries. The cost burden is substantial for industries with high external dependency, such as electronics, automobiles and precision machinery. In addition to compressing profit margins, cost increases may even offset the price advantage of products in a competitive international market. For firms that depend on global supply chains, risks in cost fluctuations caused by exchange rate volatility need to be alleviated through diversified purchasing strategies, financial hedging instruments and local substitution approaches according to the degree of dependency on intermediate products. The higher the degree of dependency on intermediate products, the more vulnerable a company will be to exchange rate movements. This poses a challenge for firms to sustain stable production and operations. The transmission effects on the macroeconomy become more complicated when exchange rates cause fluctuations in unit prices in competitive industries.

5.2 Capital Account Openness and Changes in Financing Costs

However, exchange rate depreciation always be accompanied by domestic capital outflow pressures, i. e. domestic liquidity becomes tighter and market interest rates increase, which will raise the cost of domestic currency financing for a

firm. For a company with foreign currency debt, depreciation will also increase its repayment burden. In addition, the firm will face greater foreign exchange losses and be driven into bankruptcy. In contrast, exchange rate appreciation may lower the cost of foreign currency financing for a company in the short term, but will reduce its export revenue and hence its ability to repay its debts. The more open the capital account, the more volatile cross-border capital flows will be, and the greater the firm's financing requirements and demands for its risk management capabilities. In other words, exchange rate fluctuations significantly affect a company's investment capacity, ability to operate and international competitive strength by affecting capital cost.

6. Conclusion

Fluctuation of exchange rate from the point of view of Purchasing Power Parity theory can affect the construction of international competitive strength of trade in multiple links, including the adjustment of price advantage, adjustment of structure of domestic market and adjustment of financing cost of industrial chain. Depreciation promotes the development of export and development of industry with price elasticity of demand; appreciation promotes structural adjustment of enterprises and upgrading of industrial technology. Dependence on global industrial chain and capital flow makes firms more sensitive to the exchange rate fluctuation. Constructing a stable and flexible exchange rate regulation system and an adaptive industrial response system are of strategic significance for enhancing the resilience of trade and international competitiveness.

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