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Research on Foreign Exchange Derivatives Market and Enterprise Trading Risk Neutrality

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Abstract: *The ongoing financial liberalisation has made two-way fluctuations in the foreign exchange rate the norm. This has significantly increased market participants' demand for foreign exchange derivatives transactions and also stimulated the foreign exchange derivatives market's rapid growth. The market's growth is extremely crucial because it not only helps import and export businesses manage exchange rate risks in an environment with more flexible fluctuations, but it also supports exchange rate reform and the RMB's internationalisation process. This paper will analyse the foreign exchange derivatives market and issues related to the risk-neutral trading of foreign exchange derivatives by enterprises, so as to provide theoretical reference and countermeasures for developing derivatives market and promoting enterprises to use derivatives reasonably.*

Keywords: *Foreign exchange derivatives market; Hedging; Risk-neutral; Foreign exchange options and swaps*

1. Introduction

In recent years, the exchange rate level flexibility has been increasing, and China's foreign exchange derivatives market has flourished and made numerous breakthroughs. The types of tradable foreign exchange derivatives in the market have been enriched such as foreign exchange forwards, swaps, options, cross-currency swaps, etc. Moreover, foreign exchange transactions have made significant developments in both offshore and onshore markets. The foreign exchange rate marketization has greatly increased the uncertainty of exchange rate fluctuations. Consequently, there has been a surge in demand for foreign exchange derivatives, and at the same time, it also puts forward higher requirements for enterprises' ability of risk management in foreign exchange trading. The development of the foreign exchange derivatives market not only assists enterprises in hedging exchange rate risks but also in improving the exchange rate mechanism. Therefore, promoting the expansion of the foreign exchange derivatives market and enhancing the level of enterprises' use of foreign exchange derivatives is necessary to manage exchange rate risks, and promote the stability of the financial market and the high-quality development of the foreign exchange derivatives market.

2. Foreign Exchange Derivatives Market and Function

2.1 Development of China's Foreign exchange Derivatives Market

After the exchange reform in 2005, forward and swaps foreign exchange business was launched for the first time in China's inter-bank market. Foreign exchange option products were introduced for the first time in 2011. So far the foreign exchange derivatives market within China's borders has been equipped with basic foreign exchange derivative tools. With the People's Bank of China's improvement of the RMB exchange rate mid-price formation mechanism in 2015, the significant increase in the degree of exchange rate marketization further laid the environmental foundation for the growth of the foreign exchange derivatives market. In 2022, the interbank foreign exchange market added new ordinary American options, Asian options, and their combination of products. This enhanced the trading tools of the onshore foreign exchange derivatives market, marking the development of China's foreign exchange market. The development of the foreign exchange derivatives market is a key step in building a multi-faceted and diversified foreign exchange market as well as a multi-level RMB foreign exchange market. On the one hand, the development of this market can enhance the operational

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efficiency of the financial market, and strengthen the liquidity, openness, and robustness of the foreign exchange trading models. On the other hand, it is also conducive to the internationalisation of the RMB and the deepening of financial reform, aiding enterprises in using foreign exchange derivatives to hedge exchange rate risks, and also attracting more high-level foreign investment portfolios to choose to hold RMB assets. This is of great strategic significance to the high-quality development of China's economy and finance.

2.2 Functional Role of Foreign Exchange Derivatives

Financial derivatives are derived from the underlying financial products in the form of transactions, through the exchange of cash flows or a bilateral contract aimed at transferring risk for the trader, which is generated by a series of risks in the financial market. OTC (over-the-counter) derivatives trading is the predominant form of foreign exchange derivatives trading in China. Foreign exchange derivatives instruments, including futures, swaps, options, and currency swaps, are already available. Offshore OTC mainly refers to the RMB derivatives business traded in the offshore OTC market in Hong Kong, which primarily consists of non-deliverable forwards, deliverable forwards, non-deliverable options and non-deliverable swaps, etc.

Foreign exchange derivatives mainly have three functions. The first is to hedge or avoid the potential risk of loss resulting from exchange rate fluctuations. To achieve the goal of hedging, investment and exchange rate earnings fluctuations are negatively correlated with the derivative financial products[1]. Secondly, it minimises the information asymmetry in the financial market and enhances the inter-bank market price discovery functions, which can objectively reflect the market's price expectations of future exchange rate trends and improve market efficiency and information transparency [2-3]. Thirdly, the features of leveraged risk amplification in derivative products mean that systemic financial risks could arise from market speculators' excessive operation of derivatives.

3. Enterprise' Foreign Exchange Derivatives Trading

3.1 Application of Enterprise Foreign Exchange Derivatives

With the realisation of China's financial openness and two-way fluctuation of the foreign exchange rate, enterprises are facing a greater exchange rate risk. There will be an increasing number of enterprises that use foreign exchange derivatives for risk management. Enterprises in the use of foreign exchange derivatives for exchange rate risk management, hedging strategy first follow the "risk-neutral" principle, in combination with their own hedging needs and risk tolerance, select the appropriate foreign exchange derivatives, in accordance with the situation of the dynamic management of foreign exchange risk exposure, in the use of the way should be hedging-based. Simultaneously, the choice of foreign exchange derivatives tools should be diversified, besides the usage of the most common forward exchange, the use of foreign exchange options and swaps also have different advantages and applications.

3.2 Examples of Foreign Exchange Derivatives Strategy

Cite two foreign exchange derivatives using principles to analyse the role of hedging exchange rate risk.

3.2.1 Options and Option Portfolios

Take value-added seagull options as an instance, we establish a foreign exchange call and foreign exchange put options portfolio, with the option price range defined as (E1, E2, E3). Assume that the market exchange rate on the maturity date of the agreed period is Em, if the future maturity date of the market exchange rate is Em <E1,enterprises purchase foreign exchange at E1 price; if E1 <Em <E2, enterprises purchase foreign exchange at Em market price; if E2 <Em <E3, enterprises purchase foreign exchange at E2 price; if Em> E3,enterprises are subsidized with exchange rate points from the roll-over of the E2 and E3 exchange rates.and purchase foreign exchange at the time of market price. As a result, the use of foreign exchange derivatives can meet the different types of exchange rate risk hedging needs of enterprises, and better manage exchange rate risk.

3.2.2 Foreign Exchange Swap

Foreign exchange swap business can be combined with the weight of the near and far end of the enterprise, through the B / S or S / B swap transactions to adjust the duration of the business. The underlying principle is that the near end of the currency, through a swap transaction converted to the near end of the currency to be paid for, at the same time in the far end, on the maturity of the income currency to reverse the operation, to change back to the near end of the currency and to lock in the cost or revenue. Thus, it resolves the problem of short-term liquidity shortage of funds caused by the mismatch of currency and maturity of enterprises in the course of operation[4].

In summary, by actively managing exchange rate risk with a variety of foreign exchange derivatives tools, enterprises can smooth and controlled fluctuations in their future cash flow and reduce their reliance on outside financing, which lowers their operating costs.

4. The Shortcomings of the Current Foreign Exchange Derivatives Market

4.1 Inadequate Financial Marketization

Inadequate financial marketization leads to imperfect operation mechanism of the foreign exchange derivatives market.The domestic foreign exchange derivatives business started relatively late, although it has developed over ten years, it is still in its early stages of development, and it differs greatly from the global foreign exchange derivatives market. Simultaneously, single market trading entity exists in China's interbank market, which only accepts large banks and financial institutions for trading foreign exchange derivatives. The percentage of forward and options transactions in derivatives transactions is likewise relatively low, enterprises have limited options in terms of derivatives, and trading contracts must adhere to the principle of real demand, all of which contribute to the market's lack of activity.

4.2 Lack of Exchange Rate Risk Management Awareness and Biased Motivation

Firstly, the enterprises lack awareness of exchange rate risk management. Some small and medium-sized enterprises are negligent in managing exchange rate risk, enterprises are not familiar with foreign exchange derivatives, and banks provide limited foreign exchange derivatives or complex designs. Additionally, enterprises are afraid of improper operation that leads to losses, so the use of foreign exchange derivatives is not very active. Secondly, the enterprise's incentive for managing exchange rate risk is biased. There is a sense of speculation, the reasonable cost of risk prevention as the actual loss. The use of foreign exchange derivatives is substantially impacted by exchange rate expectations. When foreign exchange derivatives transactions are expected to make a profit, enterprises consider the exchange rate hedge to be effective; when derivatives transactions are expected to lose, enterprises perceive the exchange rate hedge to be ineffective and less willing to sign contracts and retain foreign exchange positions exposed to market risk.

5. Derivatives Market and Trading-related Recommendations

5.1 Strengthen Foreign Exchange Derivatives Market System

Firstly, encourage more financial institutions to take part in competitive transactions and also assist in optimising foreign exchange derivative contracts and tools for reasonable pricing. At the same time, actively strengthen the onshore and offshore market linkage between hedging for the purpose of protecting the virtuous cycles[5]. Secondly, to create a better financial environment for the fundamental requirements, it is also critical to coordinate the promotion of interest rates, exchange rate market-oriented reform, improved market level of capital price formation, improved price formation mechanism. Supervisory department based on risk control, gradually promote China's capital account opening up, and continuously improve the exchange rate market-oriented reform mechanism.

5.2 Promote Products Innovation and Transaction Efficiency

On the one hand, enrich the existing foreign exchange standardised contracts in light of the actual situation. Based on forward transactions, strengthen the vitality of foreign exchange derivatives transactions including foreign exchange forwards, swaps, options and optimise the structure of foreign exchange derivatives transactions. Increase the number of participants in the foreign exchange derivatives market, expand the trading volume and scope of the derivatives market. A specialised talent team and a larger reserve of high-end financial professionals are also required because of the intricacy

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of the principles governing the operation of the numerous new foreign exchange derivatives. On the other hand, increase investment in financial technology and improve the foreign exchange derivatives trading system. For instance, cloud computing financial technology can be employed to lower transaction costs and enhance transaction efficiency in the derivatives trading clearing and risk control processes.

5.3 Strengthen Derivatives Market Regulatory System

Firstly, establish and improve the regulatory laws and regulations for foreign exchange derivatives business to lower the legal risks of derivative transactions. Further, improves the regulatory mechanism of the foreign exchange derivatives market, clarifies the roles and responsibilities of various departments, and promotes the exchange and collaboration of various regulatory departments. Secondly, strengthen the monitoring of transactions and improve the capacity for early risk detection[6-7]. Through the use of financial technology, build an interactive early warning system for information on foreign exchange derivative business, and monitor the major risks that may arise in the transaction. In addition, we closely monitor the entry conditions of foreign exchange derivatives market players and the behavioural norms of the industry and equip a perfect credit assessment system and a sound regulatory system in time.

5.4 Enterprises Establish Risk-Neutral Principles

Enterprises should establish risk-neutral principles and improve internal exchange rate risk management mechanisms. Firstly, when establishing derivatives hedging objectives, enterprises should establish the "risk-neutral" principle to reduce exchange rate risk exposure by not betting on the market direction. Furthermore, they should not engage in market arbitrage speculative behaviour, and based on their receipts and payments of foreign exchange positions. Enterprises should employ foreign exchange derivatives as a key tool for mitigating exchange rate risk, appropriately allocate local and foreign currency assets and liabilities, and accurately recognise the hedging role of these instruments. Combined with the different characteristics of foreign exchange derivatives to develop exchange rate risk hedging strategy, such as hedging tool selection, hedging ratio, and hedging period determination so as to achieve the effect of hedging exchange rate risk. Secondly, it is recommended to strengthen the mechanism of exchange rate risk management within the enterprise. Clearly define the internal division of labour, scientifically formulate exchange rate risk management objectives and procedures, and formulate a systematic system of risk control and performance assessment and supervision process, to ensure the exchange rate risk management process and institutionalisation[8-9]. To manage exchange rate risk exposure in an effective manner, enterprises should be equipped with professional foreign exchange risk management departments and relevant talents, combined with the actual business situation of the enterprise.

5.5 Banks Enhance the Level of Financial Services

Commercial banks should enhance the level of financial services, guide enterprises to use foreign exchange derivatives rationally. Firstly, in order to satisfy market demand for varied foreign exchange derivative products, banks should raise the quality of their financial services and boost the market's effective supply of foreign exchange derivatives and liquidity transparency[10]. The creation of specific guidelines for foreign exchange trading is formulated with strengthening risk limits and internal control measures. Secondly, so as to assist clients in effectively managing exchange rate risk and addressing the demands of businesses to hedge exchange rate risks, banks offer specialised services for exchange rate risk management, promote foreign exchange derivatives from a specialised perspective, and increase company understanding of their use.

6. Conclusion

In the context of deepening financial openness, as a result of the advancement of China's exchange rate market-oriented reform, the demand for foreign exchange derivatives from economic agents is rising, and China's foreign exchange derivatives market has broad prospects for development. China needs to continue to advance the reform of the RMB exchange rate system, accelerate the construction as well as the improvement of the foreign exchange derivatives market, and need the cooperation of the regulatory authorities, enterprises, and banks in order to enrich the types of foreign exchange

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derivatives and trading methods. Finally,China should continue expanding the breadth and depth of foreign exchange derivatives market to promote the high-quality development of finance.

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