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Innovative Research on the Development Model of Foreign Exchange Derivatives

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ABSTRACT
In order to encourage enterprises to use foreign exchange derivatives to avoid exchange rate risk, this paper will study the use and development pattern of foreign exchange derivatives of listed enterprises in China, in order to further innovate the response to foreign exchange risk faced by Chinese enterprises and the factors affecting the development of foreign exchange derivatives, as well as the use of foreign exchange derivatives to effectively help Chinese enterprises reduce foreign exchange risk, hoping to provide useful references for enterprise managers and policy makers.

Keywords: *Foreign exchange derivatives, foreign exchange risk, derivatives market, management*

1. INTRODUCTION

In recent years, under the combined effect of multiple factors at home and abroad, the foreign exchange market is complex and volatile, the RMB exchange rate shows obvious two-way fluctuations, and foreign-related enterprises face greater exchange rate risks. Under such circumstances, for import and export enterprises, actively carrying out foreign exchange derivatives business is beneficial to their effective hedging and risk hedging. However, the survey found that some foreign-related enterprises do not know much about foreign exchange derivatives business, and the enthusiasm of exchange rate hedging through foreign exchange derivatives business is not high. The use of foreign exchange derivatives for risk hedging is an important means for enterprises to manage foreign exchange risks. More and more Chinese enterprises are using foreign exchange derivatives.

2. THE CURRENT DEVELOPMENT SYSTEM OF FINANCIAL DERIVATIVES

2.1. Interest-rate derivative market.

The production and development of the interest-rate derivatives market have the following characteristics: first, it is of great significance to the enterprise financial management. Participants in the interest-rate derivatives market include almost all banks and financial institutions worldwide. The trading activities of participants constitute a global market that integrates the current and future expected earnings and risks. How to reduce risks and maintain returns has become an important driving force for the development of the derivatives market. Second, in business operations, operators need to rely on the original loans provided by the capital market, so both lenders and borrowers need to manage the interest rate risks in the transaction, which promotes the emergence and rapid development of the interest-rate derivatives market. Third, the market demand is flexible and innovative, producing other relevant tools other than interest-rate exchange, which makes business operators to develop more appropriate risk management methods on the basis of own operating risks.[1]

2.2. Foreign exchange derivative market.

From a financial perspective, exchange rates are closely related to the capital markets. The main difference between the foreign exchange derivatives market and euro exchange rate derivatives market is the different risk assumed by the participants.[2] The universality and mobility of exchange rate derivatives depend largely on the impact of exchange rate fluctuations on enterprises in the fierce competition. Only by leading financial executives participated in cross-border business in exchange rate derivatives market can implement effective foreign exchange risk management. As a result the credit risk and market risk of foreign exchange derivatives are higher than in the interest rate derivatives market. Given the new risk and capital reserve requirements, market participants need both advanced risk management capabilities and to bear the balance sheet and credit risk capabilities. On account of the market flexibility and high mobility, Exchanges' derivatives are undoubtedly the most effective measures to hedge risks by global operators, customers and investors.

2.3.Stock derivatives market.

Stock derivatives fully reflect the risk and return characteristics of equity investment as well as timing requirements of operation. Equity risk management investors can obtain investment returns through the appropriate financial instruments and control the risk within the short-term floating range. Moreover, the flexibility of financial instruments and trading methods also ensures that investors can consider the appropriate expectations of risk-returns, select the appropriate market access method to accurately implement investment strategies. Because of the increased competition and improved risk management technology improve continually the mobility and transparency of the market, the most effective and lowest cost transnational investments is to organically invest mix stocks, interest rates, and foreign exchange derivatives.[3]

3. CASE RESEARCH ON THE DEVELOPMENT OF FOREIGN EXCHANGE DERIVATIVES

According to the latest data of 2012 released by the Bank for International Settlements (BIS), the trading volume of foreign exchange derivatives has increased significantly. By the end of December 2020, global trade volume of foreign exchange market was \$6.6 trillion. Despite the money market value was \$1,934 trillion in 2016, it had reached \$2,4,09 trillion by 2020. The daily trading volume in the foreign-exchange market has reached \$2 trillion, and other foreign exchange instruments with the largest trading volume were foreign exchange forwards trading, with a daily volume of \$1 billion; the daily business volume was \$3.2 billion in currency swaps.

Table 1. Global trading volume of foreign exchange market from 2015-2020 (Unit: one billion dollars)

Year	2015	2016	2017	2018	2019	2020
Total	1530	1934	2865	5100	6600	6420
Spot exchange	569	655	1357	2214	2980	2570
Forward exchange	129	237	263	712	1128	1360
Currency swap	735	943	1127	1921	2178	2200
Currency swap	9	39	41	157	210	180
Foreign exchange options	88	60	77	96	104	110

Data source: the data exposed by Forexpress

Case analysis of the foreign exchange derivatives of international airlines：For example, Southwest Airlines was founded in 1971 and headquartered in Dallas, Texas, United States. Commonly known as Southwest Airlines, it is the originator of the "low-cost airline" business model.Since 1973, Southwest Airlines is profitable every year, and such an outstanding performance is a precedent for the airline business. During the operation, the company has the highest net profit growth rate, a relatively low net indebtedness equity rate, and the highest American Airlines rating. A "9/11" incident caused many problems in that year, and many American Airlines were on the verge of bankruptcy, but Southwest Airlines was the exception. In 2001, the retained profits of the company reached \$511 million. In 2005, the sharp swings in crude oil prices also lost nearly \$10 billion in American Airlines, but America Southwest Airlines remained profitable on net income of \$484 million. In addition to its unique low-cost business model and high equipment utilization, America Southwest Airlines mainly, benefiting from the use of reasonable financial derivatives to hedge business risks, offsetting by using financial derivatives portfolio, recovers fuel costs in the business process by maintaining overweight to reduce price risk faced by the company, cut loss, ensure future performance of airline and promote the rapid development of the company. The America Southwest Airlines began releasing its annual report in 1994. The use of financial derivatives was relatively low at the outset. With the development of economy, the proportion of using financial derivatives to prevent operating risks is getting higher and higher, and the hedging of aviation oil has also become an important work of the company to prevent the possible price risks. After years of practical operation, Southwest Airlines has accumulated rich experience and achieved remarkable results.

The financial derivatives chose by Southwest Airlines is a combination of options and futures for forward and swaps. In using options, the company, only purchasing call options, disperses the risk of jet fuel price fluctuations by using a continuous overweight coverage strategy to prevent drastic fluctuations in the fair price of jet fuel, which is not line with Chinese airlines.[4] China is usually hedging for several years, the price fluctuations and concentration of costs will bring great risks to the company. Southwest Airlines has a clear understanding of financial derivatives, and can conduct a clear analysis and research on the company's development and risks, chooses appropriate financial derivatives for the company, and establishes an efficient risk management mechanism and strict internal control system, while the company's internal mechanism operates in an efficient way in order to fulfill its role due to risks. On this basis Southwest Airlines has successfully prevented and managed business risks, developed appropriate hedging operation strategies, and benefited from the company year by year. The fuel cost is a very expensive project for companies. Airlines' fuel costs account a large portion of the total operating costs according to the International Air Transportation Association. The specific expenses and profit statement are shown in Table 2.:

Table 2. Southwest Airlines's expense and profit statements of 2016--2020 (Unit: one hundred million dollars)

Year	Fuel cost	Total cost	Retained profits	Profit before tax
2016	0.56	13.17	22.46	47.33
2017	0.61	14.41	34.88	40.67
2018	0.58	15.94	24.65	31.73
2019	0.63	16.39	23.00	30.05
2020	0.51	11.83	-30.74	-47.13

ata source: Southwest Airlines released its annual report

4. DEVELOPMENT BARRIERS TO FOREIGN EXCHANGE DERIVATIVES

4.1.The hidden risk is greater.

Despite the role of financial derivatives in risk avoidance is overestimated, the implied risks also pose great risks. On the one hand, it can provide multiple risk avoidance tools; On the other hand, once the operation program fails or there are some human risk factors, it will be the risk cause of financial failure. Financial derivatives are financial innovations in cross-period transactions. Interest rates, exchange rates and prices have changed throughout this time. All we can avoid is some predictable risks. Moreover, paying small margin is the threshold for entry into the low derivative financial market, which is highly attractive to most investors, thus strengthening market activity. However, high leverage undoubtedly means excessive speculation by many operators and wants additional profits. Once the game fails, the integration of its cross-period transaction characteristics not only cannot avoid risks, but also increases its own risks.

4.2.Technology has followed up slowly.

Financial derivative markets develop very fast, but some of the corresponding technical work is moving slowly. As the scale of digital currency booming in recent years, investments in the digital currency sectors are also becoming increasingly active. There is still great potential to be explored by improving the existing operating mechanism. Such trading platforms usually have two problems: one is a weak underlying architecture. In order to save time, many trading venues directly purchase source code in the absence of team technical support, resulting in insufficient underlying technology to handle competitive high-level transactions. Second is the serious security problem of foreign exchange funds. The world's leading leading exchanges has largely attacked by hackers. The characteristics of digital currency itself lead to very high security requirements for trading platforms. At present, the vast majority of digital currency exchanges are centralized, holding all assets and data are easily targeted by hackers.

4.3. Relevant legal systems lag behind.

At present, the government has taken numerous administrative measures in the market management of financial derivatives. If the policy has a very negative impact on the market, many unfair phenomena will occur. In addition, the space of financial instruments is extremely limited for innovation, and it is difficult for this legal environment to adapt to the internal laws of financial innovation. Most legal loopholes are filled only by some temporary documents or laws and regulations. The situation in the financial derivatives markets is increasingly complex. If there is no timely legal adjustment to regulate the relevant relations, it will have a significant impact on the overall development of the financial market.

5. INNOVATIVE DEVELOPMENT STRATEGY OF FOREIGN EXCHANGE DERIVATIVES

First, deepen the development of the foreign exchange market and better meet the coverage needs of market entities. The company will continue to promote the development and construction of the exchange market, enrich commercial products, and support financial institutions to innovate the varieties of exchange derivatives with market demand and controllable risks; expand the scope of negotiation, and gradually strengthen the investment and trading function of the exchange market; expand participants, continue to promote non-banking financial institutions to participate in the domestic foreign exchange market, and expand the opening up of the foreign exchange market; strengthen infrastructure development, improve the attractiveness and service capacity of the domestic foreign exchange market, and better meet the needs of market participants.

Second, strengthen policy training and tool promotion, improve the coverage ability of enterprise exchange rate. Exchange rate management departments and financial institutions should make use of their professionalism and sensitivity to the situation, provide exchange rate coverage knowledge training for enterprises through lectures and field visits, promote RMB cross-border settlement business, interpret foreign exchange risk management policies and tools with typical cases, and help enterprises effectively manage foreign exchange risks.

Third, guide enterprises to establish an awareness of "financial independence" and strengthen foreign exchange risk management. Generally speaking, "financial independence" refers to the financial management of the company must be based on the basic principle of serving the main business, can not separate from the main business, and simply rely on the financial business for arbitration. The company applies the principle of "financial independence" to enterprise foreign exchange risk management, guide operators to correctly understand the positive role of foreign exchange derivatives, establish the awareness of "financial independence" and correct coverage, allocate assets and liabilities in domestic currency and foreign currencies, do not bet on the change of exchange rate direction or replace subjective decisions in the market; on the other hand, focus on major activities and manage exchange rate exposure through foreign exchange derivatives.

Fourth, support enterprises in improving their internal management system and strengthen the risk management of RMB and foreign exchange derivatives activities. The company encourages operators to develop and improve the risk control and supervision system of foreign exchange derivative instruments, formulates effective risk control mechanisms and procedures according to their own actual situation, formulates the commercial activity management system of RMB currency derivative instruments, clarifies commercial operation principles, approval authority, internal operation procedures, information isolation means, internal risk control procedures, information disclosure, etc., and clearly stipulates to strictly control transaction risks.

Fifth, supervise the banks to correctly publicize foreign exchange derivatives and strengthen the supervision and management of the development of the banking industry. The company urges banks to continue to optimize and improve the risk control of derivative tool companies, conscientiously implement the requirements of the "Three Principles of Business Development", ensure the authenticity and compliance of the transaction background, and maintain transaction fairness. In promoting the foreign exchange derivative tool business, banks should fully introduce the relevant business risks to customers, and should not mistakenly carry out the business or mislead customers through oral commitments. The banks will be punished if the bank affects the company's equity with improper promises and inappropriate advertising. Sixth, encourage banks to innovate in derivative tools and strengthen the sharing and learning from experience. On the one hand, banks should on the basis of preventing and controlling financial risks strengthen the innovation of derivatives, striving to meet the personalized and differentiated needs of enterprises. The price selection and pricing of hedging products should give full consideration to the foreign exchange risk exposure, risk preference and cash flow of enterprises to improve the professional service ability of foreign foreign exchange starting with the identification and measurement of foreign exchange risk.

Sixth, strengthen the business monitoring and authenticity audit of foreign exchange derivatives. The company clarifies the judgment criteria for the effective trading principle of foreign exchange derivatives, attaches importance to the development of foreign exchange derivatives business, timely finds new trends and signs in the field of currency derivatives, conducts in-depth supervision in accordance with the principle of essence in form, and severely investigates and dealt with illegal structured transaction arbitration. Banks should also strengthen communication, learn from each other about Madura's experience in product design and risk management, and actively enrich exchange rate derivatives. On the other hand, banks should be encouraged to learn more from the experience of foreign derivatives, introduce new technologies into derivative innovation, and improve their ability to analyze product and market data to reduce derivative risks and promote the development of the internal derivative market.

6. CONCLUSION

China's listed companies can effectively hedge foreign exchange risk by using foreign exchange derivatives. However, the degree of Chinese listed companies to participate in the foreign exchange derivatives market is far from enough compared with developed countries from the actual situation of the use of foreign exchange derivatives by Chinese listed companies, and the ability to use foreign exchange derivatives is also unequal. It is suggested that we encourage companies to reasonably use foreign exchange derivatives for hedging and risk management. From the above analysis, we can see that the use of derivatives will increase business value and benefit creditors, and creditors, employees, and corporate customers are benefited by reducing the volatility in corporate income under imperfect market conditions. Then, the use of derivatives can replace the assets and liabilities of representatives, and it becomes one of the means for the companies to adjust their financial policies. If Chinese companies can provide positive foreign exchange derivatives, they can effectively manage the risks of exchange rate fluctuations. At present, enterprises urgently need to raise their awareness of risk management and make appropriate use of financial derivatives as insurance. It is encouraged to manage relatively regulated listed companies to hedge using foreign exchange derivatives, and increase the level of social welfare to the benefit of company stakeholders, including shareholders. This paper, introducing a series of innovative foreign exchange derivatives development strategies, looks forward to provide a useful reference for Chinese relevant managers and decision makers.

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