Exchange Rate Exposure in Vietnam

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Abstract:
Research conducted an overview of the research works to the exchange rate sensitivity, synthesized, analyzed, and evaluated the contributions and limitations of content, method, and theory of use. From there, find the gaps and propose research models to evaluate the factors affecting the exchange rate sensitivity.

Keywords: Exchange rate exposure

1. Introduction

Exchange rate risk is one of the most important factors in international asset valuation. If it is assumed that asset prices are determined in a world where the financial markets are fully integrated globally and people around the world have the same level of consumption and investment, there are no barriers to the International investment and products can be freely exported and imported between countries so an asset will have the same price no matter where it is traded. With such a fully integrated market, the asset pricing model encompasses only global pricing factors. Conversely, if the market is assumed to be purely segmented, the local pricing factors will be the ones that determine asset prices. In other words, in a completely segmented market, the price of an asset depends on where it is traded.

However, none of the above special cases apply in practice, since the actual market is not fully integrated or segmented, but rather a partially segmented market (Bekaert and Harvey, 1995.). Given that condition, the asset price will not be the same between different markets, thus purchasing power parity (PPP) is violated, and exchange rate risk should be valued in this case (Hekman, 1983; Adler and Dumas, 1984). So, when compared to the full global pricing model or the full domestic pricing model, which is based on the assumption of full consolidation or full segmentation, the asset pricing model in the sub-market. The partial segment should contain exchange rate risk pricing factors.

Experimental studies of exchange rate sensitivity have been carried out since the 1970s after the collapse of the Bretton Woods regime (revised to the Smithsonian Treaty of 1971) in 1973, from the very first study of Shapiro (1975), a series of follow-up studies are carried out in developed economies and groups of emerging countries. Along with the increasing trend of economic integration of the world and the instability of major economies (global financial crisis in 2008 originated in the US, the European public debt crisis, the decline in economic growth economic variables of China), the macroeconomic variables of the countries are under great pressure to fluctuate, including the exchange rate. Therefore, the research target on the impact of exchange rate fluctuations on the economy in general, but especially the stock market, and the operation of the business in particular still receives a lot of attention from researchers. In the world.

Researches around the world on the sensitivity to exchange rate risk are focused in the direction of providing theoretical models to identify the sensitivity to exchange rate risk at the market and public level. ty. At the same time, a series of empirical studies were carried out to propose and develop research methods on exchange rate sensitivity, from background studies to improved studies in estimation and receipt methods. the characteristic area of the exchange rate sensitivity. In addition, many empirical studies on exchange rate sensitivity also focus on analyzing and finding out factors affecting the presence of firm exchange rate sensitivity, especially inequality. Balance of exchange rate sensitivity.

2. Literature review

2.1. Exchange rate exposure

Exchange rate risk sensitivity is a term that describes the degree to which a firm is affected by changes in exchange rates (Dumas, 1978; Lessard 1979; Stulz and Williamson, 2000). This concept refers to the circumstances in which a trading company is exposed to the risk of exchange rate losses.

Although it is difficult to accurately forecast the rate, at least for each particular company we can still measure sensitivity to exchange rate fluctuations. When the company becomes aware that it will be subject to the strong impact of changes in exchange rates, it will inevitably use a variety of techniques to mitigate this risk. The sensitivity to exchange rate fluctuations is presented in 3 forms, including transaction sensitivity to exchange rate risk, economic sensitivity to exchange rate risk and conversion sensitivity to risk. exchange rate risk.

Transaction sensitivity to exchange rate risk refers to the extent to which the value of future cash transactions is affected by fluctuations in exchange rates. This means that when exchange rates change, the value of a company's cash in and out of different currencies will be affected by those changes. This may happen for companies that have contracts or receipts and receipts in foreign currency. For example, when a company exports goods, it agrees to pay the customer in the currency of the customer's country and agrees to give the customer a deferred payment for 30 days. Thus the company has accepted to place itself under the exchange rate changes within a period of 30 days for the debt. As a result, the amount of this debt in local currency is likely to increase or decrease depending on whether the exchange rate fluctuates in favor of the company or not.

The exchange rate affects the profits of firms in globally competitive industries whether or not they export or generate business transactions with foreign markets. The reason for this problem comes from the fact that companies have to deal with foreign competitors in the domestic market. By understanding the short- and long-term trends of the exchange rate, we can understand how the exchange rate will affect the business profits of the business. In the long run, the change in the nominal exchange rate will be equal to the inflation difference in the prices of goods traded between domestic and foreign. This is the purchasing power parity (PPP) state with the implication that changes in the level of commodity competition among countries (due to differences in inflation) will be offset accordingly in exchange rate fluctuations. However, in the short term, the exchange rate changes will have a strong impact on the competitiveness of companies that sell in the same market but have raw materials and labor from different countries.

The variation in the correlation in the level of competition in the short term caused by the nominal exchange rate change will not offset the difference in inflation between the two countries. Assuming the foreign currency strengthens 4% against the domestic currency and foreign inflation is 1%, a domestic company exports goods, the cash flow they earn when converted to the local currency will increase by about 5%. purchasing power parity theory. However, if domestic inflation is 4%, 3% higher than foreign inflation, profit margin will increase only 1%.

Traditional analysis of exchange rate sensitivity has often focused on balance sheet items. This analysis will identify two types of exchange rate sensitivity including conversion sensitivity (derived from the conversion of accounting items in the consolidated financial statements at the end of the fiscal year) and sensitivity. transaction sympathy (related to economic transactions in foreign currencies). However, in many cases, the above two sensitivities can only partially cover the exchange rate sensitivity because the impact of exchange rate on items such as revenue, expenses and expenses has not been considered. long-term operating profitability, while this factor creates the business sensitivity (also known as the sensitivity of market share or sensitivity to competition) that all types of businesses face.

2.2. The transmission channel of exchange rate changes to stock returns

Economic theories so far hold that there are many approaches to the effect of the foreign exchange market on the stock market, particularly in terms of the effect of exchange rates on the rate of return. This makes the empirical studies on the interactions between these markets even more intriguing. From here, it also sets out the direction to develop empirical studies to identify the sensitivity of exchange rates based on testing the impact of exchange rate changes on the stock returns of enterprises.

First, to determine the rate of return of securities, which is specifically based on the expectation of the impact of a macro factor, Arbitrage pricing theory (APT) is a general theory. clearly identify this. The APT theory proposed by economist Stephen Ross in 1976 states that the expected rate of return of financial assets can be measured through different macroeconomic factors or as market factors. . The APT theory is a multi-factor asset pricing model based on the idea that the return of an asset can be predicted using a linear relationship between the asset's expected return and a number of Macroeconomic variables have systemic risks. The sensitivity of the asset's rate of return to a change in each factor is represented by a specific quantity called the beta coefficient. On the basis of this theory, the model for determining the rate of return of securities has been used to accurately value the asset, whereby the asset's price must be equal to the expected price at the end. The investment period is discounted to the present at the discount rate calculated in the model. If there are differences in asset prices in different markets, the arbitrage business opportunity will return exactly the same value as the valuation model. The systemic risk factors commonly referred to in APT theory include inflation, business cycle (recession risk), economic growth, the difference between short-term and long-term rates, and spreads. the interest rate difference between a government bond and a corporate bond, and especially the exchange rate. Therefore, determining the role of the impact of macroeconomic variables, particularly the exchange rate on stock returns, will contribute to clarify the factors of stock valuation, at the same time also contributes to clarifies the presence of exchange rate sensitivity of the market as well as of firms.

Another channel to identify clearly the effect of exchange rate changes on securities profits is the movement of capital flows of indirect investment through the behavior of investors before information about exchange rate changes. . Foreign investors can rely on the forecasted fluctuations of exchange rates to make investment decisions on the stock markets of other countries. Because the rate of return of the arbitrage operations on foreign securities denominated in foreign currency is determined by the investment interest rate of foreign currency and combined with the fluctuation in value of foreign currency in relation to foreign currency. with local currency. If a country's local currency is expected to increase in value, the indirect inflows of capital on that country's financial account will tend to increase (as long as other factors remain constant) to benefit from currency fluctuations. bad. Conversely, if the domestic currency tends to depreciate, this will have an adverse effect on the rate of return that foreign investors will receive on a domestic securities portfolio, and thus there will be a reversal of the capital flows of indirect investment, which will change the price of domestic securities. The mechanism of the effect of exchange rate changes on daily stock returns through indirect investment channels along with the globalization of the stock market when the capital control barriers between countries are minimized or dismantle, increase the level of financial integration of the economies.

In addition, Dornbush and Fisher in their research and in 1980 have proposed a flow oriented model (a positive relationship) between the exchange rate and rate of return. stock. The author combines the IS-LM model in a small and open economy with the dividend discount model (DDM). This approach is built on a macroeconomic perspective, assuming that changes in exchange rates will affect the international competitive position of businesses as well as the state of the trade balance or current account. . A devaluation of the local currency (the exchange rate increases according to the direct quote) will lead to greater competitiveness for domestic firms, and their exported goods will be cheaper in international transactions. More exports will increase domestic income and thus firms' stock prices will increase as firm values through the DMM model are represented by the present value of future earnings increases. This is consistent with the efficient market theory since what factors affect a firm's future cash flow will be reflected in the stock price, and exchange rate fluctuations are an important factor to consider. in this case.

Besides, the analysis of exchange rate transmission channels to consumer prices (Figure 2.1) also contributes to clarify the spillover effects from exchange rate changes to stock price fluctuations. Through two direct and indirect transmission channels, when the local currency changes in value, it will affect the costs of the business as well as the demand for domestic goods.

Direct exchange rate transmission occurs when exchange rate fluctuations, such as in the case of a depreciation in the local currency, increase the cost of imports in the local currency of imported products used as inputs for the products. domestic export as well as increasing the price of imported goods for consumption purposes. The cost of producing goods of domestic firms increases due to higher costs of importing raw materials and this will affect the business efficiency of the business if the enterprise does not increase the selling price. In addition, under the pressure of an increase in production prices leading to an increase in output prices will put pressure on consumer prices and will affect domestic demand for goods if income does not increase. Therefore, business operations will be significantly affected by exchange rate fluctuations under this direct transmission channel.

Meanwhile, the indirect exchange rate channel refers to the effect of exchange rate changes on the final import cost of goods, in particular, when the domestic currency devalues, it will cause the price of imported goods to be sold in the market. domestic market becomes more expensive, so domestic consumers tend to switch to consuming domestic goods instead. In addition, domestically produced goods will become cheaper in the eyes of foreign consumers, so the demand for exported goods increases, leading to increased production, an increase in labor demand and a rise in wages, thereby contributing to increase the aggregate demand of the economy. The increase in demand for domestic goods will affect the business prospects of domestic enterprises.

In short, fluctuations in the exchange rate, an important macroeconomic variable, will have profound effects on the business environment of the business and in turn have the potential to affect stock prices. of domestic enterprises.

2.3. Recognize exchange rate sensitivity

Since the collapse of the Bretton Woods system in 1971, the degree of exchange rate volatility has increased dramatically globally. Accompanying it is an increase in volatility of both current and future cash flows of domestic companies and international business enterprises. Firms have to pay higher costs to access capital markets, making it difficult to invest and reducing the value of the firm (Shapiro and Titman, 1985; Lessard, 1990; Stulz, 1990; Froot et al. , 1993; Minton and Schrand, 1999).

There are many different approaches to analyze the mechanism of impact of exchange rate fluctuations on firm value. Dumas (1978) emphasized that exchange rate sensitivity (the sensitivity of firm's value to currency fluctuations) is determined only when accompanied by a specific time period and depends directly on the time frame. Investment period is being analyzed. Lessard (1979) first mentioned that the nature of the sensitivity to currency risk will change as the evaluation period is longer in the future. Then, in their study, Stulz and Williamson (2000) analyzed the overall impact of exchange rate fluctuations on corporate value into separate sensitivities, transaction exposure. competitive exposure, and conversion sensitivity.

Transaction sensitivity (also known as contractual exposure) represents the sensitivity to the exchange rate a business faces in relation to the particular commercial transactions they have participated in. These transactions are subject to specific terms and times, so the sensitivity can easily be measured through bookkeeping data. Meanwhile, for enterprises with both domestic and foreign assets and liabilities, fluctuations in the exchange rate affect the value of these items and generate conversion sensitivity. When analyzing with a longer time frame, the last component in exchange rate sensitivity is identified as competition sensitivity (or economic exposure). Specifically, when exchange rates fluctuate, it will affect the comparative prices of goods sold in different countries and in turn change the competitive position and indirectly affect the business and development environment. future development prospects (Flood and Lessard, 1986; Levi, 1994; Marston, 2001). For direct sensitivities such as transaction sensitivity and switch sensitivity, it can be effectively managed with preventive strategies, while indirect sensitivities such as sensitivity. Competition causes the cash flow of most global firms to fluctuate dramatically (Di Iorio and Faff, 2000). Because of the complexity in the relationship between exchange rate fluctuations and the degree of competition, it is difficult to accurately assess

competition sensitivity (Luehrman, 1990; Williamson, 2001) and therefore prevent effective It is also a challenge.

Since there are different components of exchange rate sensitivity, many parameters are considered when estimating an firm's overall exchange rate sensitivity. In order to recognize the importance and influence of these parameters more accurately, exchange rate sensitivity studies have tried to clarify the mechanism and build a theoretical model to show the impact of these parameters. exchange rate fluctuations to enterprise value.

Realizing that it is incomplete to identify the sensitivity of exchange rates from the perspective of accounting information, so Shapiro (1975) has conducted a pioneering study on modeling the relationship between enterprise value and exchange rate. His two-country model predicts that a devaluation of the domestic currency will lead to an increase in the value of domestic firms and a decrease in the value of foreign competitors. Inheriting the research of Shapiro, Dumas (1978) and Hodder (1982) examines the business having business in both domestic and foreign markets. Dumas (1978) describes the effect of exchange rate fluctuations on profits through a profit function where purchases, sales and payments take place at three different times; then the firm's conversion sensitivity is determined, but the overall sensitivity is always uncertain because it is a function of the degree of future exchange rate volatility, the impact of macroeconomic variables and the micro of the business. Hodder's model (1982) proposes the idea that the exchange rate affects firm value through its price effect. According to him, the exchange rate sensitivity is only present in the imperfect market. In the short term, the price has not adjusted according to the exchange rate fluctuation and the law of one price is violated. A firm's exchange rate sensitivity can be divided into four different sections, including: sensitivity to domestic prices, sensitivity to real foreign assets, sensitivity to inflation, and sensitivity with foreign loans. Hodder's judgment is based on the clear fact that a purely domestic company can suffer from fluctuations in the exchange rate and this sensitivity depends on a price adjustment.

Other models are developed by Cornell and Shapiro (1983), Flood and Lessard (1986) are considered from a financial perspective. Since the value of a business is the present value of current and future cash flows, exchange rate sensitivity is estimated by considering the effect of exchange rate fluctuations on these cash flows. Flood and Lessard (1986), when doing research on operating cash flows, refer to this as firm operating exposure and differentiate the difference between the effects of exchange rate fluctuations on competitiveness and convertibility in terms of currency. This approach is then generalized by Booth and Rotenberg (1990) by considering the limitations on arbitrage trading. This model shows that the real cost and cost structure of a firm is the difference between the relative purchasing power parity and transaction costs relative to economic barriers to arbitrage, and government regulatory restrictions are the main variable influencing exchange rate sensitivity.

In Hekman's (1985) theoretical model of corporate valuation, macroeconomic linkages are related to expectations of exchange rate fluctuations. Hekman modeled on the basis that all macroeconomic relations depend only on the expected rate move. Assuming efficient capital markets, the Cobb-Douglas production function with the parameters of production and the rate of return constant, Hekman assesses the effect of expected exchange rate fluctuations on the three components of the business value. It is the value of the net of non-financial operating cash flows after tax, the amount of current liabilities and foreign exchange forward contracts. In short, this model has emphasized the importance of risk hedging decisions and investment choices.

Similar to Shapiro (1975), Levi (1994) exploits the relationship between firm value and exchange rate from a micro-economic perspective, through the relationship between exchange rate sensitivity and characteristics. corporate finance and economics. Thus, he developed a multi-currency model that included the tax rate and net position of the firm's assets and liabilities. Levi groups between exporters and importers, and as a result the firm's sensitivity to currency rate changes in j depends directly on the elasticity of product demand in country j and profit from the country market j.

In the next study, Allayannis and Ihrig (2001) focus on the element of change in the competitive structure. The results show that the change in exchange rate affects firm profitability through three channels, namely the competitive structure of the market where firms sell products, the structure of the business industry and the market share of exports, competitive structure of the import market for factors and import factors. Marston (2001) also studies different competition structures and shows that while transaction sensitivity depends only on nominal net revenue in foreign currency, economic sensitivity depends on contraction. elasticity of product demand, behavior on marginal cost and reaction to market for output products of competitors.

Bodnar et al. (2002) link the components of the exchange rate sensitivity from different perspectives in a theoretical analysis model. This model differentiates the impact of exchange rate changes on the value of the exporting firm in three aspects. The first is the effect of exchange rate fluctuations on returns (transaction and conversion sensitivity), followed by the effect of exchange rate changes on exporters' costs, and finally a measurement of the effect. of the change in profit margins in domestic currency (the following two impact directions are economic sensitivity). Thus, Bodnar et al. (2002) showed an association between exchange rate sensitivity and exchange rate pass-through due to effects on pricing behavior and profitability. With a fixed market share, the easily substitutability of domestically produced products with imported goods will be negatively correlated with the pass-through (since both exporters and competitors are motivated at this time. maintaining price stability) and positively correlated with sensitivity (since margins become more sensitive to exchange rate fluctuations). However, if the degree of product substitution is constant, an increase in market share will reduce pass-through and sensitivity. The study also shows that pass-through in the case of an exporter's currency devaluation is incomplete because a devaluation of the currency encourages the exporting firm to increase the selling price.

Flodén et al. (2008) also analyzed the correlation between exchange rate pass-through and exchange rate sensitivity by constructing a nonlinear firm cost function. From the supplier's perspective, the research shows that businesses will have cost adjustment behavior to stabilize demand and prices, thereby affecting the profitability of the business. Therefore, exchange rate pass-through and exchange rate sensitivity will be positively correlated. At the same time, the study also shows that the cost structure of industries is different, so the link between exchange rate pass-through and exchange rate sensitivity will also differ between industries.

In summary, the pioneering studies that argue about the determination of the mechanism causing exchange rate sensitivity (sensitivity in enterprise value to fluctuations in exchange rate) have shown that there are many parameters that affect weakly. This includes the nature of your business, the structure of your import and export, the degree of international market participation, the currency of your cash flow and the level of market competition. input and output products of the enterprise

2.4. An empirical study of firm-level exchange rate sensitivity

Adler and Dumas (1984) develop a technique that is simply applicable to the measurement of exchange rate sensitivity. Exchange rate sensitivity is defined as "the sensitivity of the domestic market value of tangible or financial assets when converted to foreign currencies to random fluctuations in domestic purchasing power. foreign currency at the time in the future. " We therefore estimate the sensitivity of an asset by regressing the asset's local market value against the exchange rate. Because using the original data series in the regression model, there will be statistical problems, so Alder et al. (1986) proposed to use the stock rate of return and the rate of exchange rate change to make the data series more stable, achieving stop calculation. A series of follow-up studies on exchange rate sensitivity to firm level have been based on this approach (Booth and Rotenberg, 1990; Levi, 1994; Glaum et al., 2000) i.e. Exchange rate sensitivity is mostly measured by the indirect method or the capital market approach, i.e., measuring exchange rate fluctuations affecting the rate of return of firm securities instead of using Cash flow figures on financial statements. This method measures the sensitivity of the future cash flow value expressed in the security's price to exchange rate movements, and in an efficient

market this is the overall effect of exchange rate risk on Enterprise value. The regression model is estimated with the dependent variable of the stock rate of return volatility and the independent variable as the exchange rate fluctuation, specifically as follows:

$$R_{i,t} = \alpha_i + \varphi_i \theta_t + \varepsilon_{i,t}$$

where Ri, t is the security rate of return of company i in period t, θ_t is the rate change in period t, φ_i is firm i's sensitivity to exchange rate fluctuations, α_i is constant and $\varepsilon\_$ (i, t) is the error (white noise). If the exchange rate is quoted directly, an increase in the exchange rate (that is, a depreciation of the local currency) will make the prices of exports cheaper in foreign currencies, thereby increasing demand products from overseas markets and export sales will increase. In addition, the importing company will be adversely affected when the domestic currency depreciates because the cost of importing in the local currency will increase. Hence, the coefficient φ_i will be positive for a net exporter and negative for a net importer. Similarly, firms with foreign currency-denominated liabilities will suffer losses when the local currency depreciates and vice versa for companies with foreign currency denominated assets.

If exchange rate is considered as a valuation factor (Dumas and Solnik, 1995; De Santis and Gerard, 1998; Doukas et al., 1999), then capturing the sensitivity of stock returns to the variable Rate dynamics are of particular importance to analysts, investors and portfolio managers. Knowing the magnitude of the impact of exchange rates on a company's shares allows investors to increase or decrease their equity holdings in line with the risk they expect. If investors are not willing to reduce their holding, they can take hedging to reduce exchange rate sensitivity. If the exchange rate risk can be diversified, the portfolio manager needs to evaluate this sensitivity in order to establish a risk diversification portfolio. The business executives are also interested in the capital market angle of exchange rate sensitivity for the following two reasons. Firstly, if the exchange rate risk is a valuation factor, the cost of equity will be affected by the degree of exchange rate risk that the company is exposed to. Therefore, managers need to pay attention to the sensitivity of exchange rates to determine the exact discount rate used to value investment opportunities. Secondly, the reward in the form of shares and / or stock options will make managers pay attention to the movement of stock prices. Under these circumstances, the manager will make adjustments to financial and operating policies, including adjusting the firm's exchange rate sensitivity to receive a return on shares and / or stock options they own.

The second method used to measure the sensitivity of exchange rate is the cash-flow approach with a focus on assessing the impact of exchange rate fluctuations on current cash flows (Walsh, 1994; Martin and Mauer, 2003). This method allows the sensitivity grouping into short and long term components, thus separating transaction sensitivity and economic sensitivity, helping to identify existing sensitivities and evaluate effectiveness. results of the risk prevention program. However, the exchange rate sensitivity in this case is "incomplete" because it does not include future forecasts, so the overall impact of currency fluctuations on corporate values cannot be measured.

Martin and Mauer (2005) analyzed and compared the two methods to assess the exchange rate sensitivity. Several arguments have been made to explain why the capital market model can determine the significant exchange rate sensitivity while the cash flow model does not. This occurs when capital market expectations are a combination of effects on future earnings and broader than the past sensitivity pattern obtained from the cash flow method. For example, members of the capital market can base their expectations on the effect of exchange rate fluctuations on the level of future competitiveness as well as forecasts about the long-term impact of billion fluctuations. Future prices to foreign currency cash flow. Besides, there are also arguments for the capital market model not to find a statistically significant sensitivity while the cash flow model detects sensitivity. This is due to the complexity of foreign exchange sensitivity and the lack of mass media available. These effects on cash flow can be accurately determined by the cash flow model while the effects on firm value are not clear. In addition, as mentioned above, capital market participants will incorporate their expectations of future sensitivity through the effects on the degree of future competition and the obligation

to make a commitment. Foreign currency under existing contracts, which may result in present and future cash flows having a compensating effect on security returns.

In the capital market method proposed by Adler et al. (1986) in the equation, firm i's exchange rate sensitivity is simply measured through the volatility in the stock's rate of return. correlated with exchange rate changes, and this is considered the overall sensitivity of the company i. However, because other macroeconomic variables can change the correlation of exchange rate fluctuations and stock returns at the same time, ignoring these factors in the model will lead to an estimation. a way of exaggerating the impact of exchange rate fluctuations on stock returns. This is also the reason that Jorion (1990) offers a measure of exchange rate sensitivity called residual exposure, which is the dominant part of the market's response to exchange rate fluctuations. This additional market model adds a market rate of return variable to control the macroeconomic influence on the exchange rate, taking the following form:

$$R_{i,t} = \alpha_i + \beta_i R_{mt} + \gamma_i \theta_t + \varepsilon_{i,t}$$

where Ri, t represents firm i's stock return in period t, Rmt is the stock market rate of return in period t, β_i is the sensitivity in the company's return rate. i for market risk, θ_t is the rate change in period t, γ_i is firm i's sensitivity to exchange rate fluctuations, α_i is constant and $\varepsilon\_$ (i, t) is the error (noise white). The implication in this model is that this adjusted sensitivity regression will measure the sensitivity in firm i's stock return to exchange rate changes, and this is the residual between the sensitivity. overall and market sensitivity (adjusted by market beta β_i) of the company. Hence γ_i represents firm's exchange rate sensitivity i.

Using the monthly stock returns of 287 US multinationals from 1971 to 1987, Jorion (1990) found only the effect of nominal exchange rate fluctuations on stock returns at a significant level. statistic 5% in 15 companies. This finding is strengthened in a follow-up study (Jorion, 1991) with the return rates of 20 securities portfolios by industry without exchange rate sensitivity. Similarly, the study of Bodnar and Gentry (1993) in the period 1979-1988 shows that only 9 out of 39 industry categories have a statistically significant 5% exchange rate sensitivity.

From these non-statistically high studies, Amihud (1994) conducted a more rigorous sample selection by focusing on 32 of the largest US exporting firms during 1982-1988. . However, the results did not find a statistically significant sensitivity, even for a portfolio of eight largest exporting companies with an average export value of a quarter of total sales. Choi and Prasad (1995) examined a 12-year data set of 409 multinational firms from January 1978 to December 1989 and found that the proportion of firms that had the exchange rate sensitivity was statistically significant as At 15%, the results are portfolio-based and only retail and mining are sensitive to exchange rate fluctuations. This finding is consistent with the study of Miller and Reuer (1998) when analyzing a sample of 404 US manufacturing firms from 1988 to 1992 and found that the number of firms has an exchange rate sensitivity of 13 to 17%. Chow et al. (1997) studied both stock and bond yields from 1997 to 1989 with monthly data, showing that bonds have a positive exchange rate sensitivity due to interest rate effects but Stock sensitivity was not statistically significant.

Khoo (1994) studied a sample of mining companies in Australia, the results showed that there are about half of companies whose stock returns are explained by exchange rate fluctuations. At the same time, Khoo also noted that portfolio-level analysis is more effective than individual firm because portfolio returns are less disturbed than individual securities. However, this finding is only relevant to a group of companies with similar expected exchange rate sensitivity, that are companies of the same size in the same field as the input market and product consumption. is the same. In addition, if a portfolio includes stocks with opposite sensitivity, this will affect the value as well as the significance of the portfolio's sensitivity. Therefore, for a research model at the category or industry level, it is assumed that there is no sample heterogeneity. Choi and Prasad (1995) as well as Muller and Verschoor (2006) both find a statistically significant decrease in exchange rate sensitivity when comparing portfolio level to firm level. This is consistent with the study of Allayannis (1996) on the automobile

industry when the sensitivity to currency risk of three major corporations in the industry is significantly different in the period 1976-1990. The empirical results of Willimson (2001) at US, German and Japanese auto companies also give similar conclusions, namely that the sign and significance of firm-level regressions depend on elasticity. of demand and the type of competition, while there are still significant differences in the regression coefficients of sensitivity between firms, industries and countries.

Also following the research direction for industry portfolios, Griffin and Stulz (2001) find insignificant effects of exchange rates on industry portfolio returns in the US and other open economies, besides Industry sensitivity will be more important than the competitive effect. However, previous research by Allayannis (1995) has also shown that the detailed subdivision helps detect susceptibility to a higher level of statistical significance compared to the large subgroup.

If the early studies on the exchange rate sensitivity focused on the US market and developed countries, the later studies were done in other countries, especially groups of emerging and developing economy. Extending the sample to highly open economies and large international trade capital flows will provide more diverse empirical evidence for exchange rate sensitivity. Research by He and Ng (1998) shows that 25% of a sample of 171 Japanese multinationals have exchange rate sensitivity. Chamberlain et al. (1997) compared firm-owned banks in the US and Japan, the return on stocks of US firms fluctuated with a significant rate, while only a few. Japanese companies have found this.

In the next phases, the scope of the study on exchange rate sensitivity expands to different markets, especially emerging and developing economies. Kiymaz (2003) found about 50% of 109 Turkish firms had exchange rate sensitivity between 1991 and 1998. Dominguez and Tesar (2006) studied 2,387 companies in 8 developed and emerging industrial economies from 1980 to 1999 also found in 5 countries (excluding Chile, France and Thailand) more than 20% of firms in the sample. has a statistically significant exchange rate sensitivity.

Chue and Cook (2008) used OLS and GMM regression to evaluate the exchange rate sensitivity from 1999 to 2006 of 931 companies in 15 emerging economies. The results obtained from the regression in the two sample periods of 01 / 1999-06 / 2002 and 07 / 2002-06 / 2006, the exchange rate sensitivity only appears in the first period with the negative correlation between the fluctuations. stock exchange rates and returns, the number of firms that are most sensitive to exchange rate risk are in Brazil, Mexico and South Korea (10% to 14.04%) where the exchange rate drop has an effect. In addition, the author also found evidence on the relationship between exchange rate risk and the country's external debt level. The fact that exchange rate sensitivity did not exist in the second period is explained by the change in the structure of the regional bond market with the increase in the market share of deposits from domestic bonds, in addition to the development. The fast scale of currency derivative products also contributes to limit exchange rate risk for investors.

Hutson and O'Driscoll (2010) found the effect of exchange rate fluctuations on stock returns at 10.5% among 1,154 companies in 11 European countries during the period 1990-2008. The results show that there has been an increase in exchange rate sensitivity since the introduction of the euro, but companies in the eurozone have a lower rate of increase than the rest of the world. there is a shift from systemic risk to company-specific risk.

Chkili et al (2012) used the univariate and multivariate GARCH model to study the correlation between fluctuations in stock returns and exchange rates in the UK, France and Germany in the period 1999-2010. Using two pairs of EUR / USD and GBP / USD in the measurement of exchange rate movements, the author has found a long-term relationship between the change in the rate and the rate of return in stocks, especially this is weak. Key factors forecasting as well as implementing risk hedging strategies and portfolio diversification.

Tsai (2012) used a sample of monthly data from 6 Asian countries (Singapore, Thailand, Malaysia, Philippines, Korea, and Taiwan) from 1992 to 2009 to estimate the effect between stock price indexes and exchange rate by quantile regression. The results show that a negative correlation exists between market

portfolio returns and exchange rate fluctuations at all percentile levels, and this correlation is even more pronounced when the exchange rate fluctuates strongly.

Chaieb and Mazzotta (2013) conducted research to examine the relationship between exchange rate fluctuations and stock returns. The estimated exchange rate sensitivity to the exchange rate variable is the US dollar index against major currencies and US dollar index against emerging country currencies. The sample includes export companies and domestic companies in 11 industries in the US for the period from quarter 2/1973 to quarter 4/2005. Using the panel data regression, the author found no significant and statistically significant effect of the unconditional exchange rate sensitivity. But with conditional sensitivity when considering more business cycle factors and business characteristics, the author finds that exchange rate sensitivity changes over time with fluctuations of economic variables. financial and macroeconomic, and sensitivity increased during economic downturns.

Ye et al. (2014) used a data set of 1,523 companies from 20 emerging economies from December 1999 to December 2009 and estimated using GARCH method determined the existence of the sensitivity. rate indices in half of the country in the sample. Especially in countries where the non-floating exchange rate arrangement applies, the exchange rate sensitivity is amplified. This is a failure in the exchange rate policy although it has eliminated the "fear of floating" which is an important reason leading to the exchange rate risk. According to the author, the reason for this experimental result is the ethical risk theory, because the anchor exchange rate system will reduce the motivation for risk prevention and the tendency to conduct early activities. investment easily leads to high risks.

Akay and Cifter (2014) use a panel data estimate of 173 manufacturing and service firms in 7 Turkish industries for the period 2002-2010, the data sample is grouped by firm size (number of employees) and industry, the results show the exchange rate sensitivity present in medium and large companies, while by sector the stock returns in services and textiles are affected. negative action when the exchange rate falls.

2.5. *Study on exchange rate sensitivity properties*

Misjudging the correlation between exchange rate fluctuations and firm value can lead to failure to find a statistically significant exchange rate sensitivity. Barotv and Bodnar (1994) argue that misconceptions increase due to complex problems in estimating this correlation, such as determining whether a change in exchange rates has an asymmetric effect. no, the difference between temporary and frequent fluctuations in the exchange rate, the impact of exchange rate shocks on the economic and competitive environment of the company. Theoretically, the general statements a company makes about its current business will contain information relating to currency risk and will reduce the information asymmetry between the administrator and the operator. invest. In practice, however, there is a lack of information when identifying market risks as managers often conceal uncertain assumptions about future events and actions (Roulstone, 1999) and being able to make choices unsuitable for company sensitivity (Beckett, 1997). On the other hand, investors are faced with a multitude of different types of risk identification that make it difficult for them to understand and compare options (Hodder et al., 2001). In addition, due to information asymmetry, investors are not always well-informed about risk prevention activities as well as the strategies that the company applies to adapt to changes in the competitive environment. when the exchange rate fluctuates. This leads to the possibility that investors will evaluate the relationship between exchange rate volatility and future cash flows in a way they consider to be more efficient, that is, valuation of the effect of money movements. Worsening business value should be considered over time because investors only react when information on business performance is available, meaning there will be a lag between exchange rate fluctuations and firm value. Bartov and Bodnar (1994) used both present and lagged values of the exchange rate change in their study. The results they achieved show that the lag variable has a better explanation for the return on shares of US companies, and the effect of exchange rate fluctuations on firm value is only shown when digital information. Performance, assets and liabilities are published. However, in studies by He and Ng (1998) at 171 Japanese multinational companies, Nydahl (1999)

at 47 Swedish companies did not have the same results. He and Ng as well as Nydahl only found less than 4% and 6% of stocks in the sample whose return rates were statistically significantly affected by the lag value of exchange rate fluctuations, and included the addition of This delay also did not have a significant effect on the model's interpretation level.

One of the other arguments in exchange rate sensitivity is that a company's exchange rate sensitivity is likely to fluctuate over time. While Jorion's estimation model considers the sensitivity to be constant over time, this seems impractical in the context of macroeconomic environment, competitive position, and operational structure. , the company's hedging policy has changed over time (Bartov and Bodnar, 1994). At the same time, Levi (1994) also argued that identifying the exchange rate inductance in the normal direction will make the regression coefficients no longer statistically significant, so it is necessary to use regression techniques to determine the variation of the regression coefficient on this sensitivity. There are a number of different proposals for assessing the time volatility of the exchange rate sensitivity. The first is the study based on the method suggested by Engel and Hamilton (1990), the authors divide the time series of study time into small periods and examine the immutability of the exchange rate sensitivity. in different periods (Jorion, 1990; Amihud, 1994; Choi and Prasad, 1995; Glaum et al., 2000; He and Ng, 1998; Williamson, 2001; Doukas et al, 2003; Dominguez and Tesar, 2006). The results obtained support the hypothesis of exchange rate sensitivity fluctuations over time.

Another method used is a revolving regression technique (moving-window regression) to determine the likelihood that currency sensitivity will fluctuate randomly between periods, or identifying specific patterns and trends (Glaum et al., 2000; Entorf and Jamin, 2004). Experimental results show that the regression coefficient of sensitivity has a clear variation over time and changes both the sign (direction) of the effect.

The sensitivity of exchange rate changes over time also leads to many studies on the causes of this fluctuation. Allayannis (1995) found empirical evidence on the correlation between the exchange rate sensitivity of the four US manufacturing industries to the share of their exports and imports. Research at the firm level, Gao (2000) uses a model that separates the positive impact of a domestic currency depreciation (or a negative when a domestic currency appreciates) due to the impact of sales in foreign markets, and the negative impact of a domestic currency depreciation (or a positive domestic currency appreciation) in relation to the proportion of overseas production of the company. This analysis helps Gao identify two explanatory channels for the impact of exchange rate fluctuations on enterprise value, that is, the firm's decisions on revenue and production can help reduce exchange rate risk. their. Williamson's (2006) research on the auto industry shows that exchange rate sensitivity depends on specific competitive environment in each specific period. In addition, Dominguez and Tesar (2006) argue that the sensitivity of exchange rate fluctuations over time reflects the firm's adaptation to exchange rate risks, as firms themselves in each period will self-adjust. financial policies and operations to compensate and avoid the disadvantages of exchange rate fluctuations.

The time volatility characteristic of exchange rate sensitivity also leads to studies on the use of reasonable frequency of observations when assessing the relationship between stock returns and exchange rate fluctuations. If the sensitivity of the exchange rate fluctuates from year to year, for example, it is not reasonable to estimate the sensitivity regression coefficient over a 5 or 10 year period, since the regression coefficient is now conventional. The quantity shown only shows the average exchange rate sensitivity over the entire study period and the volatility of the exchange rate will cause the regression coefficient to be statistically insignificant. Therefore, some researchers investigating the possibility that the frequency of observations used most often by month may be unreasonable to assess the exchange rate sensitivity of firms. While the market efficiency theory holds that exchange rate sensitivity is independent of the frequency of observations used, empirical results suggest that because markets are ineffective and feature complex in the relationship between the exchange rate fluctuation and the enterprise value, so the regression coefficient of the exchange rate sensitivity will be different due to the frequency of observation and the time frame to calculate the rate of return. Chamberlain et al. (1997) used daily data to estimate the sensitivity of US and Japanese banking

institutions to exchange rate fluctuations. Similarly, Di Iorio and Faff (2000), Glaum et al. (2000) also found evidence that exchange rate sensitivity is statistically higher when using date data than with monthly frequency. In contrast, Chow et al. (1997) used a time frame longer than 1 month and found a more significant relationship between stock returns and exchange rate fluctuations. Subsequent studies such as Chow and Chen (1998), Griffin and Stulz (2001), Dominguez and Tesar (2001, 2006), Di Iorio and Faff (2001), Muller and Verschoor (2006) also showed the sensitivity of Stock yields with exchange rate fluctuations will be stronger than the rate of return measured with a longer timeframe. This demonstrates that regression with a long time frame will capture wider fluctuations in exchange rates and find more about the nature of the long-term relationship between exchange rates and firm values.

Levi (1994), Booth (1996), Bartov et al. (1996) argued that the low statistical significance of the sensitivity regression coefficients in experimental studies is explained by the firms' performance. effectively risk your sensitivity. If a company has the ability and decision to hedge exchange rate risk completely, the exchange rate sensitivity will be zero. Therefore the nature and character of the exchange rate sensitivity of the firm will depend on the level of effectiveness in implementing the hedging activities, so the sensitivity will become unstable if the policy is Risk hedging changes over time (Levi, 1994). At the same time, the implementation of specific prevention strategies as well as the hedging nature of hedge tools (such as options) will make the relationship between exchange rate and firm value. nonlinearity.

Based on the argument recognizing the impact of hedging activities (internal or external) on exchange rate sensitivity, many authors have combined the impact of the hedging strategy. when estimating exchange rate sensitivity. Pantzalis et al. (2001), Williamson (2001), De Jong et al. (2006) found that the higher the size of firms operating abroad, the lower the sensitivity of the exchange rate due to the implementation of the war. internal prevention strategy. A series of other studies by He and Ng (1998), Chow and Chen (1998), Glaum et al. (2000), Choi and Kim (2003) rely on the foundation of the optimal prevention theory that companies that do not hedge will be more sensitive to exchange rate risk than companies that do hedging. Due to the difficulty in collecting data on risk prevention activities, the authors used variables representing the risk hedging motivation to examine the effects of this "implied" prevention. in estimating the sensitivity. The main point in the results is that companies with high leverage, low short-term liquidity will have more incentives for prevention and are therefore less sensitive to exchange rate fluctuations. Allaynnis and Ofek (2001), Nguyen and Faff (2003), conducted an empirical study with non-financial firms in the US and Australia on the association of the price. The results showed that companies used foreign currency derivatives mainly for hedge activities, not for speculative purposes, but the sensitivity to exchange rate risk only decreased slightly with the level of using derivatives. born. Muller and Verschoor (2004) also reach similar conclusions and suggest that the statistically low impact of the use of a low statistically on firm currency sensitivity is due to the fact that the This company hedges only a small proportion of the exchange rate risk they are facing. Evaluating the impact of using currency derivatives on the exchange rate sensitivity is also the research objective of Crabb (2002) when the author adds to Jorion's model variables including the rate of assets abroad, overseas profits and currency derivative utilization rates. Crabb's findings also show that the increase in hedging levels tends to reduce the firm's sensitivity to exchange rate risk.

Booth (1994) deals with the use of hedging methods that will increase transaction costs and also give rise to an asymmetric factor in the profit function of the company. hypothesis that the exchange rate sensitivity will have nonlinear and asymmetric behavior, and this may also cause the previous studies to find no evidence that the exchange rate sensitivity is statistically significant. From a macro perspective, there are a lot of theories and empirical studies around the topic of the disproportionate impact of exchange rates on trade flows and prices, along with the trend, have also been studied on the reactions. nonlinearity of stock returns to exchange rate fluctuations. Based on assumptions about an increase in exchange rate shock having a different effect on firm value than a falling one, studies by Choi and Prasad (1995), Krishnamoorthy (2001), Koutmos and Martin (2003). , Priestley and Ødegaard (2007) test the ability of stock returns to react disproportionately to rising and falling exchange rates. While the results of Prasad (1995) and Krishnamoorthy (2001) do not support the

hypothesis of asymmetric exchange rate sensitivity, the other two studies both show that the exchange rate sensitivity of many firms is asymmetry for the upward and downward trend of the exchange rate

Williamson (2001) assumes that the increase or decrease of the exchange rate will have an equal impact on firm value, so to test the nonlinearity of the exchange rate sensitivity, the author adds a linear regression function. calculate a variable that is the square of the rate. Bartram (2004) proposes a convex regression form (hydronic with triple powers) to allow studying different responses of stock returns to increase and decrease in exchange rates. With a sample of 447 non-financial companies in Germany, the results show that using the form of nonlinear functions increases the statistical significance of the exchange rate sensitivity.

Koutmos and Martin (2003) examined whether the return rates of 9 industry indices in four developed countries (Germany, Japan, UK, USA) during January 1992 to December 1998 were disproportionately affected. value from the exchange rate fluctuations or not. Study to supplement independent variable is dummy variable (increase and decrease trend of exchange rate) to study asymmetric effect (threshold) on difference in angle coefficient. The results show that exchange rate sensitivity exists at the industrial level with approximately 40% of the sample, of which more than 40% is asymmetric (in the finance and consumption sectors). At the market level, the four countries exhibit exchange rate sensitivity to the increase in the profitability of their domestic portfolio as domestic currencies decline.

Kizys and Pierdzioch (2007) analyze a nonlinear relationship between stock returns and exchange rate sensitivity using a time-varying parameter model, using monthly data of three industrialized countries Japan, the UK and the US in the period 1970-2006. The results show that nonlinear exchange rate sensitivity exists in these markets, while the sensitivity changes over time, increasing with the correlation between rate of return and exchange rate, and market openness. commodity as well as the development of the financial market.

Lin (2011) studied a sample of six Asian emerging countries including India, Indonesia, Korea, the Philippines, Taiwan and Thailand in the period from July 1997 to November 2010, right after the financial crisis. Asia itself in 1997 and covers the time of the global financial crisis in 2008. The author uses real exchange rates instead of nominal rates to measure changes in exchange rates due to inflation in markets. emerging economies are relatively large and more volatile than developed economies. The author's empirical results show that although a regulated floating rate regime is implemented in emerging Asian countries, there is still a significant level of exchange rate risk in these countries. during the sample period with empirical results of 10.48% and 17.7% of companies with greater risks during the Asian crisis 1997 and the global crisis of 2008, while only 8.81% of companies were at risk during the stabilization period from August 1999 to February 2008. About 6% of companies have exchange rate risk as an asymmetric risk of increasing and decreasing domestic currency prices. The greater level of exchange rate risk during a crisis can be due to net exports or holding assets in dollars, so firms can reduce their exchange rate risk by reducing their ratio of exports or assets. real dollar holding.

Bartram and Bodnar (2012) provides a comprehensive view of the relationship between exchange rate sensitivity and firm returns based on samples collected from July 1994 to December 2006. Non-financial companies from 37 countries around the world. The study results show a significant difference in the impact of exchange rate sensitivity on firm returns between countries. Specifically, 30-40% of firms in emerging markets (eg Brazil, South Africa, Indonesia, Argentina and Thailand) are sensitive to exchange rate risks. Researchers have demonstrated that the relationship between exchange rate sensitivity and rate of return exists only in the conditional case of consideration on exchange rate changes. This relationship is of high economic significance, ranging from 1% for a susceptibility unit when the local currency appreciates to 3% for a susceptibility unit when the local currency depreciates. The impact of exchange rate sensitivity on the firm's rate of return is more evident in emerging market countries than in developed market countries. The impact of exchange rate sensitivity on the emerging market average rate of return is close to 8% per sensitivity unit when the local currency depreciates and -5.5% per sensitivity unit. when the local currency increases. As for the developed market, this impact is 2.5% when the domestic currency depreciates and is not statistically significant when the domestic currency appreciates.

Al-Shboul and Anwar (2014) studied nonlinearity of exchange rate sensitivity based on arguments about different responses of firms to exchange rate fluctuations, the authors used the nonlinear variable as the 3rd order rate action to control this possibility. Research results in 13 Canadian industries using weekly data for the period 2003-2011 show that stock returns have a systematic negative correlation with exchange rate fluctuations and that there are 3 sectors. Affected by the nonlinear sensitivity is the financial sector, the retail and general consumer goods sectors.

3. Research method

The research conducted a review of the foundation theories and previous empirical studies in the world and Vietnam, at the same time, synthesized and analyzed to build up suitable research methods of the Study.

The study performed a regression study of table data by GLS method to correct variance of change and GMM is a method to check the stability of the model, these are estimation methods are performed to answer for Research questions (1, 2, 3) on market-level exchange rate sensitivity testing.

4. Result

Chkili et al. (2011) studied the link between stock price volatility and exchange rate changes in four emerging markets (Hong Kong, Singapore, Malaysia and Mexico) in the period 1994-2009 using an EGARCH model. Markov state transitions. The results show that there is a difference between the two states in both the conditional mean and the conditional variance of stock returns. The first state corresponds to the high mean and low variance, and the second state is characterized by low mean and high variance. The study also found evidence of a dependency relationship between the stock market and the foreign exchange market, as well as the asymmetric response of stock price movements to exchange rate movements.

Chortareas et al. (2012) examined the effect of floating announcements and / or exchange rate devaluation on stock yields in the following three MENA countries (Egypt, Morocco, Turkey). The financial crises that these countries experienced from 2001 to 2003. The authors use the fact-research method to examine abnormal rates of return and find clear evidence of stock price fluctuations. securities and unusual stock returns resulting from the Egyptian and Turkish floating rates in 2003 and 2001, respectively. On the contrary, this result was not identified in the context of the devaluation of the stock. Moroccan coin in 2001.

Wang et al (2013) applied the STARX (Smooth Transition Autoregressive with Exogenous Transition) model to test whether the exchange rate and the rate of return of the stock market have a non-linear relationship in the market. Chinese school period 2005-2010. Using data from Shanghai and Shenzhen stock markets, the results show a nonlinear relationship in both stock markets. This is the basis that market investors and government policymakers can use to evaluate the effect of exchange rates on stock returns. The exchange rate sensitivity has created a portion of the risks required by investors when doing arbitrage business.

Moore and Ping (2014) study the origins of the relationship between real exchange rates and equity returns in 4 developed economies (Australia, Canada, Japan, UK) and 6 countries. Asian emerging markets (Indonesia, Malaysia, Korea, Philippines, Singapore, Thailand) in the period of 1973-2006. The author uses a dynamic conditional correlation (DCC) model on two data series, and then regression DCC on trade balance and interest rate difference. The study found that the trade balance is considered to be the main determinant of correlation for Asian markets, while interest rate differentials are the driving force for developed markets due to the flow of investment capital. high.

Chkili and Nguyen (2014) tested the linkage between exchange rates and the rate of return on the stock market in the BRICS countries (Brazil, Russia, India, China and South Africa) from 1997 to 2013 using the model. state transition. The experimental results show that there exists a link between the stock market volatility and the exchange rate in both stable and unstable periods. This has important implications for investors in portfolio investment activities as well as in exchange rate hedging.

So from theoretical model, we propose the following equations:

$$INDEX_{i,t} = \beta_0 + \beta_1 MSCIACWI_t + \beta_2 NER_{i,t} + \beta_3 D_{i,t} * NER_{i,t} + \varepsilon_{i,t} \qquad ($$

$$INDEX_{i,t} = \beta_0 + \beta_1 MSCIACWI_t + \beta_2 RER_{i,t} + \beta_3 D_{i,t} * RER_{i,t} + \varepsilon_{i,t}$$

The interconnection and interdependence between economies as well as the deeper integration into the international business environment of enterprises are inevitable trends, and the trend also presents many challenges. in determining the appropriate factors in the financial asset pricing model. The review and development of exchange rate risk management strategy is a remarkable direction for businesses in Southeast Asia, whether they are operating in markets where the central bank is committed to anchoring billion. price. This issue requires businesses to be proactive in building a culture of risk management as well as policy regulators need to develop and perfect a derivative market on exchange rates to provide public markets. Modern preventive tools. In addition, the increase in the size of the domestic bond market is also a positive direction to help limit dependence on foreign currency funding, and at the same time limit exchange rate sensitivity in the long run. term for businesses.

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