**MINISTRY OF EDUCATION AND TRAINING**

**UNIVERSITY OF ECONOMICS HO CHI MINH CITY**

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**EXCHANGE RATE EXPOSURE - RESEARCH IN VIETNAM AND SOUTHEAST ASIAN COUNTRIES**

**Major: Finance - Banking**

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**SUMMARY OF ECONOMICS PH.D’S THESIS**

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**CHAPTER 1. INTRODUCTION**

**1.1 Reason for research**

Economic policy fluctuations at the world’s largest financial centers such as the quantitative easing policy used by the US, UK and the European region after the 2008 financial crisis caused a new cash flow. into emerging markets, leading to strong fluctuations in monetary value. On the other hand, Asian countries are placed under a managed floating exchange rate regime, whereby their central banks intervene in the foreign exchange market to influence the exchange rate in a positive way. With the intervention of the central bank in the foreign exchange market, it can be said that the exchange rate risk is insignificant. However, by looking at exchange rate exposure through an empirical analysis of the impact of exchange rate risks on stock returns in Southeast Asian markets, especially in the period 2010-2017.

**1.2****Gaps in research, objectives and research questions**

Studies combining market-level and company-level sensitivity are currently limited, especially in Southeast Asian markets including Vietnam, mainly focusing on exchange rate exposure. market level. Therefore, from the theoretical background and empirical research on exchange rate exposure, the thesis aims to evaluate the exchange rate exposure in Vietnam and Southeast Asian markets for both market and company levels contribute to identifying the existence of asymmetric exchange rate exposure as well as the financial variables affecting exchange rate exposure.

The thesis will focus on solving the following research questions:

1. How does exchange rate fluctuations affect market-level stock yields in Southeast Asian countries?

2. Is there a difference in the presence of market-level exchange rate exposure when measured by real exchange rate fluctuations?

3. Is the market-level exchange rate exposure asymmetric?

4. Does exchange rate exposure exist or does exchange rate risk contribute to the explanation for fluctuations in stock return rates at firm level?

5. Are company-level exchange rate exposure asymmetric?

6. What factors influence exchange rate exposure of businesses?

**1 .3 Subject and scope of the study**

**1.3.1 Subject of research**

Exchange rate exposure at market level and the firm level in six Southeast Asia countries namely Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam.

**1.3.2 Scope of the research**

The research period of this study is from 2010 to 2017. The countries in the research sample are selected based on complete market data including six Southeast Asian countries and 2,166 listed companies. by GICS (Global Industry Classification Standard).

**1. 4 Method of research:**At the market level, the study uses regression of panel data by GLS method to treat heterokesdaticity and GMM is a method to test the consistency of the model. At the company level, the study uses the GARCH method to test for exchange rate exposure, and panel data regressions in combination with logistic regressions to identify factors that influence the presence of exchange rate exposure.

**1. 5****New results and contributions of the study**

With the objective study of exchange rate exposure at the level of the market, k utcome prove exists exchange rate exposure in regional countries studied, even in the group of countries under the exchange rate regime has control control. More specifically, the rate of return of domestic securities portfolios decreases as the value of the domestic currency depreciates against the US dollar. A notable point from the regression results is the appearance of asymmetric exchange rate exposure, as the net export position of Southeast Asian countries will be positively affected by the real depreciation of the local currency.

Given the firm’s level of exchange rate exposure, the results show that the presence of exchange rate exposure is at an average of 30% of companies across the sample in 6 countries and the existence of exchange rate exposure even when using long study periods or year-by-year sample. In addition, factors that account for the existence of exchange rate exposure of companies are international business positions (net exporters or net importers), as well as financial criterions of company market value, debt ratio, market price to book value, stock liquidity and current ratio.

When compared with previous studies with the same exchange rate exposure topic, the thesis has made new contributions as follows:

* Firstly, provide a complete theoretical framework on the exchange rate exposure from theoretical foundations, exchange rate transmission channels to stock returns and theoretical models built to recognize the exchange rate exposure, and at the same time identify development stages in the empirical research method on exchange rate exposure, from background studies to improved studies in estimation method, and characterization of the exchange rate exposure.
* Secondly, combine both approaches of analyzing exchange rate exposure at the market level and the firm level, the achieved results identify the existence of the impact of exchange rate risk on stock returns, including countries with managed float exchange rate regime.
* Thirdly, combine two methods to identify exchange rate exposure at the market level in Southeast Asian countries by using nominal and real exchange rates with panel data.
* Fourthly, assess exchange rate exposure at firm level and identifies the presence of asymmetric exchange rate exposure in listed companies in six Southeast Asian countries, especially the Vietnamese market.
* Finally, determine the factors affecting the exchange rate exposure of the company in Southeast Asia by combining the analysis of theories of enterprise behavior with regression test of panel data.

**CHAPTER 2. LITERATURE REVIEW AND EXPERIMENTAL RESEARCH**

**2.1 Theoretical background on exchange rate exposure**

So far, economic theories have suggested that there are many approaches to the impact of the foreign exchange market on the stock market, which makes empirical research on the interaction between these markets more relevant. become more attractive.

Arbitrage pricing theory (APT) of Ross (1976) states that determining the rate of return of securities should be based on expectations about the impact of macro factors, especially exchange rate. Dornbush and Fisher (1980) propose a flow oriented model. In addition, the analysis of the impact of foreign portfolio investment flows on the exchange rate, exchange rate transmission channels to consumer prices also contributes to clarify the spillover effects from exchange rate changes to stock price movements.

There are different approaches to analyzing the mechanism of action of exchange rate fluctuations on firm value. Dumas (1978) emphasized that exchange rate exposure (the sensitivity of enterprise value to currency fluctuations) is only determined when accompanied by a specific period of time and directly depends on the time frame. Investment space is being analyzed. Lessard (1979) first mentioned that the nature of the sensitivity to currency risk will change as the assessment period becomes longer in the future. Later, in their study, Stulz and Williamson (2000) decomposed the overall impact of exchange rate fluctuations on firm value into separate exposures, namely transaction exposure, competitive exposure, and translation exposure.

**2.2.****Empirical studies on exchange rate exposure**

**2.2.1 Empirical studies on firm-level exchange rate exposure**

**2.2.1.1 Background studies on methods of identifying exchange rate exposure**

Adler and Dumas (1984) developed a simple application technique for measuring exchange rate exposure. The exchange rate exposure is determined to be the “the amounts of foreign currencies which represent the sensitivity of the future, real domestic-currency (market) value of any physical or financial asset to random variations in the future domestic purchasing powers of these foreign currencies, at some specific future date.” The authors therefore estimate the sensitivity of an asset by regressing the market value in the local currency of the asset at the exchange rate. Because using the original data series in the regression model, there will be statistical problems, Alder et al. (1986) proposed using the stock rate of return and the degree of exchange rate change to helping data series be more stable, achieving stop counting. A series of subsequent studies on exchange rate exposure at firm level are based on this approach which means that exchange rate exposure is almost always measured indirectly or indirectly. capital market approach

In the capital market method proposed by Adler et al. (1986), the exchange rate exposure of firm i is simply measured by the fluctuation in the rate of return. The security is correlated with changes in exchange rates, and this is considered to be the company’s total exposure. However, because other macroeconomic variables can change the simultaneous correlation of exchange rate fluctuations and stock returns, the failure to consider these factors in the model will lead to estimation. exaggerating the impact of exchange rate fluctuations on stock returns. This is also the reason that Jorion (1990) offers a measure of exchange rate exposure called residual exposure, which is the dominant part of the market’s response to exchange rate fluctuations.

The analysis at the portfolio level will be more effective than the level of each firm because the rate of return of the portfolio is less disturbed than each individual stock. However, this finding is only suitable for groups of companies with exchange rate exposure which are expected to be similar, which are companies of the same scale in the same field with input market and product consumption. is the same.

Most of the early studies on exchange rate exposure have focused on the US market, and many have been conducted in other countries. Expanding the research sample to economies with high levels of openness and large flows of international trade will provide a more diverse empirical evidence of exchange rate exposure.

**2.2.1.2 Improvements of research methodology on exchange rate exposure**

Studies conducted to prove the debate about the use of adjusted market portfolios, using a bilateral exchange rate or exchange rate index based on trade, nominal or real exchange rates. In addition, to solve the multicollinearity problem, a two-step method is implemented, namely regression of exchange rate according to market risk factors and using the residuals of this regression to be included in the exchange rate exposure estimation model of Jorion. Moreover, the exchange rate regime that countries are applying is also the factor affecting exchange rate exposure.

**2.2.1.3 Studies of the characteristics of exchange rate exposure**

One of the more debates in exchange rate exposure is that a company’s price sensitivity is likely to fluctuate over time, and the authors divide the study time data series into small periods. and examine the invariants of exchange rate exposure over 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). Therefore, it is necessary to use a reasonable observation frequency when assessing the relationship between stock rate of return and exchange rate fluctuation. At the same time, the impact of a hedging strategy should be combined when estimating exchange rate exposure. An important finding is that exchange rate exposure will have nonlinear and asymmetric behavior.

**2.2.1.4 Studies on factors affecting exchange rate exposure**

The asymmetric exchange rate exposure implies that when the exchange rate fluctuates in an upward or downward direction, the degree to which businesses are affected is the difference between these two price movements. This issue is addressed in a number of theoretical models that describe company behavior, such as the asymmetric pricing in the market (PTM - Pricing to market) of the firm (Knetter, 1994), delays (Baldwin and Krugman, 1989), and hedge against asymmetric exchange rate risk.

In addition to identifying the possibility of exchange rate exposure through analysis linked to theories in enterprise behavior, researchers have conducted empirical studies that address individual considerations. Factors affecting exchange rate exposure through testing factors affecting exchange rate exposure of the company are factors that belong to national characteristics and company characteristics.

**2.2.2 Empirical study of market-level exchange rate exposure**

The study of market-level exchange rate exposure is often conducted through independent studies on the impact of exchange rate fluctuations and stock market volatility, such as Chkili et al. (2011) in four emerging markets (Hong Kong, Singapore, Malaysia and Mexico) in the period 1994-2009; Chortareas et al. (2012) in Egypt, Morocco and Turkey from 2001 to 2003; Wang et al. (2013) in China market in the period of 2005-2010; Sensoy and Sobaki (2014) in Turkey 2003-2013; Chkili and Nguyen (2014) in BRICS countries from 1997 to 2013; Nguyen Thi Lien Hoa and Le Thi Thuy Huong (2014) in ASEAN countries from 2005-2013. The studies have found empirical evidence on the relationship between exchange rate fluctuations and stock return rates in a market perspective, especially the nonlinear relationship.

Particularly in Vietnam market, the link between the foreign exchange market and the stock market was also identified through the research of Tran Ngoc Tho and Ho Thi Lam (2015).

General studies conducted at both the market and corporate levels in many countries are still not much focused on the period before the global financial crisis of 2008 such as those of and Hutson and O’Driscoll. (2010), Lin (2011).

**CHAPTER 3. RESEARCH METHODOLOGY**

**3.1 Data**

**3.1.1 Exchange rate exposure at the market level**

The six Southeast Asian countries in the sample include Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam.

The nominal exchange rate according to the direct quoted price (USD/local currency) and the consumer price index (Consummer price index (CPI) (base year 2010) of each country are collected from the IFS database (International Financial Statistics of the International Monetary Fund (IMF). The stock market index of countries, the MSCI ACWI (Morgan Stanley Capital International - All Country World Index) is a measure of the world market return from the Thomson Reuters Datastream database. Data for the variables used in the study were collected monthly from January 2010 to December 2017.

**3.1.2 Exchange rate exposure at the firm level**

The study used companies listed on the stock markets of six countries Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam. Companies are classified according to GICS (Global Industry Classification Standard). The final sample is a data of 2,166 companies.

**3.2 Experimental research model**

**3.2.1 Market-level exchange rate exposure**

The standard model of Jorion (1990) is improved to test the exchange rate exposure in Southeast Asian markets through the following equations:

INDEXi,t = β0 + β1MSCIACWIt + β2NERi,t + β3Di,t\*NERi,t + εi,t (3.4)

INDEXi,t = β0 + β1MSCIACWIt + β2RERi,t + β3Di,t\*RERi,t + εi,t (3.5)

**3.2.2 Company-level exchange rate exposure**

Based on the research of Ye et al (2014), Al-Shboul and Anwar (2014), Chou et al (2017), Bae et al (2018) apply GARCH (1,1) model, as follows:

(3.11)

(3.12)

**Identify factors that affect the likelihood of exchange rate exposure**

**Table 3.4 Analyze the link between theory and model on the possibilities that lead to exchange rate exposure**

|  |  |  |  |
| --- | --- | --- | --- |
| **Case** | **β 2> 0** | **β 2= 0** | **β 2< 0** |
| **β3 > 0** | (1) PTM with VC or asymmetric hedging  (net exporter) | (4) PTM with VC or asymmetric hedging (net exporters) | (7) Asymmetric hedging (net importer) |
| **β3 = 0** | (2) Symmetric exposure (net exporter) | (5) No exposure (net exporter or net importer) | (8) Symmetric exposure (net importer) |
| **β3 < 0** | (3) PTM with MSO or hysteresis (net exporter) | (6) PTM with MSO or hysteresis (net importer) | (9) PTM with MSO (net importer) |

*Note: Pricing to market (PTM - Pricing to market); Market share objective (MSO); output constraints (VC)*

**Test the factors affecting the exchange rate exposure of enterprises**

(3.13)

is the regression coefficient representing the exchange rate exposure of firm i. Cj is a set of variables belonging to the company characteristics including: MV (market value), DA (debt to asset ratio), MTBV (market to book ratio), TR (turnover ratio): ratio between the number of traded shares compared to the total number of outstanding shares, QR (quick ratio).

(3.14)

the dependent variable  is a dummy variable representing the company with or without exchange rate exposure, which in particular  will receive a value of 1 when the regression coefficient β2 or β3of the equation (3.11) with statistical significance and the value of 0 when both regression coefficients are not statistically significant.

**3.3 Method of estimating models**

**3.3.1 Estimated rate sensitivity level market:** using GLS method (Generalized Least Squares) and DGMM (Dynamic Generalized method of moments).

**3.3.2 Estimating the sensitivity of exchange rate at firm level:**using GARCH (Generalised Autoregressive Conditional Heteroskedasticity) model.

**3.3.3 Estimation of the factors affecting the exchange rate exposure:**using panel data regression models and logistic model.

**CHAPTER 4. RESULTS OF RESEARCH**

**4.1 Exchange rate exposure at market level**

**Table 4.4 Regression results (3.4) by the GLS method**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Beta coefficient** | **Standard error** | **z-statistic** | **p-value** |
| MSCIACWI | 0.4079842 \*\*\* | 0.0379062 | 10.76 | 0.000 |
| NER | -1.047552 \*\*\* | 0.1675257 | -6.25 | 0.000 |
| DTNER | 0.4841614 \*\* | 0.2311391 | 2.09 | 0.036 |
| Constant | 0.006782 \*\*\* | 0.0022773 | 2.98 | 0.003 |

**Table 4.12 Regression results (3.5) by the GLS method**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Beta coefficient** | **Standard error** | **z-statistic** | **p-value** |
| MSCIACWI | 0.4365342 \*\*\* | 0.0381889 | 11.43 | 0.000 |
| RER | -0.86662 \*\*\* | 0.1584513 | -5.47 | 0.000 |
| DTRER | 0.4762231 \*\* | 0.2269447 | 2.1 | 0.036 |
| Constant | 0.0053598 \*\* | 0.0023147 | 2.32 | 0.021 |

**Table 4.15 The results of regression equation (3.4) and (3.5) by GLS method of sample 3 ASEAN countries (Malaysia, Singapore, Vietnam)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Equation (3.4)** | | **Equation (3.5)** | |
| **Beta coefficient** | **z-statistic** | **Beta coefficient** | **z-statistic** |
| MSCIACWI | 0.3616638\*\*\* | 6.98 | 0.3700892\*\*\* | 7.18 |
| NER | -0.2660306\* | -1.68 |  |  |
| DTNER | -0.028482 | -0.14 |  |  |
| RER |  |  | -0.2249776 | -1.46 |
| DTRER |  |  | -0.0470889 | -0.23 |
| Constant | 0.0019874 | 0.88 | 0.0018592 | 0.81 |

*Notes: \*\*\*, \*\*, and \*, respectively, denote significance at the 1%, 5%, and 10% level.*

**Table 4.16 The results of regression equation (3.4) and (3.5) by DGMM**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Equation (3.4)** | | **Equation (3.5)** | |
| **Beta coefficient** | **z-statistic** | **Beta coefficient** | **z-statistic** |
| INDEX(-1) | 0.0540751\* | 1.7 | 0.0708132\*\* | 2.02 |
| MSCIACWI | 0.3431799\*\*\* | 4.15 | 0.3807336\*\*\* | 4.60 |
| NER | -1.318789\*\*\* | -4.06 |  |  |
| DTNER | 0.7856376\*\* | 2.21 |  |  |
| RER |  |  | -0.995358\*\*\* | -4.75 |
| DTRER |  |  | 0.5810578\*\*\* | 3.49 |
| Constant | 0.004943\* | 1.65 | 0.0039422 | 1.60 |

The results of regression by GLS and GMM shows that in six Southeast Asia stock markets, following the financial crisis in 2008, specifically in the period from 2010 to 2017, exchange rate exposure always exists and is asymmetric. Exchange rate risk has opposite effects on the stock returns of countries in this region, regardless of the exchange rate policy of central banks. Besides, the results also show that the world stock market has the same effect on the regional stock market.

**4.2 Exchange rate exposure at the firm level**

**4.2.1 Regression results for the study period from 2010 to 2017**

**Table 4.17 Number of companies with exchange rate exposure by country for the period 2010-2017**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **nation** | **Number of companies with exchange eposure (**and/or   statisticall significant) | | **Number of companies with asymmetric exchange rate exposure**( statistical significance) | |
| **Sig** | **(%)** | **Sig** | **(%)** |
| Indonesia | 140 | 43 | 100 | 31 |
| Malaysia | 214 | 30 | 110 | 16 |
| Philippines | 57 | 35 | 42 | 26 |
| Singapore | 100 | 35 | 59 | 21 |
| Thailand | 193 | 42 | 161 | 35 |
| Vietnam | 27 | 12 | 11 | 5 |

*Note: The number in the table is the number of companies with a positive (+) or negative (-) regression coefficient at the 10% significance level and a percentage of the total number of companies in the sample.*

Regression results with a sample of 2,166 companies in the period of 2010 - 2017 showed the presence of exchange rate exposure ( and/or  statistically significant at 10%) in the listed companies in six Southeast Asian countries, most of them are 30% or more of the whole sample except Vietnam only at 12%. The presence of asymmetric exchange rate exposure is also significant when accounting for approximately 50% of cases with exchange rate exposure.

**4.2.2 Regression results for each year in the period 2010 - 2017**

The thesis divides the research framework to help identify the time-varying characteristics of exchange rate exposure at the firm level. So the study period 2010-2017 will split into eight years and regress firm-level exchange rate exposure each country.

In Indonesia, Malaysia, Singapore and Thailand market, the period after the global financial crisis (2010-2011), the percentage of companies with exchange rate exposure is high and tend to be stable in the following years. In the period 2014-2015, the proportion of companies with exchange rate exposure increased in countries because this is the time when the economies with important trade relations with ASEAN in terms of trade and investment are the United States and China with important adjustments in monetary policy, in particular FED raised the basic interest rate of US dollar as well as the Central Bank of China devaluated CNY. These external shocks have impacted the international forex market as well as the exchange rate policy and increased the proportion of companies with exchange rate exposure.

In addition, Malaysia and Vietnam have adjusted the exchange rate management policy in a new direction. Malaysia, from September 2017, changed the exchange rate regime with a floating regime. From 2016, Vietnam uses central exchange rate instead of the interbank average exchange rate, so that the exchange rate will be more flexible. This is a trend consistent with the fact that these two countries are making deeper international trade integration after the signing of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), international capital flows will increase, putting pressure on the exchange rate and the coordination between macroeconomic management policies, so the exchange rate needs to be operated in a more flexible manner. Vietnam’s exchange rate exposure in 2017 is higher than previous years, reflecting the more significant influence of exchange rate fluctuations on the profitability of listed companies.

**4.2.3 Identify factors that affect the likelihood of exchange rate exposure**

In the four countries of Indonesia, Philippines, Thailand and Vietnam, the disparity of exchange rate exposure is concentrated in the case corresponding to the enterprise’s pricing to market with the market share objective and hysteresis (β3 < 0 and β2 > 0), in particular these are companies with a net export position.

In Malaysia and Singapore, the sensitivity of asymmetric exchange rates is concentrated in the case corresponding to the enterprise’s pricing to market with market share objective and hysteresis (β3 <0 and β2 = 0) but these are companies with a net import position.

**4.2.4 The result of regression factors affecting the firm-level exchange rate exposure in Southeast Asia countries**

Factors that determine the extent and likelihood of the exchange rate exposure of firms associated with international trading position (net exporter or net importer) and characteristics of corporate finance are market value, debt ratio, market price to book value, stock liquidity and quick ratio.

**Table 4.26 Regression results (3.13) and (3.14) in the Southeast Asian market**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variable** | **Indonesia** | | **Malaysia** | | **Philippines** | | **Singapore** | | **Thailand** | | **Vietnam** | |
| **(1)** | **(2)** | **(1)** | **(2)** | **(1)** | **(2)** | **(1)** | **(2)** | **(1)** | **(2)** | **(1)** | **(2)** |
| MV | -0,029 \*\*  (-2,58) | -0,009  (-0.05) | -0,1243 \*\*\*  (-17.88) | -0.0892 \*\*\*  (-5.00) | -0,2324 \*\*\*  (-5.54) | 0.0143  (0.41) | -0.21 \*\*\*  (12.62) | -0,0179  (-0.46) | -0,917 \*\*\*  (-8,12) | -0.0421 \*  (-1,80) | -0,021  (-0.59) | 0.0264  (0.43) |
| SKIN | -0.04  (-0,73) | -0,0167  (-0,12) | -0,1143 \*  (-1.66) | .13875  (0.63) | -0,07979  (-1.04) | -0.1077  (-0.43) | -0,293 \*\*\*  (-2,72) | 0.1121  (0.45) | 0.0205  (0.26) | 0.234  (0.12) | -0,0023  (-0.01) | -0,752 \*  (-1.75) |
| MTBV | 0.0034  (-1,62) | -0,0085 \*  (-1.85) | 0.0052  (1.48) | -0,0219 \*\*  (-2.02) | -4.86E-07  (-0.03) | -0,000  (-0.01) | -0,001 \*\*  (-2,35) | -0,003  (-0.17) | -0,018 \*\*\*  (-3,91) | 0.0078  (0.61) | 0.0561  (1.01) | 0.0701  (0.88) |
| TR | 0.0016  (-1,33) | -0,0055 \*\*  (-2.01) | -0,0016 \*\*  (-2,49) | 8.97E-06  (0.00) | -0,0055 \*\*\*  (-3,36) | -0,0002  (-0.08) | 0.0007  (0.51) | -0,002  (-0.83) | -0,004 \*\*\*  (-4.97) | -0,0003  (-0,14) | -0,0009  (-0.52) | -0,0038  (-1,23) |
| QR | -0,0004  (-0,22) | 0.0014  (0.28) | -0,0034 \*  (-1,74) | -0,0053  (-0.83) | 0.0002  (1.05) | 0.0004  (0.64) | -0,0011  (-0.27) | -0,0102  (-0.64) | 0.0012  (0.86) | 0.0031  (0.58) | 0.0038  (0.49) | -0,107 \*\*  (-1.99) |
| Constant | 1,7099  (5.39) | -1,1342  (-2.07) | 2,9391 \*\*\*  (22,22) | -2,8621 \*\*\*  (-8.08) | 4,3561 \*\*\*  (7.75) | -1,3629  (-1,80) | 4.7799 \*\*\*  (15.61) | -0,7845  (-1,13) | 2,6146 \*\*\*  (10.8) | -0,1818  (-0.35) | 0,7126  (0.76) | -2,0166  (-1,22) |
| Number of observations | 2.087 | | 5.349 | | 1,094 | | 2.116 | | 3.211 | | 1,558 | |

*Note: Columns (1) and (2) are the regression results of equation (3.13) and (3.14), respectively; z-statistics are shown in parentheses .*

**CHAPTER 5. CONCLUSIONS AND POLICY IMPLICATIONS**

**5.1 The main conclusions of the thesis**

For market-level exchange rate exposure, the thesis uses the exchange rate fluctuation based on the nominal exchange rate as well as the real exchange rate to eliminate the effects of high inflation in the markets of Southeast Asian countries. Besides, the thesis also considers the intervention of the central bank to successfully prevent exchange rate risks.

The author’s empirical results show that there exists widespread exchange rate risk in Southeast Asian markets. More specifically, despite the positive intervention of the central bank in the period of 2010-2017 through fluctuations in foreign exchange reserves, there still appears the exchange rate exposure. Domestic stocks fell when the value of local currency depreciated against the US dollar. This is consistent with the "dollarization of debt" phenomenon as well as the continuous increase in net foreign assets in emerging markets as mentioned in previous studies. A notable point from the regression results is the appearance of asymmetric exchange rate exposure, as the net export position of Southeast Asian countries will be positively affected by the real depreciation of the local currency. At the same time, the downward trend of local currency prices also motivated enterprises to find a balance to reduce foreign currency pressure on imports from increasing trade in the region.

At the firm level, the dissertation tests the exchange rate exposure of 2,166 companies in the sample for the period of 2010-2017 as well as each year separately with data on daily frequency. The results show a significant presence of exchange rate exposure over the period as well as the annual time frame. In addition, the identification of factors affecting exchange rate exposure in theory as well as testing by financial variables also shows the level of international business participation, the market value of the company, the debt ratio, market price-to-book ratio, stock liquidity as well as short-term ratio of the company are factors that contribute to the extent and ability of the company to face exchange rate risk exposure.

**5.2 Policy implications**

- Developing the domestic bond market.

- Strengthening regional foreign exchange reserve fund.

- Increasing intra-regional trade.

- Develop the currency derivatives market.

**5.3 Limitations of the thesis**

In terms of data, due to limited data sources at the micro level of listed companies in countries, the study only identifies the factors affecting exchange rate exposure by financial variables without considering international business characteristics, ownership structures of foreign investors or the use of derivatives. In addition, in order to unify the identification of exchange rate exposure at the firm and market levels, as well as addressing the research objectives of testing the factors affecting exchange rate exposure, this study has used the indirect method which is the capital market method, so it has not been able to evaluate the exchange rate exposure by the direct method - the cash flow method.

**LIST OF RESEARCH WORKS**

**Science Press:**

1. Lê Thị Hồng Minh & Huỳnh Thị Cẩm Hà (2015), Độ nhạy cảm tỷ giá bất cân xứng nghiên cứu tại các nước Đông Nam Á, *Tạp chí Phát triển và Hội nhập*, số 24 (34), tháng 09-10/2015, trang 40-50.
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**Research at University level:**

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