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Tax Rates Effects on The Risk Level of Listed Viet Nam Banking Firms During Global Economic Crisis 2007-2009

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Abstract

The emerging stock market in Viet Nam has been developed since 2006 and affected by the financial crisis 2007-2009. This study analyses the impacts of tax policy on market risk for the listed firms in the banking industry as it becomes necessary.

First, by using quantitative and analytical methods to estimate asset and equity beta of total 9 listed companies in Viet Nam banking industry with a proper traditional model, we found out that the beta values, in general, for many institutions are acceptable.

Second, under 3 different scenarios of changing tax rates (20%, 25% and 28%), we recognized that there is not large disperse in equity beta values, estimated at 0,120, 0,132 and 0,131.

Third, by changing tax rates in 3 scenarios (25%, 20% and 28%), we recognized both equity and asset beta mean values have positive relationship with the increasing levels of tax rate.

Finally, this paper provides some outcomes that could provide companies and government more evidence in establishing their policies in governance. Because changes in tax rate (while other factors unchanged) might affect the risk level, policy makers could consider using the results for making proper decision.

Keywords: Capital Structure, Economic Crisis, Beta, Market Risk, Risk Analysis, Tax Rate, Banking Industry

JEL CLASSIFICATION: *G010, G100, G390*

1. Introduction

Together with the development of the whole economy and the growth of FDI, throughout many recent years, Viet Nam banking industry is considered as one of active economic sectors, which has some positive effects for the economy. The objective of this study, hence, is to identify how much the risk dispersion will be if corporate tax rate changes in 3 scenarios.

This paper is organized as follow. The research issues and literature review will be covered in next sessions 2 and 3, for a short summary. Then, methodology and conceptual theories are introduced in session 4 and 5. Session 6 describes the data in empirical analysis. Session 7 presents empirical results and findings. Next, session 8 covers the analytical results. Then, session 9 presents analysis of risk. Lastly, session 10 will conclude with some policy suggestions. This paper also supports readers with references, exhibits and relevant web sources.

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2. Research Issues

We mention some issues on the estimating of impacts of tax rates on beta for listed banking companies in Viet Nam stock exchange as following:

Issue 1: Whether the risk level of banking firms under the different changing scenarios of tax rates increase or decrease so much.

Issue 2: Whether the disperse distribution of beta values become large in the different changing scenarios of tax rates estimated in the banking industry.

Beside, we also propose some hypotheses for the above issues:

Hypothesis 1: because tax may strongly affect business returns, changing tax scenarios could strongly affect firm risk.

Hypothesis 2: as tax policy is vital for the business development, there will be large disperse in beta or risk values estimated.

3. Literature review

Needham (2002) mentioned that although debt financing in other contexts usually minimizes the aggregate tax burden of the parties as a whole by conveying an interest deduction, it is often inefficient in the fund context for several reasons, including lack of tax capacity at the portfolio company level, the adverse tax treatment of contingent debt, and the special tax advantages of equity financing afforded some classes of fund investors.

Fama, Eugene F., and French, Kenneth R., (2004) also indicated in the three factor model that "value" and "size" are significant components which can affect stock returns. They also mentioned that a stock's return not only depends on a market beta, but also on market capitalization beta. The market beta is used in the three factor model, developed by Fama and French, which is the successor to the CAPM model by Sharpe, Treynor and Lintner.

Anderson (2009) recognized that the user cost tax elasticities are relatively small while the expected house price inflation elasticity is substantially larger and therefore plays a greater role in affecting housing market demand. As Luis E. Peirero (2010) pointed, the task of estimating cost of equity in emerging markets is more difficult because of problems such as collecting data in short periods.

As Luis E. Peirero (2010) pointed, the task of estimating cost of equity in emerging markets is more difficult because of problems such as collecting data in short periods.

Umar (2011) found that firms which maintain good governance structures have leverage ratios that are higher (forty-seven percent) than those of firms with poor governance mechanisms per unit of profit..

Flifel (2012) stated today, the assumption of efficient capital markets is very controversial, especially in these times of crisis, and is challenged by research showing that the pricing was distorted by detection of long memory.

Chen et all (2013) supported regulators' suspicions that over-reliance on short-term funding and insufficient collateral compounded the effects of dangerously high leverage and resulted in undercapitalization and excessive risk exposure for Lehman Brothers. The model reinforces the importance of the relationship between capital structure and risk management. Then, Alcock et all (2013) found evidence that leverage cannot be viewed as a long-term strategy to enhance performance, but in the short term, managers do seem to add significantly to fund excess returns by effectively timing leverage choices to the expected future market environment. And Gunaratha (2013) revealed that in different industries in Sri Lanka, the degree of financial leverage has a significant positive correlation with financial risk.

Finally, tax rate can be considered as one among many factors that affect business risk of banking firms.

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4. Conceptual theories
The impact of fiscal policy on the economy

Tax policy is one among major fiscal policies. When the government decides to change the tax policy or tax rates, the mobility of capital in the markets will be affected.

In a specific industry such as banking industry, on the one hand, using tax policy with a decrease or increase in tax rate could affect tax revenues, profit after tax and financial results and compensation and jobs of the industry. And it also shows the purpose of fiscal policy: following either contractionary or expansionary directions.

During and after financial crises such as the 2007-2009 crisis, there raises concerns about fiscal policies or public policies of many countries, in both developed and developing markets. The government might choose either lowering the tax rates or cutting the public expenditures while increasing demand stimulating programs to resolve difficulties from the crisis.

5. Methodology
In this study, we use the live data during the crisis period 2007-2011 from the stock exchange market in Viet Nam (HOSE and HNX) to estimate systemic risk results and tax impacts.
In this research, analytical research method is used, philosophical method is used and specially, tax rate scenario analysis method is used. Analytical data is from the situation of listed banking firms in VN stock exchange and curent tax rate is 25%.

Finally, we use the results to suggest policy for both these enterprises, relevant organizations and government.

6. General Data Analysis
The research sample has total 9 listed firms in the banking market with the live data from the stock exchange.
Firstly, we estimate equity beta values of these firms and use financial leverage to estimate asset beta values of them. Secondly, we change the tax rate from 25% to 28% and 20% to see the sensitivity of beta values. We found out that in 3 cases (rate = 20%, 25%, and 28%), asset beta mean is estimated at 0,034, 0,057 and 0,057 which increases when tax rate changes. Also in 3 scenarios, we find out var of asset beta estimated at 0,001, 0,003 and 0,0027 (almost the same) which shows small risk dispersion. Tax rate changes almost has no effect on asset beta var under financial leverage.

7. Empirical Research Findings and Discussion

In the below section, data used are from total 9 listed banking companies on VN stock exchange (HOSE and HNX mainly). In the scenario 1, current tax rate is 25% which is used to calculate market risk (beta). Then, two (2) tax rate scenarios are changed up to 28% and down to 20%, compared to the current corporate tax rate.

Market risk (beta) under the impact of tax rate, includes: 1) equity beta; and 2) asset beta.

7.1 Scenario 1: current tax rate is 25%

In the case of tax rate of 25%, all beta values of 9 listed firms on VN banking market as following:

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Table 1 – Market risk of listed companies on VN banking market (t = 25%)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage
1	ACB	0,850	0,083		95,2%
2	CTG	0,415	0,024		94,4%
3	EIB	0,629	0,145		90,5%
4	HBB	0,135	0,016	SHB as comparable	89,7%
5	MBB	0,081	0,009	STB as comparable	92,5%
6	NVB	0,021	0,003	HBB as comparable	87,7%
7	SHB	1,011	0,113		91,8%
8	STB	0,826	0,089		90,3%
9	VCB	0,473	0,030		92,7%

7.2. Scenario 2: tax rate increases up to 28%

If corporate tax rates increases up to 28%, all beta values of total 9 listed firms on VN banking market as below:

Table 2 – Market risks of listed banking firms (t = 28%)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Financial leverage
1	ACB	0,8496	0,0828	95,2%
2	CTG	0,4154	0,0239	94,4%
3	EIB	0,6288	0,1449	90,5%
4	HBB	0,1394	0,0165	89,7%
5	MBB	0,0836	0,0090	92,5%
6	NVB	0,0228	0,0031	87,7%
7	SHB	1,0115	0,1132	91,8%
8	STB	0,8256	0,0887	90,3%
9	VCB	0,4732	0,0304	92,7%

7.3. Scenario 3: tax rate decreases down to 20%

If corporate tax rate decreases down to 20%, all beta values of total 9 listed firms on the banking market in VN as following:

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Table 3 – Market risk of listed banking firms (t = 20%)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Financial leverage
1	ACB	0,7874	0,0378	95,2%
2	CTG	0,5540	0,0312	94,4%
3	EIB	0,3847	0,0365	90,5%
4	HBB	0,1262	0,0130	89,7%
5	MBB	0,0681	0,0051	92,5%
6	NVB	0,0189	0,0023	87,7%
7	SHB	1,0038	0,0824	91,8%
8	STB	0,7395	0,0721	90,3%
9	VCB	0,4083	0,0299	92,7%

All three above tables and data show that values of equity and asset beta in the case of increasing tax rate up to 28% or decreasing rate down to 20% have small fluctuation.

8. **Comparing statistical results in 3 scenarios of changing tax rate:**

Table 4 - Statistical results (tax rate = 25%)

Statistic results	**Equity beta**	**Asset beta (assume debt beta = 0)**	**Difference**
MAX	1,011	0,145	0,8666
MIN	0,021	0,003	0,0184
MEAN	0,493	0,057	0,4366
VAR	0,1316	0,0027	0,1289
Note: Sample size : 9			

Table 5 – Statistical results (tax rate = 28%)

Statistic results	**Equity beta**	**Asset beta (assume debt beta = 0)**	**Difference**
MAX	1,011	0,145	0,8666
MIN	0,023	0,003	0,0197
MEAN	0,494	0,057	0,4375
VAR	0,1307	0,0027	0,1280
Note: Sample size : 9			

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Table 6- Statistical results (tax rate = 20%)

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	1,004	0,082	0,9214
MIN	0,019	0,002	0,0165
MEAN	0,455	0,034	0,4201
VAR	0,1197	0,0008	0,1189
Note: Sample size : 9			

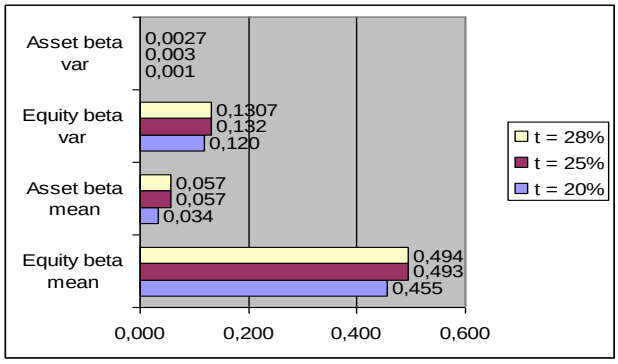
Based on the above results, we find out:

Equity beta mean values in all 3 scenarios are low (< 0,5) and asset beta mean values are also small (<0,6) although max equity beta values in some cases might be higher than (>) 1. In the case of current tax rate of 25%, equity beta value fluctuates in an acceptable range from 0,021 (min) up to 1,011 (max) and asset beta fluctuates from 0,003 (min) up to 0,145 (max). If corporate tax rate increases to 28%, equity beta moves from 0,023 (min) up to 1,011 (max) and asset beta moves in an unchanged range. Hence, we note that there is a small increase in equity beta min value if corporate tax increases. When tax rate decreases down to 20%, equity beta value changes from 0,019 (min) up to 1,004 (max) and asset beta changes from 0,002 (min) up to 0,082 (max). So, there is a small decrease in equity beta min value when tax rate decreases in scenario 3.

Beside, Exhibit 6 informs us that in the case 28% tax rate, average equity beta value of 9 listed firms increases up to 0,001 while average asset beta value of these 9 firms increase less slightly up to 0,0001. Then, when tax rate reduces to 20%, average equity beta value of 9 listed firms reduce to -0,038 and average asset beta value of 9 firms down to -0,022.

The below chart 1 shows us : when tax rate decreases down to 20%, average equity and asset beta values decrease slightly (0,455 and 0,034) compared to those at the initial rate of 25% (0,493 and 0,057). At the same time, when tax rate increases up to 28%, average equity beta increases slightly whereas average asset beta value remains unchanged (to 0,494 and 0,057). However, the fluctuation of equity and asset beta values (0,132 and 0,003) in the case of 25% tax rate is higher than or equal to (>=) the results in the rest 2 tax rate cases.

Chart 1 – Comparing statistical results of three (3) scenarios of changing tax rate (2007-2009)



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Chart 2 – Comparing statistical results of three (3) scenarios of changing tax rate (2009-2011)

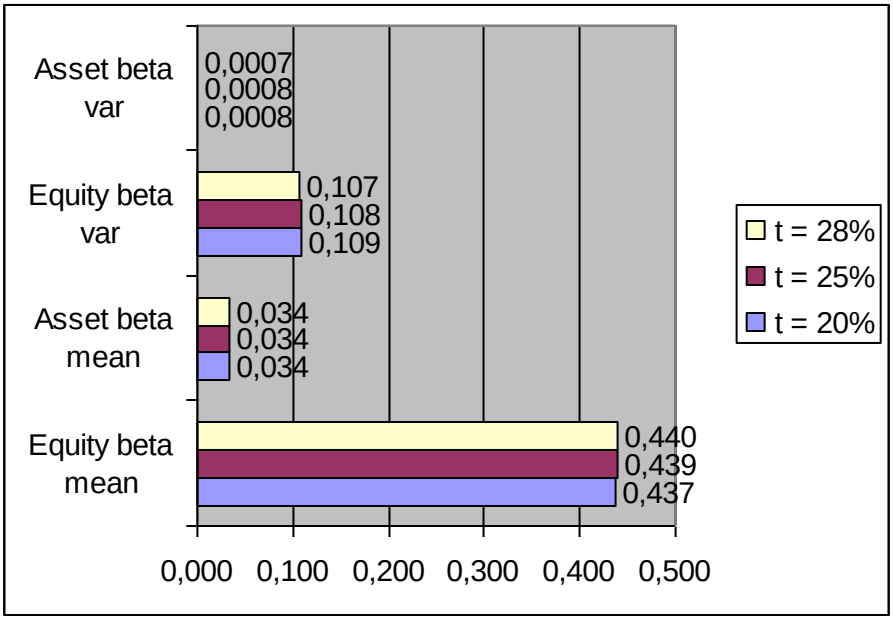
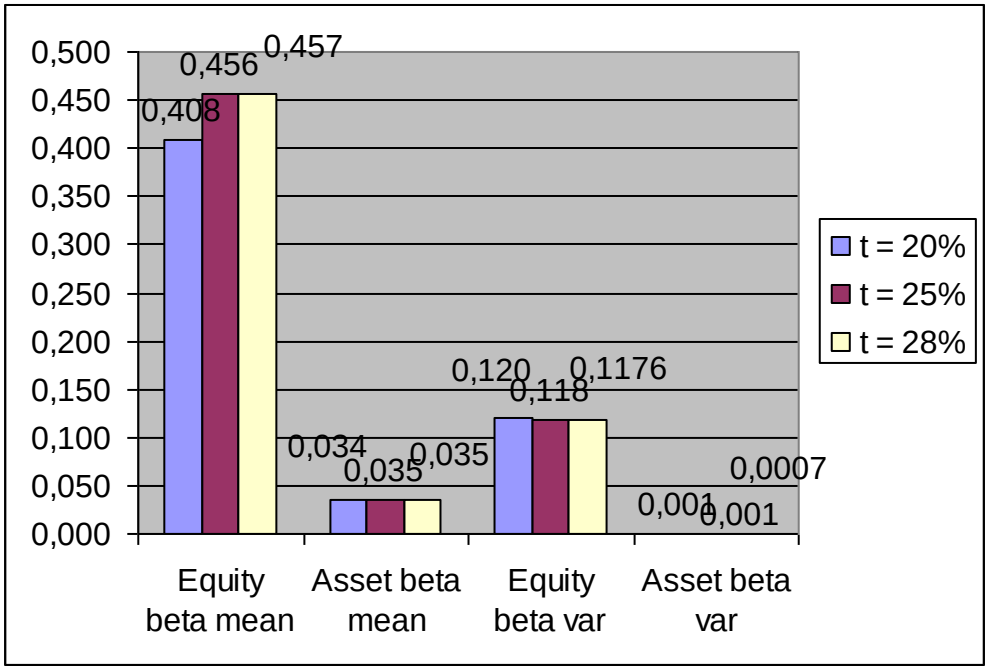


Chart 3 – Comparing statistical results of three (3) scenarios of changing tax rate (2007-2011)



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9. Risk analysis

On the one hand, in the case of decreasing tax rate, (20%), the market and companies can receive more benefits such as generating more jobs, output and compensation, but the government budget can have deficit and the government has to cut expenditures. Hence, changes in tax rates can have both positive and negative impacts on the local market.

On the other hand, in the case of increasing tax rate (28%), the government will have budget to finance public expenditures but the income tax burden could reduce both demand and supply, as well as the output, jobs and compensation.

10. Conclusion and Policy suggestion

In summary, the government has to consider the impacts on the mobility of capital in the markets when it changes the tax policy or tax rates. Besides, it continues to increase the effectiveness of building the legal system and regulation and macro policies supporting the plan of developing both the construction together with the real estate market. The Ministry of Finance Continue to increase the effectiveness of fiscal policies and tax policies which are needed to combine with other macro policies at the same time, although we could note that in this study when tax rate is going to increase up to 28%, the risk level does not increase so much, compared to the case it is going to decrease down to 20%. And the risk dispersion during 2007-2009 (asset beta var of 0,003) is higher than that during 2009-2011 (0, 0008) and higher than that during 2007-2011 (0,001) in case tax 25%.

The State Bank of Viet Nam continues to increase the effectiveness of capital providing channels for both construction and real estate companies. Furthermore, the entire efforts among many different government bodies need to be coordinated.

Finally, this paper suggests implications for further research and policy suggestion for the Viet Nam government and relevant organizations, economists and investors from current market conditions. Although it provides many results, it also has some limitation such as: not comparing the results with all other industries.

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Exhibit

Exhibit 1 – Interest rates in banking industry during crisis
(Source: Viet Nam commercial banks)

Year	Borrowing Interest rates	Deposit Rates	Note
2011	18%-22%	13%-14%	
2010	19%-20%	13%-14%	Approximately
2009	9%-12%	9%-10%	(2007: required reserves ratio at SBV is changed from 5% to 10%)
2008	19%-21%	15%-16,5%	
2007	12%-15%	9%-11%	(2009: special supporting interest rate is 4%)

Exhibit 2 – Basic interest rate changes in Viet Nam
(Source: State Bank of Viet Nam and Viet Nam economy)

Year	Basic rate	Note
2011	9%	
2010	8%	
2009	7%	
2008	8,75%-14%	Approximately, fluctuated
2007	8,25%	
2006	8,25%	
2005	7,8%	
2004	7,5%	
2003	7,5%	
2002	7,44%	
2001	7,2%-8,7%	Approximately, fluctuated
2000	9%	

Exhibit 3 – Inflation, GDP growth and macroeconomics factors
(Source: Viet Nam commercial banks and economic statistical bureau)

Year	Inflation	GDP	USD/VND rate
2011	18%	5,89%	20.670
2010	11,75% (Estimated at Dec 2010)	6,5% (expected)	19.495
2009	6,88%	5,2%	17.000
2008	22%	6,23%	17.700
2007	12,63%	8,44%	16.132
2006	6,6%	8,17%	
2005	8,4%		
Note	approximately		

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Exhibit 4: GDP growth Việt Nam 2006-2010 (*source: Bureau Statistic*)

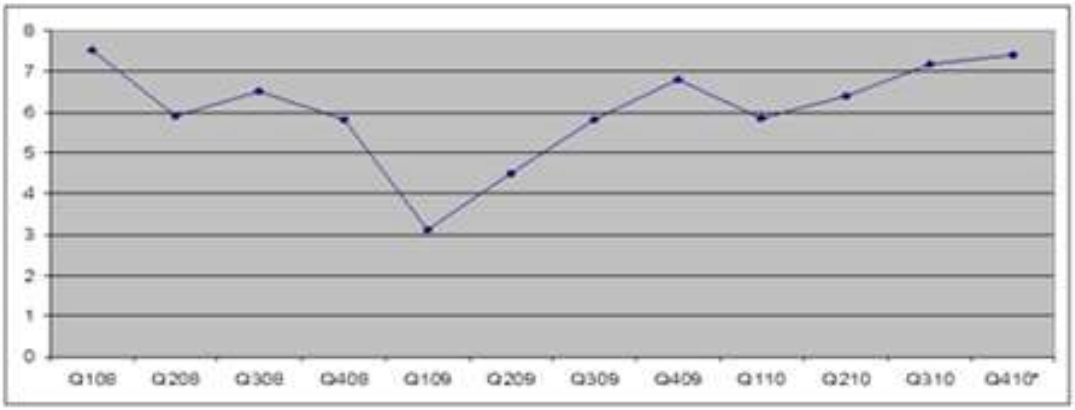


Exhibit 5: Risk and financial leverage of 9 listed banking firms on VN stock exchange period 2007-2011

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Financial leverage
1	ACB	0,7874	0,0378	95,2%
2	CTG	0,5540	0,0312	94,4%
3	EIB	0,3847	0,0365	90,5%
4	HBB	0,1335	0,0138	89,7%
5	MBB	0,0722	0,0054	92,5%
6	NVB	0,0211	0,0026	87,7%
7	SHB	1,0038	0,0824	91,8%
8	STB	0,7395	0,0721	90,3%
9	VCB	0,4083	0,0299	92,7%

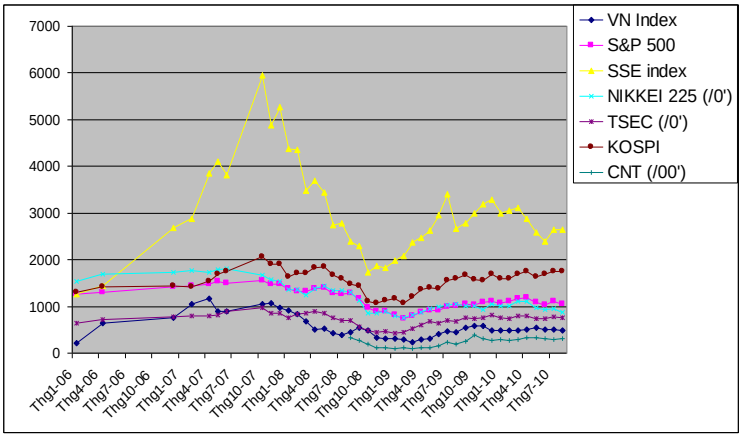
Exhibit 6 – Increase/decrease risk level of listed banking firms under changing scenarios of tax rates: 25%, 28%, 20% period 2007 - 2009

Order No.	Company stock code	t = 25%		t = 28%		t = 20%	
		Equity beta	Asset beta	Increase /Decrease (equity beta)	Increase /Decrease (asset beta)	Increase /Decrease (equity beta)	Increase /Decrease (asset beta)
1	ACB	0,850	0,083	0,0000	0,0000	-0,0622	-0,0450
2	CTG	0,415	0,024	0,0000	0,0000	0,1385	0,0074
3	EIB	0,629	0,145	0,0000	0,0000	-0,2441	-0,1084
4	HBB	0,135	0,016	0,0048	0,0006	-0,0083	-0,0029

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5	MBB	0,081	0,009	0,0030	0,0003	-0,0125	-0,0035
6	NVB	0,021	0,003	0,0015	0,0002	-0,0024	-0,0006
7	SHB	1,011	0,113	0,0000	0,0000	-0,0077	-0,0308
8	STB	0,826	0,089	0,0000	0,0000	-0,0861	-0,0167
9	VCB	0,473	0,030	0,0000	0,0000	-0,0649	-0,0005
	Average			0,0010	0,0001	-0,0389	-0,0223

Exhibit 7- VNI Index and other stock market index during crisis 2006-2010



Author note: My sincere thanks are for the editorial office and Lecturers/Doctors at Banking University and International University of Japan. Through the qualitative analysis, please kindly email me if any error found.

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