academicresearchJournals

Vol. 2(1), pp. 1-9, April 2014
ISSN: 2384-6151© 2014 Academic Research Journals
http://www.academicresearchjournals.org/IJEBM/Index.htm

International Journal of Economic and Business Management

Full Length Research

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

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Accepted 16 April 2014

The emerging stock market in Viet Nam has been developed since 2006 and affected by the financial crisis 2007-2009. This study analyzes the impacts of tax policy on market risk for the listed firms in the insurance industry as it becomes necessary.
First, by using quantitative and analytical methods to estimate asset and equity beta of total 7 listed companies in Viet Nam insurance 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 -0,147, -0,157 and -0,164.
Third, by changing tax rates in 3 scenarios (25%, 20% and 28%), we recognized both equity and asset beta mean values have negative 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.

Key words : beta, capital structure, economic crisis, risk, tax rate, insurance industry
JEL CLASSIFICATION : G010, G100, G390

INTRODUCTION

Together with the development of the whole economy and the growth of FDI, throughout many recent years, Viet Nam insurance industry is considered as one of active economic sectors, which has some positive effects for the economy. During the global economic crisis, there is certain effect on macro factors such as inflation and interest rates which later on generates some impacts on the stock exchange market and investment trend. Whereas GDP is maintained at 5 – 6% and is actually not a main factor affecting market risk, high lending rates will discourage borrowers and therefore reduce the output as well as have negative impact on beta or market risk. After the year 2009, the positive impacts from government demand stimulating policies start to come into effect. This research paper will identify and quantify the impacts of tax rates in the local market on beta or market risk of insurance firms.

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.

RESEARCH ISSUES

We mention some issues on the estimating of impacts of tax rates on beta for listed insurance companies in Viet

Nam stock exchange as following:
Issue 1: Whether the risk level of insurance 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 insurance 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.

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.
Smith (2004) mentions in Chicago, properties located in a designated TIF (tax increment financing) district will exhibit higher rates of appreciation after the area is designated a qualifying TIF district when compared to those properties selling outside TIF districts, and when compared to properties that sell within TIF district boundaries prior to designation.
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.
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. Huy, DTN (2013) pointed there comes a need for analyzing riskiness of many industries in Viet Nam stock market during the financial crisis period 2007-2011. Finally, tax rate can be considered as one among many factors that affect business risk of insurance firms.

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 insurance 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.

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 insurance 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.

General Data Analysis

The research sample has total 7 listed firms in the insurance 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 -0,100, -0,104 and -0,107 which are negatively correlated with tax rate. Also in 3 scenarios, we find out var of asset beta estimated at

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

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage
1	BVH	0,485	0,143		73,9%
2	PVI	1,006	0,436		38,1%
3	ABI	-1,592	-1,143		63,8%
4	BIC	-0,627	-0,169	ABI as comparable	67,3%
5	BMI	1,255	0,803		41,0%
6	PGI	-0,828	-0,389	ABI as comparable	55,2%
7	PTI	-0,802	-0,411	ABI as comparable	56,7%

Table 2. Market risks of listed insurance firms (t = 28%)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage
1	BVH	0,485	0,143		73,9%
2	PVI	1,006	0,436		38,1%
3	ABI	-1,592	-1,143		63,8%
4	BIC	-0,642	-0,174	ABI as comparable	67,3%
5	BMI	1,255	0,803		41,0%
6	PGI	-0,844	-0,397	ABI as comparable	55,2%
7	PTI	-0,819	-0,419	ABI as comparable	56,7%

0,403, 0,406 and 0,407 (almost the same) which shows acceptable risk dispersion. Tax rate changes almost has no effect on asset beta var under financial leverage.

EMPIRICAL RESEARCH FINDINGS AND DISCUSSION

In the below section, data used are from total 7 listed insurance 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 7 listed firms on VN insurance market as following:

7.2. Scenario 2: tax rate increases up to 28%
If corporate tax rates increases up to 28%, all beta values of total 7 listed firms on VN insurance market as below:

7.3. Scenario 3: tax rate decreases down to 20%
If corporate tax rate decreases down to 20%, all beta values of total 7 listed firms on the insurance market in VN as following:

All three tables (Table 1, 2 and 3) 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 .

Comparing statistical results in 3 scenarios of changing tax rate:

Based on the Table 4, 5 and 6 the results, we find out:
Equity beta mean values in all 3 scenarios are low (< 0) and asset beta mean values are also small (<0) 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 -1,592 (min) up to 1,255 (max) and asset beta fluctuates from -1,143 (min) up to 0,803 (max). If corporate tax rate

Table 3. Market risk of listed insurance firms (t = 20%)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage
1	BVH	0,485	0,143		73,9%
2	PVI	1,006	0,436		38,1%
3	ABI	-1,592	-1,143		63,8%
4	BIC	-0,602	-0,163	ABI as comparable	67,3%
5	BMI	1,255	0,803		41,0%
6	PGI	-0,802	-0,377	ABI as comparable	55,2%
7	PTI	-0,777	-0,398	ABI as comparable	56,7%

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

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	1,255	0,803	0,4519
MIN	-1,592	-1,143	-0,4494
MEAN	-0,157	-0,104	-0,0532
VAR	1,1508	0,4057	0,7451
Note: Sample size : 7			

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

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	1,255	0,803	0,4519
MIN	-1,592	-1,143	-0,4494
MEAN	-0,164	-0,107	-0,0572
VAR	1,1604	0,4074	0,7530
Note: Sample size : 7			

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

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	1,255	0,803	0,4519
MIN	-1,592	-1,143	-0,4494
MEAN	-0,147	-0,100	-0,0469
VAR	1,1359	0,4031	0,7328
Note: Sample size : 7			

increases to 28%, equity beta and asset beta move in an unchanged range. When tax rate decreases down to 20%, equity beta value and asset beta also fluctuate in an unchanged ranage.

Beside, Exhibit 6 informs us that in the case 28% tax rate, average equity beta value of 7 listed firms

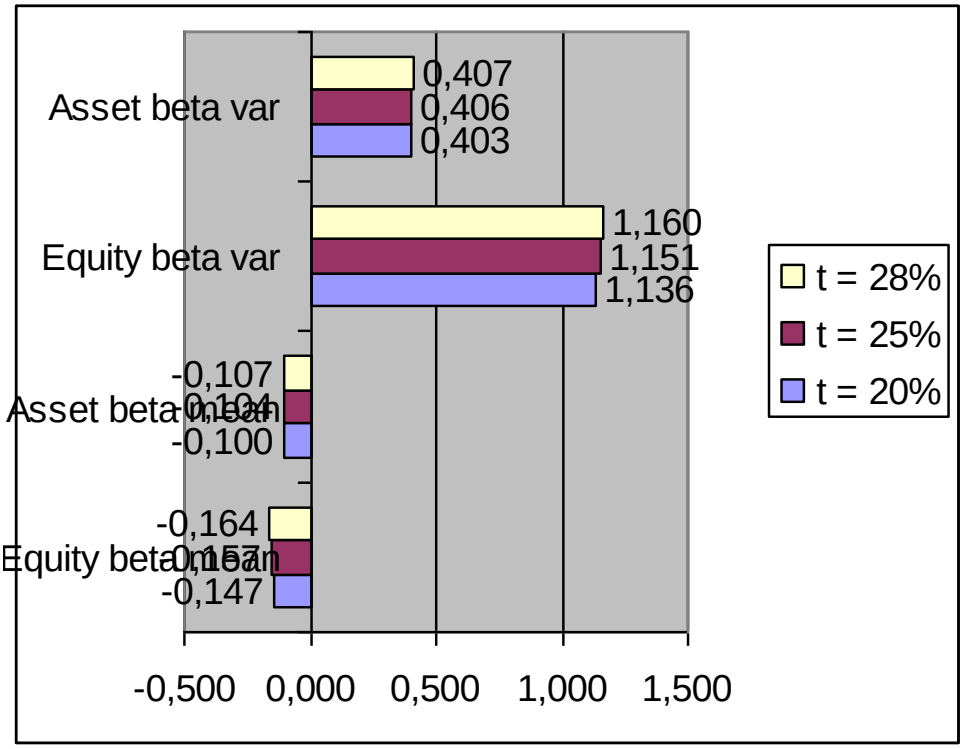

Figure 1. Comparing statistical results of three (3) scenarios of changing tax rate (2007-2009)

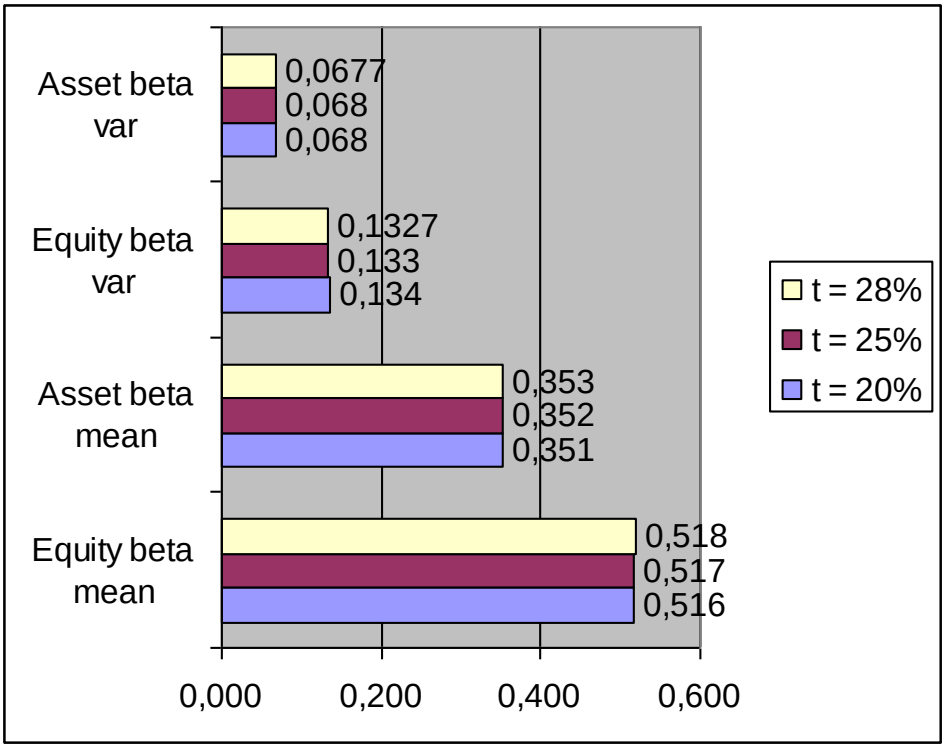

Figure 2. Comparing statistical results of three (3) scenarios of changing tax rate (2007-2011)

decreases down to -0,007 while average asset beta value of these 7 firms decrease slightly up to -0,003. Then, when tax rate reduces to 20%, average equity beta value of 7 listed firms goes up to 0,011 and average asset bet value of 7 firms up to 0,005.

The below Figure 1 and 2 shows us : when tax rate decreases down to 20%, average equity and asset beta values increase slightly (-0,147 and -0,100) compared to those at the initial rate of 25% (-0,157 and -0,104), which shows opposite movement compared to the market index. At the same time, when tax rate increases up to 28%, average equity beta decreases slightly whereas average asset beta value remains unchanged (to -0,164 and -0,107). However, the fluctuation of equity beta value (1,160) in the case of 28% tax rate is higher than (>) the results in the rest 2 tax rate cases.

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.

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. Beside, it continues to increase the effectiveness of building the legal system and regulation and macro policies supporting the plan of developing insurance 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 0,406) is higher than that during 2007-2011 (0,068) in case tax 25%.

The State Bank of Viet Nam continues to increase the effectiveness of capital providing channels for insurance 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.

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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%	Approximately (2007: required reserves ratio at SBV is changed from 5% to 10%) (2009: special supporting interest rate is 4%)
2010	19%-20%	13%-14%	
2009	9%-12%	9%-10%	
2008	19%-21%	15%-16,5%	
2007	12%-15%	9%-11%	

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		

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

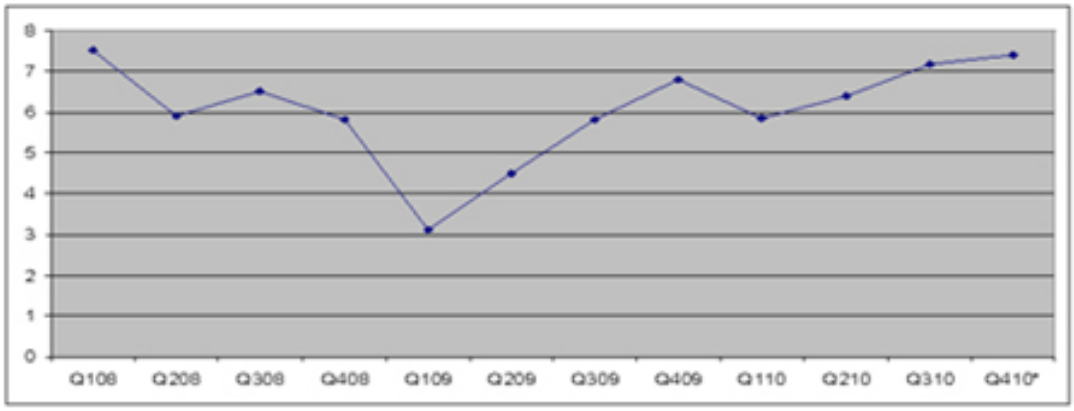


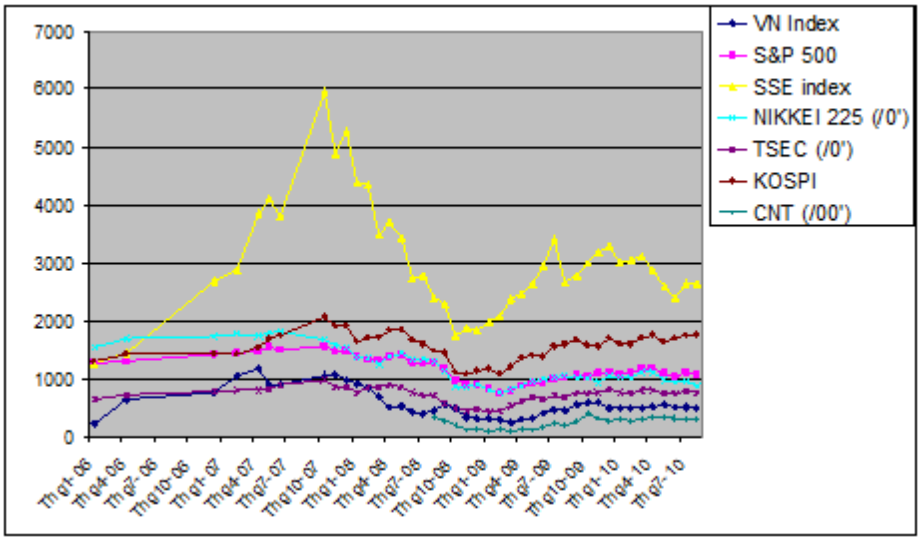
Exhibit 5: Risk and financial leverage of 9 listed banking firms on VN stock exchange period 2007-2011

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

		t = 25%		t = 28%		t = 20%	
Order No.	Company stock code	Equity beta	Asset beta	Increase /Decrease (equity beta)	Increase /Decrease (asset beta)	Increase /Decrease (equity beta)	Increase /Decrease (asset beta)
1	BVH	0,485	0,143	0,000	0,000	0,000	0,000
2	PVI	1,006	0,436	0,000	0,000	0,000	0,000
3	ABI	-1,592	-1,143	0,000	0,000	0,000	0,000
4	BIC	-0,627	-0,169	-0,016	-0,004	0,024	0,007
5	BMI	1,255	0,803	0,000	0,000	0,000	0,000
6	PGI	-0,828	-0,389	-0,016	-0,008	0,026	0,012
7	PTI	-0,802	-0,411	-0,016	-0,008	0,026	0,013
Average				**-0,007**	**-0,003**	**0,011**	**0,005**

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.