Tax Rates Effects on the Risk Level of Listed Viet Nam Wholesale and Retail Firms during Global Economic Crisis 2007-2009

Dinh Tran Ngoc Huy*

Abstract

The emerging stock market in Viet Nam has been developed since 2006 and was affected by the financial crisis 2007-2009. This study analyzes the impacts of tax policy on market risk for the listed firms in the wholesale and retail 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 wholesale and retail 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 0,603, 0,609 and 0,613. Third, by changing tax rates in 3 scenarios (25%, 20% and 28%), we recognized that 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.

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*MBA, PhD candidate, Banking University HCMC, Viet Nam – GSIM International University of Japan, Japan, dtnhuy2010@gmail.com

1. Introduction

Together with the development of the whole economy and the growth of FDI, throughout many recent years, Viet Nam wholesale and retail industry is considered as one of the active economic sectors, which has some positive effects for the economy.

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

2. Research Issues

We mention some issues on the estimating of impacts of tax rates on beta for listed wholesale and retail companies in Viet Nam stock exchange as follows:

Issue 1: Whether the risk level of wholesale and retail 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 wholesale and retail industry.

Besides, 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

Smith (2004) mentions that 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.

David (2009) stated that the U.S states can increase the likelihood of using tax rate adjustments to cope with fiscal volatility rather than (more harmful) spending fluctuations. Robert et all (2011) recognized a significant positive relation between changes in intercorporate investment and changes in corporate marginal tax rates on ordinary income.

George and Jot Yau (2012) found that there is a positive relationship between transaction cost and price volatility, suggesting that the imposition of a transaction tax could increase financial market fragility, increasing the likelihood of a financial crisis rather than reducing it. Mark (2012) found out in some European countries during the crisis raising tax rates and tax burdens, the trend in which overall revenue levels were broadly stable, while marginal rates in corporate and top personal income declined has stopped. Then, Filip (2012) believed that low levels of taxation, esp. low levels of taxation on the income or wealth of the so-called productive segments of society, are beneficial for economic growth.

Next, Ruud et al. (2013) said that greater tax bias is associated with significantly higher aggregate bank leverage, and this in turn is associated with a significantly greater chance of crisis.

Then, Sung, Mark and Laura (2013) also indicated that business property values are more responsive to changes in tax rates as compared to residential property.

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

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 wholesale and retail 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, philosophical and tax rate scenario analysis methods are used. Analytical data is from the situation of listed wholesale and retail firms in VN stock exchange and current tax rate is 25%. We select three

(3) tax scenarios: 20%, 25% and 28% which can be considered as suitable tax scenarios in the current economic conditions.

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

6. General Data Analysis

The research sample has a total of 9 listed firms in the wholesale and retail 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 0,323, 0,327 and 0,328 which are negatively correlated with tax rate. Also in 3 scenarios, we found out var of asset beta estimated at 0,026 (almost the same) which shows acceptable risk dispersion. Tax rate changes almost have no effect on asset beta var under financial leverage.

7. Empirical Research Findings and Discussion

In the section below, data used are from a total of 9 listed wholesale and retail companies on VN stock exchange (HOSE and HNX mainly). In 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 wholesale and retail market are as follows:

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

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage
1	HHS	0,818	0,538	PIT as comparable	34,2%
2	IMT	0,296	0,286	TH1 as comparable	3,4%
3	TH1	0,501	0,196		60,8%
4	BSC	0,395	0,330	FBA as comparable	18,7%
5	PET	1,170	0,322		72,4%
6	BTT	0,722	0,561	PIT as comparable	22,8%
7	CMV	0,341	0,112	PIT as comparable	67,9%
8	PIT	0,881	0,447		49,2%
9	VT1	0,358	0,156	BTT as comparable	57,5%

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

If corporate tax rate increases up to 28%, all beta values of a total of 9 listed firms on VN wholesale and retail market are as shown below:

Table 2 – Market risks of listed wholesale and retail firms (t = 28%)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage
1	HHS	0,818	0,538	PIT as comparable	34,2%
2	IMT	0,297	0,287	TH1 as comparable	3,4%
3	TH1	0,512	0,201		60,8%
4	BSC	0,397	0,323	FBA as comparable	18,7%
5	PET	1,170	0,322		72,4%
6	BTT	0,727	0,561	PIT as comparable	22,8%
7	CMV	0,349	0,112	PIT as comparable	67,9%
8	PIT	0,881	0,447		49,2%
9	VT1	0,368	0,156	BTT as comparable	57,5%

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

If corporate tax rate decreases down to 20%, all beta values of a total of 9 listed firms on the wholesale and retail market in VN are as follows:

Table 3 – Market risk of listed wholesale and retail firms (t = 20%)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage
1	HHS	0,818	0,538	PIT as comparable	34,2%
2	IMT	0,296	0,286	TH1 as comparable	3,4%
3	TH1	0,484	0,190		60,8%
4	BSC	0,391	0,318	FBA as comparable	18,7%
5	PET	1,170	0,322		72,4%
6	BTT	0,713	0,551	PIT as comparable	22,8%
7	CMV	0,328	0,105	PIT as comparable	67,9%
8	PIT	0,881	0,447		49,2%
9	VT1	0,342	0,145	BTT as comparable	57,5%

All the data in the three tables above 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	1,170	0,561	0,6083
MIN	0,296	0,112	0,1841
MEAN	0,609	0,328	0,2812
VAR	0,0919	0,0260	0,0659
Note: Sample size : 9			

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

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	1,170	0,561	0,6083
MIN	0,297	0,112	0,1844
MEAN	0,613	0,328	0,2857
VAR	0,0904	0,0259	0,0645
Note: Sample size : 9			

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

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	1,170	0,551	0,6191
MIN	0,296	0,105	0,1907
MEAN	0,603	0,323	0,2800
VAR	0,0943	0,0265	0,0678

Based on the above results, we find out:

Equity beta mean values in all 3 scenarios are low (< 0,7) and asset beta mean values are also small (<0,4) 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 0,296 (min) up to 1,17 (max) and asset beta fluctuates from 0,112 (min) up to 0,561 (max). If corporate tax rate increases to 28%, equity beta changes from 0,297 to 1,17 and asset beta move in an unchanged range. When tax rate decreases down to 20%, equity beta value also fluctuates in an unchanged range whereas asset beta changes from 0,105 to 0,551 (showing a decrease in asset beta min).

Besides, Exhibit 6 informs us that in the case of 28% tax rate, average equity beta value of 9 listed firms increases down to 0,004 while average asset beta value of these 9 firms increases more up to 0,214. Then, when tax rate reduces

to 20%, average equity beta value of 9 listed firms goes down to -0,007 and average asset beta value of 9 firms up to 0,209.

Chart 1 below shows us : when tax rate decreases down to 20%, average equity and asset beta values increase slightly (0,603 and 0,323) compared to those at the initial rate of 25% (0,609 and 0,327), 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 0,613 and 0,328). However, the fluctuation of equity beta value (0,094) in the case of 20% tax rate is higher than (>) the results in the rest 2 tax rate cases.

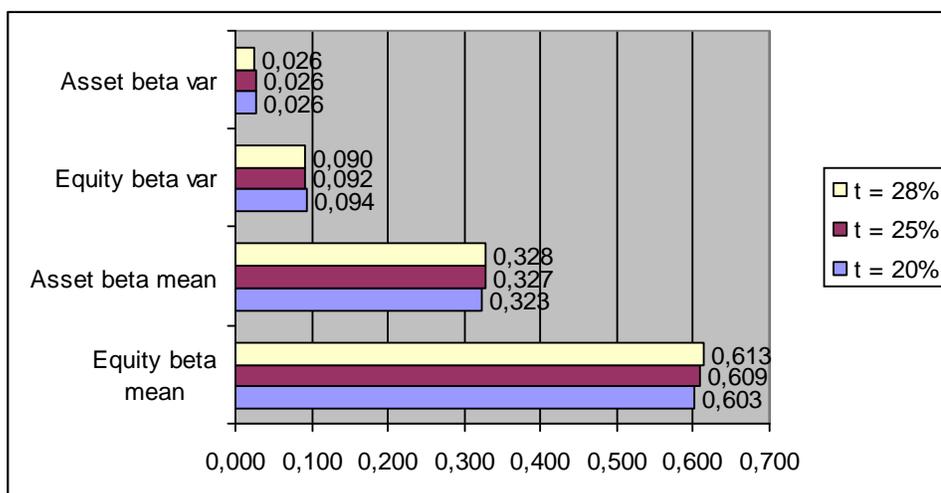Chart 1 – Comparing statistical results of three (3) scenarios of changing tax rate (2007-2009)
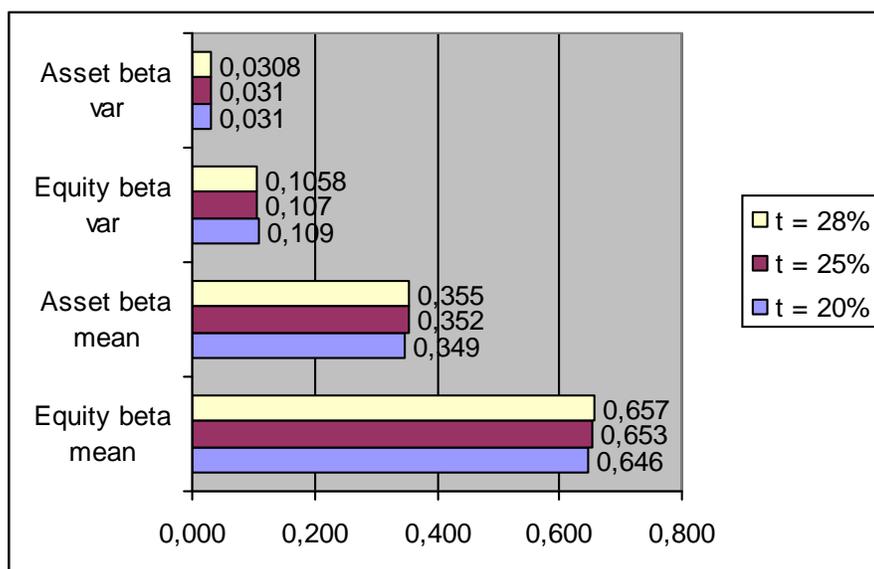
Chart 2 – Comparing statistical results of three (3) scenarios of changing tax rate (2007-2011)

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.

Our calculations give the results of two betas: equity and asset beta which can be used in the CAPM model and in WACC formula to estimate cost of equity and cost of capital.

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 wholesale and retail market. The Ministry of Finance Continues 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 0,026) is smaller than that during 2007-2011 (0,031) in the case of 25% tax.

The State Bank of Viet Nam continues to increase the effectiveness of capital providing channels for wholesale and retail 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. For example, we recognize that the government can increase public expenditure if tax rate increases up to 28%, otherwise it has to borrow to finance government expenses.

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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 macroeconomic 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 Vi t Nam 2006-2010 (*source: Bureau Statistic*)
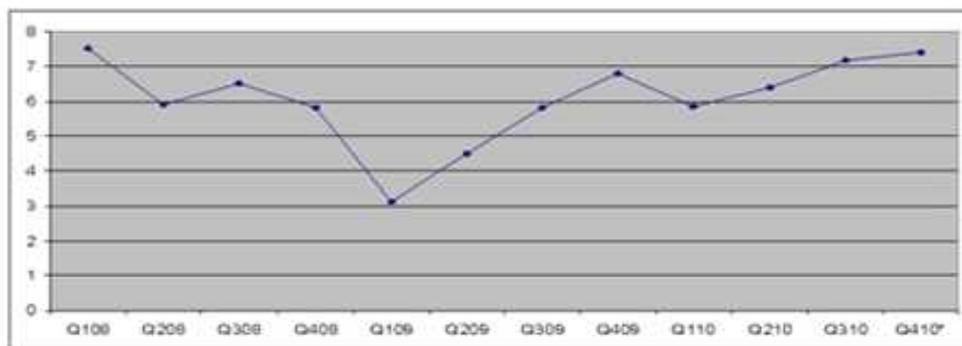

Exhibit 5: Risk and financial leverage of 9 listed banking firms on VN stock exchange period 2007-2011

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 wholesale and retail 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	HHS	0,818	0,538	0,000	0,000	0,000	0,000
2	IMT	0,296	0,286	0,000	0,000	-0,001	0,000
3	TH1	0,501	0,196	0,011	0,004	-0,017	-0,007
4	BSC	0,395	0,000	0,002	0,323	-0,004	0,318
5	PET	1,170	0,000	0,000	0,322	0,000	0,322
6	BTT	0,722	0,000	0,005	0,561	-0,009	0,551
7	CMV	0,341	0,000	0,009	0,112	-0,013	0,105
8	PIT	0,881	0,000	0,000	0,447	0,000	0,447
9	VT1	0,358	0,000	0,010	0,156	-0,016	0,145
	Average			0,004	0,214	-0,007	0,209

Exhibit 7- VNI Index and other stock market index during crisis (2006-2010)
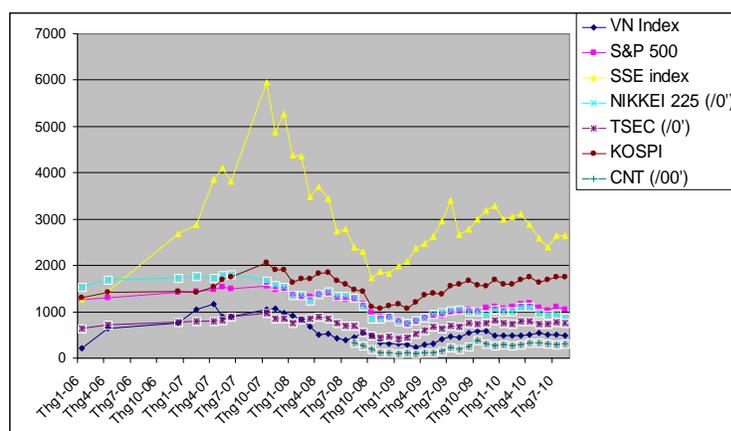
Author note: My sincere thanks go to the editorial office and Lecturers/Doctors at Banking University and International University of Japan. Through the qualitative analysis, please kindly email me if any error is found.