

“Whether different changing tax rates cause the increase or decrease of the risk level of listed Vietnam banking firms?”

AUTHORS	Dinh Tran Ngoc Huy Humayun Kabir
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Dinh Tran Ngoc Huy (Japan), Humayun Kabir (South Africa)

# Whether different changing tax rates cause the increase or decrease of the risk level of listed Vietnam banking firms?

## Abstract

The emerging stock market in Vietnam has been developed since 2006 and affected by the financial crisis of 2007-2009. This study analyzes 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 Vietnam banking industry with a proper traditional model, the authors find 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%), the authors recognize that there is not large disperse in equity beta values, estimated at 0.408, 0.456 and 0.457. These values are lower than those of the listed Vietnam construction firms. Third, by changing tax rates in 3 scenarios (25%, 20% and 28%), the authors recognize both equity and asset beta mean values have positive relationship with the increasing levels of tax rate. Finally, this paper provides some outcomes that can provide companies and government more evidence in establishing their policies in governance.

**Keywords:** equity beta, financial structure, financial crisis, risk, tax rate, banking industry.

**JEL Classification:** G10, G39.

## Introduction

Together with the development of the whole economy and the growth of foreign direct investment (FDI), throughout many recent years, Vietnam banking industry is considered as one of active economic sectors, which has some positive effects for the economy.

This paper is organized as follow. The research issues and literature review will be covered in next sections 1 and 2, for a short summary. Then, methodology and conceptual theories are introduced in sections 3 and 4. Section 5 describes the data in empirical analysis. Section 6 presents empirical results and findings. Next, section 7 covers the analytical results. Then, section 8 presents analysis of risk. The final section concludes with some policy suggestions. This paper also supports readers with references, exhibits and relevant web sources.

## 1. Research issues

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

**Issue 1.** Whether the risk level of banking firms under the different changing scenarios of tax rates increase or decrease greatly.

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

## 2. Literature review

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.

David (2009) stated 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 al. (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 was 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 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 decline had stopped. Then, Filip (2012) believed low levels of taxation, especially low levels of taxation on the income or wealth of the so-called productive segments of society were beneficial for economic growth.

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

## 3. Conceptual theories

**3.1. 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 construction 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, concerns about fiscal policies or public policies of many countries, in both developed and developing markets are raised. 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.

#### 4. Methodology

In this study, we use the live data during the crisis period of 2007-2011 from the stock exchange market in Vietnam (HOSE and HNX) to estimate systemic risk results and tax impacts.

In this research, analytical research method philosophical method and specially, tax rate scenario analysis method are used. Analytical data is from the situation of listed banking firms in Vietnam stock exchange and current tax rate is 25%.

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

#### 5. 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, 0,035 and 0,035 which are almost the same. Also in 3 scenarios, the authors find out var of asset beta estimated at 0.001, 0.001 and 0.0007 (almost the same) which show small risk dispersion. Tax rate changes almost have no effect on asset beta var under financial leverage.

#### 6. Empirical research findings and discussion

In the section below, data used are from total 9 listed banking companies on Vietnam 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.

**6.1. Scenario 1.** Current tax rate is 25%. In the case of tax rate of 25%, all beta values of 9 listed firms on Vietnam banking market as follows.

Table 1. Market risk of listed companies on Vietnam banking market ( $t = 25\%$ )

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)
1	ACB	0.7874	0.0378
2	CTG	0.5540	0.0312
3	EIB	0.3847	0.0365
4	HBB	0.1335	0.0138
5	MBB	0.0722	0.0054
6	NVB	0.0211	0.0026
7	SHB	1.0038	0.0824
8	STB	0.7395	0.0721
9	VCB	0.4083	0.0299

**6.2. 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 Vietnam banking market are as follows.

Table 2. Market risks of listed banking firms ( $t = 28\%$ )

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)
1	ACB	0.7874	0.0378
2	CTG	0.5540	0.0312
3	EIB	0.3847	0.0365
4	HBB	0.1383	0.0143
5	MBB	0.0749	0.0056
6	NVB	0.0226	0.0028
7	SHB	1.0038	0.0824
8	STB	0.7395	0.0721
9	VCB	0.4083	0.0299

**6.3. 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 Vietnam banking market are as follows.

Table 3. Market risk of listed banking firms ( $t = 20\%$ )

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)
1	ACB	0.7874	0.0378
2	CTG	0.5540	0.0312
3	EIB	0.3847	0.0365
4	HBB	0.1262	0.0130
5	MBB	0.0681	0.0051
6	NVB	0.0189	0.0023
7	SHB	1.0038	0.0824
8	STB	0.7395	0.0721
9	VCB	0.4083	0.0299

All three tables above 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.

### 7. 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	1.004	0.082	0.9214
MIN	0.021	0.003	0.0185
MEAN	0.456	0.035	0.4214
VAR	0.1185	0.0008	0.1177

Note: Sample size is 9.

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

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	1.004	0.082	0.9214
MIN	0.023	0.003	0.0198
MEAN	0.457	0.035	0.4223
VAR	0.1176	0.0007	0.1169

Note: Sample size is 9.

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 is 9.

Based on the above results, the authors find out:

Equity beta mean values in all 3 scenarios are low ( $< 1$ ) and asset beta mean values are also small 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 1,004 (max) and asset beta fluctuates from 0,003 (min) up to 0.082 (max). If corporate tax rate increases to 28%, equity beta moves from 0.023 (min) up to 1,004 (max) and asset beta moves from 0.003 (min) up to 0.082 (max). Hence, we note that there is a change 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 increase in equity beta min value when tax rate increases in scenario 2 and a small decrease when tax rate decreases in scenario 3. Beside, Table 6A (in Appendix) 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 more

slightly up to 0,0001. Then, when tax rate reduces to 20%, average equity beta value of 9 listed firms reduces to 0.0015 and average asset beta value of 9 firms downs to 0,0001.

Figure 1 (in Appendix) shows us: when tax rate decreases down to 20%, average equity and asset beta values decrease slightly (0.408 và 0.0034) compared to those at the initial rate of 25% (0,456 và 0.0035). At the same time, when tax rate increases up to 28%, average equity beta increases slightly whereas average asset beta value remains unchanged (to 0.457 và 0,0035). However, the fluctuation of equity and asset beta values (0.120 và 0.001) in the case of 20% tax rate is higher than or equal to ( $> =$ ) the results in the rest 2 tax rate cases.

### 8. 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.

### Conclusions

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 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%.

The State Bank of Vietnam 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 Vietnam government and relevant organizations, economists and investors from current market conditions.

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## Appendix

Table 1A. Interest rates in banking industry during crisis

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%	

Source: Vietnam commercial banks.

Table 2A. Basic interest rate changes in Vietnam

Year	Basic rate	Note
2011	9%	Approximately, fluctuated
2010	8%	
2009	7%	
2008	8.75%-14%	
2007	8.25%	
2006	8.25%	Approximately, fluctuated
2005	7.8%	
2004	7.5%	
2003	7.5%	
2002	7.44%	
2001	7.2%-8.7%	Approximately, fluctuated
2000	9%	

Source: State bank of Vietnam and Vietnam economy.

Table 3A. Inflation, GDP growth and macroeconomics factors

Year	Inflation	GDP	USD/VND rate
2011	18%	5.89%	20.670
2010	11.75% (estimated on 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		

Source: Vietnam commercial banks and economic statistical bureau.

Table 4A. Risk and financial leverage of 9 listed banking firms on Vietnam Stock Exchange in period of 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%

Table 5A. Increase/decrease risk level of listed banking firms under changing scenarios of tax rates 25%, 28%, 20%, 2007-2011

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	0.7874	0.0378	0.0000	0.0000	0.0000	0.0000
2	CTG	0.5540	0.0312	0.0000	0.0000	0.0000	0.0000
3	EIB	0.3847	0.0365	0.0000	0.0000	0.0000	0.0000
4	HBB	0.1335	0.0138	0.0048	0.0005	-0.0073	-0.0008
5	MBB	0.0722	0.0054	0.0027	0.0002	-0.0041	-0.0003
6	NVB	0.0211	0.0026	0.0015	0.0002	-0.0022	-0.0003
7	SHB	1.0038	0.0824	0.0000	0.0000	0.0000	0.0000
8	STB	0.7395	0.0721	0.0000	0.0000	0.0000	0.0000
9	VCB	0.4083	0.0299	0.0000	0.0000	0.0000	0.0000
	Average			0.0010	0.0001	-0.0015	-0.0001

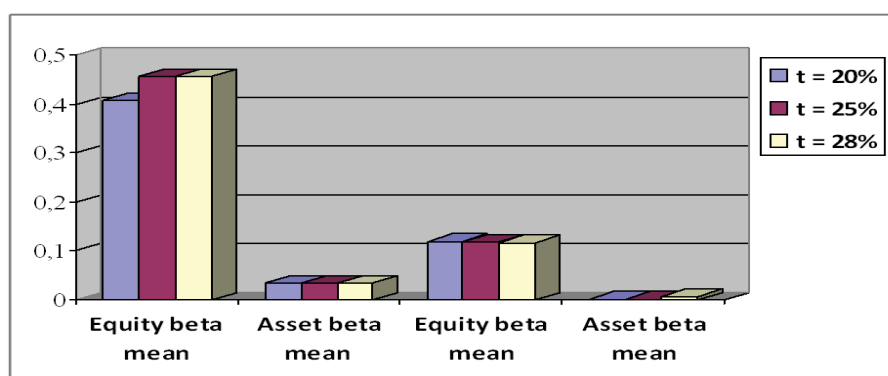
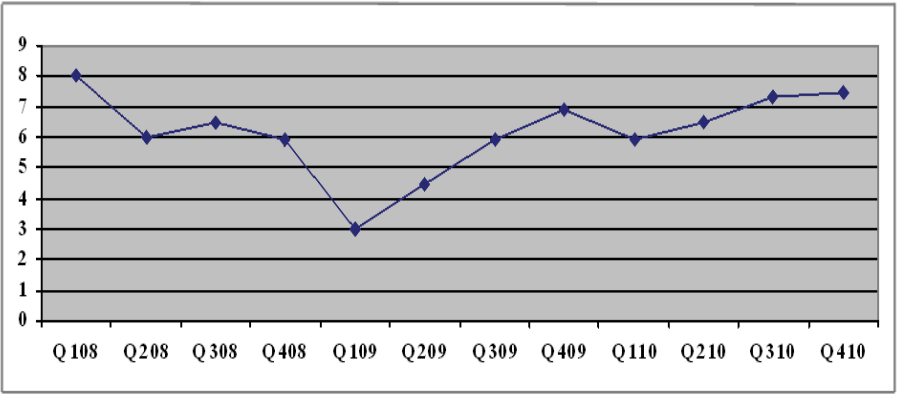


Fig. 1. Comparing statistical results of three (3) scenarios of changing tax rate





Source: Bureau Statistic.

Fig. 2. GDP growth Vietnam 2006-2010

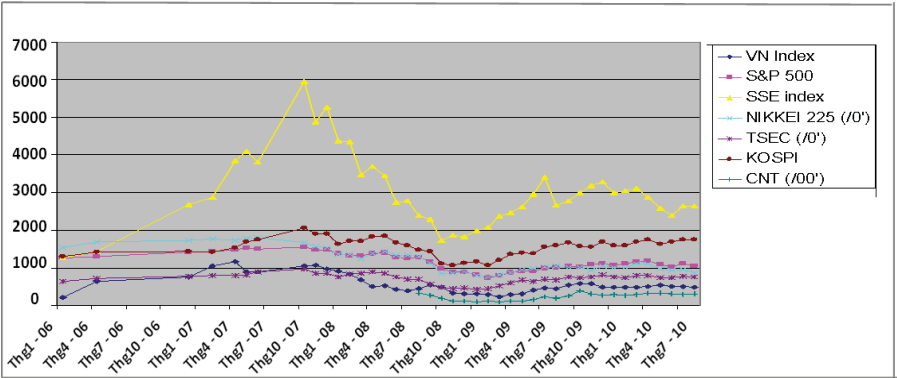


Fig. 3. VNI index and other stock market index during crisis of 2006-2010