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Tax rates effects on the risk level of listed Viet Nam real estate 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 analyzes the impacts of tax policy on market risk for the listed firms in the real estate industry as it becomes necessary. First, by using quantitative and analytical methods to estimate asset and equity beta of total 45 listed companies in Viet Nam real estate 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 0.750, 0.762 and 0.769. 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.

Keywords: beta, capital structure, economic crisis, risk, tax rate, real estate industry.

1. Introduction

Together with the development of the whole economy and the growth of FDI, throughout many recent years, Viet Nam real estate 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 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 real estate companies in Viet Nam stock exchange as following:

Issue 1: Whether the risk level of real estate 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 real estate 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

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 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 in some European countries during the crisis raising taxe 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 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.

Finally, tax rate can be considered as one among many factors that affect business risk of real estate 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 real estate 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 insurance firms in VN stock exchange and current 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 45 listed firms in the real estate 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 0.362, 0.367 and 0.370 which are negatively correlated with tax rate. Also in 3 scenarios, we find out var of asset beta estimated at 0.750, 0.762 and 0.769 (almost the same) which shows acceptable 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 45 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 45 listed firms on VN real estate market as following:

Table 1: Market risk of listed companies on VN real estate market (t = 25%)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage
1	API	1.686	1.580	RCL as comparable	6.3%
2	ASM	0.495	0.173	HDC as comparable	65.0%
3	BCI	1.161	0.523		55.0%
4	CCI	0.476	0.145	UIC as comparable	69.4%
5	CLG	0.383	0.092	UIC as comparable	75.9%
6	D2D	1.446	0.533		63.2%
8	DLG	0.596	0.198	SC5 as comparable	66.9%
9	DTA	0.974	0.466	RCL as comparable	52.2%
10	DXG	0.145	0.046	LGL as comparable	68.4%
11	HAG	0.632	0.295		53.3%
12	HDC	1.185	0.425		64.2%
13	HDG	0.253	0.099	LHG as comparable	61.0%
14	IDJ	1.198	0.776	API as comparable	35.2%
15	IDV	0.428	0.082	RCL as comparable	80.7%
16	IJC	0.411	0.120	BCI as comparable	70.9%
17	ITA	1.121	0.749		33.2%
18	ITC	0.591	0.338	NBB as comparable	42.8%
19	KBC	0.945	0.371		60.7%
20	KDH	1.071	0.670	LCG as comparable	37.5%
21	LCG	1.552	0.923		40.5%
22	LGL	0.381	0.168	PPI as comparable	56.1%
23	LHG	0.548	0.215	DLG as comparable	60.8%

24	NBB	0.923	0.317		65.6%
25	NHA	1.399	1.034	RCL as comparable	26.1%
26	NTL	1.557	0.701		55.0%
27	NVN	0.167	0.061	CLG as comparable	63.3%
28	OGC	0.593	0.271	ITA as comparable	54.3%
29	PDR	0.194	0.078	IJC as comparable	59.9%
30	PPI	0.746	0.332	D2D as comparable	55.5%
31	PVL	0.110	0.078	DXG as comparable	29.6%
32	QCG	0.718	0.290	SJS as comparable	59.5%
33	RCL	1.770	0.991		44.0%
34	SC5	1.497	0.240		84.0%
35	SDU	0.128	0.053	VCR as comparable	58.5%
36	SJS	1.509	0.799		47.1%
37	SZL	0.425	0.258		39.3%
38	TDH	1.103	0.722		34.5%
39	TIX	0.202	0.082	SZL as comparable	59.6%
40	UDC	0.216	0.071	LHG as comparable	67.2%
41	UIC	1.286	0.357		72.2%
42	VCR	0.263	0.165	LGL as comparable	37.4%
43	VIC	0.755	0.186		75.4%
44	VPH	0.070	0.019	UDC as comparable	73.5%
45	VRC	0.203	0.073	CCI as comparable	64.1%

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

If corporate tax rates increases up to 28%, all beta values of total 45 listed firms on VN real estate market as below:

Table 2: Market risks of listed real estate firms (t = 28%)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage
1	API	1.6891	1.5835	RCL as comparable	6.3%
2	ASM	0.5066	0.1772	HDC as comparable	65.0%
3	BCI	1.1606	0.5225		55.0%
4	CCI	0.4880	0.1491	UIC as comparable	69.4%
5	CLG	0.3938	0.0950	UIC as comparable	75.9%
6	D2D	1.4459	0.5326		63.2%
8	DLG	0.6107	0.2024	SC5 as comparable	66.9%
9	DTA	0.9915	0.4742	RCL as comparable	52.2%
10	DXG	0.1548	0.0489	LGL as comparable	68.4%
11	HAG	0.6324	0.2955		53.3%
12	HDC	1.1847	0.4247		64.2%
13	HDG	0.2637	0.1030	LHG as comparable	61.0%
14	IDJ	1.2141	0.7866	API as comparable	35.2%
15	IDV	0.4409	0.0850	RCL as comparable	80.7%

16	IJC	0.4218	0.1229	BCI as comparable	70.9%
17	ITA	1.1212	0.7488		33.2%
18	ITC	0.5999	0.3432	NBB as comparable	42.8%
19	KBC	0.9455	0.3713		60.7%
20	KDH	1.0841	0.6780	LCG as comparable	37.5%
21	LCG	1.5516	0.9225		40.5%
22	LGL	0.3967	0.1743	PPI as comparable	56.1%
23	LHG	0.5602	0.2199	DLG as comparable	60.8%
24	NBB	0.9232	0.3171		65.6%
25	NHA	1.4110	1.0424	RCL as comparable	26.1%
26	NTL	1.5570	0.7011		55.0%
27	NVN	0.1756	0.0644	CLG as comparable	63.3%
28	OGC	0.6041	0.2760	ITA as comparable	54.3%
29	PDR	0.2032	0.0815	IJC as comparable	59.9%
30	PPI	0.7611	0.3383	D2D as comparable	55.5%
31	PVL	0.1188	0.0836	DXG as comparable	29.6%
32	QCG	0.7331	0.2967	SJS as comparable	59.5%
33	RCL	1.7702	0.9910		44.0%
34	SC5	1.4974	0.2396		84.0%
35	SDU	0.1377	0.0571	VCR as comparable	58.5%
36	SJS	1.5094	0.7989		47.1%
37	SZL	0.4252	0.2579		39.3%
38	TDH	1.1026	0.7220		34.5%
39	TIX	0.2062	0.0833	SZL as comparable	59.6%
40	UDC	0.2261	0.0741	LHG as comparable	67.2%
41	UIC	1.2863	0.3573		72.2%
42	VCR	0.2775	0.1738	LGL as comparable	37.4%
43	VIC	0.7551	0.1860		75.4%
44	VPH	0.0753	0.0199	UDC as comparable	73.5%
45	VRC	0.2133	0.0765	CCI as comparable	64.1%

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

If corporate tax rate decreases down to 20%, all beta values of total 45 listed firms on the real estate market in VN as following:

Table 3: Market risk of listed real estate firms (t = 20%)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage
1	API	1.6805	1.5754	RCL as comparable	6.3%
2	ASM	0.4763	0.1666	HDC as comparable	65.0%
3	BCI	1.1606	0.5225		55.0%
4	CCI	0.4565	0.1395	UIC as comparable	69.4%
5	CLG	0.3657	0.0882	UIC as comparable	75.9%
6	D2D	1.4459	0.5326		63.2%
8	DLG	0.5730	0.1899	SC5 as	66.9%

				comparable	
9	DTA	0.9453	0.4521	RCL as comparable	52.2%
10	DXG	0.1308	0.0413	LGL as comparable	68.4%
11	HAG	0.6324	0.2955		53.3%
12	HDC	1.1847	0.4247		64.2%
13	HDG	0.2353	0.0919	LHG as comparable	61.0%
14	IDJ	1.1713	0.7589	API as comparable	35.2%
15	IDV	0.4069	0.0784	RCL as comparable	80.7%
16	IJC	0.3940	0.1148	BCI as comparable	70.9%
17	ITA	1.1212	0.7488		33.2%
18	ITC	0.5775	0.3303	NBB as comparable	42.8%
19	KBC	0.9455	0.3713		60.7%
20	KDH	1.0490	0.6560	LCG as comparable	37.5%
21	LCG	1.5516	0.9225		40.5%
22	LGL	0.3578	0.1572	PPI as comparable	56.1%
23	LHG	0.5292	0.2077	DLG as comparable	60.8%
24	NBB	0.9232	0.3171		65.6%
25	NHA	1.3799	1.0194	RCL as comparable	26.1%
26	NTL	1.5570	0.7011		55.0%
27	NVN	0.1535	0.0563	CLG as comparable	63.3%
28	OGC	0.5746	0.2625	ITA as comparable	54.3%
29	PDR	0.1795	0.0719	IJC as comparable	59.9%
30	PPI	0.7230	0.3214	D2D as comparable	55.5%
31	PVL	0.0978	0.0688	DXG as comparable	29.6%
32	QCG	0.6934	0.2806	SJS as comparable	59.5%
33	RCL	1.7702	0.9910		44.0%
34	SC5	1.4974	0.2396		84.0%
35	SDU	0.1138	0.0472	VCR as comparable	58.5%
36	SJS	1.5094	0.7989		47.1%
37	SZL	0.4252	0.2579		39.3%
38	TDH	1.1026	0.7220		34.5%
39	TIX	0.1950	0.0788	SZL as comparable	59.6%
40	UDC	0.2003	0.0656	LHG as comparable	67.2%
41	UIC	1.2863	0.3573		72.2%
42	VCR	0.2422	0.1517	LGL as comparable	37.4%
43	VIC	0.7551	0.1860		75.4%
44	VPH	0.0621	0.0164	UDC as comparable	73.5%
45	VRC	0.1878	0.0673	CCI as comparable	64.1%

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	1.770	1.580	0.190
MIN	0.070	0.019	0.051
MEAN	0.762	0.367	0.394
VAR	0.2577	0.1149	0.143

Note: Sample size : 45

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

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	1.770	1.583	0.187
MIN	0.075	0.020	0.055
MEAN	0.769	0.370	0.398
VAR	0.2546	0.1148	0.140

Note: Sample size : 45

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

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	1.770	1.575	0.195
MIN	0.062	0.016	0.046
MEAN	0.750	0.362	0.388
VAR	0.2624	0.1151	0.147

Note: Sample size : 45

Based on the above results, we find out:

Equity beta mean values in all 3 scenarios are low (< 0,8) 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 0.07 (min) up to 1.77 (max) and asset beta fluctuates from 0,019 (min) up to 1.58 (max). If corporate tax rate increases to 28%, equity beta changes from 0.075 to 1.77 and asset beta move in a range from 0.02 to 1.583. When tax rate decreases down to 20%, equity beta value changes from 0.062 to 1.77 and asset beta fluctuates in a range from 0.016 to 1.575.

Beside, Exhibit 6 informs us that in the case 28% tax rate, average equity beta value of 45 listed firms increases to 0.007 while average asset beta value of these 45 firms increase slightly up to 0.003. Then, when tax rate reduces to 20%, average equity beta value of 45 listed firms goes down to -0.01 and average asset beta value of 45 firms down to -0.005.

The below chart 1 shows us : when tax rate decreases down to 20%, average equity and asset beta values increase slightly (0.750 and 0.362) compared to those at the initial rate of 25% (0.762 and 0.367), 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 0.769 and 0.370). However, the fluctuation of equity beta value (0.262) 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)

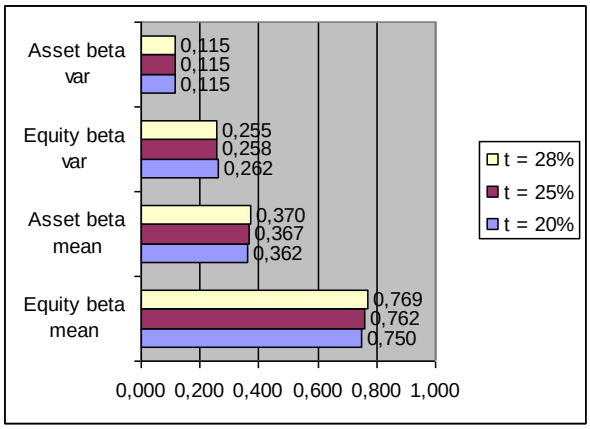
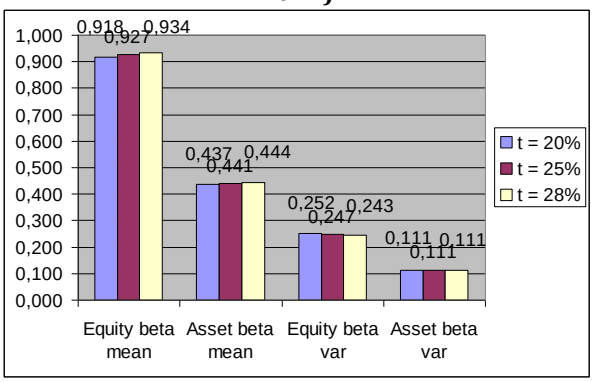


Chart 2 – Comparing statistical results of three (3) scenarios of changing tax rate (2007-2011)



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.

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. Beside, it continues to increase the effectiveness of building the legal system and regulation and macro policies supporting the plan of developing 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 0.115) is higher than that during 2007-2011 (0.111) in case tax 25%.

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

Appendix A. Supplementary material

Supplementary data associated with this article can be found, in the online version, at https://doi.org/10.14254/jems.2018.3-2.3

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Appendix B

Exhibit

Exhibit 1: Interest rates in banking industry during crisis

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%	(2009: special supporting interest rate is 4%)
2007	12%-15%	9%-11%	

(Source: Viet Nam commercial banks)

Exhibit 2: Basic interest rate changes in Viet Nam

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%	

(Source: State Bank of Viet Nam and Viet Nam economy)

Exhibit 3: Inflation, GDP growth and macroeconomics factors

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	

(Source: Viet Nam commercial banks and economic statistical bureau)

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

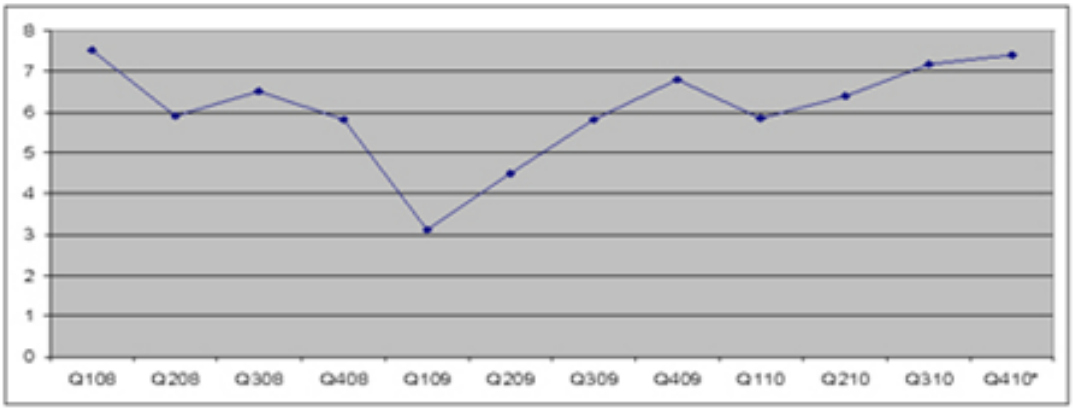


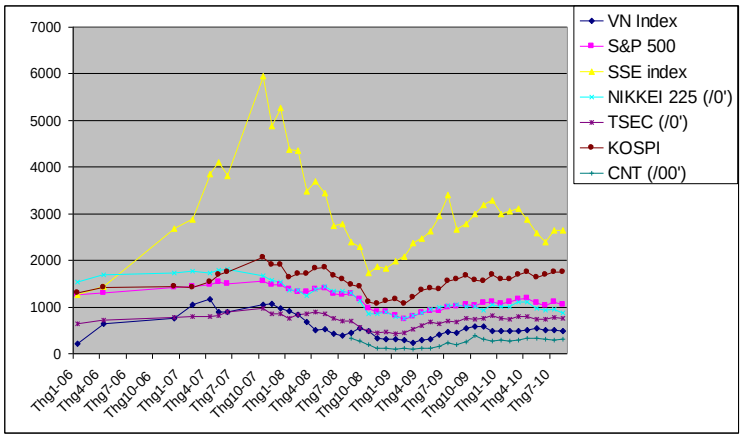
Exhibit 5: Risk and financial leverage of 9 listed banking firms on VN stock exchange period 2007-2011

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 real estate 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	API	1.686	1.580	0.0032	0,0030	-0.0053	-0.0050
2	ASM	0.495	0.173	0.0118	0,0041	-0.0185	-0.0065
3	BCI	1.161	0.523	0.0000	0,0000	0.0000	0.0000
4	CCI	0.476	0.145	0.0123	0,0038	-0.0192	-0.0059
5	CLG	0.383	0.092	0.0111	0,0027	-0.0171	-0.0041
6	D2D	1.446	0.533	0.0000	0,0000	0.0000	0.0000
8	DLG	0.596	0.198	0.0147	0,0049	-0.0230	-0.0076
9	DTA	0.974	0.466	0.0178	0,0085	-0.0284	-0.0136
10	DXG	0.145	0.046	0.0097	0,0030	-0.0144	-0.0045
11	HAG	0.632	0.295	0.0000	0,0000	0.0000	0.0000
12	HDC	1.185	0.425	0.0000	0,0000	0.0000	0.0000
13	HDG	0.253	0.099	0.0112	0,0044	-0.0172	-0.0067
14	IDJ	1.198	0.776	0.0163	0,0106	-0.0264	-0.0171
15	IDV	0.428	0.082	0.0134	0,0026	-0.0206	-0.0040
16	IJC	0.411	0.120	0.0109	0,0032	-0.0170	-0.0049
17	ITA	1.121	0.749	0.0000	0,0000	0.0000	0.0000
18	ITC	0.591	0.338	0.0086	0,0049	-0.0138	-0.0079
19	KBC	0.945	0.371	0.0000	0,0000	0.0000	0.0000
20	KDH	1.071	0.670	0.0134	0,0084	-0.0217	-0.0136
21	LCG	1.552	0.923	0.0000	0,0000	0.0000	0.0000
22	LGL	0.381	0.168	0.0153	0,0067	-0.0236	-0.0104
23	LHG	0.548	0.215	0.0120	0,0047	-0.0190	-0.0074
24	NBB	0.923	0.317	0.0000	0,0000	0.0000	0.0000
25	NHA	1.399	1.034	0.0118	0,0087	-0.0193	-0.0142
26	NTL	1.557	0.701	0.0000	0,0000	0.0000	0.0000
27	NVN	0.167	0.061	0.0088	0,0032	-0.0132	-0.0049
28	OGC	0.593	0.271	0.0114	0,0052	-0.0181	-0.0082
29	PDR	0.194	0.078	0.0094	0,0038	-0.0143	-0.0057
30	PPI	0.746	0.332	0.0147	0,0065	-0.0233	-0.0104
31	PVL	0.110	0.078	0.0085	0,0060	-0.0125	-0.0088
32	QCG	0.718	0.290	0.0154	0,0062	-0.0242	-0.0098
33	RCL	1.770	0.991	0.0000	0,0000	0.0000	0.0000
34	SC5	1.497	0.240	0.0000	0,0000	0.0000	0.0000
35	SDU	0.128	0.053	0.0096	0,0040	-0.0142	-0.0059
36	SJS	1.509	0.799	0.0000	0,0000	0.0000	0.0000
37	SZL	0.425	0.258	0.0000	0,0000	0.0000	0.0000
38	TDH	1.103	0.722	0.0000	0,0000	0.0000	0.0000
39	TIX	0.202	0.082	0.0043	0,0017	-0.0068	-0.0028
40	UDC	0.216	0.071	0.0102	0,0033	-0.0156	-0.0051
41	UIC	1.286	0.357	0.0000	0,0000	0.0000	0.0000
42	VCR	0.263	0.165	0.0140	0,0088	-0.0213	-0.0133
43	VIC	0.755	0.186	0.0000	0,0000	0.0000	0.0000
44	VPH	0.070	0.019	0.0054	0,0014	-0.0078	-0.0021
45	VRC	0.203	0.073	0.0101	0,0036	-0.0154	-0.0055
Average				**0,0072**	**0.0031**	**-0.0112**	**-0.0049**

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



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