THE RISK LEVEL OF VIETNAM NON-BANKING INVESTMENT AND FINANCIAL SERVICES INDUSTRY UNDER FINANCIAL LEVERAGE DURING AND AFTER THE GLOBAL CRISIS 2007-2011

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Abstract

This paper estimates the impacts of external financing on market risk for the listed firms in the Vietnam non-banking financial services industry, esp. after the financial crisis 2007-2009.
First, by using quantitative and analytical methods to estimate asset and equity beta of total 10 listed companies in Vietnam non-banking financial services 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 leverage (in 2011 financial reports, 30% up and 20% down), we recognized that the risk level, measured by equity and asset beta mean, decreases when leverage increases to 30% and vice versa.
Third, by changing leverage in 3 scenarios, we recognized the dispersion of risk level increases (measured by equity beta var) if the leverage decreases down to 20%.
Finally, this paper provides some outcomes that could provide companies and government more evidence in establishing their policies in governance**.

Keywords: Equity Beta; Financial Structure; Financial Crisis; Risk; External Financing; Investment and Financial Service Industry

JEL classification: G010, G100, G390

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1 Introduction

Financial system development has positively related to the economic growth, throughout many recent years, and Viet Nam non-banking investment and financial servies industry is considered as one of active economic sectors.

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.

2 Research Issues

We mention some issues on the estimating of impacts of external financing on beta for listed non-banking investment and financial servies companies in Viet Nam stock exchange as following:

Issue 1: Whether the risk level of non-banking investment and financial servies firms under the different changing scenarios of leverage increase or decrease so much.

Issue 2: Whether the dispersed distribution of beta values become large in the different changing scenarios of leverage estimated in the non-banking investment and financial servies industry.

3 Literature review

Scott (1976) indicated that the value of tax benefit is a major factor in capital structure. Black (1976) proposes the leverage effect to explain the negative correlation between equity returns and return volatilities. Mishkin (1983) analysis suggests that the negative relation between excess leverage and future returns can be explained by the market's failure to react promptly to the information in excess leverage about the firm's probability of distress and future asset growth. Levine (1991) said liquid markets can enable investment in long-term investment projects while at the same time allowing investors to have access to their savings at short-term notice. King and Levine (1993) stated financial institutions and markets allow cross-sectional diversification across projects, allowing risky innovative activity. Grgor and Steven (1996) found out that high leverage, not poor firm performance or poor industry performance, is the primary cause of financial distress for many firms who have positive positive operating income at the time of distress.

Next, Peter and Liuren (2007) mentions equity volatility increases proportionally with the level of financial leverage, the variation of which is dictated by managerial decisions on a company's capital structure based on economic conditions. And for a company with a fixed amount of debt, its financial leverage increases when the market price of its stock declines. Then, Chava and Purnanandam (2009) mentioned leverage is positively correlated with financial distress and distress intensity is negatively related to future returns.

Reinhart and Rogoff (2009) pointed the history of finance is full of boom-and-bust cycles, bank failures, and systemic bank and currency crises. Adrian and Shin (2010) stated a company can also proactively vary its financial leverage based on variations on market conditions.

Then, Harry and Rene (2013) pointed that because debt-equity neutrality assigns zero way to the social value of liquidity, it is an inappropriately equity-biased baseline for assessing whether the high leverage ratios of real-world banks are excessive or socially destructive.

Finally, financial leverage can be considered as one among many factors that affect business risk of consumer good firms.

4 Conceptual theories

4.1 The impact of financial leverage on the economy

A sound and effective financial system has positive effect on the development and growth of the economy. Financial institutions not only help businesses to reduce agency problems but also enable them to enhance liquidity capacity and long-term capital. And financial innovation also reduces the cost of diversification. So, finance and growth has interrelated.

In a specific industry such as non-banking financial service industry, on the one hand, using leverage with a decrease or increase in certain periods could affect tax obligations, revenues, profit after tax and technology innovation and compensation and jobs of the industry. Hence, financial leverage could positively affect firms' growth and investment opportunities.

During and after financial crises such as the 2007-2009 crisis, there raises concerns about the role of financial leverage of many countries, in both developed and developing markets. On the one hand, lending programs and packages might support the business sectors. On the other hand, it might create more risks for the business and economy.

5 Methodology

In order to calculate systemic risk results and leverage impacts, 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 and UPCOM).

In this research, analytical research method is used, philosophical method is used and specially, leverage scenario analysis method is used. Analytical data is from the situation of listed non-banking investment and financial servies 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 10 listed firms in the non-banking investment and financial servies 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 leverage from what reported in F.S 2011 to increasing 30% and reducing 20% to see the sensitivity of beta values. We found out that in 3 cases, asset beta mean values are estimated at 0,574, 0,422 and 0,675 which are negatively correlated with the leverage. Also in 3 scenarios, we find out equity beta mean values (1,050, 1,038 and 1,058) are also negatively correlated with the leverage and with the smaller gap. Leverage degree changes definitely has certain effects on asset and equity beta values.

7 Empirical Research Findings and Discussion

In the below section, data used are from total 10 listed non-banking investment and financial servies companies on VN stock exchange (HOSE and HNX mainly). In the scenario 1, current financial leverage degree is kept as in the 2011 financial statements which is used to calculate market risk (beta). Then, two (2) FL scenarios are changed up to 30% and down to 20%, compared to the current FL degree.

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

7.1 Scenario 1: current financial leverage (FL) as in financial reports 2011

In this case, all beta values of 10 listed firms on VN non-banking investment and financial servies market as following:

Table 1. Market risk of listed companies on VN non-banking investment and financial servies market

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage (F.S reports)
1	AGR	1,370	0,313		77,2%
2	APG	0,648	0,630	CLS as comparable	2,8%
3	APS	0,895	0,382		57,4%
4	AVS	0,546	0,425	CLS as comparable	22,1%
5	BSI	1,125	0,873	AGR as comparable	22,4%
6	BVS	2,159	1,592		26,3%
7	CLS	0,662	0,331		50,0%
8	CTS	0,812	0,546		32,8%
9	PVF	1,365	0,119		91,3%
10	VNR	0,922	0,525		43,0%
				Average	42,52%

7.2 Scenario 2: financial leverage increases up to 30%

If leverage increases up to 30%, all beta values of total 10 listed firms on VN non-banking investment and financial servies market as below:

Table 2. Market risks of listed non-banking investment and financial servies firms (case 2)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage (30% up)
1	AGR	1,370	-0,004		100,3%
2	APG	0,644	0,621	CLS as comparable	3,6%
3	APS	0,895	0,228		74,6%
4	AVS	0,508	0,363	CLS as comparable	28,7%
5	BSI	1,046	0,741	AGR as comparable	29,2%
6	BVS	2,159	1,422		34,1%
7	CLS	0,662	0,231		65,0%
8	CTS	0,812	0,466		42,6%
9	PVF	1,365	-0,255		118,7%
10	VNR	0,922	0,406		55,9%
				Average	55,3%

7.3 Scenario 3: leverage decreases down to 20%

If leverage decreases down to 20%, all beta values of total 10 listed firms on the non-banking investment and financial servies market in VN as following:

Table 3. Market risk of listed non-banking investment and financial servies firms (case 3)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage (20% down)
1	AGR	1,370	0,524		61,7%
2	APG	0,651	0,636	CLS as comparable	2,2%
3	APS	0,895	0,484		45,9%
4	AVS	0,570	0,469	CLS as comparable	17,7%
5	BSI	1,177	0,965	AGR as comparable	18,0%
6	BVS	2,159	1,705		21,0%
7	CLS	0,662	0,397		40,0%
8	CTS	0,812	0,599		26,2%
9	PVF	1,365	0,368		73,0%
10	VNR	0,922	0,604		34,4%
				Average	34,0%

All three above tables and data show that values of equity and asset beta in the case of increasing leverage up to 30% or decreasing leverage degree down to 20% have certain fluctuation.

8 Comparing statistical results in 3 scenarios of changing leverage

Table 4. Statistical results (FL in case 1)

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	2,159	1,592	0,5669
MIN	0,546	0,119	0,4268
MEAN	1,050	0,574	0,4767
VAR	0,2332	0,1694	0,0638
Note: Sample size : 10			

Table 5. Statistical results (FL in case 2)

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	2,159	1,422	0,7370
MIN	0,508	-0,255	0,7629
MEAN	1,038	0,422	0,6164
VAR	0,2372	0,2067	0,0305
Note: Sample size : 10			

Table 6. Statistical results (FL in case 3)

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	2,159	1,705	0,4535
MIN	0,570	0,368	0,2019
MEAN	1,058	0,675	0,3827
VAR	0,2314	0,1589	0,0725
Note: Sample size : 10			

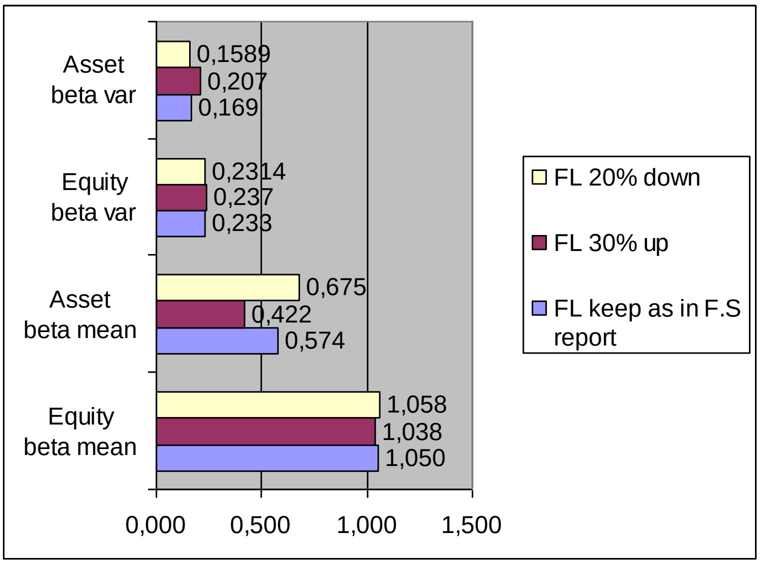
Based on the above results, we find out:

Equity beta mean values in all 3 scenarios are little high (< 1,1) and asset beta mean values are low (< 0,7) although max equity beta values in some cases might be higher than (>) 1. In the case of reported leverage in 2011, equity beta value fluctuates in an acceptable range from 0,546 (min) up to 2,159 (max) and asset beta fluctuates from 0,119 (min) up to 1,592 (max). If leverage increases to 30%, equity beta moves in a range from 0,508 (min) up to 2,159 (max unchanged) and asset beta moves from -0,255 (min) up to 1,422 (max). Hence, we note that there is a decrease in equity beta min value if leverage increases. When leverage decreases down to 20%, equity beta value still fluctuates in a range from 0,570 to 2,159 (max unchanged) and asset beta changes from 0,368 (min) up to 1,705 (max). So, there is a small increase in equity beta min value when leverage decreases in scenario 3.

Beside, Table A.4 informs us that in the case 30% leverage up, average equity beta value of 10 listed firms decreases down to 0,012 while average asset beta value of these 10 firms decreases little more up to 0,152. Then, when leverage reduces to 20%, average equity beta value of 10 listed firms goes up to 0,008 and average asset beta value of 10 firms up to 0,102.

The below Figure 1 shows us : when leverage degree decreases down to 20%, average equity and asset beta values increase slightly (1,058 and 0,675) compared to those at the initial rate in reports (1,050 and 0,574). Then, when leverage degree increases up to 30%, average equity beta decreases little more and average asset beta value also decreases more (to 1,038 and 0,422). However, the fluctuation of equity and asset beta value (0,231 and 0,159) in the case of 20% leverage down is lower than (>) the results in the rest 2 leverage cases.

Figure 1. Comparing statistical results of three (3) scenarios of changing FL



9 Risk analysis

In short, the using of financial leverage could have both negatively or positively impacts on the financial results or return on equity of a company. The more debt the firm uses, the more risk it takes. And FL is a factor that causes financial crises in many economies and firms. Using leverage too much indicates the firm met financial distress. In special perios such as financial crisis stages, firms become more careful with capital structure and financial leverage degree.

On the other hand, in the case of increasing leverage, the company will expect to get more returns. The financial leverage becomes worthwhile if the cost of additional financial leverage is lower than the additional earnings before taxes and interests (EBIT). FL has become a positive factor linking finance and growth in many companies. Beside, leverage choice could also become a determinant of firms' capital structure and financial risk.

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 macro policies. Beside, it continues to increase the effectiveness of building the legal system and regulation supporting the plan of developing consumer good 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. The State Bank of Viet Nam continues to increase the effectiveness of capital providing channels for non-banking financial service companies as we could note that in this study when leverage is going to increase up to 30%, the risk level decreases much (although the asset beta var increases), compared to the case it is going to decrease down to 20%.

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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Appendix A

Table A.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

Table A.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%	

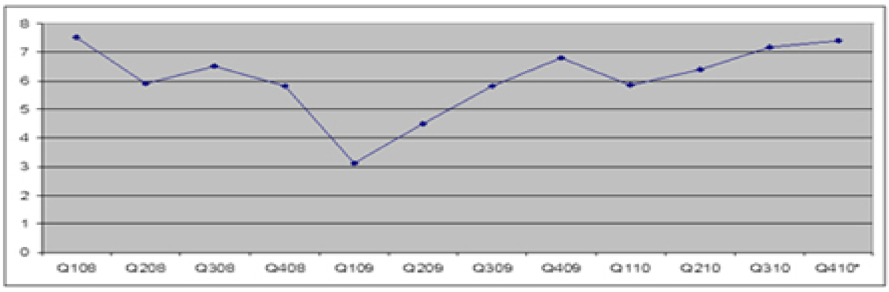
Source: State Bank of Viet Nam and Viet Nam economy

Table A.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

Figure A.1. GDP growth Việt Nam 2006-2010



Source: Bureau Statistic

Table A.4. Increase/decrease risk level of listed non-banking investment and financial servies firms under changing scenarios of leverage : in 2011 F.S reports, 30% up, 20% down in the period 2007 - 2011

Order No.	Company stock code	FL keep as in F.S report		FL 30% up		FL 20% down	
		Equity beta	Asset beta	Increase /Decrease (equity beta)	Increase /Decrease (asset beta)	Increase /Decrease (equity beta)	Increase /Decrease (asset beta)
1	AGR	1,370	0,313	0,000	-0,317	0,000	0,211
2	APG	0,648	0,630	-0,004	-0,009	0,003	0,006
3	APS	0,895	0,382	0,000	-0,154	0,000	0,103
4	AVS	0,546	0,425	-0,037	-0,063	0,024	0,044
5	BSI	1,125	0,873	-0,079	-0,132	0,051	0,092
6	BVS	2,159	1,592	0,000	-0,170	0,000	0,113
7	CLS	0,662	0,331	0,000	-0,099	0,000	0,066
8	CTS	0,812	0,546	0,000	-0,080	0,000	0,053
9	PVF	1,365	0,119	0,000	-0,374	0,000	0,249
10	VNR	0,922	0,525	0,000	-0,119	0,000	0,079
			Average	-0,012	-0,152	0,008	0,102

Figure A.2. VNI Index and other stock market index during crisis 2006-2010

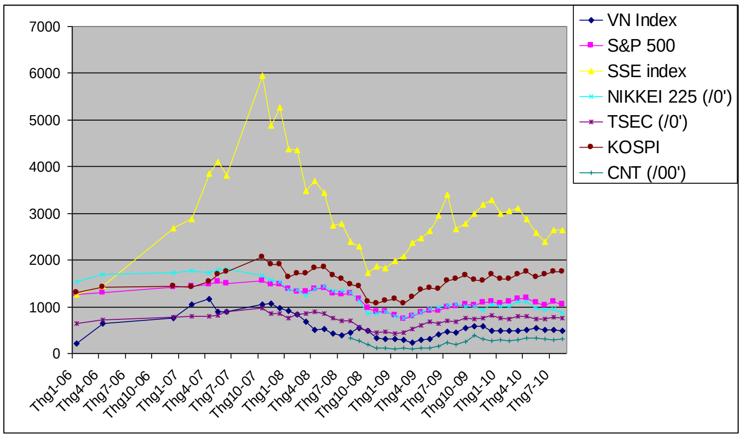


Figure A.3. Comparing statistical results of three (3) scenarios of changing FL of 121 listed firms in the consumer good industry