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Risk Level of Viet Nam Human Resource Industry under Financial Leverage during and After the Global Crisis 2007-2011

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Abstract

After the financial crisis 2007-2009, this paper evaluates the impacts of external financing on market risk for the listed firms in the Viet nam HR industry.
First, by using quantitative and analytical methods to estimate asset and equity beta of total 4 listed companies in Viet Nam HR 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 (asset beta mean of 0,27) when leverage increases to 30% and it increases (0,284) if leverage decreases down to 20%.
Third, by changing leverage in 3 scenarios, we recognized the dispersion of risk level, measured by equity and asset beta var, increases very slightly (0,222) if the leverage increases to 30%. But the difference in asset beta var value is quite small, showing leverage having not much impact.
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, HR industry
JEL Classification : G010, G100, G390

1. Introduction

Financial system development has positive effect for the economic growth, throughout many recent years, and Viet Nam HR industry is considered as one of active economic sectors in local financial markets, 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

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and findings. Next, session 8 covers the analytical results. Then, session 9 presents analysis of risk. Lastly, session 10 and 11 will present discussion and 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 HR industry companies in Viet Nam stock exchange as following:

Issue 1: Whether the risk level of HR and medical equipment industry firms under the different changing scenarios of leverage increase or decrease so much.

Issue 2: Whether the disperse distribution of beta values become large in the different changing scenarios of leverage estimated in the HR industry.

Beside, we also propose some hypotheses for the above issues:

Hypothesis 1: because using leverage may strongly affect business returns, changing leverage scenarios could strongly affect firm risk.

Hypothesis 2: as external financing is vital for the business development, there will be large disperse in beta or risk values estimated.

3. Literature review

Goldsmith (1969), Mc Kinnon (1973) and Shaw (1973) pointed a large and active theoretical and empirical literature has related dfinancial development to the economic growth process.

Black (1976) proposes the leverage effect to explain the negative correlation between equity returns and return volatilities. Diamond and Dybvig (1983) said banks can also help reduce liquidity risk and therefore enable long-term investment.

Next, Brennan et all (1984) pointed that a firm's capital structure is dynamic. Aghion et all (1999) stated debt instruments can reduce the amount of free cash available to firms and thus managerial slack.

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, Penman et all (2007) documented a negative association between leverage and future returns, after controlling for conventional risk proxies.

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. Marco (2012) found out in Euro region, asset risk, measured as the annualized volatility of the market enterprise value, is the best predictor of observed leverage ratios. Thomas and Fredrik (2012) pointed asset specificity has a negative impact on leverage, but a positive impact on debt maturity.

Then, Ana and John (2013) Binomial Leverage – Volatility theorem provides a precise link between leverage and volatility. Chen et all (2013) supports suspicions that over-reliance on short-term funding and insufficient collateral compounded the effects of dangerously high leverage and resulted in undercapitalization and excessive risk exposure for Lehman Brothers.

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

4. Conceptual theories

The impact of financial leverage on the economy

Financial development and economic growth are positively interrelated. The interaction between these two (2) fields can be considered as a circle, in which good financial development causes economic growth and vice versa. A sound and effective financial system has positive effect on the development and growth

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of the economy. Financial institutions and markets can enable corporations to solve liquidity needs and enhance long-term investments. This system include many channels for a firm who wants to use financial leverage or FL, which refers to debt or to the borrowing of funds to finance a company's assets.

In a specific industry such as HR 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. Financing decisions relate to the growth of investments, which create tax effects for companies.

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. FL On thehas been criticized as one factor contributing to financial crises. 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

For calculating 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 HR industry 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 4 listed firms in the HR industry 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 0,278, 0,270 and 0,284 which are negatively correlated with the leverage. Also in 3 scenarios, we find out equity beta mean values (0,469, 0,448 and 0,487) are also negatively correlated with the leverage. 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 4 listed HR industry 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 4 listed firms on VN HR industry market as following:

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Table 1 – Market risk of listed companies on VN HR industry market

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage
1	CMS	-0,063	-0,016	VCM as comparable	74,4%
2	ILC	0,635	0,226	SDA as comparable	64,5%
3	SDA	1,502	0,958		36,2%
4	VCM	-0,199	-0,058		71,1%
				Average	61,5%

7.2. Scenario 2: financial leverage increases up to 30%

If leverage increases up to 30%, all beta values of total 4 listed firms on VN HR industry market as below:

Table 2 – Market risks of listed HR industry firms (case 2)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage
1	CMS	-0,052	-0,013	SDA as comparable	96,7%
2	ILC	0,542	0,192	SDA as comparable	83,9%
3	SDA	1,502	0,958		47,1%
4	VCM	-0,199	-0,058	SDA as comparable	92,4%
				Average	80,0%

7.3. Scenario 3: leverage decreases down to 20%

If leverage decreases down to 20%, all beta values of total 4 listed firms on the HR industry market in VN as following:

Table 3 – Market risk of listed HR industry firms (case 3)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage
1	CMS	-0,072	-0,019	SDA as comparable	59,5%
2	ILC	0,718	0,255	SDA as comparable	51,6%
3	SDA	1,502	0,958		29,0%
4	VCM	-0,199	-0,058	SDA as comparable	56,8%
				Average	49,2%

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.

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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	1,502	0,958	0,5436
MIN	-0,199	-0,058	-0,1412
MEAN	0,469	0,278	0,1914
VAR	0,6075	0,2214	0,3861
Note: Sample size : 4			

Table 5 – Statistical results (FL in case 2)

Statistic results	**Equity beta**	**Asset beta (assume debt beta = 0)**	**Difference**
MAX	1,502	0,958	0,5436
MIN	-0,199	-0,058	-0,1412
MEAN	0,448	0,270	0,1783
VAR	0,5957	0,2223	0,3734
Note: Sample size : 4			

Table 6- Statistical results (FL in case 3)

Statistic results	**Equity beta**	**Asset beta (assume debt beta = 0)**	**Difference**
MAX	1,502	0,958	0,5436
MIN	-0,199	-0,058	-0,1412
MEAN	0,487	0,284	0,2029
VAR	0,6221	0,2211	0,4009
Note: Sample size : 4			

Based on the above results, we find out:

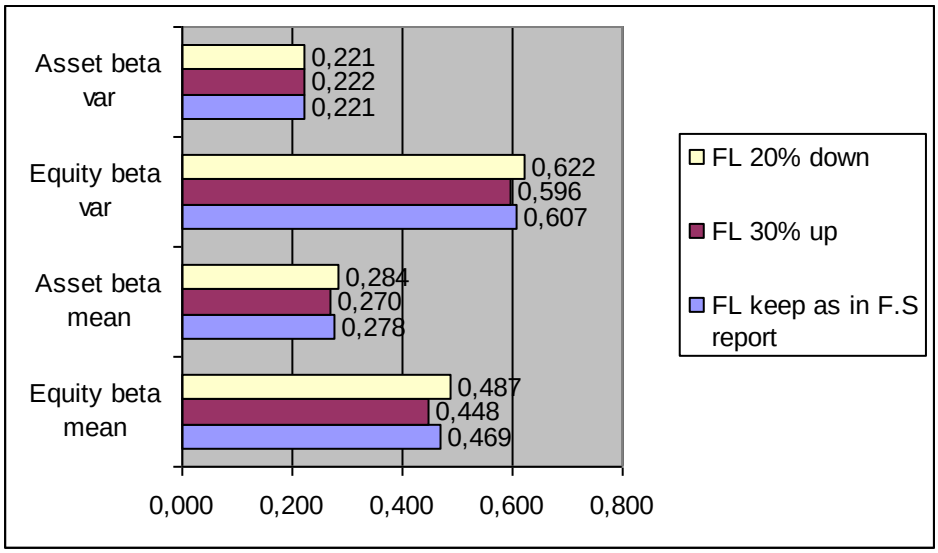
Equity beta mean values in all 3 scenarios are low (< 0,5) and asset beta mean values are also small (< 0,3) and max equity beta values in just a few cases are higher than (>) 1. In the case of reported leverage in 2011, equity beta value fluctuates in an acceptable range from -0,199 (min) up to 1,502 (max) and asset beta fluctuates from -0,058 (min) up to 0,958 (max). If leverage increases to 30%, equity and asset beta move in an unchanged range. Hence, we note that there is no impact of leverage on the moving range of asset /equity beta mean values. When leverage decreases down to 20%, equity and asset beta value also move in an unchanged range.

Beside, Exhibit 5 informs us that in the case 30% leverage up, average equity beta value of 4 listed firms decreases down to -0,021 while average asset beta value of these 4 firms decreases little to -0,008. Then, when leverage reduces to 20%, average equity beta value of 4 listed firms goes up to 0,018 and average asset beta value of 4 firms up to 0,007.

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The below chart 1 shows us : when leverage degree decreases down to 20%, average equity and asset beta values increase slightly (0,487 and 0,284) compared to those at the initial reported leverage (0,469 and 0,278). Then, when leverage degree increases up to 30%, average equity beta decreases little more and average asset beta value also decreases more (0,448 and 0,270). However, the fluctuation of equity beta value (0,622) in the case of 20% leverage down is higher than (>) the results in the rest 2 cases.

Chart 1 – Comparing statistical results of three (3) scenarios of changing FL (2007-2011)



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. Beside, the increasing interest on loans might drive the earning per share (EPS) lower. And FL becomes a source of risk that need to be managed by finance managers.

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). Considering risk vs. return, FL becomes a decisional variable for managers. And the maximum risk that a firm accepts will ask for the maximum financial leverage. Last but not least, FL becomes a vital factor in determining firms' capital structure.

10. Discussion

Looking at exhibit 7, we can see asset beta mean is higher and equity beta mean is lower (0,270 and 0,448) than those of consumer good industry (0,222 and 0,630). This relatively shows us that financial leverage does affect asset beta values.

11. Conclusion and Policy suggestion

In general, 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 HR 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. The State Bank of Viet Nam continues to increase the effectiveness of

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capital providing channels for HR industry as we could note that in this study when leverage is going to increase up to 30%, the risk level decreases despite of the little high asset beta var, 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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5. www.saigontimes.com.vn;
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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 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		

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

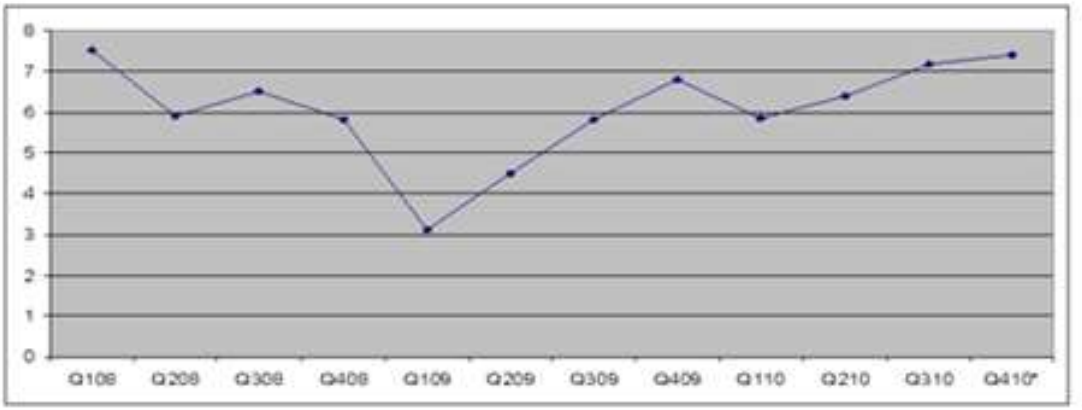
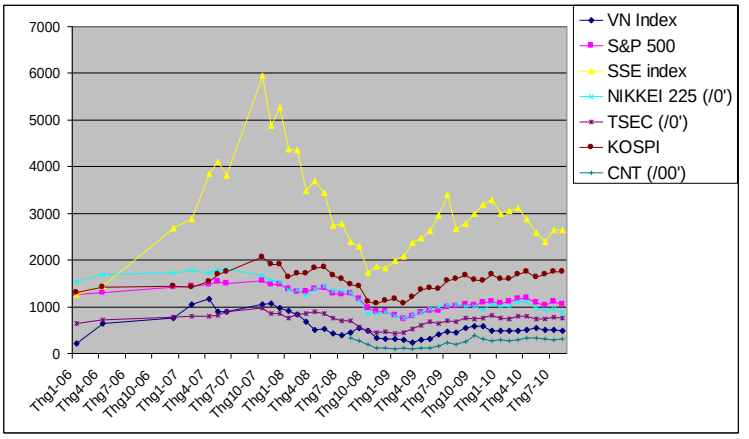


Exhibit 5 – Increase/decrease risk level of listed HR industry firms under changing scenarios of leverage: in 2011 F.S reports, 30% up, 20% down in the period 2007 - 2011

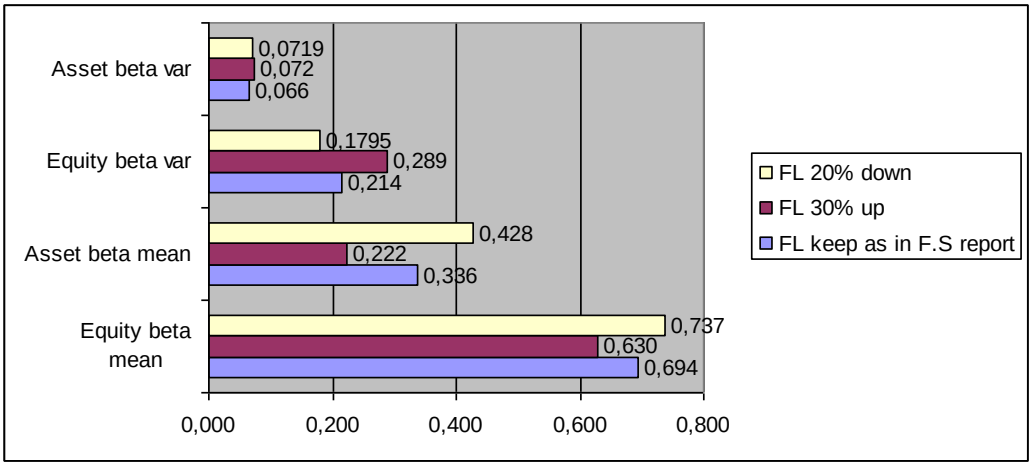
Order No.	Company stock code	FL keep as in F.S report		FL 30% up		FL 20% down	
		Equity beta	Asset beta	Increase/ Decrease (equity beta)	Increase/ Decrease (asset beta)	Increase/ Decrease (equity beta)	Increase/ Decrease (asset beta)
1	CMS	-0,063	-0,016	0,011	0,003	-0,010	-0,003
2	ILC	0,635	0,226	-0,094	-0,033	0,083	0,029
3	SDA	1,502	0,958	0,000	0,000	0,000	0,000
4	VCM	-0,199	-0,058	0,000	0,000	0,000	0,000
			Average	-0,021	-0,008	0,018	0,007

Exhibit 6- VNI Index and other stock market index during crisis 2006-2010



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Exhibit 7 – Comparing statistical results of three (3) scenarios of changing FL of 121 listed firms in the consumer good industry



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.

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