

The Risk Level of Viet Nam Construction Industry under the Impacts of a Two Factors Model during and after the Global Crisis 2007-2011

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Abstract

Using a two After the financial crisis 2007-2009, this research paper evaluates the impacts of external financing on market risk for the listed firms in the Viet nam software industry. First, by using quantitative and analytical methods to estimate asset and equity beta of total 6 listed companies in Viet Nam software 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

Index terms— equity beta, financial structure, financial crisis, risk, external financing, software industry. he global crisis 2007-2009 has some certain impacts on the whole Viet nam economy, and specifically, the Viet Nam construction industry. However, together with financial system development and the economic growth, throughout many recent years, Viet Nam construction industry is considered as one of active economic sectors, which has some positive effects for the economy. Hence, this research paper analyzes market risk under a two factor model of these listed construction firms during this period.

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.

For the estimating of impacts of a two factor model: external financing and the size of competitor on beta for listed construction industry companies in Viet Nam stock exchange, research issues will be mentioned as following: Issue 1 : Whether the risk level of construction industry firms under the different changing scenarios of leverage and the size of competitor increase or decrease so much.

Issue 2 : Whether the disperse distribution of beta values become large in the different changing scenarios of leverage and the size of competitor estimated in the construction industry. ??innon (1973) and Shaw (1973) pointed a large and active theoretical and empirical literature has related dfinancial development to the economic growth process. ??lack (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. Aghion et all (1999) stated debt instruments can reduce the amount of free cash available to firms and thus managerial slack.

1 Goldsmith (1969), Mc

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.

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. arginal rates in corporate and top personal income declined has stopped.

Last but not least, 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 shortterm funding and insufficient collateral compounded the effects of dangerously high leverage and resulted in undercapitalization and excessive risk exposure for Lehman Brothers.

2 The impact of financial leverage and the size of competitor on the economy and business

In a specific industry such as construction 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. Next, in a competitive market, there raises an issue of choosing a competitive firm as a competitor. There are many firms offering the similar products and services and this helps customers select a variety of qualified goods that meet their demand. Competitors could affect price and customer service policies; hence, affect revenues and profits of a typical company. So, a company needs a risk management policy to reduce risks coming from competitors, both current and potential.

In this research, analytical research method is used, philosophical method is used and specially, scenario analysis method is used. Analytical data is from the situation of listed construction industry firms in VN stock exchange and applied current tax rate is 25%. Finally, we use the results to suggest policy for both these enterprises, relevant organizations and government.

The research sample has total 104 listed firms in the construction 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 0,471, 0,389 and 0,539 which are negatively correlated with the leverage. Also in 3 scenarios, we find out equity beta mean values (0,602, 0,512 and 0,664) are also negatively correlated with the leverage. Leverage degree changes definitely has certain effects on asset and equity beta values.

In the below section, data used are from total 104 listed construction 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) whereas competitor size is kept as current, then changed from double size to slightly smaller size. Then, two (2) FL scenarios are changed up to 30% and down to 20%, compared to the current FL degree. In short, the below table 1 shows three scenarios used for analyzing the risk level of these listed firms.

Market risk (beta) under the impact of tax rate, includes: 1) equity beta; and 2) asset beta. 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. ? Based on the calculated results, we find out First of all, Equity beta mean values in all 3 scenarios are acceptable ($< 1,1$) and asset beta mean values are also small ($< 0,4$). In the case of reported leverage in 2011, equity and asset beta min values increase when the competitor size changed from current to slightly smaller and to double size (0,077 and 0,008). If leverage increases to 30%, equity and asset beta min values are the highest when competitor size kept as current (-0,366 and -0,031). Finally, when leverage decreases down to 20%, equity and asset beta min values reach maximum values in case compmetitor size doubles (0,156 and 0,023).

3 ? The below chart 1 shows us

When leverage degree decreases down to 20%, average equity beta values increase slightly (1,046 and 1,041) compared to those at the initial reported leverage (0,944). Then, when leverage degree increases up to 30%, average equity beta decreases little more (to 0,934 and 0,947). However, in case the competitor size doubles, the risk level of the selected firm is higher. Next, the fluctuation of equity beta value (0,150) in the case of 30% leverage up is higher than ($>$) the results in the rest 2 leverage cases. And we could note that in the case competitor size doubles, the risk is more dispersed. Last but not least, from chart 2, under financial leverage, in case competitor size doubles, asset beta mean (0,312) is lower than the rest 2 cases whereas the risk dispersion is almost the same (0,069).

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Figure 1: Chart 1 : 12 Chart 2 :

1

Competitor size as
current

Competitor size
slightly smaller

Competitor size
double

a) 7.1 Scenario 1

Current financial leverage (FL) as in financial
reports 2011 and competitor size kept as current,
slightly smaller and double.

In this case, all beta values of 104 listed firms
on VN construction industry market as following:

scenarios

FL as	FL	FL
	up	down
current	30%	20%
Scenario	Scenario	Scenario
1	2	3

[Note: C]

Figure 2: Table 1 :

2

a two factors model (case 1)									
		Competitor size as current				Competitor size twice smaller		Competitor size double	
Company		Equity	Asset	beta	Equity	Asset	beta	Equity	Asset
No.stock		beta	debt	beta =	beta	(assume	debt	beta	(assume
code			0)			beta = 0)			beta = 0)
1	CNT	1,062	0,134		1,062	0,134		1,062	0,134
2	DCC	1,299	0,578		1,299	0,578		1,299	0,578
3	DIG	1,772	0,964		1,772	0,964		1,772	0,964
4	FPC	0,484	0,229		0,484	0,229		0,484	0,229
5	HBC	1,030	0,277		1,030	0,277		1,030	0,277
6	L10	0,909	0,193		0,909	0,193		0,909	0,193
7	MCG	1,595	0,543		1,595	0,543		1,595	0,543
8	VNE	1,700	0,606		1,700	0,606		1,700	0,606
9	L35	0,116 0,337	0,037 0,040		0,293 0,337	0,094 0,040		0,289 0,337	0,093 0,040
	LM3	0,745 0,606	0,179 0,171		0,745 0,606	0,179 0,171		0,745 0,606	0,179 0,171
	LO5	0,856 0,709	0,261 0,217		0,856 0,709	0,261 0,217		0,856 0,709	0,261 0,217
	L62	1,277 0,860	0,252 0,146		1,277 0,860	0,252 0,146		1,277 0,860	0,252 0,146
	L61								
	L43								
	L44								
	B82								
	BCE	0,739	0,398		0,955	0,515		0,231	0,125
	C92	0,800 0,919	0,121 0,248		0,800 0,919	0,121 0,248		0,800 0,919	0,121 0,248
	CIC	0,891 1,023	0,423 0,217		0,891 1,023	0,423 0,217		0,891 1,023	0,423 0,217
	CID	0,105 0,950	0,029 0,574		0,241 0,950	0,067 0,574		0,568 0,950	0,159 0,574
	CSC	2,869 0,829	1,458 0,504		2,869 0,636	1,458 0,387		2,869 0,474	1,458 0,289
	CT6	-0,054	0,010 0,057		0,180 1,228	0,034 0,442		0,180 0,285	0,034 0,103
	CTD	0,160 0,041	0,011 0,143		0,003 1,084	0,001 0,143		0,536 1,084	0,141 0,143
	CTM	1,084 1,069	0,156 0,002		1,069 0,406	0,156 0,108		1,069 0,509	0,156 0,135
	CVN	0,006							
	CX8								
	DC2								
	DLR								
	HUT								
	L18								
	LCS								
	LHC	0,755	0,358		0,755	0,358		0,755	0,358
	LIG	-0,063	-0,013		0,027	0,006		0,380	0,079
	LUT	1,433	0,730		1,433	0,730		1,433	0,730
	MCO	0,755	0,127		0,755	0,127		0,755	0,127
	NSN	-0,155	-0,018		0,011	0,001		0,206	0,024

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Figure 3: Table 2 :

3

Order No.	Company stock code	Competitor size as current CNT	Equity beta	Asset beta (assume debt beta = 0)	1,062 0,134	Comp
1	DCC	1,299	0,578			1,299
2	DIG	1,772	0,964			1,772
3	FPC	0,484	0,229			0,484
4	HBC	1,030	0,277			1,030
5	L10	0,909	0,193			0,909

[Note: © 2013 Global Journals Inc. (US)]

Figure 4: Table 3 :

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() C			Competitor size as current		Competitor size slightly smaller		Competitor size double	
Global	Order	Company	Equity	Asset beta	Equity	Asset beta	Equity	Asset beta
Journal	No.	stock	beta 1,062	(assume	beta 1,062	(assume	beta 1,062	(assume
of	1	code	1,299	debt beta	1,299 1,772	debt beta	1,299	debt beta
Man-	2	CNT	1,772	= 0) 0,134	0,484 1,030	= 0) 0,134	1,772	= 0) 0,134
age-	3	DCC	0,484	0,578	0,909 1,595	0,578	0,484	0,578
ment	4	DIG	1,030	0,964	1,700 0,400	0,964	1,030	0,964
and	5	FPC	0,909	0,229	0,337 0,745	0,229	0,909	0,229
Busi-	6	HBC	1,595	0,277	0,606	0,277	1,595	0,277
ness	7	L10	1,700	0,193		0,193	1,700	0,193
Re-	8	MCG	0,116	0,543		0,543	0,395	0,543
search	9	VNE	0,337	0,606		0,606	0,337	0,606
		L35	0,745	0,037		0,129	0,745	0,127
		LM3	0,606	0,040		0,040	0,606	0,040
		LO5		0,179		0,179		0,179
		L62		0,171		0,171		0,171
		L61	0,856	0,261	0,856	0,261	0,856	0,261
		L43	0,709	0,217	0,709	0,217	0,709	0,217
		L44	1,277	0,252	1,277	0,252	1,277	0,252
		B82	0,860	0,146	0,860	0,146	0,860	0,146

[Note: © 2013 Global Journals Inc. (US)]

Figure 5: Table 4 :

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Statistic	Competitor size as current			Competitor size slightly smaller			Competitor size double		
	Equity	Asset beta (assume debt beta = 0)	Difference	Equity	Asset beta (assume debt beta = 0)	Difference	Equity	Asset beta (assume debt beta = 0)	Difference
results	beta	beta = 0)		beta	beta = 0)		beta	beta = 0)	
MAX	2,884	1,458	1,427	2,884	1,458	1,427	2,884	1,458	1,427
MIN	-0,366	-0,031	-0,335	0,003	0,001	0,003	0,077	0,008	0,069
MEAN	0,944	0,290	0,654	1,008	0,310	0,698	1,005	0,306	0,699
VAR	0,4063	0,0689	0,337	0,3041	0,0650	0,239	0,3012	0,0625	0,239

Note: Sample size : 104 firms
(Source : VN stock exchange 2012)

Figure 6: Table 5 :

6

Statistic	Competitor size as current			Competitor size slightly smaller			Competitor size double		
	Equity	Asset beta (assume debt beta = 0)	Difference	Equity	Asset beta (assume debt beta = 0)	Difference	Equity	Asset beta (assume debt beta = 0)	Difference
results	beta	beta = 0)		beta	beta = 0)		beta	beta = 0)	
MAX	2,884	1,458	1,427	2,884	1,458	1,427	2,884	1,458	1,427
MIN	-0,366	-0,031	-0,335	-0,388	-0,037	-0,351	-0,379	-0,034	-0,345
MEAN	0,944	0,290	0,654	0,947	0,293	0,653	0,934	0,289	0,645
VAR	0,4063	0,0689	0,337	0,3909	0,0694	0,322	0,4139	0,0689	0,345

Note: Sample size : 104 firms
(Source : VN stock exchange 2012)

Figure 7: Table 6 :

[Note: (Source : VN stock exchange 2012)]

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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.

In general, the government has to consider the impacts on the mobility of capital in the markets when it changes the macro policies and the legal system and regulation for developing the construction 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 capital providing channels for construction companies as we could note that in this study when leverage is going to increase up to 30%, the risk level decreases much (asset beta mean values are the smallest: 0,293 and 0,289), and the asset beta var values are the same in changing competitor size cases, 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. I would like to take this opportunity to express my warm thanks to Board of Editors and Colleagues at Citibank -HCMC, SCB and BIDV-HCMC, Dr. Chen and Dr. Yu Hai-Chin at Chung Yuan Christian University for class lectures, also Dr Chet Borucki, Dr Jay and my ex-Corporate Governance sensei, Dr. Shingo Takahashi at International University of Japan. My sincere thanks are for the editorial office, for their work during my research. Also, my warm thanks are for Dr. Ngo Huong, Dr. Ho Dieu, Dr. Ly H. Anh, Dr Nguyen V. Phuc and my lecturers at Banking University -HCMC, Viet Nam for their help.

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