Global Journal of Management and Business Research
Finance
Volume 13 Issue 10 Version 1.0 Year 2013
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

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 (2) factors model, this research paper analyzes the impacts of both financial leverage and the size of firms' competitors in the construction industry on the market risk level of 104 listed companies in this category. This paper founds out that the risk dispersion level in this sample study could be minimized in case financial leverage decreases down to 20% and the competitor size doubles (measured by equity beta var of 0,253). Beside, the empirical research findings show us that the risk level could be reduced when financial leverage increases up to 30% and the size of competitor doubles (measured by equity beta value of 0,934). Last but not least, this paper illustrates calculated results that might give proper recommendations to relevant governments and institutions in re-evaluating their policies during and after the financial crisis 2007-2011.

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GJMBR-C Classification : *JEL Code: G00, G3, G30*

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This paper founds out that the risk dispersion level in this sample study could be minimized in case financial leverage decreases down to 20% and the competitor size doubles (measured by equity beta var of 0,253).

Beside, the empirical research findings show us that the risk level could be reduced when financial leverage increases up to 30% and the size of competitor doubles (measured by equity beta value of 0,934).

Last but not least, this paper illustrates calculated results that might give proper recommendations to relevant governments and institutions in re-evaluating their policies during and after the financial crisis 2007-2011.

Keywords : risk management, competitive firm size, market risk, asset and equity beta, construction industry.

I. Introduction

The 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.

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II. Research Issues

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.

III. 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. 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.

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, Thorsten (2011) found that there reasing the likelihood of a financial crisis rather than reducing it.

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 short-term funding and insufficient collateral compounded the effects of dangerously high leverage and resulted in undercapitalization and excessive risk exposure for Lehman Brothers.

IV. Conceptual Theories

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.

V. Methodology

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.

VI. General Data Analysis

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.

VII. Empirical Research Findings and Discussion

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.

Table 1 : Analyzing market risk under three (3) scenarios

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

Table 2 : Market risk of listed companies on VN construction industry market under a two factors model (case 1)

Order No.	Company stock code	Competitor size as current		Competitor size twice smaller		Competitor size double	
		Equity beta	Asset beta (assume debt beta = 0)	Equity beta	Asset beta (assume debt beta = 0)	Equity beta	Asset beta (assume debt 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	0,037	0,293	0,094	0,289	0,093
10	LM3	0,337	0,040	0,337	0,040	0,337	0,040
11	LO5	0,745	0,179	0,745	0,179	0,745	0,179
12	L62	0,606	0,171	0,606	0,171	0,606	0,171
13	L61	0,856	0,261	0,856	0,261	0,856	0,261
14	L43	0,709	0,217	0,709	0,217	0,709	0,217
15	L44	1,277	0,252	1,277	0,252	1,277	0,252
16	B82	0,860	0,146	0,860	0,146	0,860	0,146
17	BCE	0,739	0,398	0,955	0,515	0,231	0,125
18	C92	0,800	0,121	0,800	0,121	0,800	0,121
19	CIC	0,919	0,248	0,919	0,248	0,919	0,248
20	CID	0,891	0,423	0,891	0,423	0,891	0,423
21	CSC	1,023	0,217	1,023	0,217	1,023	0,217
22	CT6	0,105	0,029	0,241	0,067	0,568	0,159
23	CTD	0,950	0,574	0,950	0,574	0,950	0,574
24	CTM	2,869	1,458	2,869	1,458	2,869	1,458
25	CVN	0,829	0,504	0,636	0,387	0,474	0,289
26	CX8	-0,054	-0,010	0,180	0,034	0,180	0,034
27	DC2	0,160	0,057	1,228	0,442	0,285	0,103
28	DLR	0,041	0,011	0,003	0,001	0,536	0,141
29	HUT	1,084	0,143	1,084	0,143	1,084	0,143
30	L18	1,069	0,156	1,069	0,156	1,069	0,156
31	LCS	0,006	0,002	0,406	0,108	0,509	0,135
32	LHC	0,755	0,358	0,755	0,358	0,755	0,358
33	LIG	-0,063	-0,013	0,027	0,006	0,380	0,079
34	LUT	1,433	0,730	1,433	0,730	1,433	0,730
35	MCO	0,755	0,127	0,755	0,127	0,755	0,127
36	NSN	-0,155	-0,018	0,011	0,001	0,206	0,024

37	PHC	1,667	0,409	1,667	0,409	1,667	0,409
38	QTC	0,259	0,110	0,259	0,110	0,259	0,110
39	TV2	0,822	0,207	0,822	0,207	0,822	0,207
40	TV4	0,666	0,241	0,666	0,241	0,666	0,241
41	VE1	1,475	0,776	1,475	0,776	1,475	0,776
42	VE2	0,493	0,297	0,595	0,358	0,718	0,432
43	VE3	0,525	0,354	0,500	0,337	0,526	0,354
44	VE9	0,704	0,430	0,704	0,430	0,704	0,430
45	VHH	0,328	0,168	0,708	0,363	0,836	0,428
46	SNG	1,264	0,484	1,264	0,484	1,264	0,484
47	SSS	1,074	0,385	1,074	0,385	1,074	0,385
48	STL	1,634	0,066	1,634	0,066	1,634	0,066
49	SJM	1,030	0,389	1,030	0,389	1,030	0,389
50	SJE	1,399	0,324	1,399	0,324	1,399	0,324
51	SJC	1,103	0,266	1,103	0,266	1,103	0,266
52	SIC	1,568	0,365	1,568	0,365	1,568	0,365
53	SEL	0,044	0,012	0,269	0,072	0,364	0,098
54	SDT	1,406	0,435	1,406	0,435	1,406	0,435
55	SDS	0,929	0,071	0,929	0,071	0,929	0,071
56	SDJ	1,257	0,249	1,257	0,249	1,257	0,249
57	SDH	2,884	1,290	2,884	1,290	2,884	1,290
58	SDB	-0,046	-0,009	0,427	0,085	0,135	0,027
59	SD9	1,456	0,415	1,456	0,415	1,456	0,415
60	SD8	1,210	0,103	1,210	0,103	1,210	0,103
61	SD7	1,461	0,243	1,461	0,243	1,461	0,243
62	SD6	1,670	0,479	1,670	0,479	1,670	0,479
63	SD5	1,332	0,503	1,332	0,503	1,332	0,503
64	SD4	1,114	0,233	1,114	0,233	1,114	0,233
65	SD3	1,361	0,695	1,361	0,695	1,361	0,695
66	SD2	1,386	0,450	1,386	0,450	1,386	0,450
67	SD1	-0,102	-0,017	0,334	0,057	0,108	0,018
68	S99	1,286	0,800	1,286	0,800	1,286	0,800
69	S96	1,706	0,480	1,706	0,480	1,706	0,480
70	S91	1,213	0,386	1,213	0,386	1,213	0,386
71	S74	1,250	0,443	1,250	0,443	1,250	0,443
72	S64	1,099	0,358	1,099	0,358	1,099	0,358
73	S55	1,251	0,476	1,251	0,476	1,251	0,476
74	S27	-0,366	-0,025	0,064	0,004	0,113	0,008
75	S12	1,180	0,202	1,180	0,202	1,180	0,202
76	MEC	-0,208	-0,031	0,266	0,040	0,077	0,011
77	ICG	1,634	0,795	1,634	0,795	1,634	0,795
78	PHH	0,105	0,030	0,189	0,055	0,143	0,041

79	PIV	0,361	0,256	0,682	0,484	0,493	0,350
80	PVA	1,932	0,209	1,932	0,209	1,932	0,209
81	PVE	1,580	0,499	1,580	0,499	1,580	0,499
82	PVR	0,648	0,310	0,104	0,050	0,322	0,154
83	PVV	-0,147	-0,025	0,112	0,019	0,251	0,042
84	PVX	1,304	0,311	1,304	0,311	1,304	0,311
85	PXI	-0,014	-0,004	0,527	0,152	0,677	0,195
86	PXS	0,205	0,065	0,482	0,153	0,395	0,126
87	PXT	0,266	0,090	0,511	0,172	0,506	0,170
88	SDP	1,410	0,271	1,410	0,271	1,410	0,271
89	CTN	0,922	0,160	0,922	0,160	0,922	0,160
90	V11	1,148	0,161	1,148	0,161	1,148	0,161
91	V12	1,521	0,181	1,521	0,181	1,521	0,181
92	V15	1,566	0,582	1,566	0,582	1,566	0,582
93	V21	-0,241	-0,023	0,194	0,019	0,175	0,017
94	VC1	1,815	0,525	1,815	0,525	1,815	0,525
95	VC2	1,240	0,220	1,240	0,220	1,240	0,220
96	VC3	1,256	0,195	1,256	0,195	1,256	0,195
97	VC5	1,266	0,181	1,266	0,181	1,266	0,181
98	VC6	1,123	0,287	1,123	0,287	1,123	0,287
99	VC7	1,106	0,252	1,106	0,252	1,106	0,252
100	VC9	1,140	0,124	1,140	0,124	1,140	0,124
101	VCC	0,971	0,188	0,971	0,188	0,971	0,188
102	VCG	1,505	0,186	1,505	0,186	1,505	0,186
103	VCH	-0,296	-0,031	0,095	0,010	0,150	0,016
104	VMC	1,503	0,292	1,503	0,292	1,503	0,292

(Source : VN stock exchange 2012)

b) 7.2. Scenario 2

Financial leverage increases up to 30% and competitor size kept as current, slightly smaller and double.

If leverage increases up to 30%, all beta values of total 104 listed firms on VN construction industry market as below:

Table 3 : Market risks of listed construction industry firms under a two factors model (case 2)

Order No.	Company stock code	Competitor size as current		Competitor size slightly smaller		Competitor size double	
		Equity beta	Asset beta (assume debt beta = 0)	Equity beta	Asset beta (assume debt beta = 0)	Equity beta	Asset beta (assume debt 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	0,037	0,115	0,037	0,114	0,037
10	LM3	0,337	0,040	0,337	0,040	0,337	0,040
11	LO5	0,745	0,179	0,745	0,179	0,745	0,179
12	L62	0,606	0,171	0,606	0,171	0,606	0,171
13	L61	0,856	0,261	0,856	0,261	0,856	0,261
14	L43	0,709	0,217	0,709	0,217	0,709	0,217
15	L44	1,277	0,252	1,277	0,252	1,277	0,252
16	B82	0,860	0,146	0,860	0,146	0,860	0,146
17	BCE	0,739	0,398	0,739	0,398	-0,026	-0,014
18	C92	0,800	0,121	0,800	0,121	0,800	0,121
19	CIC	0,919	0,248	0,919	0,248	0,919	0,248
20	CID	0,891	0,423	0,891	0,423	0,891	0,423
21	CSC	1,023	0,217	1,023	0,217	1,023	0,217
22	CT6	0,105	0,029	0,058	0,016	0,137	0,038
23	CTD	0,950	0,574	0,950	0,574	0,950	0,574
24	CTM	2,869	1,458	2,869	1,458	2,869	1,458
25	CVN	0,829	0,504	0,530	0,322	0,396	0,241
26	CX8	-0,054	-0,010	-0,054	-0,010	-0,054	-0,010
27	DC2	0,160	0,057	0,607	0,218	0,141	0,051
28	DLR	0,041	0,011	0,001	0,000	0,090	0,024
29	HUT	1,084	0,143	1,084	0,143	1,084	0,143
30	L18	1,069	0,156	1,069	0,156	1,069	0,156
31	LCS	0,006	0,002	0,073	0,019	0,092	0,024
32	LHC	0,755	0,358	0,755	0,358	0,755	0,358
33	LIG	-0,063	-0,013	-0,001	0,000	-0,055	-0,011
34	LUT	1,433	0,730	1,433	0,730	1,433	0,730
35	MCO	0,755	0,127	0,755	0,127	0,755	0,127
36	NSN	-0,155	-0,018	0,019	0,002	-0,279	-0,033
37	PHC	1,667	0,409	1,667	0,409	1,667	0,409
38	QTC	0,259	0,110	0,259	0,110	0,259	0,110
39	TV2	0,822	0,207	0,822	0,207	0,822	0,207
40	TV4	0,666	0,241	0,666	0,241	0,666	0,241
41	VE1	1,475	0,776	1,475	0,776	1,475	0,776
42	VE2	0,493	0,297	0,493	0,297	0,595	0,358
43	VE3	0,525	0,354	0,394	0,266	0,461	0,311
44	VE9	0,704	0,430	0,704	0,430	0,704	0,430
45	VHH	0,328	0,168	0,528	0,270	0,623	0,319
46	SNG	1,264	0,484	1,264	0,484	1,264	0,484
47	SSS	1,074	0,385	1,074	0,385	1,074	0,385

48	STL	1,634	0,066	1,634	0,066	1,634	0,066
49	SJM	1,030	0,389	1,030	0,389	1,030	0,389
50	SJE	1,399	0,324	1,399	0,324	1,399	0,324
51	SJC	1,103	0,266	1,103	0,266	1,103	0,266
52	SIC	1,568	0,365	1,568	0,365	1,568	0,365
53	SEL	0,044	0,012	0,054	0,014	0,073	0,020
54	SDT	1,406	0,435	1,406	0,435	1,406	0,435
55	SDS	0,929	0,071	0,929	0,071	0,929	0,071
56	SDJ	1,257	0,249	1,257	0,249	1,257	0,249
57	SDH	2,884	1,290	2,884	1,290	2,884	1,290
58	SDB	-0,046	-0,009	-0,092	-0,018	-0,029	-0,006
59	SD9	1,456	0,415	1,456	0,415	1,456	0,415
60	SD8	1,210	0,103	1,210	0,103	1,210	0,103
61	SD7	1,461	0,243	1,461	0,243	1,461	0,243
62	SD6	1,670	0,479	1,670	0,479	1,670	0,479
63	SD5	1,332	0,503	1,332	0,503	1,332	0,503
64	SD4	1,114	0,233	1,114	0,233	1,114	0,233
65	SD3	1,361	0,695	1,361	0,695	1,361	0,695
66	SD2	1,386	0,450	1,386	0,450	1,386	0,450
67	SD1	-0,102	-0,017	-0,172	-0,029	-0,024	-0,004
68	S99	1,286	0,800	1,286	0,800	1,286	0,800
69	S96	1,706	0,480	1,706	0,480	1,706	0,480
70	S91	1,213	0,386	1,213	0,386	1,213	0,386
71	S74	1,250	0,443	1,250	0,443	1,250	0,443
72	S64	1,099	0,358	1,099	0,358	1,099	0,358
73	S55	1,251	0,476	1,251	0,476	1,251	0,476
74	S27	-0,366	-0,025	-0,159	-0,011	-0,379	-0,026
75	S12	1,180	0,202	1,180	0,202	1,180	0,202
76	MEC	-0,208	-0,031	-0,208	-0,031	-0,060	-0,009
77	ICG	1,634	0,795	1,634	0,795	1,634	0,795
78	PHH	0,105	0,030	0,053	0,015	0,040	0,012
79	PIV	0,361	0,256	0,612	0,435	0,337	0,239
80	PVA	1,932	0,209	1,932	0,209	1,932	0,209
81	PVE	1,580	0,499	1,580	0,499	1,580	0,499
82	PVR	0,648	0,310	0,020	0,010	0,227	0,109
83	PVV	-0,147	-0,025	-0,016	-0,003	-0,130	-0,022
84	PVX	1,304	0,311	1,304	0,311	1,304	0,311
85	PXI	-0,014	-0,004	0,145	0,042	0,187	0,054
86	PXS	0,205	0,065	0,183	0,058	0,205	0,065
87	PXT	0,266	0,090	0,222	0,075	0,220	0,074
88	SDP	1,410	0,271	1,410	0,271	1,410	0,271
89	CTN	0,922	0,160	0,922	0,160	0,922	0,160

90	V11	1,148	0,161	1,148	0,161	1,148	0,161
91	V12	1,521	0,181	1,521	0,181	1,521	0,181
92	V15	1,566	0,582	1,566	0,582	1,566	0,582
93	V21	-0,241	-0,023	-0,388	-0,037	-0,350	-0,034
94	VC1	1,815	0,525	1,815	0,525	1,815	0,525
95	VC2	1,240	0,220	1,240	0,220	1,240	0,220
96	VC3	1,256	0,195	1,256	0,195	1,256	0,195
97	VC5	1,266	0,181	1,266	0,181	1,266	0,181
98	VC6	1,123	0,287	1,123	0,287	1,123	0,287
99	VC7	1,106	0,252	1,106	0,252	1,106	0,252
100	VC9	1,140	0,124	1,140	0,124	1,140	0,124
101	VCC	0,971	0,188	0,971	0,188	0,971	0,188
102	VCG	1,505	0,186	1,505	0,186	1,505	0,186
103	VCH	-0,296	-0,031	-0,135	-0,014	-0,255	-0,027
104	VMC	1,503	0,292	1,503	0,292	1,503	0,292

(Source : VN stock exchange 2012)

c) 7.3. Scenario 3

Leverage decreases down to 20% and competitor size kept as current, slightly smaller and double.

If leverage decreases down to 20%, all beta values of total 104 listed firms on the construction industry market in VN as following:

Table 4 : Market risk of listed construction industry firms under a two factors model (case 3)

Order No.	Company stock code	Competitor size as current		Competitor size slightly smaller		Competitor size double	
		Equity beta	Asset beta (assume debt beta = 0)	Equity beta	Asset beta (assume debt beta = 0)	Equity beta	Asset beta (assume debt 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	0,037	0,400	0,129	0,395	0,127
10	LM3	0,337	0,040	0,337	0,040	0,337	0,040
11	LO5	0,745	0,179	0,745	0,179	0,745	0,179
12	L62	0,606	0,171	0,606	0,171	0,606	0,171
13	L61	0,856	0,261	0,856	0,261	0,856	0,261
14	L43	0,709	0,217	0,709	0,217	0,709	0,217
15	L44	1,277	0,252	1,277	0,252	1,277	0,252
16	B82	0,860	0,146	0,860	0,146	0,860	0,146

17	BCE	0,739	0,398	0,053	0,029	0,442	0,238
18	C92	0,800	0,121	0,800	0,121	0,800	0,121
19	CIC	0,919	0,248	0,919	0,248	0,919	0,248
20	CID	0,891	0,423	0,891	0,423	0,891	0,423
21	CSC	1,023	0,217	1,023	0,217	1,023	0,217
22	CT6	0,105	0,029	0,351	0,098	0,825	0,230
23	CTD	0,950	0,574	0,950	0,574	0,950	0,574
24	CTM	2,869	1,458	2,869	1,458	2,869	1,458
25	CVN	0,829	0,504	0,702	0,427	0,524	0,319
26	CX8	-0,054	-0,010	0,317	0,060	0,317	0,060
27	DC2	0,160	0,057	1,605	0,577	0,372	0,134
28	DLR	0,041	0,011	0,153	0,040	0,802	0,210
29	HUT	1,084	0,143	1,084	0,143	1,084	0,143
30	L18	1,069	0,156	1,069	0,156	1,069	0,156
31	LCS	0,006	0,002	0,604	0,160	0,757	0,201
32	LHC	0,755	0,358	0,755	0,358	0,755	0,358
33	LIG	-0,063	-0,013	0,077	0,016	0,635	0,133
34	LUT	1,433	0,730	1,433	0,730	1,433	0,730
35	MCO	0,755	0,127	0,755	0,127	0,755	0,127
36	NSN	-0,155	-0,018	0,318	0,038	0,487	0,058
37	PHC	1,667	0,409	1,667	0,409	1,667	0,409
38	QTC	0,259	0,110	0,259	0,110	0,259	0,110
39	TV2	0,822	0,207	0,822	0,207	0,822	0,207
40	TV4	0,666	0,241	0,666	0,241	0,666	0,241
41	VE1	1,475	0,776	1,475	0,776	1,475	0,776
42	VE2	0,493	0,297	0,660	0,397	0,795	0,478
43	VE3	0,525	0,354	0,574	0,387	0,567	0,382
44	VE9	0,704	0,430	0,704	0,430	0,704	0,430
45	VHH	0,328	0,168	0,820	0,420	0,968	0,496
46	SNG	1,264	0,484	1,264	0,484	1,264	0,484
47	SSS	1,074	0,385	1,074	0,385	1,074	0,385
48	STL	1,634	0,066	1,634	0,066	1,634	0,066
49	SJM	1,030	0,389	1,030	0,389	1,030	0,389
50	SJE	1,399	0,324	1,399	0,324	1,399	0,324
51	SJC	1,103	0,266	1,103	0,266	1,103	0,266
52	SIC	1,568	0,365	1,568	0,365	1,568	0,365
53	SEL	0,044	0,012	0,397	0,107	0,538	0,145
54	SDT	1,406	0,435	1,406	0,435	1,406	0,435
55	SDS	0,929	0,071	0,929	0,071	0,929	0,071
56	SDJ	1,257	0,249	1,257	0,249	1,257	0,249
57	SDH	2,884	1,290	2,884	1,290	2,884	1,290
58	SDB	-0,046	-0,009	0,731	0,146	0,231	0,046

59	SD9	1,456	0,415	1,456	0,415	1,456	0,415
60	SD8	1,210	0,103	1,210	0,103	1,210	0,103
61	SD7	1,461	0,243	1,461	0,243	1,461	0,243
62	SD6	1,670	0,479	1,670	0,479	1,670	0,479
63	SD5	1,332	0,503	1,332	0,503	1,332	0,503
64	SD4	1,114	0,233	1,114	0,233	1,114	0,233
65	SD3	1,361	0,695	1,361	0,695	1,361	0,695
66	SD2	1,386	0,450	1,386	0,450	1,386	0,450
67	SD1	-0,102	-0,017	0,630	0,107	0,273	0,046
68	S99	1,286	0,800	1,286	0,800	1,286	0,800
69	S96	1,706	0,480	1,706	0,480	1,706	0,480
70	S91	1,213	0,386	1,213	0,386	1,213	0,386
71	S74	1,250	0,443	1,250	0,443	1,250	0,443
72	S64	1,099	0,358	1,099	0,358	1,099	0,358
73	S55	1,251	0,476	1,251	0,476	1,251	0,476
74	S27	-0,366	-0,025	0,257	0,018	0,394	0,027
75	S12	1,180	0,202	1,180	0,202	1,180	0,202
76	MEC	-0,208	-0,031	0,542	0,080	0,156	0,023
77	ICG	1,634	0,795	1,634	0,795	1,634	0,795
78	PHH	0,105	0,030	0,270	0,078	0,205	0,059
79	PIV	0,361	0,256	0,726	0,515	0,401	0,284
80	PVA	1,932	0,209	1,932	0,209	1,932	0,209
81	PVE	1,580	0,499	1,580	0,499	1,580	0,499
82	PVR	0,648	0,310	0,176	0,084	0,381	0,182
83	PVV	-0,147	-0,025	0,303	0,051	0,473	0,080
84	PVX	1,304	0,311	1,304	0,311	1,304	0,311
85	PXI	-0,014	-0,004	0,754	0,217	0,969	0,279
86	PXS	0,205	0,065	0,661	0,210	0,542	0,173
87	PXT	0,266	0,090	0,685	0,230	0,679	0,229
88	SDP	1,410	0,271	1,410	0,271	1,410	0,271
89	CTN	0,922	0,160	0,922	0,160	0,922	0,160
90	V11	1,148	0,161	1,148	0,161	1,148	0,161
91	V12	1,521	0,181	1,521	0,181	1,521	0,181
92	V15	1,566	0,582	1,566	0,582	1,566	0,582
93	V21	-0,241	-0,023	0,529	0,051	0,476	0,046
94	VC1	1,815	0,525	1,815	0,525	1,815	0,525
95	VC2	1,240	0,220	1,240	0,220	1,240	0,220
96	VC3	1,256	0,195	1,256	0,195	1,256	0,195
97	VC5	1,266	0,181	1,266	0,181	1,266	0,181
98	VC6	1,123	0,287	1,123	0,287	1,123	0,287
99	VC7	1,106	0,252	1,106	0,252	1,106	0,252
100	VC9	1,140	0,124	1,140	0,124	1,140	0,124

101	VCC	0,971	0,188	0,971	0,188	0,971	0,188
102	VCG	1,505	0,186	1,505	0,186	1,505	0,186
103	VCH	-0,296	-0,031	0,268	0,028	0,383	0,040
104	VMC	1,503	0,292	1,503	0,292	1,503	0,292

(Source : VN stock exchange 2012)

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.

VIII. Comparing Statistical Results in 3 Scenarios of Changing Leverage

Table 5 : Statistical results (FL in case 1)

	Competitor size as current			Competitor size slightly smaller			Competitor size double		
Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference	Equity beta	Asset beta (assume debt beta = 0)	Difference	Equity beta	Asset beta (assume debt beta = 0)	Difference
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)

Table 6 : Statistical results (FL in case 2)

	Competitor size as current			Competitor size slightly smaller			Competitor size double		
Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference	Equity beta	Asset beta (assume debt beta = 0)	Difference	Equity beta	Asset beta (assume debt beta = 0)	Difference
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	-0,346
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)

Table 7 : Statistical results (FL in case 3)

	Competitor size as current			Competitor size slightly smaller			Competitor size double		
Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference	Equity beta	Asset beta (assume debt beta = 0)	Difference	Equity beta	Asset beta (assume debt beta = 0)	Difference
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	0,053	0,016	0,037	0,156	0,023	0,133
MEAN	0,944	0,290	0,654	1,041	0,316	0,725	1,046	0,312	0,735
VAR	0,4063	0,0689	0,337	0,2681	0,0632	0,205	0,2533	0,0597	0,194
Note: Sample size : 104 firms									

(Source : VN stock exchange 2012)

- Based on the calculated results, we find out

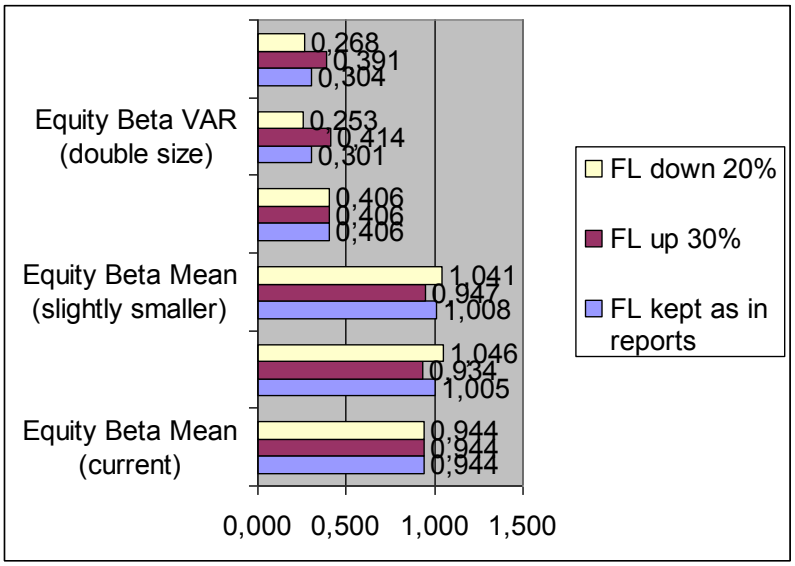
First of all, Equity beta mean values in all 3 scenarios are acceptable (< 1,1) and asset beta mean values are also small (< 0,4). In the case of reported leverage in 2011, equity and asset beta min values increase when the competitor size changed from current

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).

- The below chart 1 shows us

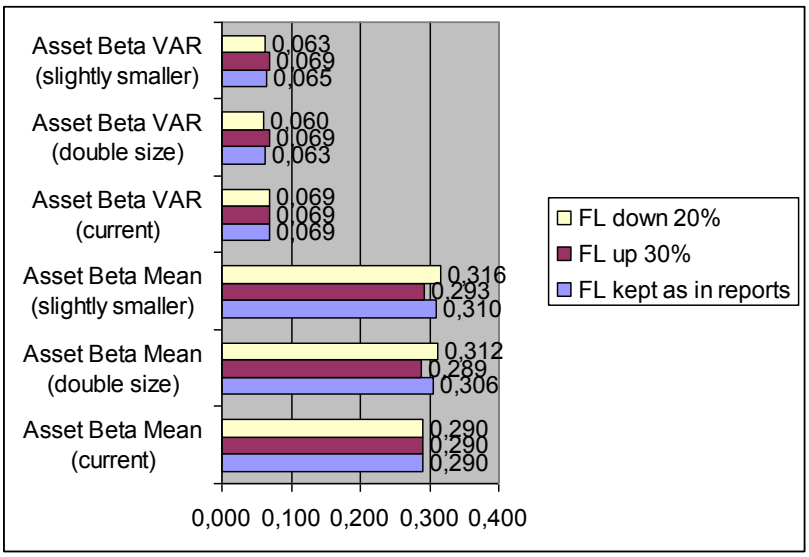
When leverage degree decreases down to 20%, average equity beta values increase slightly (1,046 and 1,041) compared to those at the initial reported leverage (0,944). Then, when leverage degree increases up to 30%, average equity beta decreases little more (to 0,934 and 0,947). However, in case the competitor 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).

Chart 1 : Comparing statistical results of equity beta var and mean in three (3) scenarios of changing FL and competitor size



(Source : VN stock exchange 2012)

Chart 2 : Comparing statistical results of asset beta var and mean in three (3) scenarios of changing FL and competitor size



(Source : VN stock exchange 2012)

IX. Risk Analysis

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.

X. 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 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.

XI. Acknowledgements

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.

Lastly, thank you very much for my family, colleagues, and brother in assisting convenient conditions for my research paper.

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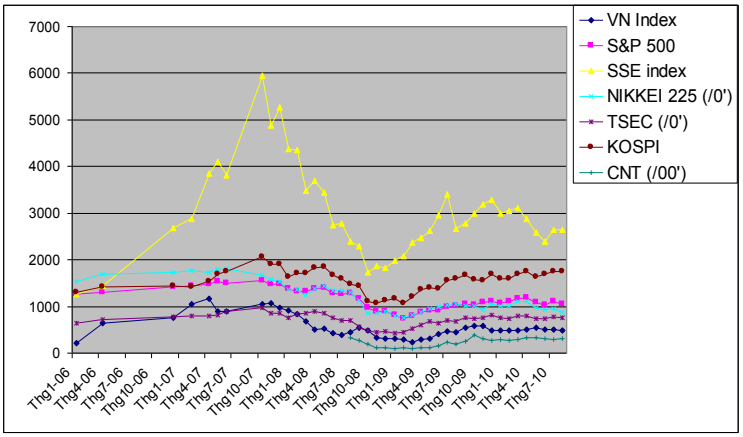
Exhibit

Exhibit 1 : VNI Index and other stock market index during crisis 2006-2010



(Source : global stock exchange 2012)

Exhibit 2 : 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)