The Measurement of Impacts of External Financing on The Risk Level of Viet Nam Construction Material Industry During and After The Global Crisis 2007-2011

Dinh Tran Ngoc Huy

Banking University, 26 Nguyen Cong Tru str, District 1, HCM city, Viet nam – GSIM, International University of Japan, Japan

Abstract- *This research paper aims to analyze the impacts of external financing on market risk for the listed firms in the Viet nam construction material industry, esp. after the financial crisis 2007-2009.*

First, by using quantitative and analytical methods to estimate asset and equity beta of total 57 listed companies in Viet Nam construction material 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 increases to 30%.

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; construction material industry*

JEL CLASSIFICATION: *G010, G100, G390*

1. INTRODUCTION

Financial system development has related to the economic growth, throughout many recent years, and Viet Nam construction material 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.

2. RESEARCH ISSUES

We mention some issues on the estimating of impacts of external financing on beta for listed construction material companies in Viet Nam stock exchange as following:

Issue 1: Whether the risk level of construction material 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 construction material industry.

3. LITERATURE REVIEW

Black (1976) proposes the leverage effect to explain the negative correlation between equity returns and return volatilities. 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.

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.

Last but not least, Martin and Sweder (2012) found out that, in a dataset of US banks from 1993 to 2010, and more risk taking has a negative impact on valuation of the debt of highly leveraged banks. And Mikhail (2012) stated that dynamic leverage depends on the level of fund volatility, time horizon and distance in terms of NAV to a pre-defined critical liquidation level for a fund.

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

4. CONCEPTUAL THEORIES

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.

In a specific industry such as construction material 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. Throughout a business cycle, firms can choose to use different leverage degree to maintain and develop business.

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 estimate 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 construction material 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 57 listed firms in the construction material 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 0,456, 0,415 and 0,436 which are negatively correlated with the leverage. Also in 3 scenarios, we find out equity beta mean values (1,011, 0,935 and 0,975) 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 57 listed construction material 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 57 listed firms on VN construction material market as following:

Table 1 – Market risk of listed companies on VN construction material market

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage (F.S reports)

1	**DIC**	0,986	0,337		65,8%
2	**LBM**	1,186	0,783		34,0%
3	**NAV**	0,895	0,539		39,8%
4	**DXV**	1,135	0,185		83,7%
5	**HT1**	0,599	0,087		85,4%
6	**CVT**	2,504	1,031		58,8%
7	**DC4**	1,007	0,345		65,7%
8	**HPS**	0,815	0,697		14,5%
9	**KBT**	1,019	0,639	VE1 as comparable	37,4%
10	**PPG**	0,755	0,354		53,1%
11	**SDN**	0,533	0,281		47,4%
12	**SKS**	0,761	0,358		53,0%
13	**VXB**	0,355	0,141	SKS as comparable	60,4%
14	**DHA**	0,837	0,704		15,8%
15	**CTI**	0,129	0,041	LM3 as comparable	68,2%
16	**DCT**	0,869	0,316		63,7%
17	**SCL**	1,007	0,550	DC4 as comparable	45,4%
18	**HVX**	0,816	0,567	DTC as comparable	30,5%
19	**NHC**	0,717	0,549		23,4%
20	**BHV**	1,308	0,412		68,5%
21	**XMC**	1,095	0,211		80,8%
22	**ACC**	0,816	0,602	HVX as comparable	26,3%
23	**BBS**	0,689	0,358		48,0%
24	**BCC**	0,851	0,148		82,6%
25	**BHC**	0,677	0,153		77,3%
26	**BHT**	0,816	0,137	DTC as comparable	83,2%
27	**BT6**	0,407	0,126		68,9%
28	**BTS**	0,880	0,188		78,6%
29	**CCM**	1,095	0,554		49,5%
30	**CYC**	0,788	0,239		69,6%
31	**DAC**	1,027	0,559		45,6%
32	**DTC**	0,816	0,161		80,3%
33	**GMX**	1,427	0,885	SDY as comparable	38,0%
34	**HCC**	1,022	0,534		47,7%

35	**HHL**	1,787	0,692		61,3%
36	**HLY**	0,948	0,446		52,9%
37	**HOM**	0,585	0,243		58,5%
38	**MCC**	1,308	1,181	BHV as comparable	9,7%
39	**MCL**	0,717	0,378	NHC as comparable	47,3%
40	**NNC**	0,816	0,619	DTC as comparable	24,1%
41	**QNC**	0,939	0,105		88,8%
42	**SCC**	0,943	0,710		24,7%
43	**SCJ**	1,390	0,703		49,4%
44	**SDY**	1,427	0,479		66,4%
45	**SHN**	3,693	1,807		51,1%
46	**TBX**	0,493	0,248		49,6%
47	**TCR**	0,759	0,376		50,4%
48	**TLT**	1,448	0,088		93,9%
49	**TMX**	1,559	0,568		63,6%
50	**TSM**	1,787	1,333	HHL as comparable	25,4%
51	**TTC**	0,708	0,241		66,0%
52	**TXM**	1,013	0,377		62,8%
53	**VCS**	1,177	0,500		57,6%
54	**VHL**	0,538	0,137		74,5%
55	**VIT**	0,541	0,126		76,8%
56	**VTS**	1,078	0,647		40,0%
57	**YBC**	1,310	0,227		82,7%
				Average	55,6%

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

If leverage increases up to 30%, all beta values of total 57 listed firms on VN construction material market as below:

Table 2 – Market risks of listed construction material firms (case 2)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage (30% up)
1	**DIC**	0,986	0,337		85,5%
2	**LBM**	1,186	0,783		44,2%
3	**NAV**	0,895	0,539		51,7%
4	**DXV**	1,135	0,185		108,8%
5	**HT1**	0,599	0,087		111,1%
6	**CVT**	2,504	1,031		76,4%
7	**DC4**	1,007	0,345		85,5%

8	HPS	0,815	0,697		18,9%
9	KBT	0,864	0,541	VE1 as comparable	48,6%
10	PPG	0,755	0,354		69,0%
11	SDN	0,533	0,281		61,6%
12	SKS	0,761	0,358		68,9%
13	VXB	0,204	0,081	SKS as comparable	78,5%
14	DHA	0,837	0,704		20,5%
15	CTI	0,049	0,016	LM3 as comparable	88,7%
16	DCT	0,869	0,316		82,8%
17	SCL	0,484	0,264	DC4 as comparable	59,0%
18	HVX	0,546	0,379	DTC as comparable	39,7%
19	NHC	0,717	0,549		30,4%
20	BHV	1,308	0,412		89,1%
21	XMC	1,095	0,211		105,0%
22	ACC	0,393	0,290	HVX as comparable	34,1%
23	BBS	0,689	0,358		62,4%
24	BCC	0,851	0,148		107,4%
25	BHC	0,677	0,153		100,5%
26	BHT	-0,091	-0,015	DTC as comparable	108,1%
27	BT6	0,407	0,126		89,6%
28	BTS	0,880	0,188		102,2%
29	CCM	1,095	0,554		64,3%
30	CYC	0,788	0,239		90,5%
31	DAC	1,027	0,559		59,2%
32	DTC	0,816	0,161		104,4%
33	GMX	0,824	0,511	SDY as comparable	49,4%
34	HCC	1,022	0,534		62,0%
35	HHL	1,787	0,692		79,7%
36	HLY	0,948	0,446		68,8%
37	HOM	0,585	0,243		76,0%
38	MCC	1,180	1,066	BHV as comparable	12,6%
39	MCL	0,326	0,172	NHC as comparable	61,5%

40	NNC	0,608	0,461	DTC as comparable	31,3%
41	QNC	0,939	0,105		115,5%
42	SCC	0,943	0,710		32,1%
43	SCJ	1,390	0,703		64,3%
44	SDY	1,427	0,479		86,4%
45	SHN	3,693	1,807		66,4%
46	TBX	0,493	0,248		64,5%
47	TCR	0,759	0,376		65,6%
48	TLT	1,448	0,088		122,1%
49	TMX	1,559	0,568		82,6%
50	TSM	1,304	0,972	HHL as comparable	33,1%
51	TTC	0,708	0,241		85,7%
52	TXM	1,013	0,377		81,6%
53	VCS	1,177	0,500		74,8%
54	VHL	0,538	0,137		96,9%
55	VIT	0,541	0,126		99,8%
56	VTS	1,078	0,647		52,0%
57	YBC	1,310	0,227		107,5%
				Average	72,3%

7.3. Scenario 3: leverage decreases down to 20%

If leverage decreases down to 20%, all beta values of total 57 listed firms on the construction material market in VN as following:

Table 3 – Market risk of listed construction material firms (case 3)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage (20% down)
1	DIC	0,986	0,337		52,6%
2	LBM	1,186	0,783		27,2%
3	NAV	0,895	0,539		31,8%
4	DXV	1,135	0,185		67,0%
5	HT1	0,599	0,087		68,4%
6	CVT	2,504	1,031		47,0%
7	DC4	1,007	0,345		52,6%
8	HPS	0,815	0,697		11,6%
9	KBT	1,118	0,700	VE1 as comparable	29,9%
10	PPG	0,755	0,354		42,5%
11	SDN	0,533	0,281		37,9%
12	SKS	0,761	0,358		42,4%

13	**VXB**	0,448	0,177	SKS as comparable	48,3%
14	**DHA**	0,837	0,704		12,6%
15	**CTI**	0,177	0,056	LM3 as comparable	54,6%
16	**DCT**	0,869	0,316		50,9%
17	**SCL**	0,705	0,385	DC4 as comparable	36,3%
18	**HVX**	0,657	0,456	DTC as comparable	24,4%
19	**NHC**	0,717	0,549		18,7%
20	**BHV**	1,308	0,412		54,8%
21	**XMC**	1,095	0,211		64,6%
22	**ACC**	0,547	0,404	HVX as comparable	21,0%
23	**BBS**	0,689	0,358		38,4%
24	**BCC**	0,851	0,148		66,1%
25	**BHC**	0,677	0,153		61,9%
26	**BHT**	0,327	0,055	DTC as comparable	66,6%
27	**BT6**	0,407	0,126		55,2%
28	**BTS**	0,880	0,188		62,9%
29	**CCM**	1,095	0,554		39,6%
30	**CYC**	0,788	0,239		55,7%
31	**DAC**	1,027	0,559		36,5%
32	**DTC**	0,816	0,161		64,2%
33	**GMX**	1,075	0,667	SDY as comparable	30,4%
34	**HCC**	1,022	0,534		38,2%
35	**HHL**	1,787	0,692		49,0%
36	**HLY**	0,948	0,446		42,3%
37	**HOM**	0,585	0,243		46,8%
38	**MCC**	1,230	1,111	BHV as comparable	7,7%
39	**MCL**	0,492	0,259	NHC as comparable	37,9%
40	**NNC**	0,692	0,525	DTC as comparable	19,3%
41	**QNC**	0,939	0,105		71,1%
42	**SCC**	0,943	0,710		19,8%
43	**SCJ**	1,390	0,703		39,5%
44	**SDY**	1,427	0,479		53,1%

45	SHN	3,693	1,807			40,8%
46	TBX	0,493	0,248			39,7%
47	TCR	0,759	0,376			40,4%
48	TLT	1,448	0,088			75,1%
49	TMX	1,559	0,568			50,8%
50	TSM	1,500	1,118		HHL as comparable	20,4%
51	TTC	0,708	0,241			52,8%
52	TXM	1,013	0,377			50,2%
53	VCS	1,177	0,500			46,0%
54	VHL	0,538	0,137			59,6%
55	VIT	0,541	0,126			61,4%
56	VTS	1,078	0,647			32,0%
57	YBC	1,310	0,227			66,1%
					Average	44,5%

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

Based on the above results, we find out:

Equity beta mean values in all 3 scenarios are acceptable ($< 1,1$) and asset beta mean values are also small ($< 0,5$) 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 0,129 (min) up to 3,693 (max value is somewhat high) and asset beta fluctuates from 0,041 (min) up to 1,807 (max). If leverage increases to 30%, equity beta moves from -0,091 (min) up to 3,693 (max unchanged) and asset beta moves from -0,015 (min) up to 1,807 (max). Hence, we note that there is a decrease in equity min value if leverage increases. When leverage decreases down to 20%, equity

beta value changes from 0,177 (min) up to 3,693 (max unchanged) and asset beta changes from 0,055 (min) up to 1,807 (max). So, there is a small increase in equity beta min value when leverage decreases in scenario 3.

Beside, Exhibit 5 informs us that in the case 30% leverage up, average equity beta value of 57 listed firms decreases down to 0,076 while average asset beta value of these 57 firms decreases little more up to 0,041. Then, when leverage reduces to 20%, average equity beta value of 57 listed firms also goes down to 0,036 and average asset beta value of 57 firms down to 0,02.

The below chart 1 shows us : when leverage degree decreases down to 20%, average equity and asset beta values increase slightly (0,975 and 0,436) compared to those at the initial rate as in reported (1,011 and 0,456). Then, when leverage degree increases up to 30%, average equity beta decreases little more and average asset beta value also decreases more (to 0,935 and 0,415). However, the fluctuation of equity beta value (0,317) in the case of 30% leverage up is higher than ($>$) the results in the rest 2 leverage cases.

Table 4 - Statistical results (FL in case 1)

| Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	3,693	1,807	1,885
MIN	0,129	0,041	0,088
MEAN	1,011	0,456	0,554
VAR	0,2839	0,1101	0,174
Note: Sample size : 57 firms			

Table 5 – Statistical results (FL in case 2)

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	3,693	1,807	1,885
MIN	-0,091	-0,015	-0,076
MEAN	0,935	0,415	0,520
VAR	0,3166	0,0977	0,219
Note: Sample size : 57 firms			

Table 6- Statistical results (FL in case 3)

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	3,693	1,807	1,885
MIN	0,177	0,055	0,122
MEAN	0,975	0,436	0,539
VAR	0,2875	0,1001	0,187
Note: Sample size : 57 firms			

Chart 1 – Comparing statistical results of three (3) scenarios of changing FL
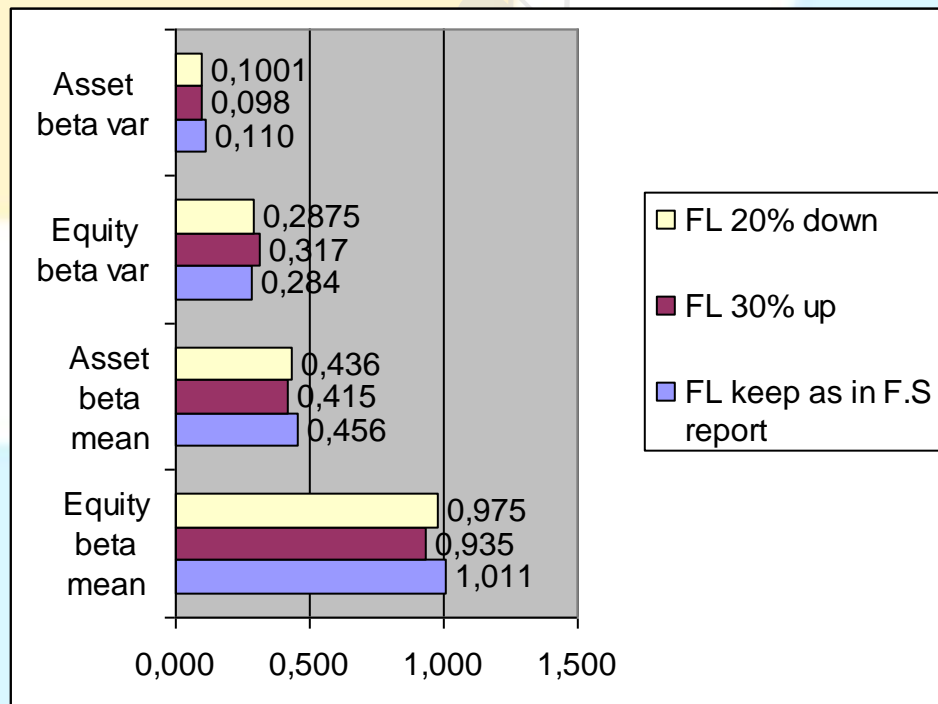
9. RISK ANALYSIS

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 debt financing also causes what is called financial risk for a firm.

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.

10. CONCLUSION & 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 construction material 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 equity 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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Author's Biography with Photo

Dinh Tran Ngoc Huy
MBA degree from International University of Japan, Japan

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		

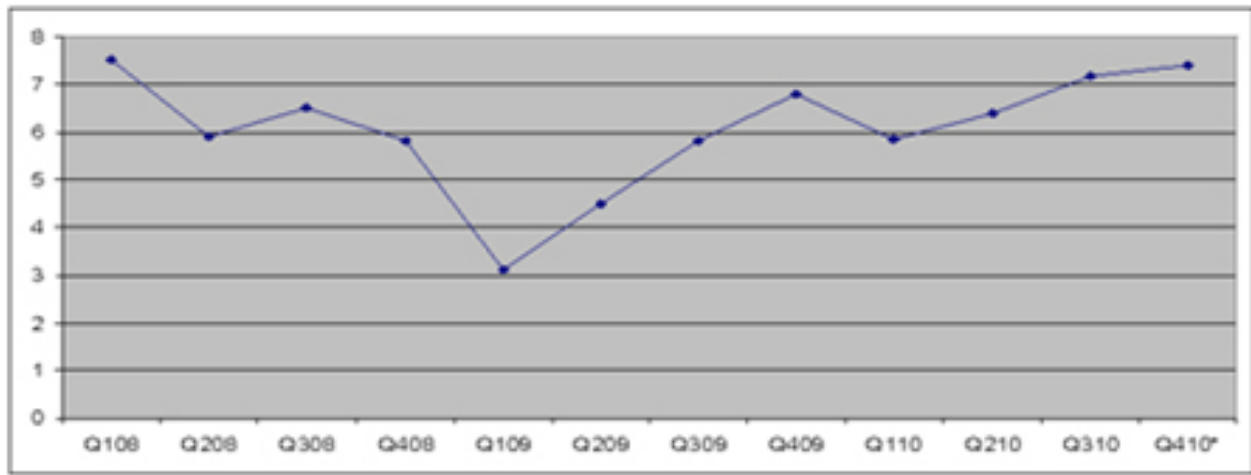**Exhibit 4**: GDP growth Việt Nam 2006-2010 (*source: Bureau Statistic*)

Exhibit 5 – Increase/decrease risk level of listed construction material 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	DIC	0,986	0,337	0,000	0,000	0,000	0,000
2	LBM	1,186	0,783	0,000	0,000	0,000	0,000
3	NAV	0,895	0,539	0,000	0,000	0,000	0,000
4	DXV	1,135	0,185	0,000	0,000	0,000	0,000
5	HT1	0,599	0,087	0,000	0,000	0,000	0,000
6	CVT	2,504	1,031	0,000	0,000	0,000	0,000
7	DC4	1,007	0,345	0,000	0,000	0,000	0,000
8	HPS	0,815	0,697	0,000	0,000	0,000	0,000
9	KBT	1,019	0,639	-0,156	-0,098	0,099	0,062
10	PPG	0,755	0,354	0,000	0,000	0,000	0,000

11	SDN	0,533	0,281	0,000	0,000	0,000	0,000
12	SKS	0,761	0,358	0,000	0,000	0,000	0,000
13	VXB	0,355	0,141	-0,151	-0,060	0,092	0,037
14	DHA	0,837	0,704	0,000	0,000	0,000	0,000
15	CTI	0,129	0,041	-0,080	-0,025	0,048	0,015
16	DCT	0,869	0,316	0,000	0,000	0,000	0,000
17	SCL	1,007	0,550	-0,523	-0,285	-0,302	-0,165
18	HVX	0,816	0,567	-0,270	-0,187	-0,159	-0,111
19	NHC	0,717	0,549	0,000	0,000	0,000	0,000
20	BHV	1,308	0,412	0,000	0,000	0,000	0,000
21	XMC	1,095	0,211	0,000	0,000	0,000	0,000
22	ACC	0,816	0,602	-0,423	-0,312	-0,268	-0,198
23	BBS	0,689	0,358	0,000	0,000	0,000	0,000
24	BCC	0,851	0,148	0,000	0,000	0,000	0,000
25	BHC	0,677	0,153	0,000	0,000	0,000	0,000
26	BHT	0,816	0,137	-0,907	-0,152	-0,488	-0,082
27	BT6	0,407	0,126	0,000	0,000	0,000	0,000
28	BTS	0,880	0,188	0,000	0,000	0,000	0,000
29	CCM	1,095	0,554	0,000	0,000	0,000	0,000
30	CYC	0,788	0,239	0,000	0,000	0,000	0,000
31	DAC	1,027	0,559	0,000	0,000	0,000	0,000
32	DTC	0,816	0,161	0,000	0,000	0,000	0,000
33	GMX	1,427	0,885	-0,603	-0,374	-0,352	-0,218
34	HCC	1,022	0,534	0,000	0,000	0,000	0,000
35	HHL	1,787	0,692	0,000	0,000	0,000	0,000
36	HLY	0,948	0,446	0,000	0,000	0,000	0,000
37	HOM	0,585	0,243	0,000	0,000	0,000	0,000
38	MCC	1,308	1,181	-0,127	-0,115	-0,077	-0,070
39	MCL	0,717	0,378	-0,391	-0,206	-0,225	-0,118
40	NNC	0,816	0,619	-0,208	-0,158	-0,124	-0,094
41	QNC	0,939	0,105	0,000	0,000	0,000	0,000

42	SCC	0,943	0,710	0,000	0,000	0,000	0,000
43	SCJ	1,390	0,703	0,000	0,000	0,000	0,000
44	SDY	1,427	0,479	0,000	0,000	0,000	0,000
45	SHN	3,693	1,807	0,000	0,000	0,000	0,000
46	TBX	0,493	0,248	0,000	0,000	0,000	0,000
47	TCR	0,759	0,376	0,000	0,000	0,000	0,000
48	TLT	1,448	0,088	0,000	0,000	0,000	0,000
49	TMX	1,559	0,568	0,000	0,000	0,000	0,000
50	TSM	1,787	1,333	-0,483	-0,360	-0,287	-0,214
51	TTC	0,708	0,241	0,000	0,000	0,000	0,000
52	TXM	1,013	0,377	0,000	0,000	0,000	0,000
53	VCS	1,177	0,500	0,000	0,000	0,000	0,000
54	VHL	0,538	0,137	0,000	0,000	0,000	0,000
55	VIT	0,541	0,126	0,000	0,000	0,000	0,000
56	VTS	1,078	0,647	0,000	0,000	0,000	0,000
57	YBC	1,310	0,227	0,000	0,000	0,000	0,000
		Average	-0,076	-0,041	-0,036	-0,020

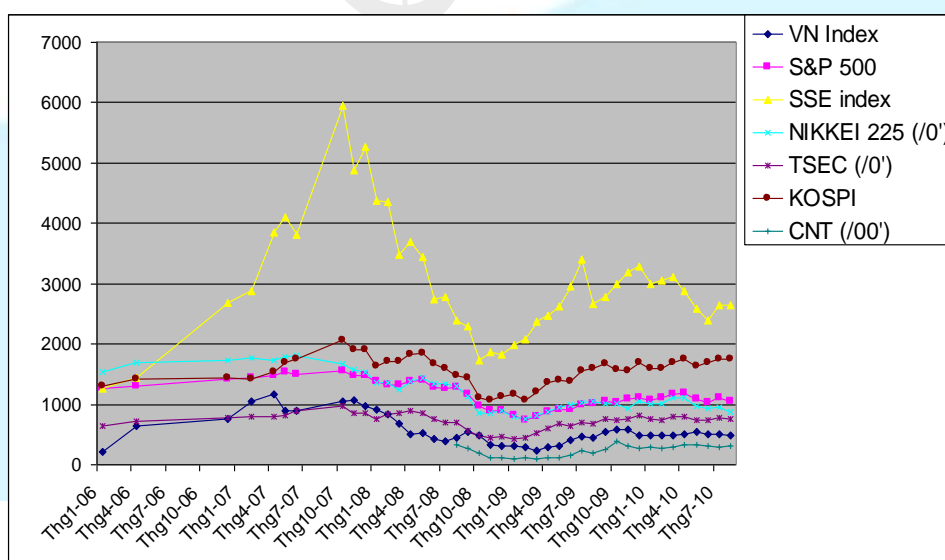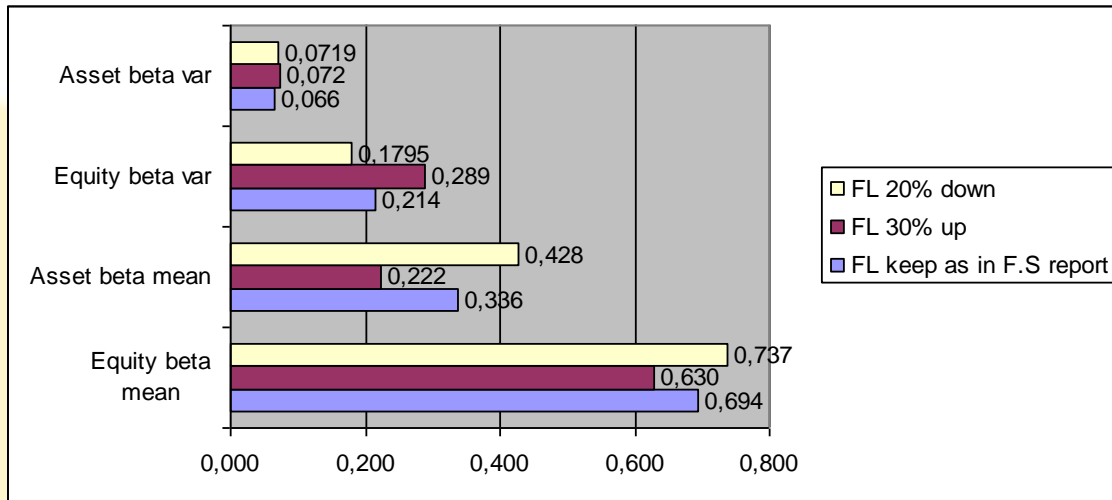**Exhibit 6-** VNI Index and other stock market index during crisis 2006-2010

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