

Changing Tax Rates Impacts on the Risk Level of Vietnam Construction Material Firms

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Abstract

The Viet Nam stock market has been affected by the financial crisis 2007-2009. This study analyzes the impacts of tax policy on market risk for the listed firms in the construction material industry as it becomes necessary.

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 companies are acceptable.

Second, under 3 different scenarios of changing tax rates (20%, 25% and 28%), we recognized that there is not large disperse in equity beta values, estimated at 0,957, 1,011 and 0,961. These values are lower than those of the listed VN construction firms.

Third, by changing tax rates in 3 scenarios (25%, 20% and 28%), we recognized equity /asset beta mean and asset beta var increase if tax rate increases from 20% to 25%, then decrease when tax rate goes up from 25% to 28%.

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; Tax rate; Construction material industry; Jell classification

Introduction

During the global crisis 2007-2009, Viet Nam stock market (Figure 1) has difficulties and opportunities. In this study, we perform a market risk analysis with quantitative methodology based on asset and equity beta of 57 listed companies in the group of construction material firms. The above industry faced many difficulties in previous years such as how to increase the number of customers, service quality and revenues; now, they have to deal with some problems from the global crisis. From 2009-2011, the local government and central bank have performed some effective macro policies including fiscal policy (tax) to help the economy to recover.

Together with the development of real estate industry, throughout many recent years, Viet Nam construction industry is considered as one of active economic sectors, which has certain positive effect for the economy. Hence, this paper emphasizes on analyzing un-diversifiable risk in the above industry in one of emerging markets: Vietnam stock market (Figure 2) during and after the financial crisis 2007-2009. There is no research, so far, done on the same topic.

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.

Research Issues

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

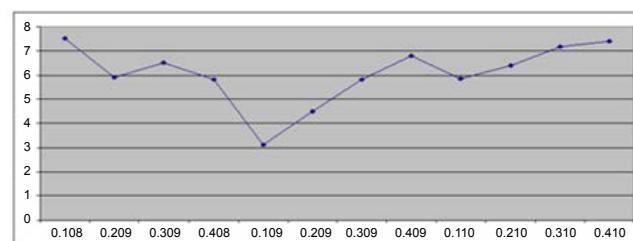


Figure 2: GDP growth Viet Nam 2006-2010 (source: Bureau Statistic).

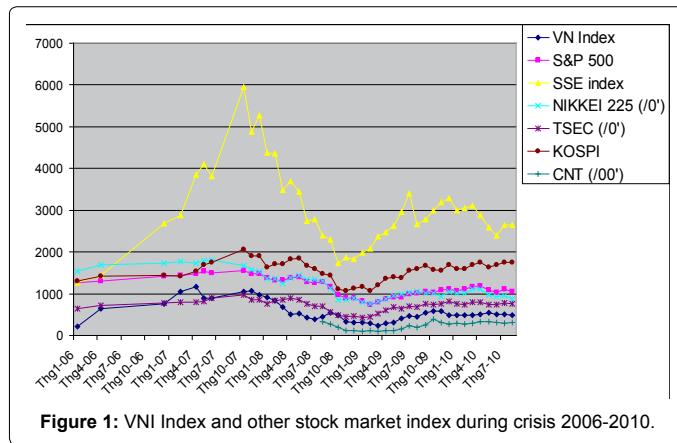


Figure 1: VNI Index and other stock market index during crisis 2006-2010.

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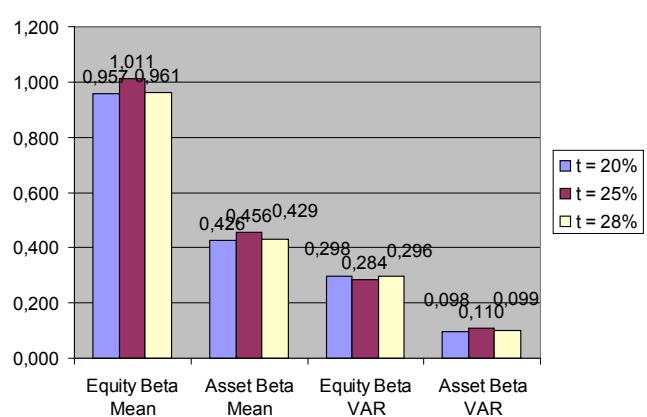


Figure 3: Comparing statistical results of three (3) scenarios of changing tax rate.

behavior of economic agents, leading them to wrong economic decision. George and Yau [6] found that there is a positive relationship between transaction cost and price volatility, suggesting that the imposition of a transaction tax could increase financial market fragility, increasing the likelihood of a financial crisis rather than reducing it.

Next, Rudd [7] said that greater tax bias is associated with significantly higher aggregate bank leverage, and this in turn is associated with a significantly greater chance of crisis.

Then, Sung et al. [8] also indicated that business property values are more responsive to changes in tax rates as compared to residential property.

Finally, tax rate can be considered as one among many factors that affect business risk of construction material firms.

Conceptual Theories

The impact of fiscal policy on the economy

Tax policy is one among major fiscal policies. In a specific industry such as construction material industry, on the one hand, using tax policy with a decrease or increase in tax rate could affect tax revenues, profit after tax, demand, the allocation of economic resources and financial results and compensation and jobs of the industry. Beside, using tax policies and rules could affect the excessive using of leverage or debt, as well as the number of financial transactions in businesses and the economy.

In the financial crisis 2007-2009, tax policy is not the cause whereas the government could use it to help the economy and business. However, we might note that the wrong use of tax policy might partly cause the crisis impacts become more serious.

Methodology

The impacts from the financial crisis happened during the period 2007-2011; hence, in this study, we use the live data from the stock exchange market in Viet Nam (HOSE and HNX) during the four or five years period to estimate systemic risk results and tax impacts.

In this research, analytical research method is used, philosophical method is used and specially, tax rate 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.

General Data Analysis

The research sample has 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 tax rate from 25% to 28% and 20% to see the sensitivity of beta values. In 3 cases (rate = 20%, 25%, and 28%), asset beta mean is estimated at 0,426, 0,456 and 0,429. Also in 3 scenarios, we find out var of asset beta estimated at 0,098, 0,110 and 0,099 (almost the same) which shows small risk dispersion. Tax rate changes almost have no effect on asset beta var under financial leverage.

Empirical Research Findings and Discussion

In the below section, data used are from total 57 listed construction

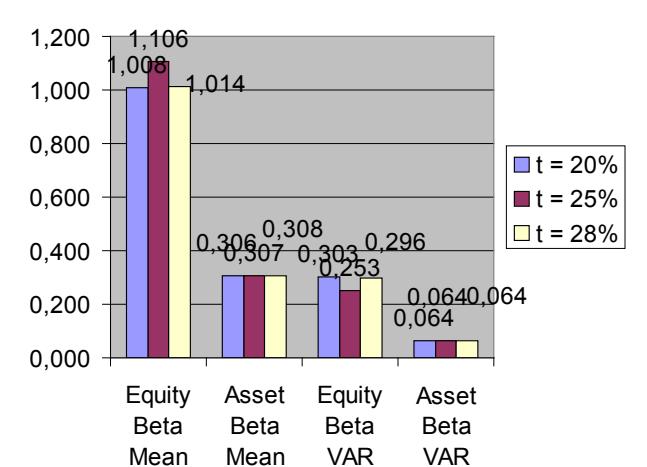


Figure 4: Comparing statistical results of three (3) scenarios of changing tax rate of 104 listed construction firms.

Issue 1: Whether the risk level of construction firms under the different changing scenarios of tax rates increase or decrease so much.

Issue 2: Whether the disperse distribution of beta values become large in the different changing scenarios of tax rates estimated in the construction industry (Figures 3 and 4).

Literature review

Smith [1] mentions in Chicago, properties located in a designated TIF (tax increment financing) district will exhibit higher rates of appreciation after the area is designated a qualifying TIF district when compared to those properties selling outside TIF districts, and when compared to properties that sell within TIF district boundaries prior to designation.

Then, Vikas and David [2] said that the change in the tax law, by itself did not because the housing bubble but other factors play a larger role, such as: a failure by regulators to intervene.

Vieri [3,4] found out tax system could affect economic factors that trigger the financial crisis, such as: mortgage interest, management performance – based remuneration, and securitization process. Thomas [5] recognized that tax incentives may indeed have exacerbated the

material companies on VN stock exchange (HOSE and HNX mainly). In the scenario 1, current tax rate is 25% which is used to calculate market risk (beta). Then, two (2) tax rate scenarios are changed up to 28% and down to 20%, compared to the current corporate tax rate (Tables 1-7).

Year	Borrowing Interest rates	Deposit Rates	Note
2011	18%-22%	13%-14%	
2010	19%-20%	13%-14%	
2009	9%-12%	9%-10%	
2008	19%-21%	15%-16,5%	Approximately (2007: required reserves ratio at SBV is changed from 5% to 10%)
2007	12%-15%	9%-11%	(2009: special supporting interest rate is 4%)

Table 1: Interest rates in banking industry during crisis(source: Viet Nam commercial banks).

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%	

Table 2: Basic interest rate changes in Viet Nam(source: State Bank of Viet Nam and Viet Nam economy).

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	

Table 3: Inflation, GDP growth and macroeconomics factors(source: Viet Nam commercial banks and economic statistical bureau).

Order	Rank	Company name	CEO	Tax code	Industry
1	1	CÔNG TY CP LÂM SẢN PISICO QUẢNG NAM	Phan Văn Cường	4000405162	Kinh doanh nông, lâm sản
2	2	CÔNG TY CP VÀNG BẠC ĐÁ QUÝ SJC CẦN THƠ	Lê Phát Vinh	1800636290	Vàng, bạc, đá quý
3	3	CÔNG TY CP SƠI PHÚ NAM	Hoàng Văn Thám	3300491474	Sản xuất sợi, dệt
4	4	CÔNG TY CP VÀNG BẠC ĐÁ QUÝ BẾN THÀNH	Tề Trí Dũng	300847936	Vàng, bạc, đá quý
5	5	CÔNG TY CP MAY CHIỀN THẮNG	Ninh Thị Ty	100101058	Ngành may
6	6	CÔNG TY TNHH DU LỊCH TRẦN VIỆT	Nguyễn Mạnh Cường	301069809	Du lịch, khách sạn
7	7	N.A		2012701	
8	8	CÔNG TY TNHH TRUYỀN THÔNG ADT	Đặng Huy Thắng	100905796	Sản xuất khác
9	9	CÔNG TY CP KẾT NỐI NHÂN TÀI	Tiêu Yến Trinh	305202145	Kinh doanh tổng hợp khác
10	10	CÔNG TY TNHH THIẾT LẬP	Nguyễn Hoàng Ân	1500441413	Sản xuất, kinh doanh, chế biến gao, bột mỳ, ngũ cốc...
11	11	CÔNG TY TNHH-CHÉ BIÊN THỦY SẢN VÀ XNK TRANG KHANH	Trần Tuấn Khanh	1900287501	Nuôi trồng, chế biến, kinh doanh thủy sản và các sản phẩm thịt
12	12	CÔNG TY SẢN XUẤT THƯƠNG MAI VÀ ĐẦU TƯ TAM MINH	Lưu Tuấn Anh	4300327589	Sản xuất đồ gỗ, nội thất
13	13	CÔNG TY TNHH THƯƠNG MAI SẢN XUẤT HÙNG HUY	Voòng A Hoa	302259111	Sản xuất và gia công giày, dép

14	14	CÔNG TY TNHH THƯƠNG MẠI HOÀNG ĐẠO	Hồ Hoàng Bách	301434963	Sản xuất, kinh doanh thuốc lá, nguyên liệu thuốc lá
15	15	CÔNG TY TNHH THƯƠNG MẠI XÂY DỰNG DIEU LONG	Đặng Thị Linh Phương	302000905	Kinh doanh tổng hợp khác
16	16	CÔNG TY CP XÂY DỰNG NHÀ VÀ PHÁT TRIỂN HA TĂNG HÀ NỘI	Phạm Thanh Nam	101370536	Xây dựng nhà và các công trình kỹ thuật dân dụng; hoạt động xây dựng chuyên dụng
17	17	CÔNG TY CP XĂNG DẦU THƯƠNG MẠI SÔNG TRÀ	Nguyễn Anh	4300334642	Kinh doanh xăng dầu, khí đốt, nhiên liệu và các sản phẩm liên quan
18	18	CÔNG TY CP SƠI PHÚ THANH	Nguyễn Văn Cường	3300471069	Sản xuất sợi, dệt
19	19	CÔNG TY TNHH DU LỊCH VÀ THƯƠNG MẠI SÔNG HỒNG	Lê Công Hoàng	100237411	Kinh doanh xăng dầu, khí đốt, nhiên liệu và các sản phẩm liên quan
20	20	CÔNG TY CP DẦU THỰC VẬT BÌNH ĐỊNH	Nguyễn Thị Thùy Giao	4100399995	Sản xuất thực phẩm chế biến: sữa, đường, cà phê, dầu ăn, bánh kẹo...
21	21	CÔNG TY CP VẬT TƯ MỎ ĐIỂM CHẤT	Lê Nhật Tân	101453768	Kinh doanh tổng hợp khác
22	22	CÔNG TY TNHH MTV SÀI GÒN BÉN TRE	Nguyễn Ngọc Minh Hùng	1300419650	Bán lẻ, kinh doanh siêu thị
23	23	CÔNG TY TNHH HÀI VIỆT	Nguyễn Văn Rỉ	3700443193	Kinh doanh nông, lâm sản
24	24	CÔNG TY TNHH MAY PHÙ ĐỔNG	Dương Đức Thanh	100598947	Ngành may
25	25	CÔNG TY TNHH THƯƠNG MẠI VÀ DỊCH VỤ KỸ THUẬT TESCO	Trần Thanh Bình	101507773	Sản xuất, kinh doanh ôtô, phụ tùng ôtô
26	26	CÔNG TY TNHH THƯƠNG MẠI PHÚC THÁI	Bùi Xuân Huy	600346391	Kinh doanh xăng dầu, khí đốt, nhiên liệu và các sản phẩm liên quan
27	27	CÔNG TY TNHH MINH ĐĂNG	Nguyễn Thị Cẩm Nhung	2200258144	Nuôi trồng, chế biến, kinh doanh thuỷ sản và các sản phẩm thịt
28	28	CÔNG TY TNHH THƯƠNG MẠI VÀ DỊCH VỤ VÂN TÀI NGỌC KHÁNH	Trần Ngọc Huân	4000377194	Kinh doanh xăng dầu, khí đốt, nhiên liệu và các sản phẩm liên quan
29	29	CÔNG TY TNHH THƯƠNG MẠI DỊCH VỤ VÂN PHÁT	Cao Ngọc Anh	303332212	Kinh doanh tổng hợp khác
30	30	CÔNG TY CP VẬN TẢI VÀ DỊCH VỤ PETROLIMEX NGHỆ TÍNH	Võ Văn Tân	2900428497	Kinh doanh xăng dầu, khí đốt, nhiên liệu và các sản phẩm liên quan
31	31	CÔNG TY TNHH THƯƠNG MẠI SẢN XUẤT TÂN BÌNH	Trần Trí Thức	3900326063	Sản xuất đồ gỗ, nội thất
32	32	CÔNG TY TNHH NGUYỄN LIÊU GIẤY DUNG QUẬT	Nguyễn Nị	4300308498	Sản xuất đồ gỗ, nội thất
33	33	CÔNG TY TNHH BỆNH VIỆN ĐA KHOA TƯ NHÂN AN SINH	Ngô Đăng Sơn Anh	302774433	Sản xuất khác
34	34	CÔNG TY TNHH IN LỤA NHẤT PHƯƠNG	Huỳnh Thị Thanh Thuỷ	301441840	Sản xuất giấy, in ấn, xuất bản
35	35	CÔNG TY CP DẦU KHÍ SÀI GÒN-PHÚ YÊN	Trần Công Chưởng	4400344901	Kinh doanh xăng dầu, khí đốt, nhiên liệu và các sản phẩm liên quan
36	36	CÔNG TY CP BÊ TÔNG ĐĂNG HÀI	Phan Văn Khanh	400619838	Sản xuất, kinh doanh vật liệu xây dựng: xi măng, gạch xây, đá, cát...
37	37	CÔNG TY CP GIÀY BÌNH ĐỊNH	Võ Ngọc Thùy	4100258761	Sản xuất và gia công giày, dép
38	38	CÔNG TY CP ĐẦU TƯ PHÁT TRIỂN THIÊN SƠN	Vũ Văn Tuyên	101536301	Sản xuất, kinh doanh vật liệu xây dựng: xi măng, gạch xây, đá, cát...
39	39	HTX THƯƠNG MẠI ĐÔ THÀNH	Hàng Thanh Dân	302804374	Kinh doanh thực phẩm chế biến: sữa, đường, cà phê, dầu ăn, bánh kẹo.....
40	40	CÔNG TY CP XÂY DỰNG TỔNG HỢP 269	Trương Duy Niêm	3000244523	Xây dựng nhà và các công trình kỹ thuật dân dụng; hoạt động xây dựng chuyên dụng

Table 4: Top 40 among top 500 SMEs with the highest growth speed in 2012 (source: Vietnamnet and Viet Nam report).

VN construction material market as following: (Table 8). The exhibit shows us that comparing to equity beta, asset beta values of firms had a big decrease.

- Scenario 2: tax rate increases up to 28%

If corporate tax rates increases up to 28%, all beta values of total 57 listed firms on VN construction material market as below: (Table 9).

- Scenario 3: tax rate decreases down to 20%

If corporate tax rate decreases down to 20%, all beta values of total 57 listed firms on the construction material market in VN as following: (Table 10).

All three above tables and data show that values of equity and asset beta in the case of increasing tax rate up to 28% or decreasing rate down to 20% have small fluctuation.

Comparing Statistical Results in 3 Scenarios of Changing Tax Rate

Based on above results, we find out:

Equity beta mean values in all 3 scenarios are acceptable despite of in the case tax rate of 25%, beta is higher than ($>$) 1, but asset beta mean values are much smaller. In the case of current tax rate of 25%, equity beta value fluctuates in a wide range from 0,129 (min) up to 3,693 (max value is much higher) and asset beta fluctuates from 0,041 (min) up to 1,807 (max). If corporate tax rate increases to 28%, equity beta moves from 0,132 (min) up to 3,693 (max) and asset beta moves from 0,030 (min) up to 1,807 (max). Hence, we note that there is a little increasing change in equity beta min value if corporate tax increases. When tax rate decreases down to 20%, equity beta value changes from 0,124 (min) up to 3,693 (max) and asset beta changes from 0,028 (min) up to 1,807 (max). So, there are

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

Table 5: Risk and financial leverage of 57 listed construction material firms on VN stock exchange period 2007-2011.

Order No.	Company stock code	t = 25%		t = 28%		t = 20%	
		Equity beta	Asset beta	Increase/Decrease (equity beta)	Increase/Decrease (asset beta)	Increase/Decrease (equity beta)	Increase/Decrease (asset beta)
1	DIC	0,9856	0,3373	0,0000	0,0000	0,0000	0,0000
2	LBM	1,1862	0,7832	0,0000	0,0000	0,0000	0,0000
3	NAV	0,8954	0,5393	0,0000	0,0000	0,0000	0,0000
4	DXV	1,1349	0,1847	0,0000	0,0000	0,0000	0,0000
5	HT1	0,5991	0,0872	0,0000	0,0000	0,0000	0,0000
6	CVT	2,5036	1,0314	0,0000	0,0000	0,0000	0,0000
7	DC4	1,0068	0,3450	0,0000	0,0000	0,0000	0,0000
8	HPS	0,8155	0,6968	0,0000	0,0000	0,0000	0,0000
9	KBT	1,0193	0,6385	0,0128	0,0080	-0,0206	-0,0129
10	PPG	0,7551	0,3543	0,0000	0,0000	0,0000	0,0000
11	SDN	0,5330	0,2806	0,0000	0,0000	0,0000	0,0000
12	SKS	0,7611	0,3576	0,0000	0,0000	0,0000	0,0000
13	VXB	0,3553	0,1408	0,0077	0,0031	-0,0122	-0,0048
14	DHA	0,8366	0,7045	0,0000	0,0000	0,0000	0,0000
15	CTI	0,1289	0,0410	0,0033	0,0010	-0,0051	-0,0016
16	DCT	0,8690	0,3157	0,0000	0,0003	0,0000	0,0000
17	SCL	1,0068	0,5496	-0,3771	-0,2059	-0,4023	-0,2196
18	HVX	0,8158	0,5666	-0,1962	-0,1363	-0,2123	-0,1475
19	NHC	0,7168	0,5492	0,0000	0,0000	0,0000	0,0000
20	BHV	1,3078	0,4118	0,0000	0,0000	0,0000	0,0000
21	XMC	1,0947	0,2106	0,0000	0,0000	0,0000	0,0000
22	ACC	0,8158	0,6015	-0,3226	-0,2379	-0,3461	-0,2552
23	BBS	0,6892	0,3584	0,0000	0,0000	0,0000	0,0000
24	BCC	0,8510	0,1478	0,0000	0,0000	0,0000	0,0000
25	BHC	0,6769	0,1534	0,0000	0,0000	0,0000	0,0000
26	BHT	0,8158	0,1371	-0,6370	-0,1071	-0,6513	-0,1095
27	BT6	0,4072	0,1265	0,0000	0,0000	0,0000	0,0000
28	BTS	0,8804	0,1882	0,0000	0,0000	0,0000	0,0000
29	CCM	1,0955	0,5536	0,0000	0,0000	0,0000	0,0000
30	CYC	0,7880	0,2392	0,0000	0,0000	0,0000	0,0000
31	DAC	1,0273	0,5592	0,0000	0,0000	0,0000	0,0000
32	DTC	0,8158	0,1609	0,0000	0,0000	0,0000	0,0000
33	GMX	1,4265	0,8848	-0,4365	-0,2707	-0,4690	-0,2909
34	HCC	1,0215	0,5342	0,0000	0,0000	0,0000	0,0000
35	HHL	1,7873	0,6920	0,0000	0,0000	0,0000	0,0000
36	HLY	0,9477	0,4461	0,0000	0,0000	0,0000	0,0000
37	HOM	0,5853	0,2430	0,0000	0,0000	0,0000	0,0000
38	MCC	1,3078	1,1813	-0,0936	-0,0846	-0,1032	-0,0932
39	MCL	0,7168	0,3776	-0,2815	-0,1483	-0,2997	-0,1579
40	NNC	0,8158	0,6192	-0,1518	-0,1152	-0,1653	-0,1254
41	QNC	0,9395	0,1051	0,0000	0,0000	0,0000	0,0000
42	SCC	0,9429	0,7098	0,0000	0,0000	0,0000	0,0000
43	SCJ	1,3904	0,7031	0,0000	0,0000	0,0000	0,0000
44	SDY	1,4265	0,4789	0,0000	0,0000	0,0000	0,0000
45	SHN	3,6926	1,8072	0,0000	0,0000	0,0000	0,0000
46	TBX	0,4932	0,2484	0,0000	0,0000	0,0000	0,0000
47	TCR	0,7593	0,3763	0,0000	0,0000	0,0000	0,0000
48	TLT	1,4483	0,0880	0,0000	0,0000	0,0000	0,0000
49	TMX	1,5594	0,5682	0,0000	0,0000	0,0000	0,0000
50	TSM	1,7873	1,3326	-0,3525	-0,2628	-0,3832	-0,2857
51	TTC	0,7075	0,2409	0,0000	0,0000	0,0000	0,0000
52	TXM	1,0135	0,3774	0,0000	0,0000	0,0000	0,0000
53	VCS	1,1768	0,4995	0,0000	0,0000	0,0000	0,0000
54	VHL	0,5380	0,1371	0,0000	0,0000	0,0000	0,0000
55	VIT	0,5415	0,1258	0,0000	0,0000	0,0000	0,0000
56	VTS	1,0780	0,6468	0,0000	0,0000	0,0000	0,0000
57	YBC	1,3097	0,2270	0,0000	0,0000	0,0000	0,0000
Average				-0,0496	-0,0273	-0,0539	-0,0299

Table 6: Increase/decrease risk level of listed construction material firms under changing scenarios of tax rates : 25%, 28%, 20% period 2007 – 2011.

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	1,770	1,575	0,195
MIN	0,062	0,016	0,046
MEAN	0,750	0,362	0,388
VAR	0,2624	0,1151	0,147

Note: Sample size : 45

Table 7: Statistical results (tax rate = 20%) in the real estate industry 2007-2009.

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)
1	DIC	0,986	0,337
2	LBM	1,186	0,783
3	NAV	0,895	0,539
4	DXV	1,135	0,185
5	HT1	0,599	0,087
6	CVT	2,504	1,031
7	DC4	1,007	0,345
8	HPS	0,815	0,697
9	KBT	1,019	0,639
10	PPG	0,755	0,354
11	SDN	0,533	0,281
12	SKS	0,761	0,358
13	VXB	0,355	0,141
14	DHA	0,837	0,704
15	CTI	0,129	0,041
16	DCT	0,869	0,316
17	SCL	1,007	0,550
18	HVX	0,816	0,567
19	NHC	0,717	0,549
20	BHV	1,308	0,412
21	XMC	1,095	0,211
22	ACC	0,816	0,602
23	BBS	0,689	0,358
24	BCC	0,851	0,148
25	BHC	0,677	0,153
26	BHT	0,816	0,137
27	BT6	0,407	0,126
28	BTS	0,880	0,188
29	CCM	1,095	0,554
30	CYC	0,788	0,239
31	DAC	1,027	0,559
32	DTC	0,816	0,161
33	GMX	1,427	0,885
34	HCC	1,022	0,534
35	HHL	1,787	0,692
36	HLY	0,948	0,446
37	HOM	0,585	0,243
38	MCC	1,308	1,181
39	MCL	0,717	0,378
40	NNC	0,816	0,619
41	QNC	0,939	0,105
42	SCC	0,943	0,710
43	SCJ	1,390	0,703
44	SDY	1,427	0,479
45	SHN	3,693	1,807
46	TBX	0,493	0,248
47	TCR	0,759	0,376

48	TLT	1,448	0,088
49	TMX	1,559	0,568
50	TSM	1,787	1,333
51	TTC	0,708	0,241
52	TXM	1,013	0,377
53	VCS	1,177	0,500
54	VHL	0,538	0,137
55	VIT	0,541	0,126
56	VTS	1,078	0,647
57	YBC	1,310	0,227

Table 8: Market risk of listed companies on VN construction material market ($t = 25\%$).

small decreasing changes in equity/asset beta min values when tax decreases in scenario 3 (Table 11).

Beside, Exhibit 7 informs us that in the case 28% tax rate, average equity beta value of 57 listed firms decreases up to 0,05 while average asset beta value of these 57 firms increase slightly up to 0,027. Then, when tax rate reduces to 20%, average equity beta value of 57 listed firms reduce to 0,05 and average asset beta value of 57 firms down to 0,03 (Table 12).

The below chart 1 shows us : when tax rate decreases down to 20%, average equity and asset beta values decrease slightly (0,957 and 0,426) compared to those at the initial rate of 25% (1,011 and 0,456). At the same time, when tax rate increases up to 28%, average equity and asset beta decrease just slightly (to 0,961 and 0,429). However, the fluctuation of equity beta value (0,298) in the case of 20% tax rate is higher than (>) the results in the rest 2 tax rate cases (Table 13 and Figure 1,4).

Risk Analysis

In the case of decreasing tax rate, (20%), the market and companies can receive more benefits such as generating more jobs and compensation, but the government budget can have deficit and the government has to cut expenses. Changes in tax rates can have both positive and negative impacts on the local market.

In the case of increasing tax rate (28%), the government will have budget to finance public expenditures but the tax could reduce both demand and supply.

The debt level of business sector also needed to be taken into account if the government would like to change the tax rates.

Conclusion and Policy Suggestion

In summary, the government continues to increase the effectiveness of building the legal system and regulation and macro policies supporting the plan of developing both the construction and the construction material 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, although we could note that in this study when tax rate is going to increase up to 28%, the value of equity beta mean decreases down to 0,961, from 1,011 and asset beta mean decreases down to 0,429, from 0,456. Furthermore, it has to pay attention to the degree of using leverage (operation and financial leverage) in the industry before it decides to change the tax rates. Certainly, the government bodies could choose either changing tax rates or cutting public expenditures as changing tax rates might have both negative and positive impacts.

The State Bank of Viet Nam continues to increase the effectiveness

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)
1	DIC	0,986	0,337
2	LBM	1,186	0,783
3	NAV	0,895	0,539
4	DXV	1,135	0,185
5	HT1	0,599	0,087
6	CVT	2,504	1,031
7	DC4	1,007	0,345
8	HPS	0,815	0,697
9	KBT	1,032	0,646
10	PPG	0,755	0,354
11	SDN	0,533	0,281
12	SKS	0,761	0,358
13	VXB	0,363	0,144
14	DHA	0,837	0,704
15	CTI	0,132	0,042
16	DCT	0,869	0,316
17	SCL	0,630	0,344
18	HVX	0,620	0,430
19	NHC	0,717	0,549
20	BHV	1,308	0,412
21	XMC	1,095	0,211
22	ACC	0,493	0,364
23	BBS	0,689	0,358
24	BCC	0,851	0,148
25	BHC	0,677	0,153
26	BHT	0,179	0,030
27	BT6	0,407	0,126
28	BTS	0,880	0,188
29	CCM	1,095	0,554
30	CYC	0,788	0,239
31	DAC	1,027	0,559
32	DTC	0,816	0,161
33	GMX	0,990	0,614
34	HCC	1,022	0,534
35	HHL	1,787	0,692
36	HLY	0,948	0,446
37	HOM	0,585	0,243
38	MCC	1,214	1,097
39	MCL	0,435	0,229
40	NNC	0,664	0,504
41	QNC	0,939	0,105
42	SCC	0,943	0,710
43	SCJ	1,390	0,703
44	SDY	1,427	0,479
45	SHN	3,693	1,807
46	TBX	0,493	0,248
47	TCR	0,759	0,376
48	TLT	1,448	0,088
49	TMX	1,559	0,568
50	TSM	1,435	1,070
51	TTC	0,708	0,241
52	TXM	1,013	0,377
53	VCS	1,177	0,500
54	VHL	0,538	0,137
55	VIT	0,541	0,126
56	VTS	1,078	0,647
57	YBC	1,310	0,227

Table 9: Market risks of listed construction material firms ($t = 28\%$).

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)
1	DIC	0,986	0,337
2	LBM	1,186	0,783
3	NAV	0,895	0,539
4	DXV	1,135	0,185
5	HT1	0,599	0,087
6	CVT	2,504	1,031
7	DC4	1,007	0,345
8	HPS	0,815	0,697
9	KBT	0,999	0,626
10	PPG	0,755	0,354
11	SDN	0,533	0,281
12	SKS	0,761	0,358
13	VXB	0,343	0,136
14	DHA	0,837	0,704
15	CTI	0,124	0,039
16	DCT	0,869	0,316
17	SCL	0,604	0,330
18	HVX	0,603	0,419
19	NHC	0,717	0,549
20	BHV	1,308	0,412
21	XMC	1,095	0,211
22	ACC	0,470	0,346
23	BBS	0,689	0,358
24	BCC	0,851	0,148
25	BHC	0,677	0,153
26	BHT	0,164	0,028
27	BT6	0,407	0,126
28	BTS	0,880	0,188
29	CCM	1,095	0,554
30	CYC	0,788	0,239
31	DAC	1,027	0,559
32	DTC	0,816	0,161
33	GMX	0,958	0,594
34	HCC	1,022	0,534
35	HHL	1,787	0,692
36	HLY	0,948	0,446
37	HOM	0,585	0,243
38	MCC	1,205	1,088
39	MCL	0,417	0,220
40	NNC	0,651	0,494
41	QNC	0,939	0,105
42	SCC	0,943	0,710
43	SCJ	1,390	0,703
44	SDY	1,427	0,479
45	SHN	3,693	1,807
46	TBX	0,493	0,248
47	TCR	0,759	0,376
48	TLT	1,448	0,088
49	TMX	1,559	0,568
50	TSM	1,404	1,047
51	TTC	0,708	0,241
52	TXM	1,013	0,377
53	VCS	1,177	0,500
54	VHL	0,538	0,137
55	VIT	0,541	0,126
56	VTS	1,078	0,647
57	YBC	1,310	0,227

Table 10: Market risk of listed construction material firms ($t = 20\%$).

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 11: Tax rate = 25%.

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	3,693	1,807	1,885
MIN	0,132	0,030	0,102
MEAN	0,961	0,429	0,532
VAR	0,2959	0,0989	0,197

Note: Sample size : 57 firms

Table 12: Tax rate = 28%.

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	3,693	1,807	1,885
MIN	0,124	0,028	0,096
MEAN	0,957	0,426	0,530
VAR	0,2977	0,0982	0,200

Note: Sample size : 57 firms

Table 13: Tax rate = 20%.

of capital providing channels for both construction material and real estate companies.

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.

Implications

Looking at exhibit 13, it is noted that comparing to asset beta mean and var results of real estate industry in the period 2007-2009 (0,362 and 0,115), asset beta mean of construction material industry group is higher while asset beta var is lower (0,426 and 0,09). The risk dispersion in case tax rate down 20% of the construction material is lower than that of real estate industry.

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