

## Changing Corporate Tax Policy Impacts on the Risk Level of Vietnam Electric Power Firms

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### Abstract

This study analyzes the impacts of tax policy on market risk for the listed firms in the electric power industry during and after the period 2007-2009 as the local economy has been affected by the financial crisis.

First, by using quantitative and analytical methods to estimate asset and equity beta of total 20 listed companies in Vietnam electric power 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 0,446, 0,449 and 0,451. These values are much lower than those of the listed VN construction firms.

Third, by changing tax rates in 3 scenarios (25%, 20% and 28%), we recognized both equity and asset beta mean values have positive relationship with the increasing levels of tax rate.

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, Electric power industry

**JEL Classification:** G010, G100, G390

### Introduction

Together with the development of real estate and banking industry, during many recent years, Vietnam electric power industry is considered as one of active economic sectors, which has certain positive effect for the country GDP.

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 electric power companies in Vietnam stock exchange as following:

Issue 1: Whether the risk level of electric power 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 electric power industry.

### Literature Review

Eugene et al. [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.

Baker [2] recognized a significant positive relation between changes in intercorporate investment and changes in corporate marginal tax rates on ordinary income.

Saleem [3] found out the US effective corporate tax rate on new investment was the highest rate in the OECD.

Next, Dutt [4] 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. Nguyen Minh [5] indicated that international tax reform is a major part of Business Tax Reform of the US President. And Both OECD and Europe Commission have recently released projects designed to address corporate tax evasion and profits shifting. Manos [6] suggested the US should adopt a two-pronged corporate tax-residence test: the place where the corporation's securities are listed for public trading, or the place of the corporation's central management and control.

Beside, Michael et al. [7] stated corporate tax avoidance increases after-tax cash flows available to service the debt by lowering cash taxes thus reducing the risk of default, whereas it can induce tax risk by increasing the uncertainty about the magnitude and volatility of the firms' future profits and cash flows.

Then, Grullon [8] also indicated that business property values are

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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 real estate firms.

### Conceptual Theories

#### The impact of fiscal policy on the economy

Tax policy is one among major fiscal policies. Corporate taxation might affect the output, income or compensation, as well as the revenue-raising capacity of both the tax system and the company. Therefore, in different countries, the tax system could have different effectiveness [9].

In a specific industry such as wholesale and retail industry, on the one hand, using tax policy with a decrease or increase in tax rate could affect tax revenues, profit after tax and financial results and compensation and jobs of the industry. On the other hand, using tax policies could increase the financial results of this industry and therefore, affect the tax revenues, compensation and jobs.

During and after financial crises such as the 2007-2009 crisis, there raises concerns about fiscal policies or public policies of many countries, in both developed and developing markets.

### Methodology

The impacts from the fiscal crisis occurred throughout the interval 2007-2011; as a consequence, in this learn, we use the living data from the stock exchange market in Vietnam (HOSE and HNX) [10] for the period of the four or five years interval to estimate systemic risk results and tax impacts.

In this Research, analytical research approach is used and specially, tax cost scenario analysis method is used. Analytical information is from the complication of listed wholesale and retail organizations in VN stock alternate and current tax rate is 25%. Subsequently, we use the outcome to recommend coverage for both these agencies, central businesses and government [11-13].

### General Data Analysis

The study pattern has complete 20 listed organizations within the electric Power market with the are living knowledge from the stock trade [14-16].

To begin with, we estimate fairness beta values of those organizations and use fiscal 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 instances (rate=20%, 25%, and 28%), asset beta imply is estimated at 0,255, 0,256 and zero, 257. Additionally in 3 situations, we discover var of asset beta estimated at zero,042 (just about the same, with somewhat cut down if tax rate raises to 28%) which indicates small danger dispersion. Tax rate alterations virtually have no influence on asset beta var underneath fiscal leverage.

### Empirical Research Findings and Discussion

Within the extending part, data used are from whole 20 listed electric power corporations on VN inventory trade (HOSE and HNX commonly). Within the scenario 1, current tax cost is 25% which is used to calculate market threat (beta). Then, two (2) tax expense eventualities are modified as much as 28% and down to 20%, compared to the current corporate tax expense.

Market hazard (beta) beneath the have an impact on of tax expense,

includes: 1) equity beta; and 2) asset beta.

#### Scenario 1: Current tax cost is 25%

In the case of tax rate of 25%, all beta values of 20 listed corporations on VN electric power market as following Table 1.

#### Scenario 2: Tax rate increases up to 28%

If corporate tax rates increases up to 28%, all beta values of total 20 listed firms on VN electric power market as below Table 2.

#### Scenario 3: Tax rate decreases down to 20%

If corporate tax rate decreases down to 20%, all beta values of total

Order no.	Company stock code	Equity beta	Asset beta (Assume debt beta = 0)
1	BTP	0,840	0,357
2	CHP	0,407	0,168
3	DNC	-0,865	-0,270
4	DRL	0,473	0,388
5	DTV	0,527	0,499
6	GHC	0,359	0,117
7	HJS	0,699	0,200
8	KHP	0,615	0,308
9	NBP	0,914	0,604
10	ND2	0,180	0,043
11	NLC	0,550	0,510
12	NT2	0,639	0,137
13	PPC	0,811	0,232
14	RHC	0,361	0,200
15	SBA	0,177	0,062
16	SEB	0,427	0,194
17	SHP	0,485	0,245
18	SJD	0,420	0,221
19	TBC	0,612	0,568
20	TIC	0,351	0,343

Table 1: Market risk of listed companies on VN electric power market (t = 25%).

Order no.	Company stock code	Equity beta	Asset beta (Assume debt beta = 0)
1	BTP	0,840	0,357
2	CHP	0,415	0,172
3	DNC	-0,865	-0,270
4	DRL	0,475	0,390
5	DTV	0,528	0,500
6	GHC	0,368	0,120
7	HJS	0,699	0,200
8	KHP	0,615	0,308
9	NBP	0,914	0,604
10	ND2	0,185	0,044
11	NLC	0,550	0,510
12	NT2	0,639	0,137
13	PPC	0,811	0,232
14	RHC	0,361	0,200
15	SBA	0,181	0,064
16	SEB	0,427	0,194
17	SHP	0,493	0,249
18	SJD	0,420	0,221
19	TBC	0,612	0,568
20	TIC	0,351	0,343

Table 2: Market risks of listed electric power firms (t = 28%).

20 listed firms on the electric power market in VN as following Table 3.

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

Tables 4a-4c indicates statistical results in 3 scenarios of changing tax rate

Based on above results, we find out:

Worth beta imply values in all 3 eventualities are particularly low (<0,5) and asset beta imply values are relatively small (<0,3). In the case of current tax expense of 25%, fairness beta price fluctuates in a large range from -0,865 (min) up to zero,914 (max) and asset beta fluctuates from -zero, 270 (min) as much as zero,604 (max). We notice there's

Order no.	Company stock code	Equity beta	Asset beta (Assume debt beta = 0)
1	BTP	0,840	0,357
2	CHP	0,393	0,163
3	DNC	-0,865	-0,270
4	DRL	0,468	0,384
5	DTV	0,526	0,498
6	GHC	0,345	0,113
7	HJS	0,699	0,200
8	KHP	0,615	0,308
9	NBP	0,914	0,604
10	ND2	0,172	0,041
11	NLC	0,550	0,510
12	NT2	0,639	0,137
13	PPC	0,811	0,232
14	RHC	0,361	0,200
15	SBA	0,170	0,060
16	SEB	0,427	0,194
17	SHP	0,471	0,238
18	SJD	0,420	0,221
19	TBC	0,612	0,568
20	TIC	0,351	0,343

Table 3: Market risk of listed electric power firms (t = 20%).

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	0,914	0,604	0,3094
MIN	-0,865	-0,270	-0,5946
MEAN	0,446	0,255	0,1909
VAR	0,1359	0,0419	0,0940

Note: Sample size: 20

Table 4a: Comparing statistical results in 3 scenarios of changing tax rate (Tax rate = 25%).

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	0,914	0,604	0,3094
MIN	-0,865	-0,270	-0,5946
MEAN	0,451	0,257	0,1938
VAR	0,1350	0,0417	0,0934

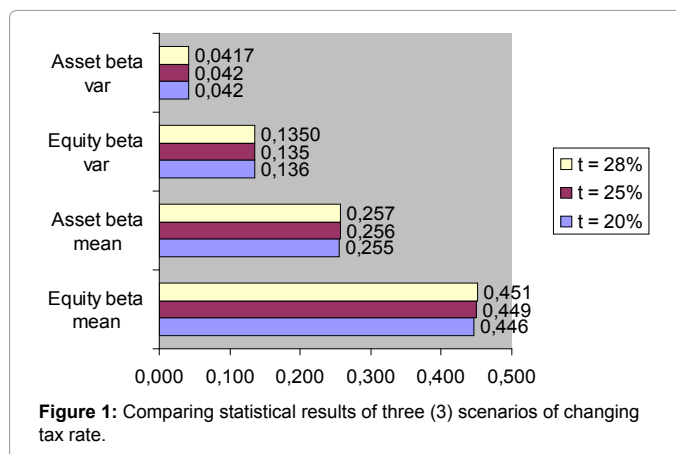
Note: Sample size: 20

Table 4b: Comparing statistical results in 3 scenarios of changing tax rate (Tax rate = 28%).

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	0,914	0,604	0,3094
MIN	-0,865	-0,270	-0,5946
MEAN	0,446	0,255	0,1909
VAR	0,1359	0,0419	0,0940

Note: Sample size: 20

Table 4c: Comparing statistical results in 3 scenarios of changing tax rate (Tax rate = 20%).



an enormous cut down in max asset beta value here. If corporate tax expense increases to 28%, fairness beta strikes from -zero,865 (min) as much as 0,914 (max) and asset beta strikes from -0,270 (min) as much as zero,604 (max). Consequently, we observe that there is not any alternate in asset/fairness beta range if company tax increases. When tax cost decreases down to 20%, equity beta worth changes from -zero,865 (min) as much as 0,914 (max) and asset beta changes from -0,270 (min) up to zero,604 (max). So, there is not any increase or scale down in fairness/asset beta worth variety when tax decreases in scenario three.

Beside, exhibit 7 informs us that in the case 28% tax price, mean equity beta value of 20 listed firms raises up to zero,002 even as typical asset beta worth of those 20 businesses increase relatively up to 0,001. Then, when tax fee reduces to 20%, ordinary equity beta value of 20 listed businesses shrink to zero,003 and traditional asset beta worth right down to zero,001.

The under Figure 1 indicates us : when tax cost decreases down to 20%, traditional fairness and asset beta values cut down quite (0,446 and zero,255) compared to these at the initial price of 25% (0,449 and zero,256). Even as, when tax cost raises as much as 28%, traditional equity and beta raises slightly (to zero,451 and nil,257). Nonetheless, the fluctuation of equity and asset beta values (zero,136 and nil,042) within the case of 20% tax fee is better than or equal to (>=) the results within the rest 2 tax rate circumstances.

### Risk Analysis

Within the case of decreasing tax fee, (20%), the market and corporations can obtain more advantages equivalent to producing more jobs and compensation and have more money glide on hand, however the executive finances can have deficit and the government has to reduce fees. Changes in tax premiums can have each positive and poor effects on the neighborhood market.

In the case of increasing tax fee (28%), the federal government will have funds to finance public fees but the tax would minimize both demand and supply. Additionally, both the company and the company owner will have got to pay taxes. And the implementation of this tax policy can have extra difficulties.

### Conclusion and Policy Suggestion

In summary, the government continues to expand the effectiveness of building the legal process and law and macro insurance policies aiding the plan of constructing both the construction in conjunction with the true property market. The Ministry of Finance continue to broaden the effectiveness of fiscal policies and tax insurance policies which are needed to combine with different macro policies while, even though we would observe that on this be trained when tax price goes to increase from 20% to 28%, the value of fairness and asset beta imply also raises.

The State Bank of Vietnam continues to increase the effectiveness of capital providing channels for both construction and real estate companies.

Finally, this paper suggests implications for further research and policy suggestion for the Vietnam government and relevant organizations, economists and investors from current market conditions.

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