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A 3 Variables Model Impact on Beta CAPM of Vietnam IT Software Industry

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Abstract:
In recent years, many milestones have been achieved in the technology industry in Vietnam. In Viet Nam, a well-established software industry has been struggling to rebound from the 2008 crisis under the uncertainty of commodity prices and change in macro-factors like CPI and market rate. This paper analyzes the effect on the market risk of listed companies in the software industry of the competitor size, tax rate policy and leverage, as applicable.

First of all, we found that the beta values for many companies in general are appropriate by using quantitative and analytical methods for the estimation of asset and equity beta of 6 listed Vietnamese software companies with a better traditional model.

Next, we have noted that under three different scenarios of adjustments in tax rates (25%, 25% and 28%), the equity beta values will not spread significantly, even if the risk distribution will increase to 0.216 if the tax rate is down to 20% and the risk dispersion will increase to 30%.

Third, this analysis found that the risk-variation in this sample analysis could be held to a minimum, if the financial leverage is reduced to 20%, and a tax rate is raised to 28% or to 25% (measured by equity beta var from 0,214) by adjusting the tax levels in 3 scenarios (25%, 20% and 28%).

Four, we find that there is no significant volatility in equity beta and var values in the same financial leverage situation with different competitor sizes. Yet if financial debt shifts without 3 examples, there are significant variations.

This paper, hopefully, presents some findings that may provide further proof for businesses and the government to determine its governance policies. When adjustments to tax rates and strategic strategy or leverage could affect risk levels, corporate management and policy makers should consider making appropriate decisions using the findings.

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INTRODUCTION

In the past few years, the software market in Vietnam has been assessed as an active market which has some positive economic impact. External factors (tax rates, interest rates, competitors) and internal factor (managerial, leveraged, technology, strategy ...), are components affecting the risk level of these firms. The scope of this paperwork includes the business risk of the listed firms, including: tax rates, debt or external funding and competitive company size, with three different factors impacting them.The goal of this study is to determine the degree to which the dispersion of risk is calculated by financial leverage, market size and rate change.

The paper material is structured as follows. As with our previous papers, in the next sessions of 2.1 and 2.2, for a brief overview, the study problems and literature review will be addressed. Then in sessions 2.3 and 2.4 are presented methodological and analytical theories. The analytical research session 3.1 explains the dataset. The analytical results and observations of Session 3.2 are discussed. Session 4 will end with a few recommendations for reform. This paper also offers readers guides, exhibits and online sources.

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2 Preliminary Notes

2.1 Research Issues

The paperwork includes:
Issue 1: Will IT companies' the degree of risk raise or decrease too much under the various evolving tax scenarios?
Issue 2: Whether dispersion of beta values within the different evolving scenarios in software industry is high in the context that Viet Nam has a developing financial market and the stock market still in its early stage.
Question 3: Is the risk of software companies rising or decreasing too much under the various evolving scenarios of competitive firms??

2.2 Literature review

Raith (2001) has documented changes in the strength of commodity market pressure, principals have specifically given their agents more opportunities to cut costs, and agents are therefore working harder. Greater rivalry at the same time often results in increased instability in earnings at the level in firms and rewards for executives.
Beside, Needham (2002) pointed out, that while debt financing in certain circumstances usually minimizes the overall total tax burden of parties by offering a deduction of interest, in the sense of the fund it is often ineffective for many reasons, including a lack of Portfolio Company Tax Ability, adverse tax handling of contingent debt and special equity Tax Benefits.
Within the three-factor model, Fama, Eugene F., and French, Kenneth R. (2004), also said "value" ("value") and "size" ("size"). They also said that a share return not only depends on the beta on the stock, but also on the beta on equity investment. The Beta sector is used in Fama and French's three-factor model, which supports Sharpe, Treynor and Lintner's CAPM model.
Anderson (2009) acknowledged that the consumer expense tax elasticity is comparatively low, while the inflation elasticity predicted from the home price is significantly higher. Nicole, Martin and Enzo (2012) have no effect on domestic price rise. And their results indicate that land capital income taxes are not sufficient steps to prevent house prices from rising excessively.
The key determinants of capital structures in companies were then identified by Maia (2010) as being sensitized to these systemic sources of risk by companies which have an asymmetrically low and high leverage impact. And for low-income companies, sudden disruptions are comparatively more significant, and the possibility of financial instability appears to be mirrored in corporate exposure to stock discount rates. Minnis (2011) observed that the audited entities, private US corporations, had considerably smaller loan rates. When assessing the interest rate, borrowers put greater weight on audited financial reports.
Next, Umar (2011) observed that businesses that uphold strong governance systems have debt levels higher (47%) than firms with bad management frameworks per income unit. Huy (2012) observed that beta values are not uniformly distributed in building communities. Chen et all (2013) supported regulatory concerns that undue reliance on short-term borrowing and insatisfactory equity had exacerbated risks of debt and driven Lehman Brothers to undercapitalization and unsustainable risk exposure.
The model reinforces the importance of the link between the capital structure and risk management. Gunaratha (2013) has disclosed that the extent of financial leverage has a considerable positive association with financial risk in various industries in Sri Lanka.
Flifel (2012) said today that the expectation of efficient capital markets, particularly in this time of crisis, is highly problematic and is questioned by research that shows demand has been skewed by long memory detection. A major negative impact of Leverage on firm results has been noticed by Gabrijelcic and all (2013). And companies which had funding of foreign debt were more competitive than their competitors.

2.3 Conceptual theories

Impacts of competitor, FL and tax on the economy and business

Two instruments may be used by the central bank and government or the finance ministry: fiscal and monetary policies to meet macroeconomic objectives. Tax rates will rapidly influence consumer demand and healthy business growth and production, whether expansion or contraction is one of the fiscal policies.
Moreover, it may impact tax responsibility, wages, profits after taxes and technological advancement, as well as reimbursement for and employment in industry for the use of leverage that decreases or rises for some times. At the other hand, financial flexibility and rising capital markets create improved business opportunities for businesses. Organizations should change the equity capital structure to change the fixed cost to variable cost structure. Although borrowing will help an organization improve its competitiveness, the company tends to maximize its debt because the vulnerability is not so anxious due to so much debt financing. Leverage will aid in its success and development over the company's lifetime.
In fact, the Porter principle tells us that the market is the fundamental analytical framework for recognizing competition. And Porter said it is the company that wins or loses the competitive edge. Competition can also lead to increasing a company's profitability by minimizing or raising monopolies. Education requires, but is not limited to, external platforms. Improved competition will further improve productivity. The more competitive the profits of

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a country's businesses, the greater the prosperity of the economy.

2.4 Methodology

The 2007-2011 period, for the purposes of estimating systemic risk outcomes, contains data from Vietnam stock exchanges (HOSE and HNX).

This thesis uses the framework of empirical science and in particular the framework of tax scenario analysis. Analytical data comes from the position of VN stock exchange listed tech firms and the current tax rate is 25%. Finally, with both the businesses, organisations and government involved, we use the findings to formulate legislation.

3 Main Results

3.1 General Data Analysis

The study review contains six listed entities on the tech market with a live bond deadline.

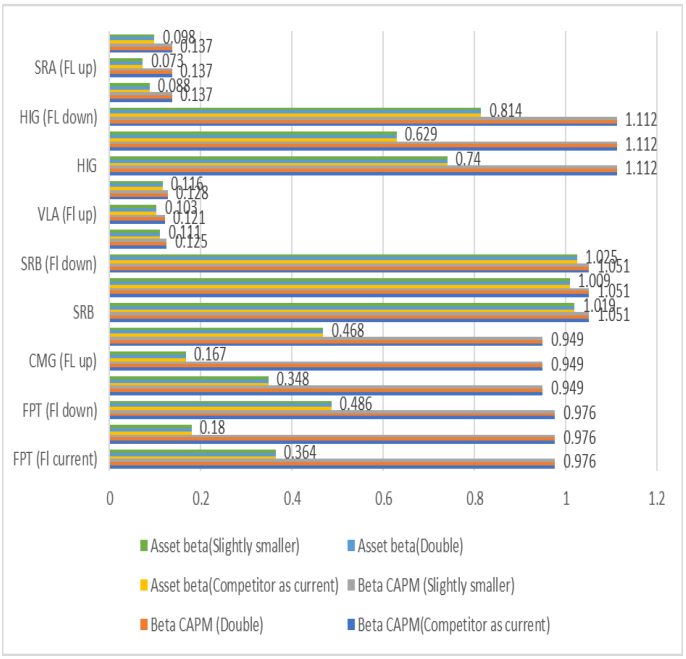
Next, we measure these companies ' stock beta valuation and use their capital flexibility to measure their asset beta values. Secondly, to see the strength of the beta values we adjust the tax rate from 25% to 28% and 20%. The average debt funding is calculated to be 0.44 for 3 situations (rate = 20%, 25%, and 28%). We also note that var of asset variance, calculated at 0,134 (same), is present in three scenarios. Changes in tax rates have virtually no effect on financial equity asset beta var.

3.2 Empirical Research Findings and Discussion

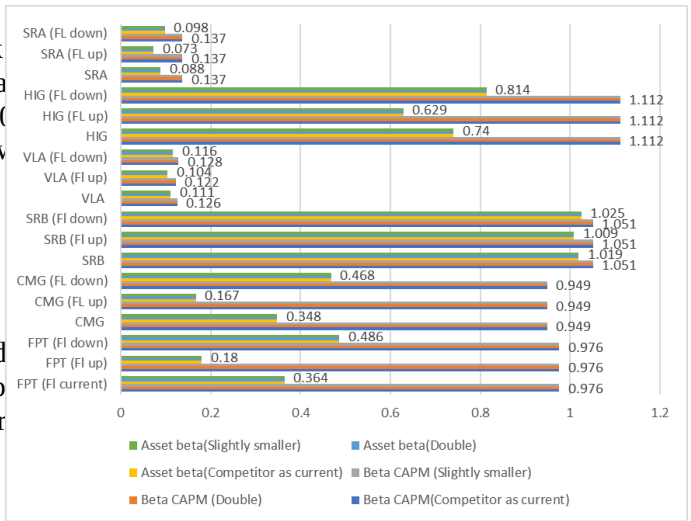
In the segment below details was included on the VN stock (mainly HOSE and HNX) of 6 listed tech firms. In scena current tax rate is kept as 25% and adjusted from 20% to 3(in contrast to the current FL degree, three (3) FL scenarios v 30% and down to 20%. Briefly, three examples are included level study of these listed entities in the following section. Market risk (beta) includes: 1) capital beta and 2) asset beta under the effect of the tax rate.

a) Scenario 1: existing tax rate of 25 percent and new d 20 percent and up 30%, assuming that competito retained as new All beta values of 6 companies repor VN market are:

Chart 1 — VN IT software sector business risk identified entities in a 3-factors model (case 1) *(source: VN stock exchange 2012)*



b. Scenario 2: the tax rate goes up to 28% and the debt stays as current, 20% down and 30% up, assuming that the competition scale is as current. The beta values of 6 businesses on the tech sector on the VN market are as follows: Chart 2 – Competitive challenges of tech companies listed on the basis of three factors (case 2) *(source: VN stock exchange 2012)*



c. Scenario 3: the tax rate is reduced to 20% and the debt stays present, 20% lower and 30% higher, based on the current scale of the competition. All beta values of the total of 6 companies listed on the tech business sector of software as below:

Chart 3 – Threat to the competition in a 3-pronged configuration with IT software companies. (case 3) *(source: VN stock exchange 2012)*

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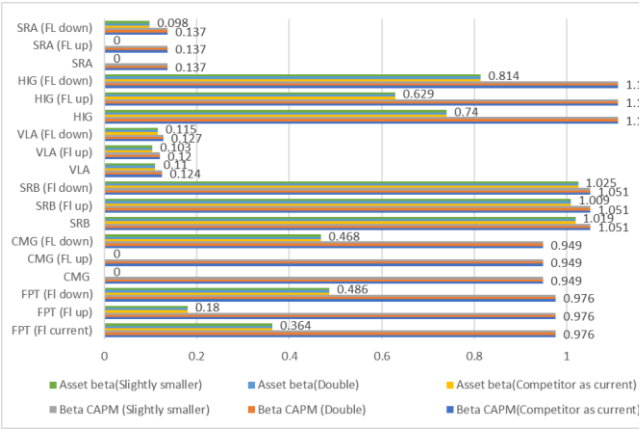
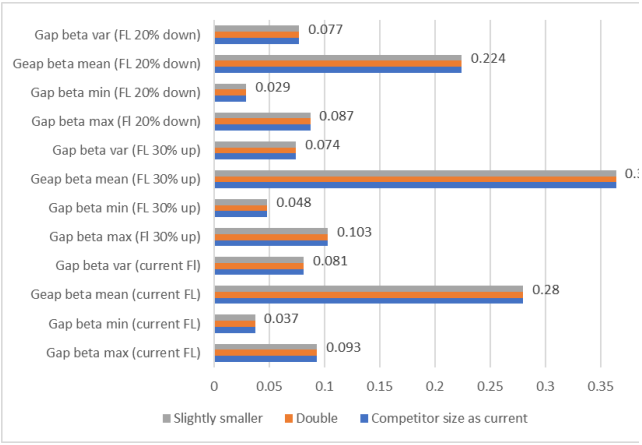


These three tables and statistics show that the values of stock beta are just minor changes, and the values of asset beta in all three (3) situations are subject to large variations.

3.2. **In 3 situations with shifting control, contrasting comparative results:**

Chart 4 - Statistical results (FL in case 3) *(source: VN stock exchange 2012)*

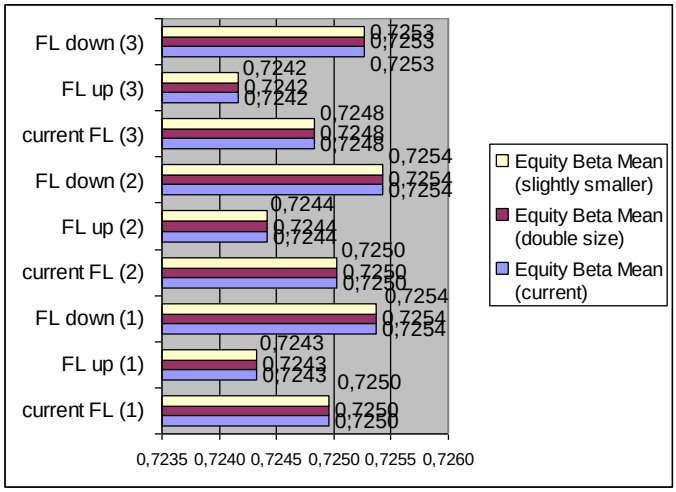


The charts above produce multiple results: first of all, stock l values are appropriate in all three cases (< 0.8) and asset b values are also low (< 0.6). When the present amount of the the comparative benefit of the stock beta min decreases n from 0.126 to 0.125 because the rate of tax is up to 28%. l debt and market level is present, beta valuation for equity is l 0.124 with a 20 per cent drop in tax rate.

Also, the average equity beta value is expected to increase l (0 725) if the amount of debt is lowered to 20% in all three c scale situations. In the case of debt raise of 30 percent, how var equity hits 0.216 (maximum) So the average beta equity rises at scenario 2 (tax rate up to 28 percent) as the debt ratin to 20 percent. In the case of debt, the variance var equity a 0.216, up 30%. Eventually, the average equity beta in scenario 3 (20% lower tax rate) hits 0.72 (minimum) as the leverage up to 30%.

In scenario 1 (current tax rate), delta assets average in all three scenarios of competitor scale approaches 0.50 if the debt decreases by 20%. The following graphs 3 and 4 show: And in case FL is as high as 30%, the asset beta var is 0,142 (maximum). The average asset level also hits 0.50 in scenario 2, (tax rate up to 28 percent), if the debt declines 20 percent. Similarly, in the case of a debt up to 30%, asset beta var hits 0.142 (maximum). Scenario 3, eventually (tax rate down 20 percent), the mean asset beta hits 0.36 (minimum) for FL up to 30 percent, relative to a current asset beta var of 0.134.

Chart 5 – Analysis of stock-bed and average statistical outcomes in three (3) changing FL and tax and competitive size scenarios *(source: VN stock exchange 2012)*



Note: (1) current tax rate; (2): tax rate up 28%; (3): tax rate down 20%

Chart 6 – Statistical results of equity beta var and mean in three (3) scenarios of changing FL and tax rate and competitor size *(source: VN stock exchange 2012)*

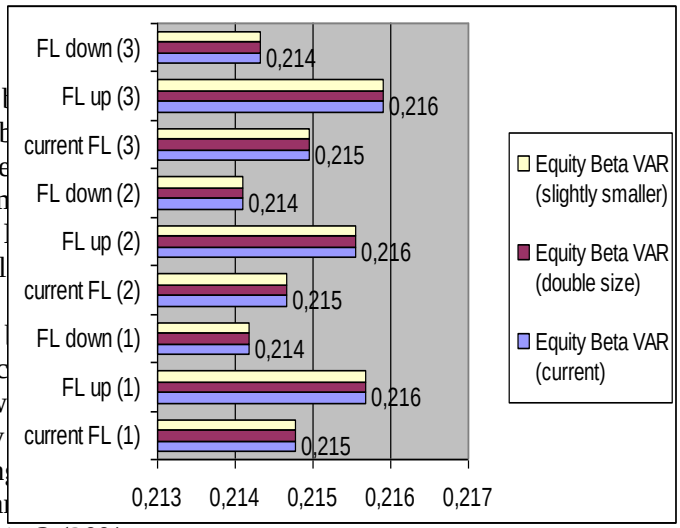


Chart 7 – Statistical results of asset beta var and mean in three (3) scenarios of changing FL and tax rate and competitor size *(source: VN stock exchange 2012)*

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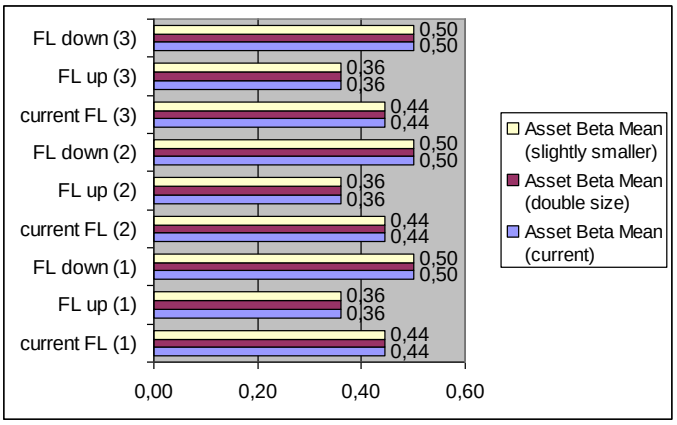
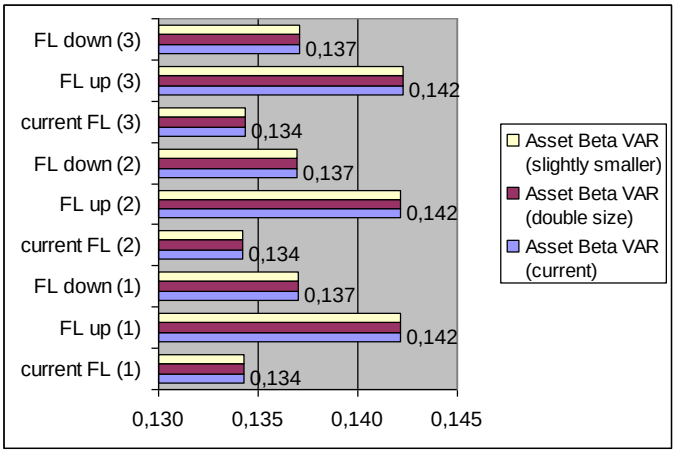


Note: (1) current tax rate; (2): tax rate up 28%; (3): tax rate down 20%

Chart 8 – Comparing statistical results of asset beta var and mean in three (3) scenarios of changing FL and tax rate and competitor size *(source: VN stock exchange 2012)*



4. Conclusion and Policy suggestion

In conclusion, by adjusting macro policy and legal frameworks and legislation for digital industry growth, the government must consider the impacts on business risk movements. The Finance Ministry seeks to improve the productivity of fiscal policies and fiscal policies that are required in accordance with other macro-policies. The state bank of Vietnam also raises the productivity of capital sources for tech firms, as we should remember that the risk level decreases to 0.36 for the three cases of taxes and the scale of competitors in the sample as leverage rises to 30 percent.

Therefore, it is important to organize all activities between several government bodies.

Ultimately, in this article, the Viet Nam government and related organisations, economists and investors under the existing business environment have consequences for future analysis and policy proposals. While it has many benefits, it has also a certain limitation: the effects can not be contrasted with all other industries. Research

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