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Abstract

Capital structure is understood as the proportion of each source of capital in the total capital that the business, or the combination of debt and equity that the company uses for business operations. The decision on capital structure is one of the important financial decisions for any business, reducing capital costs and eliminate unwanted risks. In other words, a reasonable structure is the balance between risk and profit, from which enterprises can implement their business strategies.

In fact, the capital structure of each enterprise depends on many factors such as the macro conditions of each country, each industry in which the enterprise operates, or the individual characteristics of each enterprise, etc., so there is no single structure common to all businesses. Therefore, the study of capital structure is a topic that is always interested by scientists at different stages, as well as business managers to make effective selection decisions.

Keywords

ROA, ROE, Securities Companies, Vietnam.

Introduction

Studying the impact of capital structure on the profitability of securities companies, through four least squares regression models (Pooled Ordinary Least Square - Pooled OLS). As a result, capital structure has a significant influence on profitability of Vietnamese securities companies (through the dependent variable ROE/ROA return on equity and return on assets). Specifically, the debt-to-total capital ratio (DR) has a negative effect on the profitability of the securities company's assets, while the company size (LnTTS) has a positive effect on the above profitability (ROA/ROE variable) of the securities companies, and at the same time the size of equity (LnSIZE) has the same effect on the return on equity (ROE). The implication of governance is that securities companies
can increase the profitability of the business by increasing the size of equity capital and reducing debt capital from credit institutions.

**Literature Review**

Each source of capital has different advantages and disadvantages, varying according to the size of the operation, in essence, the capital structure is the proportion of each component of capital in the total capital of the enterprise, short-term debts such as credit commercial debt, employee salary debt, government tax debt with low capital cost, little change, mainly used to finance short-term assets, thus for budgeting, as a basis for decisions for long-term investments, managers need to consider long-term debt. Then, the capital structure problem becomes determining the ratio of long-term debt to total capital (or equity) of the enterprise.

In fact, in the world, there are many studies on the influence of capital Structure on the profitability of enterprises, some theories and research works can mention as follows:

- Theory of net operating profit NOI, average cost of capital, and firm value does not change despite maintaining any level of financial leverage, assuming no corporate income tax, means that has no effect of capital structure.
- The M&M theory of capital structure by economists Franco Modigliani and Merton Miller shows the impact of capital structure on firm value and average cost of capital in the absence of corporate income tax and corporate income tax is different.
- Market pecking order theory is also known as capital appreciation order theory. This theory was initially studied by Meyers and Majluf (1984). The capital structure is decided by the company considering choosing from 3 main sources: internal capital (mainly reinvested profits), debt (mainly debt and bond issuance) and stock issuance.
- Abor (2005), Capital structure is the strategy of the enterprise, the researcher believes that capital structure has a close relationship with business performance.
- Gill and partners (2011), Through a sample of 272 manufacturing and service companies in the US. The results show a net positive relationship between short-term debt and total assets and profitability; long-term debt to total assets and profitability and total debt to total assets and profitability.
- Shubita and partners (2012), Capital structure is defined as the combination of debt and equity that a company uses in its operations. In a sample of 39 companies listed on the Amman stock exchange in the period 2004-2009, the authors examine the relationship between capital structure and profitability. Significant negative relationship between debt and profitability results, profitability is more dependent on equity.
• Velnampy and partners (2012), The selection and use of capital are one of the important elements of a business's financial strategy. The team used data of ten banks in Sri Lanka, for eight years from 2002 to 2009, to examine the relationship between capital structure and profitability. The analysis results show that there is a negative relationship between capital structure and profitability, except for the relationship between debt on equity and return on equity.

• Tailab (2014), a sample of 30 US companies in the period from 2005 to 2013 to examine the impact of capital structure on financial performance with representative variables ROA and ROE, capital structure, and short-term debt, long-term debt, total debt, debt-to-equity ratio, and size of the firm were used. The results show that total debt has a significant negative impact on ROE and ROA, while the size of sales has only a significant negative effect on ROE of US firms. at the same time, a short debt has a positive effect on ROE. A negligible positive or negative relationship was observed between long-term debt, debt-to-equity, and total asset size and profitability.

• Yapa (2015), The research sample is non-financial small and medium-sized enterprises in the UK for the period 1998-2008, to examine the relationship between capital structure and corporate profitability. The results of capital structure are negatively related to profitability, Firm size and profitability are positively related, long-term debt to total assets ratio is negatively related to profitability.

• Singh (2019), To examine the effect of capital structure on corporate profitability, the authors use a research sample of 50 listed on the National Stock Exchange of India from 2008 to 2017. Capital structure has a positive impact positively affect the profitability of the business, through the indicators of total debt and total equity for profitability ROA and ROE.

• On the basis of inheriting research results in the world, considering the specific aspects of the operation of securities companies in the field of financial services and securities, the author builds a research model with specific characteristics for securities companies.

Methodology

Research Methods

(1) Quantitative research goals. The author tests the impact of capital structure on the profitability of securities companies in the period 2015-2019, the results serve as a basis for accurately assessing the effects, helping securities companies have solutions to increase profitability for securities companies.
(2) Research data. The data used by the author is secondary data, taken from the website (Vietstock.vn). The data set includes financial statements of 49 securities companies for the period 2015-2019, 240 observations, the author will exclude newly established or consolidated securities companies, which makes financial data not comparable and securities companies are not fair. provide the necessary information for the study. According to Bollen (1989) when analyzing the model with linear structure, the sample size is calculated according to the formula n=5*2i (i is the observed variable in the model). According to Tabachnick and Fidell (2007) the sample size in multiple linear regression analysis is calculated according to the formula n= 50 + 8q (q is set up a prime).

(3) Research Methods. The author uses STATA 14 software to test and estimate the least squares regression model (Pooled Ordinary Least Square - Pooled OLS). The model is tested for defects and corrected for defects in the model.

\[ Y_t = \beta_1X_{t1} + \beta_2X_{t1} + \ldots + \mu_i \]

*In which:*

\( \beta_1, \beta_2, \ldots \) is the regression coefficient, \( \beta_1 \) is the intercept, \( \mu_i \) is the residual - Select variables ROE and ROA to represent the performance of securities companies.

<table>
<thead>
<tr>
<th>No.</th>
<th>Variable names and symbols</th>
<th>Calculation formula</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The dependent variable is ROE/ROA representing the profitability of securities companies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Independent variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Debt to Equity (DR) Ratio</td>
<td>Total liabilities/Total capital</td>
<td>Abor (2005); Gill and partners (2011); Shubita and partners (2012); Abor (2005); Tailab (2014); Singh (2019)</td>
</tr>
<tr>
<td>2</td>
<td>Debt to Equity (DE) Ratio</td>
<td>Liabilities/Equity</td>
<td>Velnampy and partners (2012), Tailab (2014)</td>
</tr>
<tr>
<td>3</td>
<td>Short-term debt ratio (STD)</td>
<td>Short-term debt/Total resources</td>
<td>Gill and partners (2011); Abor (2005); Tailab (2014); Shubita and partners (2012)</td>
</tr>
<tr>
<td>4</td>
<td>Long-term debt ratio (LTL)</td>
<td>Long-term debt/Total resources</td>
<td>Abor (2005); Gill and partners (2011); Abor (2005); Tailab (2014); Yapa (2015); Shubita and partners (2012)</td>
</tr>
<tr>
<td><strong>Control variable</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Securities Company size (LnTTS)</td>
<td>Logarithm of total assets</td>
<td>Tailab (2014); Yapa (2015)</td>
</tr>
<tr>
<td>6</td>
<td>Size of equity (LnSIZE)</td>
<td>Logarithm of total equity</td>
<td>Shubita and partners (2012)</td>
</tr>
</tbody>
</table>

The Author Considers 4 Models

\[
\text{ROE} = \beta_1 \cdot \text{DR} + \beta_2 \cdot \text{STD} + \beta_3 \cdot \text{LTL} + \beta_4 \cdot \text{LnTTS} \quad (*)
\]

\[
\text{ROE} = \beta_5 \cdot \text{DE} + \beta_6 \cdot \text{STD} + \beta_7 \cdot \text{LTL} + \beta_8 \cdot \text{LnSIZE} \quad (**)\]
ROA = $\beta_{01} \times DR + \beta_{02} \times STD + \beta_{03} \times LTL + \beta_{04} \times LnTTS$ (***

ROA = $\beta_{05} \times DE + \beta_{06} \times STD + \beta_{07} \times LTL + \beta_{08} \times LnSIZE$ (****)

Hypotheses

H01: (DR) is positively related (ROE/ROA)
H02: (DE) ratio is positively related to (ROE/ROA)
H03: (STD) is negatively related to (ROE/ROA)
H04: (LTL) is negatively related to (ROE/ROA)

Description of Variables Participating in the Model

Table 1 Statistics of variables in the regression model (*) ; (**); (***); (****)
summarize ROE ROA DR DE STD LTL LnTTS LnSIZE

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>240</td>
<td>0.0538408</td>
<td>0.1097984</td>
<td>-4677417</td>
<td>0.5206343</td>
</tr>
<tr>
<td>ROA</td>
<td>240</td>
<td>0.0348036</td>
<td>0.0814484</td>
<td>-0.3438544</td>
<td>0.5126692</td>
</tr>
<tr>
<td>DR</td>
<td>240</td>
<td>0.3095143</td>
<td>0.2718089</td>
<td>0.0013649</td>
<td>1.319532</td>
</tr>
<tr>
<td>DE</td>
<td>240</td>
<td>0.6541146</td>
<td>0.8835022</td>
<td>0.0009594</td>
<td>5.611687</td>
</tr>
<tr>
<td>STD</td>
<td>240</td>
<td>0.1241578</td>
<td>0.1580068</td>
<td>0</td>
<td>0.6211777</td>
</tr>
<tr>
<td>LTL</td>
<td>240</td>
<td>0.0281558</td>
<td>0.0769186</td>
<td>0</td>
<td>0.5825963</td>
</tr>
<tr>
<td>LnTTS</td>
<td>240</td>
<td>11.92213</td>
<td>0.6071276</td>
<td>10.52431</td>
<td>13.43207</td>
</tr>
<tr>
<td>LnSIZE</td>
<td>240</td>
<td>27.04782</td>
<td>12.32304</td>
<td>2386877</td>
<td>29.87184</td>
</tr>
</tbody>
</table>

(Source: Author of statistics on STATA 14 software)

Observe the statistical table in (Table 1) a sample of 240 observations, the average value of ROE variables; ROA; DR; DE; STDs; LT; LnTTS; LnSIZE has an average value of 0.538408, respectively; 0.0348036; 0.3095143; 0.6541146; 0.1241578; 0.0281558; 11.92213; 27.04782. Most variables have the value Std. Dev. higher than average, this is reflected in the strong oscillator pattern. In general, the operating efficiency of securities companies is relatively low due to low ROE/ROA.

Correlation coefficient matrix. The author checks the correlation between the variables in the models.
Table 2 Correlation matrix between variables in the regression model (*) ; (**) ; (***) ; (****)

<table>
<thead>
<tr>
<th></th>
<th>ROE</th>
<th>ROA</th>
<th>DR</th>
<th>DE</th>
<th>STD</th>
<th>LTL</th>
<th>LnTTS</th>
<th>LnSIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>10.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>0.9391</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DR</td>
<td>0.2060</td>
<td>0.0602</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DE</td>
<td>0.0612</td>
<td>-0.0344</td>
<td>0.8582</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STD</td>
<td>0.1859</td>
<td>0.0560</td>
<td>0.6584</td>
<td>0.4598</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTL</td>
<td>0.1563</td>
<td>0.0560</td>
<td>0.3875</td>
<td>0.3398</td>
<td>0.0208</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LnTTS</td>
<td>0.4040</td>
<td>0.2740</td>
<td>0.5996</td>
<td>0.4044</td>
<td>0.5477</td>
<td>0.2503</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>LnSIZE</td>
<td>0.4137</td>
<td>0.3104</td>
<td>0.3608</td>
<td>0.1396</td>
<td>0.4253</td>
<td>0.1510</td>
<td>0.9586</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

(Source: Author of statistics on STATA 14 software)

Observing (Table 2), the Sig coefficient of the variable (DE) is equal to >5% in both the correlation with (ROE) and (ROA), that is, between the variable (DE) there is no correlation with the performance efficiency of securities companies should be excluded from the regression model (**) ; (****). Variable Analogy (STD); (LTL) removed from the model (***) ; (****).

Check for multicollinearity. To remove the variable (LnTTS) due to the VIF>10 coefficient and at the same time check the multicollinearity phenomenon, the variables with VIF<10 are used in the model

Table 3 Check the model's multicollinearity

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>LnTTS</td>
<td>1.56</td>
<td>0.642912</td>
<td>LnSIZE</td>
<td>1.25</td>
<td>0.798950</td>
<td>DR</td>
<td>1.56</td>
<td>0.640474</td>
<td>DR</td>
<td>1.15</td>
<td>0.869815</td>
</tr>
<tr>
<td>STD</td>
<td>1.46</td>
<td>0.685568</td>
<td>STD</td>
<td>1.22</td>
<td>0.817230</td>
<td>LnTTS</td>
<td>1.56</td>
<td>0.640474</td>
<td>LnSIZE</td>
<td>1.15</td>
<td>0.869815</td>
</tr>
<tr>
<td>LTL</td>
<td>0.918</td>
<td>0.918057</td>
<td>LTL</td>
<td>1.03</td>
<td>0.974908</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean VIF</td>
<td>1.37</td>
<td></td>
<td>Mean VIF</td>
<td>1.17</td>
<td></td>
<td>Mean VIF</td>
<td>1.56</td>
<td></td>
<td>Mean VIF</td>
<td>1.15</td>
<td></td>
</tr>
</tbody>
</table>

(Source: Author of statistics on STATA 14 software)
Results

Table 4 Regression results of the model (*) the impact of capital structure on the profitability of securities companies is represented as the ROE variable

```
reg ROE DR STD LTL LnTTS

Source | SS   | df   | MS   | Number of obs = 240
-------|------|------|------|----------------------
Model  | .492246961 | 4   | .12306174 Prob > F = 0.0000
Residual | 238.906.444 | 235 | .010166232 R-squared = 0.1708
Total  | 28.813.114 | 239 | .012055696 Root MSE = .10083
ROE Coef. | Std. Err. | t | P>t [95% Conf. Interval]
DR      | -.0363399 | .0383323 | -0.95 | 0.344 | -1.118337 | .0391789
STD     | .0038419   | .0606675   | 0.06 | 0.950 | -1.156797 | .1233635
LTL     | .1175526   | .0984443   | 1.19 | 0.234 | -0.076393 | .3114987
LnTTS   | .0785472   | .0139803   | 5.62 | 0.000 | .0510045  | .1060898
_cons   | -.8751478  | .1611555   | -5.43 | 0.000 | -1.192642 | -.5576537
```

(Source: Author of statistics on STATA 14 software)

Observation (Table 4) gives us Regression results, variable (LnTTS) has the same direction for (ROE) p-value less than (0.05). The remaining variables (DR); (STD); (LTL) had no effect on (ROE).

\[
\text{ROE} = 0.0785472 \times \text{LnTTS} - \mu_i \quad (1)
\]

Table 5 Regression results model (**) the impact of capital structure on profitability of securities companies represented as ROE variable

```
reg ROE STD LTL LnSIZE

Source | SS   | df   | MS   | Number of obs = 240
-------|------|------|------|----------------------
Model  | .519688193 | 3   | .173229398 Prob > F = 0.0000
Residual | 236.162.321 | 236 | .010006878 R-squared = 0.1804
Total  | 28.813.114 | 239 | .012055696 Root MSE = .10003
ROE Coef. | Std. Err. | t | P>t [95% Conf. Interval]
STD     | .0120431   | .0453004   | 0.27 | 0.791 | -.0772018 | .101288
LTL     | .1381842   | .0851995   | 1.62 | 0.106 | -.0296645 | .306033
LnSIZE  | .0348976   | .0058745   | 5.94 | 0.000 | .0233244  | .0464708
_cons   | -.8954485  | .1563467   | -5.73 | 0.000 | -1.203462 | -.5874352
```

(Source: Author of statistics on STATA 14 software)
Observation (Table 5) gives us Regression results, variable (LnSize) has a positive effect for (ROE) p-value less than (0.05). The remaining variables (STD); (LTL) had no effect on (ROE).

ROE = 0.348976*LnSIZE - i (2)

Table 6 Regression model results (***): the impact of working capital on the performance of the representative securities company is the ROA variable

Table 6 Regression model results (***): the impact of working capital on the performance of the representative securities company is the ROA variable

reg ROA DR LnTTS

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS Number of obs = 240</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>.14587904</td>
<td>2</td>
<td>.07293952 Prob &gt; F = 0.0000</td>
</tr>
<tr>
<td>Residual</td>
<td>143.961.036</td>
<td>237</td>
<td>.006074305 R-squared = 0.0920</td>
</tr>
<tr>
<td>Total</td>
<td>15.854.894</td>
<td>239</td>
<td>.006633847 Root MSE = .07794</td>
</tr>
<tr>
<td>ROA</td>
<td>-.0487037</td>
<td>.0231758</td>
<td>-2.10 0.037 -.0943606 -.0030467</td>
</tr>
<tr>
<td>LnTTS</td>
<td>.0498355</td>
<td>.0103757</td>
<td>4.80 0.000 .029395 .0702759</td>
</tr>
<tr>
<td>_cons</td>
<td>-.5442667</td>
<td>.1196434</td>
<td>-4.55 0.000 -.7799672 -.3085663</td>
</tr>
</tbody>
</table>

(Source: Author of statistics on STATA 14 software)

Table 7 Regression model results (****): the impact of working capital on the performance of the representative securities company is the ROA variable

reg ROA DR LnSIZE

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS Number of obs = 240</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>.157660655</td>
<td>2</td>
<td>.078830327 Prob &gt; F = 0.0000</td>
</tr>
<tr>
<td>Residual</td>
<td>142.782.874</td>
<td>237</td>
<td>.006024594 R-squared = 0.0994</td>
</tr>
<tr>
<td>Total</td>
<td>15.854.894</td>
<td>239</td>
<td>.006633847 Root MSE = .07762</td>
</tr>
<tr>
<td>ROA</td>
<td>-.0178426</td>
<td>.0190856</td>
<td>-0.90 0.369 -.0568601 .0211749</td>
</tr>
<tr>
<td>LnSIZE</td>
<td>.0219365</td>
<td>.0043685</td>
<td>5.02 0.000 .0133304 .0305426</td>
</tr>
<tr>
<td>_cons</td>
<td>-.5530087</td>
<td>.1161959</td>
<td>-4.76 0.000 -.7819173 -.3241</td>
</tr>
</tbody>
</table>

(Source: Author of statistics on STATA 14 software)
Observation (Table 7) gives us Regression results, the independent variable (LnSize) has a positive effect for (ROA) p-value less than (0.05), and the variable (DR) does not affect the variable (ROA) p-value is greater than (0.05).

$$\text{ROA} = 0.0219365*\text{LnTTS} - \mu_i \quad (4)$$

**- Impact of capital structure on the profitability of securities companies (models 1, 2, 3, 4)**

+ The debt-to-total capital (DR) ratio has a negative effect on the profitability on assets of securities companies. That is, (DR) increases, (ROA) decreases respectively, this is consistent with the research results of Shubita and partners (2012); Tailab (2014); and vice versa the results of Abor (2005); Gill and partners (2011); Abor (2005); Singh (2019).

+ Firm size (LnTTS) has a positive effect on the profitability on ROA/ROE of securities companies, while equity size (LnSIZE) has the same effect on return on equity (ROE). Research results are consistent with Tailab's study (2014); Yapa (2015); Shubita and partners (2012).

**Conclusion**

Research results show that securities companies want to increase operational efficiency, the best solution is to increase the size of equity capital and at the same time reduce debt capital from external credit institutions and individuals. Managers need to take the following measures:

*First, increase equity.* Owner's equity is owned by the securities company, is an important and highly stable part, demonstrating the financial autonomy of the enterprise. The greater the proportion of equity in total capital, the higher the financial independence of the enterprise and vice versa. Measures to increase equity sources such as increasing capital contribution, retaining undivided profits, IPO or issuing shares.

*Second, reduce debt capital.* Change and re-regulate the policy of mobilizing loans from credit institutions, classifying and evaluating to have appropriate solutions.

**References**


