The relationship between the restated financial statements and the independent auditor using logit model in the Tehran Stock Exchange

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Abstract

Survey of the profitability of companies is one of the most important issues for managers, investors, creditors and other interested individuals and the results of this survey are the basis for many decisions inside and outside the company. In this study, the relationship between leverage factors including financial leverage, operating leverage and combined leverage and the factor of profitability assessment is taken into consideration. The objective of this study is to answer the question that whether or not the leverage of company has a significant impact on its profitability. In order to estimate multivariate regression model for testing hypotheses, mentioned model is used by using combined data of companies listed on the Tehran Stock Exchange (TSE) and also for statistical analysis, the statistical software (SPSS) is used. In this study, data of 148 companies between 1387 and 1393 (2008-2014) are selected for testing research hypotheses. K-S test is used to determine the normality of the data, regression model is used to express the relationship between variables, t-test statistic is used for testing the significance of regression coefficients and finally the F-test statistic is used for determining the significance of the equation. The results of research hypotheses test show that financial leverage, operating leverage and combined leverage have significant negative impacts on the profitability of companies listed on the Tehran Stock Exchange (TSE).

Keywords: earnings per share, financial leverage, operating leverage, combined leverage.
Introduction:

In profit and loss report, the financial performance of company is evaluated in a fiscal period. Since the profitability of company is one of the most important parameters in determining the value of company, for earnings analysis we should examine the factors affecting it. In this analysis, we can use Break-Even analysis approaches and analysis of levers.

In Break-Even analysis approach, the relationship between the sales, expenses and the profitability level are evaluated. In analysing the levers, the change in operating profit or net profit against the changes in sale are studied. Also by levers analysis, business risk or financial risk can be measured.

The end result of a company’s performance is earnings per share (EPS) and for calculating it, firstly earnings before interest and taxes (EBIT) are calculated. Then by taking into account the interest expense and taxes and preferred stock dividends, earnings per share are calculated. In this analysis, first by using Break-Even point and the degree of operating leverage, factors affecting the earnings before interest and taxes are evaluated. Then the other part of the profit and loss account or the financial part of it that states the relationship between earnings per share and earnings before interest and taxes will be analysed.

Research background

Internal researches:

Shahmardani (1392) conducted a survey of the relationship between the growth of company and profitability with financial leverage of companies listed on Tehran Stock Exchange between 1386 and 1390 (2007-2011). Results of this survey show that asset growth is positively correlated with financial leverage, sales growth and profitability are negatively associated with financial leverage but there is no significant relationship between financial leverage and profit growth.

Samadi et al. (1392) carried out a research on the effect of growth opportunities on financial leverage in listed companies on Tehran Stick Exchange. The results indicate the existence of a non-linear relationship that is negative in top and bottom surfaces of the growth opportunities in this relationship and is positive in middle surfaces. The intensity of negative relationship in low levels is much more than the high levels of growth opportunities.

Sadeghi et al. (1391) conducted a survey of the relationship between capital structure and profitability of companies listed on the Tehran Stock Exchange by using extended method of moments. The results indicate that in linear mode, the relationship between capital structure and profitability is negative. This may be due to the complex relationships in the market and debt-based financial problems in companies.

External researches:

Nawaf Ahmed Salem (2015) conducted a research of financial leverage effect on profitability of companies listed on the Amman Stock Exchange. The results of research show that there is a significant inverse relationship between financial leverage and profitability of companies.
Barkat et al. (2014) carried out a research on the impact of the financial structure, financial leverage and profitability on stock value of industrial companies listed on the Saudi Arabia Stock Exchange. The results of research indicate that there is no significant relationship between financial leverage and stock value of companies. But capital structure and profitability have positive significant relationship with stock value of companies.

Rafiq (2013) conducted a research on the impact of profitability and financial leverage on financial structure in Pakistan car sector companies. The findings of research show that profitability and financial leverage have not a significant impact on the capital structure.

Hypotheses of research:

**Hypothesis 1**: Financial leverage has a significant impact on the profitability of companies listed on the Tehran Stock Exchange.

**Hypothesis 2**: Operating leverage has a significant impact on the profitability of companies listed on the Tehran Stock Exchange.

**Hypothesis 3**: Combined leverage has a significant impact on the profitability of companies listed on the Tehran Stock Exchange.

Model of Hypotheses testing:

For testing three above hypotheses, multivariate regression models are used.

Model 1:

\[
EPS_{it} = \alpha_0 + \alpha_1 DFL_{it} + \alpha_2 DOL_{it} + \alpha_3 DTL_{it} + \alpha_4 SALE_{it} + \alpha_5 Size_{it}
+ \alpha_6 FCF_{it} + \alpha_7 Currr_{it} + \mu_{it}
\]

In this model:

- **EPS** = Earnings per share (Dependent variable)
- **DFL** = Financial leverage (Independent variable)
- **DOL** = Operating leverage (Independent variable)
- **DTL** = Combined leverage (Independent variable)
- **SALE** = Sales growth of company (Control variable)
- **SIZE** = Size of the company (Control variable)
- **FCF** = Free cash flow (control variable)
- **Currr** = Current ratio (Control variable)

Research methodology:

In terms of objective, this research is an applied research. In terms of classification based on the method, the research in correlational. This study evaluates the correlation between the variables thought to be associated with a major complex variable. On the other hand, the
present research is event study. That means that this study is performed based on the analysis of past data (financial statements of companies).

**Statistical population:**

This study include information on the financial statements of companies listed on Tehran Stock Exchange in the period from the beginning of 1387 (April 2008) until the end of 1393 (March 2015) for 7 years. During this period, the companies have maintained their membership in the Tehran Stock Exchange (TSE).

**Hypotheses testing:**

To test the null hypothesis, student’s t-test is used. Accordingly, if the obtained significance coefficient is less than 0.05, the null hypothesis is rejected and as a result, the opposite hypothesis will be confirmed. The statistical hypotheses of research are formulated as follows:

H0: There is no correlation between independent and dependent variables.
H1: There is a correlation between independent and dependent variables.

\[
\begin{align*}
\text{EPS}_{it} &= 15.292 - 9.589 \text{DFL}_{it} - 7.142 \text{DOL}_{it} - 6.850 \text{DTL}_{it} + 7.007 \text{SALE}_{it} \\
&+ 6.267 \text{Size}_{it} + 0.492 \text{FCF}_{it} + 2.106 \text{Curr}_{it} + \mu_{it}
\end{align*}
\]

Table 6-4: The results of regression model test, Source: Researcher’s calculations

<table>
<thead>
<tr>
<th>Sig.</th>
<th>T</th>
<th>Beta</th>
<th>B</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.003</td>
<td>3.059</td>
<td>3.059</td>
<td>15.292</td>
<td>Constant</td>
</tr>
<tr>
<td>0.035</td>
<td>-2.461</td>
<td>-0.120</td>
<td>-9.589</td>
<td>DFL</td>
</tr>
<tr>
<td>0.041</td>
<td>-2.251</td>
<td>-0.153</td>
<td>-7.142</td>
<td>DOL</td>
</tr>
<tr>
<td>0.033</td>
<td>-2.234</td>
<td>-0.092</td>
<td>-6.850</td>
<td>DTL</td>
</tr>
<tr>
<td>0.025</td>
<td>2.715</td>
<td>0.123</td>
<td>7.007</td>
<td>SALE</td>
</tr>
<tr>
<td>0.034</td>
<td>2.394</td>
<td>0.244</td>
<td>6.267</td>
<td>SIZE</td>
</tr>
<tr>
<td>0.127</td>
<td>1.528</td>
<td>0.048</td>
<td>0.492</td>
<td>FCF</td>
</tr>
<tr>
<td>0.025</td>
<td>3.095</td>
<td>0.103</td>
<td>2.106</td>
<td>Curr</td>
</tr>
</tbody>
</table>

**First Hypothesis:**

H0: Financial leverage has no significant impact on the profitability of listed companies on the Tehran Stock Exchange.

H1: Financial leverage has a significant impact on the profitability of listed companies on the Tehran Stock Exchange.

The results of the research model test and t statistic related to the first hypothesis are shown in table (6-4). The results in this table indicate that the values of t-student statistic and Sig for the variable of first hypothesis (financial leverage) are respectively –2.461 and 0.035. Given that
the error level for this study is 0.05, so the variable of financial leverage has a significant impact on the profitability of companies and the first hypothesis of this research is approved by confidence level of 95%, so the H0 is rejected.

Second hypothesis:

H0: Operating leverage has a significant impact on the profitability of companies listed on the Tehran Stock Exchange.

The results of this table indicate that the values of t-student statistic and Sig for the variable of second hypothesis (operating leverage) are respectively –2.251 and 0.041. Given that the error level for this study is 0.05, so the variable of operating leverage has a significant impact on the profitability of companies and the second hypothesis of this research is approved by confidence level of 95%, so the H0 is rejected.

Third hypothesis:

H0: Combined leverage has no significant impact on the profitability of companies listed on the Tehran Stock Exchange.

H1: Combined leverage has a significant impact on the profitability of companies listed on the Tehran Stock Exchange.

In this hypothesis, dependent variable is profitability and independent variable is combined leverage. The results of the research model test and t statistic related to the third hypothesis are shown in table (6-4). The results in this table indicate that the values of t-student statistic and Sig for the variable of third hypothesis (combined leverage) are respectively –2.334 and 0.033. Given that the error level for this study is 0.05, so the variable of combined leverage has a significant impact on the profitability of companies and the third hypothesis of this research is approved by confidence level of 95%, so the H0 is rejected.

Conclusion:

Results of first hypothesis:

The results of first hypothesis test show that financial leverage has a significant negative impact on the profitability of companies; this means that with increasing the degree of financial leverage, earnings per share declines.

Financial leverage degree indicates how a small change in operating profit can make a bigger change in earnings per share as long as there are fixed financial costs in the company.

Financial leverage is also used to calculate the financial risk. If the actual values of earnings before interest and taxes and earnings per share are different from predicted values, then the company has a risk and when the rate of deviation is greater, consecutively the risk is greater.
Results of second hypothesis:

In second hypothesis, the effect of operating leverage of profitability of companies listed on Tehran Stock Exchange has been considered and evaluated. The results of second hypothesis test show that financial leverage has a significant negative impact on the profitability of companies, this means that with increasing the degree of operating leverage, earnings per share declines.

Operating leverage degree indicates the changes of company’s operating profit for one percent of change in sales.

There exist various ways to calculate the business risk, one of them is the use of operating leverage. If the amount of production and profit before interest and taxes are predicted for an accounting period, these predictions have been made according to business risk. When the deviation rate is greater, consecutively commercial risk rate is greater.

When the degree of operating leverage is greater, the risk of error in prediction of earnings before interest and taxes is more and as a result, the probability of more negative true value before interest and taxes increases.

According to the second hypothesis result, it can be said that by increasing the operating leverage degree of the company, the risk of company concerning profitability increases and the company become susceptible to lose its actual and potential investors, so it will be faced with the reduced demand in market and the decline of stock price that subsequently puts at risk the ability of company to earn profits for shareholders.

Results of third hypothesis:

In third hypothesis, the impact of combined leverage on profitability of listed companies on Tehran Stock Exchange has been considered and evaluated. The results of third hypothesis test show that combined leverage has a significant negative impact on the profitability of companies, this means that with increasing the degree of operating leverage, earnings per share declines.

Combined leverage is also used to calculate the risk of the company. The overall risk of the company or final risk that the company is faced with means the probability of bankruptcy. It means that the capital that shareholders invested in the company loses its value. In such a case, the stock price arrives to zero. And when the overall leverage of company is greater, the risk that the company and its shareholders will encounter is more. This issue subsequently puts at risk the ability of company to earn profits for shareholders. Therefore, with an increase in the level of combined leverage, earnings per share declines.
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