Investigating Role of Changing Profit in Stock Returns of the Listed Companies on Tehran Stock Exchange

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ABSTRACT: The purpose of this study was to examine the relationship between profit changes and stock returns on Tehran Stock Exchange. The population included 53 active companies listed in Tehran Stock Exchange from 2001 to 2010. Changing profit and stock returns were independent and dependent variables respectively. The results showed that there is a significant inverse relationship between stock returns and changing profit, it means that stock returns will be reduced by increasing changes in profit and vice versa.

Keywords: Stocks, returns, Stock exchange, Company.

INTRODUCTION

Obtaining stock returns is objective of investment. To invest on stocks of the listed companies in stock exchange, investors consider various factors including accounting and stocks’ risk (Azadeh Aghideh, 2001). Profit is one of the most important items in financial statements, which it is considered as an indicator for pricing stock, assessing the expected returns, predicting future performance and designing policies of profit dividend. Stocks’ risk is another factor that investors consider when investing. Risk means how to determine certainty, and the more uncertainty the more risk. Changes in profit and stock prices are items affecting to evaluate situation of companies and managers and consequently, the made decisions by actual and potential investors (Qadiri, 2006). In the conducted studies by Hylson et al (2004), risk is an uncertainty that can have positive or negative effects on one or more objectives (Olson, 2012). However, in discussing about financial theories and investors’ decisions, risk means “difference between actual return on an investment with its expected return” (Tehrani, 2003). Investors try to invest their financial resources with the most returns and the lowest risk. Thus, in addition to focus on profit, companies consider risk as a factor limiting returns maximize. In the proposed model by Stone and Harris (1991), stock returns depend on net profit. They also believe that change in profit will affect the relationship. To introduce and estimate their model, the researchers only consider accounting profit and its change.

They state that there is a significant relationship between profit and its changes with stocks return. At macro level, it is expected that the more cash stocks, the more new information for gradual changes, which it leads to increase amount of stocks return. Therefore, the purpose of this study was to answer the question whether there is a relationship between changes on profit with stocks return on Tehran Stock Exchange.

METHODOLOGY

The research was descriptive. The population of all the companies listed in Tehran Stock Exchange in the period from 2001 to 2010. Companies that participated in the study had the following conditions:
1. The financial year ending in March each year;
2. They should be accepted in Tehran Stock Exchange prior to 2001 and should not leave it until ending 2010;
3. All required information should be available;
4. It should not be a financial company (investment, brokering etc);
5. It should have at least 20 trading days per year.
According to the criteria, there were participated 53 active companies on Tehran Stock Exchange in the period from 2001 to 2010 in the research. Changing profit and stock returns were independent and dependent variables respectively. The variables were measured as cases.

**Stock Returns**

Merton (1973) uses capital assets pricing model (CAPM) to calculate return on stocks (Khodadadi, 2011).

\[
E_{t-1} (r_t) = R_f + \beta_i (R_m - R_f)
\]

Model 1

Where:
\(E_{t-1} (r_t)\): The expected return of investors at beginning year \(t\) (E indicates the expected indicator);
\(R_f\): Risk-free return;
\(\beta_i\): Beta of each market share;
\(R_m\): Market return

**Calculating Market Beta**

The covariance between market and stock return divided by variance of market return is called market beta. The following equation is used to calculate market beta (in the research, there was used Tadbirpardaz software to calculate market beta):

\[
\beta_i = \frac{\text{COV} (R_i * R_m)}{\text{Var}(R_m)}
\]

**Calculating Market Returns:**

The following equation is used to calculate market returns:

\[
R_m = \frac{M_t - M_{t-1}}{M_{t-1}}
\]

The equation variables are as follows:
\(R_m\): Market returns;
\(M_t\): Market indicator at end of year \(t\);
\(M_{t-1}\): Market indicator at beginning year \(t\).


\[
\frac{\Delta X_{jt}}{p_{jt-1}} = \alpha_0 + \alpha_1 DR_{jt} + \beta_1 R_{jt} + \beta_2 DR_{jt} * R_{jt} + \eta_{jt}
\]

Model 2

Where:
\(\Delta X_{jt}\): Changes of net profit before extraordinary items at year \(t\);
\(p_{jt-1}\): Market value of company \(j\) at beginning year \(t\);
\(DR_{jt}\): A dummy variable that it is 1 if return of company \(j\) at year \(t\) is negative; otherwise, it is 0;
\(R_{jt}\): Return on stocks of company \(j\) at year \(t\).

The cross-sectional regression model was used to examine the relationship between independent and dependent variables. The model 1 was separately classified and fitted to analyze data for the companies in the sample.

\[
R_t = \delta_0 + \delta_1 \left( \frac{\Delta X_{jt}}{p_{jt-1}} \right) + \delta_2 \text{DISP} + \varepsilon_t
\]

Model 1

Where:
\(R_t\): Return on stocks;
\(\left( \frac{\Delta X_{jt}}{p_{jt-1}} \right)\): Changes in profit

Regression, Fisher F-test, significant t-test and Hausman test were used to analyze data. There were used Limer F-test, Dorbin Watson test, White test and Fisher test to select methods for panel and compilation data, lack of autocorrelation test, lack of variance anisotropy and similarity test of variables respectively.
RESULTS

Determining Types of the Combined Data

As there was used the combined data (year-company) in the research and they are panel and compilation data, therefore Limer F-test was used to choose panel and compilation data. As seen in Table 1, p-value is zero and less than 0.05 in the research model. As a result, panel data approach is adopted. The Hausman test in Table 1 is zero and less than 0.05, then the fixed effects method will be accepted.

Table 1. Limer F and Hausman test.

<table>
<thead>
<tr>
<th>Limer F test</th>
<th>Hausman test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limer F statistics</td>
<td>Possibility</td>
</tr>
<tr>
<td>4.26</td>
<td>0.00</td>
</tr>
</tbody>
</table>

As Dorbin Watson statistic is 2.07, it was identified that regression model has no correlation. White test was significant too indicating consistency of the remained variance. Fisher-ADF test was less than 0.05 (p-value≤ 0.05), which indicated similarity of variables (Table 2).

Table 2. Results of similarity test of model variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Statistic value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADF - Fisher Chi-square</td>
<td>198.8</td>
</tr>
<tr>
<td>p-value</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Regression analysis showed a significant model (P <0.05, Table 3). According Table 3 and p-value, the t-statistic in variable of profit changes (DX/P), which is 0.02 and less than error level 0.05 (p-value≤ 0.05), it can be said that there is a significant relationship between stock returns and profit changes, and profit changes impact stock returns. As changes’ variable coefficient is -0.06, it is resulted that there is an inverse relationship between stock returns and profit changes. As a result, stock returns will be decreased by increasing profit changes.

Table 3. Analysis results.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>SD</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.95</td>
<td>0.01</td>
<td>71.44</td>
<td>0.00</td>
</tr>
<tr>
<td>DX/P</td>
<td>-0.06</td>
<td>0.03</td>
<td>-2.26</td>
<td>0.02</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.44</td>
<td></td>
<td>F-statistic</td>
<td>3.4</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.43</td>
<td>Prob(F-statistic)</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

CONCLUSION

The purpose of this study was to examine the relationship between profit changes and stock returns on Tehran Stock Exchange. The results showed that there is a significant inverse relationship between stock returns and changing profit, it means that stock returns will be reduced by increasing changes in profit and vice versa. This finding is not consistent with results of Shahpur (2006) and Janjani (2011). They showed that there is no significant relationship between profits with stock returns. The research findings are consistent with results of Stone and Harris (1991) and Chang (2010). For example, Janjani (2011) showed that companies with high profit quality have positive returns and companies with low profit quality have negative returns, as which during the study, companies with the highest quality of profit could have 17% returns more than companies with the least quality of profit. It is recommended that managers use the current debts to provide floating capital specially goods’ stocks because using the current debts to finance stock as well as using optimal patterns of properties result decreasing cash transform period, preventing cash dull and preventing operational costs such as storage charges. It can be a solution to solve problems of cash in companies, increase profitability and consequently, increase efficiency of management and decrease incentive to gain profit.

REFERENCES


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