The Impact of Earnings Quality on Capital Expenditure

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ABSTRACT

This study examines the impact of earnings quality on capital expenditure in each of the company’s life cycle. The main purpose of this study was to examine the impact of the quality of earnings on capital expenditure, in order to test the hypothesis of 57 Companies listed on Tehran Stock Exchange, in which their selection was based on the principle of systematic elimination in the time span of 2009 to 2014. In addition, to statistical analyze of research data SPSS software was used, and the results of testing hypotheses indicates that by using Anthony and Ramesh model among the companies investigated, no company was in a growth phase, so the first hypothesis is testable, but between earnings quality and capital expenditure in companies that are in maturity and decline stage there were significant positive correlation. In other words, by increasing the quality of earnings, capital expenditure rises also we came to the conclusion that the relationship between earnings quality and capital expenditure in maturity stage is stronger than the decline stage. The second hypothesis was accepted.

KEYWORDS: Profit, quality capital expenditure, life cycle, Stock Exchange

INTRODUCTION

Stock market securities reflects the every country's economy. Moving from Bank –oriented economy to market-based economy leads to more economic growth and prosperity. Capital's market dynamics and blossom and Participation of People has important role in the institutionalization of productive and transparent investment, Economic development With Equitable distribution of wealth (economic democracy) and Modifying the consumption patterns of scarce resources and ... Will play important role. However, the majority of the investors are risk-averse people and aren't willing to sacrifice their present expenditures to their future income and only creating safer Investment can take some steps to encourage them to invest in this market (Sadaghiani and Shams, 1998).

Theoretical basics

Investors' decision is done on two factors of Risk and Efficiency. One of Accounting information purposes is to assist users in predicting future cash flows and consequently to predict stock returns. Some of the variables affecting On Stock returns of companies in Market Capital is caused by financial information that is collected through the accounting system (Dastgir and Zafari, 2009). Basic financial statements and notes to them as the product of the final process of accounting and financial reporting is one the main means of conveying information to users. Accounting system, as well provides additional information for manager's decisions about capital projects. The more quality of accounting information is better, the better investment decisions are made. On rational decisions, detailed information has more weight and importance and investment decisions show more sensitivity to accounting variables. In this study, the quality of accounting information is considered synonymous with quality of earnings, so earnings quality can be so effective on investment decisions sensitivity to this information and especially accounting information (accounting earnings) (Chen, 2005,22). Also at different stages of the life cycle of the company, the companies have special properties that these features can affect the relationship between the quality of accounting information and capital expenditure. In this study, the company's life cycle variable is used as moderator variables.

Experimental background

Internal records

Mehrani (2003) in a study entitled the relationship between profitability ratios and stock returns in Tehran Stock Exchange reached the conclusion that some ratios such as return on assets and return on equity significantly associated with stock returns. Also changes in some variables such as return on equity and return on assets predict changes in stock returns.

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Nazemi (2005) examined the impact of accruals on earnings quality of listed firms on the Tehran Stock Exchange. The results of this study demonstrated that the mean stock returns won't be under the influence of accruals and its related components.

Ghorbani (2006) examined the relation of profit and cash flow of Company in the framework of company cycle life A. His findings Show that in the company's growth and wane, the relation of company's valuable cash flow is stronger than relation of profit with value of company and while maturity the inverse case goes right.

Namazi and Rostami (2006) in a study entitled "to assess the relationship between financial ratios and rate of return on their stock" examined that. The results indicate a significant relationship between all financial ratios (liquidity ratios, Profitability, Activity, Efficiency and Market) with the rate of return on equity.

Kashanipoor and Rasaiian (2007) conducted a research entitled "the relationship between stock returns and criteria for performance evaluation. The results of their research represents a significant and relatively stable relationship between annual stock return and some of internal performance measurements such as ROE, EPS, ROW In the period of investigation.

Dehdar (2007) examined the impact of the life cycle on profit components increasing explanatory power and cash flow and his findings show that in stages of maturity, evaluation patterns are based on earnings and accrual compared with earnings-based value patterns and accruals compared to operating cash flow, investment and financing, contain more increasing explanatory power and in the fall stage the opposite side is true.

**Foreign backgrounds**

Chen (2005) by choosing 6193 American companies, investigated the impact of increasing earnings quality on sensitivity of capital expenditure of next year to earnings of this year. In this study, it was assumed that capital expenditure of next year is sensitive to this year profit, so impact of earnings quality on this sensitivity was assessed. The criteria to measure the quality of earnings in this research, the quality of working capital accruals of Duchy & dacha model (2002) in which, the less mistakes in measuring and estimating working capital accruals, the more quality of accruals and greater earnings quality will be. Research results showed that there is a positive relationship between earnings quality and capital expenditures. In other words, with increasing earnings quality, sensitivity of capital expenditure of next year to this year's accounting earnings increases.

Biddle and Hillary (2005) with choosing a sample of 34 Countries examined that how the quality of financial information disclosure and transparency of accounting information in the country decreases the problem of adverse selection and Problems related to moral hazard. Also, they assessed the impact of increasing accounting information on sensitivity of capital expenditure to operating cash flow. Research results showed that by increasing the quality of accounting information, sensitivity of capital expenditure to operating cash flow will increase.

K Lonak and Sylvla (2008) surveyed the use of costing system based on the companies' different stages of life cycle. Their findings show that due to changes in management information needs, the amount of use of systems based on different stages of life cycle is different. The amount of use of costing system based on activity in companies during the maturation and revival process than the stage of growth is more.

Gu Harastpanyan (2010) investigates the life cycle and way of paying dividend. In this study, three different groups of distributor of cash business units including repurchase the dividends, cash profit or a combination of dividends and repurchase of shares is intended. Redemption of stocks in the stage of rapid growth is very likely and is a Mark of business unit quality for investors. The cash payment of dividends to shareholders increases in mature business and desire of the manager to extend or maintain the entity's size in relation to well-being of stockholders increases. Finally, using a combination of dividends and redemption of stocks, in more mature business units takes place. This study shows that the Life Cycle of business units is one of the most important reasons for choosing the method of paying dividends.

**Research Hypothesis**

Based on the abovementioned theoretical foundations the following hypotheses are developed:

Hypothesis 1: The impact of earnings quality on capital expenditure in growth stage companies is more than maturity stage.

Hypothesis 2. The impact of earnings quality on capital expenditure in the stage of maturity of the company's is greater than the stage of firms' declining.

**RESEARCH METHODOLOGY**

Since the objectives of this study was to evaluate the impact of earnings quality on capital expenditure in growth and maturity stage, then the methodology of this study is descriptive regarding how to conduct this study, and is of correlative type. The research data and information are adapted from the financial statements of companies listed on the stock exchange in the electronic information system of the stock exchange and securities. Hypothesis testing is done using regression model.
Statistical models and research variables
Statistical modeling of 1st hypothesis
Growth stage ….
\[ \text{INVEST}_{t+1} = \alpha + \beta \cdot \text{A.QI}_{t} + \ldots + \epsilon \]
Maturity stage ….. \[ \text{INVEST}_{t+1} = \alpha + \beta \cdot \text{A.QI}_{t} + \ldots + \epsilon \]
Statistical modeling of 2nd hypothesis
Maturity stage ….
\[ \text{INVEST}_{t+1} = \alpha + \beta \cdot \text{A.QI}_{t} + \ldots + \epsilon \]
The decline stage ….
\[ \text{INVEST}_{t+1} = \alpha + \beta \cdot \text{A.QI}_{t} + \ldots + \epsilon \]

Variables
Dependent variable
Capital expenditure
\[ \text{INVEST}_{t} = \frac{\Delta \text{A} \text{I}_{t} + 1}{\text{A} \text{I}_{t}} \]

Capital expenditure of next year: Investi, t + 1
\[ \Delta \text{AI}_{t}, t + 1: \text{The sum of changes (book value) of assets since the year of } t \text{ until the } t + 1 \text{ year} \]
\[ \text{AI}_{t}, t: \text{Total (book value) of assets in year } t \]

Independent variable
Quality of earning
Criteria needed for it, is the working capital accruals in which was calculated based on the following regression.
\[ \text{CAL}_{t} = \alpha + \beta \cdot \text{CFO}_{t} + \beta \cdot \text{CFO}_{t-1} + \beta \cdot \text{CFO}_{t-2} + \beta \cdot \text{CFO}_{t-3} + \beta \cdot (\Delta \text{SaleSI}_{t} - \Delta \text{AR}_{t}) + \beta \cdot \text{PPE}_{t} + \epsilon_{t} \]

TCAi, t: Total of working capital accruals which was measured using the following equation:
\[ \text{TCA}_{i,t} = \frac{\Delta \text{CA}_{i,t} - \Delta \text{CL}_{i,t} - \Delta \text{STDEBT}_{i,t}}{\text{of average of book value of assets during years of } t, t-1} \]

\[ \Delta \text{CA}_{i,t}: \text{change in current assets during the years } t, t-1 \]
\[ \Delta \text{CL}_{i,t}: \text{Change in total current liabilities of years } t, t-1 \]
\[ \Delta \text{CASH}_{i,t}: \text{change in cash during the years } t, t-1 \]
\[ \Delta \text{STDEBT}_{i,t}: \text{Change in the current portion of loans received in years } t, t-1 \]
\[ \Delta \text{CFO}_{i,t}: \text{Operating cash flow divided by the average book value of total assets during the years } t, t-1 \]
\[ \Delta \text{SaleSI}_{t}: \text{change in sales revenue over the years } t, t-1 \text{ divided by the average value of total assets during the years } t, t-1 \]
\[ \Delta \text{AR}_{t}, t: \text{Change in receiving accounts for years } t, t-1 \text{ divided by the average book value of total assets during the years } t, t-1 \]
\[ \text{PPE}_{t}, t: \text{net value of tangible fixed assets in year } t, \text{divided by the average book value of total assets during the years } t, t-1 \]
\[ \epsilon_{t}: \text{residuals of the regression. The standard deviation of these remaining is an indicator in measuring the quality of working capital accruals (earnings quality) is. The more standard deviation, the lower earnings quality will be , then it is multiplied in -1,and by new criteria, the more standard deviation , the more earnings quality will be.} \]

Systematic Risk
\[ \beta_{i, t} = \frac{\text{COV}(R_{i}, R_{m})}{\text{VAR}(R_{m})} \]

\[ \text{COV}(R_{i}, R_{m}): \text{The covariance stock returns of I company and returns of the market (stock exchange) during the } t^{th} 6\text{-month period.} \]
\[ \text{VAR}(R_{m}): \text{The variance of the market return during the } t^{th} 6\text{-month period.} \]

Size of the company
Research by Lee (2008) has been made, the Nehprii logarithm of total assets to measure the variable of "company size" is used.
(Total assets) $LN = \text{Size of the company}$

**Statistical population**
The present study statistical sample, is the manufacturing firms listed in the Tehran Stock Exchange in which includes companies that meet the following requirements:
1. It should be among manufacturing companies, and not the investment companies, banks, insurance and multidisciplinary companies.
2. Their financial year ending on 19 March
3. Do not change the fiscal year.
4. According to prior research time range, it had to accept in stock market before 2009.
5. Company information should be available.

According to the above restrictions, only 57 companies (including 653 year - the companies) for the period 2009 to 2014 had the above conditions and therefore were selected as statistical sample.

**Results and analysis of research hypotheses**

Descriptive results of the research hypothesis is as follows (Table 1)

**Hypothesis 1**: The impact of earnings quality on capital expenditure in growth stage companies is more than maturity stage.

Because among the companies surveyed, by using Anthony and Ramesh model, no company was in a growth phase, so there was no chance to examine this hypothesis in this study.

**Hypothesis 2**: The impact of earnings quality on capital expenditure in the stage of maturity of the company's is greater than the stage of firms' declining.

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Table 1. Pearson correlation between earnings quality and capital expenditure in maturity stage

<table>
<thead>
<tr>
<th></th>
<th>Quality gains in maturity stage</th>
<th>Capital expenditure on maturity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of earning on maturity</td>
<td>Pearson correlation: 1</td>
<td>0.272 0.000 240 240</td>
</tr>
<tr>
<td></td>
<td>Significance level: 0.000</td>
<td></td>
</tr>
<tr>
<td>Capital expenditure on maturity</td>
<td>Pearson correlation: 0.272</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Significance level: 0.000</td>
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<tr>
<td></td>
<td>Number: 240</td>
<td>240</td>
</tr>
</tbody>
</table>

Table 2. Pearson Correlation between earnings quality and capital expenditure on the decline stage

<table>
<thead>
<tr>
<th></th>
<th>Quality gains in decline stage</th>
<th>Capital expenditure on the decline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality gains in decline stage</td>
<td>Pearson correlation: 1</td>
<td>0.058 0.399 45 45</td>
</tr>
<tr>
<td></td>
<td>Significance level: 0.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number: 45</td>
<td>45</td>
</tr>
<tr>
<td>Capital expenditure on the decline</td>
<td>Pearson correlation: 0.058</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Significance level: 0.399</td>
<td></td>
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<td></td>
<td>Number: 45</td>
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According to Table 1, it can be seen that between earnings quality and capital expenditure in companies that are in the stage of maturity, there is a direct correlation to the amount .272, and according to the sig in this table (0.000), this relationship is a significant relationship. In other words, by increasing the quality of earnings, capital expenditure increases. But according to Table (2), it can be seen that between earnings quality and capital expenditure in companies that are in the decline phase, there is a direct connection to the amount of .058, and according to the sig at this table (.399), this connection is not a meaningful relationship. Because sig observed, is higher than the forecast error (.05). In other words, by increasing the quality of earnings, capital expenditure increases.

Thus it can be seen that the relationship between earnings quality and capital expenditure at maturity is greater than the decline stage or by the other interpretation, the impact of earnings quality in the stage of maturity of the company's is greater than the decline stage of firms. So based on conducted statistical tests the second hypothesis is confirmed.
between the errors themselves, assuming a correlation between the errors is rejected and regression can be used. Durbin is 1.551 and the number indicates that errors are independent of each other and there is no correlation relationship between two above-mentioned variables. According to the output of software SPSS; Tables show changes of the earnings quality by the variable of capital expenditure. Also the calculated adjusted coefficient of determination shows .071, in which represents the anticipated and capital expenditure at the stage of maturity is .272.

According to the table above, Pearson correlation coefficient between the two variables of earnings quality and capital expenditure at the stage of maturity is .272. This number in error level of 5% shows a significant relationship between two above-mentioned variables. According to the output of software SPSS; Tables show. Also the calculated adjusted coefficient of determination shows .071, in which represents the anticipated changes of the earnings quality by the variable of capital expenditure. Watson The statistic value of Watson-Durbin is 1.551 and the number indicates that errors are independent of each other and there is no correlation between the errors themselves, assuming a correlation between the errors is rejected and regression can be used.

The above table represents a variance analysis between two variables of earnings quality and capital expenditure on maturity stage, according to this output, the overall significance of the regression model is accepted.

In the output of above table and in column B, respectively, constant and independent variable coefficients of regression transaction is presented and the equation is as follows:

\[ \text{INVest}, t + 1 = \beta_0 + \beta_1 \text{AQI}, t + \epsilon \]

INVesti = capital expenditure  
\( \beta_0 \) and \( \beta_1 \) = slope of the regression line  
AQI, \( t \) = earnings quality

The relationship between variables by taking control variable of firm size

Based on the performed analysis, it was found that between earnings quality and capital expenditure in smaller companies there are significant and direct correlation by the amount of .272 but the relationship between above variables in large firms is .271. But the difference between them is trivial.

So we get this conclusion that the use of control variables of firm size does not affect the relationship between earnings quality and capital expenditure.
The relationship between variables taking into account the systematic risk of control variable

Based on the performed analysis, it was found that between earnings quality and capital expenditure in companies that their systemic risk is lower than average risk companies, there was significant relationships, there is significant and direct relationships by the amount of .276 but relationship between abovementioned companies in which their systematic risk is greater than average risk of the companies surveyed is of the amount of .268. But the difference between them is trivial.

So we get this conclusion that the use of systematic risk control variable does not affect the relationship between earnings quality and capital expenditure.

Conclusion

According to the tests being obtained through correlation and regression, we conclude that between earnings quality and capital expenditure in companies that are at the stage of maturity and decline, there is a significant and positive correlation. In other words, by increasing the quality of earnings capital expenses increase. But because by using the Anthony and Ramesh model among the surveyed companies, no company was in a growth phase, thus there was no possibility to investigate the relationship between earnings quality and capital expenditure in growth stage, therefore the first hypothesis is not testable.

It also concluded that the relationship between earnings quality and capital expenditure in maturity stage is stronger than the decline stage. The second hypothesis is accepted.

Also the association between earnings quality and capital expenditure, taking into account the company's size control variables and systemic risks were also examined.

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