

A Review on the Relationship of Capital Investment and Future Earning

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Abstract

Studies in early phase of capital investment are focused towards the investment decision and appraisal due to considerable controversy on, whether Net Present Value or Internal Rate of Return will essentially maximize the shareholder's wealth. Later, capital investment is referred as crucial managerial decision in generating future benefit that eventually increases the national economy based on traditional capital investment dynamics. However, empirical findings show that not every capital investment announcement has significant positive relationship with future earnings. Literature reviews indicate mixed result of capital investment relationship with firm's future earning, which varies according to the level of capital investment and financing. Review furthermore explains that capital investments are projected for other reasons despite future earning such as obligatory by government body. Based on the review, this study recognizes the need to understand the unique behavior of capital investment in various sectors in generating future earnings by looking at linearity level, effect capital investment on profitability and stock return.

Keywords: Capital investment; future profitability and stock return

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1.0 INTRODUCTION

There is no definite concept on capital investment, whereby all the cost incurred during firms' capital expenditure is traditionally considered as capital investment. In other words, capital expenditure is an element of the capital investment that brings future benefit that is more than one year and current investment is the benefits accrue relatively for short-term (Ross *et al.*, 2007).

There are constant discussions on capital investment administration between academia and practitioners in corporations as it is related to macro and micro levels of managerial decision (Hill, 1955; Hamidi *et al.*, 2013). Various researchers examined the relationship between capital investments with future profitability and provided mixed results. More specifically, the results do not seem to encourage the further development of capital investment in business practice. The liquidity-profitability trade-off conceptualization suggests negative relationship on achieving management's general concerns on profitability and liquidity (Fazzari *et al.*, 1987; Carpenter and Guariglia, 2008). However, much uncertainty still exists in relation to capital investment stability as the fund is limited and profitability assumed from capital investment is for the long-term.

Frequently, capital investment has been treated as a nonlinear contributor towards firm's future profitability that engages irrevocable large initial amount. Investigation shows that over-investment can partially explain the negative relationship between capital investments and future profitability (Li, 2004). Financial markets do not seem to fully understand the implications of capital investment for future profitability. However, Jiang *et al.* (2006) view that capital investment ratio remains as an important variable for explaining the behavior of future corporate earnings. In addition, no research has been found that examines the links between fundamental capital investment period and future value changes by sector. Sectorial analysis allows may to test directly the validity of unique behavior of each sector that affects the relationship of capital investment and firms' future earning which may underline the capital-intensive industries that over-invest during recent economic period in Malaysia.

2.0 BACKGROUND RESEARCH

The seminal research initiated by Modigliani and Miller (1958) suggests firms to execute capital investment if that investment will maximize the firm's profitability and market value. Nevertheless, only a few studies found positive linear association between capital investment and future earnings (Bryan, 1997; Jing *et al.*, 2006; Kumar and Li, 2013). However, none of these studies have proven the relationship of capital investment with future earnings based on sectorial differences. Understanding the association of capital investment with future earnings by sector level is essential as the capital investment decision made are based on future assumption and not past information where over-investment practices in certain sectors may lead to lower future returns. Capital investment intensity is based on

the nature of industry (Raheman *et al.*, 2012) as the level of capital usage of each industry or sector is diverse as in the case of capital-intensive industries such as telecommunication, oil palm, utilities and technology sectors that require higher capital investment (Hassan and Manshor, 1991).

Capital investments are projected for few reasons despite profit generation alone. Some are for obligatory reason that is necessary to keep operations going on, in order to be compatible. One of the investment criteria used to evaluate capital investment is to make detailed estimation of future cash flows, which result from future costs and future revenues (Pegels, 1991). Money generated from capital investment is known as free cash flow where Biddle and Hilary (2006) identified capital investment as assets that may generate internal fund to the firm. Excess cash generated from capital investment is assumed to be unreturned to the investor but certain amount will be retained in the firm as fund for future investment. A rather recent finding by Abolgasim (2008) confirmed that capital investment influences the internally generated cash flow, whereby announcement on capital spending increase the share price of the firm. Hence, the resultant values of the investment criteria are dependent on the estimates of future cash flows.

According to Tobin (1999) firms face dilemma on capital investment decision, as capital investment requirements have to compete with all other alternatives under the capital budgeting. The highest return among the alternatives is chosen as the best investment. Thus, financial managers have to clarify all related issues to capital investment and make sure the expenses are consistent with the future expected cost saving and profitability.

Corporate policy to maximize shareholders value by effective capital investment planning and implementation is a challenging process as it does incur various professionals across management area of study. The idea of increasing shareholder's value appears easy but implementing the process is difficult as firms face major challenges to match the capital investment arrangements with varying needs (Lynch, 2001). As such, the researchers believe that recognizing the association of capital investment and firm's future performance at sectorial level could clarify the requirements for firms to over-invest or under-invest in a particular industry.

■3.0 LITERATURE REVIEW

Based on the traditional valuation theory, none of the capital investment announcement would affect market valuation if the rate of return of firm is equal to market required return. The literature provides evidence on the existence of mixed relationship between capital investment and future earning where Sloan (1996) specifies that future earning can be viewed as firm performance in term of future stock performance and future profitability.

Capital investment based on data of 658 firms in New York Stock Exchange and American Exchange, study found positive significant effect on stock return for industrial firms and non-significant relation for the public sector (McConnell and Muscarella, 1985). The result obtained for public sector is consistent with market value maximization hypothesis as each public sector's project's return is marginal. This specifies that capital investment in public sector is not mainly for maximization of future earnings.

As per the findings of Bar-Yosef *et al.* (1987) and Kim (2001), relationship between corporate investment and corporate earning exist in two ways. Past investment may be useful in predicting future earnings, while past earnings may be useful in predicting future investment. However, it is not necessarily that corporate earning is affected by past investment (Little, 1962; Jensen, 2001). The future earning is not only determined by the capital investment.

Penman (1992) observed that growth in capital investments and its covered periods are not positively related to next period of earnings. In addition, Abarbanell and Bushee (1997) estimated that capital investment could be a bad signal for future earnings, if poor performing firms take an excessive projects, findings that are supported by Kim (2001) based on a similar study, which denotes that capital investment signaling further lower liquidity level in poor performing firms.

Financial managers give a positive signal about the firm's available positive net present value projects when they unexpectedly increase their capital investments (Beaver *et al.*, 1980; Trueman 1986; Jing *et al.*, 2006). In addition, many models in accounting and finance predict that investment information has a significant and positive relation to stock returns (Kerstein and Kim, 1995; Bryan, 1997). Empirical research by Jing *et al.* (2006) also provides consistent evidence on the aforementioned relationship. The unexpected capital investments provide incremental value relevant information beyond unexpected current earnings.

According to Kim (2001), there is no linear association between capital investments and future earnings. However, the examination on firms without at least one year of losses in the next five years exhibit evidence of a strong positive linear relationship with capital investment. In contrast, firms with at least one year loss in the next five years indicate strong negative linear relationship between capital investment and future earning. A recent study by Kim *et al.* (2013) similarly denotes negative relationship between capital investment and stock prices. Hence, the researchers opine that capital investment decisions are critical in managing strategic change and sustaining long-term corporate performance where investors tend to underestimate the importance of the unfavorable information about managerial intentions in capital investment.

A study conducted in Japan by Titman *et al.* (2002) found negative relationship between capital investment and future performance for firms that are over dependent on financing from major banks and positive relation for independent firms. Similarly, Titman *et al.* (2004), denoted that increase in capital investment tend to realize the lower stock returns for next subsequent five years. This study indicates that, risk level, firm characteristic or any past favorable information cannot explain the relationship between capital investment and future return.

Besides, Fairfield *et al.* (2003) found negative association between net long-term operating asset growths with future return on asset, this materializes that unanticipated capital investment does not generate positive future earning across sectors. Inconsistent with work of Fairfield *et al.* (2003), Kumar and Li (2013) provide suggestion on positive effect capital investment on future corporate earning. The study conducted on large and small firms, indicated innovation capital involves higher future capital investment. Thus, R&D intensive firms have positive return after fourth or fifth year of capital investment due to high systematic risk involved.

Bar-Yosef *et al.* (1987) considers annual corporate earning follows random walk, thus the best estimation of future earning is based on current earning. Bar-Yosef *et al.* (1987) also identifies current and past capital investment as important determinants of its future

earnings. Similarly, Vogt (1997) supports that capital investment can be viewed as important information to predict success of future earning.

The aforementioned findings are drawn from studies across various sectors, based on firm's size and furthermore based on capital intensity level without conducting any sectorial analysis. McConell and Muscarella (1985) and Kumar and Li (2013) highlights the positive relationship of capital investment with corporates' future earning which go along with the traditional dynamic views where capital investment implementation seeks to obtain maximum earning. The researcher believes that higher future investment will have positive effect on future return if there is more systematic risk as in the case of R&D intensive firms which mostly have positive returns after the fourth or fifth year of investment.

Li (2004) measured capital investment by deriving the change in long-term asset accruals to investigate whether over-investment can partially explain the negative relationship between capital investments. Long-term accruals classified as one of the capital investment's dimension in this study besides dimension employed by Kim (2001), who computed capital investment grounded on current capital investment over the market value of equity at the beginning of the year.

Researcher have studied that sales have close relationship with capital investment (Pandey, 2006; Shaver, 2011; Hamidi *et al.*, 2013). The growing production and sales may require additional capital investment that could help the firm to reach the sales and production demand. Thus, question arises whether conceptually the additional capital investment would increase the future profitability. Second, leverage determined as control variable as Jensen (1986) noted the negative association of capital investment and profitability is stronger when firms have greater investment preference, which are for the firms with higher free cash flow and lower leverage. A study by Nazir and Afza (2009) suggest that investment in long-term asset will affect the cost of fund externally thus external funding may place the firm with better liquidity position but at lower profitability.

Table 1 indicates the relevant findings in the literature. This research reviews the previous works on the capital investment or in other boarder concept, known as capital investment (Levy and Sarnat, 1994). In general, the motivation of previous literatures develops mainly based on traditional dynamics of capital investment and traditional valuation theory. Table 1 lists the finding on the linearity level of capital investment with future earning that characterized by profitability and stock return. Based on the examination on literatures, it demonstrates the need for future studies to control for cross-sectional valuation differences of capital investment. This may justify unique behavior of each industry in identifying the linearity level of capital investment and future earning.

Table 1 Relevant findings on trends in capital investment

<i>Author (s), Year of Publication</i>	<i>Findings</i>
<i>Mc Conell and Muscarella, 1985</i>	<i>Future capital investment information increases the present stock return of firm.</i>
<i>Bar-Yossef et al., 1987</i>	<i>Capital investment does not increase the predictable earning.</i>
<i>Ou and Penman, 1989</i>	<i>Capital investment growth not positively correlated with next period of earning.</i>
<i>Bryan, 1997</i>	<i>Capital investment information has positive relation with future earning.</i>
<i>Kerstein and Kim, 1995</i>	<i>Capital investment information has positive relation with future earning.</i>
<i>Lev and Thiagarajan, 1993</i>	<i>Capital investment is value relevance for investor</i>
<i>Callen et al., 1992</i>	<i>Capital investment increases the abnormal return</i>
<i>Fama and French, 1992</i>	<i>Book to market value have long-term relation with future firm success</i>
<i>Ou, 1990</i>	<i>Capital investment has negative relation with next period of earning.</i>
<i>Kim, 2001</i>	<i>Winner firms have positive relationship of capital investment and future earning. Looser firms have negative relationship of capital investment and future earning.</i>
<i>Jing et al., 2006</i>	<i>Capital investment has positive relation with future corporate earning.</i>
<i>Chan et al., 2007</i>	<i>Share price negatively affected by capital investment announcement if the firm is the 1st mover in the industry.</i>
<i>Kumar and Li, 2013</i>	<i>Higher future investment have positive effect on future return if there is more systematic risk</i>

■4.0 CONCLUSION

Empirical studies based on traditional valuation model, which assumes that capital investment announcement will not increase the future profitability and stock return. In addition, the capital investment concept was expanded to capital investment, which has embraced all cost associated with capital investment (Levy and Sarnat, 1994). Further studies have identified the non-linear relationship of capital investment with future earning are affected by overinvestment activities (Titman *et al.*, 2002; Li, 2004). However, the discoveries show mixed results on the linear relationship of capital investment and future firm's earning (Ou and Penman, 1989; Kim, 2001).

The central investigation on literature reviews shows the need for further study on sectoral basis to be executed based on variables that influence capital investment, future earning and the relationship between the variables. Industry involved in new technology-based are characterized by uncertainty and there is no way of predicting what will undoubtedly happen in the future. Likewise manufacturing sector, firms have substantial investment in property, plant and equipment. Since the investments made in new companies are typically irreversible, understanding the relationship and effect of capital investment towards future earning is essential. Further study is expected to make significant contribution on the difference of across sector and sectoral analysis, which encourages capital investment by phases that may lead to lower initial investment values and reducing the amount of capital at risk according to unique behavior of each sector. Eventually the capital investment may achieve the objective to increase the firms' earning by avoiding overinvestment.

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