

# **Efficient Asset Management and Firms' Growth in Construction Sector, Malaysia**

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## **Abstract**

Construction sector has a remarkable role in cultivating wealth to economic growth and development in Malaysia. The increasing volume of growth in Malaysian construction firms in the sector lead to more competitive intensity among the existing players. This made construction sector encountering more severe challenges in optimization the level of managing assets for sustainability in the industry. The performance measurements for construction sector have received substantial attentiveness with regard to reduce investment costs and improve utilization of resources for revenue generation purpose. This paper sought to propose a conceptual framework for measuring the growth performance that can be used by the construction sector. Several independent variables are examined including cash management, inventory management, account receivable management, non-current assets management and firm size with the dependent variable of return on assets ratio. Using a sample of 82 construction firms listed in Bursa Malaysia over a five year (2010 to 2015) period, several research methodologies were employed, that are, descriptive analysis, correlation analysis, Pooled Ordinary Least Square (OLS) regression, Breusch-Pagan (BP) Lagrange Multiplier test, and Hausman test. The result from this study is a conceptual framework for measuring the growth performance for construction sector where each variables has a significant correlation to the return on assets. This research is expected to contribute as the literature used by academics and serves as an important reference to the top-management for strategic planning for competitive advantage. This research also provides guidance to the authority to plan for policies related to asset management without damaging others in the supply chain. In other words, asset management should help the firms in construction sector to identify the right amount of money to be spent on the right assets, at the right time.

**Keywords:** Asset management, Construction sector, Return on assets, Firms' growth

## **Introduction**

The scope of this research will involve analysis of the efficient asset management and firms' growth for construction sector listed in Bursa Malaysia. The general objective of this study is to evaluate both the current assets and non-current assets management and its impact on the firms' growth for construction sector listed on Bursa Malaysia. The specific objectives of this research tend to investigate the firms' cash management, inventory management, accounts receivable management and non-current asset management on the firms' growth.

### ***Construction Sector and Return On Asset (ROA)***

Today, there are eight primary sectors that contributed to the GDP growth of Malaysia's economic namely mining, agriculture, manufacturing, construction, transportation, wholesale

and retail trade, forestry and fishing, finance and insurance and government services. Based on The Stars, the construction industry is expected grow by 8% contributed by lots of big infrastructure projects in Malaysia (CIDB, 2017). Moreover, many researchers found that contribution of construction industry to national economic development (Myers, 2013). Therefore, this study only focus on construction industry in Malaysia and one dimension in measuring growth or firm performance is by using the financial ratios. The financial ratios derived from financial data to objectively evaluate firm's performance. In this area, Return on Asset (ROA) is used as a proxy for firms' growth measurement.

### ***Cash Management***

In the previous literature, the cash conversion cycle was found associated with these three variables (Ebben & Johnson, 2011). Efficiency of cash conversion cycle giving impact of more liquidity, decrease the debt and financing in equity. First, the efficiency will come out with higher of returns. Second, the owners or managers may be proactive in organizing the cash management and third, the study signifies that of cash conversion cycle as a positive or essential management apparatus for company's owner. In another study, cash flow management have a positive relationship to firm's profitability (Aftab Hameed Memon, 2010). The finding indicates firm that can smoothly plan their cash flow will reduce difficulty in financial management. In fact, increasing in cash will increase the profitability of a company (Malik, Waseem & Kifayat, 2011). Bhutto, Abbas, Rehman & Shah, (2011) confirmed the finding that there is positive relationship between cash conversion cycle with company's profitability.

### ***Inventory Management***

A study was conducted entitle of the effect of inventory management on business performance of companies in Nigeria (Anichebe & Agu, 2013). The study found that there is significant link between inventory management and effectiveness of the companies. There is significant impact on productivity of companies and inventory management and also strong positive correlation between the two variables. It can be concluded that effective inventory management is one way to successful and growing companies. However, based on study by Panigrahi (2013), she conducted the association between inventory conversion period and profitability of top 5 listed companies in India in 2001 to 2010. The test used was regression analysis. The study found that the inventory and profitability of the companies have opposite relationship. Thus, the variables move in different direction.

### ***Account Receivables Management***

A study was examined the association between account receivable management and profitability for 131 listed firms in Athens Securities Exchange (Lazaridis & Tryfonidis, 2006). The finding can be summarized that utilization of CCC by upper management could rise the shareholder value. There was positive significantly association between the company's profitability and the efficiency of the company's account receivables. However, another study found that there is no statistically significant association between firm's profitability and average inventory days (Gill, 2010). Further, there is negative association between profitability and the number of day's debtor and cash conversion cycle (Garcia & Martinez, 2007). This is supported with another finding that there is negative association between inventory in days, CCC, ACP and firm's value (Waweru,2011).

### ***Non-Current (Fixed) Asset Management***

The fixed asset (non-current assets) has the major role in the profit ratio determination and the evaluation of risk involved (Smith, 1980). Effective organization of non-current assets is the most important part of the entire corporation and in creating the value of shareholders. It includes the land, equipment of manufacturing and other assets which last for longer periods of time. The non-current assets are more revenue generators than the current assets but the risk involvement is more than the current assets as it is difficult to convert them into cash and the value also differ in different point of times than the current assets (Scott, 2003). Muritala (2012) in the study recommended that asset tangibility should be a driven factor to capital structure because firms with more tangible asset are less likely to be financial constrained. In the other hand, he sampled firms used in Taiwo, 2012 study were not able to utilize the fixed asset composition of their total assets to gives positive impact on their firms' profitability.

### ***Firms' Growth***

Asset structure significantly influences company growth. The influence of both is positive, this means that asset structure affect company growth. According to Bambang Riyanto (2001), most industrial companies in which majority of capital is embedded in non-current assets will give priority to meeting the needs of capital from permanent capital, namely equity, while foreign capital as a complementary. It can be connected with the rule that horizontal conservative financial structure which states that the amount of own capital should at least be able to cover the amount of non-current assets plus other assets that are permanent. And companies that own most of its assets in current assets will give priority to meeting the needs of their funds with short-term debt. Firms that achieve growth will subsequently go on to contribute more actively towards the development of Malaysia's economy and social elements. According to Autio (2007), growing firms have long attracted the attention of policy makers worldwide and high growth enterprises are seen as important contributors to employment, innovation, and competitiveness. However, firm with growth ambitions should rationally evaluate the overall capabilities of the firm instead of only rely on a competitive strategy. Right and appropriate decisions are crucial for construction companies to remain active and grow in today's challenging business environment.

Based on the literatures by the prior researchers, this research study is motivated by three main factors. Firstly, asset management is very crucial and valuable components owned by a firm or any businesses. The assets were purchased and owned by the firm to manage the business to maximize the profit of shareholders and generate profitability income. For examples, buildings, cash in bank, prepayments, machines, debtors and motor vehicles. These assets are reported in firm's balance sheet and the common types of assets include current, non-current, physical, intangible, operating, and non-operating. Secondly, assets have significant role in determining the role and the profit ratio of a firm (Smith, 1980). The non-current assets are about half of the total assets of the manufacturing firm and in a distribution firm. A greater return on investment can be obtained by having huge level of assets which are not current. However, Van Horne and Wachowicz (2004) claimed that there can be negative effect of profit of a firm on the current assets of the firm, while the deficiency of current assets may drop down the stock outs and the liquidity of a firm so that the liquidity of firms could not be disturbed. Finally, the performance of construction industry as a high-risk business due to the high level of business failures which is far beyond those in many other industries. Then, this failure result from the combination of several factors and financial-related causes considered as one of them. Thus, this study aims to analyse both the current

and non-current asset management issues to construct the best-suited model of asset management and firms' growth based on the asset management theory.

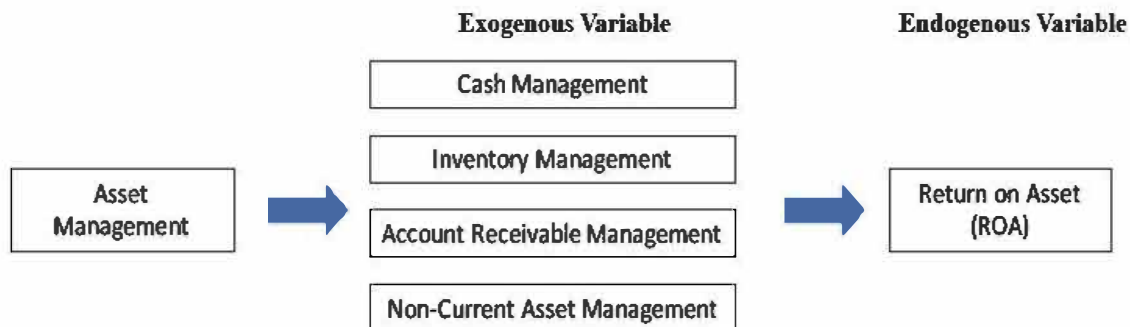
## Methodology

### Data Descriptions

In order to gather enough data for this research, the secondary sources of data were obtained from the published annual reports and audited financial statements of the sampled local construction firms. This study empirically analyses the association between efficient asset management and firms' growth by using a sample size of 82 construction firms listed in Bursa Malaysia, to cover the period from 2010 - 2015.

### Conceptual Framework

The following figure is the conceptual framework for this study. The exogenous or independent variables are cash management, inventory management, account receivable management and non-current asset management. The endogenous or dependent variable in this study is Return on Asset (ROA) is used as a proxy for firms' growth measurement.



**Figure 1: Conceptual Framework for the relationship between asset management variables and firms' growth in Malaysia.**

### Estimation Model

The relationship between firms' growth with the chosen asset management variables was tested using panel data regression model. The regression model as follows:

$$ROA_{it} = \beta_{1t} + \beta_2 CM_{it} + \beta_3 IM_{it} + \beta_4 ARM_{it} + \beta_5 NCM_{it} + \beta_6 SIZE_{it} + \varepsilon_{it} \quad (1)$$

where ROA represents Return on Asset.  $i$  represents the cross-sectional unit (firms) while  $t$  represents the period of time (2010-2015),  $\beta_1$  is the intercept or constant term while  $\beta_2, \beta_3, \beta_4, \beta_5$  and  $\beta_6$  are estimated coefficient of the independent and control variables. Also,  $\varepsilon$  refers to the random error term. The set of independent and control variables include:

CM = Cash Management

IM = Inventory Management

ARM = Account Receivable Management

NCM = Non-Current Asset Management

SIZE = Firm size

## ***Hypothesis Development***

This study purposed to examine the relationship between asset management variables and firms' growth for construction industry in Malaysia. After conducting a literature review, the researcher will propose some hypothesis based on the existing constructs. There are four hypotheses to be proposed in this study which describes the relationship between the independent variables and dependent variables. Here are the hypotheses proposed:

H1: There is relationship between cash management and firms' growth.

H2: There is relationship between inventory management and firms' growth.

H3: There is relationship between account receivables management and firms' growth.

H4: There is relationship between non-current asset management and firms' growth.

## **Data Analysis**

In order to test the relationship among each variable, several research methodologies were employed, that are, descriptive analysis, correlation analysis, Pooled Ordinary Least Square (OLS) regression, Breusch-Pagan (BP) Lagrange Multiplier test, and Hausman test.

### ***Descriptive Analysis***

Measures of central tendency depict the center of a distribution for a set of data, which include mean and median. Meanwhile, measures of variability describe how spread out a distribution is for a data set, or in other words, how data points diverge from the average value. These measures include standard deviation, minimum and maximum values. When a sample is obtained in the study, the descriptive statistics are applied to make inferences about the characteristics of the firms' growth measures, asset management variables, and also the control variables for the sample.

### ***Correlation Analysis***

The value of correlation coefficient,  $r$ , can ranges from +1.0 to -1.0. The value of +1.0 denotes a perfect positive relationship exists, while the value of -1.0 denotes a perfect negative relationship exists. No relationship between the variables is indicated if the value of  $r$  is zero. The closer the value is to +1.0 or -1.0, the linear relationship among variables is strong. Isik and Ince (2016) states that multicollinearity problem may arise due to the high correlation coefficient. Generally, there is no multicollinearity problem if the correlation between independent variables does not more than 0.8 (Jadah et al., 2016). It is conducted to determine the relationship between the five independent variables namely cash management, inventory management, account receivable management, non-current asset management and firm size with the dependent variable of return on assets ratio.

### ***Pooled Ordinary Least Square (OLS) Regression***

This model assumes that the ROA will depend on various asset management variables and control variables. The common Pooled OLS model can be written as follow:

$$Y_{it} = \beta_{1i} + \sum \beta_k X_{it} + \varepsilon_{it} \quad (2)$$

where  $Y$  is dependent variable (ROA) of construction firm  $i$  for time period  $t$ ,  $\beta_i$  is the intercept,  $\beta_k$  represents the regression coefficients of the  $X_{it}$  variables, while  $X_{it}$  represents

the independent variables (CM, IM, ARM, NCM and SIZE) of construction firm ( $i$ ) for time period ( $t$ ).

### ***Breusch-Pagan (BP) Lagrange Multiplier Test***

In BP test, the null hypothesis is that the variance of the random effects is equal to zero while the alternative hypothesis is that the variance of the random effects is not equal to zero. Therefore, the null and alternative hypotheses can be stated as follows:

H<sub>0</sub>: Pooled Ordinary Least Square model

H<sub>a</sub>: Random Effects model

If the p-value is less than a level of significance, the null hypothesis is rejected and therefore the random effects model is the more suitable model to be used in the study. However, we do not reject the null hypothesis when the p-value is greater than a level of significance, indicating that the pooled OLS is the more preferred model as compared to the random effects model (REM).

### ***Hausman Test***

Besides BP test, the Hausman Test is used to test the hypothesis that whether Fixed Effect Model (FEM) or Random Effects Model (REM) should be the choice for this research study. The null and alternative hypotheses underlying the Hausman Test are stated as below (Isik and Ince, 2016):

H<sub>0</sub>: There is no correlation between individual intercept and independent variables.

H<sub>a</sub>: There is correlation between individual intercept and independent variables.

The null hypothesis is rejected when the p-value is less than level of significance at 1%, 5%, and 10%. Meanwhile, if the p-value is larger than a level of significance, therefore we do not reject the null hypothesis. If the null hypothesis is rejected, it can be concluded that the REM is not appropriate as there is correlation between individual intercept and independent variables and therefore FEM is preferred to REM.

## **Results and Discussion**

The main purpose of this research is to investigate the relationship between asset management and firms' growth of 82 construction firms listed in Malaysia over 5 years period from 2010 to 2015. This study also attempts to analyze evidence regarding which theory would be appropriate to explain the relationship between firms' growth and asset management. The hypotheses are finally formulated to examine the relationship between asset management and firms' growth which is measured by return on assets. The following discussion of the result is expected based on the Fixed Effect Model Regression.

H1: There is relationship between cash management and firms' growth.

The empirical result suggests that the log of cash conversion cycle (CCC) which is used to measure the liquidity of firms is found to have no effect over the firm's growth. Therefore, this hypothesis is believed to be rejected as CCC is not significant at all in affecting firms' growth.

H2: There is relationship between inventory management and firms' growth.

It is expected that this hypothesis will not be rejected because the log of inventory conversion period (ICP) used to measure the liquidity of firm is positively correlated to firms' growth in this study. This suggest that firms can create the value and increase the performance by increasing the inventory conversion period.

H3: There is relationship between account receivables management and firms' growth. The log of average collection period (ACP) used to measure the firm's liquidity and is expected to have a significant and positive relationship with the firms' growth. This hypothesis is will not rejected suggesting that longer collection period is creating increased profitability.

H4: There is relationship between non-current asset management and firms' growth.

This hypothesis will not be rejected as the non-current asset management is significantly and positively associated with the firm's growth. This result means greater use of non-current assets turnover, firms generate higher revenue for growth and expansion.

### **Conclusions**

Several implications can be observed from the findings of this study about the relationship between the asset management and the firms' growth. Firstly, the empirical results imply that the log cash conversion cycle is insignificantly and negatively correlated to firms' growth. This indicates that the firms' growth would not be affected despite of shorter collection of accounts receivable, fast-moving inventory or longer payments to suppliers. Secondly, the results from the regression analysis also showed that the log average collection period has a significant positive relationship with the firms' growth. Thus, the longer the credit period granted by the firms to their customer, the higher the firms gain their profitability. In many cases, this form of results implies that the company is experiencing over-trading. Third, the finding also exhibited that the log inventory conversion period is significantly and positively related with the firms' growth. This means when the number of days of the inventory turnover period increases, the profitability of a firm increases (vice versa). This implies that the contractors will be influenced to report longer period of inventory so as to elevate the firms' growth. Finally, the results from the regression analysis also indicated that the non-current assets have positive relationship with firms' growth. In other words, effective use of non-current assets like land, building, plant and machinery, fixtures and fittings and motor vehicles enhance productive capacity of firms. Thus, ensure long term profitability and growth. Furthermore, the firm size showed positive relationship with the firms' growth suggesting when the firm size increases, more profit is expected to increase too. This concludes that the larger firms would often grow and survive as compared to smaller firms.

There are some limitations that could not be avoided during this study was conducted. Certain data which are available in the databases does not cover a long period and therefore not adopted in this research. For example, the data available for construction cost in several legal databases available from year 2005 onwards which is inconsistent with other data used in this research and thus this particular variable failed to be included in this study. The construction sector is still developing and will always face various challenges from various factors that are either natural or independent depending on the circumstances surrounding it. Therefore, the information received must be screened and observed in detail so that the data analyzed give a reasonable and acceptable decision. Moreover, it shows the real picture of a firm and therefore, the importance of cash flow details and its relationship with firm profits should be disclosed and displayed perfectly as it can be a major factor in hosting firms'

growth. Faced with volatile environment, this study serves as an important reference for the real estate industry to plan for strategy and the authority to plan for policies related to asset management. In other words, asset management should help the firms in property sector to identify the right amount of money to be spent on the right assets at the right time. This research has signposted areas in which future research may reveal the effects of different outcomes by extending the research to consider all other potential types of both current and non-current assets.

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