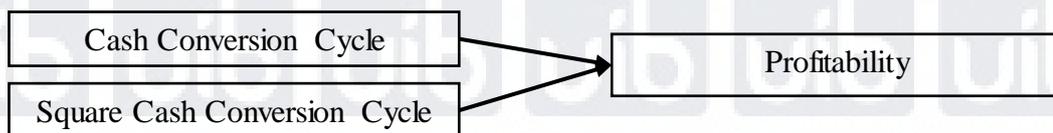


## CHAPTER II THEORETICAL FRAMEWORK AND HYPOTHESIS

### 2.1. Previous Research Models

Afrifa and Padachi (2016) did a research on the relationship between working capital level, referred as cash conversion cycle (CCC) and the profitability of small and medium enterprises (SMEs). The research is based on the sample from 160 Alternative Investment Market (AIM) listed SMEs for the period from 2005 to 2010. This research model is shown in Graph 2.1.

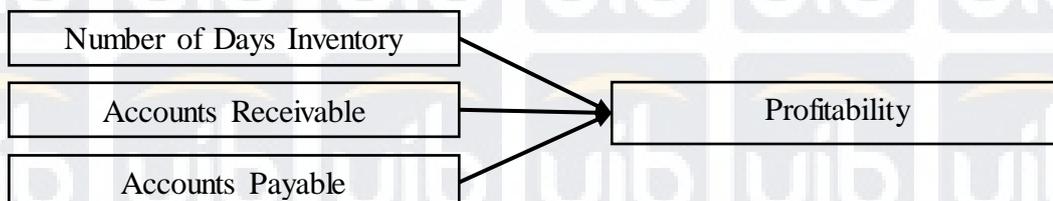
**Graph 2.1**  
Financial performance relationship to profitability model



Source: Afrifa and Padachi, (2016)

Lyngstadaas and Berg (2016) did a research on working capital management's (WCM) influence towards the profitability level of small and medium enterprises in Norwegia. The research is based on a total of 21,075 Norwegian enterprises and 84,300 observations made during the period of 2010 to 2013. This research model is shown in Graph 2.2.

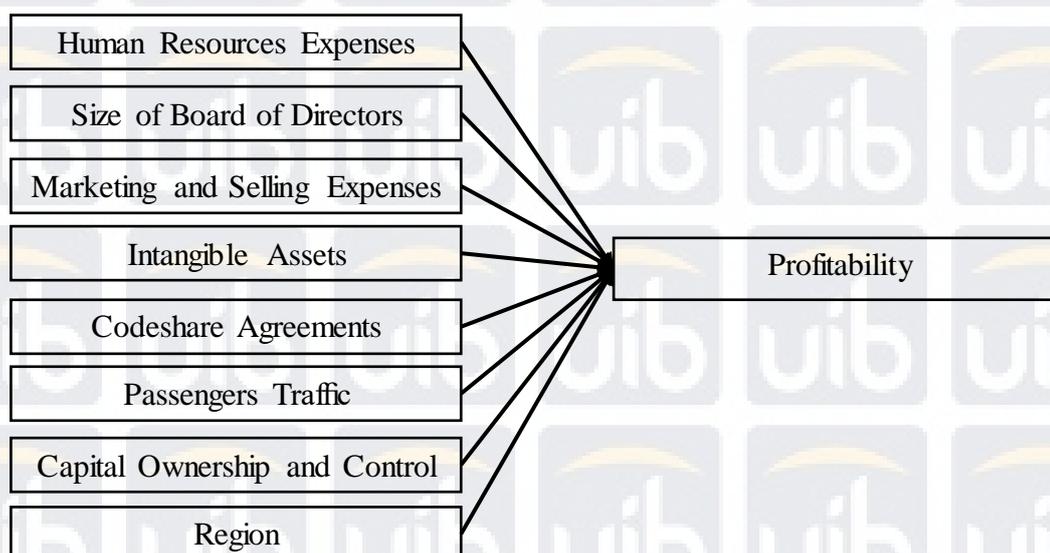
**Graph 2.2**  
Financial performance relationship to profitability model



Source: Lyngstadaas and Berg, (2016)

Lopes *et al.* (2016) did a research on the profitability of major airlines, to figure out the effect of human and structural capital towards the profitability. It also includes region, control, strategic alliance and capital ownership as some of the affecting factors in the analysis. This research analyzes 30 major airlines listed at the top worldwide and shows that the profitability of airlines is not influenced by region, control, strategic alliance and capital ownership. This research model is shown in Graph 2.3.

**Graph 2.3**  
Financial performance relationship to profitability model

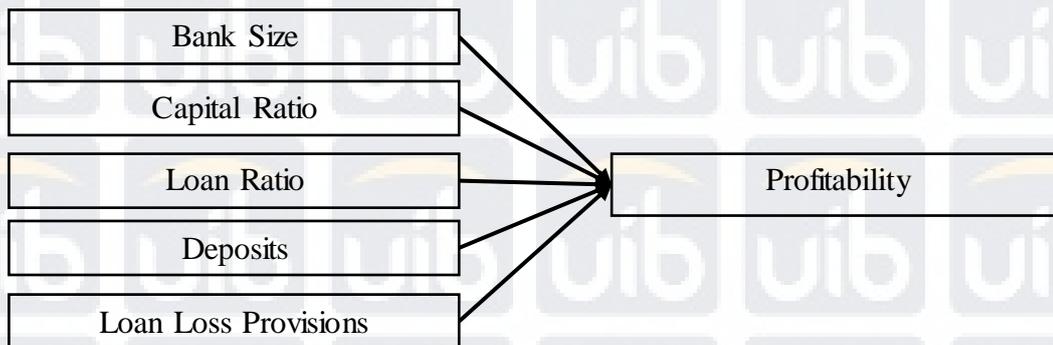


Source: Lopes *et al.*, (2016)

Menicucci and Paolucci, (2016) did a research on the relationship between certain business characteristics specific to banks and their profitability in European banking sector to investigate the impact of internal factors in getting a high profitability level. This research uses an unbalanced panel data set containing a total 175 observations from 35 major European banks during the period of 2009 to 2013.

This research model is shown in Graph 2.4.

**Graph 2.4**  
Financial performance relationship to profitability model



Source: Menicucci and Paolucci, (2016)

Cheema *et al.*, (2016) did a research on the relationship of political connections and organizational performance in Pakistan. This research analyzes 250 non-financial firms registered in the Karachi Stock Exchange of Pakistan. This research model is shown in Graph 2.5.

**Graph 2.5**  
Financial performance relationship to profitability model

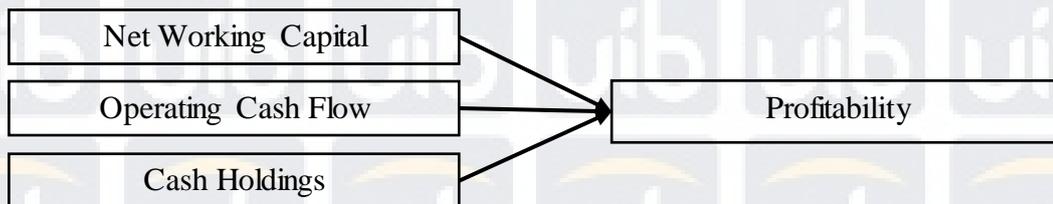


Source: Cheema *et al.*, (2016)

Afrifa (2016) did a research investigating the relationship of firm performance and net working capital and the impact of cash flow towards the relationship. The research implements an unbalanced panel data regression analysis in its model. This model uses 6,926 samples, collected from non-financial firms in the UK during the period of 2004 to 2013. This research model is shown in Graph

2.6.

**Graph 2.6**  
Financial performance relationship to profitability model

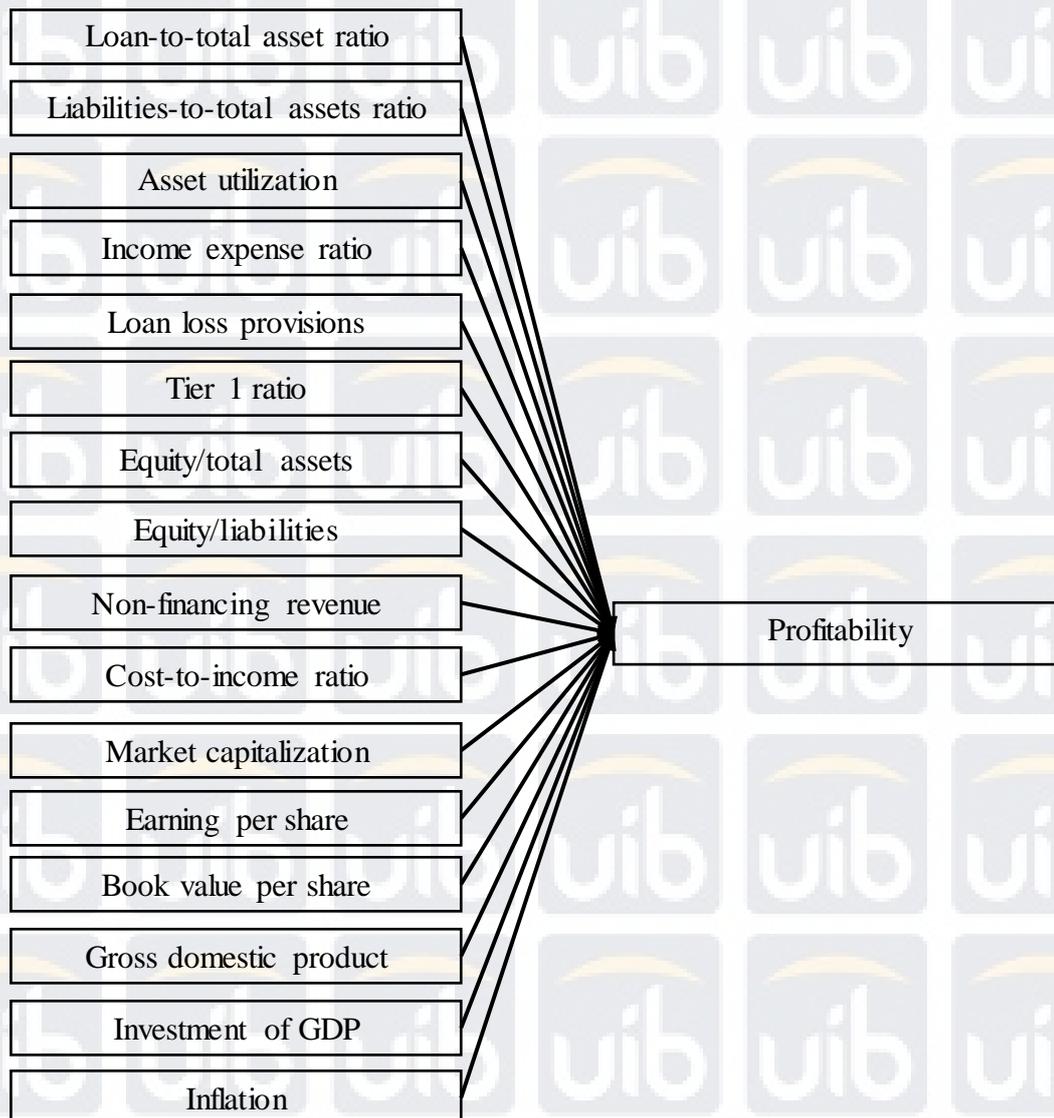


Source Afrifa, (2016)

Zarrouk *et al.*, (2016) did a research to investigate the factors driving the profitability of Islamic bank and their similarity with the factors affecting conventional banking in the Middle East and North Africa (MENA). This research implements a dynamic panel data model to describe the determinants and macroeconomic factors that affect the profitability of banks. The model uses 51 samples of Islamic banks in the MENA region during the period of 1994 to 2012.

This research model is shown in Graph 2.7.

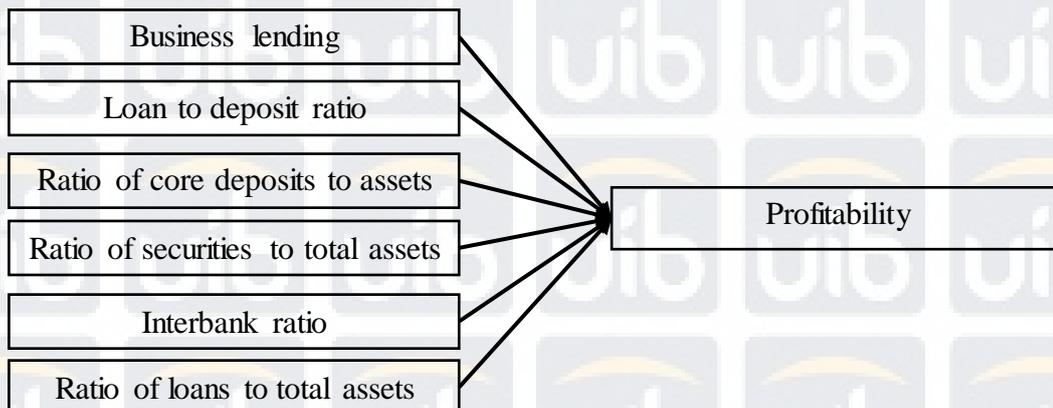
**Graph 2.7**  
Financial performance relationship to profitability model



Source: Zarrouk *et al.*, (2016)

Ekpu and Paloni (2016) did a research investigating the source of bank profits in the UK banking system. The research analyzes business lending as one important source of profit. The research model implements data from Bank Scope with a total sample of 83 banks. This research model is shown in Graph 2.8.

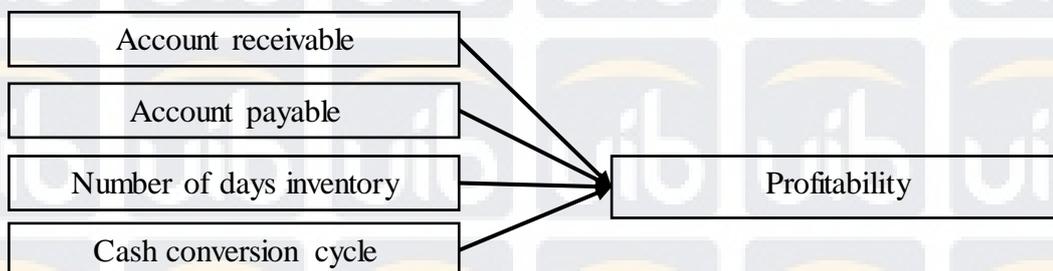
**Graph 2.8**  
Financial performance relationship to profitability model



Source: Ekpu and Paloni, (2016)

Pais and Gama (2015) did a research analyzing the profitability of Portuguese small and medium-sized firms and working capital management as one of the factors affecting it. The research is based on a sample of 6,063 Portuguese firms, during the time period of 2002 to 2009. This research model is shown in Graph 2.9.

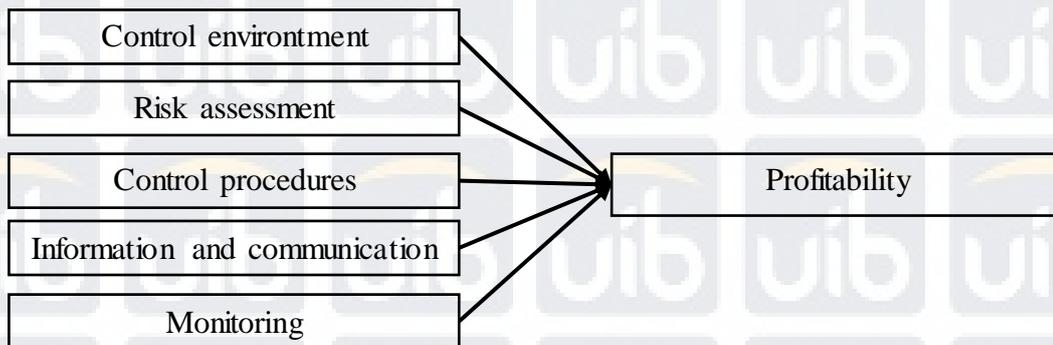
**Graph 2.9**  
Financial performance relationship to profitability model



Source: Pais and Gama, (2015)

Al-Thuneibat *et al.* (2015) did a research on Saudi shareholding companies, to investigate the effects of internal control factors towards the profitability of the firms. This research model is shown in Graph 2.10.

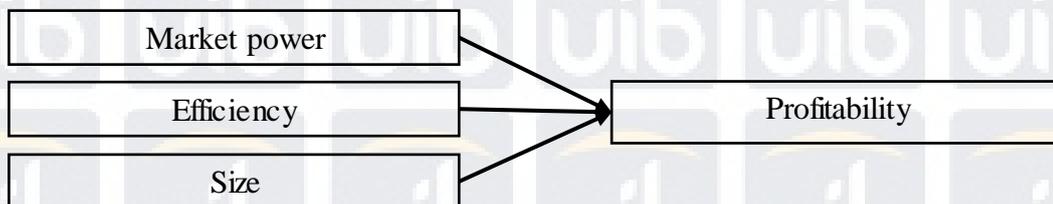
**Graph 2.10**  
Financial performance relationship to profitability model



Source: Al-Thuneibat *et al.*, (2015)

Alhassan *et al.* (2015) did a research on the impact of market structure regulations towards firm pricing strategy, through analyzing the Structure-Conduct-Performance (S-C-P) possibility for insurance markets in Ghana. This research model is shown in Graph 2.11.

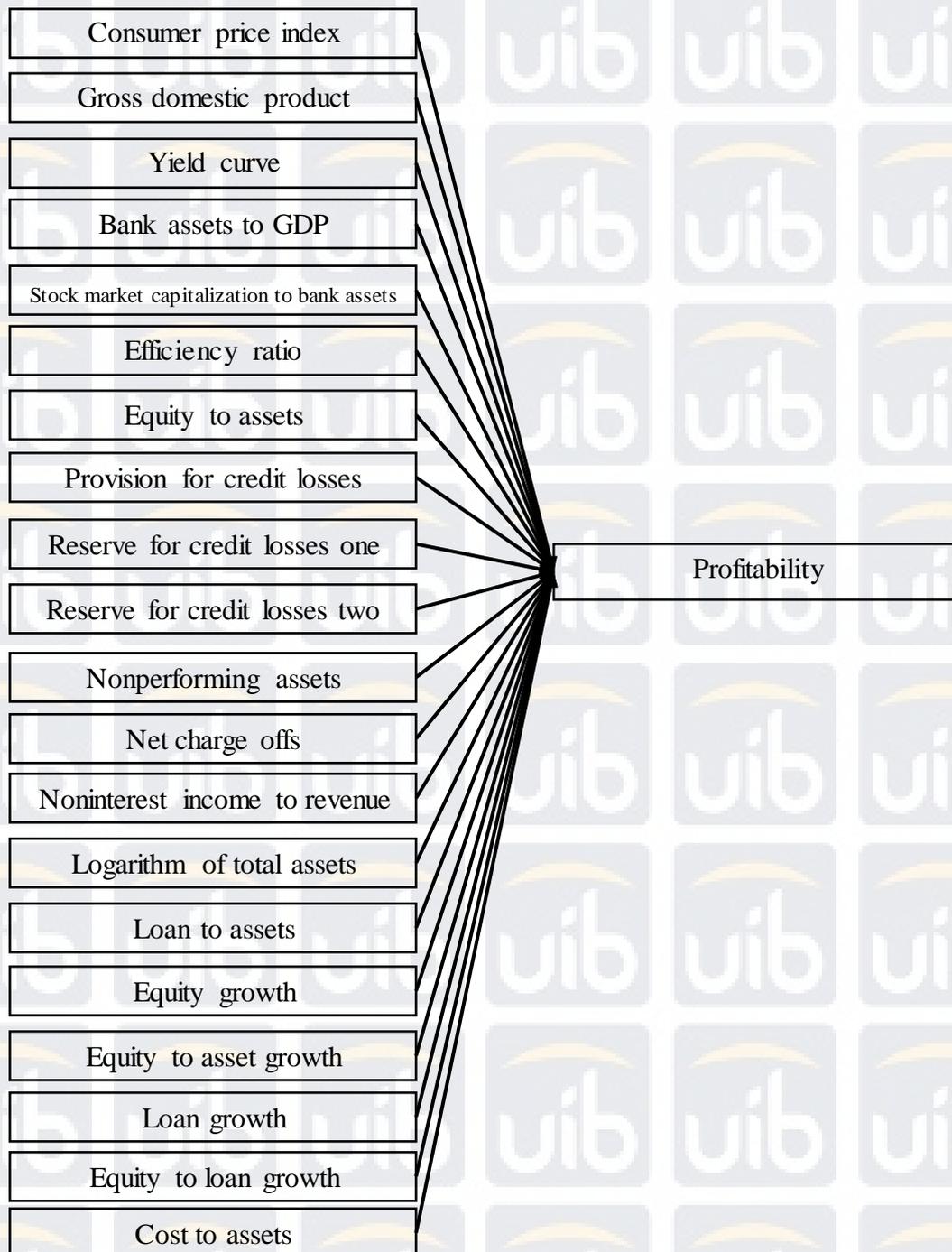
**Graph 2.11**  
Financial performance relationship to profitability model



Source: Alhassan *et al.*, (2015)

Grove *et al.* (2014) did a research measuring the profitability and performance levels of U.S. banks during the period of 1994 to 2011. The research model applies bank-specific, industry-specific, and macroeconomic determinants of profitability along with their performance indicators. This research model is shown in Graph 2.12.

**Graph 2.12**  
Financial performance relationship to profitability model



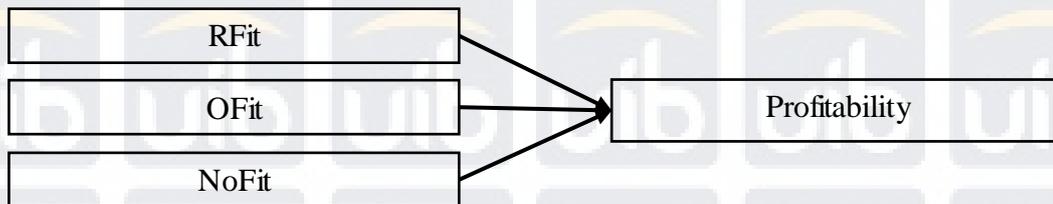
Source: Grove *et al.*, (2016)

Pleshko *et al.* (2014) did a research examining how Miles & Snow strategic groups and marketing strategy concepts affect firms' performance. The research is

based on a survey given to 125 chief executives of credit unions in the Florida Credit Union League (FCUL). This research model is shown in Graph 2.13.

**Graph 2.13**

Financial performance relationship to profitability model



Source: Pleshko *et al.*, (2014)

Yazdanfar and Ohman (2014) did a research investigating the effect of cash conversion cycle towards performance, measured in profitability of Swedish enterprises during the period of 2008 to 2011. The research uses a seemingly unrelated regression (SUR) model to analyze cross-sectional panel data with a total sample of 13,797 enterprises operating in four different industries. This research model is shown in Graph 2.14.

**Graph 2.14**

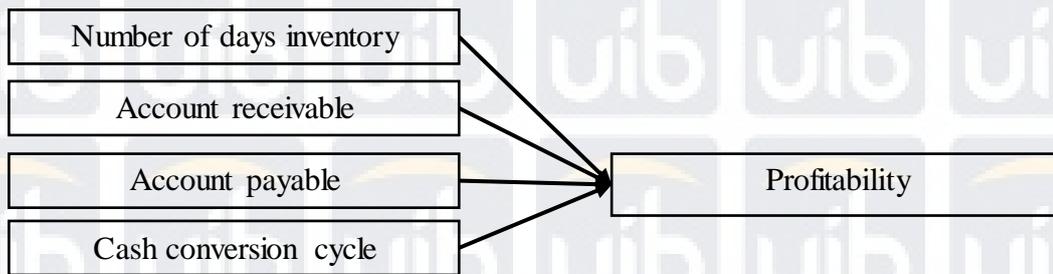
Financial performance relationship to profitability model



Source: Yazdanfar and Ohman, (2014)

Tauringana and Afrifa (2013) did a research investigating the factors affecting the profitability of small and medium-sized enterprises. The factors referred to are working capital management, measured by the cash conversion cycle and its components. The research implements panel data regression and utilizes a questionnaire-based survey on a sample of 133 Alternative Investment Market (AIM) listed enterprises. This research model is shown in Graph 2.15.

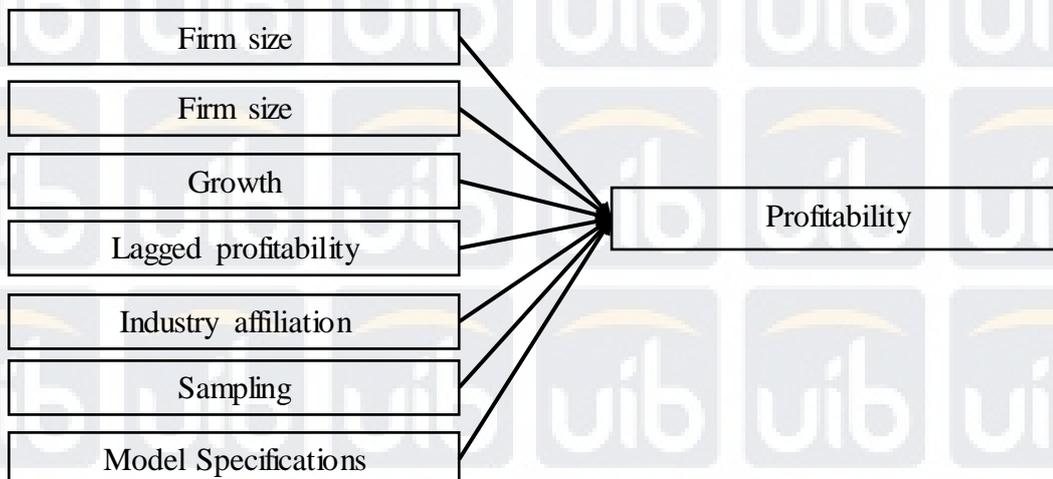
**Graph 2.15**  
Financial performance relationship to profitability model



Source: Tauringana and Afrifa, (2013)

Yazdanfar (2013) did a research to examine the factors affecting firm profitability, by using the seemingly unrelated regression (SUR) method to a large sample of approximately 87,000 observations covering 12,530 non-financial micro firms operating in four industry sectors, during the period of 2006 to 2007. This research model is shown in Graph 2.16.

**Graph 2.16**  
Financial performance relationship to profitability model



Source: Yazdanfar, (2013)

## **2.2. Definition of Dependent Variable**

The dependent variable used in this research is *return on investment* or *return on assets*. Return on assets represents the profitability of a firm, which refers to how much it can acquire from the investment that it has made. Return on assets is selected as the primary profitability measurement because it indicates performance levels in regards to given resources, without the bias from firm size and allows proper comparison (Afrifa & Padachi, 2016).

Financial management studies efficient management on one's financial activities, starting from investment decisions, returns (income and profit), expenses, and debt management. Return on assets is a ratio representing a return on the amount of assets used in a firm (Kashmir, 2012). Compared to other profitability variables, it better measures firm's profitability due to management effectiveness to acquire income. In short, return on assets calculates how effective a firm can maximize profit using all of its assets.

## **2.3. Relationship between Variables**

### **2.3.1. Relationship between number of days inventory and profitability**

Lyngstadaas and Berg (2016) describe that inventory levels have connections to sales increment and transaction costs reduction. This indicates that inventory levels influence profitability. On the other hand, keeping a high inventory level is costly as it increases the chances of goods not being sold or expired, while increasing warehousing expenses and insurance to maintain inventories.

A significant and negative correlation between number of days inventory and profitability is described by Lyngstadaas and Berg (2016). In their findings as the

cycle of number of days inventory decreases, the amount of profitability increases.

Minimizing the inventory cycle will maintain a high level of profitability.

There are other researches that tested the influence of number of days inventory towards profitability, Pais and Gama (2015) describe a significant and negative correlation between number of days inventory and profitability, resulting in an inverse relationship where a lower inventory cycle will increase profitability.

Tauringana and Afrifa (2013) also describe a negative correlation between number of days inventory and profitability, although, in their findings, the correlation is not significant. This finding means that number of days inventory may not be one of the main factors that may affect profitability level.

### **2.3.2. Relationship between average collection period and profitability**

Lyngstadaas and Berg (2016) describe the motivation of trade credit transaction for customers may motivate frequent purchases, resulting in increased sales and profits. Decreasing account receivables means reduced trade credit, which causes customers to pay earlier, possibly during transaction, increasing profitability in return.

A significant and negative correlation between average collection period and profitability is described by Lyngstadaas and Berg (2016). In their findings as the receivable collection period decreases, the level of profitability increases. Maintaining a short receivable cycle is the aim of firms as it drives profitability to a higher level.

There are other researches that tested the influence of average collection period towards profitability, Pais and Gama (2015) describe a significant and negative correlation between average collection period and profitability, resulting

in an inverse relationship where maintaining a low number of days receivable will increase profitability. Tauringana and Afrifa (2013) describe a significant and negative correlation between average collection period and profitability, suggesting its importance in maintaining a high firm profitability level.

### **2.3.3. Relationship between average payment period and profitability**

Lyngstadaas and Berg (2016) describe that the expenses of prolonged trade credit are included in cost of goods calculation. Through reducing trade credit and getting customers to pay earlier, cost of goods will lower. This indicates an inverse relationship account payables and profitability.

A significant and negative correlation between average payment period and profitability is described by Lyngstadaas and Berg (2016). In their findings as the debt payment period decreases, the level of profitability increases. Managing a short debt cycle will lessen the burden and increases profitability.

There are other researches that tested the influence of average payment period towards profitability, Pais and Gama (2015) describe a significant and negative correlation between average payment period and profitability, resulting in an inverse relationship where maintaining a short cycle of debt payments will increase profitability. Tauringana and Afrifa (2013) describe a significant and negative correlation between average payment period and profitability, suggesting its importance in maintaining a high firm profitability level.

### **2.3.4. Relationship between cash conversion cycle and profitability**

According to Afrifa and Padachi (2016), working capital management has a linear relationship with firm profitability. Cash conversion cycle period determines how much the firm must rely on external financing. Working capital management

strategy implemented by the firm may affect the relationship between working capital level and profitability however.

Research conducted by Afrifa and Padachi (2016) indicates a significant and positive correlation between cash conversion cycle and the measure of profitability, return on assets. This indicates that the working capital increases profitability up to the breakpoint, after which, increases in the working capital reduces profitability.

There are other researches that tested the relationship of cash conversion cycle towards profitability (Pais & Gama, 2015) describes a negative correlation between cash conversion cycle and profitability. This negative correlation indicates an inverse relationship in which a shorter cash conversion cycle means a higher profitability. Yazdanfar and Ohman (2014) also describe a significant and negative relationship between cash conversion cycle and profitability. Tauringana and Afrifa (2013) on the other hand, describe an insignificant correlation between cash conversion cycle and profitability.

### **2.3.5. Relationship between working capital and profitability**

Working capital is a measurement of a company's short-term financial health status as it is calculated from the difference of the company's current assets and current liabilities. Afrifa and Padachi (2016) in their research explain that working capital level carries a linear relationship with company's profitability. The level working capital is may explain the current financial performance of the company, leading to how profitable it can be in the near future. Low working capital level indicates insufficiency of assets currently available to cover short-term liabilities, while on the other hand having a high level of working capital can also indicate that the company is holding excess cash which is not used for investment, causing loss

of potential profits. Due to these circumstances, there is an existence of an optimal working capital level that allows the company to maximize its profitability.

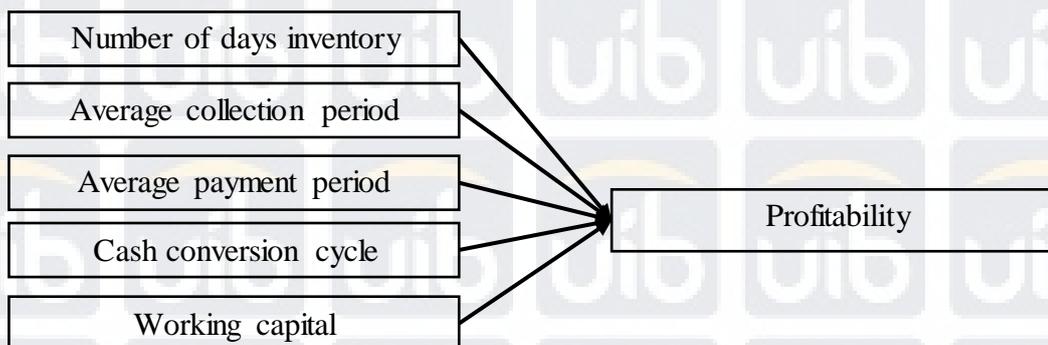
Related to the held research by Afrifa and Padachi (2016), their result shows a negative significant relationship between working capital and company's profitability. In their finding, the working capital increases the profitability of company up to a breakpoint, after which, any increases in the working capital actually reduces profitability. This means that an optimal working capital actually exists, and managing it at the indicated level will maximize company's profitability.

Other researches testing the influence of working capital to profitability, Lyngstadaas and Berg (2016), describe a negative relationship between profitability and working capital variables, which supports the use of aggressive working capital management strategy as it increases profitability. Pais and Gama (2015) also describe a similar negative relationship between working capital and profitability.

#### **2.4. Research Model and Hypothesis Formulation**

This research test the analysis of the correlation of financial performance towards profitability. The variables tested includes six criteria, which are cash conversion cycle, number of days inventory, average collection period, average payment period, net working capital and equity per total asset ratio. These variables are chosen due to their importance in assessing financial statements and regarding the number of other researchers that also include the variables in their research. So, the author chose to research on these variables in firms in Indonesia. The research model is shown in Graph 2.17.

**Graph 2.17**  
Financial performance relationship to profitability model



**Source:** Afrifa and Padachi, 2016; Lyngstadaas and Berg, 2016;

Based on the research model on Graph 2.17, then the hypothesis formulation

for this research is as described below:

H<sub>1</sub> : There is a significant relationship between number of days inventory and profitability.

H<sub>2</sub> : There is a significant relationship between average collection period and profitability.

H<sub>3</sub> : There is a significant relationship between average payment period and profitability.

H<sub>4</sub> : There is a significant relationship between cash conversion cycle and profitability.

H<sub>5</sub> : There is a significant relationship between working capital and profitability.