ST.MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES

FACTORS AFFECTING PROFITABILITY THE CASE OF ETHIOPIAN SELECTED PRIVATE CONSTRUCTION COMPANIES

BY
TESHAGER KIDANU ACHENEF

JUNE 2016
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ST. MARY'S UNIVERSITY
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APPROVED BY BOARD OF EXAMINERS

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of factors affecting construction profitability in the case of Ethiopian selected private construction companies. All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

Name	Signature
St. Mary's University, Addis Ababa	**June, 2016**

ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

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Advisor Signature

St. Mary's University, Addis Ababa **June, 2016**

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LIST OF ACRONYMS (ABBREVIATIONS)

BC	Before Crist
CPS	Capital structure
EEA	Ethiopian Economic Association
EPRDF	Ethiopian People's Revolutionary Democratic Front
ERA	Ethiopian Road Authority
ETBRC	Ethiopian Building road Construction
G.C	Gregorian calendar
GDP	Growth domestic product
FE	Fixed-effects
FIZ	Firm size
INF	Inflation rate
IMF	International Monetary Fund
ISIC	International Standards Industrial Classification
LIQ	Liquidity
MEDaC	Ministry of Planning and Economic Cooperation
MM	Miller & Modigliani
MoFED	Ministry of finance and economic development
NEC	National Engineers and Contractors
OLS	Ordinary Least Square
POT	Percentage of the profit of turnover
ROA	Return on Asset
ROE	The return on equity ratio
ROI	Returns on capital investment
ROIC	Return on invested capital
UN	United nation
UNEP	United Nations Environment Program
WCM	Working capital management

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ABSTRACT

This study investigates factors affecting profitability the case of Ethiopian selected private construction companies. Profitability is one of the most important objectives of financial management because one goal of financial management is to maximize the owner` s wealth. This study examined the effect of independent variables that is firm size, liquidity, capital structure and working capital management on dependent variables that is profitability (ROA). The sample in this study includes twelve private construction companies panel data covering for five years period from 2011-2015. Secondary data that analyzed obtained from individual construction companies annual report of financial statements (Balance sheet and Profit/Loss account). The study used quantitative research approach and panel data regression. From the regression results; liquidity and working capital management are identified statistically significant and negative relationship with profitability. However, firm size and two control variables have negative and insignificant relationship with profitability. The dependent variable; capital structure has positive and significant relationship with construction profitability. Finally to summarize and to make on good decision on factors affecting construction company profitability, contractors need to look the liquidity, capital structure, and working capital management before making an investment decisions. Because these factors have a significant impact on factors affecting construction profitability either positively or negatively in Ethiopian private construction companies.

CHAPTER ONE

Introduction

1.1 Background of the study

According to United nations (UN), (1996) International Standards Industrial Classification (ISIC) construction as defined by the United Nations Statistics Division is "an economic activity directed to the creation, renovation, repair or extension of fixed assets in the form of buildings, land improvements of an engineering nature, and other such engineering constructions as roads, bridges, dams and so forth". It is a process that consists of the building or assembling of infrastructure in the fields of architecture and civil engineering. It comprises the building of new structures, including site preparation, as well as additions and modifications to existing ones. It also incorporates maintenance, repair, and improvements on these structures. It is the process of adding structure to real property. In the case of Ethiopia, although the definition adopted by the National Accounts department of Ministry of Finance and Economic Cooperation(MoFEc) report on Ethiopian economy is the same as that of ISIC, the activities actually covered under the industry are the construction and maintenance activities of: (1) Residential buildings in urban and rural areas, (2) Nonresidential buildings, i.e. factory buildings, ware houses, office buildings, garages, hotels, schools, hospitals, clinics, etc., (3) Other construction works, like roads, dams, dikes, athletic fields, electricity transmission lines, telephone & telegraph lines, etc. (MoFEC, 2005).

United Nations Environment Program, (UNEP, 1996) explanations, construction industry makes significant contributions to the socio-economic development process of a country. Its importance emanates largely from the direct and indirect impact it has on all economic activities. It contributes to the national output and stimulates the growth of other sectors through a complex system of linkages. It is noted that about one-tenth of the global economy is dedicated to constructing and operating homes and offices. UNEP further observes that the industry consumes one-sixth to one half of the world's wood, minerals, water and energy. Empirical researches support the strong linkages between the construction industry and other economic sectors. For instance, Park quoted in Rameezdeen et al (1989) has confirmed that the construction industry generates one of the highest multiplier effects through its extensive backward and forward linkages with other sectors of the economy. The World Bank as

quoted in Rameezdeen et al (1984) also argues that the importance of the construction industry stems from its strong linkages with other sectors of the economy.

A number of factors affect the profitability of an enterprise due to this it is necessary to examine the determinants of profitability to understand how companies finance their operations. Their influence varies in the short term, as well as in the long term. Recognizing these factors will be very helpful in managing a business entity. According to Wright (1970) defined the determinants of profitability in a firm as the sales volume (or the amount of work done), the margin earned on work done, and the capital investment necessary to support the sales. According to Dietrich and Wanzenreid (2011), bank profitability is usually measured by the return on average assets and is expressed as a function of internal and external determinants. Similarly in construction industry have also there is internal and external determinants of profitability. The internal factors (variables) that are firm specific factors, whereas the external factors (variables) are that are expected to affect the profitability of construction companies that is macro-economic factors. Even if the researchers focuses on firm specific variables, the researchers used macro-economic factors used as control a variables.

The return on equity ratio (ROE) is also used as an index for firm profitability in a study done by Basil Al-Najjar and Taylor, 2008. In study done by Chaghadari (2011), the research has randomly selected sample listed in Bursa Malaysia and demonstrate the used of return on asset (ROA) and ROE to measure profitability of firms. Joh (2003) has used ROA to represent profitability of firms because according to the study, ROA is a better evaluation tools to measure firm's profitability. By knowing and understand factors affecting of profitability, it will give the feedback for the companies. The researchers also used ROA to measure profitability of Construction Company. Therefore to know the factors it requires investigation so as to dig out what are the important factors affecting profitability of Construction companies.

1.2 Historical Background of the Construction Industry in Ethiopia

According to Ministry of Planning and Economic Cooperation (MEDaC, 1999) explanations, the evolution of modern construction industry in Ethiopia is a recent phenomenon and can generally be summarized into four distinct periods. The first period covers the period prior to the year 1968 when most civil works (including roads) were carried out by foreign

contractors through international competitive bids. Relevant skilled manpower was also largely employed from abroad. These contractors did not help in retaining local capacity; hence the establishment of indigenous construction contractors had generally been impeded.

The second era in the development of the construction industry in Ethiopia was that spanning the period 1968 -1982 when some small domestic contractors started to emerge. In order to build capacity and enhance their competitiveness, the government took initiatives to help contractors participate in the construction of feeder road projects. In this connection, three domestic contractors can be mentioned: Berta Construction Company, National Engineers and Contractors (NEC) and the Ethiopian Building road Construction (ETBRC).

The third period in the evolution of the industry was the period of the Derg Regime which had brought the then evolving domestic private construction companies under state control in 1982. In addition, state-owned construction companies were established. It was regarded as the lost opportunity for the creation of a competitive construction industry in the country. Over this period government increased the building capacity of the Ethiopian Road Authority (ERA) and monopolized the road construction activities. Construction projects were carried out without competitive bidding by awarding contracts directly to government construction companies.

The fourth period begins from the time the Ethiopian People's Revolutionary Democratic Front (EPRDF)-led transitional government of Ethiopia took power in May 1991. Economic management has shifted from command to a free market system and various reform measures aimed at promoting the private sector including private construction companies have been introduced. As a result, the role of private contractors in the industry has started flourishing while that of public companies diminishing since 1991.

With the above considerations in mind, the construction industry is being given special focus in the policies of the country. The construction industry is one of the three sectors of the economy identified by the Ethiopia Government for special consideration to foster the country's economic development. This sector that open the door for the growth of many additional industries. For instance when we take building works it require high input like different metal products, clay works, and cement and cement products, etc. As such, the growth of these industries will surely follow the growth of the construction industry. Similarly, when the construction and renovation of housing increase, the demand for

household furniture increased; thereby, indirectly, opening the door for the growth of the furniture industry. All in all, the construction industry is a sector that can entertain big micro companies, that is widely labor based. All these being taken into consideration, the industry policy of the Federal Democratic Republic of Ethiopia has sought to pay special attention to the construction industry of the country. According to Ethiopian Economic Association (EEA), (2007) report on the Ethiopian economy (2006/2007) the contribution of construction industry has important role to the Ethiopian economy, as demonstrated by its share in the Growth domestic product (GDP). For instance, the share of the sector in the total GDP averaged at about 5.2 percent in the period 2002/03- 2006/07. The sector has registered relatively higher growth as compared to the growth of GDP during this period. Over this period, there has been increased investment on the development and expansion of various infrastructure projects like roads, airports and residential and non-residential housing units.

1.3 Statement of the Problem

Profitability is the ratio to measure the performance of the company and it shows a company's ability to generate earnings for a certain period at a rate of sales, assets and certain of capital stock. Understanding factors affecting profitability is the key point that helps managers in developing an effective profitability strategy for their company.

Profitability is one of the importance preconditions for long-term firms' survival and success. There are factors that affected the profitability of construction companies. Those factors are important because it give an effect to the economic growth, employment, innovation and technological change, even if some factors have negative effect on profitability of construction companies. The primary goal of the business company is to maximize their profitability. Without profitability a firm could not attract outside capital and the business will not survive in the long run.

Different Empirical evidence has given varying results relating to the relationship between determinants and profitability. These lists of variables firm size, liquidity, capital structures and working capital management are investigated by different researchers and their result shows that some are positively related with profitability others result shows both positive and negative relation with profitability. The above lists of variables are investigated on different countries on construction companies. Therefore the researchers investigate these variables in Ethiopian context on selected private construction companies' profitability.

Different researches have been carried out the relationship between factors affecting profitability on constructions companies in different countries of the world. Like study done Determinants of Profitability by Noor Azila Mohd Zaid ,Wan Muhd Faez Wan Ibrahim, and Nurul Syaqirah Zulqernain, (2014) ,in Malaysian Construction Companies and Lee, Fook Pui Billy(2009) Factors affecting the profitability of construction companies in Hong Kong. However, when we come our country, factors affecting construction profitability concern not to attract the attention of researchers in Ethiopia. Because when the researcher find on internet, regarding this issue, could not get the articles and journals directly related research topics carried out in Ethiopia. Therefore due to the absence of empirical studies in Ethiopia, the researcher interested to put his own contribution on what factors affecting construction profitability on private companies and the problem is almost new and this indicate that there is a knowledge gap on this area. Therefore, this study addresses to sort out factors affecting profitability on selected private construction companies in Ethiopia and to what extent do the factors affect profitability in Ethiopian context.

1.4 Basic Research Questions

This study would be guided by the following research questions

1/ What are company specific factors that affect profitability in Ethiopian private construction companies?

2/ To what degree these factors affect profitability on private construction companies?

3/ How does macroeconomic factors related to the profitability of construction companies?

1.5 Objective of the Study

The study was conducted with two main objectives that were general objectives and specific objectives.

1.5.1 General Objective

The general objective of this research was to investigate factors affecting construction profitability on Ethiopian private construction companies.

1.5.2 Specific Objectives

Based on the above broad objective, the researchers was broken-down in to the following specific objectives:

- To identify on company specific factors of on construction companies profitability;
- To measure the magnitude of each factors that affect company's profitability and
- To determine the interrelation ship between macro-economic factors and profitability.

1.6 Significance of this Study

This study was expected to provide on factors affecting the profitability of construction companies. Although similar studies have been conducted on financial institution like banks and insurance companies, in my view there has been no similar empirical research done on construction companies in Ethiopia. Therefore this study will help for other researchers as a starting point and can also assist to practitioners such as contractors, investors, construction cost consultants, and other construction professionals in making decisions. This result would also have important implications for the government in formulating appropriate policies for the construction industry, as the government has the dual role of being the largest single client of the industry and manager of the economy. Besides, this study was important towards the growth of an economy in the country due to the construction sector is the contributor of country income in Ethiopia.

1.7 Scope and Limitation of the Study

The purpose of this research was to identify the factors affecting construction profitability of the twelve private construction companies in Ethiopia. Even if there are many construction companies in Ethiopia, the study focus only on twelve construction companies located in Addis Ababa. Hence the researcher tried to point out the scope of the study on twelve construction companies and the quantitative measure on factors affecting construction companies' profitability in Ethiopia. However, due to the time constraints non voluntarily to give the data and difficult to obtain a profit and loss account from a private construction company for research due to commercial confidentiality, the researcher was forced to limit the study only on twelve private Ethiopians construction companies.

1.8 Organization of the Paper

The study has five chapters. The first chapter deals introduction, which consists of background of the study, historical background of the construction industry**,** statements of the problems, basic research questions, hypothesis development, objective of the study, significance of the study, scope of the study and methodology of the study**.** The second chapter was emphasizing on review of related literature, which is briefly discuss the definition and concepts of factors affecting profitability of construction companies and other related concept. The third chapter would consist of methodology of the study. The fourth chapter consists of data presentation and analysis. The fifth chapter would consist of summary of findings, conclusions and recommendations.

CHAPTER TWO

2. Review of Related Literature

2.1 Introduction

In this part the review of related literature is discuss the theories and related empirical studies in detail in relation to factors affecting profitability in the case of Ethiopian private construction companies.

According to Ethiopian Economic Association (EEA),(2007) report on the Ethiopian Economy (2006/2007),explanations, in the world, the contribution of construction industry cannot be denied because it plays important roles towards the growth of socio-economic in the country. The construction industry is one of the three sectors of the economy identified by the Ethiopia government for special consideration to foster the country's economic development. This sector that opens the door for the growth of many additional industries. For instance when we take building works it require high input like different metal products, clay works, and cement and cement products, etc. As such, the growth of these industries will surely follow the growth of the construction industry. Similarly, when the construction and renovation of housing increase, the demand for household furniture increased; thereby, indirectly, opening the door for the growth of the furniture industry. All in all, the construction industry is a sector that can entertain big micro companies, that is widely labor based. All these being taken into consideration, the industry policy of the Federal Democratic Republic of Ethiopia has sought to pay special attention to the construction industry of the country. According to Ethiopian Economic Association (EEA),(2007) the contribution of construction industry has important role to the Ethiopian economy, as demonstrated by its share in the GDP. For instance, the share of the sector in the total GDP averaged at about 5.2 percent in the period 2002/03- 2006/07. The sector has registered relatively higher growth as compared to the growth of GDP during this period. Over this period, there has been increased investment on the development and expansion of various infrastructure projects like roads, airports and residential and non-residential housing units.

Thus, the importance of to know factors affecting profitability towards the construction companies profitability need to be study and identify in order to create a sustainable

economic growth of a country and at the same time bring benefits to other stakeholders as well.

2.2 Theoretical Review

The next part discusses the theoretical background and present the most relevant theories with previous studies related on factors affecting profitability.

2.2.1 Profitability

Profitability has been given considerable importance in the finance and accounting literatures. A financial benefit is realized when the amount of revenue gained from a business activity exceeds the expenses, costs and taxes needed to sustain the activity. Additionally, profitability can be defined as the final measure of economic success achieved by a company in relation to the capital invested in it. This economic success is determined by the magnitude of the net profit accounting (Pimentel et al, 2005).

Akintola and Skitemore (1991) said that profitability is expressed as a percentage of the profit of turnover (POT) or returns on capital investment (ROI). Profit is the residual of sales revenue once all costs, including interest payments on debt, have been deducted; it thus constitutes the return to equity holders. (‘‘Profit’’ is the aggregate profit of profitable enterprises minus the losses of loss-making enterprises). According to Hifza Malik, (2011), profitability is one of the most important objectives of financial management since one goal of financial management is to maximize the owners’ wealth, and, profitability is very important determinant of performance. A business that is not profitable cannot survive. So that, a business that is highly profitable has the ability to reward its owners with a large return on their investment. Hence, the ultimate goal of a business entity is to earn profit in order to make sure the sustainability of the business in prevailing market conditions.

2.2.2 Profitability Measurement

Profitability analysis classifies measures and assesses the performance of the company in terms of the profits it earns either in relation to the shareholders investment or capital employed in the business or in relation to sales, profit, (or loss). Given that most entrepreneurs invest in order to make a return, the profit earned by a business can be used to measure the success of that investment. The return on equity ratio (ROE) is also used as an

index for firm profitability in a study done by Basil Al-Najjar and Taylor, (2008). John J. Hampton (2009) clarified profitability ratio as a class of financial metrics that are used to assess a business's ability to generate earnings as compared to its expenses and other relevant costs incurred during a specific period of time. According to Hamdan Ahmed Ali Al-Shami (2008) there are different ways to measure profitability such as: ROA, return on equity (ROE) and return on invested capital (ROIC). ROA is an indicator of how profitable a company is relative to its total assets. It gives us an idea as to how efficient management is in using its assets to generate earnings whereas ROE measures a company's profitability which reveals how much profit a company generates with the money shareholders have invested. ROIC is a measure used to asses a company's efficiency in allocating the capital under its control in profitable investments. This measure gives a sense of how well a company is in using its money to generate returns. Thus the researcher also used ROA to measure the company profitability.

Return on asset (ROA): This ratio explains that how efficient a company is to utilize its available assets to generate profit. It calculates the percentage of profit a company is earning against per dollar of assets (Weston and Brigham (1977, P. 101). The higher value of ROA shows the better performance and it can be computed as follows:

ROA = (Earnings Available For Common Stockholders / Total Asset)*100

OR

$$ROA = \frac{\text{Net Income}}{\text{Total asset}}$$

2.2.3 Determinates of Profitability

A number of factors affect the profitability of an enterprise due to this it is necessary to examine the determinants of profitability to understand how companies finance their operations. Their influence varies in the short term, as well as in the long term. Recognizing these factors will be very helpful in managing a business entity. These determinants can be of a positive or negative nature. According to Wright (1970), the determinants of profitability in a firm as the sales volume (or the amount of work done), the margin earned on work done, and the capital investment necessary to support the sales. The usual measure of profitability is the returns on the amount of capital employed. This is widely used in accounting and measures the level of profit against the amount of long term capital committed to business.

According to Wright (1970) defend ,level of profits to be used is operating profit either before or after tax but before charging interest on long term loans and Capital employed is can be defined as either the total long term fund employed, e.g. shareholder's fund plus long term borrowing, or as the net assets, e.g. total assets less current liabilities. In practice, executives define profits as the difference between total earnings from all earning assets and total expenditure on managing entire asset-liabilities portfolio Kaur and Kapoor, (2007).

Nagy (2009) has employed the Return on Asset (ROA) and other financial statement variables such as net sales and debt to assess the determinants of profitability performance of firms. The financial ratio employ of ROA provides investors an idea of how much the firm's asset can be converted into income.

According to Dietrich and Wanzenreid (2011), bank profitability is usually measured by the return on average assets and is expressed as a function of internal and external determinants. Similarly in construction industry have also there is internal and external determinants of profitability. The internal factors (variables) that are firm specific factors, whereas the external factors (variables) are that are expected to affect the profitability of construction companies that is macro-economic factors.

2.2.3.1 Size of Firms

According to Lee, Fook Pui Billy(2009) small construction companies have high profit margins, since a major part of a company's operating surplus returns to the owner (also act as worker) if the company happens to be a one-person, labor-only subcontractor. Small firms are also more flexible and adaptable to changes in fluctuating construction demand, notably during recessions. However, they can experience greater negative profitability due to competition from larger companies, fewer resources, and limited works projects.

A company's overhead costs will inevitably increase as it grows, because of the higher cost of managing more people without a corresponding increase in the scale effect. There is a smaller or even absence of a barrier for small companies to enter the construction market because most regulatory controls, like safety regulations, quality standards, safety standards, prequalification systems, etc., are the responsibility of larger companies. A small company's main task is to provide skilled labor. Conversely, Lee, Fook Pui Billy(2009) also state that small companies have a negative impact on profitability, and such an impact can be

exhausted once the scale effect outweighs any increase in the diseconomy of scale due to an increase in the on cost and the costs of managing more people and resources. Additionally he explains larger companies that tend to have a positive impact on profitability because of their greater capital, management, and technical resources offset this. These increased regulatory controls include the safety regulations and safety management systems, the prequalification system, environmental regulations, international quality standard requirements, building ordinances and regulations, etc. They all contribute to increasing the competitiveness of larger companies, which are better equipped to meet them, unlike smaller companies with their limited resources.

2.2.3.2 Liquidity

According to Monika Bolek (2011, p,39) liquidity can be defined in three contexts, he distinguish the asset, asset-equity, and cash aspects of financial liquidity. The asset aspect of financial liquidity, which is financial liquidity of company's assets, is the ability to convert assets into cash in the shortest possible time, at the lowest possible costs and without losing their value. According to Shim and Siegel (2000, pp.46-47) accounting liquidity is the company's capacity to liquidate maturing short-term debt (within one year).

Liquidity ratio measures the short term solvency of financial position of a firm. These ratios are calculated to comment upon the short term paying capacity of a concern or the firm's ability to meet its current obligations (Fabozzi and Peterson, 2003 p. 729) and they are discussed as follows:

1/ Current ratio: This is defined as the relationship between current assets and current liabilities. It is a measure of general liquidity and it is the most widely used to make the analysis for short term financial position or liquidity of a firm (Fabozzi and Peterson (2003 p. 733). Current ratio can be calculated by dividing the total current assets by total current liability.

Current ratio = current asset / current liability

2/ Acid test ratio or quick ratio: it is the true liquidity refers to the ability of a firm to pay its short term obligations as and when they become due. It is the ratio of liquid assets to current liabilities.

Quick ratio = Current asset – inventory / Current Liabilities

It is very useful in measuring the liquidity position of a firm. It measures the firm's capacity to pay off current obligations immediately and is more rigorous test of liquidity than the current ratio. On the other hand, debt ratio is one part of financial ratio which is used for debt management used by different company. Hence, it is ratio that indicates what proportion of debt a company has relative to its assets. The measure gives an idea to the leverage of the company along with the potential risks the company faces in terms of its debt-load (Fabozzi and Peterson, 2003). It can be calculated as dividing total debt by total asset.

Relationship between Liquidity and Profitability

Finance manager has to take various types of financial decisions like investment decision, finance decision, liquidity decision and dividend decision, in different time. In every area of financial management, the finance manager is always faced with the dilemma of liquidity and profitability. He/she has to strike a balance between the two (Eljelly, 2004). Liquidity means the firm has to have adequate cash to pay bills as and when they fall due, and it also have sufficient cash reserves to meet emergencies and unforeseen demands, in all time. On the other hand, profitability goal requires that funds of a firm should be utilized as to yield the highest return. Hence, liquidity and profitability are conflicting decisions, when one increases the other decreases. More liquidity results in less profitability and vice versa. This conflict finance manager has to face as all the financial decisions involve both liquidity and profitability.

Creditors of the company always want the company to keep the level of short term assets higher than the level of short term liabilities; this is because they want to secure their money. If current assets are in excess to current liabilities then the creditors will be in a comfortable situation. On the other hand managers of the company don’t think in the same way, obviously each and every manager want to pay the mature liabilities but they also know that excess of current assets might be costly and idle resource which will not produce any return. For example, having high level of inventory will raise warehouse expense. So, rather than keeping excessive current assets (cash, inventory, account receivable) managers want to keep the optimal level of current assets, to a level which is enough to fulfill current liabilities. And also managers want to invest the excessive amount to earn some return. Hence, managers have to make a choice between two extreme positions; either they will choose the long term investments, investments in non-current asset such as subsidiaries (equity), with high

profitability that is high return and low liquidity. On the other hand to choice short term investment with low profitability i.e. low return and high liquidity. However, creditors of the company want managers to invest in short term assets because they are easy to liquidate but it reduces the profitability because of low interest rate. On the other hand, if the managers prefer the long term investment to enhance the profitability then in case of default lenders or creditors have to wait longer and bear some expense to sell these assets because the liquidity of long term investment is low. In reality, none of the managers choose any of these two extremes instead they want to have a balance between profitability and liquidity which will fulfill their need of liquidity and gives required level of profitability (Arnold, 2008).

Liquidity and profitability are two fundamental categories of company activities, constituting the basis of its evaluation (Szczepaniak, 1996, p. 35). Profit is a certain type of economic source of financing the future development of an enterprise, while financial liquidity reflects its real current possibilities of financing and so it is the determinant of its continuity on the market (Wojciechowska, 2001, p. 232). Hirigoyen (1985) argues that over the medium and long run the relationship between liquidity and profitability could become positive, in the sense that a low liquidity would result in a lower profitability due to greater need loans, and low profitability would not generate sufficient cash flow, thus forming a vicious cycle. According to Chandra (2001, p.72), normally a high liquidity is considered to be a sign of financial strength, conversely Assaf Neto (2003, p.22), a high liquidity can be as undesirable as a low. This would be a consequence of the fact that current assets are usually the less profitable than the fixed assets. It means that the money invested in current assets generates less return than fixed assets, representing thus an opportunity cost.

2.2.3.3 Capital Structure

Capital structure, which is defined as total debt to total assets at book value, influences both the profitability and riskiness of the firm (Bos and Fetherston, 1993). It is also refers to the kinds of securities and the proportionate amounts that make up capitalization. It is the mix of different sources of long-term sources such as equity shares, preference shares, debentures, long-term loans and retained earnings. The term capital structure refers to the relationship between the various long-term sources financing such as equity capital, preference share capital and debt capital. Deciding the suitable capital structure is the important decision of the

financial management because it is closely related to the value of the firm. Capital structure is the permanent financing of the company represented primarily by long-term debt and equity.

Modigliani and Miller (1958) have a theory of "capital structure irrelevance" where argue that financial leverage does not affect the firm's market value with assumptions related to homogenous expectations, perfect capital markets and no taxes but Sarkar and Zapatero (2003) find a positive relationship between leverage and profitability. Myers and Majluf (1984) find firms that are profitable and generate high earnings are expected to use less debt capital comparing with equity than those that do not generate high earnings.

An ultimate goal of a firm is the maximization of wealth or value of that firm (Miller & Modigliani, 1958, 1963; Miller, 1977). The relationship between capital structure and profitability has been the subject of remarkable milestone over the past decade throughout the irrelevance theory. In the seminal article, presented by MM's (1958) irrelevance theory, they argued that capital structure is unrelated to firm's value. In the presence of corporate income tax and the cost of capital in MM's (1963) they argued that the market value of the firm is positively related to the amount of long term debt used in its capital structure.

2.2.3.4 Working Capital Management

The term working capital implies company's investment in short term assets like cash, short term securities, accounts receivables and inventories (Weston and Brigham, 1977). It is commonly used for the capital required for day-to-day working in a business concern, such as for purchasing raw material, for meeting day-today expenditure on salaries, wages, rents rates, advertising and the like. But, still there is much disagreement among various financial authorities (Financiers, accountants, businessmen and economists) as to the exact meaning of the term working capital. Smith (1980) noted that working capital management is the administration of the whole aspects of both current assets and current liabilities and Padachi (2006) also strengthen that management of working capital is important for the financial health of all businesses, regardless of type and size. Similarly Arnold (2008) explains working capital is defined as it includes "stocks of materials, fuels, semi-finished goods including work-in-progress and finished goods and by-products; cash in hand and bank and the algebraic sum of various creditors as represented by outstanding factory payments e.g. rent, wages, interest and dividend; purchase of goods and services; short-term loans and advances and sundry debtors comprising amounts due to the factory on account of sale of

goods and services and advances towards tax payments". In addition Kaur,(2010) ,working capital management refers to all management decisions and actions that ordinarily influence the size and effectiveness of the working capital. Therefore, working capital management deals with the act of planning, organizing and controlling the components of working capital (current asset and liability) like cash, bank balance, inventory, receivables, payables, overdraft and short-term loans (Paramasivan and Subramanian, 2009).

2.3 Macroeconomic Factors

2.3.1 Economic Environment (GDP)

The literature defines economic environment as the milieu that comprises the basic macroeconomic values characterizing the economy in which an enterprise runs, institutions operating in given economy, together with specific legal system, technologies etc., Agnieszka Parkitna And Beata Sadowska(2011). Bień W (2008).defines GDP as the value of goods and services produced in a given time which are intended for final consumption and for investment, adjusted for import/export balance.

GDP, which is used as a macroeconomic determinant of profitability, measures total economic activity within a country whereas the GDP growth reflects its annual change. GDP growth is expected to have a positive effect on construction profitability according to the literature on the relationship between economic growth and construction sector profitability (Athanasoglou, Brissimis & Delis, 2008; Demirguc Kunt & Huizinga, 1999). GDP growth controls for cyclical output effects (Flamini, McDonald & Schumacher, 2009) and is expected to affect numerous factors related to supply and demand.

2.3.2 Inflation

By inflation dynamics, we mean the observation of the rate of inflation in the same economy over many years. This is in agreement with Adamson (1996). Palmer and Faseku (1982) explain inflation as a very complex set of phenomena, which is difficult to define in precise terms. Similarly, Turney (1951) sees inflation as a process consisting of alternating and successive increases in prices and costs due to struggle between social groups. In addition others see inflation as a symptom of dis equilibrium or an excess of demand over supply (James, 1962; Wilson, 1961).

Adamson (1996) defines it as the rate of increase in general price level in an economy. Nwankwo (1982) believes that inflation is an excess of demand over supply. Inflation could be creeping, galloping or hyper depending on the magnitude of its rate in a year. Generally, the rapidly fluctuating inflationary pattern creates high degree of instability in an economy. Where the structure of the economy is weak, the effect could be very devastating.

2.4 Review of Empirical Studies

Empirical evidence has given varying results relating to the relationship between firm size and profitability. According to Stekler (1964), in an earlier study found that size significantly correlates with profitability, which rises to an optimal level before decreasing with size. Larger construction companies often employ more capital in their investments. Thus, they have a good system of resource planning for labor, materials, plants, etc. Hall and Weiss (1967) have found a positive relation between firm size and profitability in the study they carried on over Fortune 500 firms. On the contrary, Shepherd (1972) has found a negative relation between firm size and profitability. According to Asenso and Fellows (1989) demonstrated that profit rates decreased with size and may be that the ability of companies to reach their optimal sizes in terms of resources utilization will lead to lower profit rates when they maximize their utilization. After removing this effect, the authors found that average profitability did not change significantly from year to year, which was contrary to expectations. They agreed on their analysis suggested that larger contractors were more consistent in their profitability.

Asenso and Fellows (1989) and Akintola and Skitemore (1991) validated that the size of a construction company is positively correlated with the profit ratio to an optimal level before decreasing with size. Akintola and Skitemore (1991) cited Spedding (1977), who said that the reason larger companies are more profitable may be that they are generally more efficient and better organized than small firms in their management strategies, while at the same time they are better off in situations of low profitability (cf Lea and Lansley, 1975a). Fiegenbaum and Karnani (1991) have found a positive relation between firm size and profitability. But Schneider (1991) has argued on the contrary, that the bigger the firm, the lower the profitability. And also Akintola and Skitemore (1991) found that variability between company profitability levels decreased with increasing company size. This trend suggested that larger companies are more consistent and similar to each other than smaller companies in

terms of estimation, pricing, and production. This could be due to the increased level of competition or awareness among larger contractors, which, together with lower margins, restricts the potential for variable alternatives. This could explain why increased competition often results in lower profitability, as standard economic theory predicts.

Yee and Cheah (2006) found that there is no significant correlation between firm size and profitability. It is, however, note that the selected firms were only on publicity listed international construction and engineering firms for the research study. In a similar fashion, Jonsson (2007) has studied the relation between profitability and size of the firms operating in Iceland. Results of the analysis have showed that big firms have a higher profitability compared to small firms. Therefore based on the above different empirical study points it is easy to understand that the linkage between profitability and firm size are somewhat inconsistent but I agree the point which is there is a positive relationship between size and profitability.

According to Lee, Fook Pui Billy(2009) on his study explains the size of a firm plays an important role in determining the kind of relationship the firm enjoys within and outside its operating environment. The larger a firm is, the greater the influence it has on its stakeholders.

According to Noor Azila Mohd Zaid,Wan muhd Faez Wan Ibrahhim and Nuri Syaqirah Zulqernain (2012),on their study liquidity management is important in good times and it takes further importance in troubled times. The efficient management of the broader measure of liquidity, working capital, and its narrower measure, cash, are both important for a company's profitability and wellbeing. Therefore for efficient operations of an enterprise it is necessary to achieve optimum levels of both financial liquidity and profitability.

Chiang et al., (2002) results show that profitability and capital structure are interrelated; the study sample includes 35 companies listed in Hong Kong. There are several commonly used debt ratios in studies on capital structure. Muhammad (2003), the main issue of investigation is laid out on the premise of the static trade off theory, which, in simple terms states that some amount of debt is desirable, but too much of it brings in financial distress. He is concerned with the total amount of debt used by a firm to finance its entire operation and firm's ability to service the loans. Abor (2005) seeks to investigate the relationship between capital structure and profitability of listed firms on the Ghana Stock Exchange and find a

significantly positive relation between the ratio of short-term debt to total assets and ROE and negative relationship between the ratio of long-term debt to total assets and ROE. Raheman. et al., (2007) find a significant capital structure effect on the profitability for non-financial firms listed on Islamabad stock exchange.

In the study of Eljelly (2004) examined the relationship between profitability and working capital management on a sample of 929 Saudi firms spread across three industries. Using correlation data analysis and regression data estimation technique, the author finds a significantly negative relationship between the firms' profitability and liquidity level, as measured by current ratio and cash conversion cycle. Falope and Ajilore (2009) examined the effects of working capital management on the profitability of 50 quoted non-financial Nigerian firms. Similarly Chatterjee (2010) studied the relationship between working capital management practices and the profitability of listed firms on the London stock exchange. Dong and Su (2010) also examined working capital management effects on firms' profitability of listed Vietnamese firms from 2006-2008. Additionally Mohammad Morshedur Rahman(2011) examines that the profitability and working capital management of Textiles Industries has a positive relationship ratio on all the statistical tools used to examine profitability.

Pilcher (1994) observed that the effects of inflation can cause serious difficulties for contractors. Fluctuations in the rate of inflation can cause serious problems in the economic processes in the construction industry. This is because of the difficulties inherent in construction contracting. Due to the nature of the process and the rate of return for work undertaken on construction projects, the effects of inflation can cause loss or profit. Fluctuating inflationary costs may therefore pose serious problem to the contractor. In such cases, the client may be the beneficiary of such fluctuating inflation costs. In some cases, contractors appear protected by some form of indexing as a means of recompenses for future inflationary costs (Pilcher, 1994; 273-4).

The degree of the inflationary burden to be borne by a contractor will depend on the nature or type of contract, the duration of the contract and the availability of credit purchase opportunities, the extent of imported components. When, for instance the contract is of the fluctuating type, the contractor relies heavily on inflationary indexing in order to claim for the increase in price levels of the resource inputs. When the duration of the contract is short,

such claim may not be tenable except in cases where there is rapid change in the price level. Projects that are financed solely by the contractor during an inflationary period many put the contractors in a difficult position financially except a serious calculation of cost increases both anticipated and unanticipated increased had been included in the estimated process. Inflationary effects on project appraisal are also very significant and could pose difficulties to property developers. Inflation will affect not only the cash flows of a project but also on the rate at which the cash flows need to be discounted (Pilcher, 1994).

2.5 Summary Review of Related Literature

The literatures focus on factors affecting profitability of on other developed countries firms rather than on construction companies. Even these fewer literatures are also concerning on other countries construction companies. So as compared to other firm's literature, the existing literatures concerning construction companies on factors affecting profitability are not enough. This shows that the research conducted in the topic of factors affecting profitability on construction companies is very limited in Ethiopia, even though a lots of construction companies are emerging continuously. Therefore, this study would help to acquire information about factors affecting profitability on private construction companies in Ethiopia.

Regarding to empirical evidences factors affecting on construction companies profitability focused on internal factors such, firm size, liquidity, capital structure and working capital management. The results found by the researchers mentioned above in the empirical shown is fluctuate based on to the country in which the research is conducted regarding some variables. Previous studies conducted on the topic of factors affecting on construction companies profitability were focused only on other countries. Therefore, this study would fill the above stated gaps by studying the factors affecting on private construction companies profitability in Ethiopian context.

CHAPTER THREE

3. Research Methodology

The previous chapter showed the review of related literature on factors affecting profitability on construction companies and pointed out that there is limited research in our country. The intent of this chapter is giving brief outline of the broad objective of the study and hypotheses, and the choice of the appropriate research method for the study.

3.1 Research Objective and Hypotheses

This study aims to examine the factors affecting profitability on selected private construction companies.According to Lee, Fook Pui Billy(2009) on his study explains the size of a firm plays an important role in determining the kind of relationship the firm enjoys within and outside its operating environment. The larger a firm is, the greater the influence it has on its stakeholders. Khandokar, Raul & Rahman (2013) has also performed the research towards determinants of the profitability performance of firms of non-banking financial industry in Bangladesh. In his research, the financial variable such as total asset (size of firms) has been employ and result has demonstrate a positive significant relationship towards the profitability of performance of firms. Therefore, depend upon the above empirical result basis the first hypothesis of the study was developed as follows:

H1: There is a positive significant relationship between firm size and profitability.

The other important variable that would affect profitability is liquidity. Liquidity and profitability are two fundamental categories of company activities, constituting the basis of its evaluation (Szczepaniak, 1996, p. 35). Profit is a certain type of economic source of financing the future development of an enterprise, while financial liquidity reflects its real current possibilities of financing and so it is the determinant of its continuity on the market (Wojciechowska, 2001, p. 232). In every area of financial management, the finance manager is always faced with the dilemma of liquidity and profitability. He/she has to strike a balance between the two (Eljelly, 2004). Liquidity means the firm has to have adequate cash to pay bills as and when they fall due, and it also have sufficient cash reserves to meet emergencies and unforeseen demands, in all time. On the other hand, profitability goal requires that funds of a firm should be utilized as to yield the highest return. Hence, liquidity and profitability are

conflicting decisions, when one increases the other decreases. More liquidity results in less profitability and vice versa. Therefore this conflict finance manager has to face as all the financial decisions involve both liquidity and profitability. As a result, the second hypothesis was developed as follows:

H2: There is a negative significant relationship between liquidity and profitability.

Myers and Majluf (1984) mentioned that profitable and generate high earnings are expected to use less debt capital comparing with equity than those that do not generate high earnings. The relationship between capital structure and profitability has been the subject of remarkable milestone over the past decade throughout the irrelevance theory. Additionally Chiang et al., (2002) state that profitability and capital structure are interrelated. Hence based on the above pints the third hypothesis was developed as follows:

H3: There is a positive significant relationship between capital structure and profitability.

The forth factor that would affect the profitability of a construction is working capital management. Smith (1980) noted that working capital management is the administration of the whole aspects of both current assets and current liabilities and Padachi (2006), also strengthen that management of working capital is important for the financial health of all businesses, regardless of type and size. Therefore, working capital management deals with the act of planning, organizing and controlling the components of working capital (current asset and liability) like cash, bank balance, inventory, receivables, payables, overdraft and short-term loans (Paramasivan and Subramanian, 2009). Dong and Su (2010) state that working capital management affect on firms' profitability. As a result depend upon the above theoretical basis the forth hypothesis of the study was developed as follows:

H4: There is a positive significant relationship between working capital management and profitability.

GDP, which is used as a macroeconomic determinant of profitability, measures total economic activity within a country whereas the GDP growth reflects its annual change. GDP growth is expected to have a positive effect on construction profitability according to the literature on the relationship between economic growth and construction sector profitability (Athanasoglou, Brissimis & Delis, 2008; Demirguc Kunt & Huizinga, 1999). As a result

depend upon the above theoretical basis the fifth hypothesis of the study was developed as follows:

H5: There is a positive significant relationship between GDP and profitability

Adamson (1996) defines it as the rate of increase in general price level in an economy. Nwankwo (1982) believes that inflation is an excess of demand over supply. Inflation could be creeping, galloping or hyper depending on the magnitude of its rate in a year. Generally, the rapidly fluctuating inflationary pattern creates high degree of instability in an economy. Where the structure of the economy is weak, the effect could be very devastating. As a result depend upon the above theoretical basis the final hypothesis of the study was developed as follows:

H6: There is a negative significant relationship between inflation and profitability.

3.2 Research Approaches

Research approaches are plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation. The overall decision involves which approach should be used to study a topic. Informing this decision should be the philosophical assumptions the researcher brings to the study; procedures of inquiry (called research designs); and specific research methods of data collection, analysis, and interpretation. The selection of a research approach was also based on the nature of the research problem. Therefore depending on the philosophy of research methodology, a research approach can be categorized as quantitative research approach, qualitative research approach and mixed research approach. Moreover the approach explains as follows.

3.2.1 Qualitative Methods Research

It is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures, data typically collected in the participant's setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data. The final written report has a flexible structure. Those who engage in this form of inquiry support a way of looking at research that honors an inductive style, a focus on individual meaning, and the importance of rendering the complexity of a situation.

3.2.2 Quantitative Methods Research

It is an approach for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures. The final written report has a set structure consisting of introduction, literature and theory, methods, results, and discussion. Like qualitative researchers, those who engage in this form of inquiry have assumptions about testing theories deductively, building in protections against bias, controlling for alternative explanations, and being able to generalize and replicate the findings.

3.2.3 Mixed Methods Research

It is an approach to inquiry involving collecting both quantitative and qualitative data, integrating the two forms of data, and using distinct designs that may involve philosophical assumptions and theoretical frameworks. The core assumption of this form of inquiry is that the combination of qualitative and quantitative approaches provides a more complete understanding of a research problem than either approach alone.

3.3 Methods Adopted

The methodology of carrying out this research was based on the objectives of the paper and the availability of relevant information. To comply with the objective of this research, the method adapted was quantitative method. The data in a research study uses secondary data individual company annual financial statement. To identify and measure the determinants of profitability panel data regression analysis was adopted to measure the effect of determinants on profitability by considers the simultaneous relationships of independent and dependent variables found across the regression model, therefore matched to the nature of the study. Panel data regressions were further utilized to examine the associative relationships between variables in terms of the relative importance of the independent variables and predicted values of the dependent variables. The study also uses explanatory type research which was the researcher to conducts the quantitative research, analyzes the results and then build the results.

3.4 Data Source

The study used secondary data for the analysis and secondary data utilized in this study was extracted from company's annual audited financial reports that are income statements and balance sheets of the selected private construction companies from 2011 up to 2015 five years coverage of annual data. And also scholarly articles from academic journals and relevant text books are also used.

3.5 Sampling Design

According to ministry of urban development, housing and construction the total number currently registered for 2015/2016 budget year were as follows: grade one contractor 133, grade two contractors 53 , grade three contractors 77 and grade four contractors 539, (www.constructionproxy.com.). Of which from the registered contractors, the researchers select 12 private construction companies for the study period from year 2011 to 2015. Name of selected grade one construction companies were Filntstone Engineering, Yere construction, Haydro construction, Zenebe Firew real estate and TNT construction. Name of selected grade two construction companies; MAT, Lecon and Rocket construction. Grade three constructions companies; ALJ Construction and BGM construction. Grade four constructions Addis Ayele construction and Tamirat Zerihun construction. Hence based on the list of names totally twelve private construction companies were selected for this study.

3.6 Methods of Data Collection

The methods of data collection were by the researchers reviewed of individual company's annual audited financial reports that were income statements and balance sheets of the selected construction companies based on purposive sampling techniques from 2011 up to 2015 five years coverage of annual data.

3.7 Data Analysis Methods

Before presenting the data analysis methods adopted, the study tried to specify the variables and models used under the study. Accordingly, the study identified a total of seven variables including one dependent, four independent variables and two control variables based on the previews review of related literatures. Descriptive statistics like mean, standard deviation was used to describe the selected variables; this study also conducted correlation analysis, specifically Pearson correlation to measure the degree of association between the variables

under considerations and panel data regression method was used to examine the relationship between dependent and independent variables in order to conclude based on the collected data about the factors affecting on private construction company profitability in Ethiopia.

In panel data regression the study used to analyze the factors affecting construction profitability in Ethiopia private companies for the last five years since 2011 to 2015. The researchers chooses this model because panel data regressions could be used to examine the relationship between several independent variables and a single continuous dependent variable (Pedzahur, 1997). And the researcher also develops the model to identify the variables one by one. The data collected for the study has the dimension of both time series and cross sections. Therefore, balanced panel data regression technique was used in order to examine the factors affecting on private construction company profitability in Ethiopian. Hence, after collecting relevant information, the researcher processed the raw data using sata 13 software having carefully completed the variable view and imputed the extracted data appropriately on the data view.

3.7.1 Research Model

Panel data involves the pooling of observations on a cross-section of units over several time periods and provides results that are simply not detectable in pure cross-sections or pure time-series studies. The panel data regression equation differs from a regular time-series or cross-section regression by the double subscript attached to each variable. The general form of the panel data model can be specified more compactly as:

$$Y_{i,t} = \alpha_i + \beta x_{i,t} + \epsilon_{i,t}$$

With the subscript i, denoting the cross-sectional dimension and t representing the time-series dimension. In this equation,

$Y_{i,t}$ represents the dependent variable in the model, which is the company's profitability(ROA);

$X_{i,t}$ contains the set of explanatory variables in the estimation model; and

α_i is taken to be constant over time t and specific to the individual cross-sectional unit i.

If α_i is taken to be the same across units, then Ordinary Least Square (OLS) provides a consistent and efficient estimate of α and β (Gujarati, 2004).

In the light of the above model and on the bases of the selected variables, the current study used the below econometric model.

$$ROA_{i,t} = \alpha i + \beta 1 Ln\ FIZ_{i,t} + \beta 2\ LIQ_{i,t} + \beta 3\ Ln\ CPS_{i,t} + \beta 4 Ln\ WCM_{i,t} + \beta 5\ Ln\ GDP_{i,t} + \beta 6\ INF_{i,t} + \epsilon_{i,t}$$

Source: developed by researcher by reviewing previous research works

The variables that have identified can be stated as follows:

ROAi,t : is the profitability in private construction company i at time t and measure by return on assets (ROA). The ROA is the ratio of net income after tax to total asset that is ROA= $\frac{\text{Net Income}}{\text{Total asset}}$

ROA is an indicator of how profitable a company is relative to its total assets. It gives us an idea as to how efficient management is in using its assets to generate earnings.

Ln FIZ: logarithm of firm size is measured by total assets in log value.

LIQ : liquidity is measured by dividing the total current assets by total current liability

Ln CPS: logarithm of capital structure and it is measured as the book value of total capital that are equity, retained earnings and legal reserve. Therefore due to most of private construction companies stabilized on equity system, the book value of total capital as measure by the natural log of book value of total capital as capital structure.

Ln WCM =Logarithm of working capital management is measured by the logarithm of the sum of current assets and current liability.

Ln GDP =Logarithm of growth domestic product (Economic growth)

INF= Annual inflation rate

ϵ = is the error component for company i at time t assumed to have mean zero E (ϵ it)= 0

αi = Constant

β= 1, 2, 3…6 are parameters to be estimate;

i = construction company i = 1. . . 12; and t = the index of time periods and t = 1. . . 5

The issue that may arise from the use of panel data is whether the individual effect is considered to be fixed or random. The random and fixed effects models yield different estimation results, especially if T is small and N is large. A specification test based on the difference between these estimates is given by Hausman test. The null hypothesis is that the

individual and time-effects are not correlated with the x_{it}'s. The basic idea behind this test is that the fixed effects estimator βFE is consistent whether the effects are or are not correlated with the x_{it}'s. If the null hypothesis is true, the fixed effects estimator is not efficient under the random effects specification, because it depend on only on the within variation in the data. And also if the individual specific effects are correlated with the regressors, we have the fixed effect model. If they are not correlated we have the random effect model. Therefore based on Hausman test the researcher uses fixed effect models for this study.

CHAPTER FOUR

4. Data Presentation, Analysis and Interpretation

4.1 Introduction

This chapter presents the empirical test results based on panel data regression on multiple linear regressions to test the outcomes of the analysis for twelve private construction companies in Ethiopia from the period of 2011 to 2015. The investigation is with regard to the relationship between profitability as dependent variable and, size of construction companies, liquidity, capital structure, working capital management, as independent variables. In addition to this economic growth that is gross domestic product (GDP) and inflation rate take as control variable. Therefore, this chapter provides the results from the analysis of data and its interpretation. The first section deals with descriptive analysis of the data and variation for the dependent variables and regressors for panel data variables for the study; the second section discusses the correlation analysis between dependent and independent variables, the third section deals panel data models with testing the models and; the forth section presents the regression analysis, result and discussion and; the fifth section testing the hypotheses based on correlation and regression analysis.

4.1 Descriptive Statistics

In this section, the study presents a summary the descriptive statistics of the dependent and independent variables for twelve private construction companies from year 2011 to 2015 with a total of 60 observations and it explores and presents an overview of all variables used in the study that is on the table 4.1 includes the mean, standard deviation, minimum, maximum and number of observations for the dependent and independent variables used in this research.

Table 4.1 Descriptive statistics

Variable	Observation	Mean	Std. Dev.	Min	Max
ROA	60	0.086883	0.0854069	-0.0423475	0.4049854
FIZ	60	6.780962	0.9412535	5.148195	8.806578
LIQ	60	1.667473	1.531833	0.2229203	8.519308
CPS	60	6.473777	0.8192792	4.861549	7.78408
WCM	60	6.754693	1.090035	4.753183	9.069888
GDP	60	11.60595	0.5591299	10.86841	12.07065
INF	60	16.32	10.21214	7.4	33.2

Source: Stata output

From table 4.1 Profitability measured by return on asset(ROA) shows the construction company productivity to generate income using the available asset and the average profitability as measured by ROA for Ethiopian construction companies during the study period is about 0.087 with a maximum of .40 and a minimum of -0.04 and the value of the standard deviation or variation for ROA is 0.085 which suggesting that Ethiopian private construction have generated on average 0.087 profitability for a one birr investment on asset and the most profitable construction companies have generated 0.40 profitability and the least profitability construction companies have generated -0.04 profitability for each birr investment. There is a moderate variation among the values of profitability across the listed construction companies in Ethiopia over the period under investigation.

The mean value of inflation is 16.32 with a maximum of 33.2 and a minimum of 7.4 and there is highly significant variation among values of inflation because the value of the standard deviation as shown on the above table is 10.21 inflation rate in the last five years from year 2011 to 2015.

The variable liquidity measures the ratio of current asset to current liability. The average value of this variable is 1.67 with a maximum of 8.51 and a minimum of 0.22. This means that for a one birr current liability there is an available 1.67 cents on average on current assets, a maximum liquidity position of 8.51 and minimum of 0.22 with a significant variation of 1.53 across the selected construction companies based on the standard deviation.

Working capital management measured the sum of current assets and current liability. The mean value of WCM 6.75 with a maximum of 9.06 and a minimum of 4.75 and 1.09 variations. The figure suggests that, there exists significant variation across the selected construction companies based on the standard deviation.

The mean value of FIZ is 6.78 and its standard deviation is 0.94 implies that there were significant differences among the values of firm size and measured by natural logarithmic of total assets across the list of construction companies under this study. The average value of CPS is 6.47 and the value of standard deviation is 0.82 which shows that there is a significant variation among capital structure.

The average value for GDP has become 11.6 with a standard deviation of 0.56.This implies that there exists moderate variation among the values of across the sample construction

company. Therefore, this study is examined to what extent; the variations in factors affecting construction companies profitability in Ethiopia.

4.1.2 Variation for the Dependent Variable and Regressors for Panel Data

On the panel data summary the researcher exclude time(year) and id(Company), but include the real variables that is ROA dependent variables and the independent variables that are FIZ, LIQ, CPS,WCM,GDP and INF. Therefore we need to understand following points:

- Over all variation : variation over time and individuals
- Between variation :variation across individuals (between individuals)
- Within variation : variation with in individuals (over time)

Table 4.2 Summary between and within for panel data

Variable		Mean	Std. Dev.	Min	Max	Observation
ROA	Over All	0.086883	0.0854069	-0.0423475	0.4049854	N= 60
	Between		0.0721059	0.0093513	0.2092617	n= 12
	Within		0.0494729	0.2929165	0.2929165	T= 5
FIZ	Over All	6.780962	0.9412535	5.148195	8.806578	N= 60
	Between		0.8871783	5.599824	8.005443	n= 12
	Within		0.3901726	4.406999	7.582097	T= 5
LIQ	Over All	1.667473	1.531833	0.2229203	8.519308	N= 60
	Between		1.184288	0.3647324	4.536604	n= 12
	Within		1.019344	-0.7047447	5.650177	T= 5
CPS	Over All	6.473777	0.8192792	4.861549	7.78408	N= 60
	Between		0.831678	5.278473	7.737323	n= 12
	Within		0.1625552	6.056854	6.969554	T= 5
WCM	Over All	6.754693	1.090035	4.753183	9.069888	N= 60
	Between		1.109	5.361642	8.85735	n= 12
	Within		0.2041489	6.10746	7.143884	T= 5
GDP	Over All	11.60595	0.5591299	10.86841	12.07065	N= 60
	Between		0.057735	11.58929	11.78929	n= 12
	Within		0.5563442	10.75352	12.08732	T= 5
INF	Over All	16.32	10.21214	7.4	33.2	N= 60
	Between		0	16.32	16.32	n= 12
	Within		10.21214	7.4	33.2	T= 5

Source: Stata output

From table 4.2 between variations of individual construction company profitability return on asset is (0.072) this implies there is more variation between individuals construction companies than within variation (0.049) within individuals over time from over all variation. Similarly firm size (FIZ), capital structure (CPS) and working capital management (WCM) have more between individual construction company variation (0.88, 0.83, 1.11) respectively and less within individual construction company variation over time (0.39 ,0.16, 0.2).

Variation across individual construction company of liquidity (1.18) and within individual construction company variation over time (1.01) this implies that there is similar variation between and within individual construction company. The variation of GDP across individual construction company (0.058) is less than within the individual construction company variation over time (0.56).

Individual-invariant regressors inflation (INF) have zero between variation and all variation is within variation that is the same as overall variation (10.2). Individual-invariant inflation between variation means there is no change between individual construction company even if the minimum (7.4) and maximum (33.2) inflation rate.

4.2 Correlation Analysis

The most commonly used correlation statistic is the Pearson correlation coefficient. It measures both the strength and direction of the linear relationship between two variables, (Bryman and Bell, 2003, pp362).The Pearson correlation coefficient is a numerical index or number between -1 and +1 that measures both the strength and direction of the linear relationship between two variables. The magnitude of the number shows or represents the strength of the relationship between the variables. A correlation coefficient of zero represents no linear relationship which means the scatter plot does not resemble a straight line at all, while a correlation coefficient of -1 or +1 means that the relationship is perfectly linear i.e. all of the dots fall exactly on a straight line. The sign (+/-) of the correlation coefficient indicates the direction of the correlation. A positive (+) correlation coefficient means that as values on one variable increase, values on the other variable tend to increase; a negative (-) correlation coefficient means that as values on one variable increase, values on the other tend to decrease, that is, they tend to go in opposite directions (Salkind, 2010, p114-115).

The following table 4.3 provides the Pearson correlation for the variables that we used in the regression model. Pearson's correlation analysis is used for data to find the relationship between dependent and independent variable.

Table 4.3 Correlation Matrix

	ROA	FIZ	LIQ	CPS	WCM	GDP	INF
ROA	1.0000						
FIZ	-0.6462	1.0000					
LIQ	0.0437	0.0931	1.0000				
CPS	-0.6421	0.9065	0.2263	1.0000			
WCM	-0.6977	0.9053	0.0331	0.9283	1.0000		
GDP	-0.0215	0.1163	-0.1880	0.1607	0.1506	1.0000	
INF	0.0290	-0.0860	0.1874	-0.1222	-0.1351	-0.9132	1.0000

Source: Stata output

As the correlation analysis result shows in table 4.3 the degree of relationship between dependent and independent variables. Based on the above of correlation analysis result, the relationship between dependent variable profitability (ROA) and liquidity is Negative and statistically significant at 5% relations. Relations which are positive and statistically significant at 1% have been observed between ROA and Capital structure (CPS). On the other hand, relations which are negative and statistically significant at 1% have been found between ROA and working capital management. The highest negative percentages are capital structure and Working capital management. The coefficients of correlations are 64.2% and 69.8% respectively and they are negatively correlated with profitability (ROA). This means that when these variables decrease ROA will increase and when these variables increase ROA will decrease. On the other hand the table also shows that Firm size (FIZ) and GDP are negatively correlated with ROA and also Inflation is correlated positively with ROA but all these three independent variables are not statistically significant at 1%, 5% and 10% Therefore, profitability is independent at these variables.

4.3 Panel Data Models

Panel data models describe the individual behavior both across time and across individuals. There are three types of models: the pooled model, the fixed effects model and the random effect model. Of the three models, pooled model specifies constant coefficient, the usual assumption for cross-sectional analysis. However this model is the most restrictive panel data model, is not used much in the literature due to this, the researchers was not used the pooled models.

The random and fixed effects models yield different estimation results, especially if T is small and N is large. A specification test based on the difference between these estimates is given by Hausman test. The null hypothesis is that the individual and time-effects are not correlated with the x_{it}'s. The basic idea behind this test is that the fixed effects estimator βFE is consistent whether the effects are or are not correlated with the x_{it}'s . If the null hypothesis is true, the fixed effects estimator is not efficient under the random effects specification, because it depend on only on the within variation in the data. And also if the individual specific effects are correlated with the regressors, we have the fixed effect model. If they are not correlated we have the random effect model.

4.3.1 Hausman Fixed or Random Test Result

Based on the above two tables 4.4 to select the model either the random effect or fixed effect models the following tables the Hausman test presented as follows.

Table 4.4 Regression result- Hausman fixed random test

---- Coefficients ----

	(b) Fixed	(B) Random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
FIZ	-0.000054	-0.003129	0.003075	.
LIQ	-0.0169219	0.0012623	-0.0181842	0.003639
CPS	0.264298	0.0154761	0.2488219	0.0577674
WCM	-0.1764127	-0.0637315	-0.1126813	0.0547086
GDP	-0.0079307	0.0268075	-0.0347383	.
INF	0.0003677	0.0007554	-0.0003876	.

Source: Stata output

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$chi^2(6) = (b-B)'[(V\_b-V\_B)^{(-1)}](b-B) = 33.98$

$Prob>chi^2 = 0.0000$

(V_ b-V_B is not positive definite)

Therefore based on the table 4.6 the Hauseman test shows the p value of the chi^2 result is very small that is 0.0000 or If the Probability chi^2 0.0000 is ($Prob>chi^2 = 0.0000$) <0 .05 which means significant result this implies we use the fixed effect models.

4.3.2 Fixed Effect Model

Use fixed-effects (FE) whenever you are only interested in analyzing the impact of variables that vary over time. FE explores the relationship between predictor and outcome variables within an entity (country, person, company, etc.). Each entity has its own individual characteristics that may or may not influence the predictor variables (for example, being a male or female could influence the opinion toward certain issue; or the political system of a particular country could have some effect on trade or GDP; or the business practices of a company may influence its stock price).

When using FE we assume that something within the individual may impact or bias the predictor or outcome variables and we need to control for this. This is the rationale behind the assumption of the correlation between entity's error term and predictor variables. FE removes the effect of those time-invariant characteristics so we can assess the net effect of the predictors on the outcome variable.

Another important assumption of the FE model is that those time-invariant characteristics are unique to the individual and should not be correlated with other individual characteristics. Each entity is different therefore the entity's error term and the constant (which captures individual characteristics) should not be correlated with the others. If the error terms are correlated, then FE is no suitable since inferences may not be correct and you need to model that relationship (probably using random-effects), this is the main rationale for the Hausman test.

"The fixed-effects model controls for all time-invariant differences between the individuals, so the estimated coefficients of the fixed-effects models cannot be biased because of omitted time-invariant characteristics(like culture, religion, gender, race, etc.)

One side effect of the features of fixed-effects models is that they cannot be used to investigate time-invariant causes of the dependent variables. Technically, time-invariant characteristics of the individuals are perfectly collinear with the person (or entity) dummies. Substantively, fixed-effects models are designed to study the causes of changes within a person (or entity). A time-invariant characteristic cannot cause such a change, because it is constant for each person Kohler, Ulrich, Frauke Kreuter, Data Analysis Using Stata, (2nd ed., p.245)

4.4 Regression Analysis, Result and Discussion

A fixed effect model panel data regression technique was used to analyze the data based on the Hausman test result. This section presents the empirical findings from the panel data regression output on factors affecting construction profitability in Ethiopia. The fixed effect models regression results shows between the dependent variable (ROA) and explanatory variables on the following table as accordingly.

Table 4.5 Regression Result- Fixed Effect Model

Fixed-effects (within) regression — Number of obs = 60
Group variable: COM — Number of groups = 12
R-sq: within = 0.2813 — Obs per group: min = 5
between = 0.0676 — avg = 5.0
overall = 0.0067 — max = 5
F(6, 42) = 2.74
corr(u _i, Xb) = -0.7221 — Prob > F = 0.0245

ROA	Coef	Std.Err	T	P>|t|	95% Conf.	Interval
FIZ	-0.000054	0.0184552	-0.00	0.998	-0.0372981	0.0371901
LIQ	-0.0169219	0.0079001	-2.14	0.038	-0.0328651	-0.0009788
CPS	0.264298	0.070548	3.75	0.001	0.1219264	0.4066696
WCM	-0.1764127	0.0618408	-2.85	0.007	-0.3012126	-0.0516129
GDP	-0.0079307	0.0316558	-0.25	0.803	-0.0718147	0.0559532
INF	0.0003677	0.0016939	0.22	0.829	-0.0030507	0.0037862
-Cons	-0.3178842	0.4772773	-0.67	0.509	-1.281069	0.6453004
Sigma _u	0.11089756					
Sigma _e	0.04971055					
rho	0.83268531 (fraction of variance due to u _i)					

F test that all u _i=0: F(11, 42) = 4.02 Prob > F = 0.0005
Source: Stata output

Correlation error

Based on the above table fixed effect model regression outputs correlation (u _i, Xb) = -0.72 indicates that the errors u _i are correlated with the regression in the fixed effects model.

F-test for overall significance of all coefficients

The value of probability (p) > F = 0.0245 and if this number is < 0.05 then the model is ok (it tests whether R^2 is different from zero). This is F-test to show for over all statistically significance of all coefficients testing whether the relationship between dependent and all independent variables is significant or to see whether all the coefficients in the model are different than zero. It is also used to test for the null hypothesis coefficients are not jointly significantly different from zero and the alternative hypothesis coefficients are jointly significantly different from zero that is H0: $\beta1 = \beta2 = \ldots \beta6 = 0$ and H1: $\beta1 \neq 0$ or $\beta 2 \neq 0$ or. . $\beta6 \neq 0$. Hence to use the F-distribution the test statistic F=MSR/MSE (mean square due to regression to mean square error) to get the critical value F test on upper one tail test.

T-test and P-value test (p>(P > |t|) for significance of one coefficient

The t-test is used to determine whether the relation between dependent variable and independent variables is significant. To get the t-values by dividing the coefficient by its standard error. The t-values test the hypothesis that each coefficient is different from zero. Additionally it is also used to test the null hypothesis of the coefficient is not significantly different than zero and the alternative hypothesis coefficient is significantly different from zero (H0: B1=0 and H1: B1≠0). If the test statistic t is in the critical rejection zone, based on a tow-tailed test we can reject the null hypothesis and find the coefficients that are significant and different from zero. Or to reject this, we need a t-value greater than 1.96 (at 0.05 confidences). The t-values also show the importance of a variable in the model. In this case, the independent variable capital structure that is 3.75 >1.96 the most important based on t-value. Therefore if this is the case then we can say that the variable has a significant influence on dependent variable (ROA) and the higher the t-value the higher the relevance of the variable.

On the other way, the two-tail p-values test (P > |t|) the hypothesis that each coefficient is different from zero. To reject this, the p-value has to be lower than 0.05 (95%, we could choose also an alpha of 0.10), if this is the case then you can say that the variable has a significant influence on dependent variable (ROA). Therefore in this study, the independent variables like liquidity (LIQ) at 5%,capital structure (CPS) at 1% and working capital management (WCM) at 1% are statistically significant in explaining profitability that is return on asset(ROA) and there coefficient are different from zero. However, the remaining

independent variable, firm size (FIZ) and control variables: GDP and inflation (INF) are not statistically significant in explaining profitability that is return on asset (ROA).

Coefficient of the regression

Coefficient of the regression may be negative or positive, indicate how much dependent variables (ROA) changes when independent variables change by one unit.

Rho

Rho is the percent of the variation that explain individual specific effect and when the value rho very high which is good that means the variation to individual effect which is insignificant. In this case the value of rho 0.83% implies the variance individual effects due to differences across panels.

$$\text{Rho} = \frac{(\text{Sigma- u})^2}{(\text{Sigma-u2}+(\text{Sigma \_e})^2}$$

Sigma _u = standard deviation of residuals within groups u-i

Sigma _e = standard deviation of residuals (overall error term) e-i

Firm Size

Firm size is measured by natural logarithm of total asset. The results of the fixed effect regression of panel model the coefficient of the variable firm size coefficient -0.000054, t-statistics -0.00 and p-value 0.998. Based on these the result indicates that there is negative and no significance influences between firm sizes to the profitability. It means that whether small or big the size of firm does not affect to the level of profitability. The result of the study by Yee and Cheah (2006) found that there is no significant correlation between firm size and profitability.

The result of the study by Stekler (1964), in an earlier study found that size significantly correlates with profitability. Similarly Hall and Weiss (1967) have found a positive relation between firm size and profitability in the study they carried on over Fortune 500 firms. Fiegenbaum and Karnani (1991) have also found a positive relation between firm size and profitability. Khandokar, Raul & Rahman (2013) has also performed the research towards determinants of the profitability performance of firms of non-banking financial industry in Bangladesh.

Asenso and Fellows (1989) and Akintola and Skitemore (1991) validated that the size of a construction company is positively correlated with the profit ratio to an optimal level before decreasing with size. Akintola and Skitemore (1991) cited Spedding (1977), who said that the reason larger companies are more profitable may be that they are generally more efficient and better organized than small firms in their management strategies, while at the same time they are better off in situations of low profitability (cf Lea and Lansley, 1975a).

On the contrary, Shepherd (1972) has found a negative relation between firm size and profitability. Schneider (1991) has argued on the contrary, that the bigger the firm, the lower the profitability. Additionaly, Akintola and Skitemore (1991) found that variability between company profitability levels decreased with increasing company size.

Liquidity

Consistent to the above table 4.5 the results of regression analysis show that there exist a negative and statistically significant relation between liquidity and profitability of private construction company in Ethiopia. The results of the fixed effect regression of panel data model evidence over twelve private constructions for five years revealed regression coefficient of -0.0169, t-statistics of -2.14 and p-value of 0.038. Hence at 5% significance level, liquidity ratio negatively explains profitability of private construction company. This shows that a 1 birr increase in liquidity would result in a 0.0169 birr decrease in profitability (ROA). This result is compatible with the hypothesis and existed theories. Thus, hypothesis 3 is not rejected.

Marques and Braga (1995) confirmed this inverse relationship between liquidity and profitability for a sample of food companies. Blatt (2001), also called a negative relationship between liquidity and profitability, measured by Dynamic Model and profitability. Similarly Abuzar (2004), found that a significant negative relationship between profitability and liquidity. Also Eljelly (2004) examined the relation between profitability and liquidity measured by current ratio and cash gap (cash conversion cycle) on a sample of joint stock companies in Saudi Arabia using correlation and regression analysis and found a negative relationship between profitability and liquidity.

Capital Structure

The regression analysis results of the capital structure to the profitability indicates that there is positive and significant influences construction profitability. That is coefficient of 0.264298, t-statistics of 3.75 and p-value of 0.001. It means that the capital structure of the company would affect the level of profitability of the construction company. The significantly positive regression coefficient for capital structure implies that an increase in 1 birr is associated with an increase 0.264298 birr in profitability: thus, the capital structure and profitability have positive relationship and hypothesis 3 is not rejected

The result of this study Chiang et al., (2002) show that profitability and capital structure are interrelated; the study sample includes 35 companies listed in Hong Kong. Abor (2005) seeks to investigate the relationship between capital structure and profitability of listed firms on the Ghana Stock Exchange and find a significantly positive relationship between the ratio of short-term debt to total assets and ROE and negative relationship between the ratio of long-term debt to total assets and ROE. Raheman. et al., (2007) find a significant capital structure effect on the profitability for non-financial firms listed on Islamabad Stock Exchange.

Working Capital Management

The regression result of working capital management to the profitability, shows that there is a negative and significant influence on construction profitability. It means that there is an influence between working capital management to profitability (ROA). The negative coefficient result shows that the fixed effect regression of panel model have a negative regression coefficient of -0.1764127, t-statistics of -2.85 and p-value of 0.007. Hence at 1% significance level, working capital management ratio negatively explains profitability of private construction company. This shows that a 1 birr increase in working capital management would result in a -0.176 birr decrease in profitability (ROA). Therefore, hypothesis 4 is not rejected but the sign differs, which states that WCM has a positive relationship with profitability.

The result in this study of Eljelly (2004) examined the relationship between profitability and working capital management on a sample of 929 Saudi firms spread across three industries. Using correlation data analysis and regression data estimation technique, the author finds a significantly negative relationship between the firms' profitability and liquidity level, as

measured by current ratio and cash conversion cycle. Additionally Mohammad Morshedur Rahman(2011) examines that the Profitability and Working Capital management of Textiles Industries has a positive relationship ratio on all the statistical tools used to examine Profitability.

Control Variables GDP and Inflation (INF)

A variable that is held constant in order to assess or clarify the relationship between two other variables. Control variables are usually variables that you are not particularly interested in but that are related the dependent variables you want to remove their effect from the equations. The results of the fixed effect regression of panel model the coefficient of the control variable GDP coefficient -0.0079307, t- statistics -0.25 and p-value 0.803. And inflation coefficient 0.0003677, t-statistics of 0.22 and p-value of 0.829. Therefore based on the coefficient and p value both GDP and INF are insignificant negative and positive respectively.

4.5 Hypotheses Testing Summary on Correlation and Regression Analysis

Table 4.6 Comparison of the Test Result with the Expectation

NO	Independent variables	Expected Relationship with dependent variable (ROA)	Actual Result	Correlation coefficient (r)	P-value	Status
H1	FIZ	+	-	-0.6462	0.998	Rejected
H2	LIQ	-	-	0.0437	0.038	Not rejected
H3	CPS	+	-	-0.6421	0.001	Not rejected
H4	WCM	+	-	-0.6977	0.007	Not rejected
H5	GDP	+	-	-0.0215	0.803	Rejected
H6	INF	-	-	-0.0860	0.829	Rejected

Form the table 4.7, we found that there is no significant relationship between Firm size (FIZ) and profitability as measured by ROA. Therefore, we reject the Hypothesis 1.

From the table 4.7 result of the hypotheses 2 tests is not rejected, which states that profitability has a negative relationship with liquidity (LIQ).

Hypothesis 3 is also accepted, which states that capital structure (CPS) has a positive relationship with ROA. But the type of relationship is negative in contrary to the hypothesis.

Hypothesis 4 is also accepted, which states that working capital management (WCM) has a positive relationship with ROA. But the type of relationship found is negative result. Hypothesis 5 and 6 is rejected, which states that GDP and INF have a negative relationship with ROA.

CHAPTER FIVE

5. Summary, Conclusions and Recommendations

5.1 Summary of Findings

Generally the previous chapter presented the results and discussed the analysis of construction company profitability. From data analysis, Ethiopian private construction company profitability is highly affected by variables included in this study except firm size. The findings of the study showed that liquidity and working capital management have statistically significant and negative relationship with construction company profitability. And also capital structure has a positive and statistically significant relationship with construction company profitability. However, independent variables, firm size and control variables like GDP and inflation (INF) have negative and insignificant relationship with profitability.

5.2 Conclusions

Construction industry makes significant contributions to the socio-economic development process of a country and its importance emanates largely from the direct and indirect impact it has on all economic activities. In its effect , the owner of business can gain benefits through by identifying of factors affecting the profitability of construction company's profitability and this helps the owner of business and other stakeholders to manage and adjusts their operations performance and company profit can be maximize as well and provide value added to the shareholders of company. And also the regulatory bodies such as government of country may help for strategic planning and implementation towards the construction sector because of having highly contribution of the country economic growth. Therefore studying the factors that affecting construction profitability has a significant importance to the country, stakeholders, regulatory bodies and construction companies. The objective of this study is to examine factors affecting construction company profitability as measured by ROA. In order to meet the purpose a five years financial statement data were used from individual company annual year audited financial statements of the company reports from year 2011 to 2015 for twelve selected companies. The collected data was analyzed on fixed effect panel regression method. Descriptive statistics, correlation and regression analysis were performed to describe the profitability of private construction companies among private construction companies.

The study investigates the impact of firm specific level characteristics on factors affecting construction profitability of Ethiopia over the period of five years from 2010 to 2015. For this purpose, size, liquidity, capital structure and working capital management are selected as explanatory variables while ROA is taken as dependent variable. The results of regression analysis reveal that liquidity, capital structure and working capital management are most important factors affecting construction company profitability(ROA) whereas firm size and others two control variables GDP and inflation (INF) have statistically insignificant relationship with construction company profitability(ROA).

The results of the fixed effect regression of panel model the coefficient of the variable firm size coefficient -0.000054, t- statistics -0.00 and p-value 0.998. Based on these the result indicates that there is negative and no significance influences between firm sizes to the profitability. It means that whether small or big the size of firm does not affect to the level of profitability. Similarly the result of the study by Yee and Cheah (2006) found that there is no significant correlation between firm size and profitability. Negative coefficient of variable liquidity specifies that the negative relationship. However, the relationship between ROA and liquidity is statistically significant. Hence, construction companies having more liquid assets should find any available investment alternative. As the findings shows that liquidity and do have negative impact on profitability, which supports the hypothesis formulated. The positive and significant relationship between capital structure and profitability of private construction company implies that a high capital structure is able to follow business opportunities more effectively and has more time and flexibility to deal with problems arising from unexpected losses, thus achieving increased profitability. Hence indicates that well capital structure construction companies face lower costs of going bankrupt, which reduces their cost of funding or that they have lower needs for external funding which results in higher profitability. Working capital management is negatively and significantly related with the profitability of construction companies. This predicts that the more working capital management is going to be less profitable and implies that better to minimize. The working capital management level of the construction company affects the profitability negatively, which contradicts the hypothesis formulated.

5.3 Recommendations

- Because of construction sector having highly contribution of the country economic growth and benefits to the owner of business, stakeholders, shareholders of company and the regulatory bodies of government, those factors that are affected constriction company profitability either positively (capital structure) or negatively affect (Liquidity and working capital management)construction profitability. Hence these parties to take measurement and discuss on factors affecting profitability and to increase for those that have positive effect and to decrease for those that have negative effect because they benefits from it and to keep its continuity.
- The sector was operating at high liquidity position this indicates that more current asset has negative impact on profitability or low profitability so better to invest in long term asset.
- Since Working capital management is use full for construction company profitability. Hence high working capital that is high current asset and current liability have a negative impact on profitability so reducing this and invest on other fixed asset that have better return on construction profitability.
- Finally to summarize and to make on good decision on factors affecting construction company profitability, contractors need to look the liquidity, capital structure, and working capital management before making an investment decisions. Because these factors have a significant impact on factors affecting construction profitability either positively or negatively in Ethiopian private construction companies.

5.4 Areas for future research

- This research has used only five years data in order to keep the sampled construction company representative as a chance only 12 construction company are included in this study but other researcher see numbers of companies and by including the data year. Therefore, future researches could this research as a starting point and replicate this study using multiple years' data and more number of companies.

- This research has used few company specific variables; future studies should also include more variables to examine on factors affecting construction company profitability. I hope the results of this study will be useful for and contribute to the further development of Ethiopian construction industry

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