

**ADDIS ABABA UNIVERSITY**  
**SCHOOL OF GRADUATE STUDIES**



**COMPARATIVE FINANCIAL PERFORMANCE OF  
DOMESTIC AND FOREIGN CONSTRUCTION  
COMPANIES IN ETHIOPIA**

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**DOMESTIC AND FOREIGN CONSTRUCTION COMPANIES**  
**IN ETHIOPIA**

**By BINIYAM BERHANU**

June 2009

**Approved by board of examiners**

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## Statement of Certification

This is to certify that Biniyam Berhanu has carried out this project work on the topic “*Comparative Financial Performance Of Domestic And Foreign Construction Companies in Ethiopia*” under my supervision. In my opinion, this work qualifies for submission in partial fulfillment of the requirements for the award of Degree of Masters of Science in Accounting and Finance.

Signature\_\_\_\_\_

G/MEDHIN G/HIWOT

Project Advisor

## Statement of Declaration

I declare that this project work is my original work. It has not been submitted for any Degree/Diploma in any University. I have undertaken it independently with the advice and suggestions of my advisor for the project, Ato G/Medhin G/Hiwot. In carrying out of the project work I have different sources and materials, which have been appropriately acknowledged.

Signature \_\_\_\_\_

Biniyam Berhanu

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## ACRONYMS

EBIT- Earnings before interest and tax

FE--- Foreign contractor E

FF--- Foreign contractor F

FG--- Foreign contractor G

FH--- Foreign contractor H

LA---Local contractor A

LB---Local contractor B

LC---Local contractor C

LD---Local contractor D

NI- Net income

ROA>Returns on asset

## ABSTRACT

The paper entitled “*Comparative Financial Performance of Domestic and Foreign Construction Companies in Ethiopia*” deals with measuring financial performance of local and foreign contractors in Ethiopia.

The paper’s objective is to measure financial performance of each group and compare to each other to identify the group which perform better comparatively and also to test both group whether they are in financial distress.

The data used in the study is all secondary data obtained from Federal Inland Revenue Authority from the financial statements reported by the contractors chosen for the study.

A sample of eight companies five year financial statements are analyzed by using financial ratios and a sample of five contractors’ financial statements are analyzed for distress test. In order to substantiate the analysis regression and t-test were used.

The final study finding revealed that foreign contractors perform financially better than local contractors. It is also found that local contractors are in financial distress according to Altman’s cut-off.

# CHAPTER ONE

## 1.1 INTRODUCTION

The construction industry accounts for around one-tenth of the world's gross domestic product, seven percent of employment, half of all resource usage and up to 40 percent of energy consumption (Well J. 1986). This industry has a profound impact on our daily lives: the buildings we live and work in, the roads and bridges we drive on, the utility distributions systems we use, the railways, airports we travel and trade from are all products of this vital industry. In the past few years Ethiopia's construction industry is growing in accelerating rate. The government spending on construction activities and at the same time the contribution of the construction industry to GDP growth has shown a significant growth. (National bank Ethiopia, annual report, 2007)

Serving the people and generating return is among the main objectives of every organization in every industry. The same objective is also true for construction companies in Ethiopia's construction industry.

In this dynamic world, where things are changing from time to time, it is a must for every company to measure its financial performance and compare it with the industry average. To identify the strength and weakness of the organization, and also to explore opportunities and treats within the industry, measuring financial performance is an appropriate tool.

In our growing construction industry, we have both domestic and foreign contractors. The number of contractors in the industry is increasing from year to year. However, it

has also seen that most of local contractors are delayed to be operational after they got licensed.

Thus, this research project tried to measure the comparative financial performance of local and foreign construction companies and also tried to determine whether the foreign or domestic construction companies are under financial distress or not.

## **1.2. OVER VIEW OF CONSTRUCTION SECTOR IN ETHIOPIA**

Modern construction is a recent phenomenon in Ethiopia. Especially works undertaken by local contractors had begun in 1968 when some small domestic contractors had emerged. Prior to 1968 most civil works were carried out by foreign contractors through international bidding. During the imperial era, the government took initiatives to build capacity and enhance the competitiveness of domestic contractors through awarding construction projects, especially feeder road projects financed by the World Bank.

After coming in to power of the Dergue in 1974 and the subsequent declaration of socialist economic system, the domestic private construction companies that were mushrooming withered out due to their nationalization. During the Dergue era, construction projects were carried out without competitive bidding by awarding directly to the state owned construction enterprises which operated inefficiently. There was no significant capacity expansion in the construction sector during those years.

The new government which comes in to power in 1991 has introduced policy measures and institutional changes that led to the revival of the participation of the private sector in the construction industry and improvement in the efficiency of government owned enterprises.

Although progresses have been registered in the construction sector in recent years, still a lot remains to be done when one considers the existing road network in relation to the size of the country and the population; the low level of urbanization; limited number of airport; and the number, distribution, and size of the hydroelectric dams when compared to the huge hydropower potential.

The GDP created in the construction sector exhibited a steady growth during the period 1995/96 to 2005/06. It increased from birr 2012 million in 1995/96 to birr 4526 million in 2005/06 registering an annual average growth rate of 12%. The share of construction sector in total GDP was 3.68% in 1995/96 and it reached 5.24% in 2005/06. (National bank of Ethiopia, annual report 2005/06)

### **1.3 STATEMENT OF THE PROBLEM**

The construction industry is one of the most important economic sectors for Ethiopia because it affects all sectors of the economy. Investment in nearly every field must eventually have a construction component. Thus, to activate and improve this industry and to arrive at the level where currently the world reached foreign contractors participation and technical expertise in the design and construction of buildings and roads is sorely needed in Ethiopia. As a result in our growing construction industry we have both Domestic and foreign firms, which have relative deference in terms of experience and capacity.

It is however, not easy for domestic firms to succeed by competing with foreign firms who have extensive international experience and capacity. This may be among the reasons for local contractors not going operational after they got license for investment and for performing less than foreign contractors.

Therefore, it is appropriate to raise the question why do most of local contractors, who are licensed for investment, are delayed (for many years) to be operational. And also how do the domestic contractors perform compared to foreign contractors and what are the reason reasons if they are inferior in performance. Thus to answer all the above questions financial performance measurement was found as an appropriate tool.

Though, there may be a number of different competitive advantages for each group. The focus of this study based on the accounting data is to compare the domestic and foreign contractor's relative financial performance and at the same time to conduct a test of financial distress by using Altman's model.

Therefore research project's questions are:

- Are the foreign firms operating in Ethiopia performing financially better than the domestic contractors?
- Are the domestic construction companies in financial distress? What about the foreign contractors operating in Ethiopia?

My study focused to answer the above questions by using different financial ratios & Altman's distress score to compare the financial performance of domestic and foreign construction companies operating in Ethiopia.

## **1.4 OBJECTIVES OF THE STUDY**

### **GENERAL OBJECTIVE:**

The study is intended to measure comparative financial performances of the domestic and foreign construction companies operating in Ethiopia by using different measurement and to conduct a test of financial distress by using Altman's model.

### **SPECIFIC OBJECTIVES:**

- To measure the trend of profitability for both domestic and foreign construction companies operating in Ethiopia.
- To identify factors that highly contribute for the performance in this industry
- To determine which ratio measurement out of all, most significantly affect the performance of both groups.
- To measure the trend of financial distress for both domestic and foreign construction companies.
- To identify factors that highly contributes for financial distress.
- To identify the group which performs better comparatively in financial respect.
- Finally, to propose possible remedies (solutions) based on the findings of the study.

## **1.5 SIGNIFICANCE OF THE STUDY**

The findings of this study can provide significant contributions to different users. Including the construction companies, government agencies, contemporary researchers and others interested parties.

Specifically it is helpful:-

To assist construction companies in Ethiopia to review their past financial performance and to formulate new strategies for their business survival in the coming years.

The study will show the financial performance of the domestic construction companies compared to foreign firms operating in Ethiopia. This will bring the strength and weakness of domestic construction companies in light. As a result it will be helpful to improve the strategy to overcome those weaknesses in the past period.

The output from this study will be a source of information about the financial performance of domestic and foreign construction companies and also it will indicate the status of domestic construction companies in the Ethiopia's construction industry.

The research result will also be a source of information for the potential investors to identify in advance the factors that affect domestic construction company's financial performance adversely.

The research result will be used as base line information for contemporary researchers in similar areas. And used as an indicator of the need of policy reformation for government agencies.

## **1.6 RESEARCH METHODOLOGY**

Since the purpose of the study is to measure the trend of financial performance of local and foreign construction companies and to identify the group in a financial distress, it is appropriate to use secondary data. However, since it is not possible to cover all construction companies in Ethiopia because of time and financial constraints, a sample of each group were taken.

To have the right picture of the contractors in Ethiopia's construction industry and to analyze different kinds of contractors, the samples were chosen on a judgmental sampling basis. The criterion used to select these samples was the availability of financial data and based on the following common characteristics:

- They are on the list of approved construction companies for public works.
- They are on the list of higher tax payers so that the comparison will be between companies under the same tax bracket.
- They are subject for tax audit.

In this study, secondary data are extracted from the annual reports of the representative four of both domestic and foreign construction companies for financial analysis purpose. Five year financial data of each contractor are analyzed.

By using the financial data of selected representative samples of both categories, financial performance is analyzed using selected financial ratios. To measure the financial performance trend and for comparison of financial performance of local and foreign contractors, the paper used the same ratios used by John and Ruby (2005) with the exception of earning per share because the information about

earning per share was not found in the financial reports that the study used. These ratios are:-

- Gross profit margin = gross profit/ sales
- Operating profit margin, EBIT margin =EBIT/SALES
- Return on equity (ROE) = NI/EQUITY
- Return on asset (ROA) = EBIT/TOTAL ASSET
- Total asset turnover = SALES/ TOTAL ASSET
- Current ratio=CURRENT ASSET/ CURRENT LIABILITY
- Debt to equity ratio = TOTAL LIABILITY/ TOTAL EQUITY

Altman's Z-Score Bankruptcy predictor that combines five common business ratios, using a weighting system is applied to determine the likelihood of a company to go bankrupt.

Altman (1968) used the multiple discriminate analysis model to combine several financial ratios into a single index, z, called "distress score" to discriminate between failed and non-failed groups.

$$Z = 1.2 X(1) + 1.4 X(2) + 3.3 X(3) + 0.6 X(4) + 1.0 X(5)$$

Where:

- X(1) =working capital / total assets;
- X(2) = retained earnings / total assets;
- X(3) = earnings before interest and taxes / total assets;
- X(4) = market value equity / book value of total liabilities; and
- X(5) = sales / total assets.

According to Altman original business failure prediction model, business with a z-score less than 1.8 implies certainly of imminent failure; a Z-Score between 1.8 and 2.99 is regarded as a gray area where companies are deemed to be at risk and a score greater than 2.99 indicates a potential for long term solvency.

However, the original model is applicable to publicly traded entities (since X4 requires stock price data). And as it is known we do not have a stock market in our country to have the market value for the equity of the contractors in both groups.

Thus rather than simply insert a proxy variable in to an existing model to calculate Z-Scores; we have re estimation of the model, substituting the book values of the equity for the market value in X4. However, all the coefficients will change (not only the new variable's parameter) and that the classification criterion and related cut-off scores will be changed.

From a total sample of eight contactors 5 of them were selected for this analysis. Three of them are from local and the remaining two are from foreign contractors. The Sample size reduction from eight to five is due to the relevance of the contactors for z-score analysis. Previous total sample size was all inclusive like partnership and joint ventures. But for z-score analysis partnership and joint venture contractors were reduced. Then the revised model is used to predict financial distress of local and foreign contractor group.

The result of the revised Z-Score model with a new X4 variable is:

$$Z' = 0.717(X1) + 0.847(X2) + 3.107(X3) + 0.420(X4) + 0.998(X5)$$

Zone of discrimination:  $-Z' > 2.99$  "safe" zone

$1.23 < Z' < 2.99$  "Gray" zone

$Z' < 1.23$  "Distress" zone

## **1.7 SCOPE AND LIMITATION OF THE STUDY**

The research is conducted to evaluate the financial performance of domestic and foreign construction companies. To identify the group in good financial position, as well as, to check whether they are in financial distress or not by using the commonly used financial ratios and Altman's distress score model.

However, since only sample of four from each groups of contractors are taken it may be difficult to generalize the result of this research for a whole construction industry in Ethiopia. To evaluate the financial performance of these construction companies and to test the existence of financial distress the study used Altman's Z-score model and key financial ratios used by John and Ruby (2005) with the exception of earning per share because the information about earning per share was not found in the financial reports that we used.

The other limitation in this study is the unavailability of financial data to apply some other ratios to measure the financial performance of each group.

Because of the nature of the construction industry it is found difficult to use the Altman's cut-off, which is used for manufacturing businesses, and clearly identify the group in financial distress.

Beside lack of some financial information on construction companies, existence of limited research work in related topics is another limiting factor.

## **1.8) ORGANIZATION OF THE PAPER**

This research paper is organized in to four parts. The first part introduces the overall study and how it is made. The second part deals with review of literatures. The third part attempts to measure (analyze) the financial performance of each group and compare to each other and also give analysis based on the results obtained. The last but not the least part summarizes the finding, conclude and recommend on the finding.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1. OVERVIEW OF CONSTRUCTION INDUSTRY**

##### **2.1.1 OVER VIEW OF CONSTRUCTION SECTOR IN ETHIOPIA**

Modern construction is a recent phenomenon in Ethiopia. Especially works undertaken by local contractors had begun in 1968 when some small domestic contractors had emerged. Prior to 1968 most civil works were carried out by foreign contractors through international bidding. During the imperial era, the government took initiatives to build capacity and enhance the competitiveness of domestic contractors through awarding construction projects, especially feeder road projects financed by the World Bank.

After coming in to power of the Dergue in 1974 and the subsequent declaration of socialist economic system, the domestic private construction companies that were mushrooming withered out due to their nationalization. During the Dergue era, construction projects were carried out without competitive bidding by awarding directly to the state owned construction enterprises which operated inefficiently. There was no significant capacity expansion in the construction sector during those years.

The new government which comes in to power in 1991 has introduced policy measures and institutional changes that led to the revival of the participation of the private sector in the construction industry and improvement in the efficiency of government owned enterprises.

Although progresses have been registered in the construction sector in recent years, still a lot remains to be done when one considers the existing road network in relation

to the size of the country and the population; the low level of urbanization; limited number of airport; and the number, distribution, and size of the hydroelectric dams when compared to the huge hydropower potential.

The GDP created in the construction sector exhibited a steady growth during the period 1995/96 to 2005/06. It increased from birr 2012 million in 1995/96 to birr 4526 million in 2005/06 registering an annual average growth rate of 12%. The share of construction sector in total GDP was 3.68% in 1995/96 and it reached 5.24% in 2005/06. (National bank of Ethiopia, annual report 2005/06)

### **2.1.2. PRIVATE SECTORS IN CONSTRUCTION INDUSTRY**

As a result of a change in the economic policy of the country and pursuant to the issuance of the successive investment proclamations, the private sector has been actively participating in the construction industry. The number of domestic and foreign investors that take license for construction investment increased from 102 and 18 respectively in 2001/02 to 160 and 23 respectively in 2005/06 (Ethiopian investment agency, 2006, cited in Girma et.al,2006).

The data obtained from Ethiopian investment agency (2006), as cited in Girma et.al (2006), during 1998/99-2005/06, a total of 795 investment projects (741 domestic and 54 foreign) with a capital of 7.9 billion birr were licensed to operate in the construction sector. These approved projects were believed to create employment opportunities for 41522 permanent employees. The number and investment capital licensed construction investment projects reached its highest in 2005/06 and thus the number of approved projects and the amount of investment capital registered grew by 27% and 140.5%, respectively, in comparison with the preceding year.

Comparison of approved and operational construction investment projects for the aforementioned period reveals that not all construction projects licensed for investment go for operational. A total of 36 construction investment projects (14 domestic and 22 foreign) having a capital of birr 1.4 billion went operational. The 36 domestic and foreign operational construction projects generated employment opportunities for 3652 permanent and 6725 temporary employees (Ethiopian investment agency, 2006, cited in Girma et.al, 2006).

A good deal of the approved private construction investment projects (93%) are domestic ones. However, the private domestic operational construction investment projects are very few in number (39%). (Ethiopian investment agency, 2006, cited in Girma et.al, 2006) A study is required as to why a large number of domestic private investment projects fail to go operational. Such a study is imperative to identify setbacks and remedies and thereby to enhance the participation of Ethiopian private construction firms.

### **2.1.3. NATURE OF THE CONSTRUCTION INDUSTRY**

The construction industry in Ethiopia is characterized by small number of construction firms with limited capacity when compared to the size and need of the country. Not only is the number of construction firms small but also the existing firms are concentrated at the lower level (grade 5 and below) according to the categorization applied in the country (Ethiopian investment agency, 2006, cited in Girma et.al, 2006).

According to the data obtained from the ministry of works and urban development, there were 2671 registered construction contractors at the federal level as of 2005/06. (Ministry of works and urban development, 2006, cited in Girma et.al, 2006) Of these

contractors 1570 (58.7%) are general contractors, contractors that undertake building and road construction activities, 1092 (41%) are building contractors (RC), and the remaining 9 (0.3) are road contractors (RC). There are 7 governments owned contractors (6 GC and 1 RC) that under fall category 1. Out of the total registered contractors, 1619 (61%) have renewed their license for the year 2005/06 (ministry of works and urban development, 2006, cited in Girma et.al, 2006).

The majority of the registered constructors (93%) fall under the category of contractors that are allowed to undertake construction works not exceeding 5 million birr (ministry of works and urban development, 2006, cited in Girma et.al, 2006).

As a result of the low level capacity of Ethiopian construction contractors, big projects such as foreign financed road projects, hydroelectric dams and stations, international airports and terminals, and special and complex buildings are undertaken by foreign contractors. Enhancing the capacity of domestic contractors is, therefore, of importance to reduce the existing excessive dependence on foreign contractors.

The number of registered contractors is increasing over time. In 1997/98 there were 1095 registered contractors at the federal level (Ministry of Economic Development and cooperation, 1998, cited in Girma et.al, 2006). This number grew to 2671 in 2005/06, registering a growth of 144% in 8 years time. This created an additional capacity even though not at a rate enabling to cope up with the demand of the country for expanding construction works. The number of grade 1 contractors of all categories (building contractors, road contractors, and general contractors) capable of undertaking construction works exceeding 20 million birr has increased from 21 in 1997/98 to 52 in 2005/06.

#### **2.1.4 CONTRIBUTION OF CONSTRUCTION INDUSTRY FOR GLOBAL ECONOMY**

Statistical analysis of the data reveals a clear positive relationship between GDP and per capita, and the three separate measures of construction activity:- value added as a percentage of GDP, gross output as a percentage of GDP, and employment as a percentage of EAP (Well J. 1986).

The construction industry accounts for around one-tenth of the world's gross domestic product, seven percent of employment, half of all resource usage and up to 40 percent of energy consumption. This industry has a profound impact on our daily lives: the buildings we live and work in, the roads and bridges we drive on, the utility distributions systems we use, the railways, airports we travel and trade from are all products of this vital industry.

Construction is a vital form of economic activity. In the industrialized countries value-added in construction commonly accounts for some seven per cent of gross domestic product (GDP). As a large percentage of inputs to the sector are 'bought-in' from other sectors of the economy (notably the building materials industries) gross output may be double this figure. As much as ten percent of the labor is commonly employed in the construction and building materials, which may in fact be the biggest employer of any single industry or service sector (Well J. 1986).

In poorer and less developed countries the construction sector appears at first sight to occupy a less important place within the economy as whole. Thus value added in construction in Tanzania in 1983 amounted only 3.8 percent of GDP; in Kenya it was five percent and in Ethiopia it was 4 percent. It must be remembered, however, that in

these countries the manufacturing sectors also is little developed. So construction may still be the largest single employer outside of agriculture. Also it should be noted that much of the construction activity that takes place in countries such as Kenya and Tanzania is of a kind that is simply not counted in official statistics- traditional construction around the fringes of the monetary economy (Well J. 1986).

The products of the construction sector differ widely in terms of size, appearance, location and in terms of end-use. In many of the least developed countries in the world today as much as one half of the total construction output may be in civil-engineering projects ( roads, railways, ports, dams, power stations, drainage projects or water supplies) forming the basic infrastructure that is so vital to all other forms of economic and social activity (Well J. 1986).

#### **2.1.5. INTERNATIONALIZATION OF CONSTRUCTION COMPANIES**

Faiza A. (2002) used two measures, to measure the volume of international construction, these are: regional spending figures from the annual review of the construction market; and spending on construction activities as a percentage of a country's GDP. Regional spending figures offer an overview of the volume of the global construction industry, while the GDP percentages are a measure at the country level that highlights pattern of growth in the industry and its importance as an economic performer.

As the country develops economically, construction spending as a percentage of GDP increases. But when the country reaches the stage of industrialization, its spending as a percentage of GDP decreases. In the research it is indicated that international

construction companies are more likely to target developing nations than industrialized economies for their overseas operations (Faiza A. 2002).

Faiza A. (2002) in her paper she indicated that the nature of competition in the market has a set of trend of a small number of established firms that dominate and will continue dominating the global construction market. In their effort to continue dominating the global construction market, multinational companies use strategies of mergers and acquisition of local firms, joint venture with local contractors, national consortia or foreign direct investment to globalize their construction operations Faiza A. (2002). And also According to Frank T. and Sam C. (2004) most foreign construction firms come in to existence as a form of joint venture with the previously domestic companies. Joint ventures sometimes mature in to formal merger. They also pointed out that Size gives confidence to the clients in the capability of the company.

In the construction industry services sector for example, developing countries protect their domestic markets by enforcing polices on foreign direct investment. In advanced economies, professional licensing is another form of protectionism for the domestic markets its human capital intensity.

In the construction industry, technological knowledge is a comparative advantage, yet it remains part of the construction process that is relatively human and capital-intensive and is highly reliant on economies of scale.

The physical assets and knowledge of developed countries when coupled with abundant and cheap labor of the developing countries explain why construction companies are able to enter and compete in developing nations. At the international

level, the construction market is dominated by a few major players from USA and Europe who are seen to continue to dominate the market (Faiza A. 2002).

#### **2.1.6. PERFORMANCE OF CONSTRUCTION INDUSTRY**

John and Ruby (2005) in their study of construction firms going insolvency or seeking opportunity, they used financial accounting ratios and distress scoring and found that the financial performance of most contractors in Hong Kong have been deteriorating very fast in the past few years. The results of all financial ratios, together with the prevailing situation of over competition, inelasticity of construction costs and reduced aggregate demand in Hong Kong, has revealed the difficulty of changing the cost structure in Hong Kong and there are no means to lower the wage rates of construction labor and to lower the costs of imported construction materials.

Hence, due to the contrast, the profit margin of contractors has been entirely eroded and will remain so in the near future. Finally the researchers suggested that the Hong Kong Government should help by regulating the market and the industry in the following ways:

- Opening opportunities of construction work across the border for construction firms in Hong Kong; and
- Aid the industry in cutting construction costs.

Frank T. and Sam C. (2004) attempted to analyze the financial performance of the bidder and target companies in the UK construction industry by measuring the return after and before the merger announcement day. And they did investigated that, in the construction industry, related take-overs generate significant positive gains for the target firm shareholders. However, the marketplace appears to generally question the

gains from related mergers for the bidding firm as reflected in the effect of a merger announcement on acquirer's stock price. The main increase in abnormal returns for target shareholders occurred on the day before the announcement and on the day of the announcement.

Though we are trying to analyze the relative financial performance of domestic and foreign contractors, there are researches made on the factors that influencing the contractor overall performance. Hong X. and David P. (2003) identified Contractor performance is critical for the success of construction project as it is contractors who convert designs into practical reality. Thus Improved contractor performance leads to increased client satisfaction, an improvement in the reputation of contractors and hence their competitiveness in the market.

On the same research the contractor performance is defined to embrace construction cost, construction time, construction quality and sustainable development, the philosophy being that the achievement of one aspect of performance should not be at the expense of another. Multiple regression analysis reveals that overall contractor performance is dependent on: their past performance on previous similar projects; their commitment towards lifetime employment; their perceived importance of time performance; their relationships with subcontractors; and the number of design variations during construction. Hong X. and David P. (2003)

To improve their overall performance, contractors are advised to focus on construction time, reduce delays, maintain a stable workforce and establish partnership with their sub contractors. And also clients should reduce design variations during construction.

Amidu et al (2006) examined the investment performance of listed property and construction companies from 1998 to 2005 with a view to developing their competitive and comparative advantage in attracting investment. The risk-adjustment performance of the companies, assessed through Sharpe ratios, show that both property and construction companies do not perform better than stocks, but, nevertheless, do offer diversification possibilities due to their low correlation with the stock market.

Peter E.D. and Gary D. (2000) identified from their research that, Construction business performance measurement (BPM) is myopic (lack of foresight), most often being project-specific, profit-orientated, and neglecting broader "stakeholder" issues. Construction BPM tends to rely on "traditional" (bottom-line) performance measures, such as efficiency, return on capital employed, and profitability. If construction organizations are to remain competitive in the longer term, they need to develop and better understand their relations with their customers, suppliers, employees, lenders and the wider community.

Hence, according to Peter E.D. and Gary D. (2000) performance measurement must include these broader business characteristics. The need for a shift in "orthodox" (BPM) beliefs from "basic" performance measurement, to an alternative "stakeholder perspective measurement" (SPM), is underlined. They found that Stakeholder perspective measurement (SPM) will adequately consider relations with customers, suppliers, employees, financiers, and the wider community; all being critical for a business's long-term viability.

Peter E.D. and Gary D. (2000) concluded that construction organizations should reject this traditional strategic thinking, and better consider the interests of their

stakeholders, both economically and morally. This approach should be addressed by the development of a serious stakeholder perspective to business performance measurement, so that construction organizations can be monitored and judged in a socially acceptable manner. However, since our focus is on measuring financial performance of domestic and foreign construction companies in Ethiopia, we will use the so called traditional BPM.

### **2.1.7. PROBLEMS IN THE CONSTRUCTION INDUSTRY**

One of the most important problems in the construction industry is delays. Delays occur in every construction project and the magnitude of these delays varies considerably from project to project. Some projects are only a few days behind schedule; some are delayed by over a year. So it is essential to define the actual causes of delay in order to minimize and avoid delays in any construction project.

Wa'el et.al (2007) done a research and find out that financial problems are the main factor and coordination problems are the second most important factor causing delay in construction projects in Malaysia. The results were analyzed to rank the causes of delay and further classify the types of delay.

According to Florence L. and Hwee L.( 2007) while they study foreign firms' financial and economic risk in china they identified that there are a number of economic and financial risks affecting foreign firms that operate in China's construction industry. Of these, the risks that occur frequently and are severe are found to be: labor and material price fluctuation; and contractors/subcontractors' default.

## **2.2. RATIO ANALYSIS**

A ratio is a relationship that indicates something about a company's activities, such as the ratio between the company's current assets and current liabilities or between its accounts receivable and its annual sales. The basic source for these ratios is the company's financial statements that contain figures on assets, liabilities, profits, and losses. Ratios are only meaningful when compared with other financial information.

Since they are most often compared with industry data, ratios help an individual understand a company's performance relative to that of competitors and are often used to trace performance over time. Financial analysis can reveal much about a company and its operations. However, there are several points to keep in mind about ratios.

First, a ratio is a "flag" indicating areas of strength or weakness. One or even several ratios might be misleading, but when combined with other knowledge of a company's management and economic circumstances, financial analysis can tell much about a corporation. Second, there is no single correct value for a ratio. The observation that the value of a particular ratio is too high, too low, or just right depends on the perspective of the analyst and on the company's competitive strategy. Third, financial ratios are meaningful only when compared with some standard, such as an industry trend, ratio trend, a trend for the specific company being analyzed, or a stated management objective ([www.Ventureline.com](http://www.Ventureline.com)).

In trend analysis, financial ratios are compared over time, typically years. Year-to-year comparisons can highlight trends and point up the need for action. Trend analysis works best with five years of ratios. The second type of ratio analysis, cross-sectional analysis, compares the ratios of two or more companies in similar lines of business.

### **2.3. Z-SCORE MODEL**

The Z-Score is a linear analysis in that five measures are objectively weighted and summed up to arrive at an overall score that then becomes the basis for classification of firms into distressed and non distressed.

New York University Professor Edward Altman introduced the Z-score formula in the late 1960s. Rather than search for a single best ratio, Altman built a model that distills five key performance ratios into a single score. As it turns out, the Z-score gives investors a pretty good snapshot of corporate financial health. (Www. Investopedia.com)

#### **2.3.1. ORIGINAL Z-SCORE MODEL**

According to Altman original business failure prediction model, business with a z-score less than 1.8 implies certainly of imminent failure; a Z-Score between 1.8 and 2.99 is regarded as a gray area where companies are deemed to be at risk and a score greater than 2.99 indicates a potential for long term solvency.

The final analysis discriminant analysis function is as follows:

$$Z = 1.2(X1) + 1.4(X2) + 3.3(X3) + 0.6(X4) + 1.0(X5)$$

Where:

Z = score

X1= Working Capital/Total Assets

X2= Retained Earnings/Total Assets

X3= Earnings Before Interest & Tax/Total Assets

X4 = Market Value of Equity/Total Liabilities

$$X5 = \text{Sales/Total Assets}$$

Note that the model does not contain a constant (Y-intercept) term. This due to the particular software utilized and, as a result, the relevance cutoff score between the two groups is not zero. Other software program, like SAS and SPSS, have a constant term, which standardizes the cutoff score at zero if the sample sizes of the two groups are equal (Max h ,2000).

### **X1, Working Capital/ Total Asset**

The working capital/ total asset ratio, frequently found in studies of corporate problems, it is a measure of the net liquid assets of the firm relative to the total capitalization. Working capital is defined as the difference between current assets and current liabilities. Liquidity and size characteristics are explicitly considered. Ordinarily, a firm experiencing consistent operating losses will have shrinking current asset in relation to total assets. Of the three liquidity ratios evaluated, this one proved to be the most valuable. Two other liquidity ratios tested were the current ratio and the quick ratio. There were found to be less helpful and subject to perverse trends for some failing firms.

### **X2, Retained Earnings/ Total Assets (RE/TA)**

Retained Earnings is the account which reports the total amount of reinvested earnings and/ or losses of a firm over its entire life. The account is also referred to as earned surplus. It should be noted that the retained earnings account is subject to “manipulation” Via corporate quasi-reorganization and stock dividend declarations. While these occurrences are not evident in this study, it is conceivable that a bias

would be created by a substantial reorganization or stock dividend and appropriate readjustments should be made to the account.

This measure of cumulative profitability over time is what I referred to earlier as a “new” ratio. The age of the firm is implicitly considered in this ratio. For example a relatively young firm will probably show a low RE/TA ratio because it has not had time to build up its cumulative profits. Therefore, it may be argued that the young firm is somewhat discriminated against in this analysis, and its chance of being classified as bankrupt is relatively higher than that of another older firm. But, this is precisely the situation in the real world. The incidence of failure is much higher in the firm’s earlier years.

In addition, the RE/TA ratio measures the leverage of a firm. Those firms with high RE, relative to TA, have financed their assets through retention of profits and have not utilized as much debt.

### **X3, Earnings before Interest and Taxes/Total Asset (EBIT/TA)**

This ratio is a measure of the true productivity of the firm’s assets, independent of any tax or leverage factors. Since a firm’s ultimate existence is based on the earning power of its assets, this ratio appears to be the particularly appropriate for studies dealing with corporate failure. Furthermore, insolvency in a bankrupt sense occurs when the total liabilities exceed a fair valuation of the firm’s assets with value determined by the earning power of the assets. As we will show, this ratio continually out performs other profitability measures, including cash flow.

### **X4, Market Value of Equity/ Book Value of Total Liability (MVE/TL)**

Equity is measured by the combined market value of all shares of stock, preferred and common, while liabilities include both current and long term. The measure shows how much the firm's asset can decline in value (measured by market value of equity plus debt) before the liabilities exceed the asset and the firm becomes insolvent. For example, a company with a market value of its equity of \$ 1000 and debt of \$ 500 could experience a two-thirds drop in asset value before insolvency. However, the same firm with \$250 equity will be insolvent if assets drop only one-third in value. This ratio adds a market value dimension which most other failure studies did not consider. The reciprocal of D is slightly modified version of one of the variables used effectively by Fisher (1959) in a study of corporate bond yield-spread differentials. It also appears to be a more effective predictor of bankruptcy than a similar, more commonly used ratio; net worth/total debt (book value). At a later point, we will substitute the book value of net worth for the market value in order to derive a discriminant function for privately held firms ( $Z'$ ) and for non-manufacturing ( $Z''$ ).

More recent models, such as the KMV approach, are essentially based on the market value of equity and its volatility. The equity market value serves as a proxy for firm's asset values.

#### **X5, Sales/Total Asset (S/TA)**

The capital turnover ratio is a standard financial ratio illustrating the sales generating ability of the firm's asset. It is one measure of management's capacity in dealing with competitive conditions. This final quit important because it is the least significant ratio on an individual basis. In fact, based on the univariate statistical significant test, it would not have appeared at all. However, because of its unique relationship to other variables in the model, the sale/total asset ratio ranks second in its contribution to the

overall discriminating ability of the model. Still, there is a wide variation among industries in asset turnover, and we will specify an alternative model ( $Z'$ ) without  $X_5$  at a later point.

### 2.3.2 REVISED ALTMAN MODEL

The revised Altman model substitutes the book values of equity for the market value in  $X_4$ . The result of the revised Z-Score model with a new  $X_4$  variable is:

$$Z' = 0.717(X_1) + 0.847(X_2) + 3.107(X_3) + 0.420(X_4) + 0.998(X_5)$$

Zone of discrimination:  $- Z' > 2.99$  "safe" zone

$1.23 < Z' < 2.99$  "Gray" zone

$Z' < 1.23$  "Distress" zone

The equation now looks different than the earlier model; note, for instance, the coefficient for  $X_1$  went from 1.2 to 0.7. But the model looks quite similar to the one using market values.

The actual variable that was modified,  $X_4$ , showed a coefficient change to 0.42 from 0.6 that it now has less of an impact on the Z-score.  $X_3$  and  $X_5$  are virtually unchanged.

The revised model becomes a model with wider gray area (ignorance zone); since the lower boundary becomes 1.23 as opposed to 1.81 for the original Z-score model. All of this indicated that the revised model is probably somewhat less reliable than the original, but only slightly less. Due to lack of a private firm data base, we have not

tested this model extensively on secondary sample distressed and non distressed entities (Max h, 2000).

## **CHAPTER THREE**

### **DATA ANALYSIS AND INTERPRETATION**

#### **3.1. INTRODUCTION**

This chapter analyzes and interprets the eight sample financial data of firms in the construction industry by taking four from local and four from foreign contractors operating in Ethiopia. To measure the financial performance trend and for comparison of financial performance of local and foreign contractors, the paper used the same ratios used by John and Ruby (2005) with the exception of earning per share because the information about earning per share was not found in the financial reports that we used. The ratios are chosen on the basis of their popularity in the literature and their potential relevance to the study. The computed financial ratios enable to judge whether the local or the foreign contractors are performing better, as well as, shows the overall trend of financial performance of each group independently.

To support the above ratios and to avoid possible ambiguities in the evaluation of relative performance, Z-Score, which uses multiple discriminant analysis as the appropriate statistical tools, was used. The computed z-scores of three local and two foreign contractors are compared with each other to identify the group in a better financial position, and also compared against the predetermined zone of discrimination.

#### **3.2 PROFITABILITY**

Profitability ratio measures the company's ability to generate a return on its resources.

On this analysis the following four ratios are used to measure profitability of each

group and to compare each other. An increase in the ratios is viewed as a positive trend.

### **3.2.1 GROSS PROFIT MARGIN**

Gross profit margin indicates how well the company can generate a return at the gross profit level. It indicates three areas – Inventory control, pricing and production efficiency.

Referring to table-3.1 we can see that from the price the local contractors charge their customers, at least 87% is consumed by construction costs and this figure may go up to 94% at some year. The table also shows that almost all contractors except contractor FH of the foreign group are performing better than the local group.

Year 2006 was not good in terms of gross profit margin for majority of the companies in both groups. This may be as a result of economic decline during the period.

Generally we can say that the trend of gross profit margin of the foreign and local group is improving throughout the period under study.

As figure-3.1 clearly shows the comparison of the two groups, foreigner contractors are superior over local contractors with their gross profit margin.

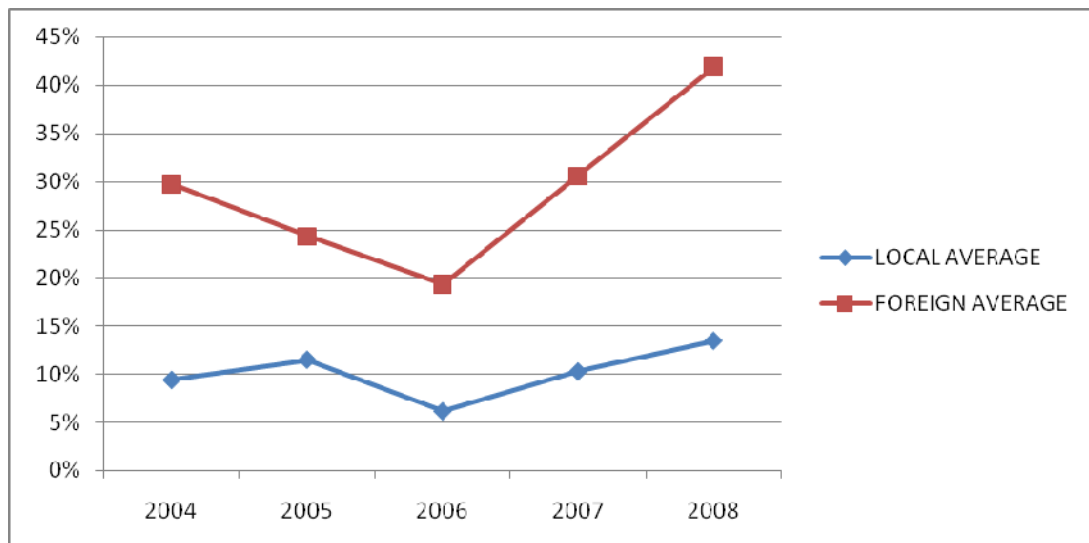
This absolutely indicates that the foreign contractors are superior over domestic contractors in terms of production efficiency, pricing of their work and in inventory management and these three factors leads to a higher profit margin.

**TABLE-3.1** Gross profit margin of local and foreign contractors

GROSS PROFIT MARGIN					
COMP/YEAR	2004	2005	2006	2007	2008
LA	14.3%	17.1%	14.3%	20.4%	21.5%
LB	13.6%	11.7%	9.3%	8.9%	11.8%
LC	5.3%	11.2%	-1.5%	8.0%	9.9%
LD	4.4%	5.9%	2.5%	3.7%	10.7%
AVERAGE	9.4%	11.5%	6.1%	10.3%	13.5%
FE	30.9%	25.2%	25.4%	25.1%	25.6%
FF	61.0%	25.6%	5.4%	28.2%	35.2%
FG	46.1%	49.8%	45.3%	35.9%	37.4%
FH	-19.2%	-3.4%	1.2%	33.1%	69.3%
AVERAGE	29.7%	24.3%	19.3%	30.6%	41.9%

Source- computed by the researcher

**FIGURE-3.1** GROSE PROFIT MARGIN



### **3.2.2 NET PROFIT MARGIN**

NPM shows how much after-tax profits are generated by each dollar of sales. Out of four samples of local contractors two of them were in a negative net profit margin during the year 2004 and the remaining two were on their top performance during the same period. When the companies who were in a negative net profit margin manage and reverse the result on 2005, contractor LA&LB's net profit margin showed a decline for two consecutive years. On 2006 contractor LC reached its largest negative net profit margin and continued in negative net profit for 2007 and finally both contractors got out from negative on 2008.

For company LA &LB, though, net profit was increasing it was not increasing in the same rate as the increase in sales. And this caused a decline in net profit margin throughout the period under study.

Thus, because of poor performance of contractor LC & LD the average net profit margin for local contractor was positive only on 2005 &2008, where contractor LC&LD scored positive net profit margin.

When we analyze the foreign group here also only contractor FE & FG stayed positive throughout the period under study. Contractor LD'S trend shows improvement, however, contractor FG's result shows deterioration throughout the period under study.

While comparison of foreign and local contractors in terms of their gross profit margin it was identified that the foreign groups are superior because of their superiority in pricing, inventory control, and production efficiency. However, the superiority didn't

last in the case of net profit margin. This is because of their higher operating expenses that they incur during operation.

**TABLE-3.2** Net profit margin of local and foreign contractors

NET PROFIT MARGIN					
COMP/YEAR	2004	2005	2006	2007	2008
LA	3.4%	3.2%	3.0%	3.4%	3.8%
LB	5.8%	3.7%	2.6%	1.9%	4.2%
LC	-10.8%	6.5%	-13.6%	-1.7%	0.2%
LD	-0.5%	1.5%	-3.2%	-4.6%	1.2%
AVERAGE	-0.5%	3.7%	-2.8%	-0.3%	2.4%
FD	1.3%	2.8%	2.6%	5.8%	6.9%
FE	-16.7%	4.6%	-50.6%	-3.8%	4.4%
FG	11.8%	13.6%	10.0%	6.7%	7.7%
FH	-37.7%	-16.3%	-12.5%	22.2%	62.6%
AVERAGE	-10.3%	1.2%	-12.6%	7.7%	20.4%

*Source- computed by the researcher*

### **3.2.2.1. Variability of Local Contractor’s Net Profit Margin**

The variability between the net profit margins of local contractors was checked by using one way ANOVA. The result revealed there is a significant difference between the net profit margins of the local contractors. The cause for variability is checked by Host hock test and the result indicated that the cause for the difference is contractor LC’s low financial performance in different years (annex-1).

**TABLE-3.3:** One way ANOVA to test variability b/n local contractors NPM

**ANOVA**

Company

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.020	3	.007	3.428	.043
Within Groups	.031	16	.002		
Total	.051	19			

*Source-annex-1*

### 3.2.2.2. Variability of Foreign Contractor’s Net Profit Margin

However, when the variability between foreign contractors is checked by using the same statistical model, it is found that, there is no statistical significant variation between the net profit margins of foreign contractors.

**TABLE-3.4:** One way ANOVA to test variability b/n foreign contractors NPM

**ANOVA**

ForCompan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.138	3	.046	.878	.473
Within Groups	.837	16	.052		
Total	.974	19			

*Source-annex-2*

### 3.2.2.3. Variability between Local and Foreign Contractors

The test of the variability between the two groups revealed that, there is no significant difference between the two group’s net profit margins. This is because of the comparative high performance of foreign contractors in gross profit and the

comparative high performance of local contractors in operating costs. These comparative advantages of the groups made the net profit margins of the two groups to be almost similar.

**TABLE-3.5:** Independent sample t-test for variability b/n local & foreign contractor

Independent Samples Test									
	Levene's Test for quality of Variance		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Compan Equal varianc assumed	7.640	.009	-.148	38	.883	.0077000	.0519412	128494	0974494
Equal varianc not assumed			-.148	20.981	.884	.0077000	.0519412	157236	1003236

*Source-annex-2*

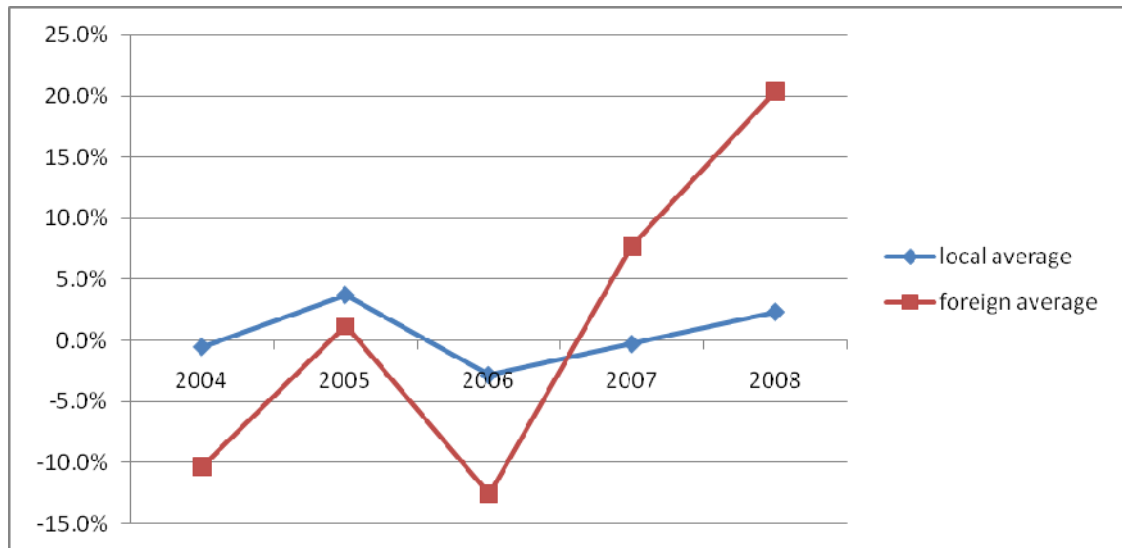
By looking at figure-3.2 we can see up and down in both group's NPM, and also scoring negative net profit margin because of the loss incurred by the some contractors.

The major thing that we recognized here is that the foreign contractors are superior in their gross profit margin, which comes as a result of pricing, inventory control, and production efficiency. And the local contractors are better than the foreigner contractors in their operating cost management.

Companies in both foreign and local groups that have incurred a negative net profit margin are those who didn't generate sales revenue to cover construction and administrative costs.

**FIGURE-3.2**

**NET PROFIT MARGIN**



*Source- computed by the researcher*

The foreign contractor's average trend showed intense increments, because of one contractor's (FH's) intense increase in net profit margin during the last two periods.

**3.2.3 RETURN ON EQUITY (ROI)**

This is also called return on investment (ROI). It determines the rate of return on the invested capital. It is used to compare investment in the company against other investment opportunities such as stocks, real estate, savings, etc. There should be a direct relationship between ROI and risk (i.e. the greater the risk, the higher the return).

Referring to table-6 ROI ranges from a loss of 198% to a profit of 1979%. Contractor LA's ROI showed improvement throughout the period because of both improvement in EBIT and because of the magnitude of increase in stockholder's equity was less than the magnitude of increase in EBIT.

Contractor LB's ROI was at its maximum during 2004 but deteriorated for three consecutive years as a result of decrease in EBIT and increase in total equity during the same periods. But it reversed the trend on 2008 by scoring its greatest EBIT and its second greatest ROI by generating 129% greater EBIT than the previous year, even if the equity increased by 26% from the previous period.

Contractor LC's ROI were negative for 3 out of 5 years. It is because of the loss that is incurred on 2004, 2006, and 2007. Contractor's highest ROI were scored on 2005. And on 2008 the contractor get out from the loss, however, it wasn't that much satisfactory when it is compared with other local contractor's EBIT during the same period.

Local contractor's returns on equity were positive only on 2005 and 2008. When this result is compared with the return from other investments, it can be classified as risky. But when we see contractor LA & LB's trend of ROI individually, their returns were interesting. On the reverse contractor LD's return on equity is very scary.

When we come to the foreign group, the trend shows improvement for contractor FE&FF and the table also shows a positive EBIT for contractor FG throughout the period in a decreasing manner unlike other contractors under consideration, who are improving their ROI though out the period under study. The reason for decreasing in return on equity for contractor FG is because it couldn't increase its EBIT with the same rate as that of an increase in equity.

The average of foreign contractors' shows an increasing trend except on 2007, where a decrease in ROI is shown, but it is still satisfactory when it is compared with other investment returns in different industries like saving.

Generally as figure-3.3 shows the foreign contractors were able to generate a higher and positive ROI throughout the period in an increasing manner. However, local contractors showed an up and deep down in their ROI and also showed a negative ROI frequently. This in turn implies that the return that the local contractors generate is unpredictable that means it is risky to invest in local contractors. This is just to mean that you may get a return of 1979% on your investment if you are ready to tolerate a loss of 198% on your investment. This means both the return and loss may be higher in any case. But the foreign contractor's trend shows improvement and it is less risky when it is compared with the locals.

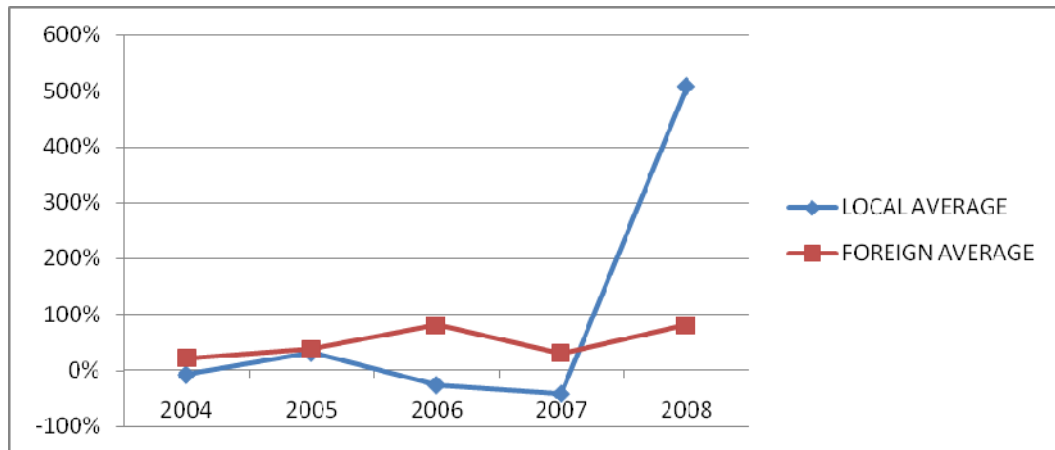
**TABLE-3.6:** Return on equity of foreign and local contractors

RETURN ON EQUITY					
COMP/YEAR	2004	2005	2006	2007	2008
LA	13%	17%	17%	19%	19%
LB	55%	26%	22%	16%	30%
LC	-7%	5%	-18%	-4%	1%
LD	-93%	77%	-125%	-198%	1979%
<b>AVERAGE</b>	<b>-8%</b>	<b>31%</b>	<b>-26%</b>	<b>-42%</b>	<b>507%</b>
FE	-12%	0%	143%	115%	102%
FF	-18%	70%	117%	29%	84%
FG	42%	50%	43%	32%	22%
FH	75%	31%	20%	-51%	116%
<b>AVERAGE</b>	<b>22%</b>	<b>38%</b>	<b>81%</b>	<b>31%</b>	<b>81%</b>

*Source- computed by the researcher*

**FIGURE-3.3**

**RETURN ON EQUITY**



**3.2.4 RETURN ON ASSET**

Measures how effectively the company employs its asset to generate return. It is an indicator of true productivity of the contractor's asset in generating returns.

Table-3.7 shows that Return on Asset for contractor LA & LB were deteriorating, even if they stayed positive. However, contractor LC & LD were in a negative in 2004 and turned to positive in 2005 but back to negative in 2006 & 2007 for two consecutive years. The return on asset for contractor LB seems extra ordinary because it has employed minimum asset on 2004 and gained 2<sup>nd</sup> largest EBIT of the period under study. But on the following consecutive years the asset employed by contractor LB increased when EBIT decreased during all the periods except on 2008 and this made the ratio to decrease.

The average of local contractors shows that the year 2005 was the period, where local contractors generated a greatest return as a ratio of the asset they employed. But this result deteriorated on 2006 & 2007 and finally showed improvements on 2008.

When we come to the foreign group, contractor FE &FH showed improvement. This is because of the rate of increase in EBIT was greater than the rate of increase in the total employed asset. For contractor FH the first three years was a loss period because of its higher construction cost. But through time it reduced its construction cost by improving inventory control & production efficiency. As a result it improved its EBIT and finally got out of negative on 2007. Additionally the contractor reduced its employed fixed asset by 91% and its total asset by 41% from the previous year (2007) and this made the return on asset ratio to move-up to 102%.

The result of each sample contractor in a foreign group has made a great effect on the average that is why we saw the average getting in to negative and positive from year to year.

TABLE-3.7: Return on asset of foreign and local contractors

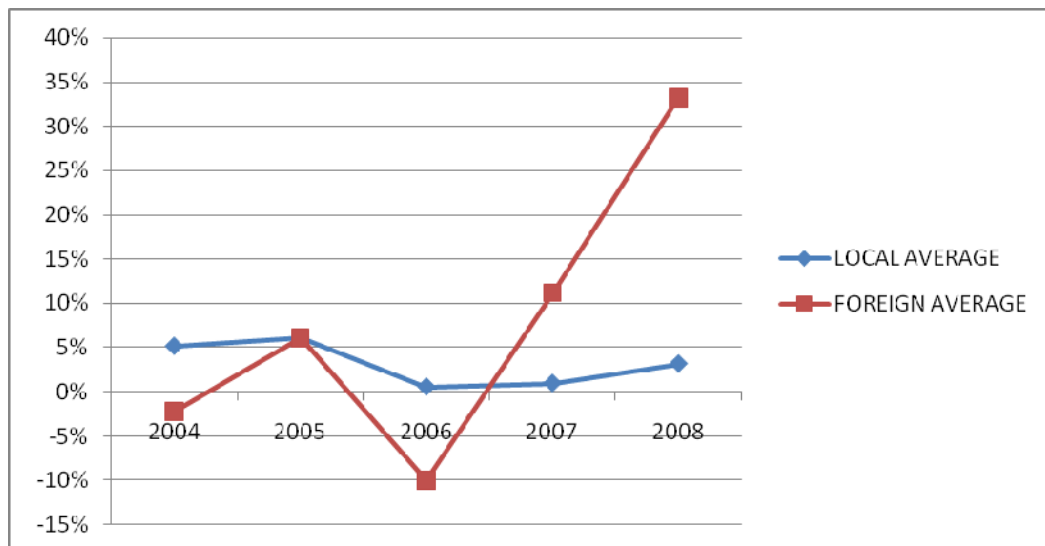
RETURN ON ASSET					
COMP/YEAR	2004	2005	2006	2007	2008
LA	2.8%	2.5%	2.0%	2.2%	2.5%
LB	24.2%	16.4%	7.1%	4.5%	8.3%
LC	-4.3%	3.5%	-4.5%	-0.9%	0.1%
LD	-1.9%	2.2%	-2.3%	-1.9%	1.9%
<b>AVERAGE</b>	<b>5.2%</b>	<b>6.2%</b>	<b>0.6%</b>	<b>1.0%</b>	<b>3.2%</b>
FE	0.4%	1.5%	2.3%	6.0%	6.2%
FF	-16.7%	7.6%	-50.6%	-3.8%	17.7%
FG	25.6%	28.6%	19.9%	13.0%	7.1%
FH	-18.2%	-13.1%	-11.5%	29.8%	102.2%
<b>AVERAGE</b>	<b>-2.2%</b>	<b>6.2%</b>	<b>-10.0%</b>	<b>11.2%</b>	<b>33.3%</b>

*Source- computed by the researcher*

The overall trend of the two averages on figure-3.4 shows that decreasing for the local contractors and improvement for foreign contractors. An early better performance of ROA for local contractors mostly came as a result of the minimum asset employed by them not because of generating greater net profit.

However, the return on equity of both groups needs improvement, especially for those companies in a loss in both groups.

**FIGURE-3.4** **RETURN ON ASSET**



### **3.3 TOTAL ASSET TURNOVER**

Measures the amount of sales generated for every dollar's worth of asset. It measures the firm's efficiency at using its assets in generating sales or revenue-the higher the number the better. It also indicates pricing strategy: companies with low profit margins tend to have high asset turnover, while those with high profit margins have low asset turnover.

Referring to Table-3.8 from the four selected local contractors, contractor LB & LD's total asset turnover shows higher ratios. These means these two contractors by using their employed asset, did generated higher revenues compared to others in the same group. And this made the ratio bigger.

The ratio for contractor LD shows a decrease for three consecutive years. This is just because of the decrease in sales revenue in these three years and an increase in total asset in 2007. However, sales increased by 61% on 2008 from previous year and assets employed decreased by 4% and this collectively reversed the trend by improving the turnover by 69% from the previous period.

The turnover trend for company LB shows intense decrease throughout the period under study except on 2005. The increase in 2005 was not resulted from sales; rather it comes from decrease in asset employed. But the decrease in the turnover since 2006 was because of the intense increase in the asset employed by the contractor in each year, even if the sales increased during these periods in the same direction.

The trend of turnover for foreign companies shows improvement for all except contractor FG. For contractor FG sales have been increasing from year to year, the only year that shows deterioration in sales is 2008. Though sales have been increasing, the ratio was forced to decrease as a result of increase in an employed asset. That means the contractor couldn't improve its sales in the same rate as that an asset increased.

The other three contractors of the foreign group do generated the higher amount of sales than the additional employed asset.

The combination of the four sample foreign contractors in the group made the average to improve throughout the study period.

TABLE-3.8: Total asset turnover of local and foreign contractors

TOTAL ASSET TURNOVER					
COMP/YEAR	2004	2005	2006	2007	2008
LA	0.58	0.46	0.47	0.46	0.51
LB	2.90	3.10	1.94	1.68	1.38
LC	0.40	0.53	0.33	0.52	0.58
LD	1.28	1.13	0.72	0.61	1.03
<b>AVERAGE</b>	<b>1.29</b>	<b>1.30</b>	<b>0.87</b>	<b>0.82</b>	<b>0.87</b>
FE	0.18	0.37	0.63	0.72	0.83
FF	0.27	1.52	0.36	0.70	0.74
FG	1.51	1.47	1.38	1.34	0.92
FH	0.48	0.80	0.92	1.34	2.98
<b>AVERAGE</b>	<b>0.61</b>	<b>1.04</b>	<b>0.82</b>	<b>1.03</b>	<b>1.37</b>

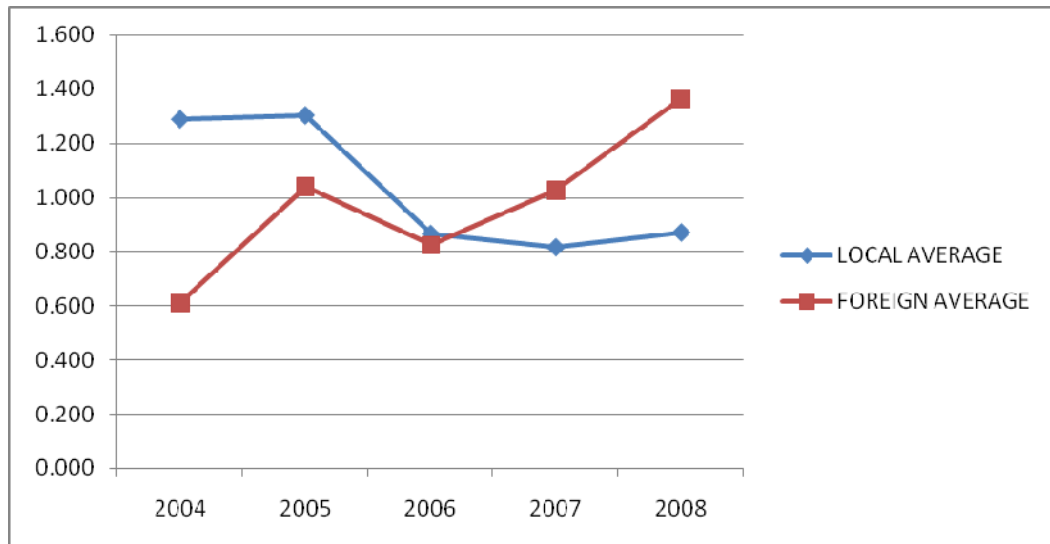
*Source- computed by the researcher*

The comparison of the asset turnover of the two averages shows that with minimum asset level the local contractors were superior in their asset turnover, however when time goes and the amount of the asset employed increases, every employed assets of foreign contractors generate a greater sales than the local contractors.

Thus the overall figure shows that local contractors need to be more efficient in generating revenue by using their employed assets to cope-up with foreign contractors. This may be done by using different mechanisms like pricing and winning contracts.

FIGURE-3.5

TOTAL ASSET TURNOVER



### 3.4 CURRENT RATIO

These ratio gauges how capable a business is in paying current liabilities by using current asset only. It is also called working capital ratio.

Referring to table-3.9 contractor LA is the one with the lowest current asset ratio among the local contractor group. This is because 73% of the contractor LA's total asset is tied-up in fixed asset during 2004 and 66% on 2005. But through time the contractor improved its current ratio from 0.51 on 2004 to 0.76 on 2008 by increasing its current asset through time. The contractors in the local group have a current ratio of more than 1 except contractor LD. The overall trend for local group shows that contractors with low current ratio showed improvement while those with higher current ratio deteriorated throughout the period.

The average of local contractor's current ratio is greater than 1 even if it reduced. This intern guarantees that the local contractors are capable of paying their current liabilities by using current asset only.

For the foreign contractors group, in table-3.9 only contractor FG had a current ratio of greater than 1 during 2004 and 2005. During these periods the contractor's current asset was about 50% of the total asset. However current assets as a percentage of total assets deteriorated and reached to 35% of total asset, while current obligations increased in an increasing rate. As a result the company's current asset lost its ability to cover current obligation.

The overall trend of foreign contractors' ability to cover current obligation by using current asset reduced during the period under study.

**TABLE-3.9:** Current ratio of foreign and local contractors

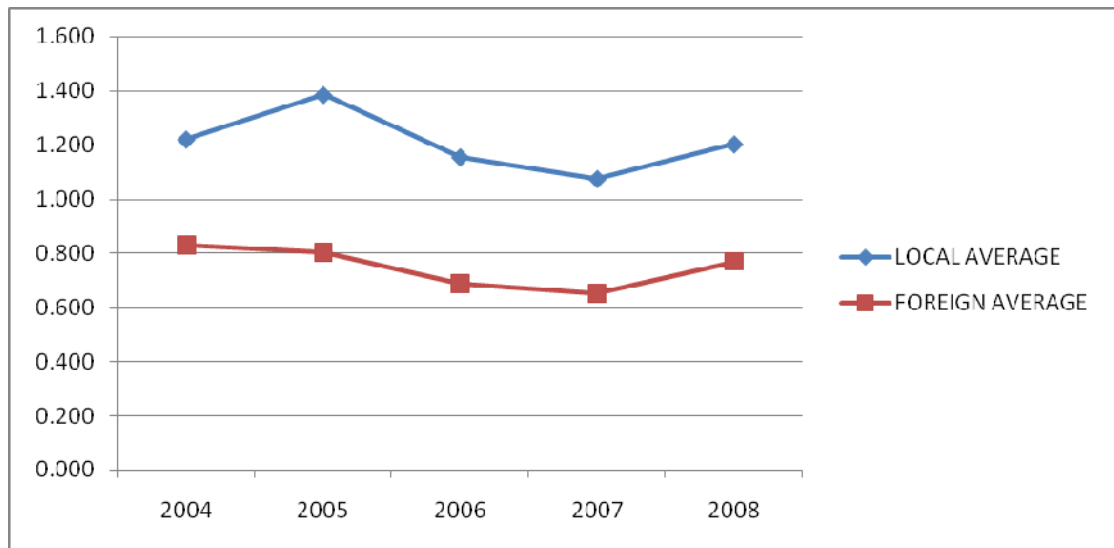
CURRENT RATIO					
COMP/YEAR	2004	2005	2006	2007	2008
LA	0.51	0.58	0.78	0.75	0.76
LB	1.26	1.10	1.10	1.06	1.12
LC	2.23	2.93	1.83	1.66	1.98
LD	0.88	0.93	0.91	0.82	0.95
<b>AVERAGE</b>	<b>1.22</b>	<b>1.38</b>	<b>1.15</b>	<b>1.07</b>	<b>1.20</b>
FE	0.87	0.81	0.75	0.81	0.77
FF	0.54	0.86	0.67	0.61	0.71
FG	1.41	1.11	0.87	0.72	0.64
FH	0.48	0.43	0.45	0.47	0.96
<b>AVERAGE</b>	<b>0.83</b>	<b>0.80</b>	<b>0.69</b>	<b>0.65</b>	<b>0.77</b>

*Source- computed by the researcher*

The comparison of foreign and local contractors in terms of liquidity is shown on the figure-6 below.

The graph shows that the local contractors are capable of paying their current obligations by using their current asset unlike the foreign contractors. Therefore, it is recognized that local contractors are more liquid than the foreign contractors.

**FIGURE-3.6** **CURRENT RATIO**



### **3.5 DEBT TO ASSET RATIO**

Debt to asset ratio indicates the percentage of total asset financed by debts. A lower measure a less risky capital structure and the contractor will be less prone to risks such as failure to meet interest and capital repayment, liquidity problems and business failure.

The debt to asset ratio for local contractors ranges from a minimum of 37% to a maximum of 101%, though, most of the time they stayed between 60% and 80%. Contractor LD is highly leveraged among local contractors. Its debt to asset ratio

ranges from a minimum of 97% to a maximum of 101% because of an increase in creditors account and long term debt throughout the time.

The overall trend shows increasing for three consecutive years after 2004 and reversed down on 2008 because of contractor LC's intense decrease in debt, even if contractor LD's ratio proceed to increase. Therefore, generally by looking at the average of sample contractors we can conclude that the local contractors are not conservative.

However in foreign contractors group we have contractor FE who has a ratio of 103% in 2004 but decreased its debt to asset ratio in following consecutive years and arrived at only 19% on 2007. This is because of increasing in total asset employed without a significant increase in total debt. This brought the company under conservative group.

Contractor FG seems to get out from conservative groups by increasing its debt as a percentage of its total assets.

Both contractor FF &FG increased their ratio trend during the period under study but their ratio do not seem normal. FF moved its ratio from 75% to 109% because of a great increase in its current liability. Contractor FH has more than 100% debt to asset ratio throughout the period under study. Except on 2008 where it showed an intense decrease to 12% because of the decrease in its current liability by 95% from the previous period.

**TABLE-3.10:** Debt to asset ratio of local and foreign contractors

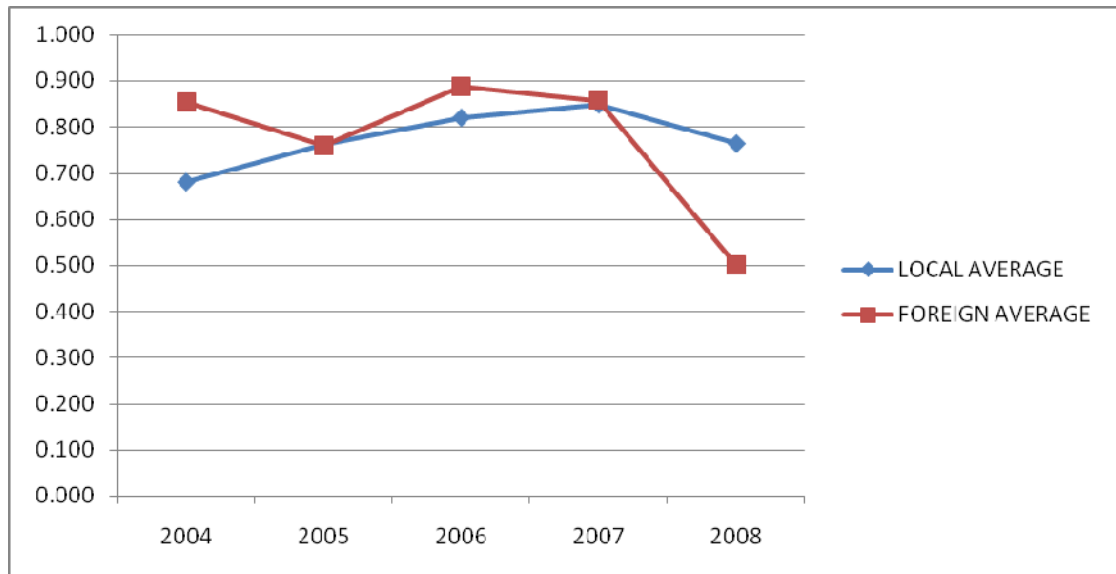
DEBT TO ASSET RATIO					
COMP/YEAR	2004	2005	2006	2007	2008
LA	79%	85%	88%	88%	85%
LB	56%	86%	67%	73%	72%
LC	40%	37%	74%	78%	57%
LD	98%	97%	98%	101%	100%
AVAERAGE	68%	76%	82%	85%	77%
FE	103%	35%	28%	19%	17%
FF	75%	84%	116%	109%	104%
FG	39%	43%	54%	57%	67%
FH	124%	142%	157%	158%	12%
AVAERAGE	85%	76%	89%	86%	50%

*Source- computed by the researcher*

Generally the trend of local contractors shows increase for three consecutive years and they have been highly levered. And in all years except on 2008 the foreign contractors are superior in their debt to asset ratio even if it is not significantly. Thus we can conclude from this that both foreign and local contractors are highly levered and foreigners are superior in this too. That means the local contractor's capital structure is less prone to risk and better than the foreign contractors capital structure.

FIGURE-3.7

DEBT TO ASSET RATIO



**3.6. REGRESSION ANALYSIS TO DETERMINE THE MAIN MEASURE(S) OF FINANCIAL PERFORMANCE**

**3.6.1 Regression Analysis of Local Contractors' Ratios**

According to the regression analysis of local contractors in table-3.11, taking net profit margin as a dependent variable, it is tried to identify the main determinant(s) measures of financial performance. The statistical analysis result revealed that, from all previously analyzed ratios, return on asset (ROA) ratio is found to be the measure that can significantly explain the financial performance of local contractors.

**TABLE-3.11:** Regression analysis of local contractors' ratios

**Coefficients (a)**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	-.648	11.687		-.055	.957
	Return on Equity	.001	.002	.053	.277	.786
	return on Asset	.869	.328	1.148	2.648	.020
	Gross Profit Margin	.045	.048	.179	.937	.366
	Asset Turn Over	-3.764	2.497	-.590	-1.507	.156
	Current Ratio	-1.164	3.082	-.139	-.378	.712
	Debt To Asset Ratio	.038	.108	.137	.347	.734

A Dependent Variable: Net profit Margin

Source- computed from financial statements

This indicates from all ratios that are analyzed above, the one that greatly measures the financial performance of local contractors is found to be the return generated by every single asset employed by local contractors.

### **3.6.2 Regression Analysis of Foreign Contractors' Ratios**

Similar analysis made on foreign contractors to identify the ratio, which explains as a measure of performance by using regression analysis shown on table-3.12 revealed the same result with local contractors by a significance difference of less 0.05.

**TABLE-3.12-** Regression analysis of foreign contractors' ratios

**Coefficients (a)**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	11.154	11.435		.975	.347
	return on Asset	.740	.129	.954	5.725	.000
	Return on Equity	-.060	.042	-.136	-1.407	.183
	Asset Turn Over	-.025	.053	-.070	-.467	.649
	Gross Profit Marigin	.034	.127	.032	.269	.792
	Current Ratio	-.060	.092	-.063	-.652	.526
	Debt To Asset Ratio	-.086	.061	-.180	-1.416	.180

A Dependent Variable: Net profit Margin

*Source- computed from financial statements*

From the above two regression analysis computed for local and foreign contractors, it is identified that return on asset (ROA) is a major measurement of financial performance of both groups.

Thus, back to return on asset (ROA) ratios that we computed in table- 3.7, we can see that local contractors were superior by the return they generated on the assets when they are not employing huge amount of assets. However, in the later years, when local

contractors increased their employed assets, the local contractor's efficiency reduced. As a result the return on the asset they generate reduced and this reduced their financial performance.

### **3.7 DISTRESS RATIO (Z-SCORE)**

According to Altman original business failure prediction model, business with a z-score less than 1.8 implies certainly of imminent failure; a Z-Score between 1.8 and 2.99 is regarded as a gray area where companies are deemed to be at risk and a score greater than 2.99 indicates a potential for long term solvency.

$$Z=1.2(X1) + 1.4(X2) +3.3(X3) + 0.6(X4) + .99(X5)$$

Where X1 = Working capital/Total asset

X2 = Retained earnings/Total asset

X3 = EBIT/Total asset

X4 = Market value of equity/ Book value of liability

X5 = Sales/ Total asset

Zone of discrimination: – Z > 2.99 safe zone

1.80 <Z < 2.99 “Gray” zone

Z < 1.80 “Distress” zone

However the original model is applicable to publicly traded entities (since X4 requires stock price data). And as it is known we do not have a stock market in our country to have the market value for the equity of the contractors in both groups.

Thus rather than simply inserting a proxy variable in to an existing model to calculate Z-Scores; we have re estimation of the model, substituting the book values of the equity for the market value in X4. However, all the coefficients will change (not only the new variable's parameter) and that the classification criterion and related cut-off scores will be changed.

The result of the revised Z-Score model with a new X4 variable is:

$$Z' = 0.717(X1) + 0.847(X2) + 3.107(X3) + 0.420(X4) + 0.998(X5)$$

Zone of discrimination:  $- Z' > 2.99$  "safe" zone

$1.23 < Z' < 2.99$  "Gray" zone

$Z' < 1.23$  "Distress" zone

The equation now looks different than the earlier model; note, for instance, the coefficient for X1 went from 1.2 to 0.7. But the model looks quite similar to the one using market values.

The actual variable that was modified, X4, showed a coefficient change to 0.42 from 0.6 that it now has less of an impact on the Z-score. X3 and X5 are virtually unchanged.

The revised model becomes a model with wider gray area (ignorance zone); since the lower boundary becomes 1.23 as opposed to 1.81 for the original Z-score model.

From a total sample of eight contactors 5 of them were selected for this analysis. Three of them are from local and the remaining two are from foreign contactor. The Sample size reduction from eight to five is due to the relevance of the contactors for z-score

analysis. Previous total sample size was all inclusive like partnership and joint ventures. But for z-score analysis partnership and joint venture contractors were reduced. Then the revised model is used to predict financial distress of local and foreign contractor group.

Referring to table-8, LA's z-score trend shows that it has been always in the distress zone. In the reverse contractor LB's z-score shows distress only on 2006. We have also contractor LC who scored z-score below the lower boundary for two consecutive periods on 2006 and 2007.

The average z-score trend for local contractors shows decline in the score during 2006 and 2007, below the lower boundary which is 1.23, however, they showed improvement on 2008.

When we come to the foreign group the trend of z-score for contractor FE is below the lower cut-off throughout the period, even if, it is improving. Inversely the trend of z-score for contractor FG shows decline even if it stayed in the gray area for the past five years. The decline is just because of the low performance the contractor scored in all variables that we have measured to analyze financial performance.

The average for foreign group shows that they are in the middle category (gray area), where there is a good chance of the companies going bankrupt within two years of operation from the date of financial figure given, by scoring z-score above 1.23 and below than 2.99.

TABLE-3.13 Z-Score analysis of local and foreign contractors

Z-SCORE					
	2004	2005	2006	2007	2008
LA	0.5983	0.4116	0.4844	0.4620	0.4635
LB	4.4110	4.4651	0.3751	2.2270	2.0844
LC	1.4095	1.9501	0.6582	0.8961	1.0711
AVERAGE	2.1396	2.2756	0.5059	1.1951	1.2063
FE	0.0893	0.2765	0.5524	0.8918	1.0542
FG	3.4786	3.3076	2.6329	2.2321	1.5104
AVERAGE	1.7839	1.7920	1.5926	1.5620	1.2823

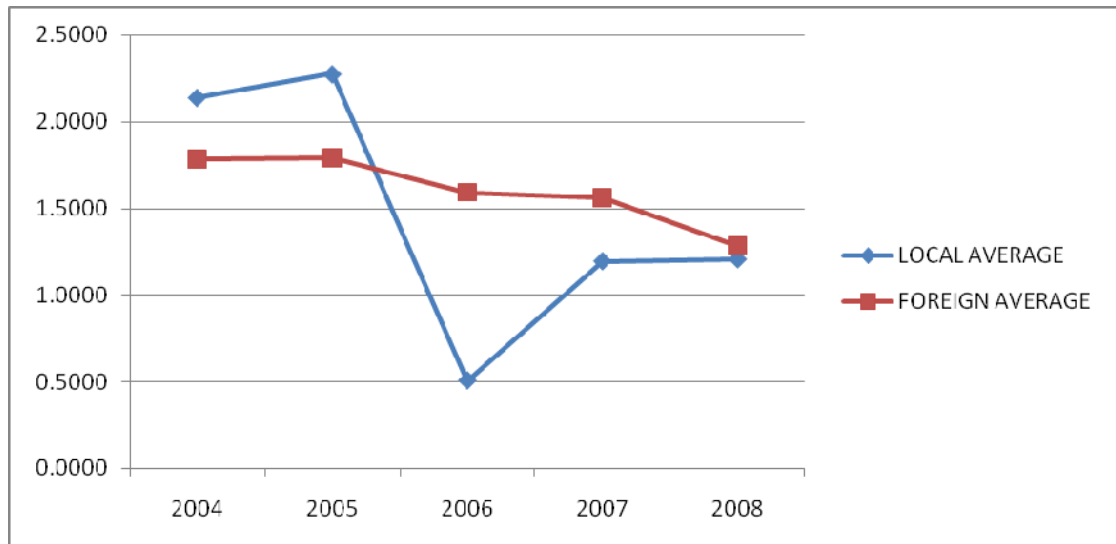
*Source: computed by the researcher*

Finally by referring figure-13 the comparison of the local and foreign contractor proves that the local contractors were scoring better z-score in 2004 & 2005, however, because of low performance starting from 2006 they are forced to be below the foreign contractors, even if, the foreign contractor's performance is reduced.

Thus from the above we can generalize that foreign contractors financial health is better than the local contractors, whose financial situation implies high probability of financial embarrassment, by scoring average z-score of below 1.23 for the past three years.

FIGURE-3.8

Z-SCORE



However, the mentioned ranges of distress score for distress prediction developed by Altman may not be applicable to the construction industry due to its unique features such as high capital tie-up, low liquidity resulted from the interim payment system, and the low profit margins.

Hence, the actual financial situation may not be as acute as described and construction firms may tolerate a lower distress ratio. Nonetheless, it can be used to compare and identify those groups performing well. It may also be used as an alarm for local contractors, who are scoring comparatively lower z-score, to improve their performance.

While analyzing the trend and comparative financial performance of each groups by using financial ratios we identified that local contractors scored higher values in three ratios while foreign contractors were superior in four ratios. By applying statistical regression analysis, from all of the above ratios analyzed, it is identified that return on

asset is the major ratio which significantly measures financial performance of each group. This made the local contractor's to perform better than foreign contractors in the first two years of the period under study, where the local contractors had higher return on asset. However, the superiority didn't continue after the first two consecutive years because of the reduction in return on asset of the local contractors.

While testing the financial distress by using Z-score as a supportive analysis, it has seen that foreign contractors are performing financially better than local contractors after the first two years of the period under the study. Thus, this shows that both the ratios analysis and Altman's Z-Score revealed the same result, that the financial performance of foreign contractors is better.

## **CHAPTER FOUR**

### **CONCLUSION AND RECOMMENDATION**

#### **4.1 CONCLUSIONS**

To measure the financial performance trend and comparison of financial performance of local and foreign contractors this research paper used the same ratios used by John and Ruby (2005) with the exception of earning per share because the information about earning per share was not found in the financial reports that we used. The financial performance of each contractor is measured (analyzed) by using selected major financial ratios, which measures profitability, liquidity, activity and capital structure.

The above analysis is supported by using Z-Score, which uses multiple discriminant analysis as the appropriate statistical tools to avoid possible ambiguities on relative performance. Under profitability measurement, we have used four ratios:

Gross profit margin-the trend of gross profit for each group shows improvement. However the comparison of local and foreign contractors in terms of their gross profit margin revealed that foreign contractors are superior over the domestic contractors throughout the period under study. This indicates that foreign contractors are superior in production efficiency, pricing of their work, and inventory management. This components lead to greater profit.

During comparison of net profit margins of the two groups, the superiority of foreign contractors is reversed and replaced by the superiority of local contractors. This is because of their minimum operating expenses compared to foreign contractors. This

may be taken as a good performance of local contractors unless it reduces the quality of their work. But the reality may be different like employment of inefficient, unqualified, and unexperienced staff to reduce operating expenses. During the same analysis we identified failure of scoring negative net profit margin because of the revenue they generate couldn't cover their costs.

The trend of local contractor return on equity shows going-up and deep down in consecutive years and also shows a negative return on investment frequently. However, foreign contractors were able to generate comparatively higher and constant positive return on equity throughout the period in an increasing manner. The foreign contractor's return on equity shows consistency and it will be a great opportunity for those who are risk averse. The overall trend of return on asset shows deterioration for local contractors and improvement for foreign contractors.

The analysis shows that local contractors are better in managing their asset at minimum level. However, their efficiency in using their asset reduces when their employed asset increases.

The analyses of asset turnover showed local contractors perform efficiently and generate reasonable revenue only at minimum level. Even if they have the resources to undertake larger contracts they will be idle because larger contracts will be undertaken by foreign contractors as a result of their experience and capacity. Thus, local contractors do not have the opportunity to employ full of their assets for operation because the contract they win may not need that much asset.

By using current ratio we have analyzed the liquidity of the two groups. The local contractors mean indicates they were liquid during the five years. Whereas foreign contractors current assets were not be able to cover the current obligations.

The comparison of local and foreign contractors' debt to asset ratio shows that both groups are highly levered with little superiority of local contractors.

The analysis for the financial distress by using Altman model indicated that local contractors were healthy in their financial situation for the first two years of the period under study. While the foreign contractor's scored z-score shows the middle category (gray area), where there is a good chance of the companies going bankrupt within two years of operation from the date of financial figure given, by scoring z-score above 1.23 and below than 2.99 throughout the period. But after the first two years, the local contractor's analysis shows that they are in financial distress whose financial situation implies high probability of financial embarrassment, by scoring average z-score of below 1.23 for the past three years.

Generally by using the above financial performance measures the result of the analysis shows that local contractors are superior in their net profit margin, liquidity, and debt ratio when compared with foreign contractors. However, foreign contractors scored superiority in their profitability (gross profit margin, return on asset, and return on equity), and asset turnover. Therefore the seven ratios used for comparison shows that, both groups have superiority in different ratios. Thus rather than generalizing, this shows that each group has its own strong and weak side. But to find a single answer to the research question Altman model is used and found that foreign contractors are superior in their financial performance. This model also answered the second research questions "are local contractors in financial distress? What about foreign contractors?"

The local contractors are in financial distress and foreign contractors are in gray area just above distress area.

Therefore, from the analysis we can say that, yes, foreign contractors perform financially better than local contractors and the local contractors are in financial distress where as foreign contractors are not, but they are just above the lower cut-off i.e. in the gray area.

## **4.2 RECOMMENDATIONS**

Among the measures of financial performance, profitability is the major. Thus to improve financial performance contractors need to improve their profitability by:

- ✓ Cost efficiency- to avoid the negative gross and net profit margin local contractors are expected to improve their cost through improving efficiency of using raw materials, improving inventory control, and efficiency of labor. In addition, local contractors are also expected to reduce their operating expenses by restructuring their organization and avoid unnecessary expenses which come as a result of unnecessary business cycle.
- ✓ Revenue generating efficiency- this efficiency leads the contractors in to an economies of scale. From asset turnover analysis on table-8, the current situation in local contractors indicates that, local contractors are not generating revenues as the same proportion as an increase in employed asset. Thus by using different mechanisms like: taking big contracts, increasing their capability to undertake large projects, by employing experienced labors, by acquiring experience of undertaking large projects by collaborating with foreign contractors and the like revenue should be increased.

As the analysis indicated most of local contractor's Z-score shows that they are in financial distress. Even if we are not sure about the appropriateness of the cut off for construction industry, we have seen that foreign contractors are superior over local contractors. Thus here we have some recommendation to help local contractors cope up with foreigners and to improve financial health:

- ✓ Restructuring debt composition (improving their working capital) – because of the nature of the construction business ties huge amount of asset in fixed asset it will pull down z-score value. Thus the business needs to reduce its current liability to have reasonable working capital. This may be done by shifting some of its current liability to long term liability. By doing so the local contractors can improve their financial health.
- ✓ Increasing the reinvested earning- since retained rearing is among the components of z-score formula, its value will have an effect on z-score. First, to have positive retained earning local contractors need to improve their financial performance using the above suggestions. Having done so to pull out their company from financial distress local contractors need to reduce their payout ratio. As a result their retained earnings will increase and this will push z-score value high to bring it in other category other than distress category.
- ✓ To improve their earnings before interest and tax- this comes as a result of cost efficiency which is indicated in the first section of recommendation. Thus, local contractors should improve their earnings in the same ratio as the increase in total asset by using the asset employed effectively and efficiently.
- ✓ Adjusting their capital structure- among the components of z-score formula we have total debt as a denominator. As the analysis indicated some local

contractors are found to have total debt greater than total asset reported. This huge amount of total debt will greatly pull the contractors z-score down. Thus other than transferring current debt to long term debt, local contractors need to look at their capital structure. And reduce their total debt.

### **4.3 FURTHER RESEARCH**

Because of the unique nature of construction industry the cut-off for predicting bankruptcy for manufacturing industry may not be applicable in construction industry. Therefore identifying the proper cut-off for construction industry will be another study area for potential researchers.

Further and detail analysis on financial performance of local and foreign contractors by increasing the sample size and by considering different ratios will be another research area.

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## APPENDIX

### APPENDIX-1 one way ANOVA (variability between local contractors)

#### Descriptives

Company								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	5	.033600	.0029665	.0013266	.029917	.037283	.0300	.0380
2	5	.036400	.0150765	.0067424	.017680	.055120	.0190	.0580
3	5	-.038800	.0823875	.0368448	-.141098	.063498	-.1360	.0650
4	5	-.011200	.0269574	.0120557	-.044672	.022272	-.0460	.0150
Total	20	.005000	.0517718	.0115765	-.019230	.029230	-.1360	.0650

#### ANOVA

Company					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.020	3	.007	3.428	.043
Within Groups	.031	16	.002		
Total	.051	19			

#### Post Hoc Tests

##### Multiple Comparisons

Dependent Variable: Company  
LSD

(I) ID	(J) ID	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.0028000	.0278397	.921	-.061818	.056218
	3	.0724000*	.0278397	.019	.013382	.131418
	4	.0448000	.0278397	.127	-.014218	.103818
2	1	.0028000	.0278397	.921	-.056218	.061818
	3	.0752000*	.0278397	.016	.016182	.134218
	4	.0476000	.0278397	.107	-.011418	.106618
3	1	-.0724000*	.0278397	.019	-.131418	-.013382
	2	-.0752000*	.0278397	.016	-.134218	-.016182
	4	-.0276000	.0278397	.336	-.086618	.031418
4	1	-.0448000	.0278397	.127	-.103818	.014218
	2	-.0476000	.0278397	.107	-.106618	.011418
	3	.0276000	.0278397	.336	-.031418	.086618

\*. The mean difference is significant at the .05 level.

**APPENDIX -2 One way ANOVA (variability between foreign contractors)**

**Descriptives**

ForCompan

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
					1	5		
2	5	-.124200	.2303762	.1030274	-.410250	.161850	-.5060	.0460
3	5	.099600	.0284482	.0127224	.064277	.134923	.0670	.1360
4	5	.036600	.3933145	.1758956	-.451764	.524964	-.3770	.6260
Total	20	.012700	.2264451	.0506347	-.093280	.118680	-.5060	.6260

**ANOVA**

ForCompan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.138	3	.046	.878	.473
Within Groups	.837	16	.052		
Total	.974	19			

**APPENDIX -3 T-Tests (variability between local and foreign contractors)**

**Group Statistics**

IDTow	N	Mean	Std. Deviation	Std. Error Mean
Company Local	20	.005000	.0517718	.0115765
Foreign	20	.012700	.2264451	.0506347

**Independent Samples Test**

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Company Equal variance assumed	7.640	.009	-.148	38	.883	-.0077000	.0519412	1128494	0974494
Equal variance not assumed			-.148	20.981	.884	-.0077000	.0519412	1157236	1003236

**APPENDIX -4 linear regression analysis (foreign contractors)**

**Coefficients(a)**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.154	11.435		.975	.347
	return on Asset	.740	.129	.954	5.725	.000
	Return on Equity	-.060	.042	-.136	-1.407	.183
	Asset Turn Over	-.025	.053	-.070	-.467	.649
	Gross Profit Marigin	.034	.127	.032	.269	.792
	Current Ratio	-.060	.092	-.063	-.652	.526
	Debt To Asset Ratio	-.086	.061	-.180	-1.416	.180

A Dependent Variable: Net profit Margin

**APPENDIX -5 linear regression analysis (local contractors)**

**Coefficients(a)**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.648	11.687		-.055	.957
	Return on Equity	.001	.002	.053	.277	.786
	return on Asset	.869	.328	1.148	2.648	.020
	Gross Profit Margin	.045	.048	.179	.937	.366
	Asset Turn Over	-3.764	2.497	-.590	-1.507	.156
	Current Ratio	-1.164	3.082	-.139	-.378	.712
	Debt To Asset Ratio	.038	.108	.137	.347	.734

A Dependent Variable: Net profit Margin