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### **Capital Structure and Firms Financial Performance: Evidence from Palestine**

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# **Capital Structure and Firms Financial Performance: Evidence from Palestine**

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## نتيجة الحكم على أطروحة ماجستير

بناءً على موافقة شئون البحث العلمي والدراسات العليا بالجامعة الإسلامية بغزة على تشكيل لجنة الحكم على أطروحة الباحث/ محمد شوقي محمد ابو طواحينة لنيل درجة الماجستير في كلية التجارة/ قسم المحاسبة والتمويل وموضوعها:

### Capital Structure and Firms Financial Performance: Evidence from Palestine

وبعد المناقشة التي تمت اليوم الاثنين 07 ربيع الأول 1436 هـ، الموافق 2014/12/29 الساعة الحادية عشرة صباحاً، اجتمعت لجنة الحكم على الأطروحة والمكونة من:

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واللجنة إذ تمنحه هذه الدرجة فإنها توصيه بتقوى الله ولزوم طاعته وأن يسخر علمه في خدمة دينه ووطنه.

والله ولي التوفيق ،،،

مساعد نائب الرئيس للبحث العلمي و للدراسات العليا

.....  
.....  
.....  
أ.د. فؤاد علي العاجز



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ رَبِّ اشْرَحْ لِي صَدْرِي \*

وَيَسِّرْ لِي أَمْرِي \*

وَاحْلُلْ عُقْدَةً مِنْ لِسَانِي \*

يَفْقَهُوا قَوْلِي) "سورة طه"

صدق الله العظيم

## **Abstract**

This thesis examines the impact of capital structure on firm's financial performance. The main objective of the study is to determine the overall effect of capital structure on corporate financial performance of Palestinian firms by establishing the relationship that may exist between the capital structure choices of firms in Palestine and their financial performance. The study use three financial performance measures including return on assets (ROA), return on equity (ROE), and return on investment (ROI) as dependent variables and three capital structure measures including short term debt to total assets (STDTA), long term debt to total assets (LTDTA) and total debt to total assets(TDTA) as independent variables. In addition, the firm size and industry type was used as control variables.

The population of this study consists of 49 Palestinian corporations listed on Palestine Exchange (PEX). 35 Corporations were selected on the basis of availability of information necessary for conducting the study and the readiness of annual financial reports for the period of 5 years from 2009-2013. These corporations belong to five sectors in PEX as the follow: Banking and financial services, Insurance, Investments, Industry, and Services. Descriptive statistics, correlation and multiple regressions were used to test the relations between variables.

The results show that there is a relationship between capital structure and corporate financial performance. For the market, there is a negative influence for STDTA and TDTA on financial performance measurements except the ROE. The results according to each sector in the market were as the following: For Banking, there is a positive influence for capital structure on firm's financial performance. For Insurance, there is a negative influence for STDTA on financial performance measurements except the ROE. For Investment Firms, there is a negative influence for STDTA on financial performance measurements except the ROA. For Industrial firms, there is no significant influence for capital structure on firm's financial performance. For Services firms, the results indicate positive influence for STDTA and TDTA on ROA and negatively on ROE, and ROI. It can be concluded that Palestinian firms are majorly financed by mixing of equity and short term financing.

The study recommends the firms to achieve the best debt ratio with the minimum cost to maximize the financial performance. Also, the firms should rely less on short term debt which formed the major part of their leverage and focus more on developing internal strategies that can improve their financial performance.

تبحث هذه الرسالة تأثير هيكل رأس المال على أداء الشركات . الهدف الرئيسي من هذه الدراسة هو تحديد التأثير الكلي لهيكل رأس المال على أداء الشركات في فلسطين من خلال إيجاد العلاقة بين هيكل رأس مقاييس للأداء وهي العائد على الموجودات، العائد على حقوق الملكية، العائد على الاستثمار كمتغيرات تابعة وثلاثة مقاييس لهيكل رأس المال وهي الديون قصيرة الأجل ، الديون طويلة الأجل وإجمالي الديون كمتغيرات مستقلة. تم استخدام الحجم ونوع الصناعة كمتغيرات متحكممة.

ي 49 شركة مدرجة في سوق فلسطين للأوراق المالية. قد تم اختيار 35  
5 (2009-2013). إن هذه الشركات تنتمي إلى  
خمسة قطاعات وهي: البنوك والخدمات المالية، التأمين  
تم استخدامهم لاختبار العلاقة بين المتغيرات.

تظهر النتائج أن هناك علاقة بين هيكل رأس المال وأداء الشرك ، هناك تأثير سلبي  
للديون قصيرة الأجل وإجمالي الديون  
على حقوق الملكية . يلي:  
إيجا . بالنسبة لشركات التأمين فإن هناك تأثير سلبي للديون قصيرة الأجل  
باستثناء العائد على حقوق المساهمين. شركات الاستثمار، هناك تأثير سلبي

للديون قصيرة الأجل  
الصناعية، لا يوجد تأثير ذو دلالة إحصائية لهيكل رأس المال على  
تشير النتائج إلى التأثير الإيجابي للديون قصيرة الأجل  
كما وتشير إلى التأثير السلبي على باقي  
الشركات الفلسطينية تعتمد بشكل رئيسي في تمويل رأس المال  
و لإجمالي الديون  
أخيرا يمكن أن  
المزج بين حقوق الملكية والديون قصيرة

تحقيق نسب المديونية تحقيق أقصى قدر من الأداء  
الديون قصيرة أيضا يجب أن تعتمد  
المالية والتركيز على تطوير الإستراتيجيات الداخلية التي يمكن أن تساعد في تحسين

## **Dedication**

I dedicate this thesis to **my parents**. I would like to thank them for their love and support.

**Without them, there is nothing else.**

## **Acknowledgments**

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## List of Abbreviations

Asset Turnover .....	ATO
Chief Executive Officer .....	CEO
Chief Financial Officer .....	CFO
Earnings before Interest and Tax.....	EBIT
Earnings per Share.....	EPS
Financial Leverage Multiplier .....	FLM
Gross Domestic Product.....	GDP
Long- term Debt to Total Assets.....	LTDTA
Modigliani and Miller .....	MM
Palestine Exchange .....	PEX
Return on Assets .....	ROA
Return on Capital Employed .....	ROCE
Return on Equity .....	ROE
Return on Investment.....	ROI
Short –term Debt to Total Assets .....	STDTA
Standard Deviation .....	SD
Total Debt to Total Assets .....	TDTA
Weighted Average Cost of Capital .....	WACC

# **Chapter One: General Background**

## 1.1. Introduction

The theory of capital structure and its relationship with a firm's value and performance has been a puzzling issue in corporate finance and accounting literature since the Modigliani and Miller theory (MM) (1958) argue that under the perfect capital market condition which assume that, if without bankruptcy cost and capital markets are frictionless, if without taxes, and without asymmetric information the firm's value is independent from capital structure. According to MM theory, the only variables that determined firm value was its future earnings power (expected cash flow) and hence the capital structure decision is irrelevant. Since that time, several theories have been developed to explain the capital structure of a firm including the Pecking Order Theory, Trade off theory, and the Agency Cost theory.

Although actual levels of debt and equity may vary somewhat over time, most firms try to keep their financing mix close to a target capital structure. A firm's capital structure decision includes its choice of a target capital structure, the average maturity of its debt, and the specific types of financing it decides to use at any particular time. With operating decisions, as (Brigham & Ehrhardt, 2011), managers should make capital structure decisions that are designed to maximize the firm's intrinsic value.

Capital structure refers to the kinds of securities and the proportionate amounts that make up capitalization. It is the mix of different sources of long-term sources such as equity shares, preference shares, debentures, long-term loans and retained earnings. The term capital structure refers to the relationship between the various long-term sources financing such as equity capital, preference share capital and debt capital. Deciding the suitable capital structure is the important decision of the financial management because it is closely related to the value of the firm, (Paramasivan and Subramanian, 2009).

Capital structure is one of the most important effective parameters on the valuation and direction of economic enterprises in the capital markets. Current changing and evolution environment cause that rating companies also in terms of the credit depends partly to their capital structure and strategic planning required them in order to select effective resources to achieve the goal of "shareholders wealth maximization" according to Pouraghajan and Malekian (2012). So, the financial managers should consider the maximizing shareholders wealth by determination the best combination of financial resources for their companies.

With the proliferation of the capital market, the evaluation of financial performance becomes significant topics in finance. Therefore, the function of the financial measures seems essential in evaluating the firm's performance Mahmoudi et al. (2013). In the recent decades, the significance and effectiveness of the financial decisions on the growth opportunities became a measure to evaluate the performance and increase the firm's value. The notion of performance is a controversial issue in

finance largely because of its multidimensional meanings. According to Tudose (2012) performance can be explored from two points of view: Financial and Organizational (the two being interconnected); a company's performance can be measured based on variables that involve productivity, returns, growth or even customer satisfaction. Financial performance (reflected in profit maximization, maximizing ROA, maximizing ROE and maximizing ROI is based on the firm's efficiency).

As the literature examines the impact of the association among capital structure and financial performance of the developed economies, very slight is identified concerning such implications in developing economies like Palestine. So, this study will investigate the impact of financial leverage on financial performance in Palestine as an example of developing economies. Consequently, the study will describes the different aspects of the capital structure and examines the relationship between profitability (as a measure of financial performance) and debt to total assets (as a measure of the capital structure).

The remainder of this research is organized as follows: this chapter will give an introduction about the problem, objectives, questions, hypothesis and related studies. The second chapter will explain the theoretical framework that explains the capital structure and firm performance. The third chapter will present the methodological framework that describes Approach, Design, Population, Data Collection and variables. The fourth chapter will present the Data analysis and interpretations. The fifth chapter will present the Results and recommendations.

## **1.2. Research Problem**

Nowadays, more and more companies tend to used different sources from equity or debts to finance its operations when they need to expand their firm size or reinvest to gain more profits. However, the situations are more complicated in the real competition world than in the theory. Capital structure and the impact on the value and financial performance had been study for many years after MM theories have exist, researchers around the world still cannot agree on the extent of the impact. Indeed, a well attribution of capital structure will lead to the success of firms. From the above, the problem can be formulated as the follow: **What is the impact of capital structure on the firm's financial performance?**

## **1.3. Research Objectives**

This research aims to explain the relationship between capital structure and firm performance using data for companies listed on the PEX. This comparison will use the debt ratio as a proxy for the capital structure and analyze its relationship with financial performance that will be represented by the standard accounting measures under control

variables like company size and industry sector. The specific objectives derived from the major objective are:

1. To establish the relationship between STDTA and financial performance for Palestinian corporations.
2. To establish the relationship between LTDTA and financial performance for Palestinian corporations.
3. To establish the relationship between TDTA and financial performance for Palestinian corporations.
4. To examine how firms sizes impact on financial performance for Palestinian corporations.
5. To find out the effect of industry type on financial performance for Palestinian corporations.

#### **1.4. Research Questions**

1. What is the relationship between STDTA and financial performance for Palestinian corporations?
2. What is the relationship between LTDTA and financial performance for Palestinian corporations?
3. What is the relationship between TDTA and financial performance for Palestinian corporations?
4. What is the effect of firm's sizes on financial performance for Palestinian corporations?
5. How does the industry type effect on financial performance for Palestinian corporations?

#### **1.5. Research hypotheses**

1. There is no significant relationship at .05 levels between STDTA and financial performance for Palestinian corporations.
2. There is no significant relationship at .05 levels between LTDTA and financial performance for Palestinian corporations.
3. There is no significant relationship at .05 levels between TDTA and financial performance for Palestinian corporations.
4. There is no significant relationship at .05 levels between the firm's size and financial performance for Palestinian corporations.
5. There is no significant relationship at .05 levels between industry type and financial performance for Palestinian corporations.



## **1.6. Research Significance**

1. Help Palestinians corporations to choose the optimal capital structure in order to improve their financial performance.
2. Enable the Palestinians chief executive officers (CEO) and chief financial officers (CFO) regarding how to a choice of capital structure effects the financial performance of the Palestinians corporations.
3. Help the Palestinians investors to create a portfolio that yield them a maximum profit.

## **1.7. Research Limitation**

There are many issues related to the study topic, however not all issues will be touched. The thesis will only focus on the issues raised in the research questions. The limitations are therefore listed below:

1. The analysis did not cover all performance indicators, it take just accounting performance.
2. This study did not consider other factor such as tax, interest rate, and inflation.
3. The analysis conducts on listed firms on PEX and ignores the non-listed firms.
4. This study have expected limitations in the amount of data that will be used, as study only use data for a period of 5 years (2009 -2013).

## **1.8. Previous Studies**

Abiodun (2014) employs a triangulation approach to investigating the relationship between capital structure and firms' performance in Nigeria. The paper considers 31 manufacturing firms with audited financial statements for the periods 1999 and 2012. The paper fined a strong curvilinear relation between ROA and debt-to-equity ratio, otherwise known as Leverage. The paper has been refuted that the large firms are more inclined to retain higher performance than middle firms under the same level debt ratio.

Hasan et al. (2014) study the influence of capital structure on firm's performance on 36 Bangladeshi firms listed in Dhaka Stock Exchange during the period 2007–2012. The paper has used four performance measures; (Earning per Share) EPS, ROE, ROA and Tobin's Q; as dependent variables and three capital structure ratios; STDTA, LTDTA and TDTA ratios; as independent variables. Using pooling panel data regression method, the paper found that EPS is significantly positively related to STDTA while significantly negatively related to LTDTA. There is significant negative relation between ROA and capital structure. On the other hand, there is no statistically

significant relation exists between capital structure and firm's performance as measured by ROE and Tobin's Q.

Quang and Xin (2014) study the impact of ownership structure and capital structure on firms' financial performance in context of an emerging transitional economy. According to research findings, capital structure has a negative impact with statistical significance on financial performance that measured by ROA & ROE. The higher level of state ownership in ownership structure, the better financial performance it has. While clear evidences with statistical significance of the impact of managerial ownership on financial performance have not been found, this paper found out that the level of entrenchment of managers in state-owned enterprises is higher than that of businesses of other types.

Seetanah et al. (2014) seek to empirically assess the impact of capital structure on performance of Mauritian firms listed on the Official Market of the Stock Exchange of Mauritius for the period 2005-2011. The study employs both static and dynamic panel data techniques to identify the determinants of firm performance. The results indicate that the main determinants of firm performance are capital structure, firm size, business risk, Mauritius Rupee/ Euro exchange rate and Mauritius Rupee /United State Dollar exchange rate. Growth opportunities, free cash flow, age of the firm and price of oil are found to have insignificant influence on firm performance. Firm performance is observed to be negatively related to capital structure indicating that firms with lower leverage have better performance thereby supporting the pecking order theory.

Twairesh (2014) investigate the impact of capital structure on the performance of non-financial firms operating in Saudi Arabia as one of emerging or transition economies. Panel econometric technique called fixed effect regression is used for the period between 2004 - 2012. Sample data includes 74 companies. The study analyzes the relationship between capital structure proxies that include STDTA, LTDTA and TDTA and the operating performance measured by ROA and ROE. The firm's size was used as a control variable. The study finds that STDTA, LTDTA and TDTA have significant impacts on ROA. While only LTDTA has significant impacts on ROE. Firm size has significant impacts on firm performance when ROA is a dependent variable and no impact on firm performance when ROA is dependent variable.

Xiaomeng and Yong (2014) use annual asset-liability ratio and ROE, respectively, as a measure of capital structure and financial performance to 1995-2009. All domestic listed companies in the real estate industry are used in empirical research. The empirical results show that: the existence of a long-term stable relationship asset-liability ratio and ROE.

Çekrezi (2013) examines several determinants of capital structure on firm's choices of financial leverage. The paper used three capital structure measures; STDTA, LTDTA and TDTA as dependent variables and four dependent variables: tangibility, profitability (measured with ROA), size and liquidity. The investigation uses panel data procedure for a sample of 65 non- listed firms, which operate in Albania, over the period

2008-2011. The results revealed a significant negative relation of ROA and a significant positive relation of size to all measures of leverage.

Goyal (2013) seeks to study the impact of capital structure on profitability of public sector banks in India listed on national stock exchange during 2008 to 2012. Regression Analysis has been used for establishing relationship between ROE, ROA & EPS with capital structure. The findings reveal positive relationship of STDTA with profitability as measured by ROE, ROA & EPS.

He (2013) encompasses 2 developed countries (Germany and Sweden) and a developing country (China) to test the impact from capital structure to firm performance of period 2003-2012 with more than 1200 listed companies in Germany and Sweden and more than 1000 listed companies in China. The result shows that capital structure has a significant negative effect on firm performance in China, whereas, significant positive effect on 2 European countries before financial crisis happened in 2008.

Taani (2013) examines the impact of capital structure on performance of Jordanian banks. The annual financial statements of 12 commercial banks listed on Amman Stock Exchange were used for this study which covers a period of 5 years from 2007-2011. Multiple regressions was applied on performance indicators such as Net Profit, Return on Capital Employed, ROE and Net Interest Margin as well as Total Debt to Total Funds and Total Debt to Total Equity as capital structure variables. Multiple regression models are applied to estimate the relationship between capital structure and banking performance. The results show that bank performance is to be significantly and positively associated with TD; while TD is found to be insignificant in determining ROE in the banking industry of Jordan.

Abbadi and Abu-Rub (2012) establishes a model to measure the effect of capital structure on the bank efficiency in Palestinian financial institutions measured by ROE, ROA, Total deposit to assets, total loans to assets and total loans to deposits were used to measure capital structure. The paper found that leverage has a negative effect on bank profits, an increase in each ROA and Total Deposit to Assets increase bank efficiency. The paper also tested the effect of the above variables on bank market value measured by Tobin's Q. The paper found that Leverage has a negative effect on market value of the bank, a positive and strong relationship between market value and ROA and bank deposits to total deposits.

Chao (2012) study the influence of capital structure on organizational performance at Taiwan-listed info-electronics companies, with corporate governance being the Moderator. While convenience sampling was used to yield knowledge from the population, the linear Structural Equation Modeling was adopted to verify the goodness-of-fit effects among the overall model, structural model and measurement model. Findings from this study show that, at Taiwan-listed info-electronics companies, the capital structure and corporate governance both have significant interactive influence on the organizational performance.

Chinaemerem and Anthony (2012) examines the impact of capital structure on financial performance of Nigerian firms using a sample of 30 non-financial firms listed on the Nigerian Stock Exchange during the 7 year period, 2004 – 2010. Panel data for the selected firms were generated and analyzed using ordinary least squares (OLS) as a method of estimation. The result shows that a firm's capital structure has a significantly negative impact on the firm's financial measures ROA and ROE. The study of these findings, indicate consistency with prior empirical studies and provide evidence in support of Agency cost theory.

Lew (2012) examines capital structure theories and debt level determinants by uses 4,598 sample companies from 11 countries and 27 industries over a 20 year period. The sample examines 11 different characteristics, which include firm size, debt level, and bankruptcy probability. There are five main findings. First, firms which are financial stable issue relatively more debt. Second, they have a preference for moderate debt levels and thus limit their bankruptcy probability. They also try to exploit opportunities from overestimated stock price by issuing stocks to increase cash inflows. Third, the effects from bankruptcy costs are greater than transaction costs in terms of capital structure adjustment. Fourth, during the sample period, firms continuously decrease leverage levels. Fifth, firm's characteristics and macro-economic factors affect their capital structure.

Pouraghajan & Malekian (2012) investigate the impact of capital structure on the financial performance of companies listed in the Tehran Stock Exchange. For this purpose, they studied a sample of 400 firms in the form of 12 industrial groups during the years 2006 to 2010. In this study, Variables of ROA and ROE used to measure the financial performance of companies. Results suggest that there is a significant negative relationship between debt ratio and financial performance of companies, and a significant positive relationship between asset turnover, firm size, asset tangibility ratio, and growth opportunities with financial performance measures. In addition, research results shows that by reducing debt ratio, management can increase the company's profitability and thus the amount of the company's financial performance measures and can also increase shareholder wealth.

Skopljak and Luo (2012) investigate the relationship between capital structure and firm performance of Australian Authorized Deposit-Taking Institutions. Findings show a significant relationship between capital structure and firm performance of Australian Authorized Deposit-Taking Institutions. At relatively low levels of leverage an increase in debt leads to increased profit efficiency hence superior bank performance, at relatively high levels of leverage increased debt leads to decreased profit efficiency as well as bank performance.

Umar et al. (2012) examines the impact of capital structure on firms' financial performance in Pakistan of top 100 consecutive companies in Karachi Stock Exchange for a period of 4 years from 2006 - 2009. Exponential generalized least square regression

is used to test the relationship. The results show that all the three variables of capital structure, STDTA, LTDTA, and TDTA, have negatively impacts on the Earnings before Interest and Tax (EBIT), ROA, EPS and Net Profit Margin whereas Price Earnings ratio shows negative relationship with STDTA and positive relationship is found with LTDTA where the relationship is insignificant with, TDTA. The results also indicate that ROE has an insignificant impact on STDTA and TDTA but a positive relationship exists with LTDTA.

Abu Mouamer (2011) examines the relationship between capital structure and debt lifetime among listed companies in PEX. This study investigates 15 firms over 5 year period (2000-2004). The study Variables used for the analysis include profitability, leverage ratios (TD, STD, and LTD), liquidity, age, asset structure, and firm size and sales growth are also included as control variables. The panel character of the data allows for the use of panel data methodology. The study has shown that the service companies have the highest TD ratio (53.69 percent), followed by industrial companies (50.86 percent), trade companies (34.11 percent) and agriculture companies (24.02 percent). The one way analysis of variance (ANOVA) shows no significant difference in the use of debt, neither total, LTD or STD among companies in the 4 sectors. Adding to that, ANOVA indicates insignificant differences among the companies in the sample with respect growth opportunities, size, age, tangibility, and liquidity. The correlation analysis has shown that TD is positively and significantly related to tangibility, on the country, no significant relationship between the long debt and STD on the one hand and age, growth, liquidity, tangibility, and size on the other hand.

Muzir (2011) examine and test the relationships among firm size, capital structure, and financial performance providing evidence from Turkey. It is also aimed to argue the validity of three major capital structure theories - Irrelevance Theorem, Trade-Off Theory, and Pecking Order Theory - on a comparative basis. A data set of the financial statements for at least 5 years between 1994 – 2003 of 114 firms listed at the Istanbul Stock Exchange is used in modeling insolvency risk based on specific financial ratios through a binary logistic regression analysis. The results present some robust evidence suggesting that the effect of firm size on financial performance and sustainability may differ according to the way how size expansion is financed. Any asset expansion financed with debt has proved to increase risk exposure especially during economic downturns, which favors the Trade- off Theory over the others.

San and Heng (2011) investigate the relationship of capital structure and corporate performance of firm before and during crisis (2007). This study focuses on construction companies which are listed in Main Board of Bursa Malaysia from 2005 - 2008. All the 49 construction companies are divided into big, medium and small sizes, based on the paid-up capital. For big companies, Return on capital with Debt to Equity Market Value and EPS with Long-term Debt to Capital have a positive relationship whereas EPS with Debt to Capital is negatively related. In the interim, only Operating Margin with Long-term Debt to Common Equity has positive relationship in medium companies and EPS with Debt to Capital has a negative relationship in small companies. In sum, the

outcome reveals that the relationship exists between capital structure and corporate performance in selected proxies.

Daraghma and Alsinawi (2010) investigate three variables that have an effect on the financial performance of the corporations listed in PEX. The three variables are aboard of directors' characteristics (size and composition), management ownership, and capital structure. Study employs various statistical techniques to examine the hypotheses (descriptive analysis, and ordinary least square; simple and multiple regressions) to study 28 corporations 4 years 2005-2008. The results of the study indicate that the CEO-Chairman separation does not have any significant impact while the CEO-Chairman duality has a significant impact on the financial performance. Additionally, the paper finds out that the board size has a significant negative impact on the financial performance. In addition, this paper concludes a positive impact of management ownership on the financial performance. Finally, they conclude that the debt financing has no influence on the profitability of Palestinian corporations.

El-SayedEbaid (2009) investigates the impact of capital structure choice on firm performance in Egypt as one of emerging or transition economies. Multiple regression analysis is used in the study in estimating the relationship between the leverage level and firm's performance. Using three of accounting-based measures of financial performance (ROE, ROA, and gross profit margin), and based on a sample of non-financial Egyptian listed firms from 1997 – 2005. The results reveal that capital structure choice decision, in general terms, has a weak-to-no impact on firm's performance.

Ananiadis and Varsakelis (2008) address two questions. First, does the capital structure affect performance in the same way as in the mature economies? Second, does the short run financial policy of the firm affect the performance and under what circumstances? They apply a panel data analysis using data from the Athens Stock Exchange to test for these questions. Using contemporary data, this study investigated the relationship between capital structure, short run financial management and profitability. The analysis covered 130 industrial firms listed in the Athens Stock Exchange for the period 1995-2000. The net- working capital management has a positive impact on the returns on assets. Financial leverage intensifies this positive effect. Finally, inventories management seems to play a significant role in the explanation of profitability. The empirical findings show that high inventories turnover may lead to lower sales and consequently to low profitability.

## **1.9. Comment on Previous Studies**

As observed by the previous studies, for the period of time with the use of regression analysis and correlation, most studies examines the impact of capital structure (STD, LTD, TD) as independent variables on firms financial performance (ROA, ROE, ROI, EPS) as dependent variables under other control variables such as industry, growth, tangibility and size of the firms. From the evidence of previous studies, it seems that the relation between capital structure and firm's financial performance is mixed between positive and negative relation according to the place, size, and industry.

This study comes to fill the gap of lack of knowledge of the influence of capital structure on the firm's financial performance, especially in Palestine, for a period of 5 years from 2009 to 2013. The importance of this study highlight because it consider one of the few studies that look at this subject, in addition to being looking for influence of capital structure in the absence of long-term funding sources. Moreover, the study examines the impact of each sector in PEX on the firm's financial performance.

# **Chapter Two: Capital Structure: Theories and Performance Measures**



## 2.1 Introduction

If there has been any area of finance theory that has attracted the greatest attention and caused the highest controversy, it is definitely the theory of capital structure and leverage and how they affect firm's performance. The capital structure issue and its impact on firms performance can be traced back to the classic MM 1958 work which argued that under certain conditions, the choice between debt and equity does not affect on firm value, the value of a corporation and its costs of capital are unaffected by its capital structure and the only variables that determined firm value was its future earnings power (expected cash flow) and hence the capital structure decision is irrelevant.

Capital structure has been an important focus point in the literature since MM started publishing their research about it in 1958. Capital structure is a remarkable topic because it has researched in both academic level and corporate level since the financing decisions of a firm are of vital importance for its operating and investing activities. Therefore, there are many theories, which discuss it in many different ways. It basically is referred how a firm mixes debt and equity in order to finance itself or in other words, it concerns about combination of funds, in the form of debt and equity. Therefore, there is still hot debate regarding that does an optimal capital structure exist and how capital structure affects firm performance and vice versa.

MM1958 created a fictional world without taxes, transaction costs, bankruptcy costs, growth opportunities, asymmetric information between insider and outsider investors and differences in risk between different firms and individuals. They proved that under these perfect conditions financing is irrelevant for shareholder's wealth and there is no optimal debt to equity ratio. However, the series of simplifying assumptions have often been questioned by subsequent literature. From these assumptions there are three basic: (1) the tax benefits of gearing, (2) bankruptcy costs and (3) asymmetric information; and the four major capital structure theories that based on these assumptions are: (1) the trade-off, (2) pecking order, (3) market timing, and (4) free cash-flow theories. As Lew (2012) stated, the trade-off theory is based on the tax benefits of gearing and bankruptcy costs; and the pecking order, free cash-flow and market timing theories are based on asymmetric information.

However, in the real world taxes exist and have a significant influence on a firm's capital structure and on a firm's value. In general, there are often preferences for debt rather than equity finance as it decreases the cost of finance. The tax deduction allowed for interest payments will relatively lower the after tax cost of debt which would bring down the overall cost and increase the firm's value.

In this chapter, the concept of capital structure, components of capital structure, and cost of each component will explained. Also, the research will present the capital structure theories and the factors that may influence a firm's capital structure decision. Following that, the research will discuss financial performance and its interplay with capital structure.

## **2.2 Capital Structure Definition**

There have been several attempts to define Capital Structure, all of definitions explain the kinds of securities and the proportionate amounts that makeup capitalization. It is the mix of different sources of long-term sources such as equity shares, preference shares, debentures, long-term loans and retained earnings. One of these definitions for Gangeni (2006) that state the study of capital structure attempts to explain the mix of securities and financing sources used by corporations to finance real investment. The firm needs to make investments in order to at least remain in business, let alone display some growth. To finance these investments, the firms can use internal finance sources such as retained earnings and issuing shares for public or use external finance sources as a loans or bonds.

The term capital structure refers to the relationship between the various long-term sources financing such as equity capital, preference share capital and debt capital as Parmasivan & Subramanian (2009). Capital structure is the permanent financing of the company represented primarily by long-term debt and equity and deciding the suitable capital structure is the important decision of the financial management because it is closely related to the value of the firm. Gitman and Zutter (2012) defined capital structure as the mix of long-term debt and equity maintained by the firm.

Although, the actual levels mix of the firm's permanent long-term financing represented by debt, preferred stock, and common stock equity may vary somewhat over time, most firms try to keep their financing mix close to a target capital structure. According to Ehrhardt & Brigham (2011), the main purpose of the capital structure is to comprise of the optimal mix of debt and equity. A firm's capital structure decision includes its choice of a target capital structure, the average maturity of its debt, and the specific types of financing it decides to use at any particular time. As with operating decisions, managers should make capital structure decisions that are designed to maximize the firm's intrinsic value.

From the last definitions, the capital structure can be defined as the mixing of financial sources to finance the firms operations. Financial sources can include the debt and equity that can be used by the firms.

## **2.3 Optimal Capital Structure**

To maximize the firm's intrinsic value, the cost of capital structure must be reduced to the lowest level. When reach this point, that's mean the optimum capital structure is achieved. Optimum capital structure may be defined by Parmasivan & Subramanian (2009) as the capital structure or combination of debt and equity that leads to the maximum value of the firm. Optimum capital structure is the capital structure at which the Weighted Average Cost of Capital (WACC) is minimums and thereby the value of the firm is maximums.

Deciding the suitable capital structure is important decision of the financial management because it is closely related to the value of the firm. Capital structure is the permanent financing of the company represented primarily by long-term debt and equity. Asaf (2004) states that the "Optimal capital structure means having the right balance of debt and equity financing in the business". Debt financing decisions for most corporations involves balancing a series of trade-offs involving cost, liquidity, choice of maturity, and the basis and frequency of interest rate resets.

Because the value of a firm equals the present value of its future cash flows as in equation, it follows that the value of the firm is maximized when the cost of capital is minimized. In other words, the present value of future cash flows is at its highest when the discount rate (the cost of capital) is at its lowest. By using this equation, the value of the firm,  $V$ , can be defined by Gitman and Zutter (2012, p.535) as the follow:

$$V = \frac{EBIT \times (1 - T)}{r_a} = \frac{NOPAT}{r_a}$$

Where:

EBIT = Earnings before Interest and Taxes

T = tax rate

NOPAT = net operating profits after taxes, which is the after-tax operating earnings available to the debt and equity holders,  $EBIT \times (1 - T)$

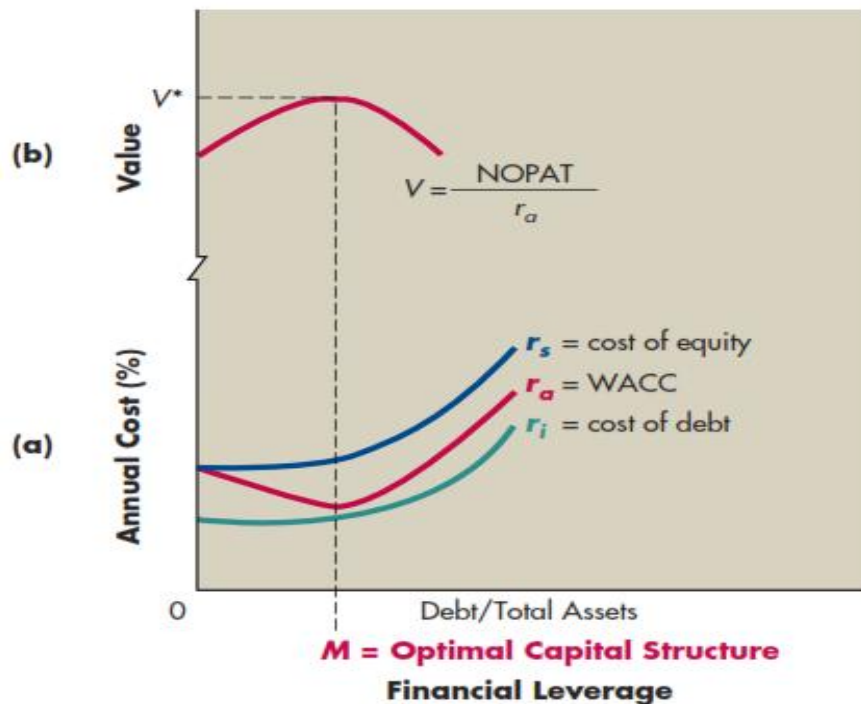
$r_a$  = weighted average cost of capital

Clearly, if assumed that NOPAT (and therefore EBIT) is constant, the value of the firm,  $V$ , is maximized by minimizing the  $r_a$ . From figure (a) in next page there are three cost functions: the cost of debt, the cost of equity, and the WACC as a function of financial leverage measured by the debt ratio (debt to total assets). The cost of debt,  $r_i$ , remains low because of the tax shield, but it slowly increases as leverage increases, to compensate lenders for increasing risk. The cost of equity,  $r_s$ , is above the cost of debt because the stockholders require a higher return to compensate for the higher degree of financial risk. The  $r_a$  results from a weighted average of the firm's debt and equity capital costs. At a debt ratio of zero, the firm is 100 percent equity financed. As debt is substituted for equity and as the debt ratio increases, the WACC declines because the after-tax debt cost is less than the equity cost ( $r_i < r_s$ ). In this range, the tax benefits of additional debt outweigh the costs of borrowing more. However, as the debt ratio continues to increase, the increased debt and equity costs eventually cause the WACC to rise (after point M in Figure (a)).

### 2.3.1 Graphical View of Optimal Structure

Because the maximization of value,  $V$ , is achieved when the overall cost of capital,  $r_a$ , is at a minimum (see Equation), the optimal capital structure is that at which the  $r_a$  is minimized. In Figure (a), point M represents the minimum WACC the point of optimal financial leverage and hence of optimal capital structure for the firm.

Figure (b) plots the value of the firm that results from substitution of rain Figure (a) for various levels of financial leverage into the zero-growth valuation model in Equation. As shown in Figure (b), at the optimal capital structure, point M, the value of the firm is maximized at  $V^*$ . Simply stated, minimizing the WACC allows management to undertake a larger number of profitable projects, thereby further increasing the value of the firm.



**Figure 2.1: Cost function and value capital cost and the optimal capital structure**

Source: Gitman and Zutter (2012, p.536).

However, as a practical matter, there is no way to calculate the optimal capital structures implied by Figure. Because it is impossible either to know or to remain at the precise optimal capital structure, according to (Gitman & Zutter, 2012), firms generally try to operate in a range that places them near what they believe to be the optimal capital structure.

From the last figure, firms usually manage toward a target capital structure to reach the maximum value by making a combination from equity and debt with the lowest cost.

## 2.4 Ideal capital market

Taking MM 1958 standpoint to its extreme, it could be argued that a company could have a capital structure consisting of 100% debt and that will still not in any way affect the value of the company. Furthermore, MM 1958 also purposed that the

expected ROE is an increasing function of the firms leverage, meaning that higher leverage should yield a higher return on a company's equity.

However, MM 1958 admitted that these propositions were only valid given certain theoretical environmental conditions, namely a so called “ideal capital market”. An ideal capital market, according to (Gansuwan & Önel, 2012), relies in short form on the existence of the following five assumptions:

1. Capital markets are frictionless: No transaction cost or taxes. No costs associated with bankruptcy.
2. All market participants share homogenous expectations: Relevant and homogenous information are available to all actors in the market, hence homogenous expectations from the actors.
3. All market participants are atomistic: No participant on the market can affect the price of a security through trading.
4. The firm’s investment program is fixed and known: The firm’s capital investment program and thus its assets, operations and strategies are fixed and known to all investors in the market.
5. The firm’s financing is fixed: Once it is chosen, the capital structure of the firm is fixed.

Since the MM 1958 propositions relies on what arguably could be considered highly rigid environmental conditions, which especially seems to be far removed from the realities of the modern business world as it is commonly characterized by very dynamic business environments, globalization of markets and trade and thus rapidly changing strategies and business models for companies.

During the decades which have passed since the emergence of MM propositions regarding capital structure, a vast amount of research, in somewhat different directions, have added quite a bit of new knowledge in the discussion regarding capital structure, which will be reviewed in this chapter. The starting point of that will be to look at what could argued to be “mainstream” financial research in the field of capital structure, post MM.

## **2.5 Components of Capital Structure**

All of the items on the right-hand side of the firm’s balance sheet, excluding current liabilities, are sources of capital. Total capital breakdown into two components, equity capital and debt capital.

### **2.5.1 Equity Financing**

In components of capital structure, equity share capital represents the ownership capital of the company. It is the permanent capital and cannot be withdrawn during the lifetime of the company. Owners are the real risk bearers, but they also enjoy rewards. Their liability is restricted to their capital contributed.

Equity shares are popular among the investing class. With equity financing via common stock, you can reduce or increase your ownership percentage in your company through the sale or purchase of common stock to/from one or more individuals or entities in exchange for a specified amount of money<sup>1</sup>. The common equity represents the amount that all common shareholders have invested in a company. Most importantly, this includes the value of the common shares themselves. However, it also includes retained earnings and additional paid-in capital<sup>2</sup>.

According to Nawaz, et al., (2011), capital consists of two types: (1) Contributed capital, which is the money that was originally invested in the business in exchange for shares of stock or ownership and (2) Retain earnings, which represent profits from past years that have been kept by the company and used to strengthen the balance sheet or fund growth, acquisitions, or expansion.

If a firm doesn't use debt financing, it's referred to as an unlevered firm. This brings about what is referred to as business risk which is defined as the risk a firm's common stockholders would face if the firm had no debt (Ehrhardt & Brigham, 2011). In other words, it is the risk inherent in the firm's operations, which arises from uncertainty about future operating profits and capital requirements. If a firm doesn't use debt then its return on invested capital shall be measured by return on equity. This simply means that the business risk of a leverage free firm will be measured by the standard deviation of its ROE.

### **2.5.2 Debt Financing**

The debt capital in a company's capital structure refers to borrowed money that is at work in the business. The safest type is generally considered long-term debt because the company has years, if not decades, to come up with the principal, while paying interest only in the meantime according to Nawaz, et al. (2011). In components of capital structure, debenture capital is a part of borrowed capital; the creditors of the company are the debenture holders. Different types of debentures are issued for the convenience of investors. Also, organizations can obtain long-term and medium term loans from banks and financial institutions. Public Deposits can be used as debt finance; public deposit means any money received by a non-banking company by way of deposit or loan from the public, including employees, customers and shareholders of the company other than in the form of shares and debentures<sup>3</sup>.

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<sup>1</sup> Small Business - Chron.com, (2015). *The Advantages of Common Stock Financing*. [online] Available at: <http://smallbusiness.chron.com/advantages-common-stock-financing-59634.html> [Accessed 10 Jan. 2015/7:06:22 AM].

<sup>2</sup> TheFreeDictionary.com, (2015). *Common Equity*. [online] Available at: <http://financial-dictionary.thefreedictionary.com/Common+Equity> [Accessed 10 Jan. 2015/7:06:35 AM].

<sup>3</sup> Business.gov.in, (2015). *Business Portal of India : Growing a Business : Financial Support : Public deposits*. [online] Available at: [http://business.gov.in/growing\\_business/public\\_deposits.php](http://business.gov.in/growing_business/public_deposits.php) [Accessed 10 Jan. 2015/7:06:52 AM].

When a firm decides to use debt financing for its operations it's faced with a financial risk and it's referred to as a levered firm. Ehrhardt & Brigham (2011) defined financial risk as the additional risk placed on the common stockholders as a result of the decision to finance with debt. Financial risk is the probability that the earnings of the firm will not be as projected because of the method of financing. Also, the financial risk arises because debt has a fixed financing obligation usually in the form of interest which must be met when the obligation falls due before the shareholders can share in the retained earnings. The level of debt (financial leverage) that is acceptable for one industry or line of business can be highly risky in another, because different industries and lines of business have different operating characteristics (Gitman & Zutter, 2012).

## **2.6 Cost of Capital**

As explained above, capital consists from two components, one is debt and other is equity. If a firm finances its operation with debt, it is borrowing money from a lender for a certain period of time with a promise to pay the money back with its interest. In return the lender receives interest payments on the loan. With equity financing the shareholders buy shares in the company, they become owners and in return they receive a portion of the firm's profit. Cost of capital in general represents the different costs attached to the different sources of financing obtained by an organization.

### **2.6.1 Interest (Cost of Debt)**

The company could raise debt in a variety of ways which included borrowing funds from financial institutions or from public debt in the form of bonds (debentures) for a specified period of time at a certain interest rate wakida (2011).

The company can use various bonds, loans and other forms of debt, so this measure is useful for giving an idea as to the overall rate being paid by the company to use debt financing. The measure can also give investors an idea as to the riskiness of the company compared to others, because riskier companies generally have a higher cost of debt.

Lenders are relatively demand lower returns because they take the least risk of any contributors of long-term capital so the cost of debt is lower than the cost of other forms of financing. Also, the tax deductibility of interest payments lowers the debt cost to the firm substantially.

### **2.6.2 Dividends (Cost of Equity)**

When investors provide equity capital to the firm, they acquire a right to the future dividends of that firm given that they become partial owners of the company

and that these dividends cannot be determined from the onset wakida (2011). Businesses have an option of raising capital internally by retaining earnings. The opportunity cost of retained earnings is the rate of return on dividend forgone by equity holders and the cost of external equity is the minimum rate of return which the shareholders require on funds supplied by them by purchasing new shares to prevent a decline in the existing market price of the equity share wakida (2011).

Unlike debt capital, which the firm must eventually repay, equity capital remains invested in the firm indefinitely—it has no maturity date. The two basic sources of equity capital are (1) preferred stock and (2) common stock equity, which includes common stock and retained earnings. Common stock is typically the most expensive form of equity, followed by retained earnings and then preferred stock. In addition, a firm that increases its use of leverage significantly can see its cost of debt rise as lenders begin to worry about the firm's ability to repay its debts. According to Gitman & Zutter (2012), whether the firm borrows very little or a great deal, it is always true that the claims of common stockholders are riskier than those of lenders, so the cost of equity always exceeds the cost of debt.

## **2.7 Theories of capital structure**

In this thesis will investigate whether the type of debt within the capital structure has an impact on a firm's performance. In order to do so, first will understand the theories that explain a firm's choice of capital structure, to see when and why a firm chooses debt rather than equity to finance its operations. These theories are presented below.

### **2.7.1 Modigliani & Miller (MM)**

In 1958 MM wrote the article "The cost of capital, corporate finance and the theory of investment". This article introduced two propositions that had an enormous impact in the field of finance, and that today can be found in finance textbooks used by universities around the world. The proposition regards a firm's capital structure and its cost of capital in a perfect capital market. The perfect capital market assumes that there are no taxes, no transaction costs and that the borrowing and lending rate is the same for corporations and individuals according to Ehrhardt & Brigham, (2011).

Five years after MM introduced Proposition I & II, in 1963 they published the article "Corporate Income Taxes and the Cost of Capital: A Correction". It was an extension and correction of the Propositions that they had introduced five years earlier, where taxes had been included. The inclusion of taxes had an effect on both of the propositions. Below, an explanation of the two propositions, with and without taxes.



### 2.7.1.1 Modigliani and Miller: No Taxes

Modern capital structure theory began in 1958, when MM published what has been called the most influential finance article ever written. MM's study was based on some strong assumptions, which included the following as (Ehrhardt & Brigham, 2011; Quiry et al, 2009):

1. There are no brokerage costs.
2. There are no taxes.
3. There are no bankruptcy costs.
4. Investors can borrow at the same rate as corporations.
5. Investors have the same information as management.
6. EBIT is not affected by the use of debt.

The perfect markets theory of capital structure contradicts the "real world" approach. The corporation can mix any proportion of debt and equity to build capital structure without any effect on firm value because the value is independent of its capital structure as MM 1958 state and the determinant factor for firm value is future earnings power (future cash inflow). Although, keep in mind that these propositions assume a perfect capital market.

The proposition of no taxes or irrelevant proposition can be stated as Ross et al, (2011), MM Proposition I (no taxes): *The value of the levered firm is the same as the value of the unlevered firm.* This is the first proposition of the MM theorem in absence of taxation. It simply states that, in perfect financial markets, the value of a levered company is exactly the same as an unlevered company.

Before MM, the effect of leverage on the value of the firm was considered complex. MM showed a simple result: if levered firm's are priced too high, rational investors will simply borrow on their personal accounts to buy shares in unlevered firm. This substitution is oftentimes called home made leverage. Homemade leverage is a substitution of risks that investors may undergo in order to move from overpriced shares in highly levered firms to those in unlevered firms by borrowing in personal accounts.

Furthermore, the MM theorem investigates the effect of changing in leverage on total cash flow and return on equity (point view of stockholders). Firstly, the effect produced by changing leverage on total cash flow is absence. According to Quiry et al., (2009) this indicates the WACC doesn't change, whatever the leverage. Secondly, Ross et al., (2011) in their book corporate finance: Core Principles & Applications studied the effect of change in leverage on stockholders. They find the change in capital structure benefit the stockholders if and only if the value of the firm increases. Conversely, these changes hurt the stockholders if and only if the value of the firm decreases. So, Managers should choose the capital structure that they believe will have the highest firm value, because this capital structure will be most beneficial to the firm's stockholders. This result supported by Olokoyo (2012) in his study that

find the expected return on equity is positively related to the leverage because the risk of equity increases with leverage.

### **2.7.1.2 Modigliani and Miller II: The Effect of Corporate Taxes**

When MM introduced taxes into their proposition in 1963 the result was altered. It was shown that it was beneficial for firms to include debt in their capital structure. Firms that are partly financed by debt can deduct the interest it pays on its debt, from the tax it has to pay on its income as MM 1958. It creates a higher total value for a firm that is financed with debt and equity, a leveraged firm, than for a firm that is financed only with equity, an unleveraged firm. The value of firm is equal to the value of the firm's cash flow with no debt tax shield (value of an all equity firm) plus the present value of tax shield in the case of perpetual cash flows.

The Tax Code allows corporations to deduct interest payments as an expense, but dividend payments to stockholders are not deductible. The differential treatment encourages corporations to use debt in their capital structures. This means that interest payments reduce the taxes paid by a corporation, and if a corporation pays less to the government then more of its cash flow is available for its investors. In other words, the tax deductibility of the interest payments shields the firm's pre-tax income.

The tax shield tends to be stronger than the increase when the debt level is low. However, as (Malm & Roslund, 2013) when the debt level reaches a certain level the increase in the cost of equity will be higher than the reduction from the tax shield due to the increased risk of default on the debt payments. Since interest payments on debt are tax deductible, the effective cost of debt is lower than equity in most cases. Higher debt leverage also improves the return on equity measure of financial performance (Asaf, 2004). Debt thus is an attractive funding source for companies, compared to equity because the interest that pays on the debt will deduct from taxable income and reduce the amount that will be pay for government. However, the cost of debt increases as leverage increases and credit ratings consequently deteriorate. Other things remaining equal, the benefits of debt are greater when tax rates are higher.

### **2.7.1.3 Miller: The Effect of Corporate and Personal Taxes**

Merton Miller (this time without Modigliani) later brought in the effects of personal taxes. The income from bonds is generally interest, which is taxed as personal income at rates, while income from stocks generally comes partly from dividends and partly from capital gains.

If investors are taxed heavily on interest income (relative to taxation on equity income), they demand higher risk-adjusted returns for holding debt (relative to holding equity), thereby discouraging the use of debt at the corporate level. The personal tax burden on interest income is generally higher than that for equity

income. Three reasons are presented by Graham (1998) for why the personal tax rate on interest income is generally higher than that for equity income. 1) Long-term capital gains are often taxed at a rate below statutory personal rates, 2) taxes on capital gains can be deferred until the gain is realized, and 3) capital gains taxes can be avoided altogether if equity shares are held until death.

So, on average, returns on stocks are taxed at lower effective rates than returns on debt. Because of the tax situation, Miller argued that investors are willing to accept relatively low before-tax returns on stock relative to the before-tax returns on bonds. Thus, as Miller pointed out, (1) the deductibility of interest favors the use of debt financing, but (2) the more favorable tax treatment of income from stock lowers the required rate of return on stock and thus favors the use of equity financing.

### **2.7.2 Pecking Order Theory**

The pecking order theory was first introduced in 1961 by Donaldson, but was later altered and modified by Myers and Majluf in 1984. The theory regards what type of financing a firm prefers when it is in need of more funding, whether it is internal or external. In this situation, according to Ehrhardt & Brigham (2011), the firm first raises capital internally by reinvesting its net income and selling its short-term marketable securities. When that supply of funds has been exhausted, the firm will issue debt and perhaps preferred stock. Only as a last resort, the firm will issue common stock.

A theory stating that, all other things being equal, companies seeking to finance a new project or product have a hierarchy of preferred financing options that progresses from the most preferred to the least preferred. The hierarchy is said to follow this order: internal funding (or simply financing a project or product out-of-pocket), debt issuance, debt-equity hybrid issuance, and equity issuance. The reasons why firms have that order of preference have to do with asymmetric information.

Asymmetric information occurs because managers have more information than the shareholders about the state of the firm and how well it is doing. The result is therefore that the shareholders will base their belief on the firm's future on the manager's actions. The manager's actions are believed to signal information about the state of the firm. According to (Malm & Roslund, 2013), issuing shares sends a message that the shares are overvalued, whereas issuing debt does not send any message. Debt issuing is therefore favored over equity issuing.

As Olokoyo, (2012) said, if firms are required to finance new projects by issuing equity, under pricing may be so severe that new investors capture more than the net present value of the new project, resulting in a net loss to existing shareholders. As a result, managers will hesitate to issue equity if they feel that it is undervalued by the market. However, investors realize that managers will hesitate to issue new equity when it is underpriced. Thus, both managers and investors react according to their available information. Based on this argument, if managers tend to issue undervalued equity (low priced equity), the wealth will be transferred to the

investors against the shareholders' benefits and wealth. In this situation, according to Al-tally (2014), internal funds and debt will be preferred to equity.

### **2.7.3 The Trade-off Theory & Financial Distress Costs**

The results of MM depend on the assumption that there are no bankruptcy costs. However, bankruptcy can be quite costly. Firms in bankruptcy have very high legal and accounting expenses, and they also have a hard time retaining customers, suppliers, and employees. Moreover, bankruptcy often forces a firm to liquidate or sell assets for less than they would be worth if the firm were to continue operating. Also, key employees jump ship, suppliers refuse to grant credit, customers seek more stable suppliers, and lenders demand higher interest rates and impose more restrictive loan covenants if potential bankruptcy looms as Ehrhardt & Brigham (2011). Bankruptcy-related problems are most likely to arise when a firm includes a great deal of debt in its capital structure. Therefore, bankruptcy costs discourage firms from pushing their use of debt to excessive levels.

As capital structure was defined as mix of debt and equity, firm hope to reach the optimal capital structure with lowest WACC and highest firm value, the trade off theory tries to explain how a firm can obtain an optimal capital structure, by adjusting their debt and equity levels so there is a balance between the benefits from their tax shield and their financial distress costs Malm & Roslund (2013). According to the theory, the optimal capital structure is reached when the present value of the tax shield is just offset by the present value of the financial distress costs.

According to the trade off models, the optimal capital structure does exist. A firm is regarded as setting a target debt level and gradually moving towards it. The firm's optimal capital structure will involve the tradeoff among the effect of corporate and personal taxes, bankruptcy costs and agency costs. Bankruptcy-related cost was divided for two components by Ehrhardt & Brigham (2011); (1) the probability of financial distress and (2) the costs that would be incurred if financial distress does occur.

Main focus of a firm is to substitute debt for equity, vice versa in order to find optimal debt ratio and maximize value of the firm. Hence, trade-off theory can be summarized as balancing the different benefits and costs associated with debt financing to have optimal capital structure. Debt also has disciplining role because of reduction in free cash flow (Gansuwan & Önel, 2012). Tax shield is also important point of the theory. Firms can deduct interest payment of debt from tax, as a result net incomes of the firms increase. In order to maximize tax shield, firms may choose higher debt levels. According to Niu (2008), the trade-off theory predicts that firm profitability is enhanced by maximizing the benefits of the tax shield offered by debt.

It is interesting to note that as years go by other researchers are continuing to use the MM theory as a base to launch further analysis – with some not even agreeing with the applicability of the propositions under current global economic

conditions. In their view, the theory implies that highly profitable firms should have higher debt levels in order to protect the profits from tax – a fact that they observe is not supported by empirical evidence. An extension to this point provided by (Gangeni, 2006) in his study, there is a limit to what the firm can borrow as the actual cost of debt leads to lower profitability of the firm – in turn reducing the effectiveness of the tax shield.

#### **2.7.4 Agency Costs (Free Cash flow) Theory**

Agency problems may arise if managers and shareholders have different objectives. Such conflicts are particularly likely when the firm's managers have too much cash at their disposal. Managers often use excess cash to finance projects none of which have much to do with maximizing stock prices according to Ehrhardt & Brigham (2011).

Agency costs are costs due to conflicts of interest. Two types of conflicts were identified by (Olokoyo,2012; Niu,2008 ): first is the conflicts between shareholders and managers arising from the situation of managers holding less than 100% of the residual claim and the second is the conflict between debt holders and equity holders arising from the debt contract that make equity holders invest sub optimally. In order to prevent this situation, principal would always choose to add additional clause in contract or take measures to monitor agency, which will definitely increase the relevant cost.

However, the theory suggests that choosing best/optimal capital structure may mitigate agency conflicts and decrease agency cost. Therefore, according to the theory, high leverage/debt ratio help a firm to reduce its agency cost and mitigate agency conflicts. According to (Gansuwan & Önel, 2012), this debt ratio also encourages managers to act more in the interests of shareholders. As a result, the firm's value increases. In addition, the optimal capital structure is minimizing the agency cost as (He, 2013).

Agency costs of monitoring managers and their risk-aversion is sometimes exacerbated by compensation structures as managers are only rewarded for success, and there are penalties for failure (Gangeni, 2006). In situations like this, the managers have a moral dilemma in that they tend to prioritize their own needs ahead of those of the shareholders. Agency costs would be reduced if the firm paid higher dividends and therefore the managers would operate more transparently as they would have to source funding from the capital markets on a regular basis (Gangeni, 2006). According to Ehrhardt & Brigham (2011), firms can reduce excess cash flow in a variety of ways. One way is to funnel some of it back to shareholders through higher dividends or stock repurchases.

### **2.7.5 Signaling Theory**

It was assumed by MM that investors have the same information about a firm's prospects as its managers-this is called symmetric information. However, managers in fact often have better information than outside investors. According to Ehrhardt & Brigham (2011) this is called asymmetric information, and it has an important effect on the optimal capital structure.

Signaling theory states that corporate financial decisions are signals sent by the company's managers to investors in order to shake up these asymmetries. These signals are the cornerstone of financial communications policy. According to Gangeni (2006), the argument here is that management will only issue debt or equity if there are not enough internal resources to finance the desired investments or the risk is not in line with the anticipated returns. In this case, the emphasis will be on identifying what trends in the type, level and reliability of the information supplied. So the managers would not issue additional equity if they thought the current stock price was less than the true value of the stock (given their inside information). Hence, investors often perceive an additional issuance of stock as a negative signal, and the stock price falls.

### **2.7.6 The Market Timing Theory**

An extension of the Signaling theory implies that managers will use equity finance when they believe it is overvalued and use debt when they believe equity is undervalued. This is based on the premise that they believe they have information that the firm is positioned to generate better performance in the future than the market currently believes.

In corporate finance, according to Baker & Wurgler (2002), equity market timing refers to the practice of issuing shares at high prices and repurchasing at low prices. The intention is to exploit temporary fluctuations in the cost of equity relative to the cost of other forms of capital. In the efficient and integrated capital markets studied by MM (1958), the costs of different forms of capital do not vary independently, so there is no gain from opportunistically switching between equity and debt. In capital markets that are inefficient or segmented, by contrast, market timing benefits ongoing shareholders at the expense of entering and exiting ones. Managers thus have incentives to time the market if they think it is possible and if they care more about ongoing shareholders.

According to Al-Tally (2014), the market timing theory suggests that managers, depending on their definition of firm value, tend to issue equity when they feel that the market overvalues their company. Market timing is sometimes classified as part of the behavioral finance literature, because it does not explain why there would be any asset mispricing, or why firms would be better able to tell when there was mispricing than financial markets. The effect of market timing on capital

structure examined by Al-tally (2014), the study found that low leverage firms are those that raise funds when their market valuations are high, while high leverage firms are those that raise funds when their market valuations are low.

### **2.7.7 Life Stage Theory**

The basic premise of organizational life stage theory is that firms – in a similar fashion to living organisms – progress through a set of life stages that starts at birth and ends in death.

According to Utami & Inanga (2012), firms in different life cycle stages have different characteristics, especially regarding the information asymmetry. Mature firms have less information asymmetry whereas growth firms have more. This is because mature and older firms are more closely followed by analysts and are better known to investors and, hence, should suffer less from problems of information asymmetry. This theory recognized a relationship between capital structure and the life stage of the firm. According to this theory, the stages of birth and growth are typical with a higher use of debt than equity. The mature companies decrease the level of debt, which rises again in the decline stage

To see the relationship between capital structure and firm value (Chowdhury, A. & Chowdhury, S. 2010) considered share price as proxy for value and different ratios for capital structure decision in Bangladesh. The interesting finding suggests that maximizing the wealth of shareholders requires a perfect combination of debt and equity, whereas cost of capital has a negative correlation in this decision and it has to be as minimums as possible. This is also seen that by changing the capital structure composition during life stages the firm can increase its value in the market. Nonetheless, this could be a significant policy implication for finance managers, because they can utilize debt to form optimal capital structure to maximize the wealth of shareholders.

## **2.8 Determinants of Capital Structure**

Different capital structure theories with tax benefits, bankruptcy costs, and asymmetric information costs were explained in the previous section. A number of previous pieces of research have shown that capital structure is affected by some other determinants, such as country, industry, firm size, firm age, market situations and etc. Thus, the management needs to consider these determinants, which are generally related to the economic environment, and firm's characteristics. Some of these determinants are used in this thesis as criteria for firm's characteristics.

### 2.8.1 Firm Size

The firm's size is related to several topics in the capital structure theory, such as asymmetric information, financial distress costs, transaction costs, and accessibility to the financial market (Lew, 2012). In addition to the issue of information asymmetry, other reasons presented by Gansuwan & Önel (2012) for why smaller companies might obtain less external financing and thus have a lower leverage ratio compared to larger companies, include the following ones below:

1. **Transaction costs:** smaller firm seeking external capital is facing higher transaction costs, as that is a function of scale. Meaning that larger companies may obtain scale advantages, which reduces the transaction costs, while seeking external capital in relation to smaller companies
2. **Market access:** smaller firms may not have access to this type of public funding through stock markets (by for instance issuing new share issues) and might be considered less reputable in not being a public company, capital market access as a factor could also influence the level of external financing.
3. **Bankruptcy costs:** bankruptcy costs of firm tends to have an inverse relationship with firm size, i.e. larger firms have lower bankruptcy cost than smaller ones and vice versa. To elaborate, bankruptcy cost could come both in a direct as well as in an indirect fashion. An example of a direct bankruptcy cost could be the liquidation return and an indirect cost could be in the form of the stakeholders losing confidence in the business long-term survival.
4. **Operating risks:** firms operating risk is argued to be inversely related to the size of the firm, thus meaning that smaller firms should pre-disposed to utilize rather less debt and outside financing compared to the larger ones, due to the perceived operating risk being higher in smaller firms.

Larger firms obtain benefits from their size and diversification because they can borrow with lower costs and survive economic disasters with more resilience than smaller firms. Consequently, this should enable them to perform better than smaller firms and thus generate more profit. Furthermore, large firms are expected to incur lower agency costs for issuing debt or equity, less cash flow volatility, and have easier access to the credit market. Therefore, large companies are expected to hold more debt in their capital structures than small firms to get the benefit of the tax shield (Titman & Wessels, 1988). Also, it is argued that smaller firms tend to have large short-term debt and less long-term debt due to the conflict between shareholders and debt holders.

Capital structure is closed link with corporate performance and to find the relation between size and performance San & Heng (2011) focuses on construction companies which are listed in main board of Bursa Malaysia from 2005 to 2008. All



the 49 construction companies are divided into big, medium and small sizes, based on the paid-up capital. The result shows that there is relationship between capital structure and corporate performance. For big companies, return on capital with debt to equity market value and EPS with long-term debt to capital have a positive relationship whereas EPS with debt to capital is negatively related. In the interim, only operating margin with long-term debt to common equity has positive relationship in medium companies and EPS with debt to capital has a negative relationship in small companies.

### **2.8.2 Industry**

Each industry may have specific features that affect the debt structure of firms in that industry. These may arise from the different business environments of industries, the degree of competition in product markets, the capital required in these industries, and the skill composition of the industries. Titman (1984) presents a model that implies that firms with specialized products suffer higher costs in the event of bankruptcy, and thus will have less debt in their capital structure. Since the uniqueness can vary from one industry to another so the firm industry sectors affect leverage.

Furthermore, industry is related to several factors in the capital structure theory, such as bankruptcy costs, liquidation value, asymmetric information, collateral value and macro-economic industrial trends. Firms with tangible assets could retain more value when firms go into bankruptcy, than firms with intangible assets, because tangible assets will have a higher liquidation value and fewer asymmetric information costs. In regard to liquidity, Aftab et al., (2012) state that there are industry effects associated with liquidity. Different industries have different levels of liquidity to take care of operational requirements as well as managing the rate of return of the firm.

## **2.9 Corporate Capital Structure in Developing Countries**

It is common knowledge that Palestinian listed firms operate under severe political and economic circumstances. In other words, it would be interesting to report the capital structure (and its determinants) of firms which operate under unstable political and economic circumstances and compare the results with the available literature.

Based on (Al-Qaisi, 2013) for the time period 2003 – 2007, the empirical results indicate that listed Palestinian firms have low leverage ratios. In addition, the results show that long-term debt is literally non-existent. Finally, the Seemingly-Unrelated Regression estimation results indicate that while some of the well-known determinants of capital structure (firm size and firm profitability) are applicable to the Palestinian case.

The nature and determinants of the capital structure choice of Jordanian, Kuwaiti, Omani and Saudi Arabian non-financial listed companies also examined by (Omet & Mashharawe, 2003). However, depending on the availability of the data, the final samples of companies consist of 51 Jordanian companies, 30 Kuwaiti companies, 38 Omani companies and 29 Saudi Arabian companies. Based on the time period 1996-2001, the results indicate that Jordanian, Kuwaiti, Omani and Saudi companies have quite low leverage ratios. In other word, the Jordanian, Kuwaiti, Omani and Saudi Arabian companies have extremely low values of long- term debt in their respective capital structures.

Bas, Muradoglu & Phylaktis (2009) discuss the capital structure decisions of firms in developing markets covering 25 countries from different regions. In contrast to early studies, the main focus is on the small firms because their contribution to GDP is higher than large firms and they comprise the majority of firms in developing countries. The study analyze whether the determinants of capital structure show differences among small, medium and large firms and it examine whether the determinants of capital structure are same for listed and private firms.

Regardless of how the firm defines, in accordance with the capital structure theory, the importance of firm level variables, such as tangibility and profitability is confirmed. According to the results, private, small, medium and large firms follow the maturity matching principle and pecking order on their debt financing decisions. But listed firms prefer equity financing to long term debt financing. Moreover, internal funds do not have an impact on the debt financing decisions. Another major finding is the size effect. It's see different responses from small and large firms towards debt financing. As firms become larger, firms become more diversified and risk of failure is reduced as a result of that firms can have higher leverage. Based on results, small and large companies have different debt policies. Due to the information asymmetries, small firms have limited access to finance; therefore, they face higher interest rate costs. Also, they are financially more risky compared to large firms. As a result of that, small companies have restricted access to debt financing which may influence their growth.

Economic environment of the countries have influenced the debt decisions of firms differently. Since large and listed firms can have easily access to both the domestic and the international financial markets, their financing decisions are not influenced by the economic conditions of the country as much as the small, medium and private firms. For instance, large firms do not consider most of the macroeconomic factors for their long term debt financing decisions. The environment is important for short term borrowing.

They find differences in the capital structure decisions of listed and private firms and small and large companies. Large and listed companies can have easily access to finance in developing countries; whereas, for small and private firms, access to finance is more depended on the conditions of economic environment of the country.

Prasad, Green & Murinde (2001) analyzed the financial structure of Malay and Thai non-financial companies using a unique new company accounts dataset - an unbalanced panel consisting of the published accounts of 174 listed Thai companies over an average period of about 5.5 years and 165 listed Malay companies over an average of just under 8 years. The main findings are fourfold. First, although the evidence generally supports the pecking order hypothesis, there is also evidence to suggest a “reversed pecking-order” of finance. Second, they find further evidence to suggest that the “brake” of equity valuation preventing over-gearing by unprofitable firms may not to be working for both Malaysia and Thailand. Third, they find that information asymmetries still persist. Fourth, risk is found to have a non-linear influence on leverage; thus the risks of bankruptcy are non-linear as postulated by the traditional capital structure school of thought. These findings have important implications for firms in considering their financing decisions.

Booth et al. (2001) examine the corporate financial structures in 10 developing countries: India, Pakistan, Thailand, Malaysia, Turkey, Zimbabwe, Mexico, Brazil, Jordan, and South Korea. They consider whether financial leverage decisions and the factors that affect them differ across countries and whether capital-structure models make better predictions if the company’s nationality is known.

The data, which come from the International Finance Corporation, contain condensed financials for the largest companies in each country from 1980 to 1990, although not all periods are included for all countries. This dataset provides the most detailed capital-structure data available for developing countries. The sample contains a significant proportion of the total equity capitalization in each country. The authors examine three debt ratios: (1) total liabilities divided by total liabilities plus net worth, (2) long-term liabilities divided by long-term liabilities plus net worth, and (3) long-term liabilities divided by long-term liabilities plus average equity market value. The first ratio is available for all 10 countries, the second for all but Thailand, and the last for all but Thailand, Brazil, and Mexico. All countries except Korea, the most developed, have debt below the median level of the G-7 (France, Germany, Italy, Japan, U.S., U.K. and Canada) countries. All are at least “adequate” for accounting quality.

They find wide differences in financial markets. The ratio of stock market capitalization to GDP ranges from 2.1 percent to 78.5 percent. Several countries have stock market turnover similar to that in the United States, but others have significantly less turnover. Most of the countries have significant banking system concentration and government-directed credit policies. No strong relationship is found between macroeconomic factors and capital structures.

The strongest result is that more-profitable companies use less total debt. Results for the long-term debt ratio are similar but weaker— except that the coefficients of the tangibility ratio are largely reversed, implying that a company with more tangible assets will use more long term debt but lower total debt. The long-term debt ratio results using the market value of equity should be treated cautiously, however, because market value data are available for only seven countries. The authors conclude that capital-structure models have predictive power

in developed and developing countries. Small, profitable, taxpaying companies with largely tangible assets tend to have less total debt but more long-term debt. Finally, country factors matter at least as much as financial variables, except in the case of the market value ratios.

## **2.10 Firm Performance and Capital Structure**

### **2.10.1 Corporate Performance**

One of the main factors that could influence the firm's performance is capital structure. Since bankruptcy costs exist, deteriorating returns occur with further use of debt in order to get the benefits of tax deduction. Therefore, there is an appropriate capital structure beyond which increases in bankruptcy costs are higher than the marginal tax-sheltering benefits associated with the additional substitution of debt for equity. Firms are willing to maximize their performance, and minimize their financing cost, by maintaining the appropriate capital structure or the optimal capital structure.

However, as stated in the previous literature, underestimating the bankruptcy costs of liquidation or reorganization, or the aligned interest of both managers and shareholders, may lead firms to have more debt in their capital structure than they should. Therefore, according to Zeitun (2006), high levels of debt in the capital structure would decrease the firm's performance. However, not only does a firm's level of leverage affect corporate performance and failure but also its debt maturity structure. In other words, the choice of debt structure could have an impact on both corporate performance and failure risk. Furthermore, according to Zeitun (2006), there are other factors besides capital structure that may influence firm performance such as firm size, age, growth, risk, tax rate, factors specific to the sector of economic activity, and factors specific to macroeconomic environment of the country.

Since the primary objective of a business entity is to make profits, performance has been the most important construct studied over the past thirty-five years of strategy and corporate finance research. According to Chathoth (2002) the important issue that needs to be addressed in research that tries to establish the relationship between environment, strategy, structure, and firm performance pertains to the identification of variables that represent the firm performance construct.

In summary, a firm's performance could be affected by the capital structure choice and by the structure of debt maturity. Also, the tax rate is expected to have an impact on a firm's performance. So, studying the impact of capital structure on a firm's performance will provide evidence of the effect of capital structure on firm performance. The next section provides a definition of performance and the types of performance measures.

## 2.10.2 Performance Measures

The concept of performance is a controversial issue in finance largely due to its multi-dimensional meanings. Research on firm performance derives from organization theory and strategic management. Performance measures are either financial or operational. The choice of the alternatives to approaching performance (either operational or financial) according to Tudose (2012) is dependent upon the objectives that are set; thus the assessment of firm performance using financial indicators must be complemented by an assessment based on non-financial indicators; currently, there is a tendency to assess performance based on value creation, yet counted to the goal of sustainable development.

According to Abdulmalik, et al. (2014), financial performance such as profit maximization, maximizing profit on assets, and maximizing shareholders' benefits are the core of the firm's effectiveness. Operational performance measures, such as growth in sales and growth in market share, provide a broad definition of performance as they focus on the factors that ultimately lead to financial performance.

The measurement of performance is dependent upon the information introduced in the measurement system and the instruments employed. According to Tudose (2012), the classical indicators used in financial analysis to measure performance have been the ROI, leverage, capital efficiency, liquidity, cash flow, inventory turnover, receivables turnover ratio. The choice of alternatives of ascertaining performance may be influenced by the firm's objective. The assessment of firm performance using financial indicators must be complemented by an assessment based on non-financial indicators that express the quality of management, corporate culture, the effectiveness of executive compensation policies, the quality of shareholder communication system, etc. Presently, there is a trend towards assessing performance based on value creation, subsumed under the goal of sustainable development Tudose (2012).

A firm's performance can be measured in many different ways, depending on what the firm wishes to measure. For example, as Malm & Roslund (2013) state, you can measure the performance of individual divisions of the firm, or the performance of the firm as a whole. In this thesis the researcher will focus on aggregate performance measurements for the entire firm.

In this thesis the researcher will focus on aggregate performance measurements for the entire firm. However, this thesis will study the financial performance of the firm in terms of profitability. The selection of measures is based on what is most commonly used for this type of studies.

## 2.11 Profitability Measures

### 2.11.1 Return on Assets (ROA)

The ROA measures the overall effectiveness of management in generating profits with its available assets. The higher the firm's ROA the better.

The profitability measure ROA is considered subject of disagreement among scholars in determining the numerator of equation. The simplest way to determine ROA is to take net income reported for a period and divide that by total assets according to Gitman and Zutter (2012), Ehrhardt & Brigham (2011), and Ross et al. (2011). In contrast, some analysts take EBIT and divide over total assets such as Lindow (2013), Glantz (2003), Ross et al. (2003) as a gross ROA and Friedlob & Schleifer (2003). This is a pure measure of the efficiency of a company in generating returns from its assets, without being affected by management financing decisions. This study chose objective financial performance measures by adjusting the interest and tax to evaluate the performance of management objectively.

According to Lindow (2013, Pp.116), Glantz (2003, Pp.307), Ross et al. (2003, Pp.37) as a gross ROA and Friedlob & Schleifer (2003, Pp.99), the ROA is calculated as follows:

$$\text{Return on Assets (ROA)} = \frac{\text{EBIT}}{\text{Total Assets}}$$

ROA is a measure that is commonly used to measure the profitability of a firm's operations. ROA measures how profitable the firm is in terms of its assets. As mentioned above, it also indicates the overall financial health of a firm. ROA is a good measure to use to evaluate a firm's financial performance. In addition, it is a measure that has been used by many other researchers when evaluating the effect of capital structure on a firm's performance. It will therefore be used in our regression model as a measure of financial performance.

The DuPont system of analysis is used to dissect the firm's financial statements and to assess its financial condition. It merges the income statement and balance sheet into two summary measures of profitability, ROA and ROE. The DuPont system first brings together the net profit margin, which measures the firm's profitability on sales, with its total asset turnover (ATO), which indicates how efficiently the firm has used its assets to generate sales. In the DuPont formula, the product of these two ratios results in the ROA:

$$\text{ROA} = \text{Net Profit Margin} \times \text{Total Assets Turnover}$$

Substituting the appropriate formulas into the equation and simplifying results in the formula given earlier will give the following:

$$ROA = \frac{EBIT}{Sales} \times \frac{Sales}{Total Assets}$$

### 2.11.2 Return on Equity (ROE)

Another ratio that gives an indication of a firm's overall financial health is ROE. It is a ratio that is used by analysts to evaluate the performance of a firm. ROE shows the income generated for the shareholder's by the equity, which is the financing provided by the shareholders. The ROE measures the return earned on the stockholders' investment in the firm.

The simplest way to calculate ROE is to take net income reported for a period and divide that by shareholders equity according to Gitman and Zutter (2012), Ehrhardt & Brigham (2011), and Ross et al. (2011). In contrast, some analysts take EBIT and divide over shareholders equity such as Lindow (2013). This is a pure measure of the efficiency of a company in generating returns from its equity, without being affected by management financing decisions. This study chose objective financial performance measures by adjusting the interest and tax to evaluate the performance of management objectively. ROE is calculated as follows according to Lindow (2013, Pp.116):

$$Return\ on\ Equity\ (ROE) = \frac{EBIT}{Shareholders\ Equity}$$

Malm & Roslund (2013) state that the ROE it can give an indication of whether a firm is able to find profitable investment opportunities, something that is of great importance for firms that want to stay competitive.

A more in-depth analysis of ROE as the follow, the second step in the DuPont system employs the modified DuPont formula. This formula relates the firm's ROA to its ROE. The latter is calculated by multiplying the ROA by the financial leverage multiplier (FLM), which is the ratio of total assets to equity as Friedlob & Schleifer (2003, Pp. 94) :

$$ROE = ROA \times FLM$$

Substituting the appropriate formulas into the equation and simplifying results in the formula given earlier will give the following:

$$ROE = \frac{EBIT}{Total\ Assete} \times \frac{Total\ Assete}{Shareholders\ Equity}$$

After adding the sales turn over to equation become as the follow:

$$ROE = \frac{EBIT}{sales} \times \frac{sales}{Total\ Assete} \times \frac{Total\ Assete}{Shareholders\ Equity}$$

Use of the FLM to convert the ROA into the ROE reflects the impact of financial leverage on owners' return.

Friedlob & Schleifer (2003) state that the measure of success ROE made up of three components:

1. Profit margin to reflect the operating success of a company
2. Asset turnover to reflect the investing success of a company
3. Financial leverage to reflect the financing activities of a company

According to Aftab et al., (2012) the relationship between debt and return on equity is posited to be positive for banking industry unlike other firms because debt is the basic source of income for the banks and equity holders which is to be further lent or invested in other projects to boost net income. Due to the same reason the relationship between debt and growth potential for banking industry is found positive unlike other firms. Banks generally play a crucial role in the economic development of every country. One critical decision banks face is the debt-equity choice.

Taani (2013) examined the impact of capital structure on profitability in Jordanian banks. The study covered 12 listed banks on Amman Stock Exchange over the period of 2007 to 2011 and the major findings of the study are summarized below: Total debt was found to be significant in determining net profit and Return on capital employed (ROCE) in the banking industry of Jordan. The debt/equity ratio is normally safe up to 2. It shows the fact that banks in Jordan depends more on debt (long-term loans) rather than equity capital. This has re-emphasized the fact that banks are highly levered institutions. LTD and TD were found to be insignificant in determining ROE in the banking industry of Jordan. This means that deposits do not necessarily transit into enhancing ROE in the banking industry of Jordan.

Salteh et al., (2012) investigate the impact of capital structure on firm performance. The sample of the present study consists of 28 Iranian companies listed in Tehran Stock Exchange. The result that firm performance, which is measured by (ROE, Market-to-book value ratio & Tobin's Q) is significantly and positively associated with capital structure.

### **2.11.3 Return on Investment (ROI)**

ROI or ROCE is generally regarded as the key performance measure. The main reason for its widespread use is that it ties in directly with the accounting process, and is identifiable from the income statement and balance sheet. ROI show how much profit has been made in relation to the amount of capital invested and it is calculated as the follow according to ACCA Study Text for Paper F9 Financial Management (2009, Pp.18) :

$$\text{Return on Investment (ROI)} = \frac{\text{EBIT}}{\text{Capital Employed}}$$

Where:



*Capital employed = Shareholders Equity + Long Term Liability, or  
Capital employed = Total Assets – Short Term Liability*

In addition, ROI conveys the return on invested capital from the different perspectives of contributors including creditors and shareholders. Therefore, ROI is a popular measurement of corporate performance because it contrasts the net income generated with the total value of assets under management control. Consequently, it shows the effectiveness of management in terms of utilizing firm assets and its power to create shareholder value.

According to Gansuwan & Önel (2012), the value is created for the shareholders only when the firm earns a rate of return on new invested capital that exceeds its cost of capital. Additionally, this measure is considered more accurate than others that depend only on the balance sheet. ROI relies on two financial statements, balance sheet (financing) and income statement (profit).

Moreover, the relationship between profit and investments that generates profit is one of the most widely used measures of firm performance. As a quantitative measure of investment and results, ROI provides the firm's management with a simple tool for examining performance (Gansuwan & Önel, 2012). Therefore, ROI is used as a primary tool to evaluate financial performance of a firm.

The efficiency of a business depends upon the functioning of the business. The ROI is taken as a basis to measure efficiency. The efficiency is reflected by the profit earned by the business. The efficiency can be increased by minimizing costs or effective use of capital or by increasing sales. In case of inefficiency, Thukaram (2006) state that the management can identify the areas and take corrective steps. Inter-firm comparison is used as a technique to evaluate the performance. The important ratios used in this connection are return on investment, assets turnover ratio and profitability ratios. According to (Bender and Ward,2002), increasing the company's return on investment – for example making the same return on a lower (working capital) investment – will increase the funds available for reinvestment and thus increase the sustainable growth level.

## **2.12 Debt Ratio**

The ratio of total liabilities to total assets is called the debt ratio, or sometimes the total debt ratio. It measures the percentage of funds provided by sources other than equity:

$$\text{Debt ratio} = \frac{\text{Total liabilities}}{\text{Total assets}}$$

Assets can include both tangible (property, plant and equipment) and intangible (patents and trademarks) resources. On the liability side, this ratio normally includes both short- and long-term debt. A lower debt ratio indicates that a company relies less on borrowing as compared to equity for financing its assets. Generally, the lower

the debt to-assets ratio the better, but acceptable levels will vary across industries and companies. Larger, stable and more established companies can take on more debt without adding too much risk for investors.

The more predictable and stable the cash flow, the easier and cheaper it is for firms to borrow. Companies in more volatile industries (like technology) may have a harder time adding debt if times get unsound. Creditors prefer low debt ratios because the lower the ratio, the greater the Supportive against creditors' losses in the event of liquidation. Stockholders, on the other hand, may want more leverage because it magnifies expected earnings.

The debt position of a firm indicates the amount of other people's money being used to generate profits. In general, the financial analyst is most concerned with long-term debts because these commit the firm to a stream of contractual payments over the long run. As Ehrhardt & Brigham (2011) state, the more debt a firm has, the greater its risk of being unable to meet its contractual debt payments. Because creditors' claims must be satisfied before the earnings can be distributed to shareholders, current and prospective shareholders pay close attention to the firm's ability to repay debts.

Rauh and Sufi (2008) show that recognition of debt heterogeneity leads to new insights into the determinants of corporate capital structure. They show low credit quality firms are more likely to have a multi-tiered capital structure consisting of both secured bank debt with tight covenants and subordinated non-bank debt with loose covenants. Further, while high credit quality firms enjoy access to a variety of sources of discretionary flexible sources of finance, low credit quality firms rely on tightly monitored secured bank debt for liquidity.

Lenders are also concerned about the firm's obligation. In general, the more debt a firm uses in relation to its total assets, the greater its financial leverage. According to (Ehrhardt & Brigham, 2011), Financial leverage is the magnification of risk and return through the use of fixed-cost financing, such as debt and preferred stock. The more fixed-cost debt a firm uses, the greater will be its expected risk and return.

Chinaemerem & Anthony (2012) examines the impact of capital structure on financial performance of Nigerian firms using a sample of thirty non-financial firms listed on the Nigerian Stock Exchange during the seven year period, 2004 – 2010. The result shows that a firm's capital structure replaced by Debt Ratio has a significantly negative impact on the firm's financial measures (ROA and ROE).

Leverage is connected to profitability and the cost of capital. It is commonly divided into operational and financial leverage. According to Dahlstrm & Persson (2010), operational leverage deals with the volatility of EBIT and how an increase in revenue can result in a levered increase in EBIT depending on the movement of variable costs. Financial leverage deals with the volatility of earnings after tax and how the debt interest deductibility on tax increases value to shareholders. As noted above, debt is thought of as the cheaper source of capital and by adding the tax shield

advantage the after tax cost of debt will be even lower. As opposed to leveraging the firm in order to gain the advantages associated with debt, firms may also keep modest debt levels in order to remain financially flexible.

The risks associated with debt financing, e.g. costs of financial distress must also be considered when it is proposed that a firm can find an optimal capital structure. This balance between the advantages and risks of using debt is referred to as the trade-off theory of capital structure and was presented by MM in 1958.

The optimal mix of long and short term debt is determined by a number of parameters including the firm's observable credit quality (i.e. its credit rating), its portfolio of growth opportunities, the profitability of the project, the ability to fund the project through retained earnings, the liquidation value of the assets, the perceived accuracy of financial information, the firm's size and age, and the level of banking competition (Caprio and Demirgüç-Kunt, 1997).

# **Chapter Three: Research Methodology**

### **3.1 Introduction**

After formulating the research problem and objective that aims to explain the relationship between capital structure and firm financial performance using data for companies listed on the PEX, the research methodology can solve the problem systematically. It is process consist from techniques to collecting and analyzing data, determine the time horizon, research approach, research strategy, and research design. In order to investigate these issues, it is necessary to use appropriate research methodology.

Due to the natures of research that aims to learn existing knowledge about capital structure and firm performance, the researcher adopts deduction models and collects the data from PEX. Also, this research adopts a quantitative strategy because it emphasizes quantification in the collection and analysis of data and use a deductive approach, which is suitable for quantification in the collection and analysis of data. In addition, cross sectional research design was selected because it gave a snapshot of the population thereby enabling the researcher draw conclusions cross a wide population about capital structure and financial performance within the given point in time.

After adopting these approaches, this chapter will discuss data collection, population, sample, and variables.

### **3.2 Data Collection**

As known, it is a very important and challenging task to find the relevant data for a thesis or research. Therefore, the researcher needs to identify time horizons and which firms to include it for narrowing down the data. The researcher chooses the listed firms, which were traded on PEX from 2009 through to 2013.

The task of data collection begins after a research problem has been defined and research design/ plan has been drawn. While deciding about the method of data collection to be used for the study, the researcher should keep in mind two types of data, primary and secondary. The primary data are those which are collected afresh and for the first time, and thus happen to be original in character. The secondary data, on the other hand, are those which have already been collected by someone else and which have already been passed through the statistical process (Kothari, 2004).

#### **3.2.1 Primary Sources**

As previously said, to be able to conduct this research, the measurement of firm performance (ROE, ROA, and ROI) and measurement of capital structure (financial leverage ratios) need to be collected. These measurements were elaborated in the second chapter. However, the ratios could be retrieved from PEX.

### **3.2.2 Secondary Sources**

When the second chapter was written, the researcher used secondary data extensively so the scientific databases such as Business Source Premier, Science Direct, JSTOR, and Emerald were used. Also, Google Scholar, Google Books, Book finder, and Book ZZ were employed. In addition to these sources, the publications and research from international institutions also were used.

### **3.3 Study Population**

Saunders et al., (2009) define Population as “The full set of cases from which a sample is taken”. So, the population can consist of objects, people or even events, e.g. schools, miners, revolutions.

The study population consists of all companies listed in PEX that consist of 49 companies registered in the market and practiced their activities until the year 2013.

### **3.4 Study Sample**

Singh (2007) define a sample as “a finite part of a statistical population whose properties are used to make estimates about the population as a whole. When dealing with people, it can be defined as a set of target respondents selected from a larger population for the purpose of a survey”.

The sample among the companies composing all sectors has been chosen for conducting this study after omitting all companies which don't meet the following criteria:

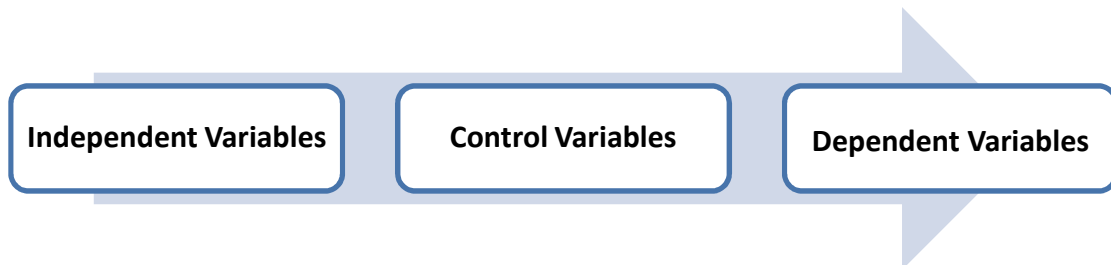
1. Companies must be listed in PEX.
2. The end of financial period of companies lead up to December 31 of each year.
3. Availability of sufficient data such as income statement, balance sheet in order to calculate financial measurement.

Thus, by considering the above constraints, the investigated sample size was about 35 companies. These companies have been selected from 5 investigated industries in PEX.

### **3.5 Study Variables**

The aim of this thesis is to empirically investigate relationships between capital structure and firm performance of listed Palestinian firms during the period 2009 - 2013. Since, it wants to find the relationships between capital structure and firm performance. Therefore, the variables divided into three groups, which are

dependent, independent and control variables. According to research questions, the measurements of firm performance are dependent variables; measurements of capital structure are independent variables. Also, will deployed control variables in order to control the dependent variables.



**Figure3.1: General categories or types of variables**

### **3.5.1 Dependent Variables**

According to research question will use three accounting based measurements of financial performance as dependent variables, which are ROA, ROE, and ROI to measure firm's performance. These are also the most commonly used performance measure proxies. These accounting measures represent the financial ratios from balance sheets and income statements as the following:

1. Return on Asset (ROA)
2. Return on Equity (ROE)
3. Return on Investment (ROI)

### **3.5.2 Independent Variable**

According to research question the measurements of capital structure will use as independent variables. Regarding the independent variables, will employed short-term debts, long-term debts and total debts as a ratio of total assets as the following:

1. Short term debt (STD) to total assets
2. Long term debt (LTD) to total assets
3. Total debt (TD) to total assets

### **3.5.3 Control Variables**

After forming both dependent and independent variables, the firm characteristics planned to control by using the factors potentially influencing capital structure, which are firm size and the industry.

The measure for firm size is varied such as by the total number of employee, the amount of total capital, and the natural logarithm of total assets. In this research, for measuring the firm size will use the natural logarithm of total assets.

Regarding industry, the classifications of PEX will be used for dividing the companies into different industries. The PEX use the following 5 industry classifications:

1. Banking and financial services
2. Insurance
3. Investments
4. Industry
5. Services



# **Chapter Four: Data Analysis and Interpretation**

## 4.1 Introduction

This chapter examines the data analysis and interpretation of results. The descriptive analysis for the dependent variables and explanatory variables are fully presented. The correlation matrix for the variables is reported in order to examine the correlation that exists among variables. The regression results for the panel data for each of the performance measures for the period 2009 to 2013 are displayed and fully discussed. The analyses are used to test the earlier formulated hypotheses to establish the relationship which may exist among the variables expressed.

## 4.2 Descriptive Statistics

Table 4.1 reports a summary statistics for the variables that used in the study. A critical examination of the descriptive statistics for the dependent and explanatory variables reveals several issues. The average ROA for the sample as a whole is 2.089%, which means that each dollar invested in assets generate only 0.02089 dollar in earnings. While the average ROE are high at 5.05%, the average ROI is the lowest for the sample as a whole and equal -.047%.

The disparity in ROA ranged from profitability of 26.1% (maximum value) for some firms to a loss of over 31.7% (minimum value) for others. While the disparity in ROE ranged from profitability of 202.4% (maximum value) for some firms to a loss of over 263.2% (minimum value) for others. This presents a disparity between firms in profitability. This result therefore reveals that the companies under review likely prefer less debts and more equity, and this is evidenced by the high percentage value of ROE over ROA. The disparity in ROI ranged from profitability of 33.4% (maximum value) for some firms to great loss of over 447.3% (minimum value) for others. This is evidenced by the low percentage value of ROI that's equal -.047%.

A quick review of the measures of leverage shows that the first measure of leverage TDTA has a high mean ratio of 41.36%. This implies that the total liabilities of the firms reviewed on average amount to about 41.36 percent of total assets value.

Examining the second measure of leverage LTDTA, the reported mean value of 6.39% for Palestinian firms is low when compared to firms in developed countries. U.S. companies have about 75% of their debt in long term. Based on the low mean value of the LTDTA (6.39%), according to the analysis it can be stated that quoted companies in Palestine do not use much long-term debt in their respective capital structure choice.

The mean value of the STDTA of 35.17% as compared to 6.39% mean value of the long term debt shows that debt financing for listed companies in the sample corresponds mainly to a short term nature. This reveals a fact that Palestinian firms are either financed by equity capital or a mix of equity capital and short term financing due to the absence of long term debt. This result can be supported by the disparity in STDTA that's ranged from 97.9% (maximum value) for some firms to

great low of .6% (minimum value) for others. Also, the LTDTA ranged from 55.7% (maximum value) for some firms to ZERO (minimum value) for others.

**Table 4.1: Descriptive Statistics for all variables**

Variable	N	Mean	Std. Deviation	Minimum	Maximum
ROA	175	.02089	.075780	-.317	.261
ROE	175	.05057	.300705	-2.632	2.024
ROI	175	-.00047	.436489	-4.473	.334
STDTA	175	.35175	.278935	.006	.979
LTDTA	175	.06396	.071073	.000	.557
TDTA	175	.41362	.280544	.009	1.057
SIZE	175	7.69525	.710911	6.194	9.371

The mean value of the size of the companies examined at 7.69525. The companies experienced high growth in size up to 9.371 (maximum) and there was decrease in size growth for the period studied up to 6.194(minimum).

Looking through the standard deviation (S.D.) which measures the level of variation of the variables from their mean value, reveals that the most volatile of the variables examined is size with a S.D of (.710911) followed by ROI with (.436489). The least volatile "most stable" variable is LTDTA with a S.D. of (.071073); followed by ROA (.075780), followed by STDTA (.278935), TDTA (.280544) and the ROE with (.300705).

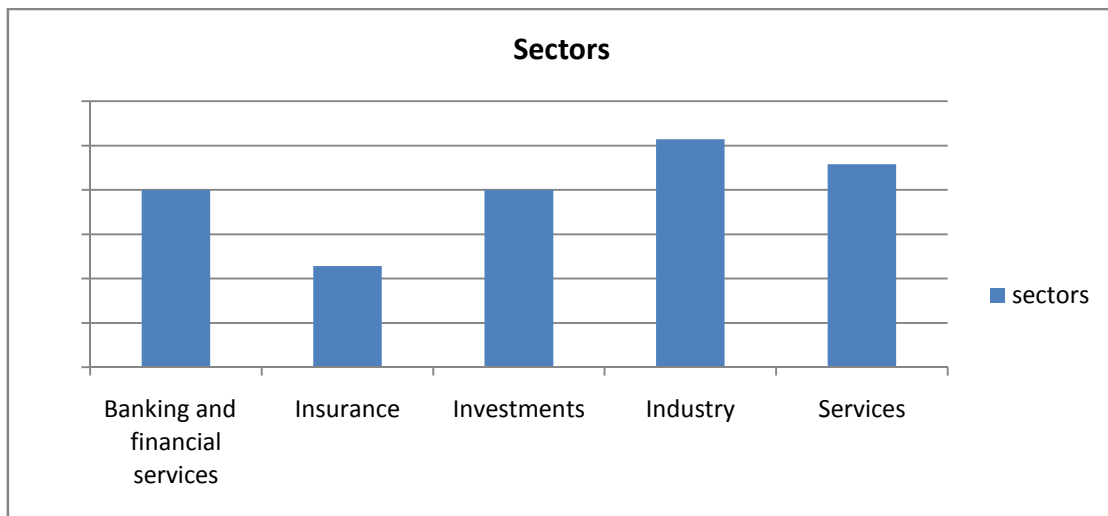
Now, the explaining of five sectors will presented in table 4.2. The study sample consists from 35 corporations for 5 year (2009-2013) selected from all sectors in PEX based in criteria that set in pervious chapter. Table 4.2 below present the 35 corporation was included in the sample that consist from Banking and financial services, Insurance, Investments, Industry, and Services. No missing value for all corporations.

**Table 4.2: Frequencies for all Sectors in the Sample**

Sector	Frequency	Percent	Valid Percent	Cumulative %
Banking	7	20.0	20.0	20.0
Insurance	4	11.4	11.4	31.4
Investment	7	20.0	20.0	51.4
Industry	9	25.7	25.7	77.1
Services	8	22.9	22.9	100.0
Total	35	100.0	100.0	

The mean for each sector equal the valid percent, its represent the portion of each sector for all sample. For example, Banking and financial services and Investments represented by 7 corporation for each (20%), the largest sector in sample is Industry by 9 corporation (25.7%) followed by 8 corporation for Services sector

(22.9%), the least sector is Insurance by (11.4%) for 4 corporation. The following bar chart will make the picture is clearer.



**Figure 4.1: Bar chart for all corporations in PEX by sector**

After presenting the frequencies for each sector, the descriptive analysis for debt based on sector will explain in table 4.3.

**Table 4.3: Descriptive Statistics for Debt Structure based on Sector**

sector	No.	Debt Structure	Min.	Max.	Mean	S.D.
Banking	7	STDTA	.245	.866	.65326	.238211
		LTDTA	.018	.176	.03991	.032046
		TDTA	.276	.896	.69309	.243388
Insurance	4	STDTA	.156	.979	.69785	.185714
		LTDTA	0.000	.557	.06705	.117488
		TDTA	.624	1.057	.76465	.140709
Investment	7	STDTA	.006	.371	.11946	.103825
		LTDTA	.002	.226	.06714	.067832
		TDTA	.009	.398	.18651	.142139
Industry	9	STDTA	.036	.586	.19818	.140436
		LTDTA	.004	.180	.05093	.045733
		TDTA	.053	.639	.24898	.151730
Services	8	STDTA	.006	.740	.29092	.163595
		LTDTA	.001	.272	.09533	.082512
		TDTA	.013	.751	.37753	.184631

Table 4.3 reports a summary statistics for the independent variables that used in the study based on sector. A critical examination of the descriptive statistics for the independent variables reveals the following results.

For banking sector, the average STDTA is 65.3%, which means that corporations in banking sector depend on short term debt to finance 65.3% from debt structure while it's used just 3.9% from long term sources. To sum up, 69.3% from capital structure finance by debt and the remaining from equity sources.

For insurance sector, the situation approximately the same, the average STDTA is 69.7%, which means that corporations in insurance sector depend on short term debt to finance 69.7% from debt structure while it's used just 6.7% from long term sources. To conclude, 76.4% from capital structure finance by debt and the remaining (23.6%) from equity sources.

For Investment sector, the situation is different; the average STDTA is 11.9%, which means that corporations in Investment sector depend on short term debt to finance 11.9% from debt structure while it's used just 6.7% from long term sources. All in all, 18.6% from capital structure finance by debt and the remaining (81.4%) from equity sources. From the last results, it can be concluded the investment corporation's depend mainly on equity to finance its operations.

For Industry sector, the average STDTA is 19.8%, which means that corporations in Industry sector depend on short term debt to finance 19.8% from debt structure while it's used just 5% from long term sources. To sum up, 24.8% from capital structure finance by debt and the remaining (75.2%) from equity sources. From the last results, it can be concluded the Industry Corporation's follow the pattern of Investment Corporation's to finance its operations.

For Services sector, the average STDTA is 29%, which means that corporations in Investment sector depend on short term debt to finance 29% from debt structure while it's used just 9.5% from long term sources. All in all, 37.7% from capital structure finance by debt and the remaining (62.3%) from equity sources to finance its operations.

Maximum, minimum, and S.D for each variable based on sectors presented in the last table.

Abu Mouamer (2011) investigates 15 firms over 5 year period (2000-2004). The study Variables used for leverage ratios are (TD, STD, and LTD). The study has shown that the service companies have the highest TD ratio (53.69 percent), followed by industrial companies (50.86 percent), trade companies (34.11 percent) and agriculture companies (24.02 percent). This study is also covering 5 year period but for different years (2009-2013). This study has shown as in table 4.3 that the Insurance companies have the highest TD ratio (76.4 %), followed by Banking (69.3 %), Services (37.7 %), Industry (24.8 %) and Investment companies (18.6%).

### 4.3 Correlation

Correlation is a bivariate analysis that measures the strengths of association between two variables. In statistics, the value of the correlation coefficient varies between +1 and -1. When the value of the correlation coefficient lies around  $\pm 1$ , then it is said to be a perfect degree of association between the two variables. As the correlation coefficient value goes towards 0, the relationship between the two variables will be weaker. Usually, in statistics, the researcher's measures three types of correlations: Pearson correlation, Kendall rank correlation and Spearman correlation.

Pearson r correlation is widely parametric test used in statistics to measure the degree of the relationship between linear related variables. For the Pearson r correlation, both variables should be normally distributed. Other assumptions include linearity and homoscedasticity. Linearity assumes a straight line relationship between each of the variables in the analysis and homoscedasticity assumes that data is normally distributed about the regression line.

In contrast, Kendall rank correlation is a non-parametric test that measures the strength of dependence between two variables. Also, Spearman rank correlation is a non-parametric test that is used to measure the degree of association between two variables. It was developed by Spearman, thus it is called the Spearman rank correlation. Spearman rank correlation test does not assume any assumptions about the distribution of the data and is the appropriate correlation analysis when the variables are measured on a scale that is at least ordinal<sup>4</sup>.

Which correlation is better for this study? The answer will depend on the result of Normality Tests. Tests of Normality box is used to determine if the data is normally distributed. The box displays the results from two tests; the Kolmogorov-Smirnov test and the Shapiro-Wilk test. The Kolmogorov-Smirnov test is used to test large data sets while the Shapiro-Wilk test is more appropriate for a smaller sample, such as 50 numbers or less. If the "Sig" column of either test is above 0.05, your data is normally distributed and the Pearson correlation is the best. If the "Sig" column of either test is below 0.05, your data is not normally distributed and the Spearman correlation is the best.

Table 4.4 presents the results from two well-known tests of normality, namely the Kolmogorov-Smirnov Test and the Shapiro-Wilk Test. The Shapiro-Wilk Test is more appropriate for small sample sizes (< 50 samples), but can also handle sample sizes as large as 2000. Because the data size is 175 samples, the study will use the Kolmogorov-Smirnov test to assessing the normality for data.

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<sup>4</sup> Statistics Solutions, (2014). *Correlation (Pearson, Kendall, Spearman) - Statistics Solutions*. [online] Available at: <http://www.statisticssolutions.com/correlation-pearson-kendall-spearman/> [Accessed 27 Oct. 2014/11:45:05 PM].

**Table 4.4: Normality Tests for all variables**

Test Variable	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ROA	.180	175	.000	.920	175	.000
ROE	.254	175	.000	.467	175	.000
ROI	.349	175	.000	.299	175	.000
STDTA	.149	175	.000	.891	175	.000
LTDTA	.201	175	.000	.731	175	.000
TDTA	.135	175	.000	.933	175	.000
SIZE	.075	175	.017	.976	175	.005

From the table 4.4, the **Sig.** value of the Kolmogorov-Smirnov Test is below 0.05, so the data significantly deviate from a normal distribution. After the test of normality, the researcher will conduct the Spearman rank correlation to measure the degree of association between variables because the data is not normally distributed.

#### **4.3.1 Correlation for the market**

The correlation matrix for all variables is presented in table 4.5 in order to examine the correlation that exists among variables.

The results show that there is negative correlation between dependent variable ROA and independent variable short term leverage, which is .245, this correlation is significant at the 0.01 level. At .05 levels, a positive correlation with LTDTA by .178 and a negative correlation with TDTA by .174 which may refer to the agency theory and the conflict cost between managers and owners that may lead to lower performance.

The dependent variable ROE is positively correlated with independent variable LTDTA by .207 at level 0.01 of significance, positively correlated with TDTA by .161 at level 0.05, positively correlated with SIZE by .279 at level 0.01 because the long term debt have low risk which effect positively on the owners.

The other dependent variable ROI has a positive correlation with the independent variable SIZE implied by the correlation coefficient of .282 which is significant at the 0.01 level because any increase in size of the corporation give it the opportunity to grant collateral, to borrow and make better investment.

**Table 4.5: Spearman's Rho correlations for the market**

Variable	ROA	ROE	ROI	STDTA	LTDTA	TDTA	SIZE
ROA	1.000						
ROE	.846**	1.000					
ROI	.908**	.905**	1.000				
STDTA	-.245**	.101	.057	1.000			
LTDTA	.178*	.207**	.177*	.129	1.000		
TDTA	-.174*	.161*	.110	.940**	.331**	1.000	
SIZE	.145	.279**	.282**	.334**	.406**	.424**	1.000

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed).

On the other hand, there are significant correlations between the independent variables. The independent variable STDTA has a positive correlation with the independent variable TDTA implied by the correlation coefficient of .940 which is significant at the 0.01 level because the main debt source is short term to finance by debt in the absence of long term debt.

Another independent variable correlated to the independent variable STDTA is SIZE. The correlation is a positive implied by the correlation coefficient of .334 which is significant at the 0.05 level. The independent variable LTDTA has a positive correlation with the independents variables TDTA and SIZE implied by the correlation coefficient of .331 and .406 respectively which are significant at the 0.01 level. The independent variable TDTA has a positive correlation with the independent variable SIZE implied by the correlation coefficient of .424 which is significant at the 0.01 level. The positive correlations between size and debt structure refer to the ability of corporation's to grant collateral and borrow more.

#### 4.3.2 Correlations based on sector

Now, the researcher will present the correlations for all variables that related for each sector. Banking and financial services will present at first as in table 4.6.

**Table 4.6: Spearman's Rho correlations for Banking and financial services sector**

Variable	ROA	ROE	ROI	STDTA	LTDTA	TDTA	SIZE
ROA	1.000						
ROE	.946**	1.000					
ROI	.840**	.834**	1.000				
STDTA	.295	.382*	.684**	1.000			
LTDTA	.077*	.110	-.024	-.140	1.000		
TDTA	.364*	.469**	.701**	.916**	.192	1.000	
SIZE	.494**	.664**	.502**	.292	.048	.354*	1.000

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed).



The results show that there is a positive correlation between dependent variable ROA and independent variable LTDTA, which is .077, this correlation is significant at the 0.05 level. Also, there is a positive correlation between ROA and TDTA by .364 at .05 levels. At .01 levels, a positive correlation between ROA and SIZE by .494. The dependent variable ROE is positively correlated with independent variable STDTA by .382 at level 0.05 of significance, positively correlated with TDTA by .469 at level 0.01, and positively correlated with SIZE by .664 at level 0.01. The other dependent variable ROI has three positive correlation with the independent variable STDTA, TDTA, and SIZE implied by the correlation coefficient of .684, .701, and .664 respectively which are significant at the 0.01 level.

The positive correlations refer to the Peking order theory which ranks the finance sources from internal, issuing debt and the issuing equity based on the cost of finance to take the advantages of tax shield by deducting the interest expenses from taxable income to protect profit and improve financial performance.

On the other hand, there are significant correlations between the independent variables. The independent variable STDTA has a positive correlation with the independent variable TDTA implied by the correlation coefficient of .916 which is significant at the 0.01 level because the main debt source is short term to finance by debt in the absence of long term debt. Another independent variable correlated to the independent variable TDTA is SIZE. The correlation is a positive implied by the correlation coefficient of .354 which is significant at the 0.05 level.

For insurance corporations, all correlations between variables are presented in the following table number 4.7.

**Table 4.7: Spearman's Rho correlations for Insurance sector**

Variable	ROA	ROE	ROI	STDTA	LTDTA	TDTA	SIZE
ROA	1.000						
ROE	.385	1.000					
ROI	.875**	.389	1.000				
STDTA	-.552*	.116	-.266	1.000			
LTDTA	.046	.559*	-.035	-.179	1.000		
TDTA	-.508*	.239	-.337	.904**	.038	1.000	
SIZE	.533*	-.177	.405	-.795**	-.176	-.833**	1.000

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

The dependent variable ROA has three correlations at .05 levels. With ROA and STDTA and TDTA there is negative correlation by .552 and .508 respectively which may refer to the high percent debt for insurance companies that exceed the total assets which increase the bankruptcy risk and reflected in losses in the income statement . Between ROA and SIZE there is positive correlation by .533 For ROE, there is a positive correlation by .559 with LTDTA at .05 levels.

Regard to independent variables, there is a positive correlation between STDTA and TDTA by .904 at .01 levels because the main debt source is short term to finance by debt in the absence of long term debt. Also, there are two negative correlations at .01, one between STDTA and SIZE by .795, the other between TDTA and SIZE by .833 because the risk is high and the ability to borrow more debt become low due to the amount of debt in some insurance corporations become more than total assets.

Now, let's move to present the correlations between variables for Investment sector.

From the table 4.8, there is no significant correlation between dependent variable ROA and any others independent variables. For ROE, there is a positive correlation with LTDTA and SIZE by .339 and .366 at .05 levels. Also, for ROI there is a positive correlation with LTDTA and SIZE by .402 and .413 at .05 levels. The debt ratio in investment corporations is low and the main source for finance is equity which reduces the cost of bankruptcy and improves the performance.

**Table 4.8: Spearman's Rho correlations for Investment sector**

Variable	ROA	ROE	ROI	STDTA	LTDTA	TDTA	SIZE
ROA	1.000						
ROE	.982**	1.000					
ROI	.971**	.988**	1.000				
STDTA	.011	.086	.139	1.000			
LTDTA	.260	.339*	.402*	.578**	1.000		
TDTA	.061	.151	.188	.897**	.747**	1.000	
SIZE	.313	.366*	.413*	.491**	.866**	.657**	1.000

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

On the other hand, there are many correlations between independent variables itself at .05 levels of significance. STDTA has a positive correlation with LTDTA by .578; STDTA has a positive correlation with TDTA by .897 and STDTA has a positive correlation with SIZE by .491.

The other independent variable is LTDTA, it has a positive correlation with TDTA by .747 and LTDTA has a positive correlation with SIZE by .866 at .05 levels because the debt structure in investment corporations distributed between the short and the long term debt to shape the total debt in contrast to banking and insurance corporations which depend mainly on short term debt.

Also, the independent variable TDTA has a positive correlation with SIZE by .657 at .05 levels. The positive correlations between size and debt structure refer to the ability of corporation's to borrow more when size become larger because it becomes able to set the collaterals.

The correlation matrix for industry sector is presented for all variables in table 4.9.

**Table 4.9: Spearman's Rho correlations for Industry sector**

Variable	ROA	ROE	ROI	STDTA	LTDTA	TDTA	SIZE
ROA	1.000						
ROE	.975**	1.000					
ROI	.957**	.991**	1.000				
STDTA	-.212	-.039	.004	1.000			
LTDTA	.264	.316*	.295*	.265	1.000		
TDTA	-.086	.088	.114	.927**	.570**	1.000	
SIZE	.036	.078	.068	.081	.646**	.326*	1.000

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

From table 4.9, no correlation exists with ROA. For ROE, there is positive correlation with LTDTA by .316 at .05 levels. Also, there is positive correlation between ROI and LTDTA by .295 at .05 levels which may refer to the low risk of long term debt that may improve the performance.

The independent variable STDTA has a positive correlation with TDTA implied by the correlation coefficient of .927 which is significant at the 0.01 level because the short term debt represent the main source for debt finance.

The independent variable LTDTA has a positive correlation with the independents variables TDTA and SIZE implied by the correlation coefficient of .570 and .646 respectively which are significant at the 0.01 level. The positive correlations between size and debt structure refer to the ability of corporation's to grant collateral and borrow more when the size become larger.

Also, the independent variable TDTA has a positive correlation with the independents variables SIZE implied by the correlation coefficient of .326 which is significant at the 0.05 level.

The sector number five in this study is services sector. The correlation matrix for all variables presented in table 4.10.

**Table 4.10: Spearman's Rho correlations for services sector**

Variable	ROA	ROE	ROI	STDTA	LTDTA	TDTA	SIZE
ROA	1.000						
ROE	.984**	1.000					
ROI	.979**	.989**	1.000				
STDTA	-.233	-.256	-.223	1.000			
LTDTA	.124	.120	.153	-.038	1.000		
TDTA	-.153	-.200	-.163	.788**	.388*	1.000	
SIZE	.465**	.476**	.492**	-.402*	.643**	-.117	1.000

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

The dependent variables ROA has a positive correlation with the independent variable SIZE implied by the correlation coefficient of .465 which is significant at the 0.01 level. At the same level, ROE has a positive correlation with the independent variable SIZE implied by the correlation coefficient of .476. Also, ROI has a positive correlation with the independent variable SIZE implied by the correlation coefficient of .492. When the size of corporations becomes larger, they can borrow for long term period with low risk and reduce the short term debt that has high risk, the results can be reflected in the positive correlations between size and financial performance as in table 4.10.

The independent variable STDTA has a positive correlation with the independents variables TDTA implied by the correlation coefficient of .788 which is significant at the 0.01 level and correlate negatively by .402 with SIZE at .05 levels. The positive correlation between short term debt and total debt refer to the large portion in total debt that finance by short term debt. The other independent variable is LTDTA, it has a positive correlation with TDTA by .388 which is significant at the 0.05 level and LTDTA has a positive correlation with SIZE by .643 at .01 levels.

In the last tables all correlations among dependent and independent variables and independent itself was presented. When there are strong correlations between multiple independent variables, it can mean that a multicollinearity problem exists if these correlations are strong. It is a problem that rises if some or all of the explanatory variables are highly correlated with one another. If it is present, the regression model has difficulty telling which explanatory variable is influencing the dependent variables (Gary Koop, 2006).

Multicollinearity makes some variables statistically insignificant while they should be otherwise significant. To overcome the multicollinearity problem, a stepwise method was used to carry out the regression. This method examines the relationship of independent variables with the dependent variable in steps. It examines each independent variable by its own and then adds the other independent variables one at a time.

#### 4.4 Regression

Regression is one of the most popular and common statistical techniques in social sciences. With a multiple regression model, researchers can investigate the relationship between a response variable and more than one explanatory variable. This study employs Ordinary least squares (OLS) regression analysis. OLS investigate the relationship between a dependent variable and a collection of independent variables as a multiple regression do. "In the most general terms, OLS estimation is aimed at minimizing the sum of squared deviations of the observed values for the dependent variable from those predicted by the model."<sup>5</sup>

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<sup>5</sup>Statsoft.com, (2014). *Multiple Regression*. [online] Available at: <http://www.statsoft.com/Textbook/Multiple-Regression#cleast> [Accessed 11 Oct. 2014/10:58:12 AM].

The value of a dependent variable is defined as a linear combination of the independent variables plus an error term as in the model below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_3 X_3 + \epsilon$$

The relationship between capital structure and a firm's performance was tested by the following regressions models:

$$\text{Model 1: Performance} = \beta_0 + \beta_1 \text{STDTA} + \beta_2 \text{SIZE} + \epsilon$$

$$\text{Model 2: Performance} = \beta_0 + \beta_1 \text{LTDTA} + \beta_2 \text{SIZE} + \epsilon$$

$$\text{Model 3: Performance} = \beta_0 + \beta_1 \text{TDTA} + \beta_2 \text{SIZE} + \epsilon$$

Where:

Performance = ROA, ROE, & ROI

STDTA= Short-term debt to total asset

LTDTA= Long-term debt to total asset

TDTA= Total debt to total asset

SIZE = Natural logarithm of total assets

$\beta_0$  = Intercept (the value of y when x = 0)

$\beta_1$  = Coefficient (slope of the line)

$\epsilon$  = Error

In addition, it is worthwhile to give a short explanation about terms of regression model. Regression coefficient,  $\beta_1$ , shows the contribution of each independent variable to prediction and provides the degree of influence. Therefore, higher value of b shows that independent variable has more influence. In addition, sign of regression coefficient (positive or negative) shows nature of relationship and direction of variables. In other words, the regression coefficient indicates that if the independent increases one unit, how many points' dependent variable increases or decreases in average amount when other independents are held constant.

$R^2$  measures the proportion of the variation in a data set. It shows how well a dependent variable is explained and predicted by independent variables. Furthermore, estimates of intercepts are given by constant, which shows value the dependent variable when all of the explanatory variables take on the value zero. These models will used to understand the relations between dependents and independents variables for the market as a whole, for each segment based on the size, and for each sector in the market.

#### 4.4.1 Regression for the market

Carrying out the regression models to examine the effect of capital structure on firm's performance for the period 2009 – 2013 for the market as a whole resulted in table 4.11.

**Table 4.11: Regression summary for the market**

<b>Model 1</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	-.210	.001	-.326	.201	-1.187	.001
STDTA	-.078	.000	.027	.755	-.541	.000
SIZE	.034	.000	.048	.163	.179	.000
R <sup>2</sup> / Sig.	R <sup>2</sup> =.120 Sig.=.000		R <sup>2</sup> =.015 Sig.=.265		R <sup>2</sup> =.135 Sig.=.000	
<b>Model 2</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	-.154	.014	-.320	.202	-.831	.022
LTDTA	.022	.791	-.320	.482	-.136	.775
SIZE	.023	.006	.046	.161	.109	.022
R <sup>2</sup> / Sig.	R <sup>2</sup> =.047 Sig.=.016		R <sup>2</sup> =.018 Sig.=.217		R <sup>2</sup> =.030 Sig.=.071	
<b>Model 3</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	-.217	.001	-.302	.242	-1.284	.000
TDTA	-.074	.001	.052	.561	-.569	.000
SIZE	.035	.000	.043	.220	.197	.000
R <sup>2</sup> / Sig.	R <sup>2</sup> =.110 Sig.=.000		R <sup>2</sup> =.017 Sig.=.235		R <sup>2</sup> =.141 Sig.=.000	

According to the results presented by table 4.11, it is concluded from model 1 that the variations of the two independent variables, STDTA and SIZE, can explain 12 percent of the variation of the dependent variable ROA. The overall model is significant at the 0.05 level as presented by table 4.11 where the model level of significance is 0.000 which is less than 0.05. The same variables can explain just 1.5 percent of the variation of the dependent variable ROE which is consider no significant at .05 levels because the significance of this model larger than .05, its equal .265. The ROI explained by 13.5 percent by STDTA and SIZE and this model is significant at the 0.05 level as presented by table 4.11 where the model level of significance is 0.000 which is less than 0.05.

By further examining the model and analyzing the coefficients of the independent variables, as presented by table 4.11, it is observed that all the independent variable is significant in explaining the variation of the dependent variable unless independent variable in ROI which is not significant.

The result indicates a negative relationship between STDTA and ROA. An increase in STDTA is associated with a decrease in ROA. If STDTA increases one unit, ROA decreases .078 on average. Also, the result indicates a negative relationship between STDTA and ROI by .541. For ROE, it's a positive relationship with STDTA but it's not significant. To sum up, there is a significant negative relationship between STDTA with ROA and ROI. Between STDTA and ROE, there is no significant relationship.

Gansuwan and Önel (2012) for the Swedish firms found significant negative relations between ROA, ROE, and ROI with STDTA. In Jordan for example, STDTA has a negative and significant effect on ROA according to Zeitun (2006). In Saudi Arabia's, Lower leverage levels tend to lead to higher returns on both assets and equity according to Al-Tally (2014). The STDTA was found to have a

significant and negative impact on ROA in Nigeria according to Olokoyo (2012). Also, In Albania, according to Çekrezi (2013), the results show that STDTA negatively impacts on the ROA. In Kuwait, STDTA is significantly and negatively related to ROA and ROE according to Al-Mutairi (2011). The results of Salteh et al. (2012) in Iran indicate that firm performance, which is measured by ROE, is significantly and positively associated with STDTA, while report a negative relation with ROA. In Pakistan, according to Umar et al. (2012), the results show that STDTA negatively impacts on the ROA. The results also indicate that ROE has an insignificant relation with STDTA. In Bangladesh, according to Hasan et al. (2014), the results show significant negative relation between ROA and STDTA. On the other hand, there is no statistically significant relation exists between STDTA and ROE. The empirical tests by El-Sayed Ebaid (2009) in Egypt indicate that STDTA impacts negatively on the firm's performance measured by ROA. On the other hand, STDTA has no significant impact on firm's performance which measured by ROE. The results of Velnampy & Niresh (2012) in Sri Lanka show that there is a negative association between STDTA and ROI. In Greece, according to Ananiadis and Varsakelis (2008), STDTA leads to better performance and a higher ROA.

From model 2 the variations of the two independent variables, LTDTA and SIZE, can explain 2.7 percent of the variation of the dependent variable ROA. The overall model is significant at the 0.05 level as presented by table 4.11 where the model level of significance is 0.016 which is less than 0.05. The same variables can explain just 1.8 percent of the variation of the dependent variable ROE which is consider no significant at .05 levels because the significance of this model larger than .05, its equal .217. The ROI explained by 3 percent by LTDTA and SIZE and this model is not significant at the 0.05 level as presented by table 4.11 where the model level of significance is 0.071 which is larger than 0.05.

By further examining the model and analyzing the coefficients of the independent variables, as presented by table 4.11, it is observed that all the independent variable is significant in explaining the variation of the dependent variable unless independent variable in ROI which is not significant and LTDTA for other three performance measures.

The result indicates a positive relationship between LTDTA and ROA, any increase in LTDTA is associated with increase in ROA. In contrast, there is a negative relationship between LTDTA and ROE and ROI, An increase in LTDTA is associated with a decrease in ROE and ROI. To sum up, there is no significant relationship between LTDTA and performance.

Gansuwan and Önel (2012) for the Swedish firms found significant negative relations between ROA, ROE, and ROI with LTDTA. In Jordan for example, the LTDTA is significantly and negatively related to ROA according to Zeitun (2006). In Saudi Arabia's, Lower leverage levels tend to lead to higher returns on both assets and equity according to Al-Tally (2014). The LTDTA was found to have a significant and negative impact on ROA in Nigeria according to Olokoyo (2012). Also, In Albania, according to Çekrezi (2013), the results show that LTDTA negatively impacts on the ROA. The results of Salteh et al. (2012) in Iran indicate

that firm performance, which is measured by ROE, is significantly and positively associated with LTDTA, while report a negative relation with ROA. In Pakistan, according to Umar et al. (2012), the results show that LTDTA negatively impacts on the ROA. The results also indicate that ROE has a positive relationship exists with LTDTA. In Bangladesh, according to Hasan et al. (2014), the results show significant negative relation between ROA and LTDTA. On the other hand, there is no statistically significant relation exists between LTDTA and ROE. The empirical tests by El-Sayed Ebaid (2009) in Egypt indicate that LTDTA impacts negatively on the firm's performance measured by ROA. On the other hand, LTDTA has no significant impact on firm's performance which measured by ROE. The results of Velnampy & Niresh (2012) in Sri Lanka show that there is a negative association between LTDTA and ROI. In Greece, according to Ananiadis and Varsakelis (2008), LTDTA leads to better operating performance and a higher ROA.

From model 3 the variations of the two independent variables, TDTA and SIZE, can explain 11 percent of the variation of the dependent variable ROA. The overall model is significant at the 0.05 level as presented by table 4.11 where the model level of significance is 0.000 which is less than 0.05. The same variables can explain just 1.7 percent of the variation of the dependent variable ROE which is consider no significant at .05 levels because the significance of this model larger than .05, its equal .235. The ROI explained by 14.1 percent by TDTA and SIZE and this model is significant at the 0.05 level as presented by table 4.11 where the model level of significance is 0.000 which is less than 0.05.

By further examining the model and analyzing the coefficients of the independent variables, as presented by table 4.11, It is observed that all the independent variable is significant in explaining the variation of the dependent variable unless independent variable in ROI which is not significant.

The result indicates a negative relationship between TDTA and ROA and ROI. In contrast, it's a positive relationship between TDTA and ROE. The case of total debt is similar to the case of short term debt. As a result for this similar, there is a significant negative relationship between TDTA with ROA and ROI. Between TDTA and ROE, there is no significant relationship.

Gansuwan and Önel (2012) for the Swedish firms found significant negative relations between ROA, ROE, and ROI with TDTA. In Saudi Arabia's, Lower leverage levels tend to lead to higher returns on both assets and equity according to Al-Tally (2014). The TDTA was found to have a significant and negative impact on ROA in Nigeria according to Olokoyo (2012). Also, In Albania, according to Çekrezi (2013), the results show that TDTA negatively impacts on the ROA. The results of Salteh et al. (2012) in Iran indicate that firm performance, which is measured by ROE, is significantly and positively associated with TDTA, while report a negative relation with ROA. In Pakistan, according to Umar et al. (2012), the results show that TDTA negatively impacts on the ROA. The results also indicate that ROE has an insignificant relation with TDTA. In Bangladesh, according to Hasan et al. (2014), the results show significant negative relation between ROA and TDTA. On the other hand, there is no statistically significant relation exists between TDTA and ROE. The



empirical tests by El-Sayed Ebaid (2009) in Egypt indicate that TDTA impacts negatively on the firm's performance measured by ROA. On the other hand, TDTA has no significant impact on firm's performance which measured by ROE. The results of Velnampy & Niresh (2012) in Sri Lanka show that there is a negative association between TDTA and ROI. In Greece, according to Ananiadis and Varsakelis (2008), TDTA leads to better operating performance and a higher ROA.

#### 4.4.2 Regression based on sector

After carrying out the regression models to examine the effect of capital structure on firm's performance for the period 2009 – 2013 for the market based on size of total assets, the study will present the regression models based on the sector of the firms.

**Table 4.12: Regression summary for banking and financial services sector**

<b>Model 1</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	-.108	.000	-1.190	.000	-1.012	.000
STDTA	.006	.094	.047	.054	.107	.000
SIZE	.013	.000	.142	.000	.116	.000
R <sup>2</sup> / Sig.	R <sup>2</sup> =.476 Sig.=.000		R <sup>2</sup> =.706 Sig.=.000		R <sup>2</sup> =.802 Sig.=.000	
<b>Model 2</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	-.119	.000	-1.273	.000	-1.091	.000
LTDTA	.051	.066	.372	.038	.169	.382
SIZE	.015	.000	.154	.000	.133	.000
R <sup>2</sup> / Sig.	R <sup>2</sup> =.486 Sig.=.000		R <sup>2</sup> =.712 Sig.=.000		R <sup>2</sup> =.595 Sig.=.000	
<b>Model 3</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	-.108	.000	-1.196	.000	-1.030	.000
TDTA	.007	.060	.051	.030	.105	.000
SIZE	.013	.000	.142	.000	.118	.000
R <sup>2</sup> / Sig.	R <sup>2</sup> =.489 Sig.=.000		R <sup>2</sup> =.715 Sig.=.000		R <sup>2</sup> =.803 Sig.=.000	

According to the results presented by table 4.12, it is concluded from model 1 that the variations of the two independent variables, STDTA and SIZE, can explain 47.6, 70.6 and 80.2 percent of the variation of the dependent variable ROA, ROE, and ROI respectively. The overall models are significant at the 0.05 level as presented by table 4.12 where the model level of significance is less than 0.05.

By further examining the model and analyzing the coefficients of the independent variables, as presented by table 4.12, it is observed that all the independent variable is significant in explaining the variation of the dependent variable unless independent variable (STDTA)in ROA and ROE which is not significant.

The results indicate significant positive relationships between STDTA and ROA, ROE, and ROI.

From model 2 the variations of the two independent variables, LTDTA and SIZE, can explain 48.6, 71.2, and 59.5 percent of the variation of the dependent variable ROA, ROE, and ROI respectively. The overall models are significant at the 0.05 level as presented by table 4.12 where the model level of significance is less than 0.05.

By further examining the model and analyzing the coefficients of the independent variables, as presented by table 4.12, It is observed that all the independent variable is significant in explaining the variation of the dependent variable unless independent variable (LTDTA) in ROA and ROI which is not significant.

The results indicate significant positive relationships between LTDTA and ROA, ROE, and ROI.

From model 3 the variations of the two independent variables, TDTA and SIZE, can explain 48.9, 71.5, and 80.3 percent of the variation of the dependent variables ROA, ROE, and ROI respectively. The overall models are significant at the 0.05 level as presented by table 4.12 where the model level of significance is less than 0.05.

By further examining the model and analyzing the coefficients of the independent variables, as presented by table 4.12, It is observed that all the independent variable is significant in explaining the variation of the dependent variable unless independent variable (TDTA) in ROA which is not significant.

The results indicate significant positive relationships between TDTA and ROA, ROE, and ROI.

In Jordan, the results show that bank performance, which is measured by ROI, is to be significantly and positively associated with total debt; while total debt is found to be insignificant in determining ROE in the banking industry of Jordan according to Taani (2013). In contrast, for Palestinian banks, the capital structure is significantly and positively related to all performance.

The results of Aftab et al. (2012) in Pakistan indicate that the relationship between debt and ROE is positive for banking industry, this study support this evidence. Also, Goyal (2013) seeks to study the impact of capital structure on profitability of public sector banks in India listed on national stock exchange during 2008 to 2012. The findings reveal positive relationship of STDTA with profitability as measured by ROE, ROA & EPS.

After carrying out the regression models to examine the effect of capital structure on firm's performance for banking and financial services firms, the study will present the regression models for insurance firms.

**Table 4.13: Regression summary for insurance sector**

<b>Model 1</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	-.566	.142	3.605	.705	-18.722	.074
STDTA	-.095	.158	-.276	.868	-1.162	.510
SIZE	.085	.067	-.425	.706	2.510	.046
R <sup>2</sup> / Sig.	R <sup>2</sup> =.583 Sig.=.001		R <sup>2</sup> =.010 Sig.=.914		R <sup>2</sup> =.497 Sig.=.003	
<b>Model 2</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	-.997	.000	2.420	.667	-24.047	.001
LTDTA	.060	.403	1.101	.524	-.092	.960
SIZE	.132	.000	-.305	.678	3.100	.001
R <sup>2</sup> / Sig.	R <sup>2</sup> =.549 Sig.=.001		R <sup>2</sup> =.033 Sig.=.753		R <sup>2</sup> =.483 Sig.=.004	
<b>Model 3</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	.231	.000	—	—	4.832	.000
TDTA	-.280	.000	—	—	-6.753	.000
SIZE	—	—	—	—	—	—
R <sup>2</sup> / Sig.	R <sup>2</sup> =.611 Sig.=.000		—		R <sup>2</sup> =.599 Sig.=.000	

According to the results presented by table 4.13, it is concluded from model 1 that the variations of the two independent variables, STDTA and SIZE, can explain 58.3, 1, and 49.7 percent of the variation of the dependent variable ROA, ROE, and ROI respectively. The overall models are significant at the 0.05 level as presented by table 4.13 where the model level of significance is less than 0.05 unless ROE which is consider no significant at .05 levels because the significance of this model larger than .05.

By further examining the model and analyzing the coefficients of the independent variables, as presented by Table 4.13, It is observed that all the independent variable is not significant in explaining the variation of the dependent variable unless independent variable (size)in ROI which is significant.

The results indicate negative relationships between STDTA and ROA, ROE, and ROI. One of these relations is not significant which exist between STDTA and ROE. The relationships between STDTA and ROA, and ROI are significant.

From model 2 the variations of the two independent variables, LTDTA and SIZE, can explain 54.9, 3.3, and 48.3 percent of the variation of the dependent variable ROA, ROE, and ROI respectively. The overall models are significant at the 0.05 level as presented by table 4.13 where the model level of significance is less than 0.05 unless ROE which is consider no significant at .05 levels because the significance of this model larger than .05.

By further examining the model and analyzing the coefficients of the independent variables, as presented by table 4.13, It is observed that all the independent variables is not significant in explaining the variation of the dependent variable unless independent variable (size) in ROA and ROI which is significant.

The result indicates a positive relationship between LTDTA and ROA and ROE. In contrast, it's a negative relationship between LTDTA and ROI.

The result indicates a positive relationship between LTDTA and ROA and ROE. In contrast, it's a negative relationship between LTDTA and ROI. In regard to which relation is significant, there is a significant negative relation between LTDTA and ROI. Also, there is a significant positive relation between LTDTA with ROA. The relations between LTDTA and ROE are not significant.

From model 3 the variations of the two independent variables, TDTA and SIZE, can explain 61.11 and 59.9 percent of the variation of the dependent variable ROA and ROI. The overall models are significant at the 0.05 level as presented by table 4.13 where the model level of significance is less than 0.05.

Also, as presented by table 4.13, it is observed that all the independent variable is significant in explaining the variation of the dependent variable.

The results indicate significant negative relationship between TDTA and ROA and ROI. Between TDTA and ROE, there is no relationship.

After carrying out the regression models to examine the effect of capital structure on firm's performance for insurance, the study will present the regression models for investment firms.

**Table 4.14: Regression summary for investment sector**

<b>Model 1</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	-.122	.122	-.199	.061	-.201	.052
STDTA	-.115	.103	-.160	.092	-.132	.150
SIZE	.021	.052	.032	.025	.033	.020
R <sup>2</sup> / Sig.	R <sup>2</sup> =.146 Sig.=.080		R <sup>2</sup> =.177 Sig.=.045		R <sup>2</sup> =.174 Sig.=.047	
<b>Model 2</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	—	—	—	—	-.176	.086
LTDTA	—	—	—	—	—	—
SIZE	—	—	—	—	.027	.044
R <sup>2</sup> / Sig.	—		—		R <sup>2</sup> =.118 Sig.=.044	
<b>Model 3</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	-.175	.060	-.269	.033	-.258	.035
TDTA	-.097	.128	-.127	.136	-.105	.203
SIZE	.028	.032	.042	.019	.040	.019
R <sup>2</sup> / Sig.	R <sup>2</sup> =.137 Sig.=.095		R <sup>2</sup> =.160 Sig.=.061		R <sup>2</sup> =.162 Sig.=.059	

According to the results presented by table 4.14, it is concluded from model 1 that the variations of the two independent variables, STDTA and SIZE, can explain 14.6, 17.7 and 17.4 percent of the variation of the dependent variable ROA, ROE, and ROI respectively. The overall models are significant at the 0.05 level as presented by table 4.14 where the model level of significance is less than 0.05 unless ROA which is consider no significant at .05 levels because the significance of this model larger than .05. Also, as presented by table 4.14, it is observed that all the independent variable (STDTA) is not significant in explaining the variation of the dependent variables. The independent variable (size) is significant in explaining the variation of the dependent variables unless in ROA.

The result indicates negative relationship between STDTA and ROA, ROE, and ROI. These relations are significant with ROE and ROI and not significant with ROA.

From model 2 the variations of the two independent variables, LTDTA and SIZE, can explain 11.8 percent of the variation of the dependent variable ROI. The overall models are significant at the 0.05 level as presented by table 4.14 where the model level of significance is less than 0.05. Also, it is observed that all the independent variable is significant in explaining the variation of the dependent variable.

The results indicate there is no relationship between LTDTA and ROA, ROE, and ROI.

From model 3 the variations of the two independent variables, TDTA and SIZE, can explain 13.7, 16 and 16.2 percent of the variation of the dependent variable ROA, ROE, and ROI respectively. The overall models are not significant at the 0.05 level as presented by table 4.14 where the model level of significance is more than 0.05.

Also, as presented by table 4.14, it is observed that all the independent variable (size) is significant in explaining the variation of the dependent variable, the independent variable (TDTA) is not significant in explaining the variation of the dependent variables.

The results indicate negative relationships between TDTA and ROA, ROE, and ROI. These results are not significant with ROA, ROE and ROI.

After carrying out the regression models to examine the effect of capital structure on firm's performance for investment firms, the study will present the regression models for industry firms.

**Table 4.15: Regression summary for industry sector**

<b>Model 1</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	-.297	.197	-.364	.231	-.378	.201
STDTA	-.117	.225	-.022	.860	.014	.906
SIZE	.051	.108	.060	.150	.062	.127
R <sup>2</sup> / Sig.	R <sup>2</sup> =.081 Sig.=.171		R <sup>2</sup> =.049 Sig.=.350		R <sup>2</sup> =.057 Sig.=.289	
<b>Model 2</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	-.312	.271	-.352	.337	-.433	.225
LTDTA	-.078	.833	.018	.970	-.124	.791
SIZE	.051	.208	.058	.265	.071	.161
R <sup>2</sup> / Sig.	R <sup>2</sup> =.049 Sig.=.351		R <sup>2</sup> =.048 Sig.=.355		R <sup>2</sup> =.059 Sig.=.281	
<b>Model 3</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	-.346	.145	-.371	.233	-.376	.214
TDTA	-.114	.221	-.019	.874	.006	.960
SIZE	.059	.079	.062	.160	.063	.143
R <sup>2</sup> / Sig.	R <sup>2</sup> =.081 Sig.=.168		R <sup>2</sup> =.049 Sig.=.351		R <sup>2</sup> =.057 Sig.=.291	

According to the results presented by table 4.15, it is concluded that the overall three models are not significant at the 0.05 level as presented by table 4.15 where the model level of significance is more than 0.05. Also, as presented by table 4.15, it is observed that all the independent variables are not significant in explaining the variation of the dependent variables.

From model 1, the result indicates a negative relationship between STDTA and ROA and ROE. In contrast, it's a positive relationship between STDTA and ROI.

From model 2, the result indicates a negative relationship between LTDTA and ROA and ROI. In contrast, it's a positive relationship between LTDTA and ROE.

From model 3, the result indicates a negative relationship between TDTA and ROA and ROE. In contrast, it's a positive relationship between TDTA and ROI.

These results differ from the results found by Gansuwan and Önel (2012) for the Swedish Industrials firms where they found significant negative relations between ROA, ROE and ROI with STDTA, LTDTA and TDTA. In the case of Palestinian Industrials firms there are no significant relations between ROA, ROE and ROI with STDTA, LTDTA and TDTA.

After carrying out the regression models to examine the effect of capital structure on firm's performance for industry firms, the study will present the regression models for services firms.

**Table 4.16: Regression summary for services sector**

<b>Model 1</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	-.716	.000	-.882	.003	-.928	.001
STDTA	.066	.487	-.161	.312	-.100	.497
SIZE	.093	.000	.122	.001	.128	.000
R <sup>2</sup> / Sig.	R <sup>2</sup> =.367 Sig.=.000 <sup>b</sup>		R <sup>2</sup> =.343 Sig.=.000 <sup>b</sup>		R <sup>2</sup> =.373 Sig.=.000 <sup>b</sup>	
<b>Model 2</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	-.687	.000	-1.107	.000	-1.054	.000
LTDTA	-.149	.426	-.343	.275	-.149	.608
SIZE	.094	.000	.151	.000	.143	.000
R <sup>2</sup> / Sig.	R <sup>2</sup> =.370 Sig.=.000 <sup>b</sup>		R <sup>2</sup> =.346 Sig.=.000 <sup>b</sup>		R <sup>2</sup> =.369 Sig.=.000 <sup>b</sup>	
<b>Model 3</b>	<b>ROA</b>		<b>ROE</b>		<b>ROI</b>	
Variable	B	Sig.	B	Sig.	B	Sig.
Constant	-.689	.000	-.943	.001	-1.001	.000
TDTA	.055	.480	-.141	.281	-.032	.792
SIZE	.089	.000	.131	.000	.136	.000
R <sup>2</sup> / Sig.	R <sup>2</sup> =.367 Sig.=.000 <sup>b</sup>		R <sup>2</sup> =.345 Sig.=.000 <sup>b</sup>		R <sup>2</sup> =.366 Sig.=.000 <sup>b</sup>	

According to the results presented by table 4.16, it is concluded that the overall three models are significant at the 0.05 level as presented by table 4.16 where the model level of significance is less than 0.05. Also, as presented by table 4.16, it is observed that all the independent variables STDTA, LTDTA, and TDTA are not significant in explaining the variation of the dependent variables. Also, as presented by table 4.16, it is observed that all the independent variables size is significant in explaining the variation of the dependent variables where the level of significance is less than 0.05.

From model 1, the results indicate significant negative relationship between STDTA and ROE and ROI. In contrast, it's a significant positive relationship between STDTA and ROA.

From model 2, the results indicate significant negative relationship between LTDTA and ROA, ROE, and ROI.

From model 3, the results indicate significant negative relationship between TDTA and ROE and ROI. In contrast, it's a significant positive relationship between TDTA and ROA.

# **Chapter Five: Results and Recommendations**



## 5.1 Results

The results of this study confirm some prior findings and contrast some others and the research has been able to test the research hypotheses earlier raised in the introductory chapter for the market as a whole and for each sector in PEX in the following ways:

### For the market

- For all corporations in PEX, there is a significant negative relation between STDTA and TDTA with ROA, and ROI. On ROE, there is no significant relation. The LTDTA has not any significant relation with financial performance.

### Based on the Sector

- For Banking and Financial Services Firms, the results indicate significant positive relation between capital structure and firm's financial performance because it depends greatly on short term debt in finance.
- For Insurance Firms, there is a significant negative relation between STDTA and ROA, and ROI. With ROE, there is no significant relation. The LTDTA has significant negative relation with ROI and positively with ROA and no relation with ROE. The results indicate significant negative relation between TDTA with ROA and ROI and no relation with ROE.
- For Investment Firms, there is a significant negative relation between STDTA with financial performance except the ROA. The LTDTA has not significant relation between with financial performance. The results also indicate no relation between TDTA and financial performance.
- For Industrial firms, there is no significant relation between capital structure and firm's financial performance because it depends greatly on equity in finance.
- For Services firms, the results indicate significant negative relation between STDTA and TDTA with ROE and ROI and positive relation with ROA. Also, the results indicate significant negative relation between LTDTA and financial performance.

## 5.2 Recommendations

In line with the findings of this study, the following recommendations are made:

- The firms should work to achieve the best debt ratio that maximizes its financial performance.

- The firms should rely less on short term debt, which formed the major part of their leverage and focus more on developing internal strategies that can help improve more on their financial performance.
- The firms should develop new strategies to use more of equity and try to finance their projects with retained earnings to maximize their financial performance.
- The PEX, government and policymakers should attempt to remove any rigid policies which could hinder the effective using of long term finance sources.

### **5.3 Suggested Future Research**

- Examine the influence of capital structure on corporate failure in Palestine.
- Investigate the influence of tax rates, interest rate, GDP and inflation on corporate financial performance.
- Examine the effect of ownership structure on firm's financial performance.
- Compare the financial performance of firms which depend on Islamic finance with others which depend on non-Islamic finance.
- Examine the influence of capital structure on non-listed firms.

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# **Appendix: Data Employed in the Study**

## Appendix

NAME	YEAR	ROA	ROE	ROI	STDTA	LTDTA	TDTA	SIZE	SECTOR
AIG	AIG 2009	0.043	0.164	0.168	0.708	0.027	0.735	7.693	INSURANCE
	AIG 2010	0.001	0.003	0.003	0.732	0.032	0.764	7.698	INSURANCE
	AIG 2011	0.033	0.127	0.119	0.709	0.031	0.741	7.711	INSURANCE
	AIG 2012	-0.012	-0.050	-0.045	0.725	0.028	0.752	7.709	INSURANCE
	AIG 2013	0.040	0.128	0.117	0.655	0.030	0.684	7.704	INSURANCE
AIB	AIB 2009	0.003	0.020	0.016	0.315	0.019	0.334	8.468	BANKING
	AIB 2010	-0.008	-0.047	-0.006	0.298	0.020	0.318	8.456	BANKING
	AIB 2011	0.003	0.016	0.006	0.281	0.024	0.305	8.477	BANKING
	AIB 2012	0.002	0.011	0.004	0.299	0.031	0.330	8.574	BANKING
	AIB 2013	0.007	0.056	0.016	0.344	0.026	0.370	8.672	BANKING
MIC	MIC 2009	0.051	0.511	0.334	0.817	0.084	0.901	7.258	INSURANCE
	MIC 2010	-0.116	2.024	-4.473	0.978	0.079	1.057	7.186	INSURANCE
	MIC 2011	-0.081	1.457	-2.484	0.977	0.076	1.053	7.139	INSURANCE
	MIC 2012	-0.057	-2.632	-2.043	0.979	0.000	0.979	7.176	INSURANCE
	MIC 2013	0.008	0.154	0.156	0.910	0.037	0.947	7.269	INSURANCE
BOP	BOP 2009	0.022	0.188	0.193	0.861	0.022	0.882	9.108	BANKING
	BOP 2010	0.019	0.184	0.164	0.852	0.042	0.894	9.189	BANKING
	BOP 2011	0.021	0.175	0.152	0.833	0.049	0.882	9.219	BANKING
	BOP 2012	0.019	0.174	0.159	0.844	0.046	0.890	9.302	BANKING
	BOP 2013	0.017	0.160	0.143	0.842	0.050	0.893	9.371	BANKING
ISBK	ISBK 2009	0.001	0.010	0.002	0.245	0.031	0.276	8.476	BANKING
	ISBK 2010	0.004	0.033	0.010	0.277	0.032	0.309	8.553	BANKING
	ISBK 2011	0.010	0.077	0.018	0.306	0.030	0.336	8.594	BANKING

	ISBK 2012	0.014	0.101	0.024	0.281	0.030	0.310	8.626	BANKING
	ISBK 2013	0.013	0.103	0.025	0.283	0.036	0.319	8.701	BANKING
BPC	BPC2009	0.104	0.125	0.147	0.104	0.066	0.170	7.696	INDUSTRY
	BPC 2010	0.110	0.132	0.137	0.096	0.070	0.166	7.727	INDUSTRY
	BPC 2011	0.074	0.093	0.100	0.132	0.074	0.206	7.759	INDUSTRY
	BPC 2012	0.083	0.103	0.120	0.120	0.075	0.196	7.778	INDUSTRY
	BPC 2013	0.085	0.106	0.116	0.114	0.084	0.198	7.811	INDUSTRY
GCOM	GCOM 2009	-0.104	-0.106	-0.105	0.006	0.006	0.013	6.929	SERVICES
	GCOM 2010	-0.168	-0.178	-0.175	0.044	0.012	0.056	6.903	SERVICES
	GCOM 2011	-0.194	-0.205	-0.316	0.389	0.016	0.055	6.822	SERVICES
	GCOM 2012	-0.203	-0.219	-0.211	0.063	0.030	0.093	6.742	SERVICES
	GCOM 2013	-0.317	-0.414	-0.393	0.208	0.026	0.234	6.674	SERVICES
JPH	JPH 2009	0.059	0.068	0.085	0.098	0.047	0.144	7.552	INDUSTRY
	JPH 2010	0.069	0.087	0.105	0.136	0.072	0.208	7.628	INDUSTRY
	JPH 2011	0.052	0.070	0.067	0.138	0.122	0.260	7.703	INDUSTRY
	JPH 2012	0.004	0.006	0.021	0.176	0.135	0.310	7.689	INDUSTRY
	JPH 2013	0.042	0.060	0.056	0.181	0.121	0.301	7.732	INDUSTRY
JERI	JERI 2009	0.005	0.007	0.015	0.187	0.042	0.229	7.137	INVESTMENT
	JERI 2010	0.041	0.059	0.064	0.286	0.026	0.312	7.213	INVESTMENT
	JERI 2011	0.031	0.050	0.050	0.331	0.051	0.382	7.257	INVESTMENT
	JERI 2012	-0.017	-0.027	-0.021	0.310	0.053	0.363	7.217	INVESTMENT
	JERI 2013	-0.114	-0.189	-0.176	0.371	0.027	0.398	7.195	INVESTMENT
NCI	NCI 2009	-0.007	-0.008	-0.006	0.111	0.018	0.129	6.776	INDUSTRY
	NCI 2010	0.026	0.029	0.030	0.091	0.013	0.104	6.774	INDUSTRY
	NCI 2011	0.004	0.004	0.005	0.049	0.017	0.065	6.759	INDUSTRY
	NCI 2012	0.017	0.019	0.022	0.077	0.017	0.094	6.780	INDUSTRY

	NIC	NCI 2013	0.069	0.080	0.096	0.120	0.018	0.138	6.825	INDUSTRY
		NIC 2009	0.065	0.227	0.107	0.156	0.557	0.713	7.779	INSURANCE
		NIC 2010	0.075	0.254	0.314	0.676	0.029	0.704	7.849	INSURANCE
		NIC 2011	0.041	0.138	0.216	0.670	0.032	0.702	7.863	INSURANCE
		NIC 2012	0.064	0.189	0.238	0.624	0.037	0.660	7.866	INSURANCE
		NIC 2013	0.069	0.192	0.220	0.600	0.039	0.638	7.899	INSURANCE
	PADICO	PADICO 2009	0.068	0.098	0.090	0.135	0.173	0.307	8.793	INVESTMENT
		PADICO 2010	0.059	0.081	0.083	0.119	0.155	0.273	8.805	INVESTMENT
		PADICO 2011	0.036	0.054	0.054	0.121	0.215	0.336	8.862	INVESTMENT
		PADICO 2012	0.024	0.037	0.045	0.133	0.226	0.359	8.889	INVESTMENT
		PADICO 2013	0.031	0.049	0.053	0.151	0.205	0.356	8.908	INVESTMENT
	PCB	PCB 2009	0.015	0.074	0.059	0.678	0.116	0.795	8.121	BANKING
		PCB 2010	0.010	0.064	0.037	0.662	0.176	0.837	8.234	BANKING
		PCB 2011	0.003	0.021	0.024	0.798	0.035	0.834	8.227	BANKING
		PCB 2012	0.000	0.002	0.002	0.812	0.037	0.849	8.270	BANKING
		PCB 2013	0.000	0.004	0.006	0.853	0.027	0.880	8.375	BANKING
	PEC	PEC 2009	0.052	0.093	0.084	0.172	0.268	0.440	8.127	SERVICES
		PEC 2010	0.054	0.090	0.084	0.201	0.191	0.392	8.095	SERVICES
		PEC 2011	0.071	0.107	0.095	0.143	0.193	0.336	8.071	SERVICES
		PEC 2012	0.075	0.104	0.101	0.187	0.097	0.284	8.051	SERVICES
		PEC 2013	0.039	0.058	0.057	0.237	0.092	0.330	8.072	SERVICES
	PIBC	PIBC 2009	0.012	0.048	0.074	0.734	0.018	0.751	8.390	BANKING
		PIBC 2010	0.003	0.013	0.024	0.672	0.095	0.767	8.422	BANKING
		PIBC 2011	0.010	0.040	0.043	0.712	0.024	0.735	8.386	BANKING
		PIBC 2012	0.007	0.028	0.035	0.717	0.028	0.745	8.413	BANKING
		PIBC 2013	0.007	0.029	0.038	0.738	0.027	0.764	8.460	BANKING

QUDS	QUDS 2009	0.008	0.057	0.081	0.839	0.019	0.858	8.519	BANKING
	QUDS 2010	0.010	0.087	0.105	0.858	0.023	0.882	8.630	BANKING
	QUDS 2011	0.010	0.084	0.104	0.866	0.018	0.883	8.670	BANKING
	QUDS 2012	0.007	0.056	0.066	0.858	0.021	0.879	8.682	BANKING
	QUDS 2013	0.009	0.073	0.094	0.855	0.023	0.878	8.726	BANKING
TNB	TNB 2009	0.011	0.064	0.072	0.804	0.019	0.823	8.211	BANKING
	TNB 2010	0.001	0.007	0.006	0.789	0.029	0.818	8.199	BANKING
	TNB 2011	0.002	0.019	0.020	0.842	0.040	0.882	8.393	BANKING
	TNB 2012	0.006	0.039	0.042	0.797	0.057	0.854	8.545	BANKING
	TNB 2013	0.007	0.065	0.053	0.819	0.077	0.896	8.724	BANKING
TRUST	TRUST 2009	0.017	0.047	0.060	0.603	0.037	0.640	7.734	INSURANCE
	TRUST 2010	0.026	0.069	0.077	0.551	0.073	0.624	7.792	INSURANCE
	TRUST 2011	0.019	0.058	0.064	0.593	0.068	0.661	7.874	INSURANCE
	TRUST 2012	0.022	0.064	0.078	0.641	0.023	0.664	7.899	INSURANCE
	TRUST 2013	0.035	0.106	0.135	0.653	0.022	0.674	7.928	INSURANCE
UCI	UCI 2009	0.051	0.053	0.053	0.029	0.017	0.045	7.717	INVESTMENT
	UCI 2010	0.039	0.040	0.040	0.025	0.018	0.043	7.701	INVESTMENT
	UCI 2011	0.035	0.036	0.040	0.013	0.025	0.038	7.712	INVESTMENT
	UCI 2012	0.016	0.017	0.018	0.023	0.015	0.038	7.616	INVESTMENT
	UCI 2013	0.008	0.009	0.010	0.030	0.007	0.037	7.615	INVESTMENT
AHC	AHC 2009	-0.019	-0.022	-0.021	0.156	0.001	0.157	7.591	SERVICES
	AHC 2010	-0.003	-0.005	-0.002	0.199	0.139	0.338	7.697	SERVICES
	AHC 2011	-0.057	-0.090	-0.050	0.147	0.217	0.364	7.676	SERVICES
	AHC 2012	-0.031	-0.051	-0.016	0.232	0.166	0.398	7.663	SERVICES
	AHC 2013	-0.032	-0.055	-0.015	0.298	0.124	0.422	7.657	SERVICES
APC	APC 2009	0.115	0.152	0.160	0.224	0.024	0.248	6.574	INDUSTRY

	APC 2010	0.178	0.276	0.285	0.329	0.027	0.356	6.718	INDUSTRY
	APC 2011	0.106	0.172	0.203	0.356	0.027	0.384	6.726	INDUSTRY
	APC 2012	0.129	0.204	0.200	0.334	0.031	0.365	6.755	INDUSTRY
	APC 2013	0.184	0.267	0.250	0.277	0.034	0.311	6.795	INDUSTRY
ARAB	ARAB 2009	0.003	0.003	0.004	0.037	0.005	0.042	7.031	INVESTMENT
	ARAB 2010	0.011	0.012	0.012	0.048	0.004	0.052	7.182	INVESTMENT
	ARAB 2011	0.041	0.044	0.045	0.057	0.005	0.062	7.160	INVESTMENT
	ARAB 2012	-0.007	-0.007	-0.006	0.007	0.006	0.013	7.128	INVESTMENT
	ARAB 2013	0.009	0.009	0.009	0.007	0.002	0.009	7.133	INVESTMENT
ARE	ARE 2009	0.090	0.096	0.094	0.041	0.022	0.064	6.194	SERVICES
	ARE 2010	-0.145	-0.356	-0.349	0.586	0.008	0.594	6.425	SERVICES
	ARE 2011	0.011	0.026	0.030	0.566	0.012	0.578	6.539	SERVICES
	ARE 2012	0.006	0.015	0.017	0.628	0.009	0.637	6.592	SERVICES
	ARE 2013	-0.113	-0.453	-0.434	0.740	0.011	0.751	6.611	SERVICES
AZIZA	AZIZA 2009	0.113	0.167	0.148	0.151	0.174	0.325	7.521	INDUSTRY
	AZIZA 2010	0.147	0.215	0.199	0.183	0.131	0.313	7.634	INDUSTRY
	AZIZA 2011	0.010	0.016	0.001	0.234	0.180	0.415	7.650	INDUSTRY
	AZIZA 2012	0.021	0.035	0.046	0.283	0.107	0.390	7.658	INDUSTRY
	AZIZA 2013	0.098	0.138	0.153	0.210	0.085	0.295	7.692	INDUSTRY
GMC	GMC 2009	0.007	0.009	0.020	0.154	0.018	0.172	7.415	INDUSTRY
	GMC 2010	0.060	0.071	0.083	0.138	0.013	0.151	7.446	INDUSTRY
	GMC 2011	0.063	0.066	0.073	0.040	0.014	0.053	7.408	INDUSTRY
	GMC 2012	0.023	0.028	0.034	0.147	0.014	0.161	7.448	INDUSTRY
	GMC 2013	0.012	0.013	0.021	0.123	0.018	0.141	7.426	INDUSTRY
JCC	JCC 2009	0.068	0.160	0.180	0.552	0.021	0.572	7.626	INDUSTRY
	JCC 2010	0.031	0.085	0.108	0.586	0.053	0.639	7.755	INDUSTRY

	JCC 2011	0.008	0.019	0.043	0.507	0.083	0.590	7.775	INDUSTRY
	JCC 2012	0.043	0.091	0.118	0.462	0.063	0.525	7.796	INDUSTRY
	JCC 2013	0.014	0.031	0.056	0.512	0.046	0.558	7.810	INDUSTRY
LADAEN	LADAEN 2009	-0.112	-0.134	-0.130	0.161	0.004	0.165	6.858	INDUSTRY
	LADAEN 2010	-0.073	-0.094	-0.090	0.221	0.004	0.225	6.851	INDUSTRY
	LADAEN 2011	-0.110	-0.134	-0.127	0.176	0.006	0.182	6.773	INDUSTRY
	LADAEN 2012	-0.158	-0.207	-0.194	0.226	0.008	0.233	6.719	INDUSTRY
	LADAEN 2013	-0.181	-0.254	-0.227	0.240	0.045	0.285	6.651	INDUSTRY
NSC	NSC 2009	0.088	0.124	0.120	0.263	0.025	0.289	6.854	SERVICES
	NSC 2010	0.072	0.111	0.105	0.310	0.040	0.350	6.925	SERVICES
	NSC 2011	0.030	0.050	0.052	0.347	0.044	0.391	6.975	SERVICES
	NSC 2012	0.066	0.113	0.118	0.361	0.050	0.411	7.042	SERVICES
	NSC 2013	0.084	0.165	0.171	0.450	0.044	0.493	7.154	SERVICES
PALTEL	PALTEL 2009	0.132	0.200	0.175	0.203	0.136	0.339	8.880	SERVICES
	PALTEL 2010	0.157	0.221	0.205	0.180	0.111	0.290	8.896	SERVICES
	PALTEL 2011	0.158	0.212	0.217	0.172	0.082	0.254	8.914	SERVICES
	PALTEL 2012	0.133	0.179	0.216	0.197	0.059	0.256	8.945	SERVICES
	PALTEL 2013	0.138	0.183	0.232	0.199	0.046	0.245	8.979	SERVICES
PID	PID 2009	-0.014	-0.015	-0.015	0.010	0.007	0.017	6.597	INVESTMENT
	PID 2010	-0.034	-0.034	-0.034	0.009	0.008	0.017	6.583	INVESTMENT
	PID 2011	-0.041	-0.042	-0.034	0.010	0.009	0.020	6.566	INVESTMENT
	PID 2012	0.093	0.096	0.100	0.015	0.010	0.025	6.612	INVESTMENT
	PID 2013	0.070	0.071	0.070	0.006	0.010	0.016	6.633	INVESTMENT
PIIC	PIIC 2009	0.076	0.100	0.097	0.124	0.117	0.241	7.698	INVESTMENT
	PIIC 2010	0.095	0.125	0.124	0.152	0.093	0.245	7.787	INVESTMENT
	PIIC 2011	0.017	0.025	0.031	0.196	0.110	0.306	7.792	INVESTMENT

	PIIC 2012	0.017	0.024	0.036	0.219	0.079	0.297	7.799	INVESTMENT
	PIIC 2013	0.087	0.114	0.126	0.175	0.065	0.240	7.838	INVESTMENT
PLAZA	PLAZA 2009	0.022	0.040	0.054	0.301	0.152	0.453	7.299	SERVICES
	PLAZA 2010	-0.022	-0.049	-0.007	0.368	0.173	0.541	7.354	SERVICES
	PLAZA 2011	-0.068	-0.170	-0.081	0.422	0.177	0.599	7.346	SERVICES
	PLAZA 2012	-0.060	-0.172	-0.065	0.396	0.252	0.648	7.333	SERVICES
	PLAZA 2013	-0.023	-0.033	-0.002	0.247	0.040	0.287	7.275	SERVICES
PRICO	PRICO 2009	0.006	0.008	0.011	0.098	0.126	0.223	8.064	INVESTMENT
	PRICO 2010	0.032	0.044	0.057	0.140	0.115	0.255	8.100	INVESTMENT
	PRICO 2011	0.043	0.062	0.078	0.215	0.091	0.306	8.139	INVESTMENT
	PRICO 2012	-0.012	-0.017	0.005	0.197	0.095	0.292	8.211	INVESTMENT
	PRICO 2013	-0.023	-0.035	-0.021	0.195	0.138	0.334	8.229	INVESTMENT
VOICE	VOICE 2009	0.123	0.144	0.151	0.125	0.024	0.148	7.174	INDUSTRY
	VOICE 2010	0.166	0.189	0.189	0.103	0.023	0.126	7.236	INDUSTRY
	VOICE 2011	0.150	0.161	0.159	0.044	0.023	0.067	7.255	INDUSTRY
	VOICE 2012	0.185	0.196	0.193	0.036	0.023	0.059	7.316	INDUSTRY
	VOICE 2013	0.261	0.278	0.279	0.041	0.020	0.061	7.423	INDUSTRY
WASSEL	WASSEL 2009	0.057	0.097	0.126	0.378	0.031	0.409	7.198	SERVICES
	WASSEL 2010	0.001	0.002	0.037	0.379	0.071	0.450	7.230	SERVICES
	WASSEL 2011	-0.173	-0.436	-0.281	0.468	0.137	0.604	7.216	SERVICES
	WASSEL 2012	-0.031	-0.084	-0.032	0.361	0.272	0.633	7.266	SERVICES
	WASSEL 2013	0.001	0.002	0.012	0.392	0.231	0.623	7.256	SERVICES