

The Impact of Capital Structure on Financial Firm Performance of Palestinian Listed Companies

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Abstract: *The main purpose of this study is to examine the impact of capital structure on the financial firm performance of companies listed in Palestine Stock Exchange (PEX) during the period over 2015-2019. The annual financial statements of 36 listed companies were used for this study, which covers a period of 5 years. A multivariate regression analysis is applied to test the influence of capital structure on firm performance. To measure firm performance, Return on Asset (ROA), Return on Equity (ROE) and Return on Investment (ROI) were utilized, whereas Short-Term Debt to Total Assets (STDTA), Long-Term Debt to Total Assets (LTDTA), and Total Debt to Total Assets (TDTA) used as capital structure proxies. The results show that there is a negative significant relationship between capital structure and Return on Asset (ROA). In addition, there is a significant positive impact of capital structure on both Return on Equity (ROE) and Return on Investment (ROI).*

Keywords— capital structure; firm performance; Palestine Stock Exchange; financial statements

1. INTRODUCTION

Company performance is the extent of the company's success in utilizing the resources available to it in terms of material and moral resources in the best way and trying to reach the previously planned objectives of the company's management. While, financial performance is the extent to which the activities carried out by companies contribute to creating value or effectiveness in using the available financial resources by achieving financial goals at the lowest costs [15]. According to Metcalf and Titard (1976) financial performance refers the act of performing financial activity. In broader sense, financial performance refers to the degree to which financial objectives being or has been accomplished, or it is used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation.

The capital structure is an important element to judging the extent of the success or failure of the company, so a good combination of capital structure is a panacea for business success arising from the need to maximize shareholders' wealth and thus have a significant impact on companies' ability to handle competition. One of the main issues facing managers today is choosing a combination of debt and equity to achieve a sound

capital structure that will reduce operating costs and thus high financial profitability. The capital structure decision includes choosing the right mixture of debt and equity, a debt maturity schedule, and the specific types of capital chosen to be used in a given period of time [17].

Brigham & Ehrhardt, (2017) stated that managers should take decisions regarding the capital structure that maximizing shareholders' wealth and maximizing the intrinsic value of the company. That means the companies must determine the size of the financing required to be provided, the type of funds and the investment field for them or the area of their spending, in order to reach the required financial performance by choosing the optimal financing mix that reduces the cost of capital to the lowest level, thus reducing the risk of liabilities and maximizing the wealth of owners [2].

The relationship between capital structure and financial performance still has a considerable attention in the theory of finance and between researchers. This study aims to examine the relationship between capital structure measured by debt ratios; short term debt to total assets (STDTA), long term debt to total assets (LTDTA), and total debt to total assets (TDTA), and financial performance measured by return on equity (ROE), return on investment (ROI), and return on assets (ROA) of listed companies on Palestine Stock Exchange (PEX).

2. THE CONCEPT OF CAPITAL STRUCTURE

There are several theories of capital structure, those theories of capital structure became one of the most argued fields for discussion within the studies on corporate finance, the modern theory of the structure of financing began (1958) when Modigliani & Miller presented their article: "The Cost of Capital, Corporate Finance and Investment Theory", and they demonstrated that the choice between debt financing Equity rights, and also the value of the company have nothing to do with the financing structure where, they have assumed that the capital markets are perfect and no corporate tax, which were not valid in reality[5]. Wherefore, this was refined

in 1963, where, they examined the influence of tax on the company's value and cost of the capital; the results confirmed that, in the existence of corporate tax, the value of the firm differ with the variance of the use of the debt percentage due to tax benefit on interest value [15]. In 1963, Solomon developed a new approach of capital structure; this approach holds the theory of optimal capital structure. According to this theory, the company stipulates the need to reach an optimal capital structure that achieves the highest return and maximizes the value of the company, this optimal capital structure is the best mix of debt and equity financing that maximizes a company's market value while minimizing its cost of capital. In theory, debt financing offers the lowest cost of capital due to its tax deductibility. However, too much debt increases the financial risk to shareholders and the return on equity that they require. Thus, companies have to find the optimal point at which the marginal benefit of debt equals the marginal cost [20].

According to the trade off models which presented by Myers (1984), the optimal capital structure does exist and the 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 [9]. In addition, Jensen and Meckling (1976), in the agency theory, they supported the existence of optimal capital structure; where the optimal capital structure is minimizing the agency 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 company to reduce its agency cost and mitigate agency conflicts [11]. Following the results of Donaldson (1961) which found that management prefer to use internal financing instead of using external financing. Myers and Majluf (1984) present pecking order theory suggest that company prefer to utilize retained earnings first, then use debt as a second resort, and finally issue equity capital as the last shelter if additional financing is required [17].

3. THE RELATIONSHIP BETWEEN CAPITAL STRUCTURE AND FINANCIAL PERFORMANCE

In the presence of tax, the more the company relies on debt financing, the greater its benefit from tax deduction and thus reaching a full financing ratio of the debt is optimal for increasing the value of the company. Abbadi and Abu-Rub (2012) show a negative relation between capital structure and corporate performance and market value of financial institutions listed on Palestine stock exchange (PEX) over the period 2006-2010. Abdul Rasul (2011) results supported the previous findings of Abbadi and Abu-Rub (2012), where find that capital structure negatively affecting financial firm performance

of the companies listed on Palestine stock exchange (PEX) over the period 2009-2013. In addition, Nassar (2016) find a significant negative impact of capital structure on financial firm performance of companies listed on Borsa Istanbul over the period 2005-2012. Moreover, 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, they find a significant negative relationship between capital structure and financial performance measured by ROA, and insignificant relation between capital structure with both ROE and Tobin's Q.

Twaresh (2014) investigate the impact of capital structure on the performance of non-financial firms operating in Saudi Arabia over the period 2004-2012, his study find a significant impact of capital structure on financial performance. Abu Mouamer (2011) investigate the impact of capital structure on financial firm performance of companies listed on PEX, the results indicated that there is no influence of capital structure on financial firm performance, these results match with what El-Sayed Ebaid (2009) results, where he reveal that capital structure has a weak-to-no impact on firm's performance. Taani (2013) examines the impact of capital structure on performance of Jordanian banks, covers a period of 5 years from 2007-2011, the results show that bank performance is significantly and positively associated with capital structure. This result associated with Saeed et al., (2013) whom examined the impact of capital structure on performance of Pakistani banks, and find a positive relationship between capital structure and profitability of Pakistani banks. Anarfo (2015) examined the impact of capital structure on banks performance in sub-Sahara Africa over the period 2000-2006, the result show insignificant impact of capital structure on banks performance.

With regard to previous studies, especially those conducted in Palestine, the researcher can note the rare number of studies conducted in Palestine, in addition, these studies focused on large companies, or banks. Moreover, some of these studies did not take into account the size of the company or the sector to which it belongs as a variable can influence the firm performance.

This study comes to fill the gap in the lack of knowledge of the impact of the capital structure on the financial performance of the companies listed in Palestine Stock Exchange (PEX), for the last five years before the Covid-19 crisis, which are the years from 2015 to 2019. The importance of this study comes from that it is one of the few studies that have dealt with this topic in this period, in addition to researching the effect of capital structure on financial performance in the absence of long-term sources of financing for the company. Moreover, the study seeks to identify the financial structure of the

company, and strive to improve its financial performance, through the results of the study.

4. DATA AND METHODOLOGY

The main purpose of the study is to examine the impact of capital structure on financial firm performance of Palestinian listed companies' performances. The study uses data of 32 from 48 companies listed on Palestine Exchange (PEX) for the period 2015 – 2019 with about 160 observations. Data has gathered from the companies' financial statements published on the Palestine Exchange website. Banks, Insurance companies and companies with missing data and discontinuous listing were eliminated from the sample. The independent variable "capital structure" is measured utilizing three ratios; Short-Term debt to Total Assets (STDTA), Long-Term debt to Total Assets (LTDTA), and Total Debt to Total Assets (TDTA). Furthermore, companies' financial performances are measured using the Return on Assets (ROA), Return on Equity (ROE), and Return on Investment (ROI) ratios, and Firm Size (SIZE) utilized as a control variable.

A Panel data regression model is implemented to examine the main hypothesis which is "There is a significant positive impact of capital structure (LTDTA, STDTA, TDTA) on companies' financial performance (ROA, ROE, ROI)".

5. RESULTS AND DISCUSSIONS

5.1 Descriptive statistics

Table (1) reports a summary statistics of the variables used in this study. A critical examination of the descriptive statistics for the dependent and explanatory variables reveals several issues. Study Samples (N) represents the number of data analyzed for the sample companies listed on the Palestinian Stock Exchange. The Mean of ROA for the sample as a whole is 3.49%, which means that each dollar invested in assets generate only 3.49% dollar in earnings. While the Mean of ROE for the sample as a whole is 15.87%, which means that each dollar invested in Equity generate only 15.87% dollar in earnings, the Mean of ROI is high for the sample as a whole and equal 29.17%, which means that each dollar invested in operating assets generate only 29.17% dollar in operating earnings.

Table (1): Descriptive Statistics for all variables

Variable	N	Mean	Std. Deviation	Maximum	Minimum
ROA	160	0.0349	0.106	0.883	-0.6219
ROE	160	0.1587	0.313	1.709	-0.3102
ROI	160	0.2917	0.416	3.367	-0.1094
STDTA	160	0.2313	0.154	0.802	0.0054
LTDTA	160	0.1175	0.135	1.159	0.0000
TDTA	160	0.3491	0.232	1.962	0.0121
SIZE	160	7.695	0.710	6.194	9.371

The disparity in ROA ranged from profitability of 88.3% (maximum value) for some firms to a loss of over -62.19% (minimum value) for others. While the disparity in ROE ranged from profitability of 170.9% (maximum value) for some firms to a loss of over -31.02% (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 336.7% (maximum value) for some firms to great loss of over -10.94% (minimum value) for others.

A quick review of the measures of leverage shows that the first measure of leverage TDTA has a high mean ratio of 34.91%. This implies that the total liabilities of the firms reviewed on average amount to about 34.91% of total assets value.

Examining the second measure of leverage LTDTA, the reported mean value of 11.75% 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 (11.75%), 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 23.14% as compared to 11.75% 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 80.22% (maximum value) for some firms to great low of 0.55% (minimum value) for others. Also, the LTDTA ranged from 115.99% (maximum value) for some firms to ZERO (minimum value) for others.

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 (0.710) followed by ROI with (0.416). The least volatile "most stable" variable is ROA with

a S.D. of (0.106); followed by LTDTA (0.135), followed by STDTA (0.154), TDTA (0.232) and the ROE with (0.313).

5.2 Correlation analysis

Correlation is concern describing the strength of relationship between two variables. In this study, the correlation coefficient analysis is under taken to find out the relationship between capital structure and financial firm performance. The correlation matrix for all variables is presented in table (2) in order to examine the correlation that exists among variables. The results show that there is negative correlation between ROA and STDTA, which is - 0.276, in addition, it has a positive correlation with LTDTA by 0.107 and a negative correlation with TDTA by - 0.323.

ROE is negatively correlated with LTDTA by - 0.005, and negatively correlated with TDTA by - 0.228, also it has a positive correlation with SIZE by 0.279. Regarding ROI it has a positive correlation with SIZE implied by the correlation coefficient of 0.282 and negative correlation with other variables.

STDTA has a positive correlation with TDTA implied by the correlation coefficient of 0.872, and it is positively correlated with SIZE implied by the correlation coefficient of 0.334. LTDTA has a positive correlation with TDTA and SIZE implied by the correlation coefficient of 0.643 and 0.406 respectively. TDTA has a positive correlation with SIZE implied by the correlation coefficient of 0.424.

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.

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:

Model 1: Performance = $\beta_0 + \beta_1$ STDTA + β_2 SIZE + ϵ

Model 2: Performance = $\beta_0 + \beta_1$ LTDTA + β_2 SIZE + ϵ

Model 3: Performance = $\beta_0 + \beta_1$ TDTA + β_2 SIZE + ϵ

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

β_0 = Intercept (the value of y when x = 0)

β_1 = Coefficient (slope of the line)

ϵ = Error

The following table (3) Carrying out the regression models that examine the effect of capital structure on firm’s performance of Palestinian companies listed on Palestine Stock Exchange (PEX) for the period 2015– 2019.

Table (2): Spearman's Rho correlations matrix

Variable	ROA	ROE	ROI	STDTA	LTDTA	TDTA	SIZE
ROA	1.00						
ROE	0.94**	1.00					
ROI	0.28**	0.28**	1.00				
STDTA	-	-	-	1.00			
LTDTA	-0.10*	-	-	0.24**	1.00		
TDTA	-0.32*	-0.22*	-0.22*	0.87**	0.64**	1.00	
SIZE	0.14**	0.27**	0.28**	0.33*	0.40**	0.42**	1.00

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

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

5.3 Regression Analysis:

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

Table (3): Regression summary for the study variables

Model 1		ROA		ROE		ROI	
Variable	β	Sig.	β	Sig.	β	Sig.	
Constant	-	0.118	2.909	0.000	0.871	0.004	
STDTA	0.397		0.062	0.615	0.421	0.157	
Size	0.059	0.079	-	0.000	-	0.014	
			0.376		0.096		
R^2	0.052		0.311		0.108		
Sig.	0.204		0.000		0.031		
Model 2		ROA		ROE		ROI	
Variable	β	Sig.	β	Sig.	β	Sig.	
Constant	-	0.146	3.095	0.000	0.911	0.002	
LTDTA	-	0.754	0.038	0.353	0.219	0.098	
Size	0.057	0.091	-	0.000	-0.10	0.011	
			0.393				
R^2	0.049		0.305		0.111		
Sig.	0.226		0.000		0.030		
Model 3		ROA		ROE		ROI	
Variable	β	Sig.	β	Sig.	β	Sig.	

Constant	- 0.353	0.149	3.125	0.000	0.926	0.002
TDTA	- 0.091	0.202	0.088	0.609	- 0.039	0.632
Size	0.060	0.073	- 0.396	0.000	- 0.099	0.012
R²	0.074		0.291		0.107	
Sig.	0.105		0.000		0.034	

According to the results presented by table (3), it is concluded that the overall three models are significant at the 0.05 level unless the dependent variable ROA which has insignificant relation with all independent variables (STDTA, LTDTA, TDTA), that's mean capital structure is negatively impact ROA of companies listed in PEX, this results is in consistent with the results of Abbadi and Abu-Rub (2012); Abdul Rasul (2011); Nassar (2016); Hasan et al. (2014); Anarfo (2015). In addition, the results indicate a significant positive relationship between ROE and ROI and all independent variables (STDTA, LTDTA, TDTA), which mean that, capital structure is positively impact ROE and ROI of companies listed in PEX, this results is in consistent with the results of Taani (2013); Saeed et al., (2013).

6. Conclusion

This study investigates the impact of capital structure on firm performance in Palestine's stock Exchange. The results suggest that firm's capital structure is negatively and significantly associated with financial firm performance Return on Assets (ROA), that mean using a high level of debt is negatively affects a firm's return on assets. On the other hand, the results show that firm's capital structure is positively and significantly associated with financial firm performance return on equity and return (ROE), and investment (ROI).

There are three main limitations of this study; it studies the data of only Palestine stock Exchange as a developing economy, so it cannot represent all the markets of transition economies. Secondly, this study includes only 5 years data, and to have consistent findings, long time series of data could be required. Thirdly, we can find the impact of capital structure on firm's performance by sector and then compare the results to know the real picture of the relationship.

Capital structure is a puzzling concept especially so in emerging markets such Palestine. Further study can be conducted by adding more independent variables sales as growth and business risk. To clarify the results of our study more variables for performance measurement may be useful. Data of long time series can also be used for credibility of results. Future research could be processed by comparing the capital structure and firm performance of sectors.

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