

# THE IMPLICATIONS OF DEBT FINANCING POLICY ON FIRM'S CORPORATE PERFORMANCE

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## ABSTRACT

*The study aims to focus on establishing evidence for the impact of debt financing policy on firm corporate performance. The study employed correlative regression design using panel data for Jordanian non-financial companies covered the period from 2006 to 2019. Return on Assets (ROA) and Return on Equity (ROE) were used as determinants of firm corporate performance while Accounts Payable Debt (APD), Short-Term Loans (STD), Long-Term Loans (LTD) were employed as determinants of debt financing policy; other variables namely; Total Assets (TA), Operating Income (OINC) and operating cash flow (LIQ) were used as control variables. The final results of the study provided conclusive evidence that corporate performance moves positively or negatively depending on the type of debt source, the unanticipated regression correlations revealed mixed results; short term loans was found positively correlated with performance, Whilst long term loans and accounts payable debt were surprisingly negatively correlated to performance.*

**Keywords:** ROA, ROE, Accounts Payable, Short-term Loans, Long-term Loans, Corporate Performance, Jordan

## INTRODUCTION

In recent corporate environments, it is obvious that the majority of companies spend hardly efforts to survive despite of difficulties in competition era. The financial decisions concerning the amount of debt pertaining in a company become one of the difficult tasks that falls on the shoulders of debt policy makers to balance between return and risk and at the same time maximizing the value of company (Wadike et al., 2017). Up to the present time the debt amount is regarded as one of crucial methods for companies to raise their returns through leverage and enables companies to compete strongly in the market. Although positive leverage results are vital to returns, it is equally important to control debt associated risks by managers in order to avoid any possible threats to business from high debt ratio (Jensen & Meckling, 1976). In the new global economy, exploring the role of debt financing and its effect on firms' performance is regarded as one of the most controversial issues in academic research starting from the work of Modigliani and Miller 1958 up to date. Notably, this role continues to be an attracting subject that appears in several previous research (Goddard et al., 2005; Berger & Bonaccorsi, 2006; Rao et al., 2007; Baum et al., 2007; Nunes et al., 2009; Margaritis & Psillaki, 2010; Kebewar, 2012).

For several decades followed the work of Modigliani & Miller (1958) research for the effect of debt on the company's performance remained the center of attention for many studies. Traditionally, debt is regarded as the second completing half of investment that enables business to achieve short and long-term growth objectives. However, the direction of correlation between debt and performance continuously has been challenged for many researchers, some researchers found negative effects for debt on performance, such as Rehman, et al., (2012), while others showed positive results (Margaritis & Psillaki,

2010); Other researchers reported mixed results for this effect (Weill, 2008). Such difference of the findings might be referred to several factors such as: different types of variables, sample size, country, industry, period and methodology. Additionally, this divergence in reported results for previous studies could be also referred to the researcher's theoretical strand of capital structure theories; theoretically, researchers are divided between those who are with or against the framework of certain capital structure theory.

According to the classical theory of Modigliani and Miller that suggests, firms should follow the appropriate financial structure that creates value from them. Modigliani and Miller also pointed out that companies tend to apply an order of preference in the choice of financial resources, preferring firstly internal resources and, only when these resources are insufficient, companies would resort to the banking support to raise their investment (Modigliani & Miller, 1958). The undertaken study is aimed to extend prior research for exploring the controversial issue of debt effect on performance through investigating different set of variables has never before been tested such as debt financing from suppliers represented in accounts payable, moreover, extending the time period and increasing the number of sectors is expected to provide empirical evidence about the association between debt and performance. Furthermore, the study is structured to provide a more comprehensive view on this topic for companies, finance managers, and investors. Besides that, the results are expected also be useful for improving financial management knowledge and encourage further future research about debt financing.

A theoretical background and the hypothesis development are provided in the second part of the study and the third part focuses on methodology and data collection. The fourth part, show results and discussion, and the final part are the conclusions and recommendations.

## LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

### Theoretical Backgrounds

Starting with the pioneer work of Modigliani & Miller's (1958) there have been increasingly rapid advances in the concept of capital structure and its relationship with the financial performance of firms. For several years after Modigliani & Miller's (MM) theory of capital structure the finance literature regarded accuses this theory by irrelevancy on the ground that business value does not change by leverage if taxes and transaction costs are absent as the theory suggests. But lately, in 1963 Modigliani and Miller improved their theory and introduced a new evidence that the cost of capital do influence capital structure, and hence value of business affected by debt factors ignoring the unrealistic assumptions for the effect of taxes; this new findings assured out that debt is capable to provide firms with tax advantage when interest is deducted from the tax resulting in tax shield, and thus by reducing the cost of borrowing firm performance will be maximized (Modigliani & Miller, 1963).

Up to the present time the finance literature has generated four different types of theories that explain the effect of debt on performance, namely: the Pecking order theory, agency costs theory, tradeoff theory, and signaling theory. According to the Pecking order theory, the firm prefers using internal sources of financing first, then debt from external sources and finally external sources of equity through preferred or common stocks (Myers, 1977). As for and According to the agency theory, a positive as well as negative effect is assumed for the debt effect on profitability; the theory suggests that there is an effect for agency costs of equity on the relationship between shareholders and managers; this effect is regarded with positive impact on financial performance (Myers et al., 2003). Whereas; the effect of debt costs between shareholders and creditors has a negative effect on financial performance (Jensen & Meckling, 1976). The third theory, trade-off theory is structured to

focus on the proportion of debt to equity that the company selects. According to this theory, although debt financing adduces tax benefits, but on the other hand it upraises the risks of bankruptcy and financial distress cost for companies. Regarding the final theory the, Signaling theory, debt is theorized that it is the presence of asymmetric information, and should be automatically correlated positively with performance (Kebewar, 2012).

### **Relationship between Debt and Profitability**

The inspiring work of Modigliani and Miller's has attracted and motivated many researchers to explore the relationship between debt and performance. Due to the doubts about the accuracy of capital structure theory in different environments, over the past fifty years there has been a dramatic increase in the amount of literature to analyze this relationship; however, some of this research revealed a positive correlation between debt and performance, on the other hand, several attempts of research also found a negative relationship while others reported mixed results for this relationship. As for positive relationship Wippen (1966) found a positive association between debt and profitability, the same result was also reported by Rehman, et al., (2012); Gill, et al., (2011). Likewise, Margaritis & Psillaki (2010) also approved this positive connection, and pointed out that debt ratio positively affect the performance of firms. Furthermore, Holz (2002); Sarkar & Zapatero (2003); Baum, et al., (2007), and many other researchers also found this positive influence (Berger & Bonaccorsi, 2006; Leibenstien, 1966; Nerlove, 1968; Taub, 1975). Other finding also supported the existence of positive correlation (Petersen & Rajan, 1994; Roden & Lewellen, 1995; Champion, 1999; Abor, 2008).

However, although much of previous research reported positive correlation between debts and performance, a notable amount of research also reported opposite negative results for this correlation for example, Mendell, et al., (2006) while investigating 20 firms of forest industry, his results confirmed the existence of negative relationship between debt and profitability; likewise Mohammad & Jaafer (2012) when examined Amman Stock Exchange listed companies and analyzed the effect of debt on performance, their results indicated significant negative relationship between short term debt, long term debt, total debt and return on equity. Other negative results also were reported by several researchers (Wali et al., 2012; Goddard et al., 2005; Zeitun & Tian, 2007; Onaolapo & Kajola, 2010; Rao et al., 2007). Other related papers also reached the same conclusion (Kester, 1986; Rajan and Zingales, 1995; Fama & French, 1998; Cassar & Holmes, 2003; Hall et al., 2004; Graham, 2004; Amidu, 2007).

Previous research about the mixed direction of the relationship between debt and performance also appeared in several previous studies that reported this result. Hurdle (1973) when applied different regression models reached mixed results. According to his results, positive results are appearing only when using Ordinary Least Square (OLS) is applied for testing the effect of debt on profitability. In other studies for McConnell and Servaes (1995); Agarawal & Zhao (2007), their results suggest that only companies with high growth debt rate suffers a negative effect for debt financing, while other companies with low growth rates were effected positively. Equally, Weill (2008) reached also mixed results, after studying different European his results proved that, debt have positively impacted the financial performance in countries like Spain and Italy, whereas, Belgium, France, Germany, and Norway showed contrary negative effect. Identically, Cheng & Chien (2010) when they investigated Chinese companies, their conclusions showed a positive relationship when the debt ratio between (53.97%-70.48%), while negative relationship appeared when the debt ratio exceeded 70.48%. In the same stream, the findings of several other studies have also reported mixed results for the connection between debt and performance (Dwilaksono, 2010; Mesquita & Lara, 2003; Skopljak & Luo, 2012).

Taken together; the review of empirical literature regarding the impact of debt on

performance leads into the some ascertainment: first, it is obvious that plenty of previous literature attends to focus solely on particular sectors or on large companies. Secondly, there are few of the studies viewed this relationship for the whole industry. Therefore, it is our aspiration that this study fills this gap, by contributing to the existing empirical literature on the relationship between debt and performance for the Jordanian environment with a larger sample and for longer periods.

## METHODOLOGY

### Sample and Data

The sample compromises of all non-financial Jordanian companies listed on Amman stock exchange for the period from 2006 up to 2019. The number of sampled companies was 107 companies that have data concerning the subject of the study after excluding companies with missing data. The number of observations was 1498 observation collected over 14 years. The data are sourced from the company quid that issued annually from Amman stock exchange.

### Method and Variables

The study is structured as a quantitative empirical study and uses real financial market data to examine the hypotheses of the study by capturing the relationship between the independent and dependent variables through two regression models. The two multiple regression models are as follows:

$$ROA_{it} = \alpha + \beta_1 APD_{it} + \beta_2 STD_{it} + \beta_3 LTD_{it} + \beta_4 \log TA_{it} + \beta_5 \Delta OINC_{it} + \beta_6 LIQ_{it} + E$$

$$ROE_{it} = \alpha + \beta_1 APD_{it} + \beta_2 STD_{it} + \beta_3 LTD_{it} + \beta_4 \log TA_{it} + \beta_5 \Delta OINC_{it} + \beta_6 LIQ_{it} + E$$

The above equations represents the dependent and independent variables of the study, both Return On Assets (ROA) and Return On Equity (ROE) are donated to represent corporate performance as dependent variable while Accounts Payable Debt (APD), Short Term Loans (STD) and Long Term Loans (LTD) are used to represent debt policy; the remained variables are control variables; total assets was employed to control the size effect, income from operations is aimed to control the growth effect and finally cash flow from operations is used to control the increase in liquidity other than debt. The multiple regressions were applied twice, once with ROA and the other with ROE. The variables and their estimated correlations are shown in (Table 1).

Variable	Variable Notation	Type	Variable Description	Estimated Correlation
Return on assets	ROA	Dependent	Net income / total assets	----
Return on equity	ROE	Dependent	Net income / total equity	----
Accounts payable debt	APD	Independent	Accounts payable debt deflated by total assets	?
Short term loans ratio	STD	Independent	Short term loans deflated by total assets	?
Long term loans ratio	LTD	Independent	long term loans deflated by total assets	?

Total assets	Log TA	control	The log of total assets	----
Change in operating income	$\Delta$ OINC	Control	The percentage growth in operating income	----
Cash flow from operations ratio	LIQ	Control	Cash flow from operations deflated by total assets	----

Based on earlier discussed literature and our assumed models, the hypotheses of the study are as follows:

*H1: There is a statistical significant relationship between APD and ROA.*

*H2: There is a statistical significant relationship between STD and ROA.*

*H3: There is a statistical significant relationship between LTD and ROA.*

*H4: There is a statistical significant relationship between APD and ROE.*

*H5: There is a statistical significant relationship between STD and ROE.*

*H6: There is a statistical significant relationship between LTD and ROE*

## Diagnostic Regression

Before discussing the study results, it is necessary that the data should be normal in order to remove outliers from data, data normality test was run. Some outliers were found and they are excluded from data for the purpose of data normalization. Further, Hausman Fixed and Random Effect Test were conducted in order to evaluate whether to accept fixed effect or random effect regression model. If the sig-value of this test is less than 0.05, then we should accept fixed effect regression model or if it is greater than 0.05, then we should follow random effect regression model. In this study, the sig-value was greater than 0.05, hence, random effect regression model is used (Bryman & Cramer, 2012).

## FINDINGS, DISCUSSION AND CONCLUSION

### Descriptive Statistics

Table (2) illustrates the descriptive statistics of the study's variables, as table 2 shows the mean score for ROA was 7.07% of the Jordanian Dinar (JD), and this value fluctuated between a minimum value of 0.85% of JD and a maximum value of 16.18% of JD. From this result, it is appear that ROA volatile and not stable in our market, this volatility can be attributed to the difference in profitability mean among different sectors included in the study. Similarly the mean score for ROE was 9.89 % of JD; and this result mediates a minimum value of 1.15 % of JD and a maximum value of 24.97% of JD, which means that both of ROA and ROE were not stabilized in the Jordanian market for the period under study.

In the same table 2, when we screen the results for the next three independent variables representing debt, that are APD, STD and LTD interestingly almost a little unnoticed difference is found between their means and their minimum or maximum value; this result indicates that the amount of debt percentage is stable for all Jordanian companies in all sectors. Further screening of table 2 reveals another fact concerning the control variables (Log TA,  $\Delta$  OINC, LIQ); that is, all of the three control variable results also were almost stable over the period of the study, and this result is expected to neutralize the effect of control variables on performance and supports the effect of debt variables in justifying the change in corporate performance.

<b>Variables</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>ROA</b>	0.85	16.18	7.07	4.28
<b>ROE</b>	1.15	24.97	9.89	6.38
<b>APD</b>	8.19	8.60	8.45	0.11
<b>STD</b>	7.62	8.15	7.93	0.17
<b>LTD</b>	8.12	8.51	8.28	0.12
<b>Log TA</b>	9.41	9.64	9.57	0.05
<b>Δ OINC</b>	7.51	8.77	8.28	0.33
<b>LIQ</b>	8.09	8.73	8.46	0.18
<b>N</b>	1498			

### Multiple Regression Results Discussion

Table 3 presents the results of regression for both of the models. It can be seen from the table that both of models were valid for the purpose of the study. The regression results confirm that both models were fit for the proposed hypothesis. This fitness was significant; the F-test value was 29.622 for model 1 at sig. = 0.05 level, and F-test value for model 2 was 24.638 at sig. = 0.05 level. Moreover, the Adjusted R Square result in the table empirically proves that the suggested independent variable (APD, STD, LTD, TA, OINC, and LIQ) explained approximately more than 90% of the change in the dependent variables (ROA, ROE). This result provides a strong evidence for the significant correlation between debt policy and corporate performance. Consequently, this result agrees with our predetermined hypothesis of the study.

<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>F</b>	<b>Sig</b>
M 1 (ROA)	0.965	0.931	0.871	29.622	0.000
M 2 (ROE)	0.949	0.901	0.816	24.638	0.000
Dependent variables: ROA, ROE					
Predictors: APD, STD, LTD, TA, OINC, LIQ.					

Before discussing the regression results for independent variables we should mention that no multicollinearity was found between the independent variables. The Variance Inflation Factor (VIF) for all independent variables was below (10) which is a common cutoff value according to Hair, et al., (2010). However, With reference to coefficients results for model 1& 2 in tables (4, 5); the results indicate that: Short Term Loans (STD) is positively correlated with both return on assets (ROA) and return on equity (ROE) as we predicted; results for STD in table 4 (B = 12.918; t-value = 2.322; sig < 0.05); and in table 5 (B = 25.054; t-value = 2.535; sig < 0.05). Similar to many studies accounts payable (APD) represents a type of external debt obtained in form of goods or services, and consequently argued to have significant effect on leverage; the results for this source effect is shown in the same tables 4 & 5; interestingly, the results of APD were significantly negative associated with ROA as appear in table 4 model 1 (B = -17.659; t-value = -2.456; sig < 0.05); while in contrast to earlier findings the results for (APD) in table 5 model 2 suggest no effect for APD on ROE, where (B = -25.192; t-value = -1.972; sig > 0.05).

<b>Table 4</b>					
<b>THE MULTIPLE REGRESSION MODEL COEFFICIENTS OF MODEL 1</b>					
$ROA_{it} = \alpha + \beta_1 APD_{it} + \beta_2 STD_{it} + \beta_3 LTD_{it} + \beta_4 \log TA_{it} + \beta_5 \Delta OINC_{it} + \beta_6 LIQ_{it} + E$					
Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-160.819	107.102		-1.502	0.177
APD	-17.659	7.191	- 0.475	-2.456	0.000
STD	12.918	5.564	0.539	2.322	0.001
LTD	-25.380	10.741	- 0.729	-2.363	0.000
Log TA	43.989	23.437	0.608	1.877	0.103
OINC	14.292	2.983	1.114	4.791	0.002
LIQ	-13.550	7.382	- 0.585	-1.835	0.109
Dependent variable: ROA.					
Independent variables: APD, STD, LTD, TA, OINC, LIQ.					

As for the final debt factor, long term loans (LTD), the result was proved significant, but unexpectedly negative, the coefficients results in both tables 4&5 suggests that, LTD in Jordanian companies is negatively correlated to performance, as seen in table 4 (B = -25.380; t-value = -2.363; sig < 0.05), while in table 5 (B = -41.478; t-value = -2.174; sig < 0.05). Our results are consistent with previous research findings for long term debt. The remained results in tables 4&5 for control variables show that both of total assets (TA) and cash flow from operations (LIQ) has no significant effect on performance; whilst operating income (OINC) was found significantly positive correlated to performance.

<b>Table 5</b>					
<b>THE MULTIPLE REGRESSION MODEL COEFFICIENTS OF MODEL 2</b>					
$ROE_{it} = \alpha + \beta_1 APD_{it} + \beta_2 STD_{it} + \beta_3 LTD_{it} + \beta_4 \log TA_{it} + \beta_5 \Delta OINC_{it} + \beta_6 LIQ_{it} + E$					
Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-278.308	190.233		-1.463	0.187
APD	-25.192	12.772	- 0.455	-1.972	0.089
STD	25.054	9.883	0.701	2.535	0.039
LTD	-41.478	19.079	- 0.800	-2.174	0.030
Log TA	69.216	41.628	0.642	1.663	0.140
OINC	21.848	5.298	1.143	4.124	0.004
LIQ	-23.366	13.112	- 0.677	-1.782	0.118
Dependent variable: ROE.					
Independent variables: APD, STD, LTD, TA, OINC, LIQ.					

Taken together, our results suggest that, despite of that our Jordanian market is a newly emerged market in comparison to other international markets; the study results revealed that Jordanian market corporate performance is a proved to have an admirable reaction to debt policy that companies apply; a significant effect for debt external sources has been found, However, these results prove empirically that the company's performance in Jordan acts rationally with debt factors (see results of hypotheses in table 6). This final result encourages more attention for debt as an indicator of financial efficiency.

<b>Hypothesis</b>	<b>Coef.</b>	<b>T-Value</b>	<b>Sig</b>	<b>F-Value</b>	<b>Sig</b>	<b>Decision</b>
H1	-17.659	-2.456	0.000	29.622	0.000	<b>Accepted</b>
H2	12.918	2.322	0.001	29.622	0.000	<b>Accepted</b>
H3	-25.380	-2.363	0.000	29.622	0.000	<b>Accepted</b>
H4	-25.192	-1.972	0.089	24.638	0.000	<b>Rejected</b>
H5	25.054	2.535	0.039	24.638	0.000	<b>Accepted</b>
H6	-41.478	-2.174	0.030	24.638	0.000	<b>Accepted</b>

## **CONCLUSION**

The relationship between debt and performance continued to be controversial issue in accounting and finance literature, however, the choice for relevant proportion of financed debt is argued to upraise company's profitability and hence corporate performance is increased to the level that a satisfy management and owners. On the other hand the unbalanced percentage of debt will result into high increase in risks for companies. For this reason the present study was designed to extend the financial knowledge by answering the question, whether debt policy has significant effect on corporate performance or not.

After choosing a sample that represents the majority of Jordanian companies listed on Amman stock exchange, and by employing statistical multiple regression to explore the assumed connection between debt and performance; The most obvious general finding of our study that our results empirically proved the significant effect of debt on performance; moreover, our results confirmed to the growing body of literature that company's performance is influence positively or negatively depending on the type of debt source. Moreover, the study detailed findings revealed mixed results concerning debt effect; for example, short term loans were founded positively correlated to performance, whilst long term loans and accounts payable debt were surprisingly negatively correlated to performance.

## **LIMITATIONS, RECOMMENDATIONS AND FUTURE RESEARCH**

The research shows some limitations which, nonetheless, did not affect the results of the study. One limitation is concerned with the absence of data for several companies for the period under study. The second limitation linked to the sample of the study; although the number of observations covered almost 14 years with 1498 observations, but this number in other environments are considered too small to generalize conclusions. The study findings support a strong recommendation for the practical benefits for debt effect on performance; first, management and financial managers could enhance business performance by focusing on the right source of debt that is positively affected profitability. Secondly, for financing purposes internal financing is the more appropriate than external debt that could be negatively correlated with performance.

As for future research, first, it will be interesting to extend this research across different sectors in the market; because, according to most of the studies, contradictory effects have been found. Secondly, we ideally would add new specific variables for companies and sectors, for example, effect of debt on stock price or price earnings ratio. Finally, considering the fact that the relationship between debt and performance could be non-linear, further research can deepen this analysis by using econometric methods that can evaluate the effects of non-linearity regression and threshold models.



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