The Impact of Determinants of Leverage on Capital Structure of Service Companies in Jordan

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Abstract

This study aims at analyzing the determinants that influence the capital structure in the Jordanian service companies for the period 2002 – 2008. Financial leverage has been accepted as a dependent variable affected by independent variables (profitability, liquidity, total liabilities, long-term debts and working capital).

The relationship between the indicators studied and the form of the financial structure of service corporate in Jordan was established by using multiple regression analysis and analysis of variance.

The study found that there are significant positive relationships between the financial structure represented by leverage and liabilities, working capital, and long-term debt at the moral level of 1%. It also showed a significant inverse relationship between the financial structure and profitability, liquidity at the level of 1%.

Because of the inverse relationship between financial leverage and profitability, the study recommended that the service sector should rely on retained earnings in seeking financing, with the condition of high rates of profitability in the company, in order to depend on internal financing in the case of gaining a certain investment opportunity, rather than resorting on the borrowing that carries high risk, and keeping pace with the current economic status which is characterized by instability.

Keywords: Capital Structure, Financial leverage, profitability, liquidity, total liabilities, long-term debts and working capital

1. Introduction

Capital structure is one of the most complex areas of financial decision-making in the company, because of the close relationship with other variables of financial decisions. The financial structure can simply be defined as that which includes items in the right side of the balance sheet except the short-term financing.

Through this definition, we can deduce that if the company makes a weak decision related to capital structure, it may face a high risk, or higher cost of capital. This will lead to a decline in net present value of the project, and accordingly, it will lead to a decline in the market value of the company. In contrast, when taking an efficient decision affecting capital structure, it will lead to lower risks, and lower cost of capital represented by (WACC), which results in higher net present value of the project, and higher market value of the company (Gitman, 2009). Here, we must refer to the concept of WACC where it expresses the weighted average of the cost of capital, and reflects the expected mean cost of funds on the long-term. It can be calculated by multiplying the weighted cost of each financing cost in the contribution rate of each source in the company's capital (Gitman, 2009).

The breakthrough made by the famous article of (Miller, 1958), is one of the most important releases of the theory of capital structure. The most important conclusion from this essay was that there is no relationship between the company's value and the capital structure which achieves the lowest cost; therefore, one can find that each company has a different capital structure.

There is a lot of literature in the capital structure field, due to data incompatibility of domestic and international markets, in addition to tax high rates, and the high rate of expenditure in the event of bankruptcy, and because of the absence of equilibrium between the commodities market and the market of production factors (Alkhasawneh, 2006).

When talking about capital structure, we must refer to its main sources, which are the following:

    1.1. Borrowing, which reflects a temporary commitment to creditors. Borrowing for the purposes of funding is through bank credit and trade credit, as sources of short or long-term debt, and by the issuance of bonds (Alkhasawneh, 2006).

    1.2. Property rights, such as the issuance of common stock or retained earnings (Alkhasawneh, 2006).

    1.3. Issuance of preferred stock, which combines between the characteristics of common shares and debt (Gittman, 2009). Preferred shares are similar to common shares; they do not entail a commitment to the company. They are also similar to the bonds in terms of distribution of a minimum limit and highest profits. It also comes after the debt in priority to get the company's profits from the proceeds of liquidation of the company at bankruptcy, in addition to the priority right to obtain profits after the payment of debt (Jensen and Meckling, 1976).

A closer look at these three sources and what they represent in the company reveals that they are more likely to produce confusion in interests. This was assured by (Jensen and Meckling, 1976), when they considered that the company represents a loop, or a series of contracts linked with each other by a group of members. Each member seeks to achieve his personal interests, which means more conflict. And here comes the role of the management to organize and coordinate the relationship among the members, through taking decisions that achieve the entire goals of the company (Jensen et al, 1976).

There are May factors, both internal and external, impacting the decision of choosing the suitable financing structure. The internal and the external factors include sensitivity of creditors, due to high debt on the company, and the nature of industry, in terms of competition, growth, stability of sales and profits, and the assets value. These factors determine the capacity of the debt, i.e., the optimal debt ratio, and the evolution of the cost of capital for different levels of debt (Alkhasawneh, 2006).

No manner can help the company in designing its financial structure directly, where the first attempt in this regard was through a study by (Miller, 1958).

This study addresses the relationship between the financial structure and the cost of funds, and states that the value of a company that is represented by its investment value, depends upon returns and risks related to these returns, regardless any link with the financial structure, where the information level is equal for the owners and the company management. Therefore, there is no difference between them in terms of using the different financing sources, because they have the same information about the future opportunities available to the company, and using any of financing sources, will not affect absolutely the market value of the company. But this is not true in practice. There are variances in practice of investors, and the information cost, brokerage commissions, and taxes on operations and capital gains, in addition to the high number of dealers in the stock market. Therefore, the real world and practices vary from assumptions.

Finally, the financial manager must choose the suitable financial structure which specifies the sources that benefit the company to finance its assets and the proportion of each source, taking into account the balancing between returns and the risks generated from the targeted financial structure (Shlash, Al-Bakom, Al-Own, 2006).

2. Previous Studies

Some of related previous studies include the following:

In a study by Kharawish (2008), the determinants of financial structure to the Jordanian industrial companies listed in Amman Stock Exchange were tested, during the period 2001 – 2005, in order to discern the best approaches used to finance these companies. This was done by finding the relationship between the debt ratio, and long-term debts to total debts as dependent variables, and between the company size, and total assets, profitability and long and short-term debts as independent variables. In order to test the assumed relationship, the multiple linear regressions was used, and the results showed that there is a significant relationship between the debt ratio and long-term debts with total debts and the size and total assets, but there is a negative relationship between long-term debts to total debts and short-term debts. In addition, the results showed that most of the Jordanian industrial companies rely on equity in financing with a proportion of 70%, while 30% of financing needs depend on short-term debts. In addition, companies of high profitability do not depend on debts in general.

The study by Shalash et al. (2006) has summarized the relationship between accounting indicators and the shape of financial structure of Jordanian industrial companies by using multiple regression analysis. Their model included four independent variables, which are debt ratio, liquidity, profitability and growth rate, while the leverage ratio was the dependent variable. The findings of the study can be summarized as follows:

- The leverage ratio of Jordanian industrial companies did not exceed 36%. This indicates a weak ratio compared with similar companies in the U.S.A, Germany, and East Asia, where this ratio exceeds 80%.
- There is a significant positive relationship between financial structure and previous debt ratio at 1% level of significance.
- There is a significant negative relationship between financial structure and profitability, liquidity and growth rate at 1% level of significance.

The researchers have recommended that companies with higher profitability should rely on retained earning in financing rather than borrowing, due to the economic instability that faces Jordan.

In her study, Alkhasawneh (2006) has conducted an analysis of the effect of each of the ownership of management members, and the ownership of the rest of the shareholders in determining the capital structure in Jordanian corporates. The main findings of the study showed that there is a positive relationship between leverage and the ownership of major shareholders, while there is a negative relationship between leverage and the ownership of management. This means that the variable "ownership" is a major factor that must be taken into account when determining the capital structure in Jordanian companies.

The study of Al-Siddiq (2002) was aimed at identifying the determinants of financial structure, and the impact of each factor on the ability of the company to obtain financing, in order to focus on the important factors that increase confidence of the financing institutions in the future. The results of the study showed that there is a positive statistically significant relationship between debt ratio (dependent variable) and the previous debt ratio, the size of the company, liquidity and profitability, the size of the guarantees provided and growth opportunities (independent variables).

Ozkan (2001) stated in his study that the British companies assume that profitability, liquidity, and opportunities to grow have a negative impact on financial structure, while the researcher found that the size of the company impacts the company's debt, and there is a negative relationship between tax considerations and debt ratio.

The study by Ismail (1996) focused on the relationship between the concentration of ownership, and all of the performance and financial structure and interrelationships among them, to solve the problem of the agency in the field of commercial banks in Egypt, in the light of a number of control variables, through using simultaneous equations, and the method of least squares with the two phases. The results showed a positive impact of ownership concentration on the financial structure, in addition to same impact of financial structure on ownership concentration, while the performance has a limited impact.

The study by Ruslan Deranieh (1992) about the most important determinants of financial structure in Jordanian industrial companies, aimed to discern the relationship between some of accounting indicators and the shape of financial structure in Jordanian industrial companies. These indicators included the financial ratios which express the characteristics of borrowers, such as the ratio of viable mortgage assets, total assets, tax savings not related to the cost of borrowing, the size of the company, income fluctuations, profitability and expected growth. The results showed that there is statistically significant relationship between most of these variables with capital structure.

3. Problem Statement

The financing structure acquired great importance especially after the emergence of Miller assumption in 1958, which was built on assumptions of a perfect world. This assumption stated that there was no difference between the use of sources of internal and external funding, or debt and equity. This result is untrue because we live in the real world (Kharawish, 2008). Theoretically, it is possible to say that there is optimal financing which leads to reduce the cost of capital to its lowest level. But practically, there are many factors governing the financial structure. These factors are represented by the degree of risk that the management is willing to carry when financing through borrowing in order to obtain greater profitability, in addition to the sensitivity of the lenders due to high debt on the company, and the nature of activity practiced by the company and growth ratios, stability of sales, competition and the size of assets. Therefore, identification of these factors will contribute significantly in determining the capacity of the debt in companies. The company, in order to be eligible for the money from others, must provide some requirements, which are the determinants of financial structure, and which vary from one sector to another and from one company to another (Shlash and Alen, 2001).

4. Importance of the Study

The importance of this study stems from the assumption that it illustrates the determinants of financial structure, and provides help in how to select suitable financial structure of the company. The practical benefits of the study are the following:

- Helping companies in taking decisions related to capital structure, which increases the market value of the company.
- Helping companies in estimating the financial risk, generated from the increase of debt ratio to owners equity, taking into account the determinants of financial structure, and the risk of financial leverage.

5. The Study Objectives

This study seeks to achieve the following objectives:

- Identifying the determinants of financial structure of the Jordanian public shareholding companies.
- Identifying the effects of these factors on the ability of companies to obtain financing.
- Identifying the extent to which there is a relationship between the financial structure and leverage through the factors under study.

6. Research Hypotheses

Major Hypothesis: H_0: There is no impact for the independent variables (profitability, liquidity, long-term debts, total liabilities and working capital) on the financial leverage.

Sub-hypotheses:

The first hypothesis H0:	There is no significant moral relationship between profitability and leverage.
The second hypothesis H0:	There is no significant moral relationship between long-term debt and leverage.
The third hypothesis H0:	There is no significant moral relationship between liquidity and leverage.
The fourth hypothesis H0:	There is no significant moral relationship between working capital and leverage.
The fifth hypothesis H0:	There is no significant moral relationship between indebtedness and leverage.

7. Methodology

7.1. Study Population and Sample

The study population consists from the Jordanian services companies listed in the Amman Stock Exchange, and the study sample included seven of these companies for the period 2002 – 2008 as follows:

- Beit Al-Mal Saving and Investment for Hosing (BAMB).
- Al-Bilad Medical Service (ABMS).
- Jordan Hotels and Tourism (JOHT).
- Irbid District Electricity (IREL).
- Jordan Electric Power (JOEP).
- Arab International Hotels (AIHO).
- Jordan Press Foundation / AL-Ra'I (PRES).

7.2. Data: Sources and Collection Methods

Data needed for the purpose of this study were collected from the following sources:

- Annual reports of the companies.
- Companies Guide issued by Securities commission.

7.3. Methods of Data Analysis

The following models were used in data analysis:

7.3.1. Analysis of Variance(ANOVA table): Based on de-fragment of the total variance to a group of standards, the most important is within groups and inside groups or the error, in order to test the impact of independent variables on the dependent variable through testing the null hypothesis (Ho), which states that there is no impact of independent variables on the dependent variable, and calculating the value of (F) to be compared with tabulated value of (F) in order to accept or reject the null hypothesis.

7.3.2. Multiple linear Regression: Generally, the multiple linear regression is concerned with the analysis of the quantitative impact of a number of independent variables on a quantitative dependent variable. By assuming that Y is the dependent variable and $(X_1, X_2, X_3 \ldots ,X_k)$ are the independent variables represented by K, and the number of observations is "n", and if the regression cofactors were $(B_o, B_1, B_2, B_3 \ldots ,B_K)$, therefore the relationship will be as follows:

$$Y_i = B_o + B_1 X_{i1} + B_2 x_{i2} \ldots B_k X_{ik} + e_i \qquad (7-1)$$

8. The Study Variables

There are many factors which impact the financial structure. But by examining the literature, the researcher has tackled the following main variables:

8.1. Financial leverage (Y): it is a dependent variable of this study, meaning the company's dependence on borrowing as one of financing means. Therefore, any increase in leverage will lead to higher risks and thus an increase in revenue, and in contrast, any decline in leverage leads to lower risks and thus a decrease in revenue.

The general formula of financial leverage is:

Financial Leverage = Total debt / property rights $\qquad\qquad$ (8 – 1)

8.2. Liquidity (X_1): The liquidity factor was in this study an independent variable, due to its importance for all kinds of companies, because it measures the ability of the company to meet the current liabilities during the operation period through the cash flow generated from sales, services, collection from debtors and from selling some of assets .

Liquidity affects capital structure from two sides; first, when the expected relationship between liquidity and debt is positive, the company becomes able to meet the short-term liabilities due to high liquidity, which facilitates the process of borrowing. Second, if this relationship was negative, this means that the company has high liquidity to be used to finance the investments. In this case, the company will not resort to borrow, and thus the debt ratio will be low (Shlash et al, 2001).

Liquidity can be calculated as follows:

Liquidity = Current Assets / Curent Liabilities $\qquad\qquad$ (8 – 2)

8.3. Long-term debt (X_2): They are obligations payable within a period of time exceeding one year, or operating cycle whichever is longer, such as bonds, long-term notes payable and real estate loans.

8.4. Working Capital (X_3): It equals the difference between total current assets and total current liabilities. It measures the ability of the company to finance its daily operations, and to meet short-term liabilities.

It can be calculated as:

Net working capital = Current assets – current liabilities $\qquad\qquad$ (8 – 4)

8.5. Total Liabilities (X_4): it is the debt ratio of previous period (Al Khaswaneh, 2006).

Liabilities = total debts / total assets $\qquad\qquad$ (8 – 5)

8.6. Profitability (X_5): The researcher used profitability as an independent variable in this study, where profitability represents the main goal for all companies and shareholders, in addition to its importance as a survival indicator for the company. Profitability can be achieved through two issues, financial decision and investment decision .The general equation of profitability:

Profitability = net income / owners equity $\qquad\qquad$ (8 – 6)

9. Result and Analysis

The study was conducted according to multiple linear regression, as a statistical model to measure the impact of many independent variables on a dependent variable. The general equation of this model is:

$Y = a + B_1 X_1 + B_2 X_2 + B_3 X_3 + B_4 X4 + B_5 X_5 + ei.$ $\qquad\qquad$ (9 – 1)

where Y is the financial leverage.

A: Constant value.

B: cofactor of the independent variables.

X_1, X_2, X_3, X_4, X_5 : independent variables.

To test the research hypotheses SPSS program was used to prepare the table of analysis of variance(ANOVA table) as shown in table (1) below:

Table 1:   Analysis of Variance for the Variable (ANOVA table)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	169.031	5	33.806	3.978	0.005
Residual	365.424	43	8.498		
Total	**534.455**	**48**			

By reviewing the table above we find that the value of (F) is highly significant, and this supports the reject of the main null hypothesis, i.e., there is significant impact of independent variables on the dependent variable.

The data were also analyzed by using multiple regression and applying the SPSS program, as shown in table (2).

Table 2:   Multiple linear Regression

	Un- Standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.941	0.657		1.432	0.159
Liquidity	-6.128E-08	0.000	-0.157	-1 .146	0.258
Long-term debt	3.824E-07	0.000	0.266	1.963	0.056
Working Capital	2.726E-08	0.000	0.302	1.251	0.218
Total Liabilities	2.671E-08	0.000	0.682	3.451	0.001
Profitability	-1.342E-07	0.000	-0.584	-2.087	0.043

By relying on the table above, the multiple regression model is as follows:
$$\hat{Y}= 0.941 - 0.157X_1 + 0.266X_2 + 0.302X_3 + 0.682X_4 - 0.584X_5 \qquad (9 - 2)$$
Through the observation of multiple regression equation and Beta, we can note the inverse relationship between the first variable (liquidity) and the dependent variable (financial leverage), where Beta was negative. For the second variable (long-term debt), the third variable (working capital), and the fourth (total liabilities), Beta was positive, which means a positive relationship between these independent variables and the dependent variable. Also, the fifth variable (profitability) with a negative signal means a negative relationship between this variable and the dependent variable (financial leverage). Therefore, we find that the most influential variable on the dependent variable is the fourth variable (total liabilities) by exponential trend of (0.682), and the fifth variable (profitability) by exponential trend of (-0.584).

10. Discussion of sub-hypotheses

10.1.The first hypothesis: This hypothesis stated that there is no relationship between liquidity and financial leverage, but data analysis has pointed out a negative relationship between the two variables, and logically, this is true because the company with high liquidity will not rely on external finance.

10.2.The second hypothesis: this hypothesis stated that there is no relationship between long-term debt and financial leverage, but data analysis has reported a positive relationship between the two variables. This result can be interpreted as some companies tend to borrow to obtain the benefits of tax breaks.

10.3. The third hypothesis: This hypothesis stated that there is no relationship between the working capital and financial leverage, but data analysis has assured the emergence of positive relationship between the two variables. This result can be interpreted according to two aspects: first, the major item of current assets is the inventory, and because the study sample is from service companies, therefore, there is no impact for the inventory in service companies. Second, the working capital indicates the ability of the company to meet the current obligations, thus, the increase in this ability leads to increasing the leverage.

10.4. The fourth hypothesis: this hypothesis stated that there is no relationship between liabilities and financial leverage, while data analysis has pointed out a positive relationship between the two variables. This indicates that the higher the liabilities of the company, the more it turns to one of the sources of funding to pay off these liabilities, such as borrowing and issuing new shares, which leads to high financial leverage.

10.5. The fifth hypothesis: this hypothesis showed that there is no relationship between profitability and financial leverage, but the analysis showed a negative relationship between the two variables. This may be due to the companies` preference to use internal funding sources such as retained earnings because of the lower cost compared to borrowing.

11. Conclusions

11.1. Through the analysis of the main hypothesis, we can conclude that the studied variables have a significant relationship with the financial leverage, because the test was at the level 1%, where the relationship was positive for the variables (long-term debts, total liabilities, and working capital), and negative for (profitability and liquidity).

11.2 A multi-regression model was adopted to show the type of relationship between the independent variables (liquidity, profitability, long-term debts, working capital and total liabilities) and the dependent variable (financial leverage). Therefore, it becomes possible to predict financial leverage through the value of independent variables.

11.3 The most influential independent variable on the dependent variable (financial leverage) was the variable "liabilities" in positive trend, while the profitability variable was in negative trend (see Beta for these two variables in the model of multiple regression).

12. Recommendations

Through the inverse relationship as a finding of this study, between leverage and profitability at the level of significance of 1%, the study recommended that the service sector is heading to capture profits in case of distinguished high rate of profitability, in order to reduce the borrowing due to high risk of this process.

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