

## Corporate Governance and Capital Structure Behavior: A Study of Jordanian Non-Financial Firms

Haneen Khalifeh<sup>1</sup>, Omar Mowafi<sup>2</sup>, Melina AL-Hasan<sup>3</sup>

<sup>1</sup>Finance and Accounting Department, The Royal Jordanian Airlines (RJ), Amman, Jordan, haneenkhalifeh@yahoo.com

<sup>2</sup>Accounting Department, School of Business, The University of Jordan, Amman, Jordan, o.mowafi@ju.edu.jo

<sup>3</sup>Accounting Department, Faculty of Economics and Administrative Sciences, The Hashemite University, Zarqa, Jordan, Melina@hu.edu.jo

### *Abstract*

Corporate governance and finance are heavily influenced by capital structure, which greatly affects equity returns and the risks associated with the owner. Since CEOs are an important asset of a company and have a considerable role in decision-making and other functions, investigating the issue from their stance is decisive to yield valuable outcomes. Therefore, this study examines the impact of CEOs' personal, functional, and educational characteristics on the capital structure behavior of Jordanian non-financial firms listed on the Amman Stock Exchange (ASE) between 2010 and 2014.

Keywords: Corporate Governance, Capital Structure, Non-Financial Firms, Jordanian Firms.

### **Introduction**

A company's capital structure plays a significant role in its financing decision since it affects the market value of its securities, equity returns, and risks associated with the owner. Mismatching finance can be serious and detrimental to a business's performance and survival (Thomas, Kiptanui, Chenuos and Biwott, 2014). In the late 1950s, theories about capital structure started to outset and Modigliani and Miller (1958) were the first to propound the theory that the value of the firm is not affected by its capital structure decision. The impact of capital structure determinants on firm performance has been described in several theories after Modigliani and Miller.

Malmendier et al. (2011) in their demonstrated that CEO has a responsibility to first settle on the configuration of financing choice; CEOs only can affirm whether to embrace external financing or use

internal cash, to reduce the risk of incurring debt. In Salawu and Agboola (2008), it was emphasized that documenting corporate capital structure plays a vital management role, as it greatly impacts shareholders' equity return, and share's market value.

In recent times, a new area of academic interest which is Behavioural Finance has provided additional empirical evidence to support traditional capital structure, by considering the effect of CEOs' attributes on capital structure decisions (Malmendier, Tate and Yan, 2011; Jiraporn, Chintrakarn and Liu, 2012). Though, there remains a major gap in the previous empirical work due to the limited and unclear findings.

The banking credit policy promotes short-term debt since banks tend to reduce their willingness to take risks since several firms in Jordan mainly rely on short-term debt (Al-Fayoumi and Abuzayed, 2009; Zurigat, 2009). Moreover, Duchin, Ozbas, and Sensoy (2010) declared that following the global crisis, corporate investment declined significantly in Jordan. As a result, banks resorted to reducing their willingness to take on the risks associated with long-term loaning, to avoid failure; as banks are linked directly to the entire economic activities including the industrial and service sectors.

#### Research Aim

This research examines the impact of CEO personal, functional, and educational characteristics on the capital structure behavior of Jordanian non-financial companies listed on the Amman Stock Exchange (ASE) between 2010 and 2014.

#### Objectives of the research

- From 2010 to 2014, the demographic characteristics of CEOs of non-financial institutions on ASE list were examined to determine how they influenced the capital structure choices of the institutions.
- Analysis of the CEOs' functional backgrounds and how they influenced the non-financial institutions listed on the ASE's capital structure choices between 2010 and 2014.
- To identify the impact of the CEOs' educational background characteristics on the corporate capital structure choice of the non-financial institutions listed on the ASE over the period 2010 to 2014.

#### Identifying research questions

This study aims to answer the following questions to meet the objectives mentioned above:

1. What effect does the demographic profile of the CEO have on the choice of corporate capital structure?
2. What is the impact of the CEOs' functional background characteristics on the corporate capital structure choice?

### 3. How do the CEOs' educational background characteristics affect the corporate capital structure choice?

#### Research Significance

The proposed research aimed to contribute to knowledge, in the field of finance and management, by examining the impact of the CEOs' demographics, and functional and educational background characteristics on the corporate capital structure decision of the Jordanian non-financial companies listed on ASE for the following reasons. Several works reported the outcomes on the impact of characteristics on leverage decisions although no study has been conducted in Jordan. Moreover, the majority of empirical work solely focused on a particular characteristic. In contrast, this work has taken into consideration numerous personal, professional and background CEO characteristics. We will examine whether corporate debt choices in Jordanian non-financial industries are positively correlated with the corresponding characteristics. Therefore, this study could inform especially shareholders and directors and influence their decision in choosing their Chief Executives (who in some organisations function as the Managing Directors) to promote and improve financial performance and maximize the value of the firm. Eventually, the main argument is to examine the impact of CEOs' and finding optimal capital structure that will eventually increase the overall value of firms.

#### **Methodology**

##### Research Paradigm

This research follows a mixed-method approach by incorporating qualitative or quantitative designs for understanding and integrating theories with the practice that reflect various perspective and views that helps to address research questions with knowledge-based justification (Johnson, Onwuegbuzie and Turner, 2007).

The deductive approach will be used in this study to explain the outcomes logically based on the related theories and then compare it existing literature to find if the results concur with the previously published research in the field. Quantitative data collection is gathered to calculate some of the capital structure determinants. Conversely, qualitative data is gained to identify CEO characteristics in an attempt to answer the study questions and objectives.

##### The source of data and the construction of the sample

To calculate determinants of capital structure, the Income Statement and Balance Sheet of ASE market database are used as secondary sources of data. Other data sources were used to run the analysis such as Security Depository Centre (SDC). Additionally, some data have been

collected from the Ministry of Industry, Trade and Supply namely; the Companies Controller Department, where the data covers five years from 2010 to 2014.

The original sample was compiled from the listed non-financial companies namely, service and industry sectors. The service sector includes 144 listed companies and the industry sector 70 listed companies. Then the sample is narrowed down by excluding firms with missing data or gone bankrupt to avoid bias. A total of 845 observations were obtained from 169 companies, resulting in the final sample. To examine how CEO characteristics influence corporate capital decisions, this study selected non-financial companies (Jiraporn, Chintrakarn and Liu, 2012).

Finally, this particular period was selected because 2010 is considered as a year following the financial crisis; hence the research believes the study will be more accurate (Zurigat, 2009). In addition, the availability of data on the ASE database began in 2010. The financial data of listed Jordanian non-financial companies will be estimated and analysed based on STATA statistical software to examine whether there is a significant correlation between leverage and CEOs' characteristics.

#### Ethical Concerns

Prior to the conduct of the analysis, all essential ethical considerations were taken into account. The secondary data was collected from the ASE and SDC databases which are appropriate sources to provide the study with the needed data to answer the research questions and objectives. In addition, more than 130 academic articles and books have been selected to review the literature on both capital structure as developed by Modigliani and Miller since 1958 and CEO's personal; functional and educational background characteristics. Therefore, the authors of those articles and books are referenced as required to cite all the information ethically.

#### Data Analysis Techniques

After the regressions are run, some tests will be performed to achieve the potential predicted impact of the independent variables on the dependent variable. Many statistical tests which are descriptive statistics, Matrix Correlations and Random Effect Regression Model will follow the execution of the regressions. Additionally, proxy for the employed measures will be presented and discussed separately.

Panel data analysis is one of the main statistical methods utilized broadly in social sciences and econometrics, in which it provides a means of resolving the magnitude of econometrics problems such as Multicollinearity using one of the main fundamental methodologies; independently pooled panels, Random Effects Model and Fixed Effects

Models. This study has conducted Random Effects Models since p-value of the estimated Hausman statistic result is  $\geq 5\%$  (Gujarati, 2011).

#### Variables

In Jordanian companies, figures reveal that short-term debt mainly plays an essential role in corporate financing when compared to long-term debt. Leverage levels in Jordanian companies are positive correlated with several firm characteristics, such as size, tangibility, and earnings volatility, but negative correlated with profitability, growth prospects, and liquidity (Zeitun and Tian, 2008). Debt is a significant factor in the capital structure debate since it finances the firm's operation and increases its market value. Likewise, Modugu (2013) described the debt as an important item in capital structure that funds firms with a required capital expenditure. Moreover, Chung et al. (2013) pointed out that when investment opportunities are in high demand for capital, large firms are confronted with a high level of debt ratio. On contrary, the level of debt goes down when investment opportunities are scarce.

Furthermore, different types of debt can be chosen depending on market values and capital structure. Each has its advantages and disadvantages as Chen et al. (1999) indicate that there is a difference in the outcomes between book and market value (Chen and Strange, 2005). Therefore, in particular, this study has used the book value approach as it is effectively consistent since it is reported annually in financial statements. In addition, Shyam-Sunder and Myers (1999) declared that changes in the debt ratio are due to an imbalance of internal cash flow and the need for external funds.

Financial aptitude and analytical skills need to translate into actions that lead to business improvement. Thus, financial activity is usually associated with a top officer of the firm such as the Chief Executive Officer who is also known as "Manager" in the literature. Consequently, the following CEOs' characteristics, independent variants, will be discussed in terms of their relevant measurement in this study, in which each measurement was selected upon the availability of the data on ASE. Following previous literature, Finkelstein and Hambrick (1990) and Wiersema and Bantel (1992) and Elsaid and Ursel (2011) three of the independent characteristics are considered as demographic features, which are CEOs' age, gender, and overconfidence as well as educational background and tenure.

#### Age

Apparently, managers in general are more likely to seek only to maximize the expected returns on investment and would invest upon their information which indicates that the investment has a positive Net Present Value (Scharfstein and Stein, 2000). However, differences have been found in decision-making between older CEOs and younger ones, in which the age of a CEO will expose a differential management level,

depending on the experience as the CEO advance in age (Taylor, 1975). Likewise, multiple studies demonstrated that CEOs experience positively impact corporate financial structure and firm performance (Serfling, 2012).

Utilizing, Yim's (2013) classification, the current study captures the age of the CEOs as young and old CEOs' age correspond to terciles 1 and 3 distributions (age 23-51 and 59-92). Using the CEOs' age in the given year, and mid-age (52-58) was categorised to tercile 2. However, this study indicates that on average 52 years is considered a cut-off point between young and old CEOs. Based on previous empirical studies, this study will develop the following hypotheses (Taylor, 1975; Scharfstein and Stein, 2000; Davidson et al., 2007; Serfling, 2012):

H1: There is a positive relationship between a CEO's age and the corporate capital structure choice in Jordanian non-financial companies.

#### Gender

CEOs play a vital part in determining the capital structure of a firm and the dividend policy which determines how the firm's assets are financed, according to Jalbert, Jalbert, and Furumo (2013). In addition, it was found that CEO gender explains the debt percentage and return on investment ratio. There is growing evidence that female CEOs tend to be more responsible when making critical decisions (Elsaid and Ursel, 2011; Singh and Zammit, 2000; Bernasek and Shwiff, 2001; Nelson, 2012). While Iqbal et al. (2006) and Ting et al. (2015) in their demonstrated that male CEOs are more at risk than female. Therefore, the following hypothesis must be tested:

H2: Jordanian non-financial companies choose their corporate capital structure in a negative manner when their CEOs are female.

#### Overconfidence

Recently, behavioural finance has mentioned numerous psychological and physiological characteristics such as availability bias, miscalculation of probabilities, ambiguity aversion and overconfidence that seem to have an influence on capital structure. The study, however, will only consider the influence of CEOs' overconfidence on corporate decisions due to a lack of time and resources and the difficulty to measure these characteristics precisely.

Following Malmendier and Tate (2005a) and Eichholtz and Yonder (2011) this study measures CEO overconfidence by using the Net Buyer approach, which uses the habitual ownership of company stock. Where the dummy variable equals one if the CEO is a Net Buyer, and zero otherwise. Although the CEO's personal wealth is exposed to company hazards, CEOs tend to buy additional own company stock more than they sell in the net buyer approach. However, trading activity has been taken as a proxy for the decision to buy, sell or hold (Malmendier and

Tate, 2005a). Nevertheless, several authors have chosen different kinds of proxies for overconfidence such as Holder 67 and Longholder, where both these measures focus on CEO overconfidence (Malmendier, Tate and Yan, 2011; Galasso and Simcoe, 2011; Malmendier and Tate, 2005b). As a test hypothesis, we propose the following:

H3: Non-financial Jordanian companies' capital structure is positively related to managerial overconfidence.

#### Education Background

Consistency with the management, Behavioural Finance and psychology literature indicates that a CEO's educational level affects firm performance (Finkelstein and Hambrick, 1990; Gottesman and Morey, 2006). Using Malmendier and Tate's (2005a) dummy variable, the educational level of CEOs is recorded by giving each one a value if they have a bachelor's degree or higher; otherwise, none is recorded. The aim of this study is to develop hypotheses based on a theoretical model that already exists.

H4: There is a positive relationship between a CEO's educational background characteristic and the corporate capital structure choice of Jordanian non-financial companies.

#### Tenure

Bergh (2001) emphasizes that functional characteristic is introduced by number of years that CEOs hold in the position which is known as tenure. Additionally, understanding the top manager's background and experience is considered vital when explaining the choices made. Therefore, theorist has appealed to two opposing approaches for demonstrating these views. The Upper Echelons aspect proposes that CEOs' active role will lead to more successful results (Hambrick and Mason, 1984; Finkelstein and Hambrick, 1990).

In contrast, Bergh (2001) pointed out that Recourse-based view (RBV) suggests that having the firm CEO for longer organizational tenure leads to more effective outcomes. In line with various literatures, this study will measure CEOs' tenure by computing the year top managers have been in the position (Finkelstein and Hambrick, 1990; Henderson et al., 2006). Moreover, the current study will develop hypotheses based on an existing theory and, then, will test those hypotheses to see their applicability of it in Jordanian non-financial companies.

H5: There is a positive relationship between a CEO's functional characteristics and the corporate capital structure choice in Jordanian non-financial companies.

#### Developing a regression model

This section presents an analysis CEOs' influence on debt policy. The leverage ratio was analyzed using regression analysis to determine its

relationship with the various explanatory variables. The model includes tangibility, non-debt tax shield, size, liquidity, market-to-book value, dividends, and market-to-book ratios to control, that contribute to influence between the hypothesized variables.

$$\text{Leverage}_{it} = \alpha_i + \beta_1 * \text{CEO age}_{it} + \beta_2 * \text{CEO Gender}_{it} + \beta_3 * \text{CEO Overconfidence}_{it} + \beta_4 * \text{Tenure}_{it} + \beta_5 * \text{Education}_{it} + \beta_6 * \text{Tangibility}_{it} + \beta_7 * \text{NDTS}_{it} + \beta_8 * \text{Size}_{it} + \beta_9 * \text{Liquidity}_{it} + \beta_{10} * (\text{M/B})_{it} + \beta_{11} * \text{Dividend}_{it} + \epsilon_{it}$$

$\beta_n$   $n = 1, 2, \dots, 12$  = coefficients;  $i$  = cross-sectional dimension;  $\alpha$  = intercept;  $\epsilon$  = error;  $t$  = time-series dimension.

Thus, considering the given context, the proxies for the measurement will draw upon the previous literature as follows:

1. Market to book Value (M/B) which is equity market value/ book value per share will be a proxy for Growth Opportunity.
2. Tangibility will be calculated by dividing total fixed assets by total assets.
3. The current ratio is taken as proxy for liquidity, indicated by dividing current assets by current liability.
4. Size is the measure of natural logarithm of total assets.
5. The dividend payout ratio is assessed by dividing the Dividend per Share by Earning per Share.
6. Non-debt tax shields is the measure obtained by dividing depreciation by total assets.
7. CEOs' age captures correspond to terciles 1 and 3 distributions for young and old CEOs' (age 23-51 and 59-92) respectively. While mid-age (52-58) is categorised as tercile 2.
8. Net Buyer is the proxy that will compute overconfidence where a dummy variable is employed by awarding one if the CEO is overconfident; otherwise zero.
9. Tenure is measured by computing the years a top manager has been in the position.
10. CEO educational level is measured by awarding a dummy variable with a value of one if a CEO has an undergraduate and graduate degree; otherwise zero.

**Table 1. Summary of the Dependent, Independent and Control Variables and their Measurement**

<b>Variables</b>	<b>Measurement</b>
<b>Dependent Variable</b> Leverage ratio	Total Liabilities /Total Assets
<b>Independent Variables</b> CEOs' Age	Measured in the year, 1 if the CEO is young, 3 if the CEO is old and 2 if the CEOs is categorized as mid-age.
CEOs' Gender	By name,1 if the CEO is female, and 0 otherwise
CEOs' Overconfidence	1 if the CEO is Overconfidence, and 0 otherwise
CEOs' Tenure	Years that CEOs hold the position
CEOs' Education	1 if a CEO has an undergraduate and graduate; otherwise, 0
<b>Control Variables</b> Tangibility	Total Fixed assets/ Total assets
Liquidity	Current assets /Current Liability
Size	Natural logarithm of total assets
Non-Debt Tax Shield	Depreciation/ Total assets
Market to book value	Equity Market Value/ Book Value per Share
Dividend (pay-out ratio)	Dividend per Share/ Earning per Share ratio)

## Results

The statistical results of this study derived from the STATA software will be presented in this section as an examination of how CEO characteristics (personal, functional, and educational background) impact capital structure choice in Jordanian non-financial firms. We present the empirical results in the following order. First, the descriptive statistics are presented, (mean, standard deviation, minimum% and maximum% of each independent variable and the dependent variable). Secondly, a correlation between each independent variable. Thirdly, the Random-Effect Regression Model and finally, a summary of results are discussed respectively.

### Descriptive Statistics

In Table 2, we present descriptive statistics for the non-financial companies in Jordan between 2010 and 2014. These results provide means, standard deviations, and minimum and maximum values for the key variables in the study based on ASE data collected from 2010 to 2014. Explanatory variables of this study are; age, gender, overconfidence, educational level, and tenure. The dependent variable is the leverage ratio in this study. Eventually, the control variables; size,

market-to-book value, liquidity, tangibility, dividend pay-out ratio and non-debt tax shield are being demonstrated as well.

**Table 2. Descriptive Statistics for the Variables in the Model**

	Mean	Standard Deviation	Minimum	Maximum
Leverage	39%	23%	0	79%
CEO Age	52	11.09	23	81
CEO Gender	3.9%	19.3%	0	1
CEO Overconfidence	52%	49%	0	1
CEO Education	93%	24%	0	1
Tenure	6.94	8.32	1	52
Size	7.28	.601	5.57	10.02
Growth Opportunity	1.16%	.84 %	.16%	.53%
Liquidity	16.6%	10.3%	0	38%
Tangibility	28.7%	15.5%	0	54%
Dividend	19.7%	76.4%	0	25%
NDTS	2.73%	2.22%	0	9%

**Figure 1. Graphical Chart of Descriptive Statistics for the Variables in the Model [Data Source: ASE, SDC]**

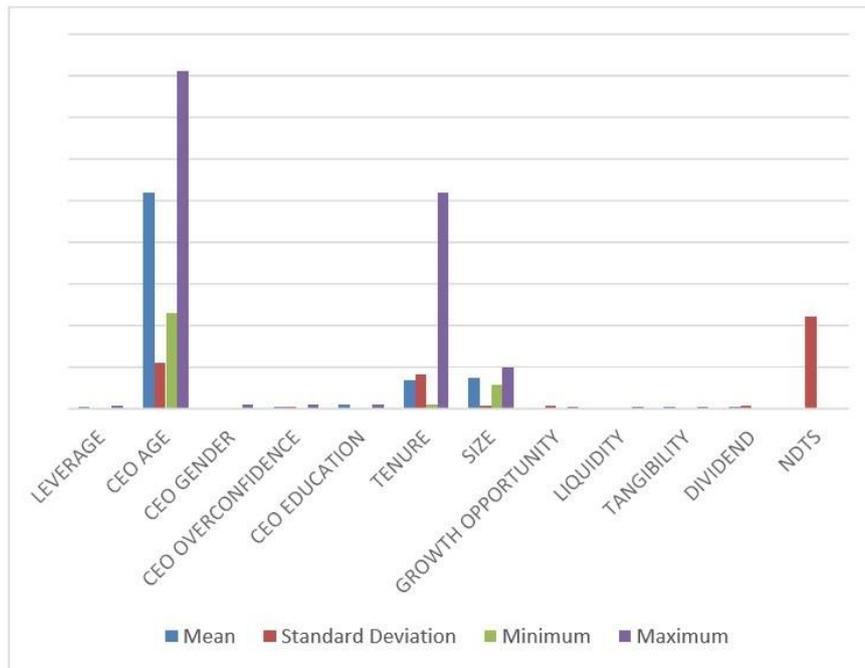


Table 2 presents CEOs age ranging from 23 to 81 years, with a mean age of around 52 years and 11.09 for standard deviation outcome. This study is consistent with Yim (2013), in classifying CEOs' age, in which it has been also found that 52 years old is the mid-age which is considered as a

cut-off point. Similarly, Ting et al. (2015) provided that, on average, 52 years old is considered as a cut point within firms in Malaysia for 9 years, from 2002 to 2011. In contrast, another study reveals that 62 years is the cut-off point for the sample, i.e., a CEO whose age is below 62 years is classified as a young executive, while those aged above are classified and assessed as old (Davidson et al., 2007).

Also, Table 2 indicates that the ratio of female CEOs in Jordanian non-financial companies from 2010 to 2014 is around 3.9%. Some studies reported that firms directed and controlled in Jordan accounts for low proportion of women in the position of CEO. However, this also might be because many leaders are not convinced of gender parity when it comes to business matters (Orser and Leck, 2010).

Likewise, a myriad of studies obtained the same small percentage of female CEOs for example; Ting et al. (2015) reported that 1.9% of Malaysian CEOs' are female during the period from 2002- 2011. Nevertheless, it has been found that only 6.4 % of the sample gathered from U.S. companies are women. Moreover, Orser and Leck (2010) documented that only 4.2% of the Chief Executive Officers are females, in a study carried out in Canada. On the contrary, Elsaid and Ursel (2011) noted that firms in North America show that, female CEOs of greater percentage than male CEOs, at about 73 % and 27% respectively.

The descriptive data of this study defines on average, 52% of CEOs in Jordanian non-financial companies as overconfident, with a standard deviation of 49%. However, this means that more than half of the Jordanian CEO overestimates their ability to take more debt. This percentage is fall between those earlier studies that found almost a similar level of CEO overconfidence. For example, Hirshleifer et al. (2012) in their study claimed that 61 % of CEOs are classified as overconfident from a sample that has been taken from EXECUCOMP firms. In contrast, Galasso and Simcoe's (2011) study revealed that only 48% of CEOs' from their sample were classified as overconfident, which is evident from the finding of this study to a certain extent.

Moreover, the data shows that for 2010-2014, an average of 93% of CEOs in the sample hold higher educational levels (graduate and post-graduate) with a standard deviation of 24%. This percentage is higher than what other studies revealed regarding the educational levels of CEOs. Similarly, a study in Canada by Graham and Harrey (2001), noted that 87% of CEOs hold a higher degree of education, which is slightly lower than what this study obtains. Moreover, Gottesman and Morey (2006) postulate that only 56.5% of CEOs derived from the selected sample from U.S. companies hold a higher level of education from 1997 to 2003. Furthermore, Besley, Montalvo, and Reynal-Querol's (2011) study reports that 48% of CEOs are highly educated, with 49% standard deviation using Archigos dataset.

In addition, Table 2 illustrates that on average, the tenure of office for the CEOs is 6.9 years, however, the standard deviation of tenure was found to be about 8.32. The sample is likely to be associated with longer organizational tenure, however, the maximum tenure for a CEO is shown to be 52 years. Based on the Archigos dataset, Besley, Montalvo, and Reynal-Querol (2011) posit 7.25 years as a mean value of CEO tenure which is almost similar to this study result. Moreover, Finkelstein and Hambrick (1990) in their study demonstrated a mean and the standard deviation of 21.6 years and 11.7 years respectively, which are higher than the value than is reported in this study.

Also, Table 2 displays a 2.73% mean value for a non-debt tax shield with 2.22% standard deviation and 9% maximum value, which is considered high as well as leverage. In contrast, an earlier study revealed that within Jordanian non-financial firms over the period 2001-2005, the mean value was higher, capturing the mean ratio as 3.59% with 2.44% standard deviation, fixing the range between 16.6% and 0 (Al-Fayoumi and Abuzayed, 2009). Jordanian companies, however, are subject to income tax. This may lessen the benefits of the non-debt tax shield because of higher taxes (Zeitun and Tian, 2008). Similarly, Manos and Ah-Hen (2003) found that non-debt tax shields have a value of mean and standard deviation of about 3.7 % and 2.6% respectively.

In terms of firm size, the results have recorded 7.28 as the mean value and a standard deviation of .601, while its range lies between 5.57 and 10.02; however, the mean value is slightly higher than other studies. For example, within a selected sample from non-financial firms listed on Madrid Stock Exchange (MSE), Campbell and Mínguez-Vera (2007) published a mean value of 5.535, with nearly the same value of the standard deviation of .667, as that generated by this study. Also, Datta and Rajagopalan (1998) published a mean value of 6.55 and 1.96 as a standard deviation within a selected sample from U.S. manufacturing companies.

Besides, by observing the descriptive statistics, the ratio of liquidity is captured as 16.6% and 10.3% for standard deviation and the range lies between 0% and 38%. However, Zeitun and Tian (2008) reported a lower mean and standard deviation of 2.71% and 2.49% respectively, setting the range between 0% and 15.5%. Rajendran and Achchuthan (2013) on the contrary, reported a higher percentage for both mean and standard deviation, 89% and 95% respectively, in a sample collected from Sri Lanka Telecom Company over the year 2005 to 2011. This implies that liquidity in this study is relatively low compared with other studies. In addition, this study indicates a mean value of 1.16 with standard deviation of .84, while its range falls between .16 and 5.3 The mean and standard deviation reported by Zeitun and Tian (2008) were nearly the same. There is a range of between .112 and 9.989 observed.

Finally, the mean value of tangibility is 28.7% with 15.5% standard deviation, meanwhile, its range falls between 0 % and 58%. On the contrary, many studies (Bas, Muradoglu and Phylaktis, 2009; Al-Fayoumi and Abuzayed, 2009; Degryse et al. 2012) report a higher value for both mean and standard deviation which allows them to borrow more debt compared to the current case.

**Multicollinearity Test**

There is a statistical problem known as multicollinearity in regression analysis when the independent variables are highly correlated. An increase in regression coefficients is associated with this potential phenomenon. As pointed out by Farrar and Glauber (1967), the regression test outcomes tend to be biased as the number of standard errors within the sample size increased.

For testing the Multicollinearity drawback, two techniques are applied to examine the problem; the Correlation Matrix and Variance-Inflating Factors (VIF) (Gujarati, 2011). It has been argued that, when Multicollinearity falls between 40% and 50% (minimal error rates observed). However, it is considered to be large if the sample size was small and R- the squared (R<sup>2</sup>) value is low. On the other hand, the VIF measure the Multicollinearity impact among the independent variables in a regression model. As a result, when the values in the test exceed 10%, Multicollinearity is often indicated (Gujarati, 2011).

**Table 3. Correlation Matrix for the Independent Variables 2010-2014**

	CEO Age	CEO Gender	CEO Overconfidence	CEO Education	CEO Tenure	Size	Growth Opportunity	Tangibility	Dividend	Liquidity	NDTS
CEO Age	1.0000										
CEO Gender	-0.1909	1.0000									
CEO Overconfidence	0.1117	0.1255	1.0000								
CEO Education	*-0.0868	**0.0527	**0.0461	1.0000							
CEO Tenure	0.3302	**_	**0.0546	**0.0291	1.0000						
Size	*0.1099	*0.0822	**0.0504	*0.0624	*0.0880	1.0000					
Growth Opportunity	*0.0616	***_	*-0.0840	**0.0506	***0.0068	*0.0678	1.0000				
Tangibility	**0.0261	0.1128	***0.0167	**0.0492	**0.0450	0.1580	-0.2010	1.0000			
Dividend	0.1854	**_	**0.0223	*-0.0801	0.2022	0.2578	0.1271	***_	1.0000		
Liquidity	**_	*0.0788	*0.0682	*-0.1084	**0.0588	**0.0323	**0.0540	*0.0788	***_	1.0000	
NDTS	0.0354	**0.0492	*-0.0937	***_	**0.0563	*0.1050	0.2318	**0.0401	0.1388	*0.0611	1.0000
				0.0047							

Note:

\*\*\* These variables are highly significant at level 0.01

\*\* These variables are highly significant at level 0.05

\* These variables are highly significant at level 0.1

As shown, Table 3 presents a correlation matrix between independent variables. The test recorded the highest positive correlation of 0.3302 between CEOs' age and tenure which is the number of years CEOs stay in office. While the highest negative correlation is at the level of -0.1909 between CEOs' gender and age. Consequently, both results reveal that in this study, the selected independent variables are below 80%, so multicollinearity does not occur. Therefore, there is no need to discard any of the variables in the estimated model.

### Regression Results

#### Hausman Test

Based on panel data analysis the current study observes the impact of CEOs' demographics and functional and educational characteristics on the capital structure behaviour of the Jordanian non-financial firms listed on the ASE from 2010 to 2014.

Owing to the nature and suitability of this study, Panel data model regression is applied in the current sample. Thereby, to run the panel regression 169 companies are included for which five sequential years of data have been comprised with a total of 845 observations. It is essential to mention that panel data regression has two methods; Random and Fixed Effect Model. Hausman test has to be implemented to decide the applicability of both the methods.

As STATA software is used in this study, the Hausman test has been carried out; the results of the Hausman test are presented in Table 4. As per the outcomes, the p-value of the estimated Hausman statistics result is equal to 36.15%. Consequently, the underlying null hypothesis of the Hausman test strongly rejects the Fixed Effects estimators since the p-value is  $\geq 5\%$ . Therefore, the results support Random Effect Model to examine the coefficient of each variable and to check whether these variables are statistically significant or not. This implies that the p-value is utilized in testing the null hypothesis. Also, to what extent these variables are considered to be significant will be recognized by assessing the Random Effects Model which is presented in Table 5. Also, Table 4 presents the Chi-Square distribution which is a skewed distribution that shows the variance of variables within the sample of this study, which is equal to 12.03, where usually it takes positive values (Gujarati, 2011).

Since Fixed Effect model (FEM) associated with two major drawbacks, this study supported the Random Effects model. Firstly, implementing FEM in a sample that has an additional dummy variable will lead to having a few observations to give a meaningful statistical analysis. Secondly, using the Fixed Effect Model may give biased estimators as the error term may be correlated with the lagged variable (Gujarati, 2011).

**Table 4. Hausman Test Results**

Model	<i>p</i> -value	Chi-Square
1	36.15%	12.03

**Random Effect Model**

The result of the Random Effect estimators can be found in Table 5. However, the R-squared of the model, also known as the coefficient of determination is viewed after the control variables (Gujarati, 2011). The R-squared in this study is 0.3056 which means that 30.5% of the independent variables have a powerful explanation in the dependent variable. In other words, the independent variables affect the dependent variable at a level of 30.5%.

As indicated, the Hausman test statistic shows that the current study has to conduct the Random Effect Model. Table 5 demonstrated the results and the parameters for hypotheses testing. In addition, Table 5 reports the statistics that are used to assess the significance of the estimated coefficient, where the Z value is used to examine the null hypothesis. Based on  $p > |z|$ , it can be concluded whether the variables are statistically significant or insignificant. Using panel data, the regression results show that findings are generally found to be insignificant with the leverage ratio except two control variables appear to be significant, which are liquidity and size of the firm.

**Table 5. Random-Effect Results of Panel Regression Model**

Leverage	Coef.	Std. Err	z	<i>p</i> >  z	[95% Conf. Interval]	
<b>CEO Age</b>	-1.113863	0.8797877	-1.27	0.205	-2.838215	0.6104896
<b>CEO Gender</b>	-4.737591	42.00347	-0.11	0.910	-87.06288	77.5877
<b>CEO Overconfidence</b>	-27.60912	14.67015	-1.88	***0.060	-56.36209	1.143877
<b>CEO Education</b>	24.65430	43.09092	0.57	0.567	-59.80235	109.111
<b>Tenure</b>	0.6942288	1.569105	0.44	0.658	-2.386827	3.775285
<b>Size</b>	50.34108	19.37078	2.60	*0.009	12.37505	88.30711
<b>Growth Opportunity</b>	12.54123	11.59385	1.08	0.279	-10.1823	35.26476
<b>Tangibility</b>	0.0451444	0.0671262	0.67	0.501	-0.0864204	0.17167093
<b>Dividend</b>	-0.1224682	0.1356284	-0.90	0.367	-0.388295	0.1433585
<b>Liquidity</b>	-0.8884328	0.1056809	-8.41	*0.000	-1.095564	-0.6813021
<b>R-squared</b>	0.3056					
<b>Number of OBS</b>	845					

Notes: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

From table 5, firstly, the results indicate that CEO age on leverage ratio has ( $p > |z| = 0.205$ ), which means that CEO age shows an insignificant relationship related to leverage ratio at a level of 20.5%. As a

consequence, this study concludes that the age of a CEO is not relevant, as far as debt ratio choice is concerned; at least in the Jordanian case. Besides, it is also shown by Z value that, the estimated coefficient on age has a negative sign with the leverage ratio.

Hypothesis 1 must therefore be rejected since it contradicts prior empirical studies, those indicated a positive correlation between CEO age and leverage ratio. Hence, the proposed work did not find that employing young or older CEOs are being better and more relevant in terms of making the right capital structure choice. This finding can be explained based on the Resource-based View (RBV) which postulates that regardless of the CEO's age, in the management domain a CEO who attains high managerial knowledge and skills would be more talented and innovative in utilizing an abnormal state of profits. This finding is consistent with Taylor (1975), who documented that no evidence was found to support that the CEOs' age impacts a firm's leverage level.

Second, the gender of CEOs was analyzed in the regression. However, it scores a negative and non significant association to firm leverage ratio at ( $p > |z| = 0.90$ ). The negative sign of the Z value indicates that firms that are operating under female CEOs tend to have fewer external financing sources, which leads to higher chances of keeping the firm away from bankruptcy. This study demonstrated that the gender factor does not affect the choice of corporate decisions. Thus, in the Jordanian case, CEO gender does not influence debt ratio choice. Therefore, Hypothesis 2 (H2) is accepted. The finding can be explained in the case of Jordanian non-financial that, regardless of gender, all CEOs will have the same attitude towards decision making, as they attain the same level of degree. According to Table 2, 93% of CEOs in the current sample have a higher educational degree, and only 3.9 % are female, which could be attributed to the way corporations are managed and controlled in Jordan. Also, it might be that many leaders do not have confidence in the female gender when it comes to business issues (Orser and Leck, 2010). This study has a similar pattern of results to Rose (2007) who confirmed that gender is not relevant when it comes to financing decision-making, on a sample of listed Danish firms. Likewise, Hutaibat (2005) and El-Sheikh et al. (2012) pointed out that the gender factor in CEO's role does not play a significant role in financing decision-making. This result is inconsistent with a large number of studies such as Campbell and Mínguez-Vera (2007), Elsaid and Ursel (2011), and Jalbert et al. (2013).

As a result of the panel regression analysis, it was found that the overconfidence of CEOs in non-financial companies in Jordan is negatively correlated with their financial decision-making at the level of ( $p > |z| = -0.06$ ). This negative relationship between these coefficients provides evidence in favor of rejecting Hypothesis 3 (H3). As a result of this study, CEOs with overconfident attitude are less likely to use

external finance when making decisions. It is interesting to note that the results are contrary to previous studies, which found that CEO overconfidence was positively correlated with leverage. The possible explanation could be that when CEOs are overconfident, they will be expected to be more risk-oriented, which means underestimating the cost of risk and borrowing more leverage, hence risky investments will incur low NPV. The results of Eichholtz and Yonder (2011) indicate that CEOs' overconfidence and leverage ratio have a negative impact. Overconfident CEOs have notably unsatisfactory performance compared with rational counterparts, which they found in their study. This study mostly concerned CEOs with stock portfolios. However, the results are also in contrast with many studies (Fairchild, 2007; Malmendier, Tate and Yan, 2011). Table 2 shows on average, 52% of CEOs within the sample are overconfident, which is not a relatively high percentage. Therefore, lenders/ banks will be more willing to lend firms more leverage since CEOs are functioning in a profitable investment that is expected to earn a high NPV.

Moreover, the current regression model tests the effectiveness of CEOs' educational backgrounds in choosing the optimal financial leverage level. However, Table 5 shows a noteworthy observation, in which the education coefficient produces a positive and insignificant relationship at the ( $p > |z| = 0.567$ ) level. As a result, there is no evidence to confirm that there is a link between corporate decision-making and CEOs' educational background attainment in Jordanian non-financial companies. However, since the Z value is positive Hypothesis 4 (H4) is accepted. Despite that the result found no evidence to prove that educational attainment in this study affects financial decision-making, the high levels of education amongst Jordanian CEOs have been attributed to several reasons such as; firstly, the cultural tradition is attached more to prestige and academic qualification which is an important factor that motivates CEOs to be more educated. In addition, the highly competitive workplace that has been noticed in Jordanian companies leads to motivating CEOs to attain a higher degree of education. This statement is supported by the following studies (Hutaibat, 2005; El-Sheikh et al., 2012). Moreover, there is another justification behind the high levels of education amongst Jordanian CEOs, i.e., CEOs with higher educational qualification have more cognitive ability to achieve the optimum financial decision, to serve shareholder interest. The outcomes are consistent with the finding of Gottesman and Morey (2006), they demonstrated a negative relationship between a CEO's educational background and corporate financial choice. In addition, Jalbert et al. (2002) found an insignificant relationship between educational attainment and CEO compensation earnings. On the contrary, Malmendier and Tate (2005a) reported an adverse and significant relationship between corporate decisions and educational background.

Additionally, the results of regression showed a non-significant and positive correlation between CEO tenure and leverage ratio at the level of ( $p > |z| = 0.065$ ) among Jordanian non-financial companies during the period of 2010 to 2014. Therefore, Hypothesis 5 (H5) is accepted and concluded that the CEO tenure coefficient doesn't influence the choice of debt ratio in Jordan. However, Table 2 shows that longer organizational tenure is the most remarkable feature in the current sample due to several reasons.

The reason that CEOs in Jordanian non-financial companies are more likely to hold on their position for a longer interval is attributed to firstly, the Resource-based View in management literature that suggests, CEO who holds high managerial knowledge and skills would be more talented and innovative in using firm resources to generate high-level of returns. Moreover, shareholders are more likely to hold onto the existing CEOs who have unique and non-transferable knowledge. Also, a study by Anderson and Reeb (2003) associated that around 75-90% of businesses in the Middle East are family-owned, thus, it might be that Jordanian non-financial firms are family business oriented. Hence, some of these companies have grown to become multinational; for example, Nuqal Group is a family-oriented company where they are tied by the traditions of adopting the law of holding the CEO position until retirement or death (Jabr, 2013). This study is consistent with many studies such as; Finkelstein and Hambrick (1990) and Maddala (1990). On the contrary, studies by other authors like Bergh (2001) report opposing outcomes.

Several studies reported theoretical explanations with promising outcomes, though most of the control variables in this study are not significant predictors, except the firm's size and liquidity. Under the panel regression model of this study, the coefficient of a firm's size on the leverage ratio is positive and strongly significant at the level of ( $p > |z| = 0.009$ ). This positive sign of the Z value supports the hypothesis that the larger the firm's size the higher its debt capacity.

One explanation of the positive relationship is that a firm's structure and capability has an inverse relationship with the probability of bankruptcy; in which larger firm's regarded to be more diversified than smaller ones. Furthermore, as larger firms are more reputable, therefore, banks tend to lend them higher credit to finance their operations; however, this explanation is supported by Colombo (2001). Furthermore, big firms will have more fixed assets, so they will be able to obtain debt more easily than smaller ones. However, this particular explanation is supported by (Antoniou et al., 2006; Tomak, 2013).

In the context of liquidity, the obtained results further reveal that the relationship between liquidity and leverage ratio is statistically significant and consistent with the capital structure theories framework. Liquidity has  $p > |z| = 0.00$  and a negative relationship with the leverage

ratio. The negative sign of the Z value is consistent with the expectation of the Pecking Order Theory that states a negative relationship between these estimated coefficients, in which high liquidity in the firm is expected to generate more profit, therefore, less external financing in the capital structure because it is considered costly if the firm had a adequate liquidity.

The study outcomes are in line with few studies that demonstrated a negative and significant correlation between liquidity and leverage ratio. For example, Ozkan (2001) reported ( $p > |z| = - 0.025$ ), ( $p > |z| = - 0.025$ ) and ( $p > |z| = - 0.017$ ) respectively. Table 6 shows a concise summary of the developed hypotheses including the accepted and rejected hypotheses grounded on the statistical analysis that is made in this study.

**Table 6. Summary of the Regression Hypothesis Results**

Hypothesis	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	H <sub>5</sub>
Result	Rejected	Accepted	Rejected	Accepted	Accepted

### Conclusion

This study has sought to combine two fields, finance and management as they are highly connected hence contributing in both areas. Finance literature has argued that capital structure is a crucial aspect of determining the optimal financing decision because it has a significant impact on equity return, business risks, and the market value of shares. This includes the leverage ratio of the companies, since it impacts equity return, business risks, and equity value.

To sum up, unlike prior studies, this study focuses on all CEOs' characteristics to perceive the direction (positive or negative), and whether a CEO's age, gender, overconfidence, and functional and educational trait affects the corporate decision-making particularly with leverage in the capital structure. Although present study did not find any correlation between CEOs' tenure and leverage ratio, the long organizational tenure has been attributed to the prediction of RBV. Although no evidence shows that there is a relationship between CEOs' educational attainment and leverage ratio, this study reveals that 93% of CEOs are highly educated which is attributed to the existence of high competitive workplace and cultural tradition. Due to the relatively low level of liquidity, the findings indicate that Jordanian non-financial enterprises prefer to employ external funding over internal financing. The findings also show no evidence of a connection between an individual's age, gender, function, or level of education and their leverage ratio. In the case of Jordanian non-financial enterprises, the data similarly show a negative and significant association between CEO

overconfidence and the leverage ratio. This implies that the leverage level of the capital structure will be lower when CEOs are viewed as overconfident.

Regarding control variables, firm size also positively correlates with the leverage ratio. Therefore, the larger the firm, the greater the impact on the leverage ratio because larger firms tend to use more debt. Larger firms also have access to financial markets and incur lower transaction costs when borrowing. The results of business liquidity demonstrated a strong and unfavorable association between the organization's capital structure. These results support Pecking Order Theory. These findings show that the organizations examined in this study had low levels of liquidity; as a result, they employ external finance because borrowing could be less expensive than using internal resources.

The study also concluded that the choice of capital structure is not only influenced by the traits of CEOs but also by the nature of the company's business operations and the culture and laws of the nation in which the study was conducted. Additional studies are required to resolve these difficulties.

### **Recommendations**

As a future research recommendation, the research scholars can focus on investigating:

- In order to obtain results that cover most Jordanian companies, CEO characteristics play a vital role in the unique characteristics of the banks and insurance industries.
- The impact of CEO's and lower-level employee characteristics on the financial decision choice. Also, the influences of family-oriented businesses on debt choice can be studied, since several studies mention that most Jordanian firms are family owned.
- A significant relationship was found between executives' overconfidence and leverage ratio based on the gender of the CEOs in this study.

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