Board Features and Capital Structure in Emerging Markets

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Abstract—The objective of this research is to investigate, in emerging markets Jordanian non-financial firms, the effect of two main measurements/indicators of board feature on a firm’s growth/capital structure. The two main measurements are: the non-executive directors; and the board of directors’ size. In addition, for this research the analysis was by using a cross-sectional study. The hypotheses were made by statistical analysis from collection data sample of 100 firms that was made available by non-financial sector in Jordan. Statistical Software programs were used by the current research; SPSS and EViews to analyze the data. Multiple regressions were utilized to test the hypotheses of the effect of the number non-executive directors appointed to a board of directors and the board size on the growth/capital structure of firms taking in the consideration industry type as a control variable. The data of the present research used the annual reports to obtain the data that issued by ASE for the year 2014. To measure the dependent variable of the current research; growth/capital structure, the present research chose financial leverage. The results showed that increasing the number of non-executive directors in the board, in another meaning increasing size of the board, has a negative and significant effect on financial leverage. Therefore, greater financial leverage is a result of the existence of small board. Yet, a testing of independent boards (non-executive directors) showed that non-executive directors have insignificant effect on capital structure. Moreover, the type of industry, as a control variable, has no impact on capital structure of the non financial firms. The present research practically presents evidence to different interested parties in emerging markets, such as scholars, policy makers and academics especially in Jordan context. The current study contributes to the literature in the middle East because it is the first study in Jordan to investigate board composition in non-financial sector (industrial and service firms) particularly from the perspective of capital structure and independent boards (non-executive directors). In that, using data from undeveloped country that has an inefficient financial market, this study provides an important view insight on the international debate on the effects of board composition on corporate decisions.

Index Terms—Board composition, capital structure/ growth, non financial companies, jordan

I. INTRODUCTION

At both the local and international level, there is an increasing interest for countries to adopt and adhere to the best practices of internal control mechanisms in order for companies to best position themselves to be competitive and to meet the challenges brought about by the global economy. To meet the challenge of economic growth, Jordan is one such country that has placed a focus on best practice [1-4].

Indeed internal control is a collection of ideas represented by mechanisms and principles. If these set of ideas can be collected and set out in a logical way, in keeping with the business environment, the system can be a precise one. In following and adhering to each step correctly, the outcome of its applications can be positive for a firm and can enhance the valuation for all interested stakeholders including customers, investors, employees and other interested parties [5, 6]. In relation to a firm’s strategic decision-making, sound best practice internal control mechanisms ought to play a major role. Good internal control mechanisms and the associated decision-making processes may well positively influence financial considerations such as the method of external financing. Therefore, the mechanisms such as the size of the board and the number of non-executive directors
appointed to the board might well have a direct influence on the decisions made regarding the capital structure. Indeed a firm’s capital structure and the notion that debt can be construed as an important tool for managers is central to the finance and accounting literature, in that it is important for managers to ensure the resources of their company are not wasted [7, 8]. Managers who select internal control mechanisms which are well-designed are able to best position themselves in relation to their firm’s debt structure and this in turn will minimize any agency problems evolving from the potential conflict between managers and shareholders. Therefore, in accordance with the findings of [9], there is an expectation that companies adopting and adhering to good internal control mechanisms will have reduced levels of financial leverage, in other words a lower level of debt. In reviewing the literature, the matter of capital structure continues to be a topic of much interest in the fields of finance, economics and accounting and has generated an enormous amount of research work. The literature review has revealed that several theories that have been raised to illustrate and better understand a firm’s capital structure. Of these theories, the agency theory has generated strong support to explain the determination of capital structure by way of agency costs due to the conflict between the stakeholder parties of managers and shareholders [10, 11].

In this context, the country has confronted significant challenges and economic problems due to a number of factors including: instability in the region; pressure on natural resources; being dependent on grants and remittances from Gulf economies; and high levels of unemployment [22]. As a consequence, these challenges have created serious problems for the Jordanian economy in general and the firms listed in the ASE in particular. This significant problem was clearly outlined in the World Bank 2016 report concerning the indicators about the deficit as a percentage of gross domestic product (GDP) and the cash surplus. The report outlined that the deficit continues to increase, as demonstrated in Fig. 1 below, and this problem is due to high levels of financial leverage in the ASE-listed companies. Indeed, based on the analysis undertaken for the current study, the mean of the ASE-listed companies’ financial leverage is 0.72 which is more than the optimal level of 1.0. This indicates that the ASE-listed companies rely on internal borrowing and this is represented by a company’s capital. Accordingly, this is one of the potential reasons there is a deficit in the GDP in Jordan’s non-financial sector as noted by The World Bank (2016).

Based upon the agency theory, the current paper has examined financial leverage as a significant indicator representing capital structure in the study of internal control mechanisms [13-17]. Furthermore, another body of research examined financial leverage as a significant indicator in the study of internal control mechanisms [18-21].

In the Jordanian context, the country has confronted significant challenges and economic problems due to a number of factors including: instability in the region; pressure on natural resources; being dependent on grants and remittances from Gulf economies; and high levels of unemployment [22]. As a consequence, these challenges have created serious problems for the Jordanian economy in general and the firms listed in the ASE in particular. This significant problem was clearly outlined in the World Bank 2016 report concerning the indicators about the deficit as a percentage of gross domestic product (GDP) and the cash surplus. The report outlined that the deficit continues to increase, as demonstrated in Fig. 1 below, and this problem is due to high levels of financial leverage in the ASE-listed companies. Indeed, based on the analysis undertaken for the current study, the mean of the ASE-listed companies’ financial leverage is 0.72 which is more than the optimal level of 1.0. This indicates that the ASE-listed companies rely on internal borrowing and this is represented by a company’s capital. Accordingly, this is one of the potential reasons there is a deficit in the GDP in Jordan’s non-financial sector as noted by The World Bank (2016).

In accordance with the agency theory, a firm’s management team might not be motivated to have an optimal level of financial leverage and in not doing so this situation can lead to the shareholders’ wealth not being maximized. As indicated by Jiraporn, et al. [12], higher levels of financial leverage can negatively impact upon the strength of the system of internal control mechanisms and this in turn can cause agency problems, when ideally internal control mechanisms are designed to mitigate agency conflicts not increase them. Therefore, as they argued, the high levels of financial leverage above an optimal level can lead to weakening the mechanisms of internal control and as a result lead to increased levels of agency conflict.

In the previous literature, financial leverage has been selected as a component of risk and of capital structure [13, 14-17]. Furthermore, another body of research examined financial leverage as a significant indicator representing capital structure in the study of internal control mechanisms [18-21].

In the Jordanian context, the country has confronted significant challenges and economic problems due to a number of factors including: instability in the region; pressure on natural resources; being dependent on grants and remittances from Gulf economies; and high levels of unemployment [22]. As a consequence, these challenges have created serious problems for the Jordanian economy in general and the firms listed in the ASE in particular. This significant problem was clearly outlined in the World Bank 2016 report concerning the indicators about the deficit as a percentage of gross domestic product (GDP) and the cash surplus. The report outlined that the deficit continues to increase, as demonstrated in Fig. 1 below, and this problem is due to high levels of financial leverage in the ASE-listed companies. Indeed, based on the analysis undertaken for the current study, the mean of the ASE-listed companies’ financial leverage is 0.72 which is more than the optimal level of 1.0. This indicates that the ASE-listed companies rely on internal borrowing and this is represented by a company's capital. Accordingly, this is one of the potential reasons there is a deficit in the GDP in Jordan’s non-financial sector as noted by The World Bank (2016).

Figure 1. Non-Financial Sector (Share in GDP) Source: World Bank Report (2016)
II. RULES, LAWS, AND REGULATIONS IN JORDAN

Boubakri, et al. [23] and Al-Najjar [24] show that Jordan is one of the civil law countries that any responsibilities or rights should be supported by legislations; such as rules, laws, and regulations. Jordan’s corporate legal framework has its origins in French civil law. Law no22 of 1997 (most recently amended in 2002) provides basic Company Law [25]. Recently there have been concerns in internal control mechanisms in multi countries including Jordan due to their participation in the World Trade Organization in 2002, trade agreement with US in 2001, and association agreement with EU in 1997, as well as in their policies which have relied on both industrialization and capitalist economy [26-28].

Jaafar and El-Shawa [29] point out that Since the 1990s, internal control mechanisms reform has been an increasingly significant agenda item in Jordan’s effort to build up and maintain the economic growth. [30] make clear that some dimensions of internal control mechanisms have extensively stated in some legislations and laws in Jordan such as Company Law of 1997, Securities Law and the mandates of Company and Law which issued in 2002. These dimensions are: capital market, legislative framework and government oversight, accounting standards and disclosure, transparency in privatization, board of directors effective supervision, preservation of property rights and minority rights protection.

III. LITERATURE REVIEW AND RESEARCH HYPOTHESES

The highest position of the company is the board of directors that is responsible for directing the company and its operations. Board of directors plays an important role in strategic decisions regarding financial structure. The evidence in the literature review indicate that the relationship between board size and capital structure is mixed.

Berger, et al. [31] found that companies with large board size have low level of financial leverage. They explained that managers follow lower levels of gearing in order to eventually enhance company performance. In the same vein, Abor and Biekpe [32] investigated the relation between internal control mechanisms and capital structure of SMEs in Ghana and the evidence revealed there is a negative association between board size and financial leverage; in that, larger boards in general have low level of financial leverage. Gurunlu and Gursoy [33] tested the relationship between foreign ownership and firm’s capital structure; they found that there is a negative association between foreign ownership and capital structure. Friend and Lang [34] examined internal control mechanisms - financial leverage relationship and they revealed that there is a negative link between managerial ownership and leverage. The larger the financial leverage, the less equity the firm uses and the greater the opportunity for agency conflict to exist [35].

On the other hand, Wen, et al. [36] investigated the relationship between internal control mechanisms represented by some of board composition and capital structure represented by financial leverage of the Chinese listed firms. They show that there is a positive association between board size and capital structure.

Based on the literature review on the above illustration, and others in emerging countries and further recently in Jordan, a study done by Alqisie [37] revealed that there is a negative association between the board size and financial leverage. Therefore, in order to predict a hypothesis between board size and capital structure represented by financial leverage, the current study predicts that increasing the number of managers appointed to the board of directors, i.e. increasing the board size, must be associated with decreased financial leverage. Based on the discussion above, the following hypothesis is made:

H1: There is a negative relationship between board size and a company’s financial leverage.

Besides, non-executive directors on board (independent board) are the basis of modern internal control mechanisms. The association between existence of non-executive directors and capital structure has been tested by a few studies but results in this regard are also mixed.

Pfeffer and Salancik [38] show that non-executive directors play an essential role in the ability of a company to get attention from external stakeholders. This limits company uncertainty and enhances company ability to raise funds. They argue that the higher of non executive directors on board of directors leads to high level financial leverage. [31] found that firms with higher levels of gearing seem to have more non-executive directors and vice versa. In the same vein, [32] demonstrated that the companies having higher non-executive managers have higher level of gearing in Ghanaian SMEs.

Besides, prior studies such as [36] presented evidence that there is a negative relationship between non-executive directors on the board and the levels of gearing. The probable reason is that independent board (non-executive directors) monitors the managers more efficiently so managers are almost forced to seek lower gearing levels to achieve superior results. The aim of internal control mechanisms is to enhance firm performance [2]. Therefore, the current study hypothesized that:

H2 There is a negative relationship between independent board (non-executive directors) and financial leverage.

IV. METHODOLOGY

The current paper is a cross sectional study and testing all its hypotheses is through using two statistical analyses: SPSS and EViews to analyze 100 available sample data of non-financial firms in Jordan (service and industrial firms). Multiple regression analysis instruments were used to test the hypothesis regarding the effect of board size and independent board on capital structure with industry type effect as a control variable.
The data used in the present research is obtained from Amman Stock Exchange (ASE) through the annual reports issued by (ASE) for the year 2014. I collected useful accounting data for dependent, independent and control variables that served the current research to achieve its aim.

The current research is the first to investigate the relationship between independent and dependent variables in Jordanian context taking into consideration the industry type as a control variable. The current research measured the dependent variables of capital structure via financial leverage. The internal control mechanisms are: board size and independent board. In addition, industry kind is the control variables. Table I. shows variables measurement summary.

<table>
<thead>
<tr>
<th>Number</th>
<th>Variables</th>
<th>Acronym</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Financial Leverage (as a percentage)</td>
<td>FLV</td>
<td>Financial leverage is measured as the total debt divided by the capital.</td>
</tr>
<tr>
<td>2</td>
<td>Board Size (number)</td>
<td>BOD</td>
<td>The number of directors appointed to the board.</td>
</tr>
<tr>
<td>3</td>
<td>Independent board (as a percentage)</td>
<td>INED</td>
<td>Outside director equates to the number of outside directors appointed to the board.</td>
</tr>
<tr>
<td></td>
<td>Control Variable Industry type (number)</td>
<td>industry</td>
<td>Dummy variable with one if it is an industrial firm and zero if it is a service firm.</td>
</tr>
</tbody>
</table>

Based on the objectives of the current research presented in the introduction and the provided arguments in the literature, the following estimated model is presented:

\[ FLV = \alpha_0 + B_1 BOD + B_2 INED + B_3 industry + \varepsilon \]  

V. RESULTS AND DISCUSSIONS

A. Descriptive Analysis

This section shows the descriptive analysis of the current study’s dependent, independent and control variables for the 100 non-financial (industrial and service sector) companies listed at ASE through using descriptive statistics like mean, standard deviation, minimum and maximum. Table II illustrates the distribution of these variables. Based on the results of the descriptive statistics, the dependent variable of financial leverage revealed that the mean financial leverage of Jordanian industrial and service firms is 0.7 percent with a standard deviation of 0.343. Moreover, a minimum rate of financial leverage in the Jordanian non-financial companies is 0.3 percent with a maximum level of financial leverage 1.95 percent. The mean BOD is 8.99 of the Jordanian industrial and service companies with a standard deviation of 3.070. Furthermore, the minimum rate of INED is 0.00 percent with the highest maximum level of INED equal to 0.933 percent. Table II explained the descriptive analysis of the variables.

In Table II, the results also revealed that the values for the Skewness and Kurtosis show that the study sample is normally distributed and there is no problem with normality assumption because they are within the accepted range of normality for both Kurtosis and Skewness. This is in line with what has been explained by Brooks [39]. He shows that the normality of data might be achieved when standard Skewness ±1.96 and standard Kurtosis is within ±3. For normality assumption a visual check using normal probability plots and histogram is also carried out. The histogram appeared to be normally distributed and the normal distribution of the probability plot a straight line and also the values appeared to fall almost on this normality line.

Additionally, autocorrelation was tested by value of Durbin Watson (DW). As demonstrates by Prusty [40], the autocorrelation doesn’t exist since DW value falls between 1.5–2.5 as acceptable range and it shows there is no problem of autocorrelation in data. In case of financial leverage, in the current study Model Summary shows that Durbin Watson is 1.824.

Moreover, this study did additional statistical tests through relying on EViews as an interactive and excellent program that provides an excellent tool do the best detailed data analyses as mentioned by Agung [41]. Thus, to explore the evidence of heteroskedasticity, White test statistics was used to do so and the results, as reported in Table III, present strong evidence not to reject the null hypothesis that state the model is free from heteroskedasticity effect. The statistical results point to that the model is homoskedastic. The model is not significant at 5% (Obs*R-squared is 11.11025 (0.1955). Also Anova test shows that F statistic was significant (p <.000) which refers that the model is significant.O

B. Correlation Analysis

The correlation between the dependent and independent variables is explained in Table III. It shows

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLV</td>
<td>0.722</td>
<td>0.343</td>
<td>0.300</td>
<td>1.195</td>
<td>1.414</td>
<td>2.605</td>
</tr>
<tr>
<td>BOD</td>
<td>8.99</td>
<td>0.070</td>
<td>5</td>
<td>15</td>
<td>.2900</td>
<td>-1.041</td>
</tr>
<tr>
<td>INED</td>
<td>0.353</td>
<td>0.328</td>
<td>0.000</td>
<td>0.933</td>
<td>-0.390</td>
<td>-1.352</td>
</tr>
<tr>
<td>Industry</td>
<td>0.440</td>
<td>0.489</td>
<td>0.000</td>
<td>1.0</td>
<td>0.245</td>
<td>-1.980</td>
</tr>
</tbody>
</table>

TABLE III. HETEROSKEDASTICITY TEST FOR FINANCIAL LEVERAGE MODEL

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Obs*R-squared</th>
<th>Prob. Chi-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>White test</td>
<td>11.11025</td>
<td>0.1955</td>
</tr>
</tbody>
</table>

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that the level of multicollinearity between independent variables is less than 80%. This in line with what has been suggested by Yoshikawa & Phan (2003). I found the data didn’t have multicollinearity problems, which often require 80% or more to indicate that the correlations between the independent variables have multicollinearity problems. Table IV reports the correlations of the variables.

### TABLE IV. CORRELATIONS BETWEEN VARIABLES

<table>
<thead>
<tr>
<th>Variables</th>
<th>FLV</th>
<th>BOD</th>
<th>INED</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLV</td>
<td>1</td>
<td>-0.422**</td>
<td>-0.093</td>
<td>-0.046</td>
</tr>
<tr>
<td>BOD</td>
<td></td>
<td>1</td>
<td>0.238*</td>
<td>-0.63</td>
</tr>
<tr>
<td>INED</td>
<td></td>
<td></td>
<td>1</td>
<td>0.227*</td>
</tr>
<tr>
<td>Industry</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

The results of regression analysis reveal that industry type is insignificant with financial leverage. The testing hypotheses for model of the present study regarding the relationship between every independent variable and dependent ones are explained in Table V. There is a highly significant negative impact relationship between board size (BOD) and financial leverage ($\beta = -0.421$, T-value= -4.387, P < .00). This indicates that the capital structure is significantly influenced by board size in non-financial listed companies in Jordan. This result is in line with what has been set in the objectives of the current study.

The study can deduct significant and negative relationship between board size and capital structure (financial leverage). This result is in line with prior studies that were done in both developed and developing countries [31, 32, 37]. Thus, hypothesis H1: There is a negative relationship between board size and a company’s financial leverage, is supported. This result admitted that the more board size in non financial companies in Jordan, the less financial leverage. In the current study, financial leverage must be one; in the case of Jordan the mean of the financial leverage of the non-financial companies is 0.722 which is less than one. In relationship to the problem of the current study regarding to the bad situation in Jordan economy, it shows that cash deficit. The problem could be probably explained that dealing with the cash by Jordanian companies just derived from internal cash. Thus, the companies need to borrow money from the lenders in order to have cash to use it in their investments.

In respect to the association between independent board and financial leverage, the testing hypotheses of the present study found insignificant relationship between independent board and financial leverage at $p > 1$, T-value= 0.034, $\beta = .003$. This means that there is no significant relationship between companies which have more non executive directors and financial leverage. This is not in line with the hypothesis H2: There is a negative relationship between independent board (non-executive directors) and financial leverage. Therefore, hypothesis H2 is not supported. This result is consistent with the previous studies in the literature.

In fact, the overall results in the current study revealed that the mean of financial leverage is 0.72 which is more than the optimal level that is supposed to be one. On the other hand, there is a problem that could be clearly observed through the report issued by The World Bank in 2016 regarding the indicators about cash surplus / deficit as a percent of GDP. This means that the companies listed in Amman Stock Exchange rely on the internal borrowing which is represented by the company’s capital. Therefore, companies listed in Amman Stock Exchange should also rely on the external borrowing for the outsiders to get cash flow and liquidity in order to be able to increase their investments and in doing so they might avoid deficit in the cash. Thus, this could make it easy for such companies to have a good position to the non-financial Jordanian companies within the financial market.
VI. CONCLUSION

The aim of this study is to investigate the impact of board composition on capital structure of Jordanian listed firms using cross-section data of a sample of 100 listed Jordanian non-financial companies through relying on the reports of such companies from Amman Stock Exchange’s website. The current study used financial leverage to represent capital structure in its relationship with both board size and independent board as two effective tools of internal control.

The contribution of this study is enriching the literature in the Middle East specifically in Jordan where no previous study has dealt with such variables taking into consideration the serious problems in non financial companies and in economy of Jordan in general.

After analysis, the present study found the following issues: There is a negative and significant relationship between board size and financial leverage. On the other hand, there is an insignificant relationship between independent board and financial leverage and also the same goes to the case of industry type that has no impact on financial leverage as well. Moreover, the present study found that the model of the relationship between board composition and financial leverage is significant.

The present study is the first of its kind in Jordanian context to introduce new insights on the relationship between these variables in light of existence of a real and serious problem. Finally, for the future research in developing countries, consideration must be taken to investigate the relationship between these variables (board composition and financial leverage) to identify the findings from different levels and different perspectives of development in the countries in both financial and non-financial companies.

REFERENCES

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