

Ownership Structure and the Likelihood of Financial Distress: Evidence from Joint-Stock Companies in Sétif, Algeria

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Summary:

The study aims to shed light on the importance of ownership structure indicators represented by: ownership concentration, ownership of members of the board of directors and members of executive management in predicting the financial failure of companies, by collecting and analyzing data for 16 companies with shares in the state of Setif for a period of 6 consecutive years, using the logistic regression method. The study found that there is no statistically significant effect for ownership concentration, ownership of members of the board of directors, and members of executive management in predicting the financial failure of companies, which is attributed to the nature of the ownership structure of most of the companies under study, which are characterized by high ownership concentration due to the state's control over all shares, which makes these oversight mechanisms weak in impact.

Keywords: Ownership Structure; Ownership Concentration; Financial Failure; Logistic Regression; Corporate Governance.

Introduction

The ownership structure represents one of the most important corporate governance mechanisms that will play a pivotal role in influencing the decision-making process, determining the nature of control over executive management, allocating resources, as well as the company's financing and investment policies. Agency theory is considered the basic origin of this relationship. It assumes that the separation between ownership and management can lead to a conflict of interests between shareholders and managers, while some types of ownership can limit this problem by strengthening the control system and reconciling the interests of managers and shareholders at the same time. However, the high concentration of ownership or control of some categories of shareholders may lead to the emergence of other forms of conflict of interest, especially between controlling shareholders and minority shareholders.

High concentration of ownership can contribute to improving oversight of managers' decisions and reducing the possibility of opportunistic behavior on their part, which would reduce decisions with high financial risks on the one hand. On the other hand, the ownership of board members and managers

of the company's shares would increase and strengthen the connection of their personal interests to the company's performance and continuity, which would directly reflect on improving the company's performance and reduce the risk of it being exposed to financial problems and difficulties that may threaten its future. However, these effects are possible and not conclusive; Some theories indicate that high levels of internal ownership can lead to increasing the immunity of executive management and its ability to influence oversight mechanisms, which makes judging the nature of the relationship between ownership structure and financial distress a relative issue that can be affected by many factors related to the company's activity environment.

Study problem:

Based on the above, through our study we will attempt to answer the following main question:

Is there a statistically significant effect of the ownership structure on the financial distress of companies?

This main question branches out from the following set of sub-questions:

- Is there a statistically significant effect of ownership concentration on the financial distress of companies?
- Is there a statistically significant effect of the ownership of board members on the financial distress of companies?
- Is there a statistically significant effect of CEO ownership on the financial distress of companies?

Study hypotheses :

In order to answer the study questions, the following hypotheses were developed:

- There is a statistically significant effect of ownership concentration on the financial distress of companies.
- There is a statistically significant effect of the ownership of board members on the financial distress of companies.
- There is a statistically significant effect of CEO ownership on the financial distress of companies.

Importance of the study:

The study derives its importance from its reliance on a set of qualitative indicators related to the characteristics of the ownership structure, recommended within modern concepts of corporate governance, in its analysis of the phenomenon of corporate financial distress, the latter of which has occupied the attention of researchers and practitioners alike, due to the losses it causes to internal and external parties associated with the company's activity, and even to the economies of the countries in which it is active. On this basis, the study, with the results it may yield, can contribute to revealing deficiencies, if any, and allow those responsible for managing companies to take appropriate corrective measures and procedures to avoid the occurrence of the phenomenon or at least mitigate its severity.

Study objectives:

The study seeks to achieve a set of objectives, the most important of which is:

- Highlighting the phenomenon of financial distress and the factors contributing to its occurrence;

- Recognize the importance of ownership structure from a corporate governance perspective;
- Highlighting and revealing the impact of ownership structure on the financial aspects of companies;
- Highlighting the importance of qualitative indicators in analyzing the financial performance of companies.

1. Impact of ownership structure

Ownership structure is considered one of the most important concepts on which the theory of corporate governance is built, because it reflects the relationship between internal investors (managers and managers who own company shares) and external investors (other shareholders) in the company¹. The concept of ownership structure raises multiple issues, including: concentration/dispersion of ownership, form of control, percentage of institutional ownership, state ownership, percentage of insider ownership, percentage of ownership of controlling shareholders... etc. The following highlights the most important of these issues and their expected impact on the company's financial condition.

1.1. concentration of ownership

The concentration of ownership in the company (i.e. the presence of controlling shareholders) represents one of the most important factors that will positively affect its performance. This is because shareholders with large and controlling ownerships have the incentive and experience - usually - in monitoring the decisions and behavior of managers² 'This is with the aim of maximizing the value of their wealth and reducing the possibility of the company being exposed to phenomena that have negative effects or are contrary to their desires, such as financial failure³. This requires providing the necessary mechanisms to prevent the emergence of the causes of the undesirable phenomenon, and obtaining the necessary information in order to evaluate the appropriateness of the decisions taken by the company's administrative staff, and analyze their effects on its performance .

These procedures can result in costs that are not negligible by small shareholders, which shows the importance of having shareholders with large ownerships. In addition to their good financial capabilities, the expected return from the operation can cover its costs. In addition, large shareholders are more keen to collect the appropriate amount of information that allows and enables them to narrow the information differentiation gap (asymmetry) and overcome the principal/agent problems in modern companies⁴. This is on the one hand, and on the other hand, this category of shareholders has the ability to limit the expansion and exaggeration of managers in consuming the privileges of their positions, and to influence the administrative decision-making process that reduces this, because they have experience and high competence in financial issues and matters and the company's operating activities⁵ .

The continuous evaluation process by the controlling owners of the company would constitute a pressure factor on the managers, which prompts them to be careful to make appropriate decisions, and for the Board of Directors to dismiss them and replace them in the event that signs of decline or decline in performance appear.

Agency problems and conflicts of interest between managers and shareholders deepen and increase in cases of financial distress. As the company faces financial problems and difficulties, managers focus

their attention on achieving their personal interests in the short term instead of focusing on addressing and finding solutions to the current situation, and this is a result of their feeling of the threat of losing their positions⁶ ‘Under these circumstances, the concentration of ownership by shareholders and/or managers can contribute to reducing this conflict of interest, and work to refine the behavior of managers and direct it according to what serves long-term (strategic) performance. This is driven by the fact that they are more likely to bear the losses of the faltering company.

From a practical standpoint, the study of (Elloumi & Gueyié, 2001) has proven; (Wang & Deng, 2006); (Li et al., 2008); (Donker et al., 2009); (Miglani et al., 2015) revealed that there is an inverse relationship between concentration of ownership and the probability of exposure to financial distress, and that the presence of controlling shareholders positively affects the supervision of managers and prevents them from acting opportunistically. This is the same relationship proven by the studies of (Ciampi, 2015) and (Parker et al., 2002) with the phenomena of financial failure and bankruptcy, respectively. As a study (Parker et al., 2002) found; (Deng & Wang, 2006) indicate that companies with concentrated ownership are more able to overcome difficult circumstances, periods, and financial crises. While the study (Liang et al., 2016) showed that ownership structure has great importance in predicting corporate bankruptcy.

Many researchers point out that there is a negative impact of the concentration of ownership on the company’s performance and value, as well as the possibility of it being exposed to financial problems. Where information asymmetry can arise and deepen between large and small shareholders⁷ ‘Agency problems and costs increase as major shareholders occupy managerial positions in the company. In this regard, he points out (Shleifer & Vishny, 1997)⁸ ‘(Lee & Yeh, 2004)⁹ In some cases where ownership concentration exceeds certain levels or thresholds, large shareholders tend to exercise their voting and oversight power to create and create special benefits, and sometimes confiscate or violate the rights of small ownership owners, all of which are factors that increase the possibility of the company being exposed to problems, administrative conflicts, and financial defaults.

In addition, it is considered (Jensen & Ruback, 1983)¹⁰ The assumptions on which the Entrenchment Hypothesis is based are one of the most important indications that the presence of a high concentration of ownership does not necessarily have a positive impact on performance, and that it is one of the most important factors that would provoke a conflict of interest between managers, shareholders, and managers due to differences in preferences, orientations, and private benefits.

The studies of (Lee & Yeh, 2004) and (Zeitun & Tian, 2007) demonstrated the existence of a direct relationship between ownership concentration and the risks of default and financial failure for each of them, respectively, while no effect of this variable appeared on the probability of financial failure in the study of both¹¹ .(McConnell & Servaes, 1990)؛ (Manzaneque et al., 2016).

From the above, it can be said that there is no definitive evidence of the impact of concentration of ownership on the company’s performance and the possibility of it being exposed to financial problems, as the results varied depending on the characteristics and features of the activity environment.

2.1. Administrative ownership

Ownership of company shares by managers and managers is considered one of the most important mechanisms used to unify and combine their interests with the interests of the rest of the shareholders, which would reflect positively on the company's value, as (Jensen, 1993) indicates that the emergence of many problems in the company is the result of managers and managers not owning significant proportions of shares, a situation that limits their eagerness to make decisions that maximize the company's value¹². In contrast, the ownership of company shares by managers and managers would give them access to a greater amount of information related to the company on the one hand, and directly influence the process of making and making decisions that maximize their wealth on the other hand¹³. This necessarily reflects positively on the company's performance and value, and keeps it safe from falling into financial distress.

In addition, owner-managers are more careful and concerned with strategic, operational and financial issues that will maximize the value of their holdings, making the company less vulnerable to financial distress¹⁴. More able to overcome periods of crisis and decline in performance. This is due to managers' good control over the company's resources and the ability to facilitate the process of monitoring performance and following up on its changes.¹⁵ This, in turn, allows for reducing information asymmetry, increases the efficiency of the company's decision-making process, and increases the effectiveness of the measures taken to correct deviations.

From a practical standpoint, the study (Liu et al., 2012) demonstrated that there is a positive effect of managerial ownership on the performance of government companies during a crisis period, and that they are less likely to face financial problems. In the same context, the study (Kaserer & Moldenhauer, 2008) concluded that there is a significant positive impact of insider ownership, represented by the ownership of the board of directors, the supervisory board and their families, on the performance of companies, while the study (Abdullah, 2006) proved; (Donker et al., 2009); (Rohani et al., 2013); (Miglani et al., 2015); (Pramudena, 2017); (Wei et al., 2017) that administrative ownership has a significant effect on reducing the probability of exposure to financial failure, and it works to motivate management to improve performance and overcome the financial problems that it may be exposed to. This is the same effect that was proven by the study of (Noor & Iskandar, 2012) with financial failure, and the studies of (Parker et al., 2002) and (Fich & Slezak, 2008); On the possibility of going bankrupt.

From all of the above, the ownership of company shares by directors and managers can be considered one of the most important internal control mechanisms for corporate governance, which allows solving the agency problem and avoiding falling into a state of financial default, by motivating the agent and directing his behavior to work according to what serves his interests and the interests of the principal at the same time.

On the other hand, he points out (Simpson & Gleason, 1999)¹⁶; (Platt & Platt., 2012)¹⁷ Managing shareholders have a greater tendency to bear risks than non-owners and managers. Therefore, managers' acquisition of large ownership will prompt and motivate them to bear high and unjustified levels of risk, due to the alignment of their interests and their common pursuit of increasing the volume of returns. This

means that the possibility of exposure to a state of financial distress will be high as the percentage of managerial ownership in the company increases.

In addition, informing managers and managers who own company shares of confidential internal information and/or that cannot be published due to its sensitivity and importance to the company would create many issues related to the possibility of them exploiting this information and related issues that would be reflected in performance for the purpose of achieving personal benefits, by giving them the opportunity to make appropriate decisions regarding their financial investments at the expense of the rest of the shareholders, and this represents a violation of the principle of justice and equality among shareholders; In the same context, a study concluded (Haat et al., 2006)¹⁸ It is noteworthy that the troubled companies share that their managers own a significant percentage of ownership, and they suffer from performance problems.

2. The practical aspect of the study :

1.2. Methodological procedures for the study:

1.1.2. Study sample:

The study sample consists of (16) joint-stock companies (SPA) active in the state of Setif during the past five (6) years. Accordingly, the number of observations subject to analysis is 96 observations (company/year), distributed according to their financial condition, as shown in the following table:

Table 1: Classification of companies according to their financial condition

Percentage(%)	Frequencies	Coding	Financial condition of the company (response variable)
28.1	27	1	Financially distressed
71.9	69	0	Not financially distressed (sound)
100	96	-	Total views

Source: Prepared by researchers.

It appears from the table that the study consists of 96 observations (company/year), extracted from data for 16 companies over the past five (6) years, including 27 observations for financially distressed companies, representing a percentage of 28.1%, and 71.9 observations for non-distressed companies, which represents a percentage of 71.9%.

2.1.2. Logistic regression model used in the study:¹

Logistic regression is one of the non-linear regression models suitable for studying phenomena in which the dependent variable is qualitative. It may take two values and is called binary logistic regression, or it may take more than two values and is called multi-category logistic regression.

Given the longitudinal nature of the study data, which includes repeated observations of companies over several years, a mixed logistic regression model with a random constant at the company level was relied upon. This model allows studying the effect of explanatory variables on the probability of financial default, taking into account the existing correlation between observations for the same company, and controlling for unobserved differences between companies.

In this study, we will rely on a logistic regression model for long data with a company-specific random effect (Panel logistic regression). Which is usually used in estimating, predicting, and describing the relationship between a dependent variable with a descriptive (nominal) level that takes two imaginary values (0, 1), which indicate the probability of achieving or not achieving the studied phenomenon, where it is expressed by:

$$P_{it} = P(Y_{it} = 1)$$

The probability of company i being exposed to financial distress during year t , while:

$$1 - P_{it} = P(Y_{it} = 0)$$

About the possibility of not being exposed to financial default.

Therefore, the purpose of using this type of regression is to explain or predict the probability of the occurrence of the phenomenon under study instead of estimating or predicting the values of the dependent variable, as is the case in linear regression. The mixed logistic regression model can be represented by the following formula:

$$P_{it} = \frac{\exp(\alpha + u_i + \beta_1 X_{1it} + \beta_2 X_{2it} + \dots + \beta_k X_{kit})}{1 + \exp(\alpha + u_i + \beta_1 X_{1it} + \beta_2 X_{2it} + \dots + \beta_k X_{kit})}$$

where:

Pit: represents the probability of the phenomenon occurring, that is, company i will be exposed to financial distress during year t ;

α : general constant term of the model;

$X_{1it}, X_{2it}, \dots, X_{kit}$: explanatory variables for firm i during year t ;

$\beta_{k1}, \beta_{k2}, \dots, \beta_{k1}$: represent the estimated parameters of the explanatory variables;

u_i represents the random effect for firm i , which represents the unobserved characteristics that distinguish each firm from others;

e : base of the natural logarithm ≈ 2.718

It is assumed that the firm-specific random effect follows a normal distribution with a mean equal to zero and a variance of δ_u^2 according to the following formula :

$$u_i \sim N(0, \delta_u^2)$$

The previous equation shows that the relationship between the probability of financial default and the explanatory variables is not linear; Therefore, there are several transformations that can be done to make the relationship linear, and the most famous of these transformations are: Logit transformation. The value of the weighting coefficient (Odds) is relied upon, which expresses the probability of financial default occurring to the probability of it not occurring :

$$\text{Odds}_{it} = \frac{P_{it}}{1 - P_{it}}$$

By taking the natural logarithm of the weighting factor, the model equation becomes in linear form as follows:

$$\ln \text{Odds} = \ln \left(\frac{P_{it}}{1 - P_{it}} \right) = \alpha + u_i + \beta_1 X_{1it} + \beta_2 X_{2it} + \dots + \beta_k X_{kit}$$

Thus, we have been able to fit a linear regression relationship between the explanatory variables (X's) and the dependent variable (response variable) of the logarithm of the company's exposure to financial distress, while including a random effect specific to each company.

The model coefficients are interpreted based on the sign of the coefficient β and its corresponding weighting coefficient, as follows:

$$\text{OR} = \exp(\beta)$$

If the OR value is greater than one, this indicates that an increase in the explanatory variable leads to an increase in the probability of exposure to financial default, while a value less than one indicates a decrease in the probability of occurrence of the studied phenomenon, and this is in light of the remaining other variables being constant.

3.1.2. Estimating variables and the study model:

- **Independent variable:** It is the ownership structure from a corporate governance perspective, and it has been divided into three sub-independent variables:
 - **Ownership concentration:** refers to the presence of owners holding an absolute majority of the issued shares;
 - **Board Member Ownership:** represents the ownership percentage of the company's Board of Directors members;
 - **Managers' ownership:** represents the percentage of ownership of the company's executives.
- **The dependent variable:** the phenomenon of financial distress. Which refers to the company's inability to fulfill its financial obligations on their due dates (payment of principal and/or interest and/or rescheduling) and/or that it has achieved losses as a result for at least two consecutive years. The symbol (1) is given to the financially distressed company (the phenomenon is achieved), and the symbol (0) is given to the non-distressed company (the phenomenon is not achieved).
- **Control variables:** to take into account the possibility of these two variables affecting the dependent variable:
 - **Debt ratio:** It is calculated by dividing the company's total debts by its total assets.
 - **Company size:** It is estimated using the logarithm of the size of the company's assets.

2.2. Evaluating the fit of the logistic regression analysis model:

1.2.2. Testing the overall statistical significance of the model and fixed effects:

In the following table, we review the overall statistical significance test for the logistic regression model adopted in the study and the fixed effects:

Table 2: Results of the fixed effects test in the adopted logistic regression model.

Significance level	df2	df1	F statistic	variable
0.974	85	10	0.320	The corrected model as a whole
0.999	85	1	0.000	Concentration of ownership
0.994	85	1	0.000	Ownership of board members

0.998	85	1	0.000	Ownership of executives
0.427	85	1	0.637	Debt ratio
0.439	85	1	0.605	Company size
0.945	85	5	0.238	Effect of years

Source: Prepared by researchers based on the outputs of the SPSS program.

We note from the previous table that the corrected model, which includes ownership structure variables, control variables, and year effects, is not statistically significant, as the F-statistic value reached 0.32 with a significance level of 0.974, which is higher than the significance level adopted in our study of 0.05.

2.2.2. .Results of model coefficients and weighting coefficients:

The coefficients show the probability of belonging to the category of financially distressed companies $FD = 1$, compared to the reference category $FD = 0$, and the following table shows the results obtained :

Table 3: Logistic regression coefficients and weighting probabilities.

Result	Significance Level	Weighting Coefficient Exp(β)	Parameter β	variable
Not a sign	0.437	$10^8 \cdot 7.16$	20.388	Fixed limit
Not a sign	0.999	0.016	4.140-	Ownership Concentration: OwnCon=0
Reference	-	Reference class	0.000	Ownership Concentration: OwnCon=1
Not a sign	0.994	0.858	0.153-	Ownership of board members
Not a sign	0.998	0.465	0.765-	Ownership of executives
Not a sign	0.427	0.110	2.211-	Debt ratio
Not a sign	0.439	0.400	0.916-	Company size

Source: Prepared by researchers based on the outputs of the SPSS program.

We note from the previous table that the value of the fixed term for the model reached 20.388, and all the coefficients of the explanatory variables and the two control variables appear to have a negative sign, which reflects an estimated inverse trend with the probability of financial default. However, the significance levels of these variables exceeded the level approved in the study of 0.05, which means that there is not sufficient statistical evidence to confirm the existence of a significant inverse relationship between these variables and the probability of financial default.

.3.2.2 Firm-specific random effect:

This test aims to take into account and control the unobserved characteristics of each company, taking into account that the observations of the same company over the years are not completely independent, and the following table shows the results of this test :

Table 4: Estimation of random effect variance and within-firm correlation coefficient.

Confidence %95 Level	Significance	Z	Standard Error	Estimate	Indicator
[65.356-6.125]	0.098	1.656	12.084	20.008	Firm stochastic stability variance
-	-	-	-	16	Number of companies
-	-	-	-	0.859	Intra-company correlation coefficient (ICC).

Source: Prepared by researchers based on the outputs of the SPSS program.

The variance of the company's random constant was 20.008, which is a relatively high value, while the correlation coefficient within the company was about 0.859, which indicates that approximately 85.9% of the latent variance in financial distress is related to unobserved differences between companies.

3.2. .Classification results

The following table shows the results of classifying companies into financially distressed and non-distressed companies using the estimated study model:

Table 5: Classification matrix for cases of financial distress

Percentage of correct classification	Prediction of default 0	Prediction of default 1	Viewed status
100%	0%	100%	Financially distressed: 1
100%	100%	0%	Not financially distressed: 0
100%	-	-	Total percentage of correct classification

Source: Prepared by researchers based on the outputs of the SPSS program.

We note from the previous table that the model showed a correct classification of all sample observations at a rate of 100%.

4.2. Study hypothesis testing table:

The following table shows the results of testing the study hypotheses using the estimated model:

Table 6: Results of testing the study hypotheses

Result	Level of significance	Coefficient direction	Hypothesis
Rejectio n	0.999	Negative	There is an effect of ownership concentration on financial distress
Rejectio n	0.994	Negative	There is an impact of board member ownership on financial distress
الرفض	0.998	Negative	There is an effect of CEO ownership on financial distress

Source: Prepared by researchers based on the outputs of the SPSS program.

From the previous table, we note that the coefficients on ownership concentration, ownership of board members and executive directors are negative, which reflects an estimated inverse trend with the probability of financial default, meaning that the presence of a controlling shareholder and/or an increase in the percentage of ownership of both board members and executive directors would reduce the probability of exposure to the phenomenon of financial default.

However, in view of the statistical significance levels of these variables of 0.999, 0.994 and 0.998 respectively, which is greater than the significance level adopted in the study and estimated at 0.05, all hypotheses indicating the presence of a significant impact of these variables on the financial distress of companies were rejected.

3. Conclusion:

Through this study, we tried to highlight the importance of the ownership structure from a corporate governance perspective on financial distress in Algerian joint-stock companies active in the state of Setif. The study reached many results, the most important of which are

- The issue of ownership structure within modern concepts of corporate governance is of great importance in explaining the phenomenon of financial distress of companies.
- There is no statistically significant effect of ownership concentration on the financial distress of companies;
- There is no statistically significant effect of the ownership of board members on the financial distress of companies;
- There is no statistically significant effect of CEO ownership on the financial distress of companies;
- High debt ratio contributes to increasing the possibility of exposure to the phenomenon of financial default, which is logical because raising debt necessarily leads to an increase in the amount of risks to which the company is exposed, and thus increases the levels of income necessary to pay the installments of these debts and the interest due.
- There is no significant effect of company size on the risk of corporate financial distress.

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