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Do ownership structure and quality of financial information affect the cost of debt of Tunisian listing firms?

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Abstract: The main objective of this paper is to investigate empirically the relationship between the boards with other internal governance mechanisms such as ownership structure, quality of financial information and the cost of debt. To do so, we use a sample of 28 Tunisian listing firms during the period from 2007-2015. The empirical results show that the ownership structure and the quality of financial information have an important role in determining the characteristics of the cost of debt. The results also indicate that the cost of debt is related positively with factors from the boards of directors, to the size of the listing firms and negatively to the institutional participation on the capital of firm.

Keywords: Corporate governance; Board of Directors; ownership structure; cost of debt

JEL Classification: G32, G34

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1. Introduction

Studies on corporate governance were a great number of recent works, mainly following the financial crisis of 2007. The financial information is an important part of corporate governance has attracted the interest of the standard setters.

There exists a vast literature on the subject of factors influencing the average cost of debt to firms. Thus, we show the existence of frequent reference to variables such as size, profitability, asset tangibility, growth options, or level of leverage (see, among others, Rajan and Zingales 1995). More recently, however, growing attention is being paid to variables with a direct impact on the severity of information asymmetries between debtors and creditors,

which can have a significant influence on the cost of debt. Specifically, analysis including ownership and corporate governance issues (see Anderson, et al., 2004; Elyansiani et al., 2010; Boubakri and Ghouma, 2010), the accounting information quality (see Anderson et al., 2004; or Armstrong et al., 2011) and analyst activity (see Mansi et al., 2011).

Thus, the evolution of corporate finance means reflects the strategic nature of the financial structure. The latter extends to all financial strategic compartments which allow the company to carry on business, i.e. to acquire its assets. Whatever the diversity of its components, aggregation distinguishes debt capital. A debate between researchers often on the issue of debt-equity mix for better enterprise value (Caby and Hirigoyen, 2001).

Leland and Pyle (1977) show that the value of a firm is more correlated with the share of capital held by the shareholder leader and therefore it is in connection with the financial structure.

In addition and as an external mechanism of government, institutional investors may force leaders to improve their financial publication. Many articles recently published in the financial press have continued to raise the activism of institutional investors and their willingness to constrain managers to improve their transparency.

Moreover, the ownership structure and the quality of information can play both a leading role in the evolution of the cost of debt in firms.

The aim of our paper is to examine the effect of the ownership structure and the quality of financial information on the cost of debt of Tunisian listing companies. We use in this study three factors such as; the ownership structure, the quality of financial information's and the cost of corporate debt. We employ a sample of 28 Tunisian listing companies during the period from 2007-2015. The empirical results find that the ownership structure and the quality of financial information have an important role in determining the characteristics of the cost of debt of each Tunisian listing firm. The results also indicate that the cost of debt is related positively to factors from the boards, to the size of the company and the stock exchange listing and negatively to the institutional participation on the capital of firm.

The rest of this paper is structured as follow. Section 2 shows a literature review concerning the impact of the ownership structure and the quality of financial information on the cost of debt. In section 3, we present the econometric methodology employed in this paper. Section 4,

indicates data characteristics. In section 5, we report the empirical finding. Finally, section 6 concludes and remarks.

2. Literature review

A review of major studies on the boards allows us to identify several criteria associated with the effectiveness of the control exercised by this mechanism. This is mainly on the size of the boards of director independence, financial motivations of outside directors and combines the functions of CEO (Chief Executive Officer) and chairman.

Several authors argue that a large board strengthens its ability to control and improve its information sources. Thanks to its diversified structure, a boards composed of a large number of directors provides better environmental links and demonstrated greater expertise. In this sense, Pearce and Zahra (1992) and Dalton et al. (1999) found that companies with a large board perform better.

Lipton and Lorsh (1992) found that the large boards make the process of communication and decision-heavier and more difficult decision. Moreover, they are often faced with problems of coordination and a risk of collusion between the members of the board. Jensen (1993) believes that a larger board is less effective and more subject to the influence of the CEO. Some empirical studies support this presumption.

In particular, Yermack (1996) and Eisenberg et al. (1998) found that the size of the board is negatively correlated with company performance. Furthermore, Core et al. (1999) show that an executive compensation is higher in companies with lots of agency and having weak governance structure problems manifested, among others, a large board.

The percentage of capital held by outside directors highlights the incentives of these directors, as shareholders, to perform their duties effectively controllers (Alexander and Paquerot, 2000). This conclusion is also shared by Minow and Bingham (1995) who said that the best way for a director is similar in behavior to a shareholder is to be himself a shareholder. This can be explained by the fact that a director with a significant shareholding is likely to be stronger advocates its interests and therefore to challenge about the direction because decisions will impact its own wealth (Patton and Baker, 1987).

Similarly, Jensen (1993) argues that the detention of a percentage of the company's capital as a means to align the interests of directors with those of shareholders and thus exercise

effective management control of the company. Over the financial commitment of external directors, the greater the flexibility of the leader will be low.

Supporters of the duality feel it is important that the organization is headed by one person. They argue that both roles allows for clear leadership with a view to formulating and implementing the strategy and should therefore lead to superior performance (Godard, 1998). Moreover, they argue that the separation of functions dilutes the authority of the leader and increases the likelihood that the actions and expectations of the manager and the board of directors are in contradiction, which can create some rivalry between them. Few studies support this theoretical current and show that combines the functions improves firm performance (Boyd, 1995; Godard and Schatt, 2000).

Demsetz (1983), Shleifer and Vishny (1986) and Agrawal and Mandelker (1990) suggest that the concentration of capital is essential to effectively control management executives by shareholders. Indeed, in a company whose capital is much dispersed, none of the owners has an incentive to invest in the control of leaders as it will only bear the cost while all shareholders benefit from this action. It is therefore possible to observe the behavior of "free rider" in a widely held and therefore leaders can unleash their opportunism in the management of the firm.

Institutional investors are thought to play an active role in corporate governance. These individuals represent shareholders indeed influential partners for the company as their financial resources are important and allow them to become 'active investors' in the management control of the firm (Agrawal and Mandelker, 1992). They can influence the decisions of leaders in order to maximize the return on their investment and consequently improve the performance of the company.

These agents also have privileged access to information because of their activity and many investments they make, which means a better understanding of the performance of the sector, a wealth of information on the environment and therefore a better assessment of the performance of the leader (Alexander and Paquerot, 2000). In addition, these shareholders have demonstrated a greater capacity for processing financial and economic information. They have in fact special skills enabling them to analyze in the company's accounts, growth prospects and quality of management. These advantages allow them to effectively control the management of executives at a lower cost compared to isolated individual shareholders.

The presence of institutional investors can thus influence the disciplinary power of the boards. Indeed, these shareholders tend to assume supervision of leaders, which reduces the potential contribution of the Boards in this regard. The study of Agrawal and Knoeber (1996) supported this hypothesis.

According to Jensen and Meckling (1976), more the share of capital held by the leaders, the greater the divergence between their interests and those of shareholders is low. In fact, the leader holding a high proportion of equities has little interest in maximizing personal wealth by opportunistic behavior detrimental to the assets of the company, since it is impacted. Therefore, it is expected that the disciplinary role of the boards is less important in companies where the managerial ownership is high (Bathala and Rao, 1995; Rediker and Seth, 1995; Denis and Sarin, 1999; Fernandez and Arrondo, 2005).

In the financial models of agency theory, debt appears as an effective way to resolve conflicts of interest that may arise between shareholders and managers. Indeed, in case of debt issuance, the leader is forced to face the payments of annuities (Jensen and Meckling, 1976), to be more efficient (Grossman and Hart, 1982), limit discretionary behavior on Free cash flow (Jensen, 1986; Stulz 1990) and finally to stop the current operations of the company and opt for liquidation (Harris and Raviv, 1990).

Therefore, it is expected that the use of debt serve as a true substitute for control exercised by the Boards. In this sense, Bathala and Rao (1995) found that the proportion of external directors on the Board is inversely related to debt. The ownership structure and the quality of financial reporting are not the only factors that can influence the cost of corporate borrowing. Other elements such as the size of the company and the stock exchange listing may also be involved in determining the structure of the cost of debt of a firm. The size of the company can influence the structure of the board i.e. the ownership structure. Indeed, large companies are generally characterized by high visibility and great complexity and therefore can be expected to have a different structure of the board of the small businesses.

Previous studies have shown that the size of the board is positively correlated with that of the company (Yermack, 1996; Denis and Sarin, 1999; Godard, 1998). In the same alignment, Rediker and Seth (1995) and Denis and Sarin (1999) found a positive impact of company size on the independence of the board. Since the cost of debt is correlated with company size and it is correlated with the ownership structure. So the ownership structure itself can affect the

cost of debt of a company. The stock market listing may also affect the characteristics of the board. Thus, on the stock market listed companies are more visible to the public and therefore they could offer more seats on the board and representatives of the public interest. Moreover, these companies are generally characterized by higher agency costs than other companies and therefore they tend to have more outside directors on the board. In this respect, the necessary company information is available to all actors on the market and mainly financial institutions. In this case, the quality of information on companies can play an important role in the cost of debt of these.

Bowerman and Sharma (2016) investigate whether corporate social responsibility disclosure (CSRD) is associated with firms' market values in order to assess whether CSRD provides incremental value relevant information to investors. They used a modified Ohlson (1995) model which is a widely accepted equity valuation model in accounting research. Their empirical findings show that investors in the UK consider CSRD information in the total information set they employ for their investment decision-making, whereas Japanese investors do not appear to find that CSRD provides incremental information over and above financial information to assist in their valuations of firms. These empirical results have implications for investors and regulators, specifically around the management, control and governance of firms.

Lawrence et al., (2009) use critical theorizing of institutional theory to find how the Housing Authority of Fiji's mission of providing housing to low income earners was obscured. The changes in Housing Authority of Fiji's accounting and management system came from pressure from donor agencies such as Asian Development Bank and the World Bank. The top management employed power to implement commercial accounting and control systems. The consultants and people brought from the private sector to carry out changes towards business routines were 'carriers of change' at Housing Authority. Lawrence et al., (2009) show that the changes in the organization systems resulted in the organization losing sight of its original idea which was to assist the underprivileged people who were locked out of the housing market place.

3. Methodology

3.1. Sample

Our goal in this paper is to validate the research proposal from the theoretical part. The data used in the empirical work has been extracted from the annual reports of the companies'

database used in our study and the Stock Exchange of Tunisia (SET). Thus, our sample included major companies in Tunisia (28 banks) during the period from 2007 to 2015. The study we develop concern the companies presented in Table 1.

Table 1. List of firm (2007-2015)

Air liquide	ARTES	SFBT	SOTRAPIL
Alkimia	Essoukna	SIAME	SOTUMAG
Assad	GIF filters	SIPHAT	SOTUVER
Tunisie lait	ICF	SITS	STEQ
SIMPAR	Magasin general	SOMOCER	Tunisair
Adwya	Monoprix	SOPAT	TPR
STIP	Poulina	SOTETEL	Electrostar

3.2. Model

In our work we used a model for measuring the impact of the ownership structure and the quality of financial reporting. This model includes the following variables:

- **CD_{it}** (The Cost of Debt): the ratio between total debt and total assets of firm i at time t . Debt is measured by financial leverage is total liabilities divided by total assets. This measurement is also used by Agrawal and Knoeber (1996) and Fernandez and Arrondo (2005).
- **DIV_{it}** : This is the company's information disclosure index i at time t .
- **$LNASSET_{it}$** : This is the logarithm of the total assets of firm i at time t . The size could be an important determinant of the performance of a company. This measure is used in several studies as Mak and Ong (1999).
- **ROA_{it}** : it is the ratio between net income and total company assets i at time t .
- **ROE_{it}** : it is the ratio between gross operating surplus and total assets of firm i at time t .
- **DIR_{it}** : is the percentage of capital represented by business leaders i at time t . This variable is measured by the percentage of capital held by the CEO and, if applicable, the CEO of the company. This measure has been used in previous writings including those of Rediker and Seth (1995) and Fernandez and Arrondo (2005).
- **$INST_{it}$** : is the percentage of institutional shareholders of the company i at time t . We measure this variable with the proportion of shares held by institutional investors. In this study we considered as institutional investors, banks, investment companies, insurance companies and social security funds. This variable was measured in the same way by Bathala and Rao (1995).
- **$CONC_{it}$** : it's business capital concentration i at time t . It is a dummy variable equal to 1% if the largest shareholder is greater than 50% if it is not equal to 0. This variable is

measured by the percentage of capital held by the largest shareholder. This measure is also used by Bathala and Rao (1995).

- $ACCT_{it}$: this is the measure the company's total accruals i at time t . This variable equal to the difference between net operating income and operating cash flows.

For the empirical analysis we chose a model to test the impact of the ownership structure and the quality of financial information on the cost of the debt of a company. Indeed, the model to be estimated is as follows:

$$CD_{it} = \alpha_0 + \alpha_1 DIV_{it} + \alpha_2 LNASSET_{it} + \alpha_3 ROA_{it} + \alpha_4 ROE_{it} + \alpha_5 DIR_{it} + \alpha_6 INST_{it} + \alpha_7 CONC_{it} + \alpha_8 ACCT_{it} + \varepsilon_{it}$$

Where, α_i denotes the coefficients of all explicative variables ($i = 1, \dots, 8$), α_0 represent the constant, i is the index of each firm ($i = 1, \dots, 28$), t is the year ($t = 1, \dots, 9$), and ε_{it} is the error term.

Thus, all data used in the calculation of variables are obtained from annual reports of the companies used in our study and the data published by the Stock Exchange of Tunisia (SET).

4. Empirical analysis

In this section, we will try to analyze and interpret the different results obtained from the estimates made on the model used (CD).

First, we will specify the type of estimate is a regression on panel data. Our choice is justified by the presence of two dimensions in the data used; the first is the time (a period of 7 years) and the second is individual (our sample is composed of 28 Tunisian companies).

Table 2 summarizes the descriptive statistics for each variable used in our estimates .The CD variable, which expresses the cost of debt of Tunisian companies, can reach a maximum value of 0.83. As the minimum value is 0.41. His risk is measured by the standard deviation is 0.133 which is pretty important. The results for the other variables are presented in Table 2.

Moreover, the results show no coefficient exceed the tolerance limit (0.7), which does not cause problems in estimating the model.

Table 2. Descriptive statistics

Variables	Observation	Mean	Max	Min	Std Div	Skewness	Kurtosis
CD	252	0.7572006	0.836772	0.4083131	0.1333252	2.319716	23.8936
DIV	252	0.482446	0.7222222	0.2142857	0.1339269	-0.2239395	1.963432
LNASSET	252	4.729896	5.736108	3.62447	0.4658897	-0.7396421	2.953065
ROA	252	0.0093889	0.0291264	-0.1035052	0.0118462	-6.63919	60.45131
ROE	252	0.0267582	0.0487229	0.0063502	0.0097373	-0.0479703	2.418214
DIR	252	0.4088346	0.6363636	0.0714286	0.147494	-0.2515029	1.787143
INST	252	0.2551459	0.5941176	0.0536316	0.1296333	0.3261328	2.115759
CONC	252	0.5357143	1	0	0.5	-0.143223	1.020513
ACCT	252	802570.2	6467555	-3084839	1290409	1.590546	7.170016

Table 3. The matrix of correlation

	CD	DIV	LNASSET	ROA	ROE	DIR	INST	CONC	ACCT
CD	1.0000								
p									
DIV	0.1092	1.0000							
p	0.128								
LNASSET	0.2339	0.2296	1.0000						
p	0.001*	0.021**							
ROA	0.0280	-0.0624	-0.0782	1.0000					
p	0.696	0.385	0.276						
ROE	0.3779	0.0577	0.2910	0.2273	1.0000				
p	0.000*	0.422	0.000*	0.001*					
DIR	0.1365	0.0352	0.4243	0.0080	0.2488	1.0000			
p	0.056***	0.624	0.000*	0.912	0.000*				
INST	-0.2075	0.1060	-0.4156	0.0485	-0.2642	-0.0577	1.0000		
p	0.004*	0.139	0.000*	0.500	0.000*	0.422			
CONC	0.0130	-0.0381	-0.0474	-0.0035	-0.0352	-0.0307	0.0421	1.0000	
p	0.856	0.596	0.510	0.962	0.625	0.669	0.558		
ACCT	-0.0780	0.0756	0.2893	-0.0028	-0.0870	0.2773	0.1138	-0.0354	1.0000
p	0.277	0.292	0.000*	0.969	0.225	0.000*	0.112	0.622	

Note: Significant value at a threshold, (*) 1%, (**) 5%, and (***) 10%

We present the results of the estimation of the model (CD) in Table 4. We note that the panel structure is homogeneous. So we can apply the method of ordinary least square which allows a better fit by minimizing the sum of squared residuals. Thus, we estimate the CD model as dependent variable.

The empirical results of the estimated model by the OLS (Ordinary Least Squares) for the measurement of the impact of the ownership structure and the quality of financial information on the cost of debt of Tunisian companies are reported in Table 5.

We also conducted a test of the unit root panel data. Thus, we used the test Levin Lin Chu. The null hypothesis of this test is H0: all series are non-stationary and the alternative hypothesis is H1: all series are stationary. The acceptance or the rejection of the null hypothesis is based on the value of the p-value. This value is compared to a 10% threshold. If the value of the p-value is less than 10%, then we reject H0 and the value of the p-value is greater than 10%, then we accept H0. Table 4 summarizes the results of study of the stationary different variables. In our case, we notice that all the variables used herein lower p-value at 10%. In this case, one rejects H0 and thereafter all these variables are stationary. For the dummy variable (CONC), we assume that this variable is stationary.

Table 4. Unit root test

Variables	Statistic	p-value
CD	-3.5395	0.0002
DIV	-2.8474	0.0022
LNASSET	-1.7158	0.0431
ROA	-4.3599	0.0000
ROE	-4.4979	0.0000

DIR	-4.4979	0.0000
INST	-3.9621	0.0000
ACCT	-3.3623	0.0000

In this test the p-value is compared to 10%. If p-value <10% therefore we reject H0 and p-value > 10% then, we accept H0. With H0: all series are non-stationary.

The problem in each estimate is the choice of the estimation method; estimating a fixed effects model or estimate a random effects model. Thus, the solution discussed in this problem is the Hausman test that allows choosing between estimating a fixed effects model or estimating a random effects model.

The choice of model to estimate is based on the comparison of the probability of the Hausman test compared a 10% threshold. If the probability of the test is less than 10%, in this case we will choose the fixed effects model. So, if the probability of Hausman test is higher than 10%, so we will choose the random effects model.

In our model, we found that the probability of Hausman test is less than 10% (0.0844), so the fixed effects models are preferable to random effects.

In addition, we conduct further tests to demonstrate the validity of our models and to justify the significance of the estimates. We test the correlation between the explanatory variables and residue. This type of test is based on the value of (Prob> chi2). If this probability is less than 5%, so we accept H0 which verifies the absence of correlation between the residuals and the explanatory variables. If this probability is greater than 5%, in this case there is a correlation between the waste problem and the explanatory variables that we must fix it. In the estimated model, the probability value (Prob> chi2) is less than 5%. So we do not have problems of correlation between the explanatory variables and residue.

For CD model, the probability value (Prob> Chi2) is less than 5%. In this context, there is not a problem of correlation between the explanatory variables and residue. These values are presented in Table 5 summarizes the estimates made on the model chosen. The significance test of the model is based on the probability of Fisher. We notice all the Fisher probability values are less than 5% in all estimates of both models. So, we can remark that the five estimates of each model are globally significant.

In addition, the coefficient of determination for the estimated model is greater than 0.70. In this case, the estimated model is characterized by a good linear fit.

Table 5. Results of estimation

Dependent variable : CD	Period of estimation: 2007 – 2015
Explicative variables	Coefficients (t-Student)
DIV	0.4700719 (1.32)
LNASSET	0.1455019 (3.28)*
ROA	0.0892024 (4.10)*
ROE	2.970688 (1.82)***
DIR	-0.0530079 (-0.63)
INST	-0.0441352 (-4.36)*
CONC	0.0098964 (3.04)*
ACCT	2.41e-09 (0.26)
CONS	-0.2124251 (-0.79)
Obs.	252
Fisher probability	Prob > F = 0.0078
Fisher value	F(8,240) = 2.72
chi2()	Prob > chi2 = 0.0005
Wald chi2 value	Wald chi2(8) = 27.76
R ²	0.7412
Hausman test	Prob>chi2 = 0.0844
Model chosen in the estimation	Model with fixed effect

Note: Significant value to a threshold, (*) 1%; (**) 5% and (***) 10%. The Wall of test is used to test the correlation between the explanatory variables and residue. Comparing the probability of (Prob> chi2) to a threshold of 5% with H0: no correlation between the variables used and residue. If (Prob> chi2) <5%, then we accept H0.

In the first case, we sit down to test the existence of a negative relationship between financial information (DIV, LNASSET, ROA, ROE, ACCT) and the cost of debt. Thus, financial communication is measured by five variables: DIV, LNASSET, ROA, ROE and ACCT.

For the DIV variable, it has a positive but not significant impact on the cost of debt.

The second variable, LNASSET, also has a positive and significant impact on a threshold of 1% on the cost of debt. So the relationship between the disclosure and the cost of debt is positive for the case of company size measured by the logarithm of total assets. Subsequently, he increased level of asset values led to an increase in the cost of debt of a company

The third variable (ROA) has a positive and significant impact on a threshold of 1% on the cost of debt. So the relationship between the disclosure and the cost of debt is positive for the case of economic business performance measured by ROA ratio. Subsequently, the increase in the level of economic performance led to an increase in the cost of debt of a company.

The fourth variable (ROE) has a positive and significant impact on a threshold of 10% on the cost of debt. So the relationship between the disclosure and the cost of debt is positive for the case of the financial performance of the company as measured by ROE ratio. Then, the increased level of financial performance induces an increase in the cost of debt of a company

The fifth variable (ACCT), which measures the value of total accruals has a positive impact but not significant on the cost of debt. So the relationship between the disclosure and the cost of debt is positive for the case of the ACCT variable. So, the augment in the level of the value of accruals resulting in an increase in the cost of debt of a company

In the second case, we sit down to test the existence of positive relationship between the concentration of ownership (CONC) and the cost of debt. We find that the variable CONC has a positive and significant impact on a threshold of 1%. That is to say that the percentage of shareholders in the company's capital plays an important role in increasing the cost of debt.

In the third case, we test the existence of a negative relationship between participation of institutional investors (INST) and the cost of debt. We remark that the INST variable that measures the percentage of institutional shareholders in Tunisian firms has a negative and significant impact on a threshold of 1% on the cost of debt. That is to say that the percentage of institutional shareholders in the company's capital plays an important role in reducing the cost of debt.

In the fourth case, we test the existence of a negative relationship between managerial ownership (DIR) and the cost of debt. We show that the DIR variable that measures the managerial stake in Tunisian firms has a negative and non significant impact on the cost of debt. That is to say that the involvement of managers in the company's capital plays a sometimes non-existent role in reducing the cost of debt.

After analyzing the results obtained from the estimation of the model for measuring the impact of the ownership structure and the quality of financial information on the cost of debt for the case of Tunisian firms, we can conclude that the ownership structure and the quality of financial reporting play a dominant role in the evolution of the cost of debt of Tunisian companies. Thus, we can find that there is a positive relationship between financial communication (DIV, LNASSET, ROA, ROE, and ACCT) and the cost of debt in the case of Tunisian firms. Also, we find a positive relationship between the concentration of ownership (CONC) and the cost of debt.

5. Conclusion

The main objective of this paper is to examine empirically the relationship between of the boards with other internal governance mechanisms such as ownership structure, quality of financial information and the cost of debt. To do so, we employ a sample of 28 Tunisian listing companies during the period from 2007-2015.

The empirical results show that the value of the assets has a positive impact on the cost of the debt of the Tunisian firm. The level of performance of each firm (ROA and ROE) influences positively the cost of debt of listing Tunisian firms. In addition, there is a positive relationship between the concentration of property and the cost of debt. There, too, a negative relationship between the participation of institutional investors and the cost of debt. Finally, there is a negative relationship between the managerial ownership and the cost of debt. Our empirical results are in conformity with the previous literature, especially, for the case of emerging countries.

The results of this paper suggest that it would be worth encouraging the development of alternative mechanisms for the decrease of information asymmetries between lenders and borrowers in order to guarantee firms' access to better credit terms. One potentially effective mechanism would be to encourage analyst coverage in order to diminish the average cost of corporate debt when the development of market tools to address information asymmetries problems is impeded by the characteristics of the institutional and legal setting.

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