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Ownership Structure, Capital Structure, and Financial Performance: Evidence from Moroccan Large Banks

Mohamed Lachaari
LARGESS, ChouaibDoukkali University, Morocco

Mustapha Benmahane
LARGESS, ChouaibDoukkali University, Morocco

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Correspondingauthor:
mohamed.lachaari@gmail.com

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Abstract

Pupose: This article aims to verify how capital structure affects Moroccan banks' performance. First, we present a summarized literature review about capital structure's impact on firm value. Then we set a hypothesis from a theoretical model to be validated by a quantitative analysis of Moroccan's most essential bank data from 2006-2017,

Method: The sample of this research is Moroccan's most essential bank data from 2006-2017. We were using an econometric *Ordinary* Last Square regression model.

Result: Our findings show a negative relationship between banks' performance and equity ratio with good indicators. Therefore, leverage would be preferable to equity under the study's specific conditions, such as ignoring others factors and significant variables affecting return on equity. In addition, we found a significant influence of ownership structure on the relationship between equity ratio and financial performance of Moroccan banks. Indeed, we observed that foreign private and domestic public ownership influence the relationship between capital structure and a bank's performance. Then, we conclude that a bank's performance is generally related to a bank's capital structure. Moreover, the study was the first to choose equity ratio as a proxy for capital structure variable to observe the impact on financial performance in the context of the Moroccan banking sector.

INTRODUCTION

In a changing economic and financial environment, especially in the context of the liberalization and disintermediation related to the financial and banking system, banks are aware of the need to adapt their structures and policies to these changes. In this context, the banking sector plays a fundamental role in economic growth, as it still constitutes the essential element of the financial intermediation between lenders and borrowers. Therefore, banks must consider all factors that affect their performance negatively or passively. Thus, Moroccan banks must think about becoming more and more competitive by reducing their financial resources costs to attain the best financial performance.

Hence, one of the most critical questions in corporate finance theory is how capital structure, and consequently, the cost of capital, can influence financial performance. Is a firm's performance independent of its capital structure or not? This question leads us to set an empirical study about the relationship between a bank's performance and capital structure. Otherwise, the traditional financial theory based on the assumption of market efficiency in an environment

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where information is symmetrical between all stakeholders and competition is pure and perfect, argues that leverage (debt financing) is always preferable to equity because the cost of debt (interest rate) is generally low than the cost of equity.

In contrast with the traditional view, Modigliani and miller affirmed that the firm value measured by its market performance, under the efficient capital market assumption, is independent of its capital structure. Consequently, the cost of capital is still unchanged even if there is a change in the firm's capital structure. Therefore, the firm value is independent of its capital structure and cost of capital.

Although many authors provide much criticism towards Modigliani-Miller theory (Modigliani & Miller, 1958), they argue that firm performance and value depend on financial choice between equity and debt, so they affirm that cost of capital is one of the most critical factors influencing the financial decision. Hence, searching for an optimal economic structure leads to favoring the costless mode of financing(El Ouafy & Ed-Dafali, 2014; Molay, 2005). However, other theoretical models affirm that there is no optimal financial structure or a debt target ratio, and all financial choices depend on the firm's specific situation(Myers, 1984; Myers & Majluf, 1984). Nevertheless, according to the same theory, debt financing is still preferable to equity if there is no considerable risk of bankruptcy(Ross, 1977).

Therefore, managers still use, up to now, the weighted average cost of capital and capital asset pricing methods based on the traditional view of their financial and business models. Authors have defined a bank as a business with a particular production function associated with providing intermediation services(Wong, 1997). Indeed, they find that an increase in the bank's external financing capital, from the monetary market, due to a change in monetary policy such as the interbank rate evolution has a significant and positive impact on the bank's performance(Ho & Saunders, 1981; McShane & Sharpe, 1985; Yılmaz, 2017).

Through the empirical analysis, we also study the influence of the ownership structure concerning Moroccan banks' capital holding (foreign/domestic/public/private banks) on the relationship between equity ratio and return on equity. According to researchers, it is also essential to look at the potential qualitative determinants of the bank's performance, such as the ownership structure of the bank (public, semi-public or private, national or foreign).

Demirgüç-Kunt & Huizinga (1999) used bank-level data for 80 developed and developing countries from the period 1988-1995; they found that differences in interest margins and financial performance reflect various determinants: macroeconomic conditions, regulations, and ownership structure. They find that foreign banks have higher margins and profits than domestic banks in developing countries, while the opposite is true in developed countries. Huang (2006) found that leverage varies in a positive direction with financial performance and ownership structure. Fungáčová & Poghosyan (2011)used banking data covering the entire Russian banking sector for the period 1999-2007 and found that the impact of some commonly used determinants on bank profit differs between domestic banks and other types of banks, passing through private banks and those owned by foreign capital. In addition, Mansouri & Afroukh (2009) have also studied the determinants of banks' financial performance in the Moroccan context. They found a close relationship between ownership structure and banking financial performance.

Otherwise, the purpose of this work, according to problematic and previous empirical studies, is to answer the following question: How does the equity ratio affect the banking performance measured by the return on equity using quantitative data analysis. The sample used concern data from 2006 until 2017 about the most critical Moroccan banks regarding size, worldwide business subsidiaries, and their market share. As a result, we find a negative relationship between return on equity and equity ratio with a significant influence of ownership structure on a bank's financial performance. We conclude that the bank's financial performance is related to the bank's capital structure.

The paper is divided into three parts: first, we have defined the problem, theoretical background, and research question we should answer throughout the empirical analysis. Secondly, we present the research methods, formulated hypotheses, and model specifications. Finally, we offer empirical results and a discussion of our findings.

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RESEARCH METHODS

The methodological approach adopted in this work is apprehended to be aligned with the positivist paradigms because the work objective is to verify, according to earlier works, if debt advantage compared to equity financing is still available by studying the impact of the capital structure measured by Equity/Liability on Moroccan banks' performance measured by return on equity. We applied an econometric model based on simple Ordinary Last Square regression using panel data on the Stata application.

The sample concerns large Moroccan banks. We mean by large banks the institution with a large size, worldwide business subsidiaries, which represent more than 75% of the market share during the period 2006-2017, those banks are BOA (Ex: BMCE): bank of Africa; SGMB: Société générale; GBP: Banque Populaire; and AWB: Attijariwafa bank.

The structure of our sample regarding ownership structure is presented as follows:

Table 1.
Moroccan banks ownership structure

Ownership structure	Private	Public
Foreign	SGMB	
Domestic	BOA &AWB	GBP

Source: by authors

Indeed, and according to the literature review, the following hypotheses would be set:

H1: There is a significant relationship between equity ratio and banks' performance.

H2: Ownership structure significantly influences the relationship between equity ratio and banks performance. We distinguish two sub-hypotheses of H2 as follows:

H2.1: Foreign ownership significantly influences the relationship between equity ratio and bank performance.

H2.2: Public ownership significantly influences the relationship between equity ratio and bank performance.

The first hypothesis is rejected by Modigliani and Miller's theoretical model known as "irrelevancy theory," with the conclusion of neutrality between financial structure and firm value. However, recent empirical evidence mainly criticizes the model proposed by Modigliani and Miller. However, the majority of literature supports the First hypothesis, H1 (Harris & Raviv, 1991; Myers, 1984). According to the literature review, through conclusions of their empirical results support the second hypothesis, H2.

The econometric model is the following.

$$ROE(i) = Ownership\_Structure \times Ownership\_National \times \beta 1 * Cstruct(i) + C + \acute{\varepsilon}.$$

Such as:

a. ROE(Return on equity: Net earnings after taxes/Equity);
b. Cstruct(Equity ratio: Equity/Total liability);
c. OWNERSHIP_STRUCTURE (Private: 1; Public: 2)
d. OWNERSHIP_NATIONAL (Domestic: 1; Foreign: 2)

With i: a bank, C: Constant and έ: the standard error.

After the methodological approach, we will present the empirical results in the next section for analysis and discussion.

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RESULTS& DISCUSSION

Collected data are analyzed using the ordinary least square method, and outputs from the stata application are presented in table 2 shows descriptive statistics as the mean and standard deviation of the dependent and independent variables.

Table 2.
Descritive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROE	48	.1148125	.0481796	.0398	.2311
CStruct	48	.0966625	.0301703	.0415	.1485

Table 3 found a negative correlation (dependence) between return on equity as a proxy for banking performance and equity ratio as a proxy of capital structure.

Table 3.
Correlation Table

	ROE	CStruct
ROE	1.0000	
CStruct	-0.5039	1.0000

This dependence is observed in figure 1. Figure 1 presents the graphic relationship between equity ratio and returns on equity.

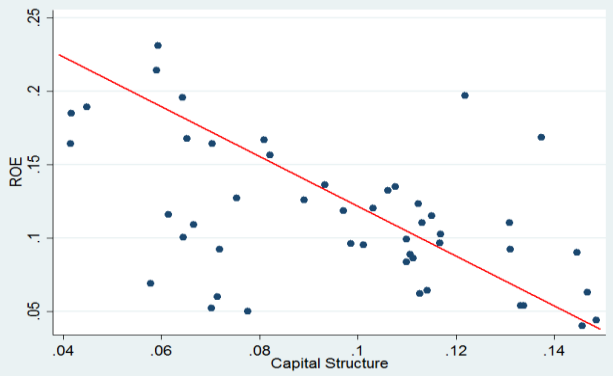

Figure 1.
Capital structure effect on banking performance

As presented in the chart above, we observe a negative effect of the equity ratio on ROE. Then, the proportion of equity in the capital structure is essential; the relationship with ROE became linear with critical dependency in a reciprocal way.

Furthermore, as shown in table 4, we observe a negative and significant relationship between equity ratio and ROE (β = -0.804). However, the equity ratio may not explain perfectly all ROE variance (R^2 = 0.237). The model was maybe acceptable (α<0.05) under abstraction and conditions.

Table 4.
OLS Model

	Coef.	Std. Error	t	Prob. t
Cstruct	-.8046538	.2033789	-3.96	0.000
_cons	.1925923	.0205754	9.36	0.000
F			15.65	
Prob. F			0.0003	
R Squared			0.2539	
Adj. R Squared			0.2377	
Number of obs.			78	

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As a result, debt financing is preferable to equity because, as we have already observed, an increase in the proportion of equity over debt provides less profitability measured by the ROE. However, the model is still significant, with a P value of less than 5%. Although, the capital structure cannot explain all return on equity behavior because other variables have been ignored to focus on the specific relationship between return on equity and equity ratio.

Otherwise, table 5 and 6 presents the influence of the ownership structure factor on the relation between capital structure and the bank's financial performance. We observe that the model becomes more efficient after introducing the ownership structure factor, with P value <0 and R^2>70%.

Table 5.
OLS Model with Ownership Factor

	Coef.	Std. Error	t	Prob. t
Cstruct	-3.4512	.4062623	-8.50	0.000
_cons	0.4316475	.0357229	12.08	0.000
F			72.17	
Prob. F			0.000	
R Squared			0.8783	
Adj. R Squared			0.8661	
Number of obs.			12	

Note: Ownership Structure =2; Ownership National =1.

Even though our model confirms the negative effect of capital structure on the banks' performance, the result concerns especially the specific context of the banking sector and the circumstances of the present empirical work. So, the first hypothesis is verified under the study conditions and then, there is a negative relationship between equity ratio, as a proxy of the capital structure, and return on equity, as a proxy of financial performance.

Table 6.
OLS Model with Ownership Factor

	Coef.	Std. Error	t	Prob. t
Cstruct	-1.941176	.3639924	-5.33	0.000
_cons	0.2902567	.0279766	10.37	0.000
F			28.44	
Prob. F			0.0003	
R Squared			0.7399	
Adj. R Squared			0.7138	
Number of obs.			12	

Note: Ownership Structure =1; Ownership National =2.

Moreover, the second hypothesis is also verified in the Moroccan context. Indeed, *foreign/private* ownership and *public* ownership significantly influence the relationship between equity ratio and return on equity.

Thus, our results align with previous empirical evidence and could be explained by the regulation standard according to the Basel II & Basel III committees. Basel, whose recommendations are rigorously applied by central banks concerning the capital requirements to avoid risky assets, which reduces the capacity of banks to provide more loans, negatively affecting banks' profit and financial performance.

CONCLUSION

In the end, we affirm that the equity ratio varies reciprocally with bank performance, and the debt ratio varies in the same direction with financial performance. Therefore, debt financing can be considered preferable to equity under the study's specific conditions, such as ignoring others factors and significant variables affecting return on equity. Then, we conclude that a bank's performance is generally related to a bank's capital structure. Moreover, the study was the

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first to choose equity ratio as a proxy of capital structure variable to observe the impact on financial performance in the context of the Moroccan banking sector, and it was the first to choose ownership structure as a targeting factor rather than an intrinsic control variable. Finally, the question of this paper is one of the most problematic discussions in financial theory, which is still difficult to resolve. However, further research would take into consideration other factors to provide more explanation of the impact of capital structure indicators and their control variables on banking financial performance.

However, like any empirical study, this research cannot claim to be exhaustive. Some unexplored points may constitute exciting avenues of research, in particular: Taking into account the impact of latent profits by integrating a lagged variable into the specified model; taking into account variables related to the quality of management that could further shed light on the understanding of banking performance in the Moroccan context; taking into account more data and other control variables into the specified model, and the comparison with other countries will also be more instructive on the specificities of the Moroccan context.

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