THE IMPACT OF BANKING RISKS ON THE CAPITAL OF COMMERCIAL BANKS IN LIBYA

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Abstract: **The objective of this research is to determine if financial risk does have any effect on the cost of capital of commercial banks in Libya. The study was conducted on 4 commercial banks in Libya which were in operation in Libya for the five years of study from 2014 to 2016, by using unbalanced panel data. The various ratios of these commercial banks were computed from the various data collected from the data extracted from their financial statement for the period. The data was then analyzed using linear regression model to establish if there is any significant relationship of the financial risk and cost of capital of these commercial banks. The finding of the analysis concluded that there is no significant relationship between the financial risk and cost of capital of commercial banks in Libya. There was very minimal effect which is negligible and therefore it was concluded that there is no relationship between the financial risk and cost of capital of commercial banks in Libya.**

Keywords: **Financial Risk, Cost of Capital, Debt Ratio, Return on Assets, Commercial Banks.**

1. INTRODUCTION

The banking market is now more extensive, more competitive, more dangerous, and more supervised by regulators at both the international and domestic levels. Therefore, banks are facing the challenges of the modern environment through several means:

Identify appropriate methods for dealing with different types of risks, whether operational, market, legal or administrative. Credit risk is one of the major challenges facing the banking sector. In transparent and competitive markets, the financial sector can transform credit risk into opportunities for success (see Berger, Hunter, & Timme, 1993). A modern approach to measuring liquidity ratios to measure and manage liquidity risk, reduce any problems faced by banks due to liquidity problems, and modern approach is the liquidity system according to the benefits. Capital risk reflects the degree of leverage used by the Bank, the Bank's capital or shareholders' equity, to protect creditors (primarily depositors) against operational losses to which the Bank may be exposed. The integration of banks into the emergence of competitive entities, the diversification of products and services produced and offered by banks to reduce risks and deal with financial innovations in this area, as well as diversification in dealing with many customers, geographical regions and different sectors in order to ensure non-concentration (Hefferman, 2005). The use of modern technology to meet the requirements of the next stage, such as remote exchange and exchange through the Internet. Deepening the independence and role of the Central Bank in supervising and supervising the banking business.

Risk management is one of the most important issues in banks and the issue of risk is becoming increasingly important for decision-makers. Banking is not without risk (Roberts, & Libuser, 1993). It is vulnerable to many similar risks to conventional banks. Commercial banks may face several risks arising from their activities or the environment in which they operate (Roberts, & Libuser, 1993). In order to pave the way for research, we need to define the problem of research, namely, the effect of risk management on the cost of capital in commercial banks. The purpose of this research is to identify the role of risk management in banks in reducing or reducing the risks faced by banks in the face of the financial crisis. Each bank should be aware of the importance of a risk management that leads its investment environment and is parallel to the overall objectives of the bank's strategy. In addition, banking has its own risks, so there is an urgent need to identify, measure, manage and control such special risks, and not to leave it to the commercial banks themselves, but it is necessary to study the risks faced by commercial banks.

The banking sector, under the economic openness, high competition and continuous changes in the economic environment, is exposed to many risks that affect its performance and safety and increase the probability of losses. The relative importance of these risks varies in terms of their degree of influence and intensity on the capital adequacy ratio, which requires the study of these risks accurately, which helps to increase the adequacy of capital in line with these risks and to protect against losses that could be exposed to the Bank because of these risks, and thus we can formulate the problem of searching through Ask questions The following:

- What are the relationship between financial risk and cost of capital?

- What are the relationship between the size of the firm and cost of capital?

- What are the relationship between the type of industry and cost of capital?

2. METHODOLOGY AND EMPIRICAL MODELS

2.1. Panel regression results:

Extraction of the financial ratios related to the study variables Debt ratio (DR), Times Interest (TI), Earned ratio, Return on Equity (ROE), Return on Assets (ROA) and DuPont Analysis (DA) of the financial statements used in the financial analysis process to determine the impact of financial risk as an indicator of the cost of Capital by (Excel Program). The Panel data analysis was used to load data and access the results of the study and based on (Muriithi, 2016 & Tafri, et al., 2009) studies. The tests (Test-F, hausman), which led to the optimal method of analysis as follows:

The method used to estimate the study model (analysis Panel data):

The modern approach proposes the basic formula for the regression of PANEL data. Hence, longitudinal data models come in three main forms:

- Pooled Ordinary Least Square (OLS).

- Fixed Effect

- Random Effect

We have N of the CT observations measured in T of time periods and therefore the longitudinal data model is known as the following formula:

$y_{it} = B_{0(i)} + \sum_{i=1}^{k} B_j X_{j(it)} + \varepsilon_{it}$, i=1,2,3,……,N   t=1,2,3,….,T   ………..(1)

2.1.1. Effect of the debt ratio on return on equity (ROE) of commercial banks:

In the case of a fundamental difference between the static and random effects, the extent to which the individual effect is associated with the independent variables, the null hypothesis is based on the absence of such correlation. Both the static and random effects are consistent, but the ability of the random effects is the most efficient, it follows the distribution of K-square with a degree of freedom K. Test Hausman for the use of Effect Random or Effect Fixed. The test results indicated that the value of (P- value ≥ 0.05) means that the effect fixed method is accepted, as shown in the Table 1.

Table 1: Correlated Random Effects - Hausman Test for financial risk

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	Prob.
Cross-section random	32.346834	3	0.0000

The test is judged as follows:

If the calculated value is greater than the value of K squared, we reject the null hypothesis and accept the alternative hypothesis, if the P-value is less than 5%, we reject the null hypothesis.

Based on the above, it is found that the method of analysis (fixed effect) is more meaningful and efficient in the estimation of the study data on other methods of analysis within the model (Panel Data), the use of the fixed effect method contributes to the control of neglected variables according to the banks' data and the period of time under study (see Amin et al., 2018). In this case, the variance in the model is in (α), thus the banking risk equation becomes as follows:

$y_{it} = z_{i\alpha} + \beta X_{it} + \varepsilon_{it}$ ………..(2)

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where:

i: Indicates the number of banks for the study sample (4 banks).

t: it refers to the number of years of study.

Z: invisible variables affect the degree of the cost of capital varies from bank to bank other than the factors listed in the form.

α: refers to alpha (a constant value across banks and over time).

β: Beta (the coefficient for each variable of the independent variables of the study - in other words, if the variable x changes by 10%, the capital cost will change by β.

X: A vector that includes several independent variables.

ε: Random error (probability of error in form or error amount in form).

The X_{it} vector also includes the explanatory variables of the model contained in the independent variables.

Table 2: Results of the regression test of the impact between financial risk and capital cost

Dependent Variable: DR				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA	0.247459	0.339653	0.728566	0.4792
ROE	-0.282162	0.540991	-0.521564	0.6107
DA	-0.758830	0.198072	-3.831093	0.0021
C	74.64737	3.845157	19.41334	0.0000
	Effects Specification			
R-squared	0.856387	Mean dependent var		57.88500
Adjusted R-squared	0.790104	S.D. dependent var		12.91565
S.E. of regression	5.917233	Akaike info criterion		6.662832
Sum squared resid	455.1774	Schwarz criterion		7.011338
Log likelihood	-59.62832	Hannan-Quinn criter.		6.730864
F-statistic	12.92014	Durbin-Watson stat		1.568420
Prob(F-statistic)	0.000081			

Estimation Equation:

DR = C(1)*DA + C(2)*ROE + C(3)*ROA + C(4)

Substituted Coefficients:

DR = -0.75*DA - 0.28*ROE + 0.24*ROA + 74.64

The model (1): This model was treated with only three variables: the return on total assets and the rate of return on equity and debt ratio to measure the effect of these variables on the cost of capital. The results of the analysis - to test the significance of the variables. The return on total assets and return on equity is related to a non-significant relationship with the cost of capital, and a F-test and Test- Housman to test the significance of the model as a whole - the model is no significance.

The hypothesis is "There is no statistically significant relationship between the return on the assets of commercial banks and the return on equity". The results of the study showed an inverse relationship between the return on commercial banks 'assets and the return on shareholders' equity, and it is no statistically significant (P-Value = 0.47) at a significant level of 5%, this achieves the hypothesis that the relationship is no statistically significant between the return on the assets of commercial banks and return on equity."

While the results of the study (Saini, 2012), and study (Pachori and Totala, 2012), contrary to the results of this study, where these studies have shown a negative relationship and no significant for raising the financial on (ROE).

Table 2 shows that the statistical value of (T) was 0.61, which is statistically significant at ($\alpha \leq 0.05$) or less. Therefore, we reject the null hypothesis that there is no statistical effect of the debt ratio on ROA, ($\alpha \leq 0.05$). The table also showed that the value of R² was 85% of the variation in the ROA variable and that the modified R value was 79%. It is also clear that the relationship between the two variables is positive and that the value of the Durbin-Watson is (1.56), which is acceptable and appropriate. Note that the higher the leverage, the lower the return on assets (ROA). This is due to the fact that in the last four years 2012-2016, industrial companies were affected by the global crisis, which is very clear when evaluating the latest stocks in addition to the periods of recession affected by Libyan industrial companies.

Table 3: Wald Test

Test Statistic	Value	df	Probability
t-statistic	-0.521564	13	0.6107
F-statistic	0.272029	(1, 13)	0.6107

Table 3 shows that the Wald statistic is 0.6107, which is greater than the critical value at 1% of significance. Thus, the study variables are of common interest in explaining the differences in the cost of capital in the specification of random effects.

2.1.2 Effect of the times interest earned ratio on return on assets (ROA) of commercial banks:

Table 4: Results of the regression test of the impact between the times interest earned ratio and return on assets (ROA) of commercial banks

Dependent Variable: TI				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DA	-96.50873	69.30369	-1.392548	0.1871
ROA	15.82097	118.8418	0.133126	0.8961
ROE	8.311194	189.2887	0.043908	0.9656
C	2653.133	1345.391	1.972016	0.0703
	Effects Specification			
R-squared	0.411306	Mean dependent var		675.0625
Adjusted R-squared	0.139600	S.D. dependent var		2232.045
S.E. of regression	2070.394	Akaike info criterion		18.37808
Sum squared resid	55724914	Schwarz criterion		18.72659
Log likelihood	-176.7808	Hannan-Quinn criter.		18.44611
F-statistic	1.513794	Durbin-Watson stat		1.620356
Prob(F-statistic)	0.249009			

Table 4 shows a comparison between the model of fixed and random effects for their comparison in the evaluation of the models of the study on the results of the Husman test, which reveals the hypothesis of the existence of a systematic difference between the variation of the regression parameters in the case of constant and random, the results in Table 4.7 show the results of the Husman Test. It is clear from this that the value of kai is a quadratic function at the level of 0.05 and less.

This result indicates rejection of the null hypothesis and acceptance Imposition of alternative means accepting the fixed effects model regression model.

Table 5: Correlated Random Effects - Hausman Test for times interest earned ratio

Correlated Random Effects - Hausman Test				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		8.260546	3	0.0409
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
DA	-96.508725	0.016425	1140.499948	0.0043
ROA	15.820970	-55.364997	1660.575776	0.0807
ROE	8.311194	106.875167	2061.508497	0.0299

TI = -96.50*DA + 15.82*ROA + 8.31*ROE + 2653.13

According to Table 5 for effect of interest rate earned on return on assets (ROA) for commercial banks that the results of the study showed that there is a positive relationship between the interest rate obtained from the return on assets (ROA) of the commercial banks is no-statistically and significant at the level of 5% (P- Value=0.89), and since the relationship is positive is statistically significant at a significant level if acceptance of the hypothesis that "there is no statistically significant relationship between the effect of the interest rate earned on return on assets (ROA) of commercial banks."

The hypothesis: There is no statistically significant relationship between the interest rate obtained and the debt ratio of commercial banks.

The results of the study showed that there is an inverse relationship between the time interest rate obtained and the debt ratio of the commercial banks but not statistically significant (P- value= 0.1871) at a significant level of 5%. Since the inverse relationship is no statistically significant, the hypothesis is accepted. "There is no statistically significant relationship between the interest rate obtained and the debt ratio of commercial banks." (See Tafri, et al. 2009).

Table 6: Wald test for correlated random effects

Test Statistic	Value	df	Probability
F-statistic	0.239477	(2, 16)	0.7898
Chi-square	0.478953	2	0.7870

Table 6 shows that the Wald statistic is 0.7898, which is greater than the critical value at 1% of significance. Thus, the study variables are of common interest in explaining the differences in the cost of capital in the specification of random effects.

3. CONCLUSION

In this study, it can be seen that financial risks have very little impact on the cost of capital of commercial banks in Libya. Therefore, the various stakeholders in the industry should seek research in other areas so that they are able to identify key factors affecting the performance of their industry.

This will enable them to control these factors to ensure maximum profitability and sustainability for industry growth. It can also be seen that the debt ratio has a positive impact on the performance of commercial banks and can be used by managers of commercial banks to help them improve profitability. This is because an increase in debt ratio may lead to increased financial performance.

REFERENCES

[1] Amin, M. A. M., Sanusi, N. A., Kusairi, S., & Abdallah, Z. M. (2018). Inverse relationship of financial risk and performance in commercial banks in Tanzania. Innovations, 11, 4-1.

[2] Berger, A. N., Hunter, W. C., & Timme, S. G. (1993). The efficiency of financial institutions: A review and preview of research past, present and future. *Journal of Banking & Finance*, *17*(2-3), 221-249.

[3] Hefferman, S. (2005). Modern banking", John Wiley & Sons Ltd. England implications for developing countries, and agenda for further research.Development International Finance Corporation.

[4] Muriithi, J. G. (2016). Effect of financial risk on financial performance of commercial banks in Kenya (Doctoral dissertation, COHRED, JKUAT).

[5] Pachori, S., Totala, N., (2012), Influence of Financial Leverage on Shareholders Return and Market Capitalization: A Study of Automotive Cluster Companies of Pithampur, (M.P.), India, 2nd International Conference on Humanities, Geography and Economics, Singapore April 28-29, PP 23 – 26.

[6] Roberts, K. H., & Libuser, C. (1993). From Bhopal to banking: Organizational design can mitigate risk. *Organizational dynamics*, *21*(4), 15-26.

[7] Roberts, K. H., & Libuser, C. (1993). From Bhopal to banking: Organizational design can mitigate risk. Organizational dynamics, 21(4), 15-26.

[8] Saini, Rajni, (2012), Impact of Financial Leverage On Shareholders Return and Market Cpitalization: Empirical Evidence of Telecommunication Sector Companies, India, International Journal of Research in IT, Management and Engineering, Vol.2, No.12, PP 55- 66.

[9] Tafri, F. H., Hamid, Z., Meera, A. K. M., & Omar, M. A. (2009). The impact of financial risks on profitability of Malaysian commercial banks: 1996-2005. Strategies, 232, 2111.