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Highlights

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Discovering Thoughts, Inventing Future

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Prudential Regulation and Banking Risk in MENA Countries

By Nadia Mansour & Ezzeddine Zouari
University of Sousse-Tunisia

Abstract- This paper analysis the impact of prudential regulation on banking risk using the measurement technique "z-score" by introducing the financial and economic determinants (real GDP growth rate, inflation, real GDP growth rate, inflation, the governance indicator, etc.).

For this reason, we used a sample of 146 conventional banks in the MENA region during the 2003-2014 period, whose purpose was to determine the specificities of these countries about the determinants of banking risk.

Keywords: *banking regulation, banking risk, z-score, mena countries.*

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Prudential Regulation and Banking Risk in MENA Countries

Nadia Mansour [α] & Ezzeddine Zouari [σ]

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I. Introduction

Recent developments in banking systems are a challenge not only for banks, but also for regulators, and then they are forced to perform riskier activities so that they can compete with other institutions in the capital market.

There is the phenomenon of deregulation that has had the same effect as disintermediation at the level of credit institutions. This deregulation creates new opportunities and, consequently, the possibility of international expansion.

Also, the erosion of margins accompanied by economic deterioration leads to a sharp increase in banking risks. These risks have the effect of reinforcing the difficulty of generating profits.

Due to the presence of several types of banking risks, public authorities are forced to put in place policies to organize the banking sector with the example of banking prudential regulation which was interpreted as a set of constraints that are difficult to bear but necessary for the proper functioning of their activities.

In the context of a modern theory of financial intermediation, it is, therefore, necessary to put in place an appropriate regulatory process while establishing a system for analyzing, measuring and controlling risks. The requirement of adequate prudential supervision has become a concern at the national and international level. To carry out the prudential and monetary tasks assigned to them, the regulatory authorities have at their disposal a multitude of devices. In addition to these, international prudential rules are imposed on all credit institutions by the Basel Committee. Over time, the prudential regulation of banks has taken on an international dimension based, notably those of the Basel Committee, which forms the basis of international prudential regulation seeking to harmonize prudential standards and financial strength in the field of global banking scale.

With the various regulatory provisions, the financial markets have undergone significant developments posing a challenge for credit institutions. Also, the financial market has brought profound fundamental changes in the nature and structure of the financial services sector. Among the main elements that characterize this regulation, there is the banking disintermediation, the development of activities, the internationalization and the reinforcement of the own funds.

Hence, the primary objective of financial regulation is to push banks to improve the level of liquidity and solvency (Lee and Chih, 2013). To this end, banks are required to put in place strategies involving the optimal allocation of resources and effective monitoring of environmental changes.

Therefore, and with financial liberalization, developing countries can not stay safe from these risks. However, few studies have focused on the study of the relationship between banking regulation in the Middle East and North Africa countries, although they have many characteristics with regard to the fragility of the banking system and informational opacity of the financial markets as well as their need to integrate on the international market (Rojas, 2001).

Also, MENA countries have put in place different mechanisms to enforce prudential regulation to deal with the effects of financial crises with a banking system increasingly integrated with global financial markets.

However, the application of prudential regulation standards requires a lot of effort on the part of banks, which must have sophisticated means to measure bank risks, as well as the possession of the necessary capital to apply these standards.

This brings us to the following questions: *What is the impact of prudential regulation on the management of banking risks?*

The problem developed is *that of assessing the impact of banking regulation in the MENA countries on the management of banking risks.*

II. Theoretical Foundations

The banking system faces various difficulties, even though this sector is one of the most regulated sectors of the economy. The most acute crisis in the

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banking sector is the subprime crisis, which has led to bank failures and significant damage to the economy. This situation led to the implementation of protection strategies, particularly for depositors to protect them from bank failures. Like those created by the subprime crisis, bank failures lead to a systemic crisis that is often accompanied by high social costs. To avoid such a situation, banks are obliged to comply with certain types of rules, the most important of which is prudential regulation through the Basel agreements.

To enable banks to manage the risks, the regulator of financial institutions has put in place several risk management principles through the Basel agreements.

a) Risk management and prudential regulation

Prudential regulation is intended to ensure stability of the banking system by pushing the banks to a reflection in their risk-taking. Thus, this regulation was presented as a cushion of security compared to the risks run by the banks.

Indeed, the main principles of prudential supervision were based on the prevention of banks' behavior, which could lead to risks and to avoid the spread in the financial markets. As a result, banks are forced to operate under liquidity and solvency constraints. When faced with a financial crisis, banks may have losses more than their capital. In this case, the role of regulation is to limit wealth transfers by forcing banks to control their risks. Thus, the most appropriate solution lies in the pressure exerted by the prudential authorities on financial institutions so that they can implement systems adapted to risk control. The supervisory authority also has the role of provoking reorganizations, having the participation of shareholders and financial partners to reduce the social cost of bankruptcies.

Thus, the Regulatory Committee focuses on researching the quality and effectiveness of banking supervision according to four different principles (Basel Committee on Banking Control, 2003).:

- Strengthen the security and reliability of the financial system,
- Establish minimum standards for prudential supervision,
- Disseminate and promote best banking practices and monitoring,
- Promote international cooperation in prudential supervision.

The prudential regulation applies to the control of financial risks and arises as a consequence of different crises and their impact on the solvency of financial institutions. Under the impetus of the work carried out by the supervisory authorities of several industrial countries, prudential regulation has evolved enormously over the last twenty years.

The control of bank risks was generally done in a conventional way in the form of legal conditions and management ratios. A part of the rules is designed to limit risks in a straightforward way. The purpose of this system is to measure and verify compliance with the internal procedures of the various rules in force and to check compliance with the risk limits while ensuring the quality of accounting and financial information. In this case, the regulations provide for the implementation of the system of measures, definition of monitoring and control of risks. As banks operate in a highly competitive environment, they face many factors that lead them to take risks that are often important. This situation puts financial institutions at risk while threatening the stability of the entire financial system, because of contagion effects. The advent of prudential regulation came about the aim of limiting the harmful effects of risk-taking and promoting the stability and security of the financial system.

To summarize the impacts of Basel regulations on risk control and balance sheet, Saidane (2011) has drawn up the following table:

Table 1: The impacts of Basel regulations

	Basel I	Basel II	Basel III
The scope of the measure	Basel I comes after a transition from a debt economy to a market economy and deregulation of credit. It aims primarily to frame a growing market activity.	The regulator has followed a micro-prudential approach (control of risk specific to an institution) to securing deposits	It begins a transition to a new macro-prudential logic aimed at stabilizing the financial system as a whole
Impact in terms of mastery risks	-Risk of market ++ -Risk credit + -Requirements of own funds +	-Risk of market ++ -Risk of credit +++ -Funding requirements own + -Operational risk ++	-Risk of market +++ -Risk of credit ++++ -Requirements of own funds ++++ -Operational risk ++ -Risk in liquidity ++++ -Pillar 2 and 3
Impact on the balance sheet	Low impact: assets, equity, off Balance-sheet	Strong impact on assets	Strong impact on assets and liabilities and very strong on equity and off Balance sheet

+ Low, ++ Medium, +++ High, and ++++ Very high. (Source: Saidane, 2011, P33)

However, while regulators believe that higher capital requirements will have a positive impact on the banking sector, the empirical results are contradictory.

Some studies indicate that capital requirements lead to excessive risk-taking by banks, Besanko and Kanatas (1996), Blum (1999), Calem and Rob, (1999), while others argue that capital requirements influence risky behavior only in particular circumstances, Beatty and Gron (2001).

Indeed, Awdeh et al. (2011), using a dataset of 41 Lebanese commercial banks between 1996 and 2008, they analyzed the impact of capital requirements on bank risk-taking. They found that increased capital requirements were associated with increased risk. Nevertheless, Rochet (1999) found that the imposition of a minimum fixed capital ratio does not necessarily translate into a reduction in bankruptcy.

On their part, Fernandez and Gonzalez (2005) indicated that stringent capital requirements reduce bank risk. Similarly, Barth et al. (2004) found that stricter capital requirements are associated with fewer nonperforming loans.

According to Hellmann, et al. (2000) and Repullo (2004), capital requirements alone were not sufficient, and the imposition of additional regulations may be useful for reducing risk in a competitive environment.

For Ghosh (2016), the most capitalized banks have high levels of liquidity and quite diversified income. Also, size promotes better diversification that reduces risk and allows banks to support their operations with less capital and less stable financing.

The second argument relates to the ability of big banks to operate in a different market segment. These may have a comparative advantage in market activities that require significant fixed costs and benefit from economies of scale (Laeven et al., 2014).

Similarly, Cetorelli (1999) has argued that poor asset quality and a low level of liquidity are the two causes of bank failures. Banks may decide to diversify their portfolios during periods of crisis.

For the ratio of costs to revenues, Lee and Chih (2013) have shown an inverse relationship between this ratio and the bank risk, for the big banks in particular. As a result, big banks need to pay more attention to control costs than small banks.

Concerning the variable ready, it is generally used to measure risk: the over-expansion of credit was often interpreted as a warning of a banking crisis (Kaminsky and Reinhart, 1999; Mendoza and Terrones, 2008; Borio and Drehmann, 2010). At this level, according to Mirzaei et al., (2013), big banks benefit from economies of scale, which allows them to diversify the risks associated with loan portfolios.

For Lee and Chih (2013), there is a positive relationship between the age of the bank and the management of bank risks. Indeed, the larger the bank is in age, the more likely it is to take more risks.

Köhler (2015) also showed that a large number of countries of characteristics likely to have an impact on the risk and return of the banks, as the overall macroeconomic environment. For example Real GDP per capita affects the Z-score in the opposite direction.

Hence the question arises as to the relationship between prudential regulations and the management of banking risks in developing countries and in particular the MENA countries, which have many characteristics about the fragility of the banking system and the informational opacity of the financial markets.

b) Risk measurement

Banking activities are considered inherently risky, and these risks are the very essence of the bankers' business.

The risk is a complex notion of defining because it is related to several factors, including the occurrence of an unforeseeable event with many consequences on the balance sheet of financial institutions. In other words, the risk presents itself for a financial institution as an event chronically impacting the operations carried out.

From these definitions, we can say that the risk was then linked to a notion of uncertainty in which we must measure both the volatility criteria and the negative consequences of risks on banking operations. Also, there were classified as specific risk, which affects all banks, and systemic risk.

Systemic risk was defined as a disruption that directly impacts the functioning of the banking system, its operating mechanisms, and its regulatory mechanisms.

To precisely define the notion of risk, it is wise to begin by distinguishing the random and unpredictable nature of the risk issue from the operation and financing of banks.

As part of this study, this is a measure Z-Score, to assess the banking risk and to overcome the shortcomings of the ratio method. Indeed, the assessment of banking risk is traditionally carried out by analyzing various financial ratios (for example the ratio of non-performing loans to total loans, the ratio of non-performing loan provisions to total assets, etc.). These variables have been criticized by the empirical literature since the ratio method has no theoretical basis, and even in its most elaborate form, the ratio method does not take into account the diversification impact on risk, Lee and Chih, (2013), p713.

Hence, we will base ourselves on the measure of Z-score. This overall measure takes into account both the risks associated with banking activities and the degree of coverage of these risks assured by capital, Goyeau and, Tarazi, (1992). According to Beck et al. (2010), "Assuming that profits follow a normal

distribution, it could be shown that z-score is the inverse of the probability of insolvency." The Z-score indicator can be estimated using the probability of default extracted from Roy (1952) and developed by Goyeau and Tarazi (1992). This is that the losses exceed the equity (Roy, 1952, Boyd and Graham, 1988) and it can be written as follows:

$$Probability\ of\ de\ fault\ =\ prob\ (\pi\ <\ -E) \quad (2.1)$$

In this study, we will divide the two components of the equation by the total assets:

$$Prob\left(\frac{\overline{\pi}}{A} \leq\ -\frac{E}{A}\right) = Prob(\overline{ROA} <\ -\frac{E}{A}) \quad (2.2)$$

With:

$\overline{ROA}$: Economic profitability

A: Total Assets

E: Equity

From where:

$$Prob\langle(\overline{ROA} - \mu_{ROA}\ )/\sigma_{ROA} \leq (-\lambda - \mu_{ROA\,\mu})/\sigma_{ROA}\rangle = Prob\langle(\overline{ROA} - \mu_{ROA}\ )/\sigma_{ROA} - Z\rangle \quad (2.3)$$

With:

At the level of our study, we will calculate this variable by integrating the natural logarithm (Lee and Chih, 2013).

III. Methodology

To avoid difficulties due to the lack of homogeneity of banking practices, the selection is focused exclusively on conventional banks, Cihak and Hesse, (2010). We have a sample of 146 banks for which we hold all the financial information necessary to conduct the empirical analysis.

Our sample will include 146 conventional banks in 17 MENA countries (Algeria, Bahrain, Djibouti, Egypt, Jordan, Kuwait, Lebanon, Malta, Morocco, Oman, Palestine, Qatar, 8 Saudi Arabia, Syria, and United Arab Emirates). Tunisia, Yemen) over the period 2003-2014, which gives a panel of 1752 observations.

Few empirical studies have focused on this area although it has specific characteristics. First, these countries have bank-based financial systems, with bank assets accounting for 60% to around 100% of GDP in countries. This situation makes the banking system a key player in the financial intermediation process.

Second, the considerable importance of banks in these economies makes bank credit the main channel of monetary transmission, Boughrara and, Ghazouani, (2011) and the lack of well-developed financial markets and the changing nature of money markets make the effectiveness of an interest rate channel much less attractive, Neaime, (2011).

Third, even in financial terms, the banking sector's indicators of cost and performance conditions are similar: funding levels are adequate, revenue cost ratios are modest and, interest margins are high (World Bank, 2014 and IMF, 2015). Hence the motivation to work in the MENA zone.

a) Presentation of the model and definition of the variables

Following the economic changes in the MENA countries and especially in the banking sector, we have chosen the quality of the assets and the capital ratio to study "Z-Score ". We also took into account the liquidity ratio, the size, the banking efficiency and the age of the bank as a control variable.

Thus , the models used for the study of banking risk, inspired by the research of Lee and Chih (2013) and Klomp and Hann (2012), take the following forms:

$$Y = a\ X_t + b\ Y_t + \varepsilon_t\ , \varepsilon_t\ \sim (N, \sigma_t^2)$$

With:

X_t : Financial determinants

Y_t : Macroeconomic determinants

And

$$Y\ (\mathrm{Z-score}) = a_0 + b_1 * Res_{NPL} + b_2 * CIR + b_3 * LIQ + b_4 * CAR + b_5 * Size + b_6 * Time + b_7 * LDR + b_8 * Res_{LOAN} + b_9 * GDPGR + b_{10} * GDPPC + b_{11} * GDP\ Deflator + b_{12} * Interest\ Rate + b_{13} * Governance + \varepsilon_t$$

Table 2: Description of the variables

		Variables	Variable codes	Description	Sources
financial determinants	**Asset quality**	Provision coverage ratio	Res_NPL	Non-performing loans / Gross loan	Bankscope
		Loan loss provision ratio	Res_LOAN	Loan-loss reserves / Gross loan	Bankscope
	Benefit and efficiency	Cost to income ratio	CIR	Costs to Income Ratio	Bankscope
	Liquidity	Current ratio	LIQ	Liquid asset / Short-term funding	Bankscope
		Loan to deposit ratio	LDR	Loans / Deposits & Short-term funding	Bankscope
	Size	Ln (total assets)	SIZE	Ln (total assets)	Bankscope
	Capital adequacy	Capital ratio	BECAUSE	Total regulatory Capital Ratio%	Bankscope
	Variable control	Time	TIME	It is the cumulative year of the establishment time	Bankscope
economic determinants	Macroeconomic variables	Real GDP Growth	GDPGR	Real GDP Growth	World Bank
	Macroeconomic variables	Real GDP per Capita	GDPCP	Real GDP per Capita	World Bank
	Macroeconomic variables	Real Interest Rate	INTEREST RATE	Real Interest Rate	World Bank
	Macroeconomic variables	Inflation	GDP DEFLATOR	Inflation	World Bank
	Macroeconomic variables	Governance Indicator	GOVERNANCE	Average of 6 Governance Indicator (Voice and Accountability, Political Stability, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption)	World Bank

b) The hypotheses

The succession of financial crises has given a lot of importance to prudential regulation in order to reduce the exposure to risks and limit the negative effects of risk-taking. Then, it is necessary to find indicators capable of alerting a risk in the banking system before the outbreak of a crisis. This situation is at the origin of the creation of a bank failure indicator "Z-Score", Mercieca et al (2007), Goyeau and Tarazi (1992).

The objective of this study is to analyze the impact of banking regulation on risk management in conventional banks in MENA countries between 2003 and 2014, taking into account the effect of the size of banks on the bank failure indicator. Hence the question underlying this study is whether there is a significant link between Z-Score and the level of regulatory oversight.

- The relationship between asset quality and bank risk management:

Ayadi and Pujals (2006): the higher the number of impaired loans, the higher the risks, despite the provisions made by the bank.

H1: Improving asset quality has a positive influence on bank risk management.

- The relationship between liquidity and the level of banking risk

Ayadi & Pujals (2005), Caprio, D'Apice et al. (2010) and Lee and Chih (2013): the more the bank's liquidity increases, the more the bank is likely to cope with liquidity shocks.

H2: Liquidity has a positive influence on bank risk management.

- The relationship between the ratio of costs to revenues and " Z-Score "

Lee and Chih (2003) and Francis (2004): These authors assure the existence of a negative relation between the costs on income and the risk. In fact, the

higher the cost-to-revenue ratio, the higher the risk of bank failure.

H3: The variable ratio of costs to revenue "has a negative influence on" Z-score ".

- The relationship between the ratio of capital and " Z-score"

Zhong (2007): The level of capital is a determining factor in the bank's ability to withstand operational losses. Adequate bank capital can be used to reduce bank risk by acting as a buffer against losses, providing easier access to financial markets and limiting risk- Taking. Indeed, most prudential regulation bodies consider that an adequate level of capital strengthens the soundness and security of the banking sector.

H4: The variable «capital ratio» has a positive influence on "Z-score ".

- The relationship between macroeconomic variables and " Z-score "

Inflation is one of the key macroeconomic factors for financial development in the MENA region. Some studies suggest a negative relationship between inflation and the "Z-score" variable, Boyd, Levine and, Smith (2001).

Real GDP growth rate has a positive effect on the Z-score variable, Köhler, (2015).

Real GDP per capita has a positive relation with the Z-score variable, Köhler, (2015) since it is an indicator of the wealth of the countries.

The governance indicator has a positive impact on the likelihood of default risk according to Köhler 2015. Also, Gerschenkron (1962) argued that governance indicators are involved in reducing bankruptcy and promoting market access.

The real interest rate is inversely related to the risk of bank failure. Indeed, banks in countries with a high level of real interest rates have lower Z-score (Köhler, 2015).

H5: The influence of macroeconomic variables affects significantly "Z-Score".

IV. Empirical Results

This study involves presenting the results of the analysis to examine the impact of asset quality, efficiency, liquidity, prudential regulation, size and time factor on bank risk management.

In what follows, we present the significant statistics of the models constructed concerning the regression of the variables defined previously on conventional banks of the MENA zone with the empirical results obtained and their interpretations.

a) Descriptive analysis of variables and econometric tests

i. *Descriptive statistics*

This study will expose the descriptive analysis of the different variables. The table below gives the mean, the standard deviation, the maximum and the minimum of the variables studied during the study of the previously defined models (see appendix 1).

Indeed, we notice the disparity of the average values of the explanatory variables and their standard deviations. These two variables suggest that the sample structure is not homogeneous and that additional tests are required to select the appropriate estimator.

b) Econometric Tests

We would be based on econometric tests following: the multicollinearity test, stationarity and heteroscedasticity tests, the homogeneity test and the Hausman test.

i. *Multicollinearity test*

Examination of the correlation matrix (see Annex 2) highlights the absence of a multicollinearity problem. Therefore, we carried out the VIF test (see appendix 3) which allowed us to confirm the result since the average value of VIF is 1.94.

ii. *Stationarity test*

It is a question of testing whether the variables are stationary in time or not. To do this, we will base ourselves on the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests.

Table 3: ADF & PP tests

Variables	ADF		PP	
	In level	Indifference	In level	Indifference
Ln (Z-SCORE)	0.0295 **		0.0295 **	
RES_NPL	0.0064 ***		0.0072 ***	
RES_Loan	0.0002 ***		0.0002 ***	
CIR	0.0271 ** (with variation)			0.02 ** (The trend)
LIQ		0.02011 ** (The trend)	0.02507 **	
LDR	0011 **		0011 **	
CAR	0.0244 **		0.0220 **	
SIZE		0.0763 *		0.08 099 *
GDPGR	0.0127 ** (The trend)		0.0127 ** (The trend)	
GDPPC	0.02163 **		0.02163 **	
INTEREST RATE	0.0009 ***		0.0002 ***	
GDP DEFLATOR	0.0021 ***		0011 **	
GOVERNANCE	0.0000 *** (The trend)		0.0535 * (The trend)	

The results show the stationarity of the variables in level for the ADF & PP test and other variables were difference stationery.

iii. *Heteroscedasticity test*

We adopted the Breusch-Pagan test, the value of chi2 displays a value of 0.766 with a significance level of 0.09 below the critical threshold of 5% (see Appendix 4). This result leads us to accept the hypothesis of homoscedasticity and confirm the absence of a problem of heteroscedasticity.

iv. *Specification test, homogeneity test*

The specification test displays a Fisher value of 3.50 with a significance level of 0.0000 below the critical threshold of 1%; this leads us to reject the null hypothesis of homogeneity and to validate the distinction between fixed and random effects models.

v. *Hausman test*

The results of the Hausman test make it possible to reject the null hypothesis since the level of significance is 0.0007 below the 1% threshold having a chi-square value of about 34. The model chosen is, therefore, the fixed effects model.

c) The results of the estimates

The results of the Ordinary Least Squares fixed effects model estimation were presented in the following table.

Table 4: The results of the estimates

Variables	Global Model			Big Banks			Small Banks		
	Coefficient	T-statistic	p-value	Coefficient	T-statistic	p-value	Coefficient	T-statistic	p-value
TIME	0.0788623	2.85	0004	0.151705	7.05	0.000	0.0457922	2.35	0019
CAR	0.0165551	2.73	0007	0.0209519	1.53	0126	0.0176421	2.92	0004
RES-NPL	-0.000159	-0.04	0972	-0.045895	-2.54	0012	0.0006495	0.14	0885
RES-LOAN	-0.015685	-2.00	0046	0.0821868	2.68	0008	-0.014277	-1.84	0067
CIR	-0.006159	-3.75	0.000	0.0180874	2.19	0029	-0.005904	-3.60	0.00 0
LDR	0.666953	2.83	0018	0.2380086	0.40	0686	0.761304	2.78	0006
LIQ	-0.014381	-5.32	0.000	0.0202948	3.16	0002	-0.01422	-5.26	0.000
Size	-0.307179	-1.65	0099						
Interest Rate	-0.017325	-1.72	0085	-0.036874	-3.13	0002	-0.019317	-1.94	0053
Inflation	-0.014115	-1.19	0233	-0.035984	-2.63	0009	-0.015862	-1.35	0179
GDPGR	-.0010608	-0.09	0932	0.0147121	1.12	0265	-0.002548	-0.21	0837
GDPPC	0 .0000111	1.06	0292	0.000014	1.70	0.09	0.000016	1.70	0089
Governance	1.077481	3.01	0003	0.6824748	1.58	0116	0.8681263	2.58	0010
Constant	4.374357	4.27	0.000	-3.451697	-3.56	0.0000	3.11873	4.69	0.000
F (13.572) = 7.47 Prob> F = 0.0000				F (12.383) = 9.23 Prob> F = 0.0000			F (12.574) = 7.84 Prob> F = 0.0000		

For the global model:

The variable «SIZE» is negatively related to "Ln Z-SCORE ". This result confirms the idea "Too Big to Fail". Indeed, this result corroborates with the work of Diamond (1984) and Hakenes and Schnabel (2011) who argue that the big banks are "too big to fail". Indeed, on the one hand, a large size allows the bank to occupy a more prominent place in the banking industry and enjoy an implicit insurance on its commitments. And on the other hand, it can still diversify in terms of asset portfolios, and as a result, achieve greater economies of scale.

The ratio of capital, in turn, is positively related to "Ln Z-SCORE". Indeed, several theoretical and empirical studies have highlighted the impact of prudential regulations on the level of banking risk. In this context, we can cite the studies by Koehn and Santomero (1980), Kim and Santomero (1988) who specify that the holding of a specific level of capital constitutes a margin of safety for the banking system, in particular for banks in the MENA countries which generally suffers from a strong asymmetry of information (Bougatef and Mgadmi, 2016).

Over the past two decades, the introduction of financial liberalization and financial system openness reforms to foreign investors in most MENA countries has led to a growing exposure financial crisis given the increase in the contagion effect. These countries have put in place various mechanisms to ensure the application of prudential regulation and put early warning indicators to avoid any possible banking crisis.

For the LDR variable, it was positively related to the "Z-score". This result confirms the finding of Ayadi and Pujals (2005), the higher this ratio, the higher the level of risk.

Also, the CIR ratio was negatively related to the risk of bank failure. As a result, the higher this ratio, the higher the risk of bank failure, according to the findings of Lee and Chih (2013) and Ghosh (2014).

For the variable LIQ, it was negatively linked with the dependent variable. This result indicates that banks have a significant level of liquidity and, as a result, high levels of risk.

Concerning the variable RES_LOAN (the ratio between Provision on bad debts and gross loans), it was negatively related to the risk of bank failure. Indeed, this ratio measures the funds spent by the bank to cover unexpected losses caused by impaired loans (Aggarwal and Jacques, 2001). This result contradicts the finding of Ayadi and Pujals (2005) which assumes a positive relationship between the ratio RES_LOAN and the risk of bank failure.

In reality, this situation reflects a poor choice of projects or a reliance of banks on risky assets. Indeed, an increase in the level of capitalization will push banks to increase their risk to compensate for the losses generated.

For the control variable "Time", it was positively related to the dependent variable "Ln Z-SCORE." Indeed, the higher the age of the bank, the more likely it is to take on more risk.

Regarding the macroeconomic variables, and to control the institutional environment and the level of governance of the country, we will use the indicator of Kaufman et al. (2008). This indicator represents the average of the following six variables (Kaufman et al., 1999): Voice and Accountability, Political Stability, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption. This indicator is positively related to "Ln Z-score" according to the findings of Köhler (2015). This result means that any improvement in the institutional environment results in a decrease in the probability of bank failure risk.

For the real interest rate, it is negatively related to the dependent variable, according to the findings of Köhler (2015). Indeed, every increase in this level will lower the level of Z-score.

Comparison of big and small banks:

At this level, it is interesting to test the evolution of Ln (Z-score) between large and small banks. Therefore, we will follow the division used by Bourgain et al. (2012) that a bank was considered big if its total assets are more than 10 thousand $, otherwise, it is a small bank. As a result, 40 banks in the sample are considered big, and 107 banks are considered small banks.

According to the estimates above, we note that only the LDR variable is not statistically significant and therefore does not affect "Ln Z-SCORE" of the major banks of MENA countries. However, and contrary to the results of Lee and Chih (2013), this variable is positively related to the "Ln Z-score" for small banks. This result confirms the finding of Ayadi and Pujals (2005), the higher this ratio, the higher the level of risk. This result is explained by the nature of the sources of deposits, in small banks, which are generally characterized by a low level of stability.

The LIQ variable is positively related to the "Ln Z-SCORE" in the big banks, but it is negatively related to the "Ln Z-SCORE" in small banks. This result indicates that big banks are more liquid and hold higher levels of risk. Indeed, according to the work of Adusei (2015), big banks can increase their profits by accumulating high "capital buffers," which allows them to be less sensitive to liquidity.

The CIR variable is positively related to the risk of bank failure in big banks. Indeed, the higher the ratio, the less risky big banks are, and as a result, banks pay less attention to control costs than small banks. However, this variable is negatively related to "Ln Z-SCORE" in small banks. This result means that the higher the cost-to-revenue ratio, the more risky banks are. This indicates that smaller banks need to pay more attention to control costs.

For the CAR variable, it was positively related to "Ln Z-SCORE" in small banks. This ratio can reduce the risk of bank failure. According to Dewatripont and Tirole (1993), this ratio presents a measure of security that can absorb the probability of bank failure.

Concerning the variable RES_LOAN, it was negatively related to the risk of bank failure for small banks. This result reflects a poor choice of projects among the latter, who find many problems to access to successful projects. Nevertheless, this variable is positively related to Ln (Z-SCORE) in big banks. This result confirms the finding of Ayadi and Pujals (2005) which assumes a positive relationship between the RES-LOAN and the risk of bank failure. Indeed, the higher the ratio, the higher the number of bad debts expected and the higher the risks despite the provisioning.

The RES-NPL variable was negatively linked with "Ln Z-SCORE" for the big banks, hence the lower the ratio, the higher the banking risk. This result, contrary to the findings of Lee and Chih (2013), means that big banks do not have a capacity to resist.

For the control variable, it was positively related to the "Ln Z-SCORE" for large and small banks. Indeed, the more they are large in age, the more likely they are to take more risks.

Regarding the inflation rate, it was negatively related to the dependent variable in the big banks. This result shows the ability of the latter to cope with the high risk of inflation.

Also, the "GDPPC" rate is positively related to the three dependent variables for large and small banks in MENA. This result confirms the findings of Köhler (2015) and means that banks in the most economically developed countries are more profitable and more capitalized.

For the real interest rate, it was negatively related to the dependent variable in large and small banks according to the findings of Köhler (2015). Indeed, banks in the MENA countries with high real interest rates have lower Z-score levels.

However, the governance indicator is positively related to the dependent variable for small banks. This result confirms the results of Köhler (2015) who argues that any increase in this indicator reflects an improvement at the institutional level.

V. Conclusion

The 1980s saw a significant increase in bank risks, including credit risks and increased competition, which had the effect of threatening the stability of the

banking and financial system. To protect banks and economic actors, monetary authorities, including the Basel Committee, have put in place regulatory requirements for banking activities.

Otherwise, the financial crisis, in recent years, has shown significant shortcomings in the prudential regulation of banks as well as some dead ends in self-regulation. To provide immediate responses to the crisis, the regulatory authorities have put in place reforms on the regulatory system for financial institutions. There were related to the implementation of solvency ratio requirements designed to take into account the level of risk faced by banks, their size and the business cycle in which they were located. However, the supervisory role of capital regulators is insufficient and requires additional new approaches focusing on macro-financial supervision.

The latter is particularly necessary because of the increasing development of systemic risk faced by banks and the ever closer interconnection between markets and financial institutions. As a result, banks are required to hold more capital so that they are more secure from different banking risks.

In this context, we have sought to highlight the impact of bank regulation on the probability of failure bench area in the countries of the MENA area over a period from 2003 to 2014. The results showed that raising the level of capital through a strengthening of risk hedging standards should lead to an overall decrease in probabilities of default within banks (Bichsel and Blum, 2004).

The result indicates that big banks are more liquid and hold higher levels of risk and are more stable with a high coverage ratio provisions. Indeed, the latter reduces the risk of bank failure.

However, smaller banks are riskier with higher cost ratios on revenues. These banks need to pay more attention to control costs.

Appendix

Appendix 1: Descriptive statistics

	Global sample				Small banks				Big banks			
Variables	Mean	Std-Dev	Min	Max	Mean	Std-Dev	Min	Max	Mean	Std-Dev	Min	Max
Ln (Z-score)	3.297863	1.254814	-1.482556	10.33783	3.808387	1.46584	-2.57441	9.85672	4.05152	1.14593	0.45373	8.35932
RES_NPL	9.345712	13.15162	0	124.04	12.03333	15.42619	0	124.04	4.86837	5.72872	0.05	41.57
RES_ Loan	7.579532	8.872731	-0.843	76.961	9.027488	10.17074	-0.843	76.961	4.52418	3.59050	0.436	27.542
CIR	49.56357	48.47783	0	950	54.66419	56.66731	0	950	37.71177	12.27384	15.751	80.337
LIQ	38.88159	31.64643	0.855	555.703	43.96369	35.6368	0.855	550.703	26.97772	13.09279	3.384	63.479
LDR	0.5910021	0.771078	0	25.25	0.5580059	0.90957	0	25.25	0.66680	0.22856	0.15746	1.68264
CAR	20.75376	14.50058	-13.1	285.4	22.49277	17.34757	-13.1	285.4	17.41534	4.41639	0.65	38.1
SIZE	8.003754	1.764696	1.8453	14.97227								
TIME	34.07437	25.84404	0	195	31.78076	26.97058	0	195	40.13333	21.47599	0	103
GDPPC	16699.14	18100.23	607.9158	96732.41	13052.7	14942.62	607.9158	96732.4	26339.41	21820.74	1071.323	96732.4
GDPGR	4.920161	3.860769	-15.08839	26.17025	4.571108	3.39394	-15.08839	26.17025	5.84296	4.76715	-7.07610	26.17025
INTEREST RATE	2.360264	8.932278	-19.9269	43.50116	2.75136	8.073605	-19.9269	43.50116	1.32630	10.82271	-19.9269	43.50116
INFLATION	6.382923	7.663647	-25.12813	33.75154	6.385414	6.970905	-25.12813	33.75154	6.37633	9.25694	-25.1281	33.75154
GOVERNANCE	-0.1370379	0.630294	-1.76	5.171667	-0.1781183	0.6811279	-1.76	5.171667	-0.02826	0.45278	-0.92166	0.79

Appendix 2: Correlate matrix

	Time	CAR	ResNPL	Resloan	CIR	LDR	Liq	GDPdef~r	Size	intere~e	GDPper~h	GDPper~a	Govern~e
Time	1.0000												
CAR	-0.1256	1.0000											
ResNPL	-0.0028	0.1549	1.0000										
Resloan	-0.0007	0.1983	0.7570	1.0000									
CIR	0.0514	-0.1066	0.1065	0.0450	1.0000								
LDR	-0.1627	0.0909	-0.2611	-0.3337	-0.1345	1.0000							
Liq	-0.3314	0.3828	0.1515	0.1247	0.0656	0.0354	1.0000						
GDPdeflator	-0.0842	0.0529	-0.0520	0.0044	-0.0511	-0.0119	-0.0337	1.0000					
Size	0.2111	-0.2604	-0.2930	-0.2546	-0.2274	0.1577	-0.3315	-0.0002	1.0000				
interestrate	0.0488	0.0277	0.1421	0.1191	0.0480	-0.1144	0.0525	-0.8297	-0.0527	1.0000			
GDPpergrowth	-0.0973	0.0069	-0.0803	-0.0661	-0.0145	0.0294	0.0429	0.1062	-0.0263	-0.1747	1.0000		
GDPpercapita	-0.1962	-0.0010	-0.2346	-0.2047	-0.1953	0.3819	-0.1288	0.0090	0.2048	-0.1360	0.2336	1.0000	
Governance	0.0128	-0.0802	-0.3425	-0.3576	-0.0918	0.5233	-0.1671	-0.0322	0.1364	-0.1308	0.1253	0.5705	1.0000

Appendix 3: Test VIF

```
. vif

    Variable |       VIF       1/VIF
-------------+----------------------
interestrate |      3.71    0.269202
 GDPdeflator |      3.62    0.275884
     Resloan |      2.34    0.426853
      ResNPL |      2.23    0.447713
  Governance |      2.06    0.484738
GDPpercapita |      1.81    0.553459
         LDR |      1.62    0.619053
         Liq |      1.45    0.689645
        Size |      1.40    0.716704
         CAR |      1.35    0.739616
        Time |      1.33    0.749893
         CIR |      1.12    0.889268
GDPpergrowth |      1.11    0.904866
-------------+----------------------
    Mean VIF |      1.94
```

Appendix 4: Test of heteroskedasticity

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of LnZscore
         chi2(1)      =     0.09
         Prob > chi2  =   0.7664
```

Appendix 5: Test of hausman

```
Test:  Ho:  difference in coefficients not systematic
            chi2(12) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                     =        34.00
           Prob>chi2 =       0.0007
```

Appendix 6: Global sample

```
. xtreg LnZscore Time CAR ResNPL Resloan CIR LDR Liq Size interestrate GDPdeflator
GDPpergrowth GDPpercapita Governance, fe

Fixed-effects (within) regression               Number of obs      =       679
Group variable: idofbank                        Number of groups   =        94
R-sq:  within  = 0.1451                         Obs per group: min =         2
       between = 0.1229                                        avg =       7.2
       overall = 0.0813                                        max =        12
                                                F(13,572)          =      7.47
corr(u_i, Xb)  = -0.8695                        Prob > F           =    0.0000

------------------------------------------------------------------------------
    LnZscore |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        Time |   .0788623   .0276417     2.85   0.004     .0245706    .1331539
         CAR |   .0165551   .0060636     2.73   0.007     .0046454    .0284647
      ResNPL |  -.0001598    .004511    -0.04   0.972      -.00902    .0087004
     Resloan |  -.0156853   .0078338    -2.00   0.046    -.0310718   -.0002987
         CIR |  -.0061597   .0016447    -3.75   0.000      -.00939   -.0029293
         LDR |    .666953   .2800626     2.38   0.018     .1168765    1.217029
         Liq |  -.0143817   .0027022    -5.32   0.000    -.0196892   -.0090742
        Size |  -.3071795   .1856812    -1.65   0.099    -.6718795    .0575206
interestrate |  -.0173253   .0100477    -1.72   0.085    -.0370602    .0024096
 GDPdeflator |  -.0141154   .0118335    -1.19   0.233    -.0373578    .0091271
GDPpergrowth |  -.0010608    .012427    -0.09   0.932    -.0254689    .0233473
GDPpercapita |   .0000111   .0000105     1.06   0.292     9.54e-06    .0000317
  Governance |   1.077481   .3583516     3.01   0.003     .3736354    1.781327
       _cons |   4.374357   1.023521     4.27   0.000     2.364039    6.384675
-------------+----------------------------------------------------------------
     sigma_u |  1.7292034
     sigma_e |  .93466811
         rho |  .77389719   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(93, 572) =     3.50                 Prob > F = 0.0000
```

Big banks

```
xtreg LnZscore Time CAR ResNPL Resloan CIR LDR Liq interestrate GDPdeflator GDPpergrowth
GDPpercapita Governance, fe
```

```
Fixed-effects (within) regression               Number of obs      =       435
Group variable: idofbank                        Number of groups   =        40
R-sq:  within  = 0.2244                         Obs per group: min =         4
       between = 0.0068                                        avg =      10.9
       overall = 0.0230                                        max =        12
                                                F(12,383)          =      9.23
corr(u_i, Xb)  = -0.9715                        Prob > F           =    0.0000
------------------------------------------------------------------------------
    LnZscore |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        Time |    .151705   .0215204     7.05   0.000     .1093921    .1940179
         CAR |   .0209519   .0136527     1.53   0.126    -.0058918    .0477956
      ResNPL |  -.045895    .0180922    -2.54   0.012    -.0814675   -.0103225
     Resloan |   .0821868   .0306134     2.68   0.008     .0219954    .1423782
         CIR |   .0180874   .0082518     2.19   0.029     .0018629    .0343119
         LDR |   .2380086   .5883502     0.40   0.686    -.9187922    1.394809
         Liq |   .0202948   .0064171     3.16   0.002     .0076777    .0329119
interestrate |  -.0368747   .0117913    -3.13   0.002    -.0600585   -.0136909
 GDPdeflator |  -.0359847   .0136721    -2.63   0.009    -.0628664    -.009103
GDPpergrowth |   .0147121   .0131779     1.12   0.265    -.0111979    .0406221
GDPpercapita |   .0000141   8.26e-06     1.70   0.090     2.19e-06    .0000303
  Governance |   .6824748   .4330602     1.58   0.116    -.1689983    1.533948
       _cons |  -3.451697    .969598    -3.56   0.000    -5.358098   -1.545295
-------------+----------------------------------------------------------------
     sigma_u |  3.3591887
     sigma_e |  .90555167
         rho |   .9322528   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(39, 383) =     6.63                 Prob > F = 0.0000
```

Small banks

```
xtreg LnZscore Time CAR ResNPL Resloan CIR LDR Liq  interestrate GDPdeflator GDPpergrowth
GDPpercapita Governance, fe
```

```
Fixed-effects (within) regression               Number of obs      =       680
Group variable: idofbank                        Number of groups   =        94
R-sq:  within  = 0.1409                         Obs per group: min =         2
       between = 0.2101                                        avg =       7.2
       overall = 0.1272                                        max =        12
                                                F(12,574)          =      7.84
corr(u_i, Xb)  = -0.7349                        Prob > F           =    0.0000
```

LnZscore	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Time	.0457922	.0195003	2.35	0.019	.0074915	.0840929
CAR	.0176421	.0060335	2.92	0.004	.0057917	.0294926
ResNPL	.0006495	.0044886	0.14	0.885	-.0081667	.0094656
Resloan	-.0142777	.0077777	-1.84	0.067	-.029554	.0009985
CIR	-.0059045	.0016387	-3.60	0.000	-.0091229	-.002686
LDR	.7613047	.2742679	2.78	0.006	.2226136	1.299996
Liq	-.0142258	.0027023	-5.26	0.000	-.0195334	-.0089182
interestrate	-.0193171	.00998	-1.94	0.053	-.0389189	.0002847
GDPdeflator	-.0158621	.011793	-1.35	0.179	-.0390248	.0073006
GDPpergrowth	-.0025486	.0124006	-0.21	0.837	-.0269047	.0218075
GDPpercapita	.0000165	9.68e-06	1.70	0.089	2.54e-06	.0000355
Governance	.8681263	.3362178	2.58	0.010	.2077592	1.528494
_cons	3.11873	.6648809	4.69	0.000	1.812833	4.424626

sigma_u	1.2228695
sigma_e	.93536776
rho	.63088871 (fraction of variance due to u_i)

```
F test that all u_i=0:     F(93, 574) =     3.54                 Prob > F = 0.0000
```

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The Impact of Credit Risk Management on the Performance of Commercial Banks in Cameroon. Case Study of BICEC Cameroon

By Fabrice Tchakounte Kegninkeu

Abstract- The study is based on f inding out the impact of credit risk management on the performance of commercial banks with specific objectives of evaluating loan assessment techniques used by banks and finding out various risk management tools used to manage credit risk. In order to verify it, secondary data were used to carry out ratio analyses and trend analyses which were then correlated to the percentages changes in profits. The findings of the study indicated that the Non-Performing loans (NPL) to total loans ratio which is one of the risk management indicators is a major predicator and is significantly related to bank financial performance, followed by the loan to total deposit ratio and loans to total assets ratios that have an inverse impact on financial performance of banks.

GJMBR-C Classification: *JEL Code: E59*

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Chapter One

I. Introduction

a) Background of the study

With the major functions of accepting deposits from customers and granting funds out in the form of loans, thus performing a middle man role between surplus spending and deficit spending units (known as financial intermediation), Commercial Banks have expanded significantly over the past decades all over the globe.

In the USA for instance, the Federal Reserve released a listing of the US largest banks ranked by consolidated assets expressed in Million US Dollars ($), in which the first three are JP Morgan Chase BANK, Bankof America, and Wells Fargo Bankwith consolidated assets of 1.945.467, 1.433.716 and 1,373,600 respectively as of 31st December 2013.

In China, the China Banking Regulatory Commission (CBRC)(2012) published a report, in which the threelargest banks in China are, in order of decreasing size, Industrial and Commercial Bank of China (ICBC), China Construction Bank (CCB),and Bank Of China (BOC) with IPOs in 2006 of respectively US $22 Billions, US $17Billions and US $13 Billion added to their capital.

Furthermore,in Africa, on one hand,the Ghanaian banking system is made up of 26 banks operating in the country among which the first group of the six largest ones including Ghana Commercial Bank Ltd (GCB), Standard Chartered Bank Ltd (SCB), Barclays Bank of Ghana Ltd (BBGL), Ecobank Ghana Ltd (EBG), Agricultural Development Bank (ADB), and Standbic Ghana Bank. Their total operating assets cumulatedincreased by 95% from GH¢4.3billion (2007) toGH¢8.4billion (2010) according to the Bank of Ghana statistics.

On the other hand, commercial banks have also been active in the Nigerian economy for many centuries now. According to the IMF Country Report N°13/146 of May 2013, Nigeria has a financial sector made up of thousands of financial institutions among which there exist 21 commercial banks with a total banking sector assets of ₦18.21 Trillion as at end December 2011, which represented 53.6% of the country's GDP.

The 3 biggest banks in Nigeria include First Bank of Nigeria with total assets worth $18.6 Billion approximately, followed by Zenith Bank PLC with $14.147 Billion and United Bank for Africa that has total assets of $11.901 Billion.

In addition, commercial banking is also present and active in the northern part of the continent, namely in Egypt where Business Directory evaluated and compared the performance of banks nationwide. From a total of 39 commercial banks, the top 3 are the following: Commercial International Bank(CIB) with total assets of about $14.8 Billion and made profits of $ 319.4 Million, followed by the National SociétéGénérale Bank (NSGB) with $222.8 Million in profits and total assets of $9.6 Billion, and Credit Agricole Egypt (CAE) came third with profits of $68.3 Million with total assets totaling about $4.1 Billion.

More so, banks have also evolved in Cameroon over the years and have played a key role in the financial system. The Cameroonian banking system is constituted of 13 commercial banks among which the first three banks are SociétéGénérale de Banques du Cameroun (SGBC), BanqueInternationale du Cameroun pour l'Epargne et le Crédit (BICEC) and Afriland First Bank with respective capital of 12,5Billion XAF, 12Billion XAF and 15,8Billion XAF. And in terms of total assets, SGBC registered 668.661Billion XAF, followed by BICEC with 658.468Billion XAF and Afriland First Bank with 654.902 Billion XAF.

Cameroon experienced a severe economic crisis in the early 1990's which resulted to a drop of 50% in the value of its currency, the CFA Franc which used to

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be pegged to the former French Franc.Then, the banking system watched the failure of two major banks namely with the liquidation of BanqueMeridien BIAO Cameroun (BMBC) in 1996, and Credit Agricole du Cameroun (CAC) in 1997.

Although COBAC put in place better policies and prudential norms to ensure the stability of the system, it still experienced the failure of Amity Bank PLC in 2008 whose assets were bought over by BanqueAtlantique in May 2009 and later in 2011, Union Bank of Cameroon PLC was recapitalized by Oceanic Bank Nigeria and which was bought over just recently by ECOBANK.

Also, the Commercial Bank of Cameroon (CBC) which is typically owned totally by Cameroonians faced financial difficulties for many years and is currently under restructuring.

Also, some Microfinance Institutions collapsed recently such as FIFFA, and COFINEST just to mention those two.

These various bank crises may lead to a reflection that the risks involved in the banking activity is one to take in consideration to the greatest extend, be it the liquidity risk, the credit risk, the foreign exchange risk, the market risk or the operational risk. Risk management tools should be as efficient and effective as to be able to mitigate those latter risks inherent to the banking business.

b) Problem Statement

Despite all efforts put in place by commercial banks in Cameroon, their credit risk in the form of non-performing loans still exists on their bank's loan portfolio. In addition, the credit experts of these banks sometimes have overlapping functions, which result to them being mixed up with the type of risk to focus on, since other types of risks such as interest rate risk, market risk, liquidity risk, currency risk and operational risk also exist. Also, with the information asymmetry that exists between borrowers and lenders, it had led to credit experts to be more likely to select projects that are dubious than those that will succeed to grant financing.
Based on the above problems, the following questions were asked:

- What are the various risk management tools used by the bank?
- How efficient are the loan assessment techniques of the institution?
- What sources of information are available for loan officers for use in loans assessment?

c) Objectives of the study

The main objective is to study and examine the impact of credit risk management on the performance of commercial banks.

The specific objectives include:

- To find out the various risk management tools used by the bank to manage credit risk.
- To evaluate the efficiency of loan assessment techniques of the institution.
- To investigate the problems associated with credit risk management at the bank.
- To make necessary recommendations based on findings.

d) Hypotheses of the study

To accomplish the aim of this research project, the following hypotheses have been posed:

1. H_0: Credit risk management does not affect profitability
2. H_1: Credit risk affects profitability.

e) Significance of the study

The conclusions and recommendations of the study will be of great importance to BICEC and other banks, to the Banking Commission of Central Africa (COBAC) or Ministry of Finance, to customers as a whole and to students.

To BICEC and other banks, the findings will assist their loan experts to know more about the impact of credit risk management and help them to upgrade the effectiveness of their techniques in order to mitigate the number of non-performing loans that affect their profitability.

To COBAC and MINFI, the study will be of great importance in knowing more about impact of effective credit risk management and help their officials to develop more efficient policies for controlling credit default risk.

To customers, this research will help them to be aware of the various tools used by banks to assess their loan applications and also to be able to meet up with the requirements to obtain credit.

To students, it would serve as a guide for doing further research in banking and finance and in other fields of study.

f) Delimitation of the study

The main aim of this study is to examine the impact of credit management on the performance of commercial banks in Cameroon. The case study here is the Bamenda branch of BICEC.

g) Organization of the study

This write up is organized in five chapters as follows: Chapter one provides the background information, the problem statement, the study objectives, significance and delimitations. Chapter two gives the literature review. Then Chapter three describes the methodology of the study and Chapter four gives the analysis and discussions and finally Chapter five is the conclusion.

Chapter Two

II. Literature Review

The purpose of this chapter is to examine what has been written by other scholars in relation to this research topic. Therefore, we are going to review various concepts, models, principles and definitions put forward by other scholars and how they can help to achieving our research objectives.

a) Conceptual literature

i. *Risk*

Risk can be defined as the uncertainty of outcome. There exists two types of risks, namely pure risk (risk that leads only to a loss such as flood, fire or accident) and speculative risk (risk that either a loss or a profit can occur such as a business venture). Risk contains many possible outcomes and we can determine the probability that an event will occur. We must note that taking risk is a part of the essence of management but it should not be taken unnecessarily and foolishly. We must take calculated risk i.e. balancing risk against rewards. There are a many risks that affect financial institutions; they include interest rate risk, market risk, liquidity risk, currency risk, operational risk, off-balance sheet risk, legal and compliance risk reputation risk, strategic risk, and capital risk. These various risks will be briefly discussed further below.

ii. *Loans*

Faure (2013) defines bank loans as advances and credit. This proportion of the bank's balance sheet makes up the vast majority of their assets. There are two categories of loans: Non-marketable debt (NMD) (made up of loans to non-banks and interbank loans) and Marketable debt (MD), i.e. investments. The author pursued that the majority of bank loans are NMD.

On the other hand, Peter S. and Sylvia C. (2010), emphasize on the various loan types which include real estate loans, financial institution loans, agricultural loans, commercial loans, consumer loans, lease financing receivables and miscellaneous loans.

iii. *Credit risk*

The Global Association of Risk Professionals (GARP) defines credit risk (also referred to as default risk) as the potential for a loss due to failure of a borrower to meet its obligations to repay a debt in accordance with agreed terms. A home owner stops making mortgage payments is an example of credit risk. According to the GARP, for banks, credit risk typically resides in the assets in its banking book (loans, and bonds held to maturity) and can arise in the banking book as counterparty credit risk.

Faure (2013) defined credit risk as the risk that the borrower from a bank will default on the loan and/or the interest payable, i.e. that it will not perform in the conditions under which the loan was granted. According to the author, credit risk is damaging to the bank, not only because of the actual loss eventually incurred, but also in terms of the time that management and bank counsel expend on attempting to recover the loss or a portion of the loss.

In the same line, two other authors, Peter S. Rose and Sylvia C. Hudgins (2010) defined credit risk by the following illustration. Financial intermediaries make loans and take on securities that are nothing more than promises to pay. When borrowing customers fail to make some or all of their promised payments, these defaulted loans and securities result in losses that can eventually erode capital.

Donald et al, (1996) defines credit risk simply as the potential that a bank borrower or counterpart will fail to meet its obligations in accordance with agreed terms.

iv. *Credit risk management*

Gestel and Baesens (2009) defined credit risk management as a process that involves the identification of potential risks, the appropriate treatment and the actual implementation of risk models.

Secondly, according to Basel Committee on Banking Supervision, (2009), credit risk management is a set of sound practices such as establishing an appropriate credit risk environment, operating under a sound credit-granting process, maintaining an appropriate credit risk measurement and monitoring process and ensuring adequate controls over credit risk. Greuning and Iqbal(2007) defined credit risk management as a structured approach to managing uncertainties through risk assessment, developing strategies to manage it, and mitigation of risk using managerial resources. The strategies include transferring to another party, avoiding the risk, reducing the negative effects of the risk, and accepting some or all of the consequences of a particular risk. The process of risk management is a two-step process. The first is to identify the source of the risk, which is to identify the leading variables causing the risk. The second is to devise methods to quantify the risk using mathematical models, in order to understand the risk profile of the instrument. Once a general framework of risk identification and management is developed, the techniques can be applied to different situations, products, instruments and institutions. It is crucial for banks to have comprehensive risk management framework as there is a growing realization that sustainable growth critically depends on the development of a comprehensive risk management framework.

v. *Commercial Banks*

These are banks that perform all kinds of banking businesses and generally finance trade and commerce. Since their deposits are for a short period, these banks normally advance short term loans to businessmen and traders and avoid medium term and

long term lending. However, recently, the commercial banks have also extended their areas of operation, to medium terms and long term finance. Commercial banks are also called joined stock banks.

According to Peter S. and Sylvia C., a commercial bank is defined as a bank that sells deposits and makes loans to businesses and individuals. In the same line, Tegwi (2010) defined commercial banks as profit making institutions that receive deposits from the public, safeguard them, and make them available on demand and make loans or create credit. He went further by giving their functions among which the main ones are accepting deposits, lending (by granting loans, overdrafts and by accepting bills) and agents of payment (by cheques, credit transfer, credit card, standing order). Other functions of commercial banks include providing cash dispensers, buying and selling of shares and stocks for customers in the stock exchange market, giving investment and financial advices to customers, providing travelers cheques to facilitate foreign trade, providing bank statements, acting as executors and trustees,and safe-keeping of valuables such as jewelries, documents and certificates.

vi. *Banks performanceand its determinants*

Illmer (2010) defines performance as one the words which definition is very flexible as everyone places the concept that suits best and letting the context take care of the definition. Nevertheless, in general terms, performance can be seen as the results of activities (e.g. of an organization) over a given period of time.He added that performance measurement is the process of qualifying the efficiency and effectiveness of past action. More concrete performance measurement is the process of measuring how well organizations are managed against their targets and the value they generate for their stakeholders.

According to Athanasoglou et al (2005), the role of banks remain central in financing economic activity and its effectiveness could exert positive impact on overall economy as a sound and profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system.

During the last decades, the banking system has experienced worldwide major transformations in its operating environment. Both external and domestic factors have affected its structure and performance.

Yuqi Li explained that the internal determinants refer to the factors originating from bank accounts (balance sheets and/or profit and loss accounts) and therefore could be termed micro or bank specific determinants of profitability. The external determinants are variables that are not related to bank management but reflect the economic and legal environment that affects the operation and performance of financial institutions. A number of explanatory variables have been proposed for both categories, according to the nature and purpose of each study.

Studies dealing with internal determinants employ variables such as size, capital, risk management, and expenses management. Akhavein et al. (1997) and Smirlock (1985) find a positive and significant relationship between size and bank profitability.

Turning to external factors, Athanasoglou et al. (2005) observes several factors have been suggested as impacting on profitability and these can be further distinguish between control variables that describe the macroeconomic environment, such as inflation, interest rates and cyclical output, and variables that represent market characteristics such as market concentration, industry size and ownership status.

b) Review of Related Literature

i. *Types of risks affecting banks*

Commercial banks activities, such as borrowing and lending for various periods, and at various rates of interest engaging in many other interest-rate related activities, dealing in foreign exchange, undertaking different investments and dealing in derivatives markets make it to be exposed to a variety of risks like no other institution. The risks faced by banks apart from credit risk include the following: interest rate risk, market risk, liquidity risk, currency risk, operational risk, off-balance sheet risk, legal and compliance risk, reputation risk, strategic risk and capital risk. Each of these will be briefly discussed below.

a. Interest rate risk

Faure (2013) defines it as the risk of expected earnings being influenced negatively as a result of changes in the pattern and level of interest rates. In other words, it is the impact of changing interest rates on a financial institution's margin of profits.

More so, Hudgins et al. (2010) relates interest rate risk to the impact of changing interest rates on a financial institution's margin of profits. Movements in market interest rates can also have potent effects on the margin of revenues over costs for banks. For example, rising interest rates can lower the margin of profits if the structure of financial institution's assets and liabilities is such that interest expenses on borrowed money increase more rapidly than interest revenues on loans and security investments.

b. Market risk

Also called position risk, trading risk or price risk, it is the risk of a decline in the market value of financial securities (shares, debt and derivatives) that is caused by unexpected changes in market prices and interest rates, and changes in credit spreads.

Aaron Hou further defined it as the potential loss resulting from declining prices in the financial market. It includes stochastic market risk factors such

as interest rate, FX, commodity and equity. There are two drivers of the market risk exposure: investment position and market volatility.

c. Liquidity risk

Liquidity risk for a bank is the risk of not being able to meet obligations in terms of funds demanded by clients. In other words, it is the danger of not having sufficient cash and borrowing capacity to meet with customers' withdrawals, loan demand, and other cash needs.

According to the Working paper series No 1008/Feb 2009 of the European Central Bank, risks relates to the probability of having a realization of a random variable different to the realization preferred by the economic agent. The economic agent will have a preference over liquidity. In that sense, the probability of not being liquid would suggest that there is a liquidity risk. The higher the probability, the higher the liquidity risks. When the probability equals unity (i.e. the possibility becomes a certainty) liquidity risk reaches a maximum and illiquidity materializes.

d. Currency risk

Also called foreign exchange risk (Forex risk), this is the exposure to loss due to the volatile foreign market conditions, changing government rules, and sometimes political instability overseas.

Moreover,Madura (1989) relates exchange rate risk to the effect of unexpected exchange rate changes on the value of the firm. In particular, it is defined as the possible direct loss (as a result of an unhedged exposure) or indirect loss in the firm's cash flows, assets and liabilities, net profit and, in turn, its stock market value from an exchange rate move. There exist three main types of exchange rate risk namely transactional risk, translational risk and economic risk.

e. Operational risk

Operational risk refers to uncertainty regarding a financial firm's earnings due to failure in information technology systems, errors, misconduct by employees, floods, lightning strikes, and similar events. It is also known as the transactional risk.

Faure (2013) expressed that each bank has its unique definition of operational risk. He reviewed a number of them including information technology systems risk, human resources risk, and other external risk. External risk here refer to the risk that parties itself than the bank itself and its employees undertake activities, or fail to deliver essential outsourced services, that harm the bank in a financial or other sense, and natural disasters that affect the services or viability of the business. Examples include a fire at the only checkbook printer in the country which puts it out of business for a long period or a power-delivery blackout for three days.

f. Off-balance sheet risk

One of the newest forms of risk faced by leading financial institutions is associated with the rapid build-up of financial contracts that obligate a financial firm to perform in various ways but are not recorded on its balance sheet. Examples include indemnities, guarantees, irrevocable letters of credit, and underwriting, effective net open position in foreign currencies, portfolios managed by others on behalf of the bank, and securities or commodities broking. These items or instruments are highly complex and volatile in their market values, creating substantial off-balance sheet risk for management to deal with.

g. Legal and Compliance risks

According to Hudgins (2010), legal risk creates variability in earnings resulting from actions taken by our legal system. Unforeseeable contracts, lawsuits, or adverse judgments may reduce a financial firm's revenues and increase its expenses. In a broader sense, compliance risk reaches beyond violations of the legal system and includes violations of the rules and regulations. For example, if a depository institution fails to hold adequate capital; costly corrective actions must be taken to avoid its closure. These corrective actions are laid out in capital adequacy regulations.

h. Reputation risk

Rose et al. (2010) defined reputation risk as the risk associated with public opinion. Negative publicity, whether true or not, can affect a financial firm's earnings by dissuading customers from using the services of the institution, just as a positive publicity may serve to promote a financial firm's services and products.

Perry and Fontnouvelle (2005) defined it as being the potential that negative publicity regarding an institution's business practices, whether true or not, will cause a decline in the customer base, costly litigation, or revenue reductions. Any reputation event that reduces present or future expected cash flows will reduce the equity value of the firm.

i. Strategic risk

Variations in earnings due to adverse business decisions, improper implementation of decisions, or lack of responsiveness to industry changes are parts of what is called strategic risk.

Allan and Beer (2006) define strategic risk as being any risk (threat or opportunity) that materially affects the ability of an organization to survive. All organizations are vulnerable to strategic threats to varying degrees despite their greatest efforts to manage them.

Kambil et al. (2005) study of the 1000 largest international organizations found that nearly half had lost up to 20% of their market value over a month long period in the last decade, with the value losses often taking longer than a year to be regained. When strategic threats occur, the results are devastating and long lasting.

j. Capital risk

The impact of all these risks can affect a financial firm's long-run survival, often referred to as its capital risk. According to Rose (2010), because of the variability in capital stems for other types of risk, it is often not considered separately by government regulatory agencies. However, risk to the capital that underlies every financial firm captures the all-important risk of insolvency or ultimate failure. For example, if a bank takes an excessive number of bad loans or a large portion of its security portfolio declines in market value, generating serious capital losses when sold, then its equity capital, which is designed to absorb such losses, may be overhelmed0 if investors and depositors become aware of the problem and begin to withdraw their funds, regulators may have no choice but to declare the institution insolvent and close its doors.

ii. *Credit risk management and banks*

As defined earlier, credit risk management as a process that involves the identification of potential risks, the appropriate treatment and the actual implementation of risk models according to Tony Van Gestel and Bart Baesens (2009).

Methods used by banks to mitigate credit risk include: Avoidance, diversification, compensating balances and monitoring business transactions, screening, long-term customer relationships, loan commitments, collateral requirements, credit rationing, specialization in lending and credit derivatives.

a. Avoidance

The obvious approach to alleviating credit risk is to avoid it. This can be achieved by only providing loans to, or buying the bonds of government, the best credit. Government securities are known to be risk-free securities, and because of that, the returns on such investments are the lowest available. Because the return on government securities is the risk-free rate (rfr), all other investment should yield rfr + rp (rp = risk premium).

b. Diversification

Diversification is the first principle of risk management as applied in portfolio theory. Banks do not lend a major proportion of their funds to individual borrowers. Rather, they restrict the amount loaned to a percentage of their capital. They are also diversified across economic sectors and countries. In most countries, the bank regulator or supervisor stipulates a strict constraint in terms of loan concentration.

c. Compensating balances and monitoring of business transactions

Often, loans are granted with the commitment by the borrower of maintaining a balance with the bank. This increases in the likelihood that the loan will be repaid. The commitment may also take the form of a current account with an undertaking that all transactions by the borrower in the business for which the loan was granted are conducted through the current account. This enables the bank to monitor the business of the borrower.

d. Screening

In order to overcome the adverse selection problem, the obvious tool to mitigate credit risk is the careful screening of potential borrowers. This involves information gathering. Much personal information is gathered in from of individuals who wish to borrow, and there are grades of information gathering. In the case of small sum for the purchase of say a washing machine, the information required is far less than that required for the mortgage loan. In the latter case, the information required would include: Work history and record, salary and salary history, other bank accounts, other debt, credit card payment history, statement of liabilities and assets.

In addition to this information, the lender may require references, which in many cases are followed up on, and some lenders (particularly the banks) put in place local boards of directors comprised of persons well known and connected in their relevant areas in order to provide information on the borrower of the area. The information gathered enables the lender to statistically calculate a score for each borrower. It should be apparent that in many cases the score is border line in terms of credit risk, and the lender uses a measure of discretion, rather than send the client off to a competitor.

Information gathering in the case of loans to companies is similar except that much emphasis is placed on past financial statements and a business plan for the future, including of course the purpose for which the loan is required.

e. Monitoring

Monitoring is also an information gathering exercise, but after the event of granting the loan, and this links with the problem of moral hazard. A client may be suitably screened and ultimately selected as a client, but may engage in activities totally different than the actual loan purpose once the money is in his or her hands. To reduce the risk of this coming about, many lenders include restrictive covenants (provisions) in their loan contracts, and monitor adherence or not to these on a regular basis.

f. Long-term relationship building

Lenders encourage long-term relationship building between loan officers of the institution and their clients. This practice reduces the cost of information gathering because records already exist and monitoring procedures are already in place. The borrower also has an incentive for encouraging a long-term relationship with the lender, and this is because a good credit record not only reduces the risk for the lender but also the borrowing rate for the borrower.

g. Loan commitments

This is another tool of credit risk management and is related to the former. Many lending intermediaries provide borrowers with a commitment of a loan up to a specific amount that can be utilized at any time. This provides the borrower with flexibility in loan utilization, and encourages a long-term relationship with the lender, which in turn reduces the information gathering cost. The loan interest rate reflects the long-term relationship.

h. Collateral requirement

Collateral means the ceding of assets (usually property, equipment financed, the debtors book, deposit, policy at appropriate discounted values) as security for the loan. This is a legal commitment to surrender the underlying assets to the lender in the event of default, which the lender is able to sell in order to recover the amount of the loan. It is known as the lost common method of "insurance" against credit risk, and the problems of adverse selection and moral hazard. A dubious borrower will be reluctant to borrow if collateral is required because she or he has much to lose in the event of default.

i. Credit rationing

Credit rationing takes on two forms: outright rejection and providing less credit that sought. Outright rejection refers to loans where the borrower is willing to pay a higher interest rate to compensate the lender for the risk, but the bank rejects the application because the higher interest rate will contribute toward the failure of the project.

Providing credit less that sought is often a tactic of the lender to prevent moral hazard. A loan that is smaller than sought will tend to ensure that the funds are efficiently allocated, whereas a loan of the desired size may bring about moral hazard.

j. Specialization in lending

Some lenders practice specialization in lending; this may refer to geographic area of industry. In the former case the lenders rely on personal relationships to ensure prompt and full repayment of interest and principal. Certain other lenders specialize in making loans to specific industries. For example, a bank may specialize in leasing contracts with the medical fraternity. The line of reasoning here is that the information costs are reduced because the lending institution is concerned with gathering information about only one industry (and its related industries). The counter-argument is that a downturn in the particular industry may place the bank at risk. This brings one back to the first tool, diversification, which is a major risk mitigation factor.

k. Credit derivatives

The use of credit derivatives consists of the purchase and sale of credit risk across sectors and countries. Credit derivatives are bi-lateral financial contracts with payoffs attached to a credit related event such as a default, bankruptcy or credit downgrade. Generally, the largest banks are net buyers of credit protection.

iii. *Credit assessment of banks*

The bank's division in charge of assessing, analyzing and making recommendations on the destiny of most loan applications is the credit department. Each loan application must be fully examined before the loan request is granted or refused and before offering any credit. The procedures followed by banks in credit evaluation may differ. These stages are the collection of information, credit investigation, financial statement analysis, and project evaluation and perfection and the decision stages.

a. Collection of credit information

When a customer comes for a loan, he will not receive the loan on the same day. He must first fill a loan application form (LAF), giving information of him and other information. Usually, he will be asked by the bank to go and come back later. During this time, the banker will collect the information that will be used to investigate or carry out credit rating to evaluate the credit worthiness of the customer. This information can be from primary and secondary sources. For convenience, they may be classified into five categories:

- Those that come from the credit applicant (loan application form).
- Information from the bank's own records (financial statements).
- Information from other sources (credit agencies, credit bureau).
- The customer's payment history with the firm.
- Credit reports on the customer's payment history with other firms.

This information ensures that the banks laid-down policies and regulatory constraints are followed. The information collected will help to determine the applicant's character, condition, capacity, capital and collateral securities.

b. Credit evaluation

Credit evaluation can also be referred to as loan appraisal techniques. These techniques are quite vital in banking because they usually involves a detailed study of the critical aspects of a loan application known as the 5 C's of credit, namely capital, condition, capacity, character, and collateral.

c. Capital

It is a measure of a customer's assets. If a credit customer's earnings power fails, assets can be sold to repay the loan. It is therefore a very crucial aspect of evaluating credit too. If financial statements are drawn properly, the analyst studies it with attention to either over capitalization or under capitalization. In case of a fall in the customer's earnings power, there is a danger that overdraft will increase or other credit facilities will remain unpaid.

d. Condition

Conditions of the individual credit customer (how well the business is doing at a given time) and of the economy in general have an important effect on creditworthiness. Therefore, the loan officer and credit analyst must be aware of recent trends in the borrower's industry and how changing economic conditions might affect the loan. A loan can look very good on paper, but one must understand that its value may change because of a decline in sales or income in recession or because of high interest rates occasioned by inflation. In this sense, in order to assess the industry and economic changes, most lenders maintain files of information such as newspapers clipping, magazines articles, and research reports on the industries represented by their major borrowing customers.

e. Collateral

This is anything of value that a borrower promises to give the lender if the borrower is unable to repay the loan. A loan for which collateral is held is said to be a secured loan and that which no security is held is called an unsecured loan. This is an asset pledged by the customer for security in case of default. In assessing the collateral aspect of a loan request, the loan officer must ask: Does the borrower possess adequate net worth or own enough quality assets to provide adequate support for the loan? The loan officer is particularly sensitive to such features as the age, condition and degree of specialization of the borrower's assets. Technology plays an important role here as well. If the borrower's assets are technologically obsolete, they will have limited value as collateral because of the difficulty of finding a buyer for those assets if the borrower's income falters.

f. Character

The loan officer must be convinced the customer has a well-defined-defined purpose for requesting credit and a serious intention to repay. If the borrower is not sure why the customer is requesting a loan, this purpose must be clarified to the lender's satisfaction. The loan officer must determine if the purpose is consistent with the lending institution's loan policy. Even with a good purpose, the credit expert must determine that the borrower has a responsible attitude toward using borrowed funds, is truthful in answering the questions, and will make every effort to repay what is owed. We must underline that responsibility, serious purpose and serious intention to repay all monies owed make up what the loan officer calls character. If the lender feels the borrower is insincere in promising to use borrowed funds as planned and in repaying as agreed, the loan should not be made, it may certainly become a problem credit.

g. Capacity

Here, the lender must be sure the customer has the authority to request a loan and the legal binding to sign a loan agreement. This characteristic is known as the customer capacity to borrow money. For example, in most areas, a minor (under age 18 or 21) cannot legally be held responsible for a credit agreement; lenders will have great difficulty collecting on such a loan. Similarly, the lender must be sure that the representative from a corporation asking for credit has proper authority from the company's board of directors to negotiate a loan and sign a credit agreement binding the company. Usually, this can be determined by obtaining a copy of the resolution passed by the corporate customer's board of directors, authorizing the company to borrow money. In case of a business partnership agreement, the loan officer must ask to see the firm's partnership agreement to determine which individuals are authorized to borrow for the firm. It is important to note that a loan agreement signed by unauthorized persons could prove to be uncollectible and result in substantial losses for the lending institution.

h. Financial statement analysis

This is the quantitative aspect of credit assessment. The financial statements usually required are the Income Statement, the Balance Sheet, Cash flow statements, cash budgets, etc. bankers are advised to ask for cash flows statement because they show the true liquidity position of a business. It is preferable to ask for statements prepared by independent accounting firms. When these statements have been presented by the customer, the banker will carry out a performance assessment by using trend analysis (comparing the figures over a number of years) and ratio analysis. If we are to use ratios, we must calculate ratios like profitability, liquidity, efficiency and stock markets (for listed companies).

iv. *Decision stage*

The decision on whether to give the loan lies in the hands of the credit officer, managers and sometimes the Board of Directors.

c) Empirical literature

Credit risk is the most serious danger or threat to commercial bank's profitability. In this regards, various researchers have examined the impact of credit risk with diverse aspects of banks. This part of our writing provides related empirical findings on the subject matter.

Various empirical findings, both from developed and developing countries have recorded mixed results. Some researchers have noted a negative relationship between either credit risk or credit risk management and profitability or performance of commercial banks; while some found a positive relationship.

Kargi (2011) evaluated the impact of credit risk on the profitability of Nigerian banks. Financial ratios as measures of bank performance and credit risk were collected from the annual reports and accounts of sampled banks from 2004-2008 and analyzed using

descriptive, correlation and regression techniques. The findings revealed that credit risk management has a significant impact on the profitability of Nigerian banks. It conducted that banks' profitability is inversely influenced by the levels of loans and advances, non-performing loans and deposits thereby exposing them to great risk of illiquidity and distress.

Kithinji (2010) assessed the effect of credit risk management on the profitability of commercial banks in Kenya. Data on the amount of credit, level of non-performing loans were collected for the period 2004 to 2008. The findings revealed that the bulk of the profits of commercial banks are not influenced by the amount of credit and non-performing loans.

Hosna, et al, (2009), in the assessment of the effect of credit risk management and profitability in commercial banks in Sweden used two credit risk indicators (NPLR and ROE). The findings and analysis revealed that credit risk management has effects on profitability in all the 4 banks selected.

IndiaelKaaya and Dickson Pastory (2013), in their study "Credit risk and commercial banks performance in Tanzania", used a sample of 11 banks in Tanzania with secondary research methods and concluded that increase in credit risk tends to lower bank performance, which tends to lower profit level. He added that the bank need to maintain substantial amount of capital reserve to absorb credit risk in event of failure, moreover , the bank need to enhance lending criteria, grading and credit mitigation techniques to reduce chance of default. Meanwhile the adoption of sound practices and corporate governance will reduce credit risk.

Benedikt et al, (2006), examined credit risk management policies for ten banks in the US using a multivariate model and found that banks that adopt advanced credit risk management techniques (proxies by the issuance of at least one collateralized loan obligation) experience a permanent increase in their target loan level of around 50%. Partial adjustment of this target, however, means that the impact on actual loan levels is spread over several years. The findings confirm the general efficiency-enhancing implications of new risk management techniques.

Ngugi, (2010) postulates that in order to determine the needs of the local banking sector with regard to risk management, the central bank of Kenya conducted a survey in September 2004 that would provide a status position on the extent to which risk management is practiced in the financial institutions operating in Kenya. The survey revealed that there is a high level of awareness in banking institutions on the importance of employing systematic methods of identifying, analyzing, and controlling or mitigating risks.

d) Theoretical literature

i. *Portfolio Theory of Credit Risk Management*

According to Margrabe, (2007), since the 1980s, banks have successfully applied Modern Portfolio Theory (MPT) to market risk. Many banks are now using earnings at risk (EAR) and value at risk (VAR) models to manage their interest rate and market risk exposures. Unfortunately, however, even though credit risk remains the largest risk facing most banks, the practical of MPT to credit risk has lagged.

Banks recognize how credit concentrations can adversely impact financial performance. As a result, a number of sophisticated institutions are actively pursuing quantitative approaches to credit risk measurement, while data problems remain an obstacle. Significant progress are been made towards developing tools that measure credit risk in a portfolio context. Credit derivatives are also been used to efficiently transfer risk while preserving customer relationships. The combination of these two developments has precipitated vastly accelerated progress in managing credit risk in a portfolio context over the past several years.

ii. *Asset-by-asset Approach*

Traditionally, banks have taken an asset-by-asset approach to credit risk management. While each bank's method varies, in general this approach involves periodically evaluating the credit quality of loans and other credit exposures, applying a credit risk rating, and aggregating the results of this analysis to identify a portfolio's expected losses. The foundation of the asset-by-asset approach is a sound loan review and internal credit risk rating system. A loan review and credit risk rating system enable management to identify changes in individual credits, or portfolio trends in a timely manner. Based on the results of its problem, loan identification, loan review, and credit risk rating system management can make necessary modifications to portfolio strategies or increase the supervision of credits in a timely manner.

iii. *Portfolio Approach*

While the asset-by-asset approach is a critical component to managing credit risk, it does not provide a complete view of portfolio credit risk, where the term risk refers to the possibility that actual losses exceed expected losses. Therefore to gain greater insight into credit risk, banks increasingly look to complement the asset-by-asset approach with a quantitative portfolio review using a credit model.

Banks increasingly attempt to address the inability of the asset-by-asset approach to measure unexpected losses sufficiently by pursuing a portfolio approach. One weakness with the asset-by-asset approach is that it has difficulty identifying and measuring concentration. Concentration risk refers to additional portfolio risk resulting from increased

exposure to a borrower, or to a group of correlated borrowers.

iv. *Traditional Approach*

It is hard to differentiate between the traditional approach and the new approaches since many of the ideas of traditional models are used in the new models. The traditional approach is comprised of four classes of models including:

a. Expert Systems

In the expert system, the credit decision is left in the hands of the branch lending officer. His expertise, judgment, and weighting of certain factors are the most important determinants in the decision to grant loans. The loan officer can examine as many points as possible but must include the five "Cs". These are; character, credibility, capital, collateral and cycle (economic conditions) in addition to the 5 Cs, an expert may also take into consideration the interest rate.

b. Artificial Neural Networks

Due to the time consuming nature and error-prone nature of the computerized expertise system, many systems use induction to infer the human expert's decision process. The artificial neural networks have been proposed as solutions to the problems of the expert system. This system simulates the human learning process. It learns the nature of the relationship between inputs and outputs by repeatedly sampling input/output information.

c. Internal Rating at Banks

Over the years, banks have subdivided the past/performing rating category, for example at each time, there is always a probability that some past or performing loans will go into default, and that reserves should be held against such loans.

d. Credit scoring systems

A credit score is a number that is based on a statistical analysis of a borrower's credit report, and is used to represent the creditworthiness of that person. A credit score is primarily based on credit report information. Lenders, such as banks use credit scores to evaluate the potential risk posed by giving loans to consumers and to mitigate losses due to bad debt.

Chapter Three

III. Research Methods

Research methodology is a vital part of the research dissertation because it is the background against which the reader evaluates the findings and draw conclusions. This chapter presents the research method adopted for the study and discusses the technique applied for the analysis of the data gathered.

a) Background to the area of study

The study sought to assess the effects of credit risk management on the performance of commercial banks in Cameroon with the case study of BICEC Bamenda branch. In this light, we are going to expand on the bank's historical evolution, its various products and services and its organizational structure.

BanqueInternationale du Cameroun pour l'Epargne et le Credit (BICEC) was set up on March 14, 1997 following the liquidation of BICIC (BanqueInternationale du Cameroun pour l'Industrie et le Commerce) that took place under particularly challenging economic circumstances. It was indeed necessary to restructure BICIC given that economic crisis of the 80's and 90's did not spare it.

Therefore, in March 1997, the Board of Directors of BICIC decided to establish BICEC. Its management was entrusted to GroupeBanquePopulaire, a French banking group that accomplished its mission namely: making the bank profitable and paving the way for its privatization in 3 years. In 2000, BICEC became a subsidiary of GroupeBanquePopulaire.

Since 2011, BICEC has continued benefiting from the extensive experience brought about by the merging of the BanquesPopulaires and Caissesd'Epargne (BPCE) Groups.Today, BICEC is the major stakeholder in the Cameroonian banking sector with a solid overall performance.

i. *Products and services*

BICEC provides a wide range of products and services to all its clientele. These products and services are classified according to the types of customers; private customer and civil servants, students, professionals SMEs, SMIs, farmers, corporate bodies, and institutions.

Therefore, the bank's products and services are as follows:

a. Bank cards

Visa Gold: This is a universal payment and withdrawal card accepted worldwide at any time. Holders of Visa Gold have privileged relationship with BICEC. It is BICEC most advanced premium card. The targeted clientele is therefore high-income private customers and it offers the holder exceptional services, recognition and quality reception.

Visa Classic: It is a universal payment and withdrawal card accepted worldwide at any time. It is a mid-range BICEC VISA product. The clientele is private customers with an income of more than or equal to 500,000FCFA. It guarantees the holder phone support 7days/week and 24h/day on the number 33 42 29 09.

Visa Electron: It is a universal payment and withdrawal card accepted worldwide at any time. The targeted clientele is customers with income between 200,000FCFA and 500,000FCFA and holders of checking accounts.

Express Card: This is a domestic withdrawal card that allows the holder to withdraw cash from ATMs of the

BICEC network all round the clock. It is a low-end product that target customers with an income less than 200,000FCFA and are checking accounts holders.

Comfort Card: It is a domestic withdrawal card that allows the holder to withdraw cash from ATMs of the BICEC network all round the clock. Target clientele is private customers that are savings account holders.

MOOV Card: It is a domestic withdrawal card that allows the holder to withdraw cash from all the ATMs of the BICEC network. It is a low-end product with a targeted clientele of students basically.

b. Insurance

Schengen Travel Insurance: This is a contract that guarantees assistance and health insurance to all BICEC customers seeking entry VISAs to any country of the Schengen zone. It is a mid-range product aimed at private customers (both BICEC and non-customers).

Super Retraite: It is a life insurance plan with two components: Pension insurance coverage, that allows insured to constitute a supplementary pension. And supplementary pension coverage whereby the insured is covered by the insurance provider with regards to pension contributions left to be paid on such a person's date of death prior to the end of the contract.

Securicartes: This is a policy that covers the customers against:The fraudulent use of bank cards and cheque books, loss or theft of the official documents (National Identity Card, Passport, car registration documents, driver's license) and theft or cash withdrawal from BICEC counters.

Securitedecouvert: This is an insurance contract whereby an insurance pledges to pay back an overdraft granted to a customer (the insured) in case of death, up to a maximum nominal amount of 400,000FCFA.

c. Short-term financing

BICEC issues three types of short term loans that include: Reserve Leader (a credit facility, intended to finance daily common needs like equipment, family events and needs), school fee loan (granted to finance school resumption expenditures, land acquisition/home renovation loans(personal loans meant for real estate acquisition or improving security and purchasing equipment.) and overdraft facilities (to finance customers daily needs, shelter them from end of month financial difficulties and render their budget more flexible. It can be permanent or spontaneous).

d. Investment savings

BICEC Immo: It is the perfect way to add value to customers' savings and then finance their construction project. It is available to all customers, holders of checking accounts between 18 and 55 years.

Certificate of deposit: BICEC offers to all its customers the possibility to subscribe for certificates of deposits (CD). In return for this interest-bearing saving, BICEC issues the customer a negotiable instrument.

There are other types of credit facilities that the bank offers such as: BICEC Junior (it is the best way to maximize the customers' savings and assist them in preparing their children's future), remote banking for corporate bodies, professional SMEs and SMIs, international expertise, and other financing facilities for farmers.

b) Method of collecting data

The main source of data collection for this research is the secondary source because based on our research objectives, secondary data are more appropriate for the various analyses that were to be done. Data has been collected from the BICEC balance sheet, trading profit and loss statements, journals, annual reports and other related document.

BICEC has been used as a sample of a commercial bank from which a period of 5 years will be used for the study.

c) Method of data analysis

Data collected on deposits, loans and profits and losses and credits will be analyzed using inferential statistics. Variables will be analyzed based on the correlation that exists between them. Correlation is used because this research is out to study the relationship that exists between profitability and credit risk.

d) Sample design

The research design used in this study is the descriptive research design because we wanted to determine relationships between variables and on the longitudinal study basis, since we were investigating on sample elements that were measured repeatedly for 5 years. BICEC branch was chosen because BICEC is among the three best performing commercial banks of the Cameroonian banking sector.

e) Limitation of the study

Due to the limited time and availability of data, the researcher was unable to enter in possession of more recent financial statements from the bank.

Chapter Four

IV. Presentation of Results and Analysis

a) Presentation and analysis of secondary data results

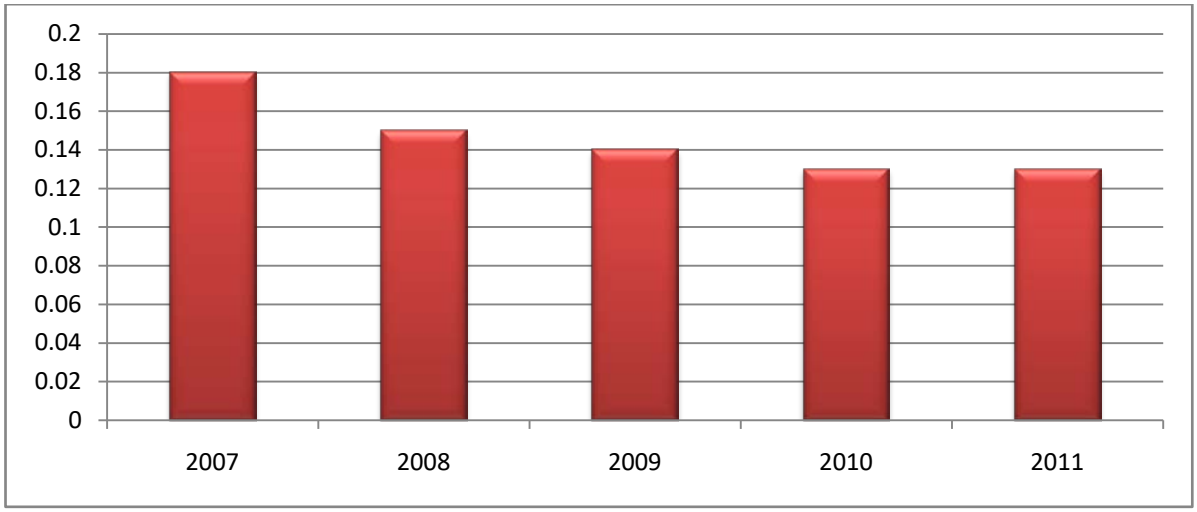
i. *Presentation of trend analysis*

Ratios were calculated and inserted in Tables as follows.

Table 1: BICEC NPL to total loans ratios (2007-2011)

Year	NPL to Total Loans Ratio
2007	0.18
2008	0.15
2009	0.14
2010	0.13
2011	0.13

Source: author (2014)



Source: author (2014)

*Figure 1:*Trend of NPL to total loan ratio

As seen from Table1 and Fig1 above, the bank's NPL to total loans ratio was at his pick in 2007 at 0.18 and it went lower from then till 2011 namely from 0.18 to 0.13. This indicates that the bank has been able to reduce the level of its NPL which is quite a good trend.

*Table 2:*BICEC total loans to deposits ratio (2007-2011)

Year	Total Loans to Deposits ratio
2007	0.56
2008	0.64
2009	0.73
2010	0.64
2011	0.70

Source: author (2014)

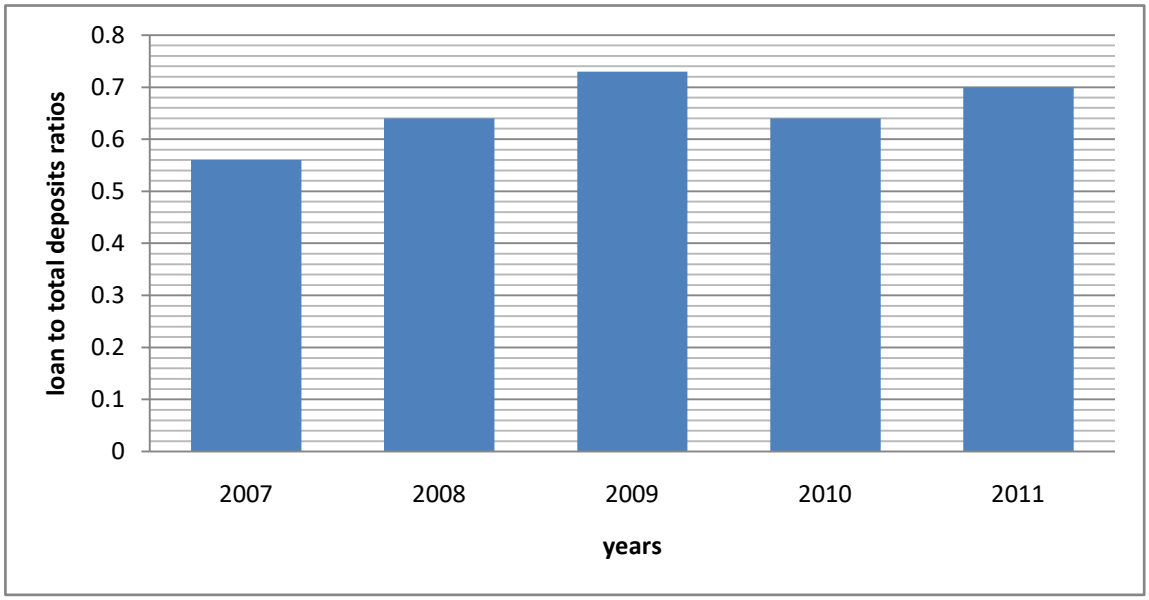


Figure 2: Trend of loan to deposits ratios

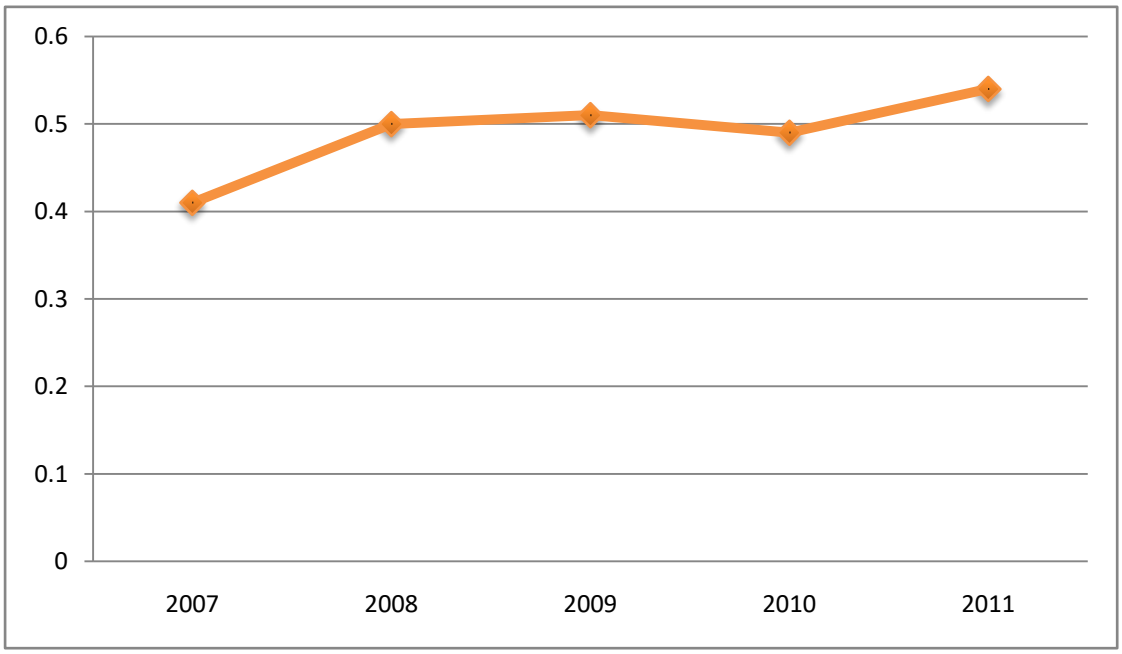
Source: Author (2014)

The loan to deposit ratio indicates the proportion of deposits that is constituted by loans. Therefore, from table2 and Fig2 above, we see that BICEC increased its loans to deposits ratio from 0.56 to 0.73 respectively in 2007 and 2009, indicating that more loans were given out that period only from deposits. But, in 2010, this dropped to 0.64 probably due to liquidity problems, the bank may have decided to lower it, and at 2011, it tends to rise again to 0.70 which may be a little risky.

Table 3: BICEC loans to total assets ratios (2007-2011)

Year	Loans to Total Assets Ratios
2007	0.41
2008	0.50
2009	0.51
2010	0.49
2011	0.54

Source: author (2014)



Source: author (2014)

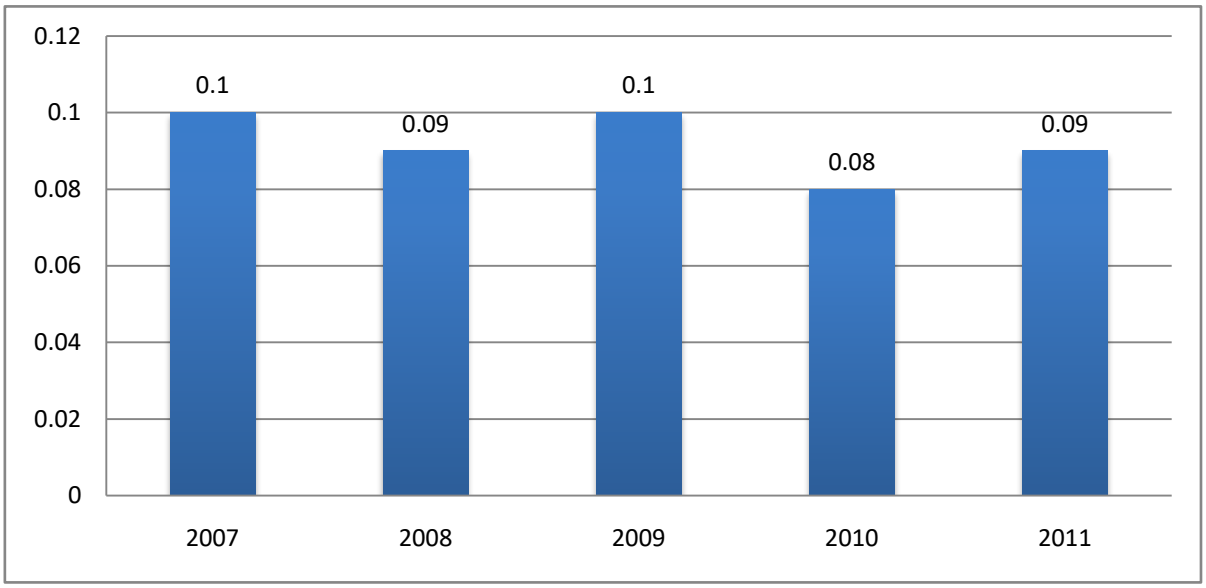
Figure 3: Trend of loans to total assets ratios

The loans to total assets ratio measures the extent to which total assets are composed of loans. Therefore, as seen in table 3 and fig 3 above, this ratio rises from 0.41 to 0.51 from 2007 to 2009. But, it felt to 0.49 in 2010 and rose back to 0.54 in 2011. This is because in 2010, there was a marginal increase in the bank's total assets due to its subscription to buy government bonds issued during that period and still maintained its loans at the current level.

Table 4: NPL to total deposits ratio of BICEC (2007-2011)

Year	NPL to Total Deposits ratios
2007	0.10
2008	0.09
2009	0.10
2010	0.08
2011	0.09

Source: author (2014)



Source: author (2014)

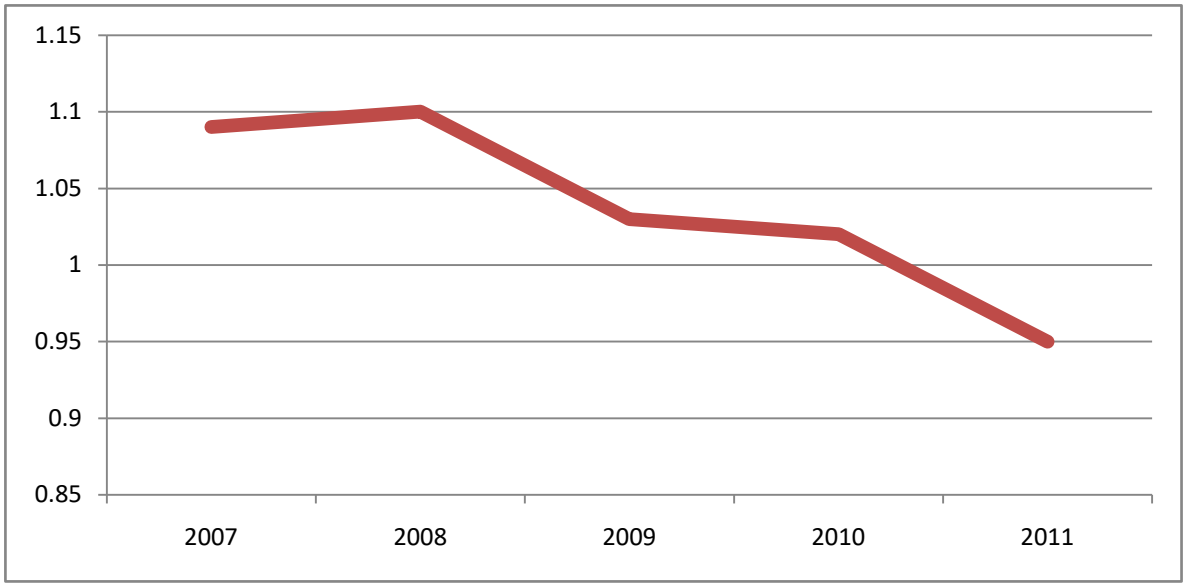
Figure 4: Trend of NPL to total deposits ratios

As seen in table 4 and fig 4 above, the NPL to total deposits which indicates the proportion of total deposits that are constituted by NPL, is quite fluctuating over the years but do not go lower than 8% nor greater that 10%. This shows that BICEC is able to maintain the amount of NPL to total deposits at a minimum.

Table 5: BICEC loan provision to NPL ratios (2007-2011)

Year	Loan Provision to NPL ratios
2007	1.09
2008	1.10
2009	1.03
2010	1.02
2011	0.95

Source: Author (2014)



Source: author (2014)

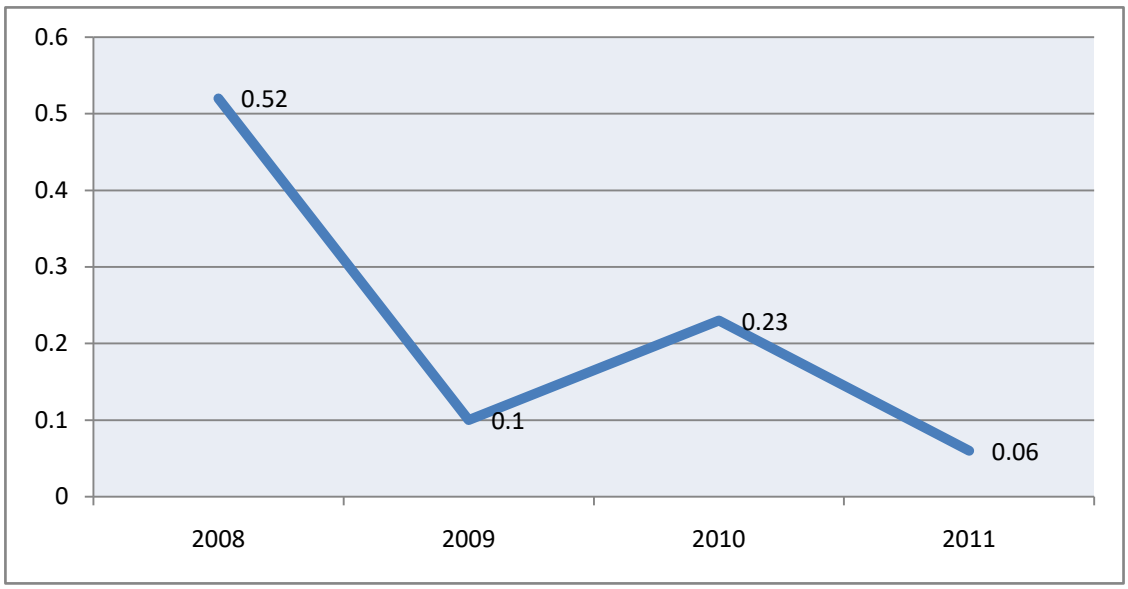
Figure 5: Trend of loan provision to NPL loan ratios

As seen above in both table 5 and Fig 5, there is a slim increase from 1.09 to 1.10 from 2007 to 2008. But from then, the ratio goes decreasingly right to 0.95 in 2011. This indicates that the institution has been able to cover its NPL from 2007 to 2010 because the ratios are greater than 1.00. On the other hand, this was not the case in 2011 where the ratio 0.95 shows that the loan provision for that year has just been able to cover up to 95% of the NPL which reveals an uncovered 5%.

Table 6: Percentage change in Profits (2007-2011)

Year	Percentage Changes
2007-2008	0.52
2008-2009	0.10
2009-2010	0.23
2010-2011	0.06

Source: Author (2014)



Source: author (2014)

Figure 6: Trend of percentage changes in profits

As seen above from table 6 and Fig 6, the percentage change in profits of BICEC drastically dropped from 2008 to 2009, namely from 52% to 10%. This can be probably due to other factors such as investments undertaken during that period such as new branches creation and renovation of existing ones. But the ratio rose to 23% in 2010 and again dropped to the lowest in 2011 at 6%. This shows that the bank is not able to maintain certain constancy in the percentage changes in its profits.

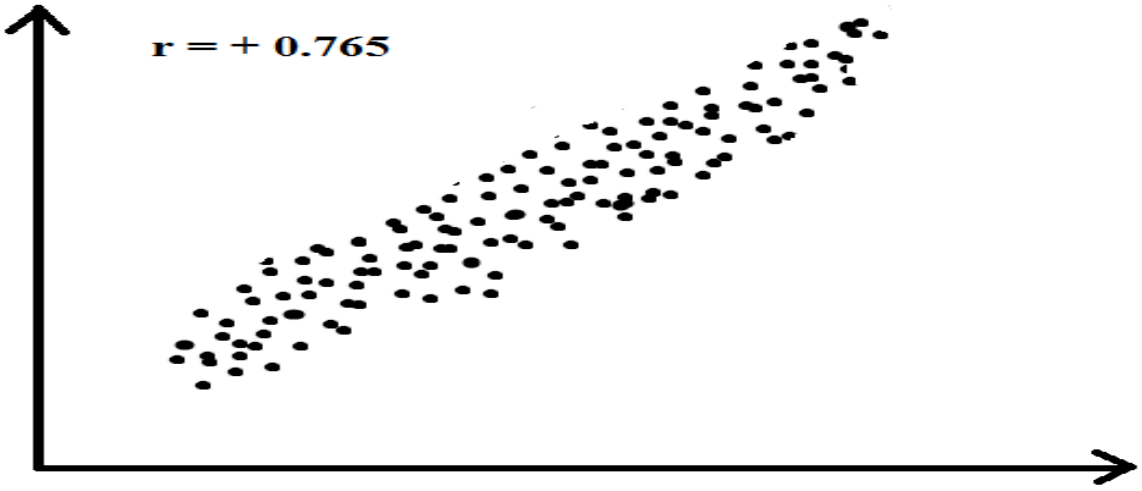
ii. *Presentation of correlation analysis*

In order to further the analysis to be more efficient, we will use the correlation between these variables so that we can have a better view of the ratios. The correlation was done over 4 years.

Table 7: Correlation results of NPL to total loans ratios (X) and percentage changes in profits (Y) for 2007-2011.

Year	X	Y	XY	X^2	Y^2
2008	0.15	0.52	0.0780	0.0225	0.2704
2009	0.14	0.10	0.0140	0.0196	0.0100
2010	0.13	0.23	0.0299	0.1690	0.0529
2011	0.13	0.06	0.0078	0.1690	0.0036
SUM	0.55	0.91	0.129	0.7590	0.8130

Source: Author (2014)



Source: author (2014)

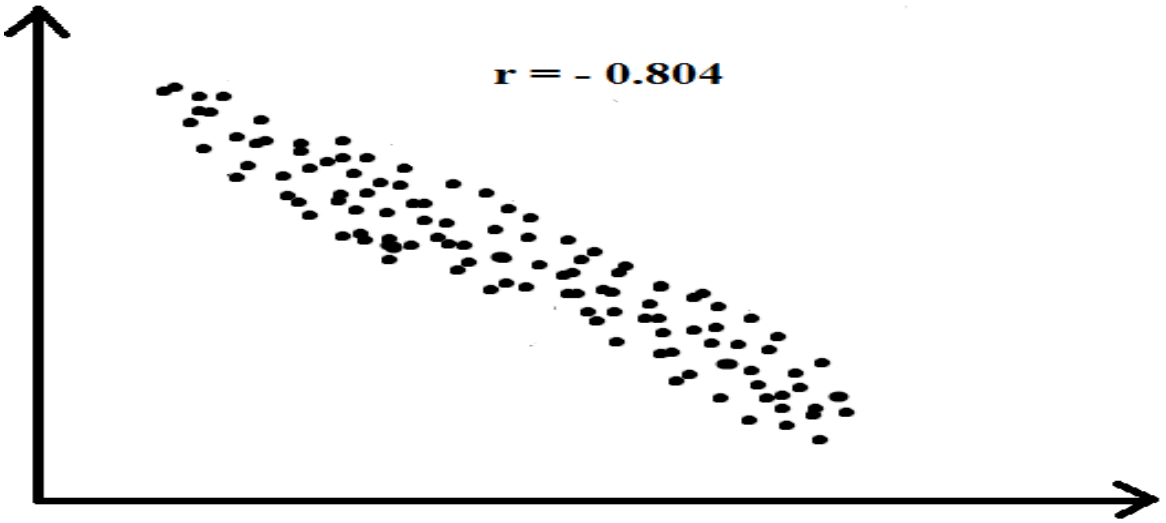
Figure 7: Representation of the correlation between NPL to total loans ratios and percentages

Therefore, $r^2 = 0.585$, which means that there is a strong positive correlation between BICEC's percentage changes in profits and its NPL to total loans ratios. This means that the variation in percentage change in profit moves the same way as variations in NPL to total loans ratios. If one increases, it will cause the other to do such. This indicates that only 58% of the variation in percentage change in profitability is due to NPL to total loans ratio of BICEC.

Table 8: Correlation results of total loans to deposits ratios (X) and percentages change in profits (Y)

Year	X	Y	XY	X^2	Y^2
2008	0.64	0.52	0.3328	0.4096	0.2704
2009	0.73	0.10	0.0730	0.5329	0.0100
2010	0.64	0.23	0.1472	0.4096	0.0529
2011	0.70	0.06	0.0420	0.4900	0.0036
SUM	2.71	0.91	0.5950	1.8421	0.8130

Source: author (2014)



Source: author (2014)

Figure 8: Representation of the correlation between total loans to deposits ratios and percentages

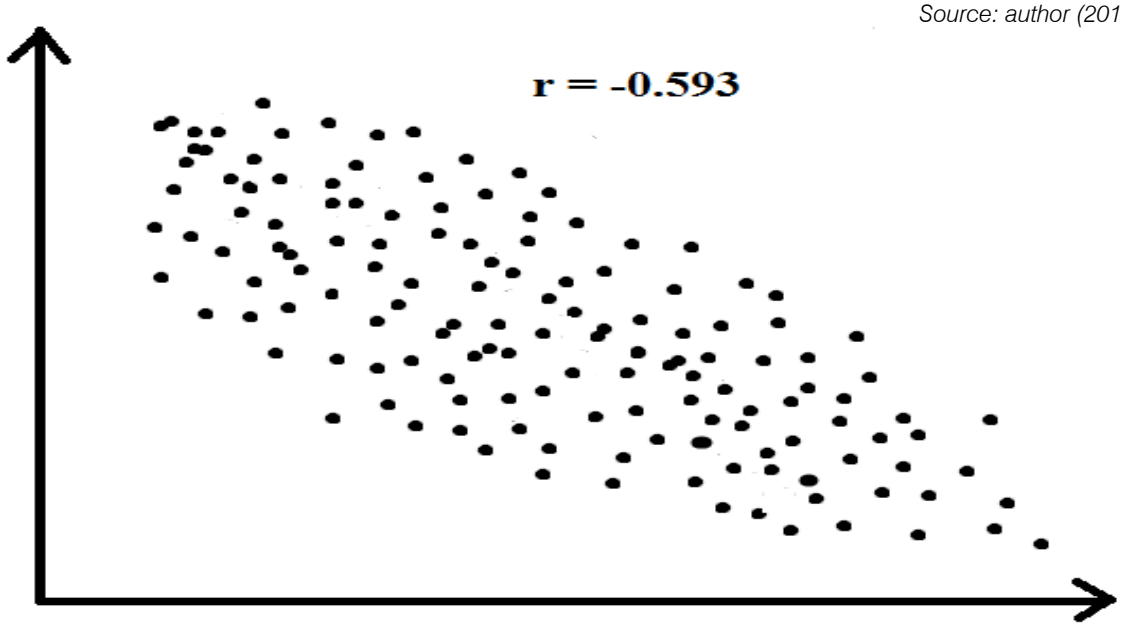
Using the formula, $r = -0.804$ thus, $r^2 = 0.65$, meaning that there is a strong negative correlation between X and Y which are the bank's Loan to deposit ratios and the percentage changes in its profits respectively. Any increase in loan to deposit ratio will lead to a decrease in the BICEC percentage change in profitability.

This implies that 65% of BICEC percentage change in profits is due to their loans to deposits ratio. Or put another way, 35% of variation of the percentage change in profit is due to factors other than loan to deposit ratios. In other words the more loans are taken from deposits, the lesser the profits realized.

Table 9: Correlation results of loan to total assets ratios (X) and percentages changes in profits (Y)

Year	X	Y	XY	X^2	Y^2
2008	0.50	0.52	0.2600	0.2500	0.2704
2009	0.51	0.10	0.0510	0.2601	0.0100
2010	0.49	0.23	0.1127	0.2401	0.0529
2011	0.54	0.06	0.0324	0.2916	0.0036
SUM	2.04	0.91	0.4561	1.0418	0.8130

Source: author (2014)



Source: author (2014)

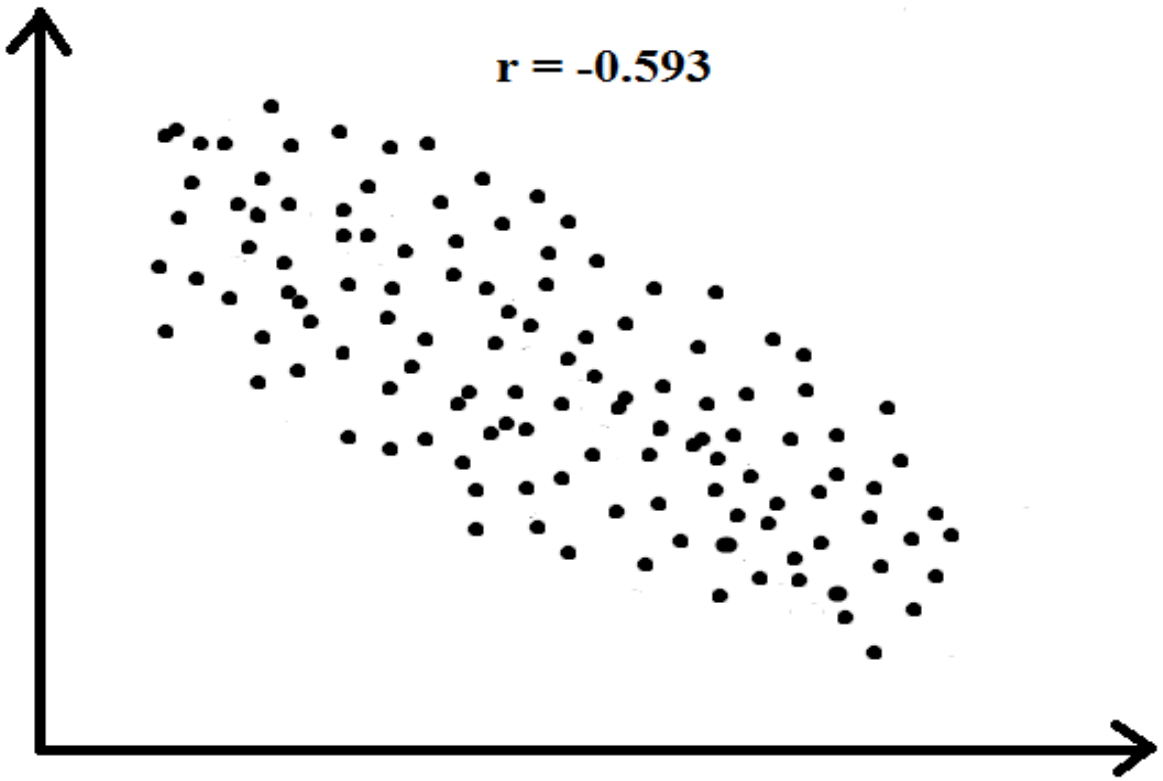
Figure 9: Representation of the correlation between loan to total assets ratios and percentages

The correlation coefficient from these series is: $r = -0.593$ and $r^2 = 0.35$. This indicates that there is a strong negative correlation between BICEC's percentage changes in profits and its loan to total assets ratios over the years. This means that only 35% of variation of the percentage change in BICEC profits is not due to the value of its loan to total assets ratio.

Table 10: Correlation results of NPL to total deposits ratios (X) and percentages changes in profits (Y)

Year	X	Y	XY	X^2	Y^2
2008	0.09	0.52	0.0468	0.0081	0.2704
2009	0.10	0.10	0.0100	0.0100	0.0100
2010	0.08	0.23	0.0184	0.0064	0.0529
2011	0.09	0.06	0.0054	0.0081	0.0036
SUM	0.36	0.91	0.0806	0.0326	0.8130

Source: author (2014)



Source: author (2014)

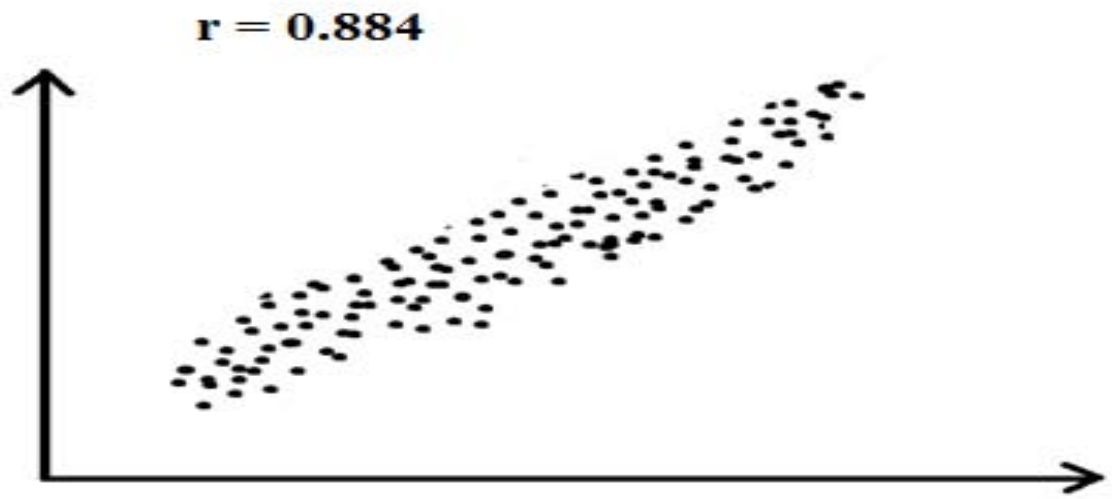
Figure10: Representation of the correlation results of NPL to total deposits ratios and percentages

The correlation coefficient is $r = -0.255$ thus, $r^2 = 0.065$. This shows that there is a weak negative correlation between the bank's profit percentage changes and its NPL to total deposits ratios over the years, revealing also that only 6.5% of variation of the bank's profits percentage changes is due to its NPL to total deposits ratios.

Table 11: Correlation results of loan provision to NPL ratios (X) and percentages changes in profits (Y).

Year	X	Y	XY	X^2	Y^2
2008	1.10	0.52	0.5720	1.2100	0.2704
2009	1.03	0.10	0.1030	1.0609	0.0100
2010	1.02	0.23	0.2146	1.0404	0.0529
2011	0.95	0.06	0.0570	0.9025	0.0036
SUM	4.1	0.91	0.9466	4.2138	0.8130

Source: author (2014)



Source: author (2014)

Figure 11: Representation of the correlation between loan provision to NPL ratios and percentages

The correlation coefficient is $r = 0.884$ therefore, $r^2 = 0.781$. The results indicate that there is a strong positive correlation between BICEC's percentage changes in profits and its Loan Provision to NPL ratios over the years. It also reveals that 78% of variation in percentage changes in profits of BICEC is due to its loan provision to NPL ratio. An increase in loan provision to NPL ratio is associated with an increase in the percentage changes of profits.

Chapter Five

V. Summary, Conclusion and Recommendations

a) Summary of the study

The study sought to examine the impact of credit risk management on commercial banks performance. In order to achieve this, first, a good number of concepts were developed and discussed; also, other researchers' works on this area were brought forward to bring more light to the research. Our conceptual literature emphasized on the various concepts such as risk, loans, credit risk, credit risk management, commercial banks, performance and its determinants, bringing out for each concept various definitions and explanations from different authors. Then we went further to elaborate on the various types of risk that affect banks; they include: interest rate risk, market risk, liquidity risk, currency risk, operational risk, off-balance sheet risk, reputation risk, legal risk, strategic risk and capital risk. More so, we developed on credit risk management since it is the key area of focus of the study; where we gave the various tools and/or techniques used by banks such as avoidance, diversification in lending, screening, compensating balances and monitoring business transactions, long term customer relationship, loan commitments, collateral requirements, credit rationing, specialization and credit derivatives. After which, some empirical works were mentioned, followed by credit risk management theories and models including the portfolio theory, the asset-by-asset approach and the traditional approach.

Using a descriptive research design, we gathered secondary data from BICEC's financial statements extracted from its annual reports (2007-2011) and any other related document. The data collected on loans, deposits, total assets, NPL and profits over the period of study were then analyzed using inferential statistics and used to compute credit risk management ratios and correlation between those ratios and percentage changes in the bank's profitability values for the period and presented both in tables and charts and graphs.

In this section, the data collected for 5 years (2007-2011) from BICEC have been analyzed using ratio analysis and correlation coefficients between variables. Table 1 to 6 present descriptive statistics of the various ratios computed based on financial statements of the periods. The study revealed that: For BICEC's NPL to total loans ratios, the maximum was attained in 2007 at 18% and minimum in both 2010 and 2011 at 13%. This ratio indicates the proportion of the total loans that are not performing. On the other hand, total loans to total deposits reached their maximum value in 2009 at 73% and minimum in 2007 at 56%. This shows that BICEC increased its loans proportion from deposited funds. But it is worth to attend to it as it is rising back to 70% in 2011. This is almost the same regarding its total loans to

total assets ratios which went increasingly from 2007 to 2011 respectively from 0.41 to 0.54. Regarding the institution's NPL to total deposits ratios, table 4 shows that there is an average ratio of 9% with a maximum of 10% attained both in 2007 and 2009, and a minimum of 8% in 2010. It shows that there is still a certain degree of default risk. Moreover, the bank has been able to cover its NPL over the first 4 years. But as seen in table 5 and Fig5, the trend of the loan provision to NPL loans ratio is decreasing over time as from 2008 revealing that there are not sufficient tools to monitor, control and cover those NPL because it even went worst in 2011 where the bank has not been able to cover all NPL as in the precedent years but just up to 95% of it.

The correlation matrices in Table 7 to 11 indicate the degree of correlation between each pair of variables. Therefore, Table 7 and 11 show a significant relationship and to be more precise, a strong positive correlation between percentages changes in profits to NPL to total loans ratios on one hand and loan provision to NPL ratio on the other hand. The findings indicate thus that all the risk management indicators have a direct relationship with performance. On the other hand, table 8 and 9 show the degree of correlation between each pair of variables; namely percentage changes in profits (dependent) and both total loans to total deposits ratios and loans to total assets ratios (both independent) and from correlation results obtained, the variables are negatively correlated. However, the findings indicate that these ratios are directly related to the bank performance but negatively. Thus, the lower these ratios, the more profits are made and vice versa. Furthermore, observations from Table 10 and Fig 10 reveal that there is a weak negative correlation between the dependent and independent variables respectively percentage changes in profits and NPL to total deposit ratios. However, this relationship is not significant which indicates that there is no any relationship between the bank's performance and the NPL to total deposits ratio.

b) Conclusion

The general objective of the study was to examine the effects of credit risk management on performance of commercial banks and our specific objectives were to find out the various risk management tools used by banks to manage credit risk and to evaluate loan assessment techniques used by the institution.

The results of the research showed that credit risk management is an important predicator of a bank financial performance; thus bank's performance depends on credit risk management.

The study also showed that the NPL to total loans ratio as one of the risk management indicators is a major predicator of the bank financial performance to the extent of 58%, and followed by both total loan to total deposits ratio and loans to total assets ratio which both affect financial performance negatively by respectively 65% and 35%.

Credit risk management is very crucial to the bank performance since it has a significant relationship with bank performance.

c) Recommendations

Based on the findings above, the following recommendations were made which can be used to improve the credit risk management of the institution so as to improve the financial performance:

First, the bank's loan to deposit ratio should be kept around 65% so that it will not put the bank at a liquidity risk situation; this is because if majority of loans are made from deposits, in case there is illiquidity due to non-repayment of the loans issued, it may lead to a bank run and thus create at the same time a reputation risk.

Then, the bank should as much as possible be able to maintain its loan provision to NPL ratio at about 1.25. This is to avoid any situation of uncovered loans. In the case NPL are not fully covered, obviously it implies a loss. Thus, the bank's provisions for bad debts should out raise the amounts of NPL as time goes.

Since credit risk management has an important contribution to the bank's performance, the institution should put more accent on its loan assessment techniques and accurately evaluate credit applications before issuing funds so that there will no longer be NPL in its financial statements, even though the risk is always present but it should be minimized to its fullest by minimizing the NPL to total loans ratio.

Banks must adhere to prudential banking practices and even diversify more in lending to avoid repetitive losses in particular types of loan issued to their customers.

BICEC should have adequate provision for doubtful debts and renegotiate loan terms for insolvent customers and even extend their credit maturity.

Appendix

Appendix 1: Consolidated figures extracted from BICEC Balance sheets and Income statements.

YEAR	TOTAL DEPOSITS	TOTAL LOANS	TOTAL ASSETS	NPL	LOAN PROVISION	PROFITS
2007	326273	183097	441521	32819	35952	7023
2008	349081	224842	447854	33096	36585	7386
2009	356689	259632	505220	37112	38327	8141
2010	454434	286130	581037	37306	38001	10024
2011	472072	329475	602673	43050	40645	10644

Source: BICEC Annual reports 2007-2011

Appendix 2: Formulae used

Correlation

$$r = \frac{n(\Sigma XY) - (\Sigma X)(\Sigma Y)}{\sqrt{[n(\Sigma X^2) - (\Sigma X)^2][(n(\Sigma Y^2) - (\Sigma Y)^2]}}$$

Where (Y) dependent variable and (X) independent variable.

Ratios formulae:

NPL to total loans ratio = NPL / total loans

Loans to total deposits ratio = total loans / total deposits

Loans to total assets ratio = total loans / total assets

NPL to total deposits ratio = NPL / total deposits

Loan provision to NPL ratio = loan provision / NPL

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La Neutralisation Des Mécanismes De Gouvernance: Quelles Stratégies Pour Le Dirigeant ?

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Résumé- La présente étude a pour objectif de mettre en évidence quelques stratégies déployées par le dirigeant pour accroitre son pouvoir discrétionnaire au sein de leur entreprise. Une analyse minutieuse de la littérature sur la gouvernance d'entreprises nous a permis de mettre en évidence deux moyens que le dirigeant dispose pour augmenter son pouvoir discrétionnaire. Il peut d'une part exploiter les mécanismes internes de contrôle liés à son pouvoir (stratégie de dissuasion) oudévelopper les actions visant à manipuler des instances de contrôle (stratégie de manipulation) d'autre part.

Motsclés: mécanismes de gouvernance, pouvoir discrétionnaire, stratégie de dissuasion, stratégie de manipulation, dirigeant.

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La Neutralisation Des Mécanismes De Gouvernance: Quelles Stratégies Pour Le Dirigeant ?

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Motsclés: mécanismes de gouvernance, pouvoir discrétionnaire, stratégie de dissuasion, stratégie de manipulation, dirigeant.

I. Introduction

Les multiples scandales financiers qui ont eu lieux dans les années 2000 sur le plan international (Enron en 2001, Worldcom en 2002 aux Etats-Unis, Crédit Lyonnais et Vivendi Universal en France, Parmalat en Italie) ont remis en scène les faiblesses des mécanismes de gouvernance de l'heure, matérialisées par la mauvaise gestion, la corruption et les détournements de fonds. Ces faits constituent d'ailleurs les principaux chefs d'accusations et de limogeage de plusieurs dirigeants d'entreprise, que ce soit le Directeur Général, le Président Directeur Général ou le Président du Conseil d'Administration.

En réponse à ces différents scandales financiers ou à la faillite des entreprises citées ci-dessus, plusieurs pays, motivés par une volonté de transparence et de responsabilisation accrues, et par le désir d'accroître la confiance des investisseurs dans les marchés boursiers, ont renforcé les cadres règlementaires et législatifs régissant les principes de bonne gouvernance dans la perspective de réduire les asymétries d'informations entre dirigeant et autres parties prenantes de l'entreprise. A titre illustratif, on peut citer la loi SOX aux Etats-Unis, les principes de l'OCDE en Europe. La gouvernance d'entreprise étant définit selon Shleifer et Vishny (1997) comme l'ensemble des mécanismes par lesquels les apporteurs de capitaux d'une firme garantissent eux-mêmes la rentabilité de leur investissement. Charreaux (1997), proposant une approche plus large, définit la gouvernance d'entreprise comme l'ensemble des mécanismes qui gouvernent le comportement des dirigeants et délimitent leur latitude discrétionnaire.

Malgré le renforcement de ces mécanismes de gouvernance, certains dirigeants opportunistes, en cherchant la maximisation de leur fonction d'utilité, se dotent d'une capacité d'adaptation et de créativité pouvant leurs être utiles pour développer des stratégies afin d'échapper à la discipline des mécanismes mis en place pour contrôler leur gestion. Charreaux (1997) et Paquerot (1997) désignent de telles stratégies de « stratégies de neutralisation des mécanismes de gouvernance » ou stratégies d'enracinement pour certains auteurs (Shleifer et Vishny, 1989). Selon Charreaux (1997) et Paquerot (1997), elles se définissent comme l'ensemble des manœuvres utilisées par les dirigeants pour contourner les mécanismes de contrôle dans le but d'étendre leur pouvoir discrétionnaire[1]. Pochet (1998) quant à elle, les définies comme l'ensemble des moyens qui visent à dissuader les contrôleurs de jouer leur rôle disciplinaire et à biaiser le jugement qu'ils conçoivent à l'égard du dirigeant. Pigé (1998) définit ces stratégies comme «le processus qui permet aux dirigeants de se libérer du contrôle du conseil d'administration ou même de leurs actionnaires ». Ainsi, cet article s'interroge sur *Comment les dirigeants procèdent-ils pour neutraliser les mécanismes de gouvernance destinés à contrôler leur gestion ?*

Cet article a donc pour objet de mettre en évidence les différentes stratégies déployées par les dirigeants pour neutraliser les mécanismes de gouvernance dans le but d'accroitre leur pouvoir discrétionnaire. Dans la littérature (Pochet, 1998), il ressort que le dirigeant peut exploiter les mécanismes internes de contrôle ou procéder à la manipulation de ses évaluateurs.

Pour atteindre cet objectif, les développements consacrés au présent travail sont organisés en deux parties : la première présente les actions issues de

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[1] Selon Charreaux (1997), le pouvoir discrétionnaire désigne la zone du pouvoir du dirigeant qui échappe au contrôle des stakeholders

l'exploitation par le dirigeant des mécanismes internes de contrôle alors que la deuxième présentera les actions destinées à manipuler les évaluateurs (conseil d'administration).

II. De La Dissuasion a La Neutralisation Des MecanismesDe Gouvernance

La plupart des travaux en gouvernance d'entreprise se sont longtemps appesantis sur la recherche des moyens efficaces pour contrôler les actions des dirigeants sans toutefois penser réellement à la contre-attaque des dirigeants à leur égard. Si d'après la théorie de l'agence, le dirigeant subit l'effet de ces mécanismes en étant souvent inerte, les théories récentes de la gouvernance d'entreprise telle la théorie de l'enracinement notamment, fournissent un éclairage pertinent sur l'existante d'un comportement actif du dirigeant.

Pour accroitre son pouvoir discrétionnaire au sein de l'entreprise, le dirigeant a la possibilité d'exploiter deux mécanismes internes de contrôle liés à son pouvoir. Il s'agit d'une part de son cumul de fonctions de direction et de présidence du conseil d'administration et d'autre part de sa participation au capital social de l'entreprise.

a) *La participation du dirigeant au capital social de l'entreprise*

La participation du dirigeant au capital social de l'entreprise entraine selon la littérature deux effets : l'effet d'incitation et l'effet d'enracinement (Jensen and Mechling, 1976 ; Shleifer et Vishny 1997). Selon la théorie de l'agence, la divergence d'intérêt entre dirigeants et actionnaires peut être limitée par la participation des dirigeants au capital de l'entreprise. Pour Jensen et Mechling (1976), une participation importante du dirigeant au capital social de l'entreprise devrait permettre d'aligner les intérêts du dirigeant sur ceux des actionnaires. La participation du dirigeant au capital social de l'entreprise serait donc perçue selon ces deux coauteurs comme un effet incitatif sur le dirigeant. Cette vision de Jensen et Meckling (1976) sur l'effet de la participation du dirigeant au capital social de l'entreprise, a été critiquée par Fama et Jensen (1983). Ces derniers affirment qu'au lieu de réduire les problèmes d'opportunisme managérial, la participation du dirigeant au capital pourrait favoriser l'enracinement du dirigeant et augmenter les coûts d'agence. En ayant un pourcentage élevé du capital de l'entreprise, le dirigeant serait capable selon Fama et Jensen (1983), de neutraliser les mécanismes de contrôle. Shleifer et Vishny (1989) insinuent pour leur part que, plus le dirigeant détient une part importante du capital, moins est le pouvoir que les autres actionnaires détiennent dans l'entreprise. Son pouvoir sur les autres actionnaires sera donc fonction de son taux de participation au capital. Vu sur cet angle, une large participation du dirigeant au capital de l'entreprise augmenterait d'après ces deux co-auteurs, sa capacité à prendre des décisions qui ne maximisent pas nécessairement la valeur de l'entreprise mais, plutôt permettent l'amélioration de leur richesse et de leur sécurité d'emploi (hypothèse de l'enracinement).

La preuve empirique apportée par Bebchuk et al. (2009) montre qu'un dirigeant puissant au sens de Diga et Kelleher (2009), c'est-à-dire qui détient les actions de l'entreprise est plus discrétionnaire et influence à souhait les décisions stratégiques de la firme. Suivant cette preuve empirique et les considérations de Shleifer et Vishny (1989), une large contribution des dirigeants au capital social de l'entreprise lui donne suffisamment de droit de vote pour influencer les décisions du conseil d'administration. Ils auront par exemple la possibilité d'entreprendre des investissements spécifiques en complément de leurs propres compétences qui, en même temps renforcent leur pouvoir de négociation et les rend difficilement remplaçable.

Dans le souci d'accroitre les avantages liés à son poste (une plus grande autonomie de décision, faire valoriser son capital humain, rendre coûteux son remplacement, assurer son emploi, obtenir une rémunération plus attrayantes), le dirigeant d'entreprise se sert du pourcentage du capital qu'il détient dans l'entreprise pour neutraliser les mécanismes de gouvernance destinés à le surveiller (Fama et Jensen, 1983 ; Shleifer et Vishny, 1989 ; Bebchuk et al., 2009 ;Cheikh, 2014)

b) *Le cumul de fonctions de direction et de présidence du conseil par le dirigeant*

Les cadres réglementaires et législatifs (la loi SOX au Etats-Unis) et des règles « de bonne gouvernance d'entreprise » édictés ou proposés par divers organismes réglementaires ou professionnels comme l'OCDE mettent l'accent sur la séparation des fonctions de direction et de présidence du conseil d'administration. D'après les théoriciens de l'agence, il est nécessaire de séparer les rôles du directeur générale de celui du Président du conseil d'administration (Mallette et Fowler, 1992) pour rendre efficace le conseil d'administration.

Le dirigeant, animé par son opportunisme préfère exécuter en même temps les fonctions de direction et de présidence du conseil d'administration. Il utilise donc le cumul de fonctions comme une stratégie de neutralisation ou de contournement des mécanismes de gouvernance mis en place pour aligner ses intérêts sur ceux des propriétaires. La preuve empirique apportée par bon nombre d'auteurs (Jensen, 1993 ; Kang et Zardkoohi., 2005 ; Lam et Lee, 2008 ; Rachdi et Gaied, 2009 ; Booth et al. 2002) confortent cette idée en soulignant que le cumul de fonctions favorise l'enracinement et réduit l'efficacité des mécanismes de

gouvernance à exercer un contrôle objectif de la gestion des dirigeants.

La neutralisation des mécanismes de gouvernance par le dirigeant rend inefficace ces mécanismes. Ceci est dû au fait que le cumul de fonctions de président du conseil et de directeur général est susceptible d'influencer l'efficacité du conseil. Il peut par exemple favoriser la nomination d'administrateurs plus enclins à servir ses intérêts que ceux des actionnaires qu'ils sont censés représenter (Moussa et al., 2013). De plus, la présence du directeur général au sein du CA contraint l'indépendance de ce dernier et estompe en quelque sorte son rôle. Le cumul de fonctions accorde plus de pouvoir au dirigeant au sein du conseil d'administration, remet en cause l'impartialité du conseil et particulièrement l'indépendance des administrateurs. Cette dualité permet, en effet, aux dirigeants d'augmenter leur pouvoir dans la firme puisqu'ils disposent d'une forte asymétrie informationnelle par rapport aux actionnaires. Ils bénéficient d'un accès libre et direct aux ressources de la firme et ils peuvent user de la dépendance des administrateurs internes pour appuyer des décisions leur profitant au conseil d'administration (Gharbi, 2004).

Du point de vue de la théorie de l'agence, le cumul des fonctions de décision et de contrôle est considéré comme étant une éventuelle source de conflits d'intérêt. La fonction du conseil d'administration étant de nommer, de rémunérer et de révoquer le dirigeant, la présence de ce dernier à la présidence du conseil, en raison du pouvoir qui lui est conféré, est de nature à entraver le bon fonctionnement du conseil (Godard et Schatt, 2005). Jensen (1993) explique que la double fonction permet d'une part au PDG de contrôler efficacement l'information à la disposition des autres membres du conseil et d'autre part, entraîne un manque de surveillance du PDG par les autres membres du conseil d'administration. Par conséquent, l'inefficacité des mécanismes de surveillance du PDG implique une intensification des coûts d'agence dans la prise de décision de gestion. Cette dualité de fonction établit un leadership fort et sans ambiguïté de la part des dirigeants.

Suite aux implications du cumul de fonctions de direction et de présidence du conseil d'administration par le dirigeant, il est de nature évident que le cumul de fonctions soit considéré comme un moyen de neutralisation ou de contournement des mécanismes disciplinaires par le dirigeant.

Le tableau n° 1 ci-après présente la synthèse de ces différentes stratégies de persuasion mobilisées par le dirigeant pour neutraliser les mécanismes de gouvernance.

Tableau 1: Stratégies de persuasion etleurmatérialisation

Stratégie utilisées	Matérialisation	Auteurs de référence
La participation du dirigeant au capital social de l'entreprise	Le dirigeant contribue largement au capital social de l'entreprise ; ce qui lui donne suffisamment de droit de vote pour influencer les décisions du conseil d'administration.	Fama et Jensen, 1983; Shleifer et Vishny, 1989; Bebchuk et al., 2009; Cheikh, 2014
Cumul de fonctions	Le dirigeant assure en même temps les fonctions de direction et de présidence du conseil d'administration ; ce qui favorise la réduction de l'efficacité des mécanismes de gouvernance à exercer un contrôle objectif de sa gestion.	Jensen et Meckling, 1976 ; Jensen, 1993; Kang and Zardkoohi., 2005 ; Lam et Lee., 2008 ; Rachdi et Gaied, 2009; Booth et al. 2002

Source: les auteurs sur la base de la revue de la littérature

En somme, il ressort des analyses mises en évidence dans cette section que le dirigeant, exploite certains mécanismes internes de contrôle à l'instar de la propriété managériale et du cumul de fonctions afin d'accroitre son pouvoir au sein de l'entreprise. Il s'ensuit dans la section suivante qu'il peut également développer certaines actions pour faire adhérer le conseil d'administration à son projet. Pochet (1998) qualifie de telles actions de stratégies de manipulation.

III. De La Manipulation Des Evaluateurs a La Neutralisation Des Mecanismes De Gouvernance

Pour arriver à avoir une influence sur la discipline du conseil d'administration, le dirigeant développe un certain nombre de stratégies qualifiées généralement de stratégies de manipulation selon Pochet (1998). L'intention de la mise en place de ces stratégies est de modifier le jugement du conseil d'administration au profit des dirigeants. A partir de la littérature, quelques moyens d'actions permettant au dirigeant de fragiliser les mécanismes de gouvernance destinés à surveiller leur gestion. Il peut s'agir de la spécificité de ses compétence par rapport à l'entreprise ou à son secteur d'activité, de son choix d'investir que dans les actifs liés à son savoir-faire, de la rétention de certaines informations utiles pour la décision du conseil d'administration, de son appartenance à un réseau relationnel et dans une certaine mesure, de l'offre des dons à certains administrateurs importants. Il est

présenté ci-dessous la littérature ayant pour but d'expliquer de façon concrète comment le dirigeant peut utiliser chacune de ces manœuvres afin de neutraliser les mécanismes de gouvernance destinés à le contrôler.

a) La détention par le dirigeant des compétences managériales spécifiques à l'entreprise

La compétence se définit en générale comme l'ensemble de connaissances et expérience qu'une personne a acquis dans un domaine. Elle se résumerait à un savoir et à un savoir-faire. Klemp (1980) a noté que la compétence peut être définie comme un ensemble de caractéristiques intrinsèques, tandis que McClelland (1973) et Boyatzis (2008) la définissent comme les capacités qui permettent à une personne d'exercer des activités plus efficacement (Klemp, 1980; Nordhaug, 1998; Fleury et Fleury, 2001). Les compétences peuvent être construites de deux manières, par le biais de formation ou par le biais de l'éducation formelle. Robertson et al. (1999) ont affirmé que les compétences sont acquises au fil du temps. Étant donné que la compétence renvoie implicitement au niveau de connaissances, elle-même étant le fruit de la formation ou de l'expérience professionnelle, Wirtz (2006) affirme qu'elle laisse concevoir des opportunités là où d'autres personnes ne voient rien.

Selon Boyatzis (2011), les compétences managériales caractérisent une personne qui gère une entreprise ou une équipe de travailleurs. Pour Castanias et Helfat (1991), elles se traduisent par la capacité du dirigeant à planifier le développement de la firme en prenant en compte les éventuelles mutations de son environnement concurrentiel, la maîtrise des domaines d'expertise et le management des ressources humaines. De ces définitions, les compétences managériales sont comprises ici comme caractéristiques observables telles que les connaissances, les compétences ou les comportements qui contribuent à la réalisation avec succès des tâches managériales (Markman, 2007 ; Mitchelmore et Rowley, 2010; Talik et al., 2012; Van Beirendonck, 2004).

Les compétences managériales que possède le dirigeant d'entreprise doivent lui permettre de remplir pleinement ses fonctions telles que décrites par Fayol en 1916; c'est-à-dire prévoir, organiser, coordonner, commander et contrôler ; ce qui traduit la pluridisciplinarité des compétences que doit détenir un dirigeant.

Armstrong (2007), Mitchelmore et Rowley (2010) soulignent dans leurs travaux l'existence de plus de quatre cents différentes compétences référencées dans la littérature et aussi des propositions quant à leur groupement. Armstrong (2007), Wright et McMahan (2011) proposent deux principaux groupes: les compétences générales et les compétences spécifiques. Si les compétences managériales générales correspondent à des connaissances qui ne sont ni spécifiques à une entreprise en particulier ou à une fonction ou une tâche singulière au sein de l'entreprise, les compétences managériales spécifiques à la firme quant-à-elles correspondent à des compétences et connaissances maîtrisées par un dirigeant sur la base d'un corpus de connaissances collectives (capital organisationnel) propre à une entreprise donnée. Elles sont liées à l'entreprise, aux stratégies et à la structure de l'entreprise. De ce fait, ne sont pas transférables d'une entreprise à une autre. Selon Fransman (1994), la compétence managériale spécifique à la firme octroie à son détenteur des capacités directement liées aux besoins spécifiques de l'entreprise. Ces compétences permettent au dirigeant de mettre sur pied des stratégies nécessaire à la valorisation de l'entreprise et au développement d'un avantage compétitif durable.

Les dirigeants susceptibles de s'imposer ou d'entraver l'efficacité des mécanismes de gouvernance sont ceux qui détiennent en plus des compétences générales, des compétences spécifiques à l'entreprise. La détention de telles compétences par le dirigeant rend difficile son remplacement dans la mesure où elles sont non substituables et non transférables. Ce qui signifie qu'il sera quasi impossible de trouver sur le marché des dirigeants, celui qui pourra valablement substitué sans coût le dirigeant en place. Le risque de perte de telles compétences rend le conseil d'administration vulnérable de façon qu'il ne joue presque plus son rôle de surveillant.

b) Investissement du dirigeant dans les actifs ayant un lien avec son savoir-faire

L'investissement est une décision stratégique qui relève de la fonction du dirigeant et les sommes investies dépendent des capacités financières de l'entreprise. Il s'agit donc d'une grande responsabilité qui nécessite des compétences spécifiques de la part du dirigeant (Huntzinger et Louazel, 1997 ; Walid, 2007).

La spécificité des actifs fait référence à des investissements durables qui ne peuvent être redéployé sans perte de valeur productive en cas d'interruption ou d'achèvement prématuré des contrats (Williamson, 1994). Un tel investissement nécessite la compétence et la maitrise des connaissances collectives spécifiques à l'entreprise par le dirigeant, ce qui rend les actifs non transférables et inimitables pour les concurrents.

Les investissements porteurs d'innovation technologiques sont considérés comme source de danger pour lesquels les dirigeants disposent des moyens et des outils qui leurs permettent d'augmenter leurs pouvoirs discrétionnaires (Jensen, 1993). Le dirigeant investit dans les actifs ayant un lien avec son savoir-faire afin de pouvoir agir sur son environnement, augmenter son pouvoir sur les actionnaires et de s'enraciner (Paquerot, 1997).

Le choix du dirigeant d'investir uniquement dans les actifs ayant un lien avec sa compétence ne permet pas seulement au dirigeant d'asseoir son pouvoir discrétionnaire, mais de contribuer non seulement à la valorisation de l'entreprise et du dirigeant sur le marché, mais aussi à défier de potentiels concurrents. Ainsi, les dirigeants peuvent se servir de ces investissements pour constituer des barrières quant à leur révocation et à l'entrée de nouveaux dirigeants. C'est en ce sens que Wirtz (2006) affirme qu'un dirigeant qui choisit d'investir dans les actifs spécifiques à son savoir-faire aura toujours un avantage compétitif par rapport à ses concurrents sur le marché.

Stiglitz et Edlin (1995) avancent un raisonnement analogue. Selon ces co-auteurs, les dirigeants tentent d'accroître l'incertitude sur les activités et les investissements qu'ils entreprennent afin de les rendre plus complexes et difficiles à entreprendre en cas de leur révocation par le conseil d'administration. L'enracinement par opportunisme des dirigeants devient ainsi possible dans ces entreprises où l'activité est complexe et créatrice d'asymétrie d'information envers les parties prenantes de l'entreprise, qui ne disposent pas d'informations précises sur l'activité en question.

Dans le même ordre d'idée, Begné (2012) souligne que l'investissement dans les actifs spécifiques renvoie au risque moral qui traduit l'action cachée du dirigeant (l'agent), et qui apparaît à chaque fois qu'il prend une décision que l'actionnaire (le principal) ne comprend pas et ne peut donc pas contrôler. Pour Castanias et Helfat (1991), les investissements spécifiques ne sont pas considérés comme des outils pour s'enraciner, mais comme un moyen de préserver le capital managérial spécifique du dirigeant et d'aligner ses intérêts sur ceux des actionnaires.

Il en ressort en définitive que le choix du dirigeant d'investir uniquement dans les actifs ayant un lien avec sa compétence rend le conseil d'administration dépendant de lui. Ceci se manifeste par la complexité des projets qu'il entreprend. Ces projets engendrent pour l'entreprise des coûts de développement et de contrôle très élevés, en plus d'une rentabilité incertaine au point où les actionnaires sont obligés de maintenir les dirigeants actuels car, leur révocation peut coûter plus cher que la perte engendrée par leur opportunisme (Cherif, 1999 cité par Affes et Chouabi, 2007).

c) La rétention de l'information par le dirigeant

L'information est considérée dans la littérature managériale comme une source de contrôle et de pouvoir et donc une source de valorisation d'une catégorie d'acteurs par rapport à d'autres. C'est ainsi que Pfeffer (1982) la considère comme une ressource essentielle pour les organisations. Selon ce dernier, sa détention constitue une source importante de pouvoir pour les acteurs qui la détiennent. Le dirigeant recherche, produit, diffuse ou retient l'information qu'il reçoit; ce qui traduit son comportement actif. La recherche continue de l'accroissement de la richesse de l'entreprise ou de ses intérêts personnels, explique les raisons qui poussent le dirigeant à la retenir.

Depoers (2009) définit la rétention de l'information comme le fait pour le dirigeant d'arrêter de diffuser en N+1 une information qui l'était en N. Elle constitue de ce fait un moyen dont dispose le dirigeant pour échapper au contrôle des actionnaires. Les tentations qu'il subit le poussent généralement à vouloir contrôler l'accès à cette information, à garder son privilège et surtout à en restreindre l'accès à d'autres partenaires de la firme (Gharbi, 2004). Si un dirigeant se comporte ainsi, c'est dans le but de dissimuler la véritable situation de la société.

Les dirigeants s'abstiennent de publier la bonne information en temps opportun pour garantir la sécurité de leur emploi vis-à-vis des concurrents. Ils peuvent ainsi dissiper l'incertitude en avançant la diffusion des informations favorables et en retardant celle des informations défavorables (Hirshleifer, 1993).

Depoers (2009) distingue trois assertions de la rétention de l'information: La dissimulation d'informations, le retard de publication de certaines nouvelles et la non-publication d'informations.

– La dissimulation de l'information

De par sa position stratégique, le dirigeant a un accès privilégié à l'information. Il peut également user de son autorité hiérarchique afin de se faire délivrer une information laudative de son propre bilan (Chatelin et Trebucq, 2003).

Cette manipulation de l'information est une des manifestations de l'opportunisme du dirigeant. La manipulation de l'information se situe selon Begné (2012), dans l'hypothèse de sélection adverse qui met en exergue la politique d'information ou de désinformation des dirigeants. Le principal (l'actionnaire) prend en effet une décision qu'il juge bonne, mais sa connaissance imparfaite de l'environnement l'incite à agir à l'encontre de ses propres intérêts. L'asymétrie de l'information joue donc en faveur des dirigeants. A titre illustratif, au Cameroun et dans la plupart des pays africains, l'information comptable est généralement manipulée par les dirigeants d'entreprise dans le but de minimiser l'assiette de l'impôt dont la conséquence directe est la réduction du montant de l'impôt à verser à l'administration fiscale (Begné, 2012). L'auteur utilise le terme « bilan habillés » pour traduire jusqu'à quel point les résultats présentés par l'entreprise à l'administration fiscale sont truqués par leur dirigeant. Dans ce même contexte, Djongoué (2007) affirme que l'énorme difficulté à laquelle font face les professionnels de la comptabilité est le secret cultivé par certains chefs d'entreprises autour des informations. Même au

commissaire aux comptes qui est présumé avoir connaissance de tous les éléments significatifs de la vie de l'entreprise, ces dirigeants se résignent à mettre à leur disposition la bonne information. Le commissaire n'étant pas « magicien », il ne peut fonder son opinion que sur les faits dont il a connaissance grâce à ses investigations ou à des recoupements effectués. Cette attitude dénote de la mauvaise foi des dirigeants qui font de la dissimulation avec la complicité de certains partenaires de l'entreprise. Par ailleurs, il dénonce la règle de « trois bilan » qui sévie au sein des entreprises camerounaises.

La sincérité, qui est une règle d'or dans la tenue de toute comptabilité se trouve donc mise en cause. Pour Depoers (2009), certaines règles rendent en effet la publication de certaines informations obligatoires mais, la latitude dont dispose le dirigeant pour appliquer ces règles rend possible leur manipulation. Le dirigeant bénéficie donc en toute légalité d'un espace discrétionnaire lui permettant de dissimuler certaines nouvelles. L'absence de transparence informationnelle et financière est une nécessité pour un dirigeant qui veut mener à bien sa stratégie d'enracinement. Toujours dans cette optique de manipulation de l'information, il peut utiliser une information privilégiée à des fins autres que celle à raison desquelles elle est détenue.

– Le retard de publication de certaines informations

Plusieurs recherches ont montré que les dirigeants ont tendance à publier rapidement les bonnes nouvelles et à retarder la publication des moins bonnes. Ainsi, Sellami (2010) affirme dans le cadre des investissements spécifiques que les dirigeants préfèrent les investissements qui leur offrent la possibilité de manipuler l'information sur les flux générés, d'agir sur la révélation des résultats, de dissiper l'incertitude, soit en avançant la diffusion des informations favorables, soit en retardant celle des informations défavorables.

Le dirigeant publie les bonnes informations et retarde les mauvaises dans l'optique de se valoriser sur le marché des dirigeants, de valoriser son entreprise sur les marché financiers afin d'attirer de nouvelles opportunités d'investissement. C'est le cas par exemple d'Enron qui, quelques mois avant sa faillite a été déclaré en bonne santé financière.

– La non publication d'informations

Elle apparaît indirectement dans les études qui portent sur les déterminants de l'offre volontaire d'informations (Depoers, 2009). Ces travaux analysent en même temps les motivations qui poussent les dirigeants à publier mais aussi à ne pas publier volontairement des informations. Dans ces études, les différents coûts de préparation, d'audit et de communication de l'information expliquent sa rétention. Akerlof (1970) dans son illustration de l'asymétrie d'information à travers son étude sur le marché des voitures d'occasion, met en exergue la sélection adverse et l'aléa moral. D'après les analyses de Williamson (1994), la non publication d'information par le dirigeant peut être considérée comme de l'opportunisme *ex-ante* et ou *ex-post*. L'opportunisme *ex-ante* consiste à la manipulation ou la non révélation de l'information avant la passation d'un contrat afin d'obtenir un accord plus favorable. Il s'agit ici d'un cas typique de sélection adverse. Une fois engagée la relation contractuelle, l'agent peut capter tout ou partie de la rente de son partenaire. L'opportunisme *ex-post* quant-à-elle est la tentation des cocontractants de changer les termes du contrat. Ainsi l'incomplétude des contrats débouche sur une réelle difficulté à vérifier la bonne exécution des termes du contrat. Le manquement aux engagements du cocontractant constitue le cas le plus grave d'opportunisme. Ces problèmes de non-exécution des contrats exposent l'autre partie à un risque moral. Ceci rend difficile la possibilité de tout individu de convaincre autrui de sa bonne foi.

Dans l'ensemble, il ressort de la littérature (Williamson, 1994 ; Depoers, 2009) que le dirigeant peut exercer un certain pouvoir sur les actionnaires grâce à la manipulation de l'information qui lui permet de garder un avantage « informationnel » et une liberté d'action. C'est ainsi que Begné (2012) soutient que l'avantage informationnel détenu par le dirigeant est souvent mis à profit pour accroître la dépendance du conseil d'administration et des autres partenaires de l'entreprise à son égard.

d) Le soutien du dirigeant par son réseau relationnel

Le réseau relationnel désigne le nombre de liens directs entretenus entre le dirigeant et les différentes autres catégories d'individus, dénommés « Alter » dans son réseau (Batjargal, 2001, Ping et al, 2010).

Le réseau relationnel se définit comme «*une relation stratégique, dyadique, interpersonnelle et face à face, asymétrique, relevant plus du don que de l'échange. Le réseau relationnel repose sur des bases d'ancrage qui permettent de manipuler des leviers de pouvoir, grâce à l'ambiguïté relationnelle des acteurs, capital relationnel qui semble se cumuler avec d'autres atouts sociaux et favoriser les favoris. Le réseau relationnel donne à celui qui en bénéficie la possibilité d'échapper aux règles impersonnelles et bureaucratiques, la jouissance du plaisir d'obliger et de personnaliser une action souvent anonyme, et procure l'allégeance symbolique qui produit la légitimité* » (Becquart Leclerc, 1979). Cette définition est très globalisante. En la rapportant à l'individu dont nous faisons allusion dans cette recherche, la définition précédente laisse comprendre que, le réseau de relationnel est pour le dirigeant un atout majeur dans sa politique d'enracinement.

La notion de réseau relationnel est connue par tous et a une explication relativement claire dans la mesure où elle permet aux acteurs d'obtenir une intervention ou de bénéficier d'une recommandation grâce à une relation bien placée. Chacun comprend ainsi ce que veut dire « faire jouer ses relation », « obtenir une intervention de » pour avoir accès à une grande école de formation, lorsqu'on est face à la justice, pour être recruté dans une structure… Dans la littérature en management, le réseau relationnel constitue une partie significative du capital des dirigeants. Il peut être ainsi à l'origine d'un recrutement (Allemand, 2008). En mettant en jeux ses liens d'amitié ou familiaux avec les anciens de son école, les actionnaires, les administrateurs, ou avec les autres parties prenantes, un dirigeant peut par lui-même chercher un nouveau poste. Cheikh (2014) avance en ce sens que, les réseaux jouent un rôle majeur dans le recrutement, aussi bien concernant les postes techniques que les postes de haut management. Il est à noter que les individus sur le marché du travail reçoivent et transmettent fréquemment leurs informations à travers des réseaux relationnels (Marsden et Campbell, 1990). Les dirigeants ayant un fort pouvoir décisionnel vont aménager leur environnement en choisissant leurs partenaires de façon à faciliter leurs futures négociations.

La notion de réseau peut faire référence à des relations professionnelles, développées avec des collègues de travail, des clients, des fournisseurs ou autres parties prenantes, dans le cadre de cercles patronaux, ou à des relations personnelles (cercles amicaux, formation commune…).

La sphère économique mondiale est fortement marquée par l'existence de réseaux sociaux, formels ou informels, qui permettent à leurs membres de perpétuer leurs pouvoirs ou encore d'accéder à certains privilèges. En France, la Franc-maçonnerie et l'Association Française des Entreprise Privées (AFEP) par exemple, jouent un rôle important dans le tissu social des grands patrons français (Cheikh, 2014). Ils regroupent régulièrement les plus grands patrons français autour de déjeuners ou dîners afin de mobiliser une expertise capable de défendre leurs intérêts.

Les réseaux apparaissent ainsi comme des canaux d'information stratégique. Ils augmentent le prestige et la crédibilité du dirigeant. L'appartenance à de multiples conseils constitue un mécanisme de promotion professionnelle (Zajac, 1988) permettant aux dirigeants de s'enraciner (Pichard-Stamford, 2000).

Les réseaux relationnels sont considérés selon Charreaux (2003) comme un vecteur d'enracinement des dirigeants et donc un facteur de réduction de la performance. Les réseaux facilitent l'acquisition des ressources intangibles par l'entreprise (Ge et al., 2009). L'influence de la formation élitiste des dirigeants sur la performance peut aussi s'expliquer par l'appartenance à des réseaux. Le passage par une grande école permet aux futurs dirigeants de nouer plus facilement des alliances industrielles, des partenariats. En outre, il favorise l'obtention de nouveaux contacts et la négociation d'accords comme le soulignent Geletkanycz et Hambrick (1997).

En cherchant à se constituer des réseaux relationnels, le dirigeant accroît son capital social dont l'entreprise en bénéficie, soit à travers l'accroissement de la demande (le dirigeant obtient plus facilement des commandes grâce à son réseau relationnel), soit à travers un meilleur climat social et une plus grande productivité du personnel (le dirigeant jouit d'une forte légitimité interne et a une connaissance approfondie de son entreprise et de son système organisationnel), soit encore une meilleure coordination tant interne qu'externe (Pigé, 1998). Selon cet auteur, l'enracinement se définit encore comme « le processus (ou l'état) de constitution de réseaux relationnels (formels ou informels) par lequel le dirigeant arrive à s'affranchir au moins partiellement, de la tutelle de son conseil d'administration et de ses actionnaires ».

En s'attardant sur le seul cas d'Enron, Pluchart (2011) avance qu'il existait au sein de cette entreprise un grand réseau de relation entre la direction de cette entreprise et les banques (Citigroup, JP. Morgan Chase et Merrill Lynch), les cabinets de conseils et d'audit (Arthur Anderson) et d'avocat et l'administration. Ils ont fait l'objet de plaintes collectives de la part des actionnaires minoritaires d'Enron (*class actions)* car, ils étaient directement impliqués dans les montages déconsolidant de cette entreprise.

En définitive, le réseau relationnel du dirigeant apparait comme une stratégie de plus dont le dirigeant se sert pour manipuler les évaluateurs et accroitre sa dépendance. En effet, selon Pichard-Stamford (2000), le réseau relationnel du dirigeant est un atout appréciable tant du point de vue des informations collectées qui vont l'aider à stabiliser l'environnement de la firme, que du point de vue des contacts humains entre firmes.

Par son réseau, le dirigeant a l'occasion de nouer des contrats implicites avec plusieurs partenaires et d'intensifier les barrières à l'entrée de nouveau concurrents. Grâce aux échanges sociaux passés et présents, et aux canaux d'information limités à un petit nombre d'interlocuteurs de confiance de son réseau, le dirigeant accumule un pouvoir qui lui permet d'agir sur le conseil d'administration et qui lui assure progressivement une plus grande liberté pour développer les stratégies quelquefois malsaines.

e) L'octroi des dons par les dirigeants aux administrateurs

Les administrateurs sont des représentants des actionnaires ayant pour rôle de veiller à la bonne gestion des fonds investies par ces derniers. Cependant, les législateurs dénoncent un certain laxisme de la part des

administrateurs internes et recommandent la nomination des administrateurs externes ou indépendant qui, atteindrons efficacement leur objectif et dont la mission ne saurait être compromise par le dirigeant. Dans la mesure où leurs responsabilités, compétences et décisions font l'objet d'un intérêt grandissant, il apparaît normal que la rémunération des administrateurs émerge en tant qu'enjeu de gouvernance.

Les jetons de présence constituent en principe le seul mode de rémunération des administrateurs. L'Assemblée Générale peut allouer aux administrateurs en rémunération de leur activité et à titre de jetons de présence, une somme fixe annuelle. Les jetons de présence sont destinés à encourager et récompenser l'assiduité des administrateurs aux séances du conseil. Dans la pratique, face à la professionnalisation des fonctions d'administrateur, ils sont perçus comme un dédommagement pour le temps passé.

Au-delà de ces jetons de présence, le dirigeant offre très souvent des dons aux administrateurs pour des raisons qui seront explicitées ci-dessous.

Toutefois, alors que les jetons de présence attribués aux administrateurs ont fait l'objet de nombreux commentaires, études et recommandations, les dons faits par le dirigeant à ces derniers demeurent un sujet relativement méconnu et ce, malgré son importance potentielle. Un tour d'horizon sur la question sera fait dans ce paragraphe. Le « don », est entendu ici comme des cadeaux, des faveurs ou encore des rétributions largement supérieures à celles estimées pour un service effectif ou non.

Le débat au tour de cette notion de « don », n'est pas nouveau. En effet, il remonte aux travaux de Mauss (1950) et de Titmuss (1970), qui dans leurs travaux ne conçoivent pas le don de la même façon. A la suite de ces auteurs, Hann (2006) oppose réciprocité et don désintéressé; Kolm (2006) oppose don réciprocitaire et don altruiste; Davies et al. (2010) distinguent don relationnel et don transactionnel et Frémeaux et Michelson (2011) différencient don échange et don existentiel.

Les auteurs en sociologie des organisations comme Masclef (2013), distinguent le don-échange du don gratuit. La distinction de ces deux catégories de don correspond à la présence ou l'absence de réciprocité dans le modèle théorique mobilisé. Dans le fonctionnement des entreprises, le don n'est pas une simple fantaisie intellectuelle. Il occupe une place plus importante dans la modélisation des stratégies de l'entreprise. cet article s'intéresse aux dons-échanges. Le don-échange est stratégique pour le dirigeant car, il attend une contrepartie. Ce dernier exerce une influence sur les administrateurs à travers les dons qu'il leur octroie. Le but étant de renforcer son pouvoir de persuasion auprès de ces derniers. Le sentiment de reconnaissance de ces derniers envers les dirigeants est l'une des raisons qui pourrait expliquer les difficultés qu'ont les administrateurs de s'opposer à certains agissements abusifs des dirigeants. De plus, les administrateurs croient retirer plus de bénéfice personnel en comblant les attentes des dirigeants et pas celles des actionnaires, ceux d'autant plus qu'ils sont, dans la plupart de temps, redevables aux dirigeants de leur nomination et du renouvellement de leur mandat. Les administrateurs font ainsi état de « danger de capture » par ces dirigeants véreux (Begné, 2012). Bodolica et Spraggon (2007) avancent en ce sens que, la similarité des profils démographiques entre dirigeants et actionnaires réduit l'objectivité de ces derniers lors de l'évaluation des dirigeants. Ceci dit, le contrôle des actes du dirigeant par les administrateurs peut être amoindri lorsqu'ils ont reçu les dons de la part du dirigeant. D'ailleurs, les méfaits observés dans les grandes entreprises emblématiques ces dernières années montrent bien que le contrôle exercé par les administrateurs est ex-post et généralement quand la situation financière de l'entreprise devient difficile.

Il en résulte en définitive que, de par sa position au sein de l'entreprise, le dirigeant arrive à manipuler le conseil d'administration afin de neutraliser les mécanismes de gouvernance destinés à son contrôle. Le tableau n°2 ci-après présente la synthèse de différentes stratégies de manipulation utilisées par le dirigeant pour renforcer son pouvoir.

Tableau 14: Stratégies de manipulation et leur matérialisation

Stratégie utilisées	Matérialisation	Auteurs de référence
La détention par le dirigeant descompétences managé-riales spécifiques à l'entreprise	La détention par le dirigeant des compétences spécifiques à l'entreprise rend difficile son remplacement dans la mesure où ces compétences sont non substituables. Ce qui signifie qu'il sera quasi impossible de trouver sur le marché des dirigeants celui qui pourra véritablement substituer sans coût le dirigeant en place. Le risque de perte de telles compétences rend le conseil d'administration vulnérable de façon qu'il ne jouer presque plus son rôle de surveillant.	Castanias et Helfat, 1991; Cheikh, 2014; Laguna et al., 2012
le choix du dirigeant d'investir	le choix du dirigeant d'investir uniquement dans	Shleifer et Vishny, 1989;

uniquement dans les actifs ayant un lien avec son savoir-faire	les actifs ayant un lien avec sa compétence rend le CA dépendant de lui. Ceci se manifeste par la complexité des projets qu'il entreprend. Ces projets engendrent pour l'entreprise des coûts de développement et de contrôle très élevés, en plus d'une rentabilité incertaine au point où les actionnaires sont obligés de maintenir les dirigeants actuels car, leur révocation peut coûter plus cher que la perte engendrée par leur opportunisme.	Cherif, 1999 cité par Affes et Chouabi, 2007
La rétention de l'information par le dirigeant	L'avantage informationnel détenu par le dirigeant est souvent mis à profit pour accroître la dépendance du conseil d'administration et des autres partenaires de l'entreprise à son égard. Ne dit-on pas que l'information est source de pouvoir ?	Williamson, 1994; Cheikh, 2014; Mselmiet Regaieg, 2017, Depoers, 2009; Begné (2012)
Le soutien du dirigeant par son réseau relationnel	Par son réseau, le dirigeant a l'occasion de nouer des contrats implicites avec plusieurs partenaires et d'intensifier les barrières à l'entrée de nouveau concurrents. Grâce aux échanges sociaux passés et présents, et aux canaux d'informations limités à un petit nombre d'interlocuteurs de confiance de son réseau, le dirigeant accumule un pouvoir qui lui permet d'agir sur le conseil d'administration et qui lui assure progressivement une plus grande liberté pour entreprendre des projets quelquefois improductifs.	Brockmann et al., 2004; Pigé, 1998
L'octroi des dons par les dirigeants aux administrateurs	Le dirigeant exerce une influence sur les administrateurs à travers les dons qu'il leur octroie. Le but étant de renforcer son pouvoir de persuasion auprès de ces derniers. Le sentiment de reconnaissance de ces derniers envers les dirigeants est l'une des raisons qui pourrait expliquer les difficultés qu'ont les administrateurs de s'opposer à certains agissements abusifs des dirigeants.	Bell, 1991; Frémeaux et Noel, 2014

Source: les auteurs sur la base de la revue de la littérature

Tout compte fait, il apparait que pour neutraliser les mécanismes de gouvernance destinés à surveiller le dirigeant, ce dernier développe des stratégies de manipulation à l'égard du conseil d'administration afin d'accroitre son pouvoir discrétionnaire.

IV. Conclusion

La présente étude avait pour ambition de recenser les stratégies déployées par le dirigeant pour neutraliser les mécanismes de gouvernance afin d'accroitre son pouvoir discrétionnaire.

A partir d'une recension de la littérature sur la gouvernance d'entreprises, il ressort que le dirigeant, pour arriver à avoir une influence sur la discipline de ses évaluateurs (le conseil d'administration), procède généralement par la dissuasion ou par la manipulation des instances de gouvernance. Il dissuade ses évaluateurs en exploitant les mécanismes internes de contrôle destinés à le surveiller. Plus spécifiquement, il cherche à cumuler les fonctions de direction et de présidence du conseil d'administration ou à participer au capital social de l'entreprise. Il ressort également que quelques moyens d'action permettant au dirigeant de manipuler les instances de gouvernance afin d'assoir son pouvoir. La détention par ce dernier des compétences managériales spécifiques à l'entreprise ou à son secteur d'activité, de son choix d'investir que dans les actifs ayant un lien avec son savoir-faire, de la rétention de certaines informations utiles pour le conseil d'administration, de son appartenance à un réseau relationnel et dans une certaine mesure, de l'offre des dons à certains administrateurs importants.

Si cette étude a le mérite de mettre en évidence les manœuvres utilisées par le dirigeant pour réduire l'efficacité des mécanismes de gouvernance afin d'accroitre son pouvoir discrétionnaire, elle a sans doute les limites. Les principales sont celles de n'avoir pas mesuré l'effet de telles actions sur la performance de l'entreprise. Il sera important dans les travaux futurs de mesurer l'impact des stratégies de neutralisation des mécanismes de gouvernance par le dirigeant sur la performance financière de l'entreprise.

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Prudential Regulation and Banking Efficiency in MENA Countries

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Abstract- This paper analyses the impact of the prudential rules on bank efficiency and the relationship between profit efficiency and banking risks by introducing the financial and the macroeconomic determinants (real GDP growth rate, inflation, real GDP growth rate, inflation, the governance indicator ...).

For this reason, we used a sample of 146 conventional banks in MENA countries during the 2003-2014 period, whose purpose was to determine the specificities of these countries concerning the determinants of profit efficiency.

Keywords: *bank regulation, profit efficiency, MENA countries.*

GJMBR-C Classification: *JEL Code: E50*

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I. Introduction

In recent years, financial crises have multiplied, affecting more and more the financial stability and economic performance of many countries.

In this context, history has shown that the banking system can not remain immune to this instability. Indeed, the financial liberalization, the decommissioning of the credits, the variation of the interest rates has been at the origin of new threats. Also, these developments pose a challenge for both supervisors and banks.

Indeed, since the 1990s, the banking systems have undergone many restructuring resulting in concentration operations. Along with this, they also experienced a significant increase in competition, especially following the deregulation movement and liberalization, Berger and Mester, (1997). Increasingly subject to the different demands of globalization processes and surrounded by an uncertain environment, banks are forced to increase their efficiency to enhance their performance and preserve their sustainability.

As a result, the efficiency of intermediation has become a key element in the success of financial liberalization movements.

Indeed, in a context in which the liberalization of economies has widened the scope and manifestations of competition, banking firms are increasingly subject to the need to improve their productive behavior, Lesueur and Plane (1997).

As is the case with businesses, some banks are considered better than others. Banks' efficiency depends on the quality of their organization, as this allows them to manage effectively the flows where the operations involve transformation. In this context, banks were considered "efficient" when they have a good command of the technical aspects of their activities and therefore come up with the maximum number of services from a minimum level of resources.

Indeed, efficiency was defined as: "An internal measure of company performance, it is very frequently appreciated regarding production, profit or productivity costs and was measured by the number of resources used to produce a unit of goods or services," Johnson & Scholes, (1997). Thus, the analysis of this notion makes it possible to make comparisons between the competitiveness of the banks.

However, this is only the first notion of efficiency in the banking business, as only physical quantities of resources were taken into account. Indeed, a bank was considered technically efficient when it comes to adapting to different constraints that surround it, taking into account risks. Thus, the efficiency of a bank is measured in two ways, firstly, the quality of the organization and position, and secondly, market knowledge.

In recent years, MENA countries have adopted new reforms in the context of financial liberalization and restructuring of the banking system. Therefore, the overarching goal of financial regulation is to push banks to improve the level of liquidity and solvency, Lee and Chih, (2013). To this end, banks are required to put in place strategies involving the optimal allocation of resources and effective monitoring of environmental changes.

Hence the question arises as to the impact of prudential regulations on banks' profit of these countries and the relationship between bank risk and efficiency.

This situation leads us to ask the following questions: *What is the relationship between profit efficiency and banking risks? What is the impact of prudential regulation on bank efficiency?*

The problem developed is that of assessing *the impact of banking regulation in the MENA countries on bank efficiency.*

II. Literature Foundation

There are many researches focus on the determinants of bank efficiency. Among the first studies, there are those of Miller and Noulas (1996), Dietsch and Lozano – Vivas(2000), Grigorian and Manole (2002)...all

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aim to study the effects of environmental variables on bank efficiency.

However, there are other studies more recent, such as the example of Halkos and Salamouris (2004), Fries and Taci (2005), Havrylchyk (2006). The purpose of these latest studies is to explain, from internal and bank-specific variables, the various efficiencies between banks compared to other environmental variables.

Also, as a result of increased globalization and the opening of financial frontiers, banks are continually trying to diversify their income while maintaining a defined level of capital.

The notion of efficiency explains the presence of excessive profits. When firms are efficient, they can gain market share while increasing concentration. As with businesses, bank efficiency could be measured at different levels. However, it is essential to present the concept of profit efficiency.

a) Profit efficiency (Berger and Mester, 1997)

Profit is the broadest concept of efficiency. Maudos and al. (2002) indicate that the profit efficiency calculation offers a source of information for the management of a bank more than the partial vision of the cost efficiency. This type of efficiency refers to the maximization of value while accounting for errors in outputs and inputs. Profit efficiency requires a great deal of managerial attention from the banks, especially about increasing or decreasing the marginal price of income.

There are usually two types of profit boundary modeling in the banking literature. The first type of modeling is the standard profit function (Berger and al, 1993). This function was based on determined product prices, so each bank offers products without reducing them, to increase quantities. However, this assumption is not sufficient when competition is imperfect in banking markets. Indeed, according to Berger and Mester (1997), banks that carry out an activity are obliged to reduce prices and cannot maximize profits.

To solve this problem, other authors like Humphrey and Pulley (1997) proposed an alternative profit function. In this alternative model, the prices of banking products were no longer considered given; it is the quantities that are. As a result, under this approach, banks are expected to have the market power to set their prices. Thus, alternative-profit efficiency incorporates the differences in market power between banks and their ability to exploit them.

The function of the standard profit efficiency is as follows:

$$Ln(\pi + \theta) = f(W, Y, Z, V) + ln\, u_r + ln\, \varepsilon_r \quad (1)$$

With:

The variable π: The price vector of variable outputs

$\ln u_r$: Inefficiency that reduces profit

$\ln \varepsilon_r$: The error variable.

Berger and Mester (1997) take into account all the interests and revenues obtained from the outputs.

In this function, it should been noted that the concept of profit assumes that all banks implement the same type of technology. However, at the practical level, this is unworkable given that foreign banks use more sophisticated than domestic banks. In this context, profit efficiency is the ratio between the current profits of the banks studied and the maximum that can be made by the banks if they are as efficient as the best bank of the sample studied.

This function makes it possible to consider the bank profit efficiency as a portion of the maximum profit generated by the bank that is the best on the market.

Unlike cost efficiency, profit efficiency can be negative, since it is possible that firms waste more than 100% of their substantial profits.

b) Prudential regulation and banking efficiency

Public authorities intervene in the banking field in three forms: prudential regulations, deposit insurance, and central bank interventions as lender of last resort. The adjustments made by these different interventions are often controversial. However, they all revolve around the fragility of banks.

Indeed, most regulatory systems require financial institutions to transfer financial information to supervisory bodies. This situation needs a permanent and high quality work. However, complying with different regulatory rules makes it easier for financial institutions to access external sources of financing such as equity or debt.

In this perspective, several banks have seen an improvement in their financial structure, including an increase in equity. Prudential regulation programs are an external governance system designed to compensate for failures, valuation systems and internal control of banks.

Under this prudential regulation, information asymmetry allows banking organizations and borrowers, regardless of size, institutional form and function in the economy, to behave opportunistically.

In this case, the delegation of control to a regulatory body has the main effect of improving banking efficiency.

Thus, prudential regulations allow all financial institutions to be protected from relative risks because of the nature of their activities while allowing them to avoid the advent of a systemic crisis. The different regulations require them to maintain a certain level of equity and liquidity.

In other words, prudential regulation aims at optimizing the soundness of the banking system to encourage financial institutions to efficiently and

effectively assume the risks related to their activities while having a solid base concerning the different banking risks.

In this framework, economic theory provides many forecasts on the impact of regulatory and supervisory policies on bank efficiency.

Some studies show that a low level of capital increases the risk of bank failure, while a high level can cause unnecessary costs to banks and, as a result, reduce the efficiency of the banking system.

Bath and al. (2006) studied how banking regulation works and how it can affect banking activity. Their research in most countries shows that standard regulation does not improve the efficiency of banks.

However, according to Awdeh and al. (2011), there is a positive correlation between bank profitability and capital increase. For Beltratti and Stulz (2009), banks with higher capital and more stable financing would obtain better results.

Altunbas and al. (2007), Hughes and Mester (1998), emphasized the importance of analyzing the impact of efficiency on risk and capital. They conclude a positive relationship between risk and capital level, which reflects the preference of regulators for a high level of this last by limiting risk-taking activities.

Shepherd and De Young (1997) and Williams (2004) indicated that a decrease in efficiency increases costs because banks do not adequately monitor credits and control expenditures effectively.

Regarding Maudos et al. (2002), higher risk banks present a higher level of profit efficiency. Banks with higher deposit credit ratios are therefore more profitable and less under pressure to control costs.

According to Berger et al. (1993), big banks tend to be closer to the efficient frontier than smaller banks. Indeed, big banks generally have high market power and can, therefore, have their inputs cheaply (Hauner, 2005). However, Cook et al. (2000) found a different result by analyzing the effects of financial liberalization on the efficiency of Tunisian banks. According to this study, big banks are created, first, for political purposes. From where they will grant credits without taking into account their profitability.

For the ratio of costs to revenues, it could be used as a tool in bank performance analyzes when reviewing its operational efficiency. Francis (2004) has shown an inverse relationship between this ratio and profit efficiency. Shehzada and De Haan (2012) found that if the ratio of costs to revenues decreases, managerial efficiency will improve.

Regarding the macroeconomic variables, Athanasoglou et al. (2008), Perry (1992) argued that the variables used are inflation, interest rate, and GDP rates. Revell (1979) introduced the relationship between efficiency and benefit inflation banks. An inflation rate fully anticipated by the bank's management implies that banks can adjust interest rates appropriately to increase their revenues faster than their costs and thus gain higher economic profits. Most studies (Bourke, (1989), Molyneux and Thornton, (1992)) have shown a positive relationship between inflation and long-term interest rate and profit efficiency.

Recently, Demirguc-Kuntand Huizinga (2000) tried to identify the effect of annual GDP growth rates and GDP per capita of bank efficiency. They found a positive relationship between this last and these two macroeconomic indicators.

Regarding the governance indicator developed by Kaufmann and al., (2008) and Kaufmann and al., (2012), the studies conducted by Ciancanelli and Reys (2001) and Lassoued and al. (2015) found a positive relationship between this indicator and the efficiency level of banks.

Also, these studies have focused on developed countries. This observation leads us to propose, on the one hand, a new light on the relationship between banking regulation and banking efficiency, and on the other hand, a relationship between banking efficiency and risks by studying the banking sector in the MENA zone.

c) Measure of efficiency

Generally, banking efficiency could be determined by two types of methods: parametric methods and non-parametric methods (Berger and al., 1993). These two methods were distinguished by the assumptions imposed on the data. A first difference was observed at the modeling level. Then there are the differences in whether random errors were taken into account or not.

On the other hand, non-parametric models were based on the production boundary using linear programming on which all observations were made without necessarily taking into account the functional form of the production function.

Indeed, the DEA or Data Envelopment Analysis approach is one of the nonparametric methods. It was Farell's (1957) work that highlighted this method of measuring bank performance. In recent years, the DEA method has been highly successful, particularly after development and the various modifications made to it, Seiford and Thrall, (1990).

The DEA method of measuring bank efficiency gives banks the opportunity to evaluate their performance by the efficiency frontier. Its purpose is to determine a synthetic and comprehensive measure of the performance of financial institutions that use various resources to create different results.

The purpose of the DEA approach is to synthetically and comprehensively calculate the performance of an organization that implements a multitude of resources with the goal of producing multiple outcomes. As part of a financial institution, the DEA method is used to identify best practices. The

purpose of this is to set the target values and the indicators that will have to appear in the banks' dashboards. Among the main advantages of this approach, we can distinguish:

- The method suitable for a small sample, and that does not require a cost specification a priori,
- The method to ensure simultaneous management of inputs and outputs, and that can distinguish between technical and scale inefficiency.

The DEA model is in the form of a ratio maximization program, as follows, Charnes and al., (1978):

$$Maxw_0 = \frac{u_t Q_0}{V_t X_t} \quad (2)$$

Under the constraints:

$Maxw_0 = \frac{u_t Q_0}{V_t X_t} \leq 1$: For any DMU (Decision Making Units), k = 1, … n.

$u_t, V_t \geq 1$

With

W_0, Q_0, X_t : They represent respectively the efficiency score of the DMU 0, the output vector of the DMU k and the input vector of the DMU k.

U_t, V_t: Represent respectively the weights relating to Q_k, X_k.

n: is the number of DMUs.

Among these various advantages, some authors note that the application of this approach is also appropriate for point-of-sale networks since it had generally based on the principle of comparison. Thus, it gives financial institutions the opportunity to realize the " benchmarking "Internally within the distribution network. Thus, the gap between inefficient banks and the efficiency frontier had determined from an efficiency score. In this context, the efficiency measure is the comparison between the observed values and the optimal values of inputs and outputs, Lovell and al., (1980).

Moreover, this approach is the most used at the level of the banking sector by making it possible to calculate a synthetic measure of performance, Berger and Mester, (1997).

The results of the DEA method could be considered according to two hypotheses: the assumption of constant returns to scale (CRS model) or variable returns to scale (VRS model).

- CRS model (Kalaitzandonakes and al., 1992) considers a sample of K firms, each of which uses M inputs to have N different outputs. The baskets of inputs and outputs are reduced by the DEA method to a couple: fictitious input and fictitious output (Charnes and al., 1978). Hence, for a company in the sample, the mathematical programming model of this measure is as follows:

$$Max_{\alpha,\beta} \ \alpha Y_i / \beta X_i \quad (3)$$

Under constraint: $\alpha Y_i / \beta X_i \leq 1$

For: j = 1.2 ... K

With:

α and β: vectors of the coefficients to be estimated

Y_i and X_i : vectors of inputs and outputs of the company "i".

For each company, this program maximizes the virtual output / virtual input ratio without exceeding 1. Thus, the companies in the sample were necessarily located on or below the efficiency frontier.

According to Coelli and al. (2005), this method assumes that all firms operate on an optimal scale. However, imperfect competition may be, for example, a constraint for this kind of operation.

- VRS model: This method represents an extension of the CRS method. It had first proposed by Banker et al. (1994). The VRS model takes into consideration the assumption of variable returns to scale. Hence, for a company in the sample, and adding a constraint on the intensity parameters of the CRS model, the mathematical programming model of this model is as follows:

$$Min\ \theta \quad (4)$$

Under constraint: $Y\lambda \geq Y_i$ and $\theta X_i - X\lambda \geq$

With:

any θ

λ ≥ 0 and λ is a vector of N * 1 units.

Moreover, in this work, we will use the DEA method according to the VRS model since it makes it possible to test the hypothesis with variable returns of scale. This method is more consistent with the imperfectly competitive environment in which banks operate in the MENA zone.

III. Methodology

From the 1980s, MENA countries began implementing financial liberalization policies as part of

the adjustment plans put in place by the Bretton Woods institutions. These reforms had based on the improvement of monetary policy, the establishment of a prudential framework and the restructuring of the banking system (Touhami and Solhi, 2009).

However, few studies have examined the determinants of bank efficiency in developing countries, particularly countries in the MENA region. Also, it is interesting to study the banking system, which is an essential element in the growth and sustainable development of this area, for many reasons. On the one hand, it is a bridge between Europe and Asia, and on the other hand, the region is experiencing rapid growth regarding population and wealth with a relatively young banking sector.

Also, the selection is focused exclusively on conventional banks, at the level of this study, to avoid the difficulties due to the lack of homogeneity of banking practices (Cihak and Hesse, 2010).

Our sample will cover 146 conventional banks in 17 MENA countries (Algeria, Saudi Arabia, Bahrain, Djibouti, Egypt, United Arab Emirates, Jordan, Kuwait, Lebanon, Malta, Morocco, Oman, Palestine, Qatar, Syria, Tunisia, Yemen) over the period 2003-2014, which gives a panel of 1752 observations.

Indeed, this period is rich in events in the MENA zone going from the Iraq war to The Arab Spring While going through the global financial crisis of 2009. Hence the motivation to work in the MENA zone.

a) Presentation of the model and definition of the variables

Over the last twenty years, the majority of MENA countries have gradually implemented policies to transform their financial and banking landscape with the goal of modernizing their systems to make them more efficient and dynamic. In this framework, and to evaluate the profit-making efficiency of the banks, we used the quality of the assets, the capital ratio, the liquidity ratio, the size and the age of the bank as a control variable.

Thus, the models used for the study of banking risk, inspired by the research of Lee and Chih (2013) and Klomp and Hann (2012), take the following forms:

$$Y = a\,X_t + b\,Y_t + \varepsilon_t\,,\varepsilon_t \sim (N, \sigma_t^2)$$

With:

X_t : Financial determinants

Y_t : Macroeconomic determinants

And:

$$Y\ (\text{profit efficiency}) = a_0 + b_1 * Res_{NPL} + b_2 * CIR + b_3 * LIQ + b_4 * CAR + b_5 * Size + b_6 * Time + b_7 * LDR + b_8 * Res_{LOAN} + b_9 * GDPGR + b_{10} * GDPPC + b_{11} * GDP\ Deflator + b_{12} * Interest\ Rate + b_{13} * Governance + \varepsilon_t$$

Table 1: Description of the variables

		variables	Variable codes	Description	sources
Financial determinants	**Asset quality**	Provision coverage ratio	Res_NPL	Non-performing loans / Gross loan	Bankscope
		Loan loss provision ratio	Res_LOAN	Loan-loss reserves / Gross loan	Bankscope
	Benefit and efficiency	Cost to income ratio	CIR	Costs to Income Ratio	Bankscope
	Liquidity	Current ratio	LIQ	Liquid asset / Short-term funding	Bankscope
		Loan to deposit ratio	LDR	Loans / Deposits & Short-term funding	Bankscope
	Size	Ln (total assets)	SIZE	Ln (total assets)	Bankscope
	Capital adequacy	Capital ratio	CAR	Total regulatory Capital Ratio%	Bankscope
	Variable control	Time	TIME	It is the cumulative year of the establishment time	Bankscope
economic determinants	Macroeconomic variables	Real GDP Growth	GDPGR	Real GDP Growth	World Bank
	Macroeconomic variables	Real GDP per Capita	GDPCP	Real GDP per Capita	World Bank
	Macroeconomic variables	Real Interest Rate	INTEREST RATE	Real Interest Rate	World Bank
	Macroeconomic variables	Inflation	GDP DEFLATOR	Inflation	World Bank
	Macroeconomic variables	Governance Indicator	GOVERNANCE	Average of 6 Governance Indicator (Voice and Accountability, Political Stability, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption)	World Bank

At the level of this study, we will use the DEA method to calculate profit efficiency. It is based on different inputs and generates several outputs. (Berger and Mester, 1997).

Table 2: Definition of variables "inputs" And "outputs"

variables	Definitions of variables	Descriptions
Input	Fixed asset	Fixed asset
	Funds	Deposits & short-term funding
Input Price	Price of fixed assets	Other operating expenses / fixed assets
	Price of FUNDS	Total interest expenses / Deposits & short-term funding
Output	Total loans	Net loans
	Investment	Other earning assets
Output price	Price of loans	Interest income of loans /
	Price of investment	Other operating income / other earning assets

At this level, it should been mentioned that there are many ways to define and categorize the variables " inputs" And "outputs" in the banking literature for the DEA method. In this study, we adopt the intermediation

approach, Subhass and Abhiman, (2010); Dasa and Ghosh, (2009); Hassan, (2008) to define the inflow and outflow of financial institutions. This approach is best for assessing the importance of efficiency frontier for the profitability of financial institutions, since minimizing total costs and not only those of production is necessary to maximize profits, Iqbal and Molyneux, (2005).

At this level, it should been mentioned that our study consists of estimating models by the Tobit regression method to determine the relationship between financial regulation and profit efficiency since the dependent variable (profit efficiency) is a binary variable.:

$$\begin{cases} 0 : non\ efficient\ bank \\ 1 : efficient\ bank \end{cases}$$

So, the model proposed by Tobin is the following:

$$y_i^* = X_i\beta + \varepsilon_i, \forall_i = 1, \dots N \tag{5}$$

$$y_i \begin{cases} y_i^* & Si\ y_i^* > 0 \\ 0 & Si\ y_i^* \leq 0 \end{cases} \tag{6}$$

With:

$$x_i = \left(x_i^1 \dots x_i^k\right), \quad \forall\, i = 1, \dots, N : A\ vector\ of\ observable\ characteristics$$

$$\beta = (\beta_i \dots \beta_k)' \in R^k : A\ vector\ of\ unknown\ parameters$$

$$\varepsilon_i : \text{Disturbances distributed according to } N(0, \sigma_\varepsilon^2).$$

The model estimates will be made, therefore, by the Tobit model using the maximum likelihood method. The latter is the most used today. We will begin by defining the log-likelihood associated with the simple Tobit model (Bourbonnais, 2015):

$$y_i \begin{cases} y_i^* & Si\ y_i^* = X_i\beta + \varepsilon_i \geq 0 \\ 0 & ifnot \end{cases}, \forall_i = 1, \dots N \tag{7}$$

With:

$$x_i = \left(x_i^1 \dots x_i^k\right), \quad \forall\, i = 1, \dots, N$$

$$\beta = (\beta_i \dots \beta_k)' \in R^k$$

ε_i : Disturbances distributed according to $N(0, \sigma_\varepsilon^2)$.

Consider a sample of N observations yi, denoted y = (y 1 ..., yN). The likelihood of this model is defined by:

$$L(y, \beta, \sigma_\varepsilon^2) = \prod_{i:y_{i=0}} \left[1 - \Phi\left(\frac{x_i\beta}{\sigma_\varepsilon}\right)\right] \prod_{i:y_i>0} \left(\frac{1}{\sigma_\varepsilon}\right) \emptyset\left(\frac{y_i - x_i\beta}{\sigma_\varepsilon}\right) \tag{8}$$

Indeed, the values of the efficiency scores resulting from the DEA method are between 0 and 1, and, consequently, the dependent variable can not follow a normal distribution. Thus, the MCO method will result in biased and inconsistent estimates of parameters, Greene, (1981). In this study, we will, therefore, use the simple and censored Tobit regression model, Fried, Schmidt, and Yaisawarng, (1999), Lin, (2002), Coelli and al., (2005).

In economics, this model had developed by James Tobin (1958), but the term Tobit only appeared in an article by Goldberger and al., (1964).

The first product is similar to that obtained by the Probit model since the two modelizations are identical for the event Y i = 0. Indeed, if one defines a dichotomous variable probit zi such that:

$$z_i \begin{cases} 1 & \text{Si } y_i^* = X_i\beta + \varepsilon_i \geq 0 \\ 0 & \text{ifnot} \end{cases}, \forall_i = 1, \dots N \quad (9)$$

Then, the probability that the variable yi takes positive values takes the following form:

$$Prob(z_i = 1) = Prob\left(\frac{\varepsilon_i}{\sigma_\varepsilon} < \frac{x_i\beta}{\sigma_\varepsilon}\right) = \Phi\left(\frac{x_i\beta}{\sigma_\varepsilon}\right)$$

Hence, the probability that yi takes a value of zero was written as follows:

$$Prob(y_i = 0) = Prob\ (z_i = 0) = 1 - \Phi\left(\frac{x_i\beta}{\sigma_\varepsilon}\right)$$

The second product corresponds to that obtained by the linear model since it is the likelihood of a Gaussian sample. Therefore, the Log-Likelihood was written as follows:

$$Log\ L(y, \beta, \sigma_\varepsilon^2) = \sum_{i:\, y_{i=0}} \log\left[1 - \Phi\left(\frac{x_i\beta}{\sigma_\varepsilon}\right)\right] - \frac{N_1}{2}\log(\sigma_\varepsilon^2) - 1/2\sigma_\varepsilon^2 \sum_{i:\, y_{i>0}} (y_i - x_i\,\beta)^2 \quad (10)$$

To achieve these goals, we adopted the STATA software in its 13th release.

a) The hypotheses

In recent years, the banking environment in the MENA zone has undergone a series of restructuring programs aimed at improving the level of efficiency to align with the international financial landscape.

Indeed, with the succession of financial crises, it is necessary to find indicators capable of measuring the banking efficiency and in particular "profit efficiency" which is the object of this study. At this level, one must also consider an essential element which is the size of the bank and its effect on the level of profit efficiency.

Hence the question underlying this study is whether there is a significant link, on the one hand, between banking regulation and efficiency and, on the other hand, between this last and bank risks for big and small banks in the MENA zone between 2003 and 2014.

- The relationship between asset quality and profit efficiency:

Lee and Chih (2013): The higher the quality of assets, the higher the efficiency level of banks.

H1: Improving the quality of assets has a positive influence on the profit efficiency of banks.

- The relationship between liquidity and banking efficiency:

Ayadi and Pujals (2005), Caprio, D'Apice and al. (2014) and Lee and Chih (2013): liquid assets tend to have low returns. An increase in liquidity ratio may imply a decrease in profit efficiency.

H2: Liquidity has a negative influence on profit efficiency.

- The relationship between the ratio of costs to revenues and "profit efficiency":

Francis (2004), Ghosh and al. (2003) and Shehzada and Haan (2012): an inverse relationship between the cost/income ratio and profit efficiency.

H3: A decrease in the cost/income ratio positively influences banking efficiency.

- The relationship between capital ratio and profit efficiency:

Pessarossi and Weill (2015): A positive relationship between the ratio of capital and profit efficiency. Hence, the capitalized banks are more efficient.

H4: The variable «capital ratio» has a positive influence on "profit efficiency".

- The relationship between macroeconomic variables and "Z-score":

Ciancanelli and Reys (2001) and Lassoued and al, (2015): Global governance indicator developed by Kaufmann et al, (2008.) That refers to the government's ability to formulate and effectively implement of approved policies, has a positive effect on the level of efficiency banks profit.

Demriguc and al., (2000); Athanasoglou and al., (2008): GDPGR and GDPPC have a positive impact on banking efficiency in developed markets.

Lee and Hsieh (2013): A positive relationship between inflation and bank profit efficiency. Indeed, an increase in the rate of inflation pushes banks to charge more profits to customers. Also, the interest rate is positively related to the profit efficiency of the banks. Also, the latter will adjust their interest rates in response to the increase in the general price level to mitigate the negative effect of inflation.

H5: Macroeconomic variables significantly influence profit efficiency.

IV. Empirical Results

This study involves presenting the results of the analysis to examine the impact of asset quality, efficiency, liquidity, prudential regulation, size and time factor on profit efficiency.

Also, we present the significant statistics followed by the models constructed concerning the regression of the variables defined previously on

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conventional banks of the MENA zone with the empirical results obtained and their interpretations.

a) Descriptive analysis of variables and econometric tests

i. *Descriptive statistics*

This study will expose the descriptive analysis of the different variables. The table below gives the mean, the standard deviation, the maximum and the minimum of the variables studied during the study of the previously defined models (see appendix 1).

Indeed, we notice the disparity of the average values of the explanatory variables and their standard deviations. These two variables suggest that the sample structure is not homogeneous and that additional tests are required to select the appropriate estimator.

b) Econometric Tests

We will rely on econometric following: Multicollinearity test, stationarity test, and heteroscedasticity test.

i. *Multicollinearity test*

According to Bourbonnais (2009) to decide on a problem of collinearity between the independent variables included in a regression model, it is necessary that the correlation coefficient exceeds the order of 0.7.

Examination of the correlation matrix and the VIF test (see Appendix 2 and 3) highlights the absence of a multicollinearity problem.

ii. *Stationarity test*

To do this, we would be based on the Dickey-Augmented Float (ADF) and Phillips-Perron (PP) tests.

Table 3: ADF & PP tests

Variables	ADF		PP	
	In level	Indifference	In level	Indifference
Vrs (profit efficiency)	0.0197 ** (With variation)			0.0146 **
RES_NPL	0.0064 ***		0.0072 ***	
RES_Loan	0.0002 ***		0.0002 ***	
CIR	0.0271 ** (with variation)			0.02 ** (with trend)
LIQ		0.02011 ** (With trend)	0.02507 **	
LDR	0011 **		0011 **	
CAR	0.0244 **		0.0220 **	
SIZE		0.0763 *		0.08 099 *
GDPGR	0.0127 ** (with trend)		0.0127 ** (with trend)	
GDPPC	0.02163 **		0.02163 **	
INTEREST RATE	0.0009 ***		0.0002 ***	
GDP DEFLATOR	0.0021 ***		0011 **	
GOVERNANCE	0.0000 *** (with trend)		0.0535 * (with trend)	

*Significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.*

This results show that some of the variables were stationary in level for the two tests ADF & PP and others were stationary in difference.

iii. *Heteroscedasticity test*

This is to test the variance of the standardized residuals is constant or homosedasticity, Evrard and al., (2003).

To do this, we adopted the "Breush-Pagan" test, the value of chi2 displays a value of 101.05 having a level of significance of 0.000 below the critical threshold of 5% (see Appendix 4). This leads us to reject the hypothesis of homoscedasticity and to confirm the presence of a problem of heteroscedasticity. To solve this problem, the estimation of the model will be carried out by the Robust command.

c) The results of the estimates

The results of the Tobit model estimation using the maximum likelihood method, with the Robust command, are:

Table 4: The results of the estimates

variables	Global Model				Big Banks				Small Banks			
	Coefficient	dy / dx	T-statistic	p-value	Coefficient	dy / dx	T-statistic	p-value	Coefficient	dy / dx	T-statistic	p-value
TIME	0.0005756	0.0005738	0.82	0. 410	-0.000258	-0.000258	-0.59	0. 555	0.0008325	0.0008299	1.16	0246
CAR	-0.001186	-0.001183	-0.66	0. 510	-0.000551	-0.000551	-0.73	0. 46 5	-0.00180	-0.001802	-1.02	0310
RES-NPL	0.0014884	0.0014838	0.69	0. 490	0.0032729	0.0032729	2.18	0.0 29	0.001292	0.001288	0.61	0542
RES-LOAN	-0.009154	-0.009126	-2.64	0008	-0.001306	-0.001306	-0.71	0. 478	-0.009424	-0.009395	-2.70	0007
CIR	0.0013378	0.0013337	3.19	0001	-0.002048	-0.002048	-1.84	0.0 67	0.0011982	0.0011944	3.20	0001
LDR	0. 1185905	0.1182257	1.91	0056	-0.017611	-0.017611	-0.36	0. 722	0. 1281606	0.1277617	2.05	0041
LIQ	-0.002101	-0.002095	-2.57	0011	-0.000317	-0.000317	-0.36	0. 716	-0.002187	-0.002180	- 2.72	0007
size	0.0196312	0.0195708	2.35	0019								
Interest Rate	0.001875	0.0018693	0.70	0. 486	0.0020501	0.0020501	2.04	0.0 42	0.0018739	0.0018681	0.69	0489
Inflation	0.0006727	0.0006706	0.23	0. 819	0.0029005	0.0029005	2.04	0.0 42	0.0005569	0.000552	0.19	0850
GDPGR	0.0118787	0.0118422	3.11	0. 002	-0.000074	-0.000074	-0.09	0. 925	0.0114105	0.11375	2.98	0003
GDPPC	-1.13e-06	-1.13e-06	-1.25	0.21 2	5.21e-07	5.21e-07	0.87	0385	-7.22e -07	-7.20e-07	-0.80	0424
Governance	-0.000904	-0.000901	-0.03	0.976	-0.034845	-0.034845	-0.78	0. 436	-0.010577	-0.010544	-0.36	0719
Constant	0.6845371		6.10	0.000	1.055496		15.73	0.0000	0.842538		10.81	0.000

For the global model:

The size variable was positively related to profit efficiency. This result corroborates with the studies of Altunbas et al. (2007) who argue that big banks are more efficient than small banks. Indeed, the largest banks have better asset portfolio management as well as better performance when choosing investment projects. Any increase of one unit of this variable, will increase the probability that the bank will be efficient of 1.96312%.

For the RES-LOAN variable, it had negatively related to the profit efficiency score. This result contrasts the findings of Lee and Chih (2013). This result means that any decrease of one unit of the variable RES-LOAN will generate a decline in the bank chance that it is efficient at 0.9126%. Indeed, the higher the ratio, the higher the amount of non-performing loans, which will degrade the efficiency of the bank.

For the LIQ variable, it was negatively related to the profit efficiency of the global sample, according to the findings of Lee and Chih (2013). This result means that any decrease in a unit of the general liquidity ratio will generate a decline of the bank chance that it is efficient at 0.2095%. As a measure of liquidity, this ratio may reflect the proper use of funding sources. Indeed, the increase in this ratio can significantly impact the efficiency of banks through inactive funds.

However, the LDR ratio was positively related to profit efficiency. This result means that any increase in this ratio will improve the level of banking efficiency. Indeed, a high LDR ratio reflects, on the one hand, efficient banking intermediation and, on the other hand, loans financed by unregistered sources, which can affect banks' financial stability (Caprio, D'Apice and al., (2010)). Any increase of one unit of this variable will increase the probability that the bank will be efficient at 11.82257%.

The CIR variable was positively related to profit efficiency, which puts into question the efficiency level of banks in the MENA zone. Any increase of one unit in the ratio of costs to revenues, will increase the probability that the bank will be efficient of 0.13337%. Indeed, according to the study conducted by Girardone et al. (2004) on Italian banks during the period 1993-1996, inefficient banks tend to have high-interest margins and extended branch networks compared to efficient banks.

For macroeconomic conditions, the GDPGR had positively related to the efficiency of banks. Any increase of one unit of this rate will increase the probability that the bank will be efficient at 1.18422%. Banks in countries with higher levels of economic development are more efficient. Our results are in agreement with the results of Johnes, Izzeldin and Pappas (2013), and Barth and al. (2013).

Comparison between big and small banks:

Concerning the variable RES_NPL, it has a significant positive effect on profit efficiency in the big banks. This result means that as the ratio increases, the level of profit efficiency increases. Any raise of one unit of this ratio will augment the probability that the bank will be efficient at 0.32729 %. However, this ratio has no significant effect on profitability in small banks.

For the CIR variable, it was negatively related to profit efficiency for big banks, according to the results of Lee and Chih (2013) who argue that a decrease in this ratio positively influences banking efficiency. Hence, the big banks in the MENA countries are more efficient. Indeed, a decrease of one unit of the variable CIR will generate an increase of the chance that the bank is efficient at 0.2048 % for the big banks and a decrease at 0.11944 % for the small banks.

The LIQ ratio has a significant negative effect on the efficiency of small banks. Indeed, the higher the ratio, the lower the score efficiency because of inactive funds in these banks. This result means that any decrease of one unit of the LIQ variable generates a decrease at 0.2180 % of the chance that the bank is efficient.

Regarding the LDR ratio, it only affects small banks. Indeed, it is positively related to bank efficiency in the latter. This result means that any one-unit increase in the LDR variable will generate an increase in the probability that the bank will be efficient at 12.77617 % in profit efficiency. The higher the ratio, the higher the level of bank efficiency is improved which means that funds are financed, firstly, by deposit O costs and therefore ensures the stability of funding. This result corroborates with the findings of Caprio, D'Apice and al., (2014). However, this ratio does not affect big banks because their sources of financing are more stable.

For the variable RES-LOAN, it had negatively related to the efficiency score of small banks. Any increase in this ratio will worsen the efficiency of the bank. This result means that any decrease of one unit of the variable RES-LOAN will generate a decline of the bank chance that it is efficient at 0.9395 %. Indeed, the higher the ratio, the higher the number of bad debts, which will degrade the efficiency of the bank.

On the macroeconomic determinants, the results showed a positive relationship between inflation and profit efficiency of the big banks, which marginally supports thefindings of Lee and Hsieh (2013) who argue that when the inflation rate increase, banks tend to charge more to customers. Any raise of one unit of this variable will increase the probability that the bank will be 0.20501% efficient. Also, the interest rate is positively related to the profitability of small banks. Any increase of one unit of this variable will increase the probability that the bank will be efficient at 0.29005%. This result means that the latter can adjust their interest rates in response

to the increase in the general price level to mitigate the effect of inflation.

The real GDP growth was positively related to the efficiency of small banks. Any increase of one unit of this rate will increase the probability of the bank being efficient at 11.375%. Also, in countries with higher levels of economic development, small banks are more efficient.

V. Conclusion

Regarding financial profitability, the introduction of the various regulatory requirements aims to reduce exposure to different banking risks. However, most regulatory arrangements require financial institutions to transfer financial information to supervisory bodies.

In this context, we have tried throughout this work to highlight the relationship between profit efficiency, as a means of assessing bank performance, and banking risks. Also, the link between profit efficiency and prudential regulation.

We found a lack of relationship between prudential regulation and bank efficiency in MENA countries.

During the last twenty years, the majority of the countries in this zone have progressively transformed their financial and banking landscape with the aim of modernizing their systems. They were involved in the implementation of a reform to liberalize their banking and financial system. It also allows them to encourage competition and open their financial system to foreign investors (Solhi and Mehdi, 2012).

However, improvements in the context of financial and banking reforms are irregular. Hence, the governments of this region are called upon to lighten the legal system to give more opportunities to the banks to diversify their activities, to satisfy better their customers while keeping a well-defined level of the capital to face the possible ones financial crises.

It is also important to note that for the majority of MENA countries, the banking sector is an axis of the financial system. Indeed, the region was weakly exposed to many financial crises, but with a financial area characterized by increasing openness to investment and foreign players, the contagion effect continues to amplify. As a result, banking systems are forced to put in place early warning indicators to prevent any possible banking crisis.

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Appendix

Appendix 1: Descriptive statistics

	Global sample				Small banks				Big banks			
Variables	Mean	Std-Dev	Min	Max	Mean	Std-Dev	Min	Max	Mean	Std-Dev	Min	Max
Vrs (profit efficiency)	0.9086057	0.2882651	0	1	0.98434	0.1242951	0	1	0.8695238	0.3369871	0	1
RES_NPL	9.345712	13.15162	0	124.04	12.03333	15.42619	0	124.04	4.86837	5.72872	0.05	41.57
RES_ Loan	7.579532	8.872731	-0.843	76.961	9.027488	10.17074	-0.843	76.961	4.52418	3.59050	0.436	27.542
CIR	49.56357	48.47783	0	950	54.66419	56.66731	0	950	37.71177	12.27384	15.751	80.337
LIQ	38.88159	31.64643	0.855	555.703	43.96369	35.6368	0.855	550.703	26.97772	13.09279	3.384	63.479
LDR	0.5910021	0.771078	0	25.25	0.5580059	0.90957	0	25.25	0.66680	0.22856	0.15746	1.68264
CAR	20.75376	14.50058	-13.1	285.4	22.49277	17.34757	-13.1	285.4	17.41534	4.41639	0.65	38.1
SIZE	8.003754	1.764696	1.8453	14.97227								
TIME	34.07437	25.84404	0	195	31.78076	26.97058	0	195	40.13333	21.47599	0	103
GDPPC	16699.14	18100.23	607.9158	96732.41	13052.7	14942.62	607.9158	96732.4	26339.41	21820.74	1071.323	96732.4
GDPGR	4.920161	3.860769	-15.0883	26.17025	4.571108	3.39394	-15.0883	26.17025	5.84296	4.76715	-7.07610	26.17025
INTEREST RATE	2.360264	8.932278	-19.9269	43.50116	2.75136	8.073605	-19.9269	43.50116	1.32630	10.82271	-19.9269	43.50116
INFLATION	6.382923	7.663647	-25.1281	33.75154	6.385414	6.970905	-25.1281	33.75154	6.37633	9.25694	-25.1281	33.75154
GOVERNANCE	-0.137037	0.630294	-1.76	5.171667	-0.178118	0.6811279	-1.76	5.171667	-0.02826	0.45278	-0.92166	0.79

Annexe 2: Correlation matrix

	Time	CAR	ResNPL	Resloan	CIR	LDR	Liq	GDPdef~r	Size	intere~e	GDPper~h	GDPper~a	Governance
Time	1.0000												
CAR	-0.1256	1.0000											
ResNPL	-0.0028	0.1549	1.0000										
Resloan	-0.0007	0.1983	0.7570	1.0000									
CIR	0.0514	-0.1066	0.1065	0.0450	1.0000								
LDR	-0.1627	0.0909	-0.2611	-0.3337	-0.1345	1.0000							
Liq	-0.3314	0.3828	0.1515	0.1247	0.0656	0.0354	1.0000						
GDPdeflator	-0.0842	0.0529	-0.0520	0.0044	-0.0511	-0.0119	-0.0337	1.0000					
Size	0.2111	-0.2604	-0.2930	-0.2546	-0.2274	0.1577	-0.3315	-0.0002	1.0000				
interestrate	0.0488	0.0277	0.1421	0.1191	0.0480	-0.1144	0.0525	-0.8297	-0.0527	1.0000			
GDPpergrowth	-0.0973	0.0069	-0.0803	-0.0661	-0.0145	0.0294	0.0429	0.1062	-0.0263	-0.1747	1.0000		
GDPpercapita	-0.1962	-0.0010	-0.2346	-0.2047	-0.1953	0.3819	-0.1288	0.0090	0.2048	-0.1360	0.2336	1.0000	
Governance	0.0128	-0.0802	-0.3425	-0.3576	-0.0918	0.5233	-0.1671	-0.0322	0.1364	-0.1308	0.1253	0.5705	1.0000

Appendix 3: Test VIF

```
. vif

    Variable |       VIF       1/VIF
-------------+----------------------
interestrate |      3.71    0.269202
 GDPdeflator |      3.62    0.275884
     Resloan |      2.34    0.426853
      ResNPL |      2.23    0.447713
  Governance |      2.06    0.484738
GDPpercapita |      1.81    0.553459
         LDR |      1.62    0.619053
         Liq |      1.45    0.689645
        Size |      1.40    0.716704
         CAR |      1.35    0.739616
        Time |      1.33    0.749893
         CIR |      1.12    0.889268
GDPpergrowth |      1.11    0.904866
-------------+----------------------
    Mean VIF |      1.94
```

Appendix 4: Test of heteroskedasticity

```
. hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of VRS
         chi2(1)      =   101.05
         Prob > chi2  =   0.0000
```

Appendix 5: Global sample

```
. tobit VRS Time CAR ResNPL Resloan CIR LDR Liq Size interestrate  GDPdeflator GDPpergrowth GDPpercapita
Governance, ll vce(robust)

Tobit regression                                  Number of obs   =        611
                                                  F(  13,    598) =       3.71
                                                  Prob > F        =     0.0000
Log pseudolikelihood = -253.54648                 Pseudo R2       =     0.1358

------------------------------------------------------------------------------
             |               Robust
         VRS |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        Time |   .0005756   .0006978     0.82   0.410    -.0007948     .001946
         CAR |  -.0011869   .0017988    -0.66   0.510    -.0047197    .0023459
      ResNPL |   .0014884   .0021547     0.69   0.490    -.0027432       .00572
     Resloan |  -.0091549   .0034639    -2.64   0.008    -.0159577   -.0023521
         CIR |   .0013378   .0004193     3.19   0.001     .0005144    .0021613
         LDR |   .1185905   .0620315     1.91   0.056    -.0032356    .2404165
         Liq |  -.0021018   .0008191    -2.57   0.011    -.0037105   -.0004931
        Size |   .0196312   .0083361     2.35   0.019     .0032596    .0360027
interestrate |    .001875   .0026922     0.70   0.486    -.0034122    .0071623
 GDPdeflator |   .0006727   .0029447     0.23   0.819    -.0051105    .0064559
GDPpergrowth |   .0118787   .0038239     3.11   0.002     .0043687    .0193886
GDPpercapita | -1.13e-06   9.06e-07    -1.25   0.212    -2.91e-06    6.49e-07
  Governance |  -.0009045    .030305    -0.03   0.976    -.0604217    .0586127
       _cons |   .6845371   .1122961     6.10   0.000     .4639945    .9050797
-------------+----------------------------------------------------------------
      /sigma |   .3218608   .0200913                      .2824027     .361319
------------------------------------------------------------------------------

  Obs. summary:         65  left-censored observations at VRS<=0
                       546     uncensored observations
                         0 right-censored observations
```

Big banks

```
. tobit VRS Time CAR ResNPL Resloan CIR LDR Liq interestrate GDPdeflator GDPpergrowth Governance GDPpercapita, ll
vce(robust)

Tobit regression                                Number of obs   =        420
                                                F(  12,     408) =       0.60
                                                Prob > F        =     0.8399
Log pseudolikelihood =  248.79318               Pseudo R2       =    -0.0422

------------------------------------------------------------------------------
             |               Robust
         VRS |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        Time |  -.0002587   .0004383    -0.59   0.555    -.0011203    .0006029
         CAR |  -.0005518   .0007542    -0.73   0.465    -.0020345    .0009309
      ResNPL |   .0032729   .0014979     2.18   0.029     .0003283    .0062176
     Resloan |  -.0013061   .0018409    -0.71   0.478     -.004925    .0023128
         CIR |  -.0020484   .0011149    -1.84   0.067    -.0042401    .0001432
         LDR |  -.0176119   .0495206    -0.36   0.722    -.1149593    .0797356
         Liq |  -.0003172   .0008715    -0.36   0.716    -.0020305     .001396
interestrate |   .0020501   .0010065     2.04   0.042     .0000715    .0040286
 GDPdeflator |   .0029005   .0014212     2.04   0.042     .0001068    .0056942
GDPpergrowth |  -.0000741   .0007848    -0.09   0.925    -.0016168    .0014687
  Governance |  -.0348458   .0447027    -0.78   0.436    -.1227221    .0530306
GDPpercapita |   5.21e-07   5.99e-07     0.87   0.385    -6.57e-07    1.70e-06
       _cons |   1.055496   .0670869    15.73   0.000     .9236171    1.187375
-------------+----------------------------------------------------------------
      /sigma |   .1270885   .0231737                      .0815337    .1726433
------------------------------------------------------------------------------

  Obs. summary:          7  left-censored observations at VRS<=0
                       413  uncensored observations
                         0  right-censored observations
```

Small Banks

```
. tobit VRS Time CAR ResNPL Resloan CIR LDR Liq interestrate GDPdeflator GDPpergrowth GDPpercapita Governance, ll
vce(robust)

Tobit regression                                Number of obs   =        612
                                                F(  12,     600) =       3.80
                                                Prob > F        =     0.0000
Log pseudolikelihood = -254.92177               Pseudo R2       =     0.1308

------------------------------------------------------------------------------
             |               Robust
         VRS |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        Time |   .0008325   .0007167     1.16   0.246    -.0005751    .0022402
         CAR |   -.001808   .0017794    -1.02   0.310    -.0053027    .0016867
      ResNPL |    .001292   .0021189     0.61   0.542    -.0028692    .0054533
     Resloan |  -.0094246   .0034868    -2.70   0.007    -.0162723   -.0025769
         CIR |   .0011982   .0003739     3.20   0.001     .0004639    .0019324
         LDR |   .1281606   .0625288     2.05   0.041     .0053586    .2509626
         Liq |  -.0021876   .0008042    -2.72   0.007      -.003767   -.0006082
interestrate |   .0018739    .002707     0.69   0.489    -.0034424    .0071902
 GDPdeflator |   .0005569   .0029509     0.19   0.850    -.0052384    .0063522
GDPpergrowth |   .0114105   .0038299     2.98   0.003     .0038888    .0189322
GDPpercapita |  -7.22e-07   9.02e-07    -0.80   0.424    -2.49e-06    1.05e-06
  Governance |  -.0105775   .0294047    -0.36   0.719    -.0683261    .0471712
       _cons |   .8425386   .0779091    10.81   0.000      .689531    .9955463
-------------+----------------------------------------------------------------
      /sigma |   .3223983    .020231                      .2826661    .3621304
------------------------------------------------------------------------------

  Obs. summary:         65  left-censored observations at VRS<=0
                       547     uncensored observations
                         0 right-censored observations
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L'influence Du Risque Opérationnel Sur Le Rendement Des Actifs Financiers Des Banques Au Cameroun: Analyse Des Crédits Improductifs Et Frais De Gestion

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Abstract- Summary: The paper objective is to measure the sensitivity of operational risk to the return on financial assets in Cameroon. The importance of bankruptcies and banking transactions observed over the last 20 years between the monetary authorities on the failures. Our sample consists of individual data from four banks in Cameroon. The data on the explanatory variables will be extracted from various bank numbers of banks and financing institutions, as well as from COBAC. All other variables are related to financial risk indicators. They will be automatically attributed to the accounts and reports published in the official journals in Cameroon. Our analysis shows that operational risk factors have a significant influence on the performance of banks' assets in Cameroon.

Keywords: bank credit, management fees, non-performing loans, return on assets.

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L'influence Du Risque Opérationnel Sur Le Rendement Des Actifs Financiers Des Banques Au Cameroun: Analyse Des Crédits Improductifs Et Frais De Gestion

Djekna Votsoma [α], Timba Gaelle Tatiana [σ] & Nzihi Nziki Zenga [ρ]

Résumé- **L'objectif de ce papier est de mesurer la sensibilité du risque opérationnel sur le rendement des actifs financiers au Cameroun. L'importance des faillites bancaires et des crises observées ces 20 dernières années interpelle les autorités monétaires sur lesdéfaillances opérationnelles, les défaillances des systèmes et les évènements extérieurs. Notre échantillon est composé de données individuelles de quatre banques au Cameroun couvrantla période allant de 2009 à 2016. Nous utilisons ainsi des données de panel à double dimensions. Les données sur les variables explicatives seront extraites des divers numéros de l'annuaire des banques et établissements financiers publiés par la COBAC puis complétées et/ou validées par certaines personnes ressources des banques concernées. Toutes les autres variables se rapportant aux indicateurs des risques financiers seront calculées grâce aux bilans et comptes de résultats publiés dans les journaux officiels au Cameroun. Il ressort de notre analyse que les composantes du risque opérationnel, ont une influence significative sur le rendement des actifs des banques au Cameroun.**

Motsclés: risque bancaire, frais de gestion, crédits improductifs, rendement des actifs.

Abstract- Summary: **The paper objective is to measure the sensitivity of operational risk to the return on financial assets in Cameroon. The importance of bankruptcies and banking transactions observed over the last 20 years between the monetary authorities on the failures. Our sample consists of individual data from four banks in Cameroon. The data on the explanatory variables will be extracted from various bank numbers of banks and financing institutions, as well as from COBAC. All other variables are related to financial risk indicators. They will be automatically attributed to the accounts and reports published in the official journals in Cameroon. Our analysis shows that operational risk factors have a significant influence on the performance of banks' assets in Cameroon.**

Keywords: bank credit, management fees, non-performing loans, return on assets.

I. Introduction

L'attention a toujours été marquée sur les risques financiers (risque de marché, risque de crédit et risque de liquidité) au détriment des risques non financiers, qui, jusqu'ici étaient jugés moins importants. Les événements observés depuis plus de 20 années ont rappelé qu'une autre source de pertes financières significatives pouvait provenir de la concentration des risques non financiers à travers des dysfonctionnements opérationnels tels que les fraudes, les détournements, les condamnations, les dysfonctionnements de systèmes, les guerres.

Parmi les risques non financiers des institutions financières, le risque opérationnel prend une place de plus en plus importante. Il est non seulement lié à l'ensemble des éléments constitutifs de la banque (Nouy, 2006) mais c'est un risque majeur dans les faillites bancaires. Les accords de Bale 2 le définissent comme étant le risque résultant d'une adéquation des procédures, du personnel et des systèmes (Bale, 2004).C'est donc la maximisation des intérêts individuels qui nous conduit à de nombreux incidents tels que des fraudes internes et externes, des problèmes relatifs aux systèmes informatiques, des fraudes à la carte bancaire, des détournements de fonds, des mauvaises gestions des crédits.

Le système bancaire de la CEMAC a été marqué par des restructurations profondes dues à des erreurs de gestion liées aux individus (Brei et al., 2018 ; Njoda et Bita, 2009 ; Avom et Eyeffa, 2007). Particulièrement au Cameroun, une mauvaise comptabilisation des dotations aux provisions pour créances douteuses a camouflé les pertes réelles des institutions financières drainant à la chute le rendement de leur portefeuille et leur rentabilité. La littérature économique et financière corrobore l'existence d'une relation négative entre la montée des composantes du risque opérationnel et le rendement des actifs bancaires.

L'objectif de ce papier est de mesurer la sensibilité du risque opérationnel sur le rendement des actifs financiers au Cameroun. En utilisant des indicateurs tels que les crédits improductifs et les frais de gestion nous analysons l'impact du risque opérationnel sur le rendement des actifs financiers des banques au Cameroun. A partir d'une méthodologie des données de panel sur un échantillon de données individuelles de quatre banques au Cameroun sur une période allant de 2009 à 2016, nous montrons que les

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composantes du risque opérationnel, ont une influence significative sur le rendement des actifs des banques au Cameroun.

La première partie de notre papier donne une définition du concept central. La deuxième décrit l'intérêt que nous portons à l'étude du risque opérationnel bancaire et élabore une revue de la littérature. La troisième partie, enfin, apporte une réponse aux concepts méthodologiques et une analyse et interprétation des données.

II. Le Risque Opérationnel : Un Facteur Déterminant Des Faillites Bancaires

La littérature économique et financière nous montre l'intérêt de maitriser le risque opérationnel en le plaçant au cœur d'évènements désastreux et des scandales financiers très médiatisés.

L'exemple précurseur est celui de Bankhaus Herstatt qui est liquidée à cause d'une défaillance opérationnelle en 1975. Les répercussions de cette liquidation sur d'autres banques font réagir les superviseurs de Bâle pour prendre conscience progressivement du risque opérationnel en tant que composante à part entière des risques des institutions financières. Ensuite dans une même optique, la Barings Bank perd 1,6 milliard de dollars en 1995, la Daiwa Bank 1,1 milliards en 1995, Orange County 1,6 milliards de dollars en 1994. En2005, la banque canadienne CIBC verse à Enron 2,4 milliards de dollars, après une poursuite judiciaire accusé de camouflage de dettes.

Lamarque et Maurer (2009) et Asli (2011) montrent que les risques liés au personnel et à l'environnement des affaires ont une influence négative sur la performance financière de la banque. Ils fondent leur analyse sur la faillite de la banque d'affaires Barings, en 1995, suite aux spéculations de l'un de ses traders[1]. Le retournement des marchés asiatiques, suite au tremblement de terre de Kobé, a eu raison de ses positions et a entraîné la chute de la banque britannique, qui a cumulé des pertes s'élevant au double de son capital.

Plus récemment, l'affaire Kerviel a coûté à la Société Générale 4,9 milliards d'euros en 2008. La fraude du trader Kerviel, qui a réussi à contourner les procédures de contrôle interne, met en exergue l'importance de la gestion de ce type de risque.

Plusieurs institutions financières dans les pays en Afrique ce sont retrouvées sous administration provisoire pour limiter la concentration du risque de gestion afin d'éviter les effets de contagion néfastes. De nombreuses autres affaires de tromperie, ayant entraîné des pertes significatives, ont défrayé la chronique (Chernobai et al., 2008).

Thirlwell (2010, 2011) nous montre que la crise des subprimes également, souvent attribuée à la complexité des produits financiers structurés, est en grande partie due à une négligence humaine, et donc à une transformation moindre de la performance financière. En effet, les traders n'ont pas examinés avec précision la composition des produits structurés, ni évalués sérieusement les risques. Par ailleurs, la crise de liquidité ayant suivi la crise des subprimes est avant tout une crise de confiance engendrée par un comportement humain relevant desdysfonctionnements opérationnels. La crise financière de 2007 est principalement la conséquence de l'échec de la gestion des risques bancaires. D'un autre côté, Thirlwell met l'accent sur un autre facteur comportemental ayant contribué à accentuer le risque opérationnel lors de cette crise, à savoir l'appât du gain, motivé par la rémunération et les primes des traders.

Le risque opérationnel n'étant pas limité aux fraudes et aux erreurs humaines, il s'est aussi matérialisé lors des catastrophes naturelles ou environnementales[2].

En juillet et en octobre 2008, on a assisté à deux pertes de 8,4 milliards de dollars chacune, un record de tous les temps des pertes opérationnelles des banques américaines. La première perte est signée Wachovia Bank, un recours collectif déposé en cour fédérale en Californie portant allégation que la banque aurait déformé ses normes de souscription quant aux garanties habituelles de paiements. La deuxième perte, concerne CFC de Bank of America, pratiques illégales concernant des produits reliés aux prêts bancaires, 400 mille acheteurs touchés.

Au vu de tout ce qui précède, le risque opérationnel est présenté comme l'un des plus puissants catalyseurs dans l'affaiblissement de la rentabilité des actifs financiers bancaires.

III. Essai De Définition et Composantes du Risque Opérationnel

a) Définition du risque opérationnel

Les autorités monétaires tentent de nous donner une définition du risque opérationnel à travers les accords de Bale 2: « les risques de pertes résultant d'une inadaptation ou d'une défaillance imputable à des procédures, personnels et systèmes internes, ou à des événements extérieurs, y compris les événements de faible probabilité d'occurrence, mais à risque de pertes élevées ». Cette définition, bien qu'exhaustive et présentant l'étendue des impacts liés aux risques opérationnels est difficile à appréhender pour des entreprises souhaitant y apporter une réponse efficace. Cette définition suppose encore une certaine culture du

[1] Le trader Nick Leeson, en tentant de rattraper ses pertes et de couvrir ses positions, ce dernier a dû emprunter des sommes importantes.

[2] C'est le cas des attentats du 11 septembre 2001, du tremblement de terre au Japon en 2011 ou encore des craintes du bug informatique, suscitées par le passage à l'an 2000

risque et une expertise car il est aisé de confondre la notion de risque avec d'autres notions proches telles que les menaces, les incidents ou encore les évènements redoutés (Dufour, 2015). Le risque opérationnel est donc un ensemble d'éléments, un ensemble de risques pouvant affecter l'organisation de part leur potentiel de désorganisation (Bon-Michel et Dufour, 2013).

Bon-Michel (2010) appréhende le risque opérationnel bancaire comme un risque multiforme mais explicite au travers de la réglementation prudentielle. Power (2005) trouve que le risque opérationnel est un sujet diffus, voire ambigu au-delà de son caractère multiforme. Il est au cœur de la banque et concerne pas uniquement des activités bancaires.

En résumé, les risques opérationnels bancaires matérialisent tous les impacts directs ou indirects engendrés par l'entreprise dans son activité quotidienne, dans son cycle d'exploitation.

b) Les déterminants du risque opérationnel

Le risque opérationnel s'adosse à trois composantes spécifiques : les risques juridiques, les risques informatiques, les risques sociaux et psychosociaux. D'après Dufour (2015), alors que les risques juridiques sont les procès suite au non-respect de certaines obligations, les risques sociaux sont les grèves, les émeutes, les risques psychosociaux sont les suicides et lesrisques informatiques sont les pannes d'un serveur ou de l'installation informatique paralysant l'activité. Ferrary (2009) met l'accent sur le risque humain comme composantes principale du risque opérationnel qu'il convient d'identifier et de gérer. Il définit parallèlement les outils et les pratiques de GRH constituent des moyens d'analyse et des modalités de couverture de ce risque. Le schéma ci-dessous décrit l'ensemble des composantes du risque opérationnel.

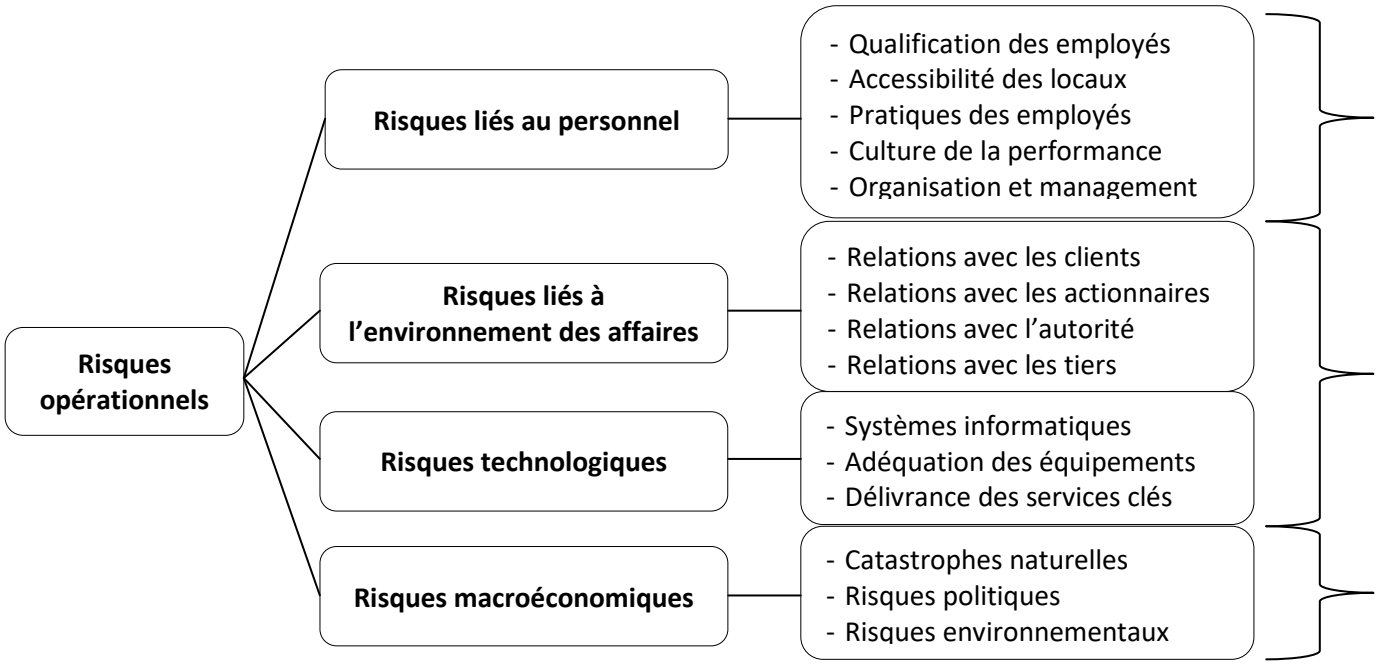

Figure 3.1: Les composantes du risque opérationnel

En définitive, le risque opérationnel renferme les frais généraux, les charges de personnel et les facteurs extrinsèques qui ont une relation directe ou indirecte avec le rendement des actifs financiers bancaires.

IV. Contribution du Risque Opérationnel au Rendement des Actifs Financiers : Revue de la Littérature

a) Le rendement des actifs comme indicateur de la performance financière

i. *Notion de performance*

La performance se fonde sur l'optimisation du rapport entre la valeur et le coût de l'entreprise. Elle concerne en effet, les éléments qui permettent la création de la valeur au sein de l'entreprise. Selon Lorino (2003) : « est performance dans l'entreprise, tout ce qui et seulement ce qui contribue à atteindre les objectifs stratégiques ». Donc l'augmentation de la valeur ou la diminution des coûts n'entraine pas la performance de l'entreprise sauf si cela améliore le ratio valeur / coût ou le solde valeur-coût. Pour Corhay et Mbangala (2008), la performance est le degré de réalisation des objectifs assignés à l'entreprise. Ainsi, la performance de l'entreprise peut se traduire par sa

pérennité (durabilité et viabilité), sa compétitivité et ses parts de marché (l'entreprise face à ses concurrents), son niveau d'innovation et sa proactivité (niveau de décision stratégique), sa rentabilité et son autonomie. La performance d'une entreprise repose aussi sur le niveau de compétence de ses ressources humaines qui y tiennent une place importante.

La performance renvoie de manière générale à quatre notions principales : les résultats de l'action : la performance correspond alors au résultat mesuré par des indicateurs ; le succès : la performance convie à un résultat positif ; l'action : la performance désigne simultanément les résultats et les actions mises en œuvre pour les atteindre, c'est à dire un processus ; la capacité : la performance renvoie alors au potentiel.

La performance économique est longtemps analysée dans le passé à travers les indicateurs financiers, comptables et boursiers. Pour Gallouj et al. (2012), la performance d'une organisation comporte plusieurs dimensions[3] : la dimension économique, la dimension sociale, la dimension politique et la dimension systémique.

La performance d'une organisation repose sur les critères d'efficacité, d'efficience (d'effectivité), d'économie de ressources (Foray (2010), Galdemar et al (2012), Salgado (2013)).

La performance est le degré de réalisation du but recherché. Selon Galdemar et al (2012), cette approche fait apparaître quelques critères de la performance qui sont l'efficacité, l'efficience et l'effectivité : l'efficacité constitue le résultat obtenu par rapport au niveau du but recherché, l'efficience signifie le résultat obtenu par rapport aux moyens mis en œuvre, l'effectivité correspond au niveau de satisfaction obtenu par rapport au résultat obtenu.

Pour Salgado et al (2013) et Foray (2010) montrent que la productivité des ressources devient de plus en plus importante. Une meilleure gestion des ressources de l'entreprise lui permet d'être efficace et rentable à moindre coût. L'efficacité dans la gestion des ressources est considérée comme une nouvelle stratégie industrielle. Les coûts de la main d'œuvre unitaire, de productivité du capital ne sont pas suffisant, de ce fait les entreprises doivent s'intéresser aussi aux coûts des ressources, afin d'être efficace.

ii. *Notion de performance financière*

La performance financière est la capacité de l'entreprise à générer un résultat à moindre coût. Une entreprise est performante lorsqu'elle est rentable c'est-à-dire lorsque les résultats (les bénéfices) sont atteints avec la minimisation des coûts. La performance financière se mesure de deux façons différentes : elle peut être basée sur le marché ou sur la comptabilité (Seifert et al, 2004).

La performance financière selon les comptables donne une idée historique d'évaluation de la rentabilité (comptable) de l'entreprise. Pour Srairi (2010), elle englobe un large panier d'indicateurs de la rentabilité comptable de l'entreprise tels que le Return On Equity, le Return On Assets, la croissance des actifs, les revenus d'exploitation, etc. La limite de cette approche est les biais provenant des différences dans les procédures et les manipulations comptables. L'analyse de la profitabilité est l'analyse du rapport entre un flux de bénéfice (Moore (2001), Seifert (2004)) : la marge brute commerciale, l'excédent brut d'exploitation, du résultat (avant et après impôt) et du flux d'activité mesurant la production de l'entreprise (le chiffre d'affaires, la valeur ajoutée nette ou VAN, etc.). La profitabilité mesure uniquement la performance de l'activité et de la recherche d'une maximisation des profits (produits-charges).

Selon Seifert et al (2004), le rendement des actifs est un indicateur par référence. Il se mesure par la détermination du Return On Assets ou ROA. En effet, selon Srairi (2010), le rendement des actifs est le rapport entre le résultat net et le total des actifs de bilan d'une entreprise (la banque). Le ROA mesure à quel point les ressources matérielles et immatérielles génèrent des bénéfices dans l'entreprise. Il donne des indications sur la façon dont l'entreprise exploite ses ressources tout au long de son fonctionnement. Le ROA permet à l'entreprise de mieux organiser ses activités d'exploitation et hors exploitation.

b) Corrélation entre le risque opérationnel et la performance financière

i. *Canaux de transmission du risque opérationnel*

Le risque opération influence la performance financière à travers plusieurs canaux. La littérature regroupe ces canaux en trois catégories : les facteurs organisationnels, les facteurs macro-financiers et les facteurs externes.

Les déterminants organisationnels représentent les caractéristiques et spécificités financières liées à la gestion de la banque. Nous distinguons la taille de la banque, l'efficacité opérationnelle, les charges d'exploitation, les crédits bancaires, la liquidité et les capitaux propres. Parlant de la taille de la banque, les

[3]La dimension économique est dominante dans la mesure de la performance. Elle se rapporte à l'évaluation de qualité et de la quantité de ressources acquises et épargnées, nécessaires au fonctionnement de l'entreprise ; La dimension sociale concerne le personnel de l'entreprise. Elle suppose une grande corrélation entre le traitement du personnel et la performance de l'entreprise. Ainsi la cohésion sociale caractérise l'équilibre de la structure organisationnelle et entraine la performance ; La dimension politique : la performance est optimale lorsque l'entreprise dégage une plus-value suffisante pour que chaque partenaire ou groupe externe trouve son gain ; La dimension systémique conçoit l'organisation comme un système composé de plusieurs sous-systèmes (groupes) ayant un objectif et interagissant avec un environnement (interne et externe) avec lequel il échange et transforme les ressources. La performance est donc la capacité d'adaptation des équipes de l'entreprise à son environnement.

travaux sur la taille de la banque comme facteur de la rentabilité, font l'objet de débat. Genay (1999) dans son analyse de banques japonaises, montre que les grandes banques sont plus performantes que les petites. Par contre Short (1979) ne trouve pas un résultat significatif en étudiant le lien entre la taille de la banque et sa rentabilité financière. La théorie économique insiste sur les effets négatifs des frais d'exploitation bancaire sur la profitabilité. Les analyses de Naceur (2003) montrent l'impact positif des frais de gestion sur la productivité des banques et donc sur son rendement. Ainsi les banques tendent à faire des dépenses supplémentaires qui justifient la variation des frais de gestion afin de maximiser son profit. Guru et al (2002) pensent que la réalisation de profit ne peut se faire sans engager des dépenses mais les banques doivent éviter les dépenses oisives.

A propos de l'efficacité opérationnelle, les études de Molyneux et Thornton (1992) trouvent un lien positif et significatif entre la rentabilité et la gestion efficace des établissements de crédit. Maghyrech et Shammout (2004) introduisent dans leur modèle les frais d'exploitation/total actif avant d'aboutir à une relation inverse entre la rentabilité et les variables explicatives.

De nombreux auteurs, à l'instar de Naceur (2003) démontrent un impact positif des crédits bancaires et de la taille de la banque sur la rentabilité des actifs. Le renforcement de la politique de crédit augmente les profits bancaires. Néanmoins, les crédits peuvent entraver la rentabilité des banques.

Les résultats des travaux de Athanasoglou et al (2008) mettent en évidence les effets négatifs du risque de crédit sur la rentabilité financière des banques. En effet plus le risque est important plus la valeur des crédits impayés augmente et plus le rendement des banques baisse. Kosmidou et al (2007) indiquent que la liquidité agit négativement sur la rentabilité des banques. Kosmidou et al (2007) démontrent dans leurs travaux l'effet significativement positif de la liquidité sur la rentabilité.

Bashir (2000) et Beckman (2007) pensent que l'émergence des marchés des capitaux dans les pays en voie de développement renforce l'activité bancaire. Ben Naceur (2003) précise que l'élargissement de ces marchés produit un effet de substitution sur l'activité bancaire. Généralement, la concentration et la taille du secteur bancaire impactent positivement la rentabilité bancaire des actifs.

Tout d'abord Beckman (2007) montre l'existence d'une relation positive entre la croissance économique (produit intérieur brut ou PIB) et la croissance des profits bancaires. En effet la richesse du pays profite aux activités des banques et incite celles-ci à innover leurs techniques et technologies de gestion.

Ensuite, s'agissant de la variation du niveau général des prix (inflation ou déflation), Guru et al (2002) démontrent un lien positif entre le rendement des actifs (accroissement des profits) des banques et la progression de l'inflation.

Enfin, le taux d'intérêt, à court ou à long terme, a des effets positifs ou négatifs sur la rentabilité, selon qu'il augmente ou baisse. L'augmentation des taux d'intérêt entraine l'augmentation des dépôts de fonds dans la banque et la diminution des crédits octroyés. Tout ceci entraine la baisse de la rentabilité de la banque (diminution de la marge sur intermédiation financière). Athanasoglou, et al.(2006) utilisent le taux d'intérêt (à long terme). Les résultats obtenus montrent une relation positive entre le taux d'intérêt et la rentabilité des banques.

ii. *Composantes du rendement des actifs*

Le rendement des actifs correspond à la rentabilité des actifs investis. Il a pour principal indicateur de mesure le Return On Asset (ROA).Le Return On Asset est le rapport entre les résultats nets de l'entreprise et leur total actif.Le résultat net comptable d'une entreprise est la différence entre les produits et les charges enregistrées par cette entreprise pendant un exercice donné. Le résultat net est le dernier solde intermédiaire de gestion qui apparait dans le compte de résultat d'une entreprise. Les différents soldes intermédiaires de gestion qui apparaissent dans le compte de résultat d'une banque sont : le produit net bancaire, l'excédent brut d'exploitation, le résultat d'exploitation, le résultat courant avant impôt et le résultat net. Dans un bilan, le résultat comptable se calcule à partir de la différence entre le total actif et le total passif. En fin d'exercice, le traitement du bilan (bilan financier) permet de repartir le résultat net. Une partie se redistribue sous forme de dividendes et l'autre constitue les réserves de l'entreprise.

Le total actif ou total de bilan est l'ensemble des actifs : les immobilisations, les actifs circulants et la trésorerie. En effet, les actifs immobilisés sont de long terme dans l'entreprise et se constitue d'immobilisations incorporelles (les frais d'établissement, les brevets et licences, etc.), d'immobilisations corporelles (les terrains bâtis et non bâtis, les matériels et les outillages, techniques, etc.) et d'immobilisations financières (ce sont les créances et participations).Par ailleurs, les actifs circulants se constituent des stocks et des créances de l'entreprise. Tandis que la trésorerie se constitue des concours bancaires, des facilités de caisse, etc.

iii. *L'incidence des risques opérationnels sur le rendement des actifs*

De nombreuses recherches prouvent l'existence d'un lien positive entre la gestion des risques opérationnels et la rentabilité des entreprises. D'autres, par contre, soutiennent que l'adoption d'un système de gestion des risques opérationnels n'affecte en rien la rentabilité financière des entreprises. Les études de Nocco et Stulz (2006) montrent comment la gestion des

risques crée de la valeur pour les actionnaires. La gestion des risques crée de la valeur pour l'entreprise et elle est un avantage concurrentiel. Les recherches de Bertinetti et al (2013) portent sur l'impact de l'adoption de la gestion des risques sur la valeur de l'entreprise et sur les déterminants du choix de la gestion des risques. Ils travaillent sur un échantillon de 200 entreprises, qui comportait à la fois des entreprises du secteur financier et non financier. Ils trouvent que le management des risques impacte positivement la valeur des entreprises européennes.

En opposition, des auteurs supposent que les risques opérationnels n'affectent pas la rentabilité financière des entreprises (des banques).Ramlee et Ahmad (2015) analysent, dans leur étude la rentabilité financière de entreprises non-financières. A partir des données sur un échantillon de 74 entreprises, avec ou sans Comité de gestion des risques, leurs résultats ne montrent aucun impact significatif de la gestion des risques sur le rendement des entreprises non financières en Malaisie. Selon cette étude, la rentabilité d'une entreprise n'est pas fonction des mesures de gestion de risque mises en place. Lukianchuk (2015) mène son étude sur l'impact de la gestion des risques sur le rendement des petites et moyennes entreprises (PME). Les données proviennent d'une base qui fournit les informations sur les firmes (208 firmes des secteurs majeurs) situées au Royaume unis et en Irlande du nord. Les résultats de l'étude ne vérifient pas le lien entre la gestion des risques et la performance. Pagach et warr (2010) étudient les effets de la gestion des risques sur la rentabilité des entreprises à partir de l'analyse des caractéristiques financiers, des actifs et du marché. Ils utilisent un échantillon de 106 entreprises détenant un gestionnaire des risques pour les accompagnés dans la pratique de gestion des risques. Leurs résultats à partir de leur échantillon ne leurs ont pas permis de confirmer que la gestion des risques crée de la valeur. Ces auteurs recommandent de fournir un programme de « mise en œuvre de management des risques et les indicateurs » et les indicateurs de mesure de la performance de ce programme, avant d'affirmer l'existence d'une relation positive entre les risques et la rentabilité financière.

V. Sensibilité Du Risque Opérationnel à La Performance Financière

a) *Méthodologie d'analyse et présentation de l'échantillon*

Nous utilisons une méthodologie des données de panel sur 4 banques au Cameroun. Nous mesurons le rendement des actifs à partir du return on assets (ROA). Il indique ce que rapporte les actifs (de long terme ou de court terme) de la banque, pendant son fonctionnement, en termes de résultat (bénéfice) afin de savoir si elle est rentable.

Nos variables explicatives seront le ratio de crédit improductif sur le total de crédit et les frais de gestion et le taux d'inflation.

Tableau 5.1.1: Tableau récapitulatif des variables d'analyse

Type de variables	Variables	Données sur les banques au Cameroun
Variable dépendante	Le rendement des actifs	Le résultat net Le total actif de bilan
Variables indépendantes	Les crédits improductifs	Les provisions sur dépréciation de créances
	Les frais de gestion	Les frais de personnel Les frais de gestion des systèmes internes, Les frais informatiques Les autres charges d'exploitation
	L'inflation	Le taux d'inflation

A la lumière des travaux de Bertinetti et al (2013), nous utilisons une régression linéaire. Il nous revient de faire une analyse des données bancaires sur le rendement des actifs des banques *(Roa),* les crédits improductifs *(Inci),* les frais de gestion *(Infg)* et le taux d'inflation *(infl).* La spécification de notre modèle économétrique sur l'impact des risques opérationnel sur le rendement des actifs des banques au Cameroun, s'écrit comme suit:

$Roait = \beta 0 + \beta 1\ Inciit + \beta 2\ Infgit + \beta 3\ inflit + \varepsilon it$ où le Roa représente le rendement des actifs; Inci, le ratio de crédit improductif sur le total de crédit; Infg, les frais de gestion; infl, le niveau d'inflation; εt, le terme de l'erreur; i, la dimension individuelle; t, la dimension temporelle.

b) *Analyse et interprétation des résultats*

i. *Analyse statistiques des données*

La moyenne correspond à la valeur ou la modalité affectée à un groupe supposé homogène contenant des informations individuelles différentes. Les quartiles d'une distribution statistique sont des indicateurs de position d'une modalité par pourcentage d'effectif cumulé. Ainsi nous distinguons quatre quartiles: Q1 : correspond à 25%, Q2 à 50%, Q3 à 75% et Q4 à 100%. Le tableau ci-dessous illustre les paramètres de position des différentes variables mobilisées pour notre analyse de données.

Tableau 5.2.1: Les paramètres de position des variables

	Roa	lnci	lnfg	infl
Moyenne	0,01329487	22,6473391	22,7026363	0,0230375
Min	0,0010452	21,1924079	21,7024142	0,009
Q1	0,00683432	21,7024949	22,6244655	0,019375
Q2	0,01260851	22,5226198	22,8364103	0,024
Q3	0,01839509	23,5443819	22,897451	0,0291
Max	0,03719717	24,8515089	23,1598517	0,0304

Ce tableau nous permet d'avoir une vue d'ensemble sur la distribution des différentes variables que nous mobilisons dans notre analyse à travers les paramètres de position. Il nous informe sur l'ensemble des observations par variables d'intérêt de manière plus simplifiée en présentant la moyenne, la valeur minimale, les quartiles et la valeur maximale.

Parlant du rendement des actifs (Roa) des quatre banques de notre échantillon, sa valeur la plus petite est 0,001 et la plus grande est 0,037. Une proportion de 25% des banques ont un rendement des actifs de 0,006 ; 50% des banques ont un rendement de 0,012 ; 75% des banques ont un rendement de 0,018 avec un rendement moyen de 0,013 et une valeur maximale de 0,037.

L'analyse de notre modèle nécessite l'utilisation du logarithme népérien appliqué à certaines variables: les crédits improductifs et les frais de gestion. En effet, l'observation des crédits improductifs nous montre une valeur moyenne de 22,64 avec une valeur minimale de 21,19 et une valeur maximale de 24,85. Les proportions de 25%, 50% et 75% des banques ont des crédits improductifs respectifs de 21,7 ; 22,57 et 23,54. Par ailleurs, les frais de gestion partent de 21,7 à 23,15 avec une moyenne de 22,7. 25% des banques ont des frais de gestion de 22,62 ; 50% des banques ont des frais de gestion de 22,83 et 75% des banques ont des frais de gestion de 22,89.

Pour terminer, l'inflation moyenne et médiane est évaluée respectivement à 0,023 et 0,024. De même l'inflation minimale est de 0,009 et l'inflation maximale est de 0,03 avec pour premier et troisième quartiles respectifs de 0,019 et 0,029.

Le tableau 5.2.2: Les écarts types des variables de notre analyse.

	Roa	lnci	lnfg	infl
Ecart Type	0,00857394	1,02225565	0,37039301	0,00696497

L'écart type de rendement des actifs est 0,008 ; celui des crédits improductifs est 1,022 ; celui des frais de gestion est 0,37 et celui de l'inflation est 0,006.

Nous présentons graphiquement le *box plot* de chaque banque mettant en évidence leur rendement moyen des actifs. Cette description graphique permet d'observer clairement le rendement des actifs de chaque banque et visualiser si elles sont homogènes ou hétérogènes.

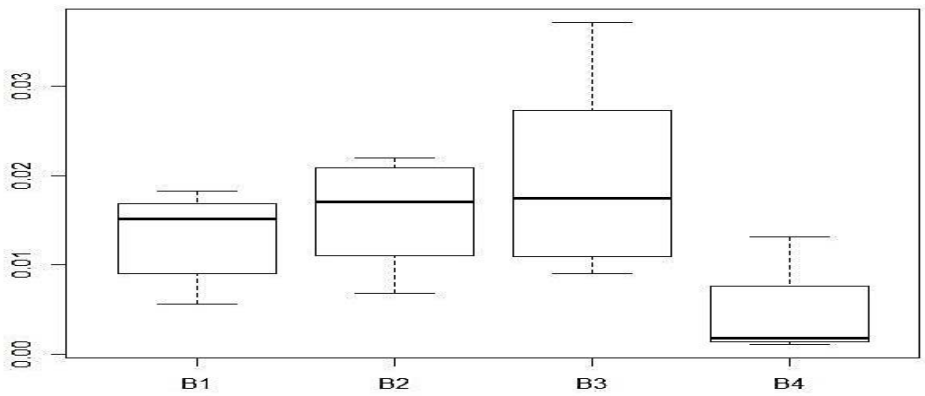

Figure 5.5.1: Rendement moyen des actifs par banque.

Sur la période de 2009 à 2016, nous observons que le rendement moyen des trois premières banques (B1, B2 et B3) est compris entre 0,015 et 0,0175. Ces banques se comportent quasiment de manière

identique pendant cette période. Nous constatons que la banque B4 sort du lot : elle présente un rendement moyen des actifs d'environ 0,0025 qui se confond à son rendement minimum avec un rendement maximum d'environ 0,0075 (très petit).

Les résultats concernant la corrélation entre les variables d'analyse se présentent comme suit dans le tableau 9 :

Tableau 5. 2.3: Corrélation des variables

	ROA	lnci	lnfg	infl
ROA	1.0000000	-0.57391369	0.37305560	-0.0160608
lnci	-0.5739137	1.00000000	0.01653038	-0.3555842
lnfg	0.3730556	0.01653038	1.00000000	-0.2168162
infl	-0.0160608	-0.35558417	-0.21681623	1.0000000

Concernant la corrélation entre les variables indépendantes (lnci, lnfg et infl) et la variable à expliquer : le Roa, elle se situe entre 0,016 et 0,57.

En effet, l'inflation et les crédits improductifs influencent négativement le rendement des actifs (respectivement de 0,016 et 0, 57). Par contre, le lien entre les frais de gestion (frais de personnel) et le Roa est de 0, 37.

La corrélation entre les frais de gestion et les crédits improductifs est de 0,0165. Il existe une relation négative d'une part, entre les frais de gestion et l'inflation (0,21) et d'autre part, entre les crédits improductifs et l'inflation (0, 35).

ii. *Sensibilité du rendement des actifs financiers au risque opérationnel des banques au Cameroun*

L'analyse économétrique par la méthode des moindres carrés ordinaires nous présente les résultats suivants:

$$Roa_{it} = -0{,}0053\ lnci_{it} + 0{,}008 lnfg_{it}$$
$$(0{,}0012) \qquad (0{,}0031)$$

( ) Représente la variance des estimateurs β de la régression par MMCO.

L'analyse du modèle, par la méthode des moindres carrés ordinaires, comporte 32 observations et 3 variables indépendantes avec un degré de liberté (DDL) de 28. Dans cette régression, la significativité globale du modèle est bonne (de 0,019%) avec un coefficient de détermination de 49,92%.

Le modèle estimé est le suivant:

$$Roa_{it} = -0{,}0188 lnfgs_{it} - 0{,}331 infl_{it}$$
$$(0{,}0103) \qquad (0{,}1768)$$

Ce modèle comporte une dimension individuelle et une dimension temporelle. La dimension individuelle se forme de 4 banques que nous étudions sur une période de 8 ans ; ce qui nous donne un total de 32 observations.

Nous constatons que le coefficient de détermination de notre modèle à effet fixe est de 32,19% et la significativité globale de ce modèle est de 1,94%.

Le test de comparaison de Fisher ou pFtest permet de choisir le meilleur modèle entre les moindres carrés ordinaires (MMCO) et le modèle à effet fixe. Le tableau ci-dessous nous donne le rendu.

Tableau 5.2.2.1: Test de comparaison de Fisher

Statistique de Fisher	Probabilité critique
2,6508	0,07071

Le pFtest du modèle estimé nous donne une probabilité critique de Fisher de 0,07071 (7,07%) très inférieure au seuil de significativité ou marge d'erreur de 5%.

Le test de comparaison de Fisher ou pFtest, dont les résultats apparaissent plus-haut (tableau 12), nous permet de choisir le modèle économétrique à mobiliser pour notre régression.

La probabilité critique du test de Fisher est de 7,07%, supérieure au seuil de significativité (7,07% 5%). Ce qui implique la validation de l'hypothèse H_0 (rejet de l'hypothèse H_1). Donc le meilleur modèle est celui des moindres carrés ordinaires. Il y a donc homogénéité entre les variables (destruction de la dimension individuelle: Banques).

Le modèle de régression linéaire correspondant au modèle à effet fixe s'écrit comme suit:

$$Roa_{it} = -0{,}0053\ lnci_{it} + 0{,}008 lnfg_{it}$$
$$(0{,}0012) \qquad (0{,}0031)$$

Le test de Fisher (F-statitique= 9,30) confirme la significativité globale de notre modèle de régression, avec une probabilité critique de 0,019%. Ce qui signifie que, dans notre échantillon, les variables exogènes, dans leur globalité expliquent le rendement des actifs des banques au Cameroun.

Le coefficient de détermination montre que, dans notre estimation, cette influence globale est de 49,92% (50% environ). Et en cas d'ajustement de notre modèle, l'influence globale est de 44,55%.

L'analyse de l'impact des variables exogènes de notre modèle sur le rendement des actifs des banques, nous permet d'observer d'une part, une significativité individuelle des crédits improductifs et des frais de gestion de la banque dans le modèle sur une marge d'erreur de 5%. D'autre part, l'inflation n'explique pas significativement le rendement des actifs.

Cette analyse nous permet d'affirmer que les crédits improductifs ont une influence significative sur le rendement des actifs des banques. L'augmentation d'une unité de crédit improductif baisse le rendement des actifs de 0,53%.Les frais de gestion influencent positivement et significativement le rendement des actifs des banques à 0,8%.

Suivant nos estimations, nous pouvons constater la qualité de la relation entre l'inflation et le rendement des actifs des banques. Le taux d'inflation n'influence pas significativement le rendement des actifs des banques au Cameroun. En effet la probabilité critique de la statistique de Student est de 26,19%. Donc $\beta_3=0$.

De même, le test de Student montre que la constante β_0 est nulle. La probabilité critique du test de Student est égale à 59,71% (elle est très supérieure à la marge d'erreur de 5% considérée dans la régression du modèle).

Dans notre modèle de régression, nous analysons l'impact des risques opérationnels sur le rendement des actifs des banques au Cameroun. Nous mesurons le risque opérationnel par des facteurs internes (les crédits improductifs et les frais de gestion) et l'inflation (facteur macroéconomique). Les résultats de notre analyse montrent que les crédits improductifs et les frais de gestion expliquent significativement le rendement des actifs des banques de notre échantillon tandis que le facteur macroéconomique, le taux d'inflation, n'influence pas significativement le rendement de actifs des banques. Tout comme les analyses de Athanasoglou et al (2008), les crédits improductifs, ont une influence significative et négative (0,5363%) sur le rendement des actifs des banques au Cameroun. Dans le même sens queNaceur (2003), nous constatons que les frais de gestion influencent positivement à 0,8036% le rendement des actifs des banques au Cameroun.

Tableau 5.2.2.2: Vérification des hypothèses.

Hypothèses spécifiques	Formulation	Résultats des tests
H1	Les crédits improductifs ont une influence positive sur le rendement des actifs des banques au Cameroun.	Hypothèse confirmée
H2	Les frais de gestion ont une influence positive sur le rendement des actifs des banques au Cameroun.	Hypothèse infirmée

Les résultats de notre étude nous enseignent que les risques opérationnels, mesurés à partir des frais de gestion et des crédits improductifs de la banque, expliquent de manière significative le rendement des actifs des banques au Cameroun. Ainsi, ces résultats permettent de dégager quelques recommandations afin de promouvoir la bonne gestion ou l'atténuation du risque opérationnel au sein des banques au Cameroun et de permettre la maximisation du rendement de leurs actifs.

La gestion ou l'atténuation des risques opérationnels au sein d'une banque ne peut être parfaite vue que le risque zéro n'existe pas. Il est donc question pour les banques du Cameroun, de trouver des moyens permettant d'une part de minimiser les risques opérationnels ou les pertes et d'autre part d'optimiser le rendement de leurs actifs.

En effet, pour identifier et gérer les risques opérationnels, les banques doivent autoévaluer quotidiennement leurs risques. Elles doivent analyser l'efficacité du système de contrôle en y associant : un mécanisme d'alerte pour déceler rapidement les cas de dépassement de seuil, un système de notation des processus supportant les risques opérationnels dans la banque. Elles doivent mettre en place un dispositif de collecte des incidents par types d'activité et types d'évènements de pertes (tant à l'intérieur qu'à l'extérieur). Elles doivent tenir compte des scénarios établis par l'opinion des experts ou directement par les opérationnels (personnel) de la banque. Cette analyse ne pouvant se faire sans la réalisation au préalable d'une « bonne » cartographie des risques opérationnels comme le propose les accords de Bâle. En outre, les banques doivent revoir et adapter périodiquement la politique de gestion des risques et les modèles correspondant. Il est aussi nécessaire d'évaluer le degré de respect d'application de cette politique par les opérationnels de la banque et d'en informer la direction. Ainsi, celle-ci peut s'appuyer sur un système de « bonus/malus », appliqué par service ou par agent (opérationnel), pour donner plus de force à la politique et réduire les pertes opérationnelles.

L'information de la direction, sur le respect de la politique de gestion des risques opérationnels consiste aussi, pour le gestionnaire des risques, à transférer des rapports. Ces rapports informent sur la cohérence entre les niveaux actuels de risque encouru et les niveaux historiques de risque, l'adéquation et l'efficacité des méthodes de gestion de risque mises en place en cas de défaillance.

Par ailleurs, comme prescrite par le cabinet Protivitirisket Business Consulting (2003), les banques peuvent s'appuyer sur quelques pratiques d'atténuation de risque. L'amélioration du niveau de culture de risque à travers des séminaires de formation organisés périodiquement pour la mise à jour du personnel et son adaptation aux nouveaux risques. La protection contractuelle par des clauses juridiques

spécifiques et strictes pour les cas de fraudes (internes ou externes). La mutualisation des risques entre les banques au Cameroun et la couverture par des compagnies d'assurances. L'interdiction des activités génératrices des pertes et la constitution des provisions pour risques opérationnels dans les états financiers.

Au niveau de la COBAC, il faut intensifier la surveillance des banques (surtout celles qui détiennent la majorité des activités bancaires au Cameroun) en terme de crédits improductifs, de frais de gestion, de la constitution d'une provision pour risque opérationnel, du total des actifs, en améliorant son niveau de contrôle (le contrôle sur place et le contrôle sur pièces) des banques.

VI. Conclusion

L'objectif principal de ce papier était de déterminer les effets des risques opérationnels sur le rendement des actifs des banques au Cameroun. Nous avons ainsi structuré notre travail en 2 parties : la première qui présente un cadre théorique sur la notion de risque opérationnel bancaire et la deuxième qui mesurait la sensibilité des rendements d'actifs financiers au risque opérationnel.

Il en ressort de cette analyse que les frais de gestion et les crédits improductifs, impactent significativement le rendement des actifs (return on assets) des banques au Cameroun. En effet, l'impact est positif avec les frais de gestion, soit de 0,8% et par ailleurs, les crédits improductifs influencent négativement (0,53%) le rendement des actifs des banques au Cameroun, avec un coefficient de détermination de 49,92%. Par contre l'inflation n'influence pas significativement le rendement des actifs des banques au Cameroun.

Nous rappelons que l'identification d'une influence significative entre les risques opérationnels et le rendement des actifs des banques au Cameroun, permet aux banques du secteur d'optimiser le rendement de leurs actifs en minimisant leurs pertes opérationnelles. Ce qui améliore leur performance financière et permet la stabilité du système bancaire du Cameroun.

Malgré l'indisponibilité des rapports annuels de toutes les banques du Cameroun, nous avons présenté un échantillon réduit. Un axe exploratoire serait de d'intégrer l'impact du contrôle interne sur la gestion des risques opérationnels au sein des banques du Cameroun.

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The Effect of Isomorphism Pressure and Accessibility of Financial Statements toward Stakeholder Trust with Financial Management Transparency as Mediation Variables (Study on Regional Government of the District/City in West Nusa Tenggara Province)

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GJMBR-C Classification: *JEL Code: G00*

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Abstract- This study aims to examine the effect of predicting the concept of isomorphism pressure and the accessibility of financial statements influencing stakeholder trust and examining the transparency prediction effects of financial management mediating isomorphism pressure and accessibility of financial statements on stakeholder trust. This research was carried out on the Regional Government in Indonesia. This type of explanatory research, the sample is determined purposively/Judgment sampling taken based on the criteria of financial management officials and internal supervision officials. The hypothesis proposed in the study was four hypotheses based on institutional theory, stewardship theory, stakeholder theory, signaling theory and analyzed using Partial Least Square 3.0 analysis tools.

The results showed that the application of the mechanism of institutuional isomorphism pressure had a positive and significant effect on stakeholder trust. The relationship between the accessibility of financial statements to stakeholder trusts indicates the existence of a distorter variable where initially the relationship between variables is positively related, but while the third variable is presented to be weak negative, Whill the transparency of financial management mediates the relationship between institutuional isomorphism pressure and stakeholder trust, and accessibility of financial statements shows the occurrence of a suppressor effect or classified as full mediation where the coefficient of indirect influence on the accessibility of financial statements to stakeholder trust increases or increases significantly and positively. Thus, the conclusion of this study shows that the application of isomorphism institutional pressure mechanisms, accessibility of financial statements, and financial management transparency have implications for increasing stakeholder trust. This research contributes to strengthening and proving that the concept of isomorphism institutions has characteristics that meet the expectations of stakeholders and initiate transparency.

Keywords: isomorphism, accessibility, transparency, stakeholder.

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I. Introduction

The birth of legislation and government policies is a form of institutional isomorphism in government organizations (Judge 2010; Pedersen 2013). Isomorphism institutional implies that the mechanism and reporting standards of local government entities must be subject to the adoption of accounting policy practices from the central government in the form of external pressure, namely regulation. (Coser in DiMaggio and Powel 1983, 150; Godfrey, 2010). UU no. 33 of 2004 mandates that regional finance of must be managed in an orderly manner, obeying the laws and regulations, efficiently, economically, effectively, transparently, and responsibly by taking into account justice, compliance and benefits for the community. Content of the policy direction of the Grand Design of the Bureaucratic Reform of the Republic of Indonesia 2010-2025 based on PP No. 81 of 2010 aims to accelerate the realization of good governance and increase stakeholder trust by applying the principles of transparent financial *governance,* forming and refining national regulations, creating access to reports finance, resulting in a clean government bureaucracy, free from corruption, collusion and nepotisme.

Regulation of the Supreme Audit Agency (BPK) no. 1/2007 jo. Per. BPK No. 1/2017 as a national financial audit standard guide aims to encourage corruption eradication, increase transparency and accountability, improve compliance with state financial management, and increase stakeholder trust. The phenomenon of institutuional isomorphism is formally measured in the report on the results of regulatory inspections, compliance violations, historical compliance records in the last few *financial* periods/years (Delmas 2011; 2004,211;) contained in the summary of the audit results of the report. Based on the recapitulation of the findings of the examination on the financial statements of the District/City Government in the West Nusa Tenggara Province for the period

2012-2017, there were 50.23% of non-compliance with the law and 49.77% of internal control system weaknesses. According to recommendations as much as 89%, and not as much as 11%.

The impact of not yet optimal management applying the mechanism of institutional isomorphism in its entirety in financial management, can bring up problems that consist of problems of non-compliance such as losses, potential losses, lack of acceptance and irregularities in administration, this is due to the lack of optimal drafting and implementation of financial management strategies, less the effective management of risk management and internal control is a result of weaknesses in management applying a professionalism scale. (Amiruddin 2018).

This study uses isomorphism institutional to prove that stakeholder trust through transparency in financial management can be created by the power of isomorphism with internal characteristics meeting the expectations of stakeholders and its role in initiating the implementation of financial management transparency. DiMaggio and Powell 1983; Mayer and Rowan 1977, 484; Ashworth 2009; Delmas 2011; Kaur 2015; Bakar 2016; Nyahas 2017). Trust is identified as not contrary to expectations and will increase public satisfaction with its services, while transparency in financial management is one of the benchmarks in gaining stakeholder trust. (Chua and Taylor 2008; Rawlins 2008; Park and Blenkinsopp 2011; Frumkin 2011; Martinez 2016).

Research Arya and Zhang (2009), Kaur (2015), Midin (2016), Bhimani (2016), concluded that institutional isomorphism is a driving factor in the application of transparency to meet stakeholder expectations and obtain positive public opinion. Trust with transparency is an important indicator in the relationship of satisfaction between the government and the community and to gain political, social and economic legitimacy so that the continuity of the organization of public institutions is guaranteed. The acquisition of legitimacy can be obtained with publicity, namely the way the organization runs the wheels of government and influences society, in terms of normative approach and dimensional approach. (Antonsen 1997; Pesch 2008).

Publicness is proxied by the presentation of financial statements and the accessibility of financial statements. Publicness consists of elements of public ownership, public funds, and publicness fulfilling the first two dimensions including public control/supervision and public access (Ashworth 2002: 198) on local government resource wealth management presented in financial statements to be examined by an independent institution after an internal supervisory review, and the results are conveyed to the representatives of the people and can be accessed easily which is useful as a signall to users of financial statement information and generate positive opinions from the public.

Limited access to information on financial reports presented by local governments in the province of West Nusa Tenggara and limitations on access to financial statement audit results, creates distrust and negative opinions from external stakeholders on government institutions, and creates a legitimacy of the gap between government values and community values. (www.suarapilardemokrasi.blogspot.co.id), (www. mataram.bpk.go.id).

Local governments can gain stakeholder trust, by implementing transparency in financial management to reduce information asymmetry between internal (management) and external (community) parties through the presentation of complete and reasonable financial information and accessible to users of financial information with interest in financial statements. Pemendagri No. 13/2006 the local government must open access to stakeholders widely on information on regional financial reports. Thus the regional government must fulfill the elements of openness, ease and accesible of the community towards the information of the regional government financial reports.

Nurrizkiana research (2016) shows that the accessibility of financial statements has a positive effect on the transparency of financial management. Accessibility to financial statements also has a positive effect on stakeholders who use regional financial information. Ramadhani (2014), Mulia (2016). Unlike the results of the study Azizah (2014), Sastra (2013) shows that the accessibility of regional financial statements does not affect the transparency and accountability of regional financial management.

The main motivation of this research is based on the tendency of the characteristics of the concept of institutional isomorphism is predicted to be a variable that produces stakeholder trust. This study uses Partial Least Square (PLS) to test the partial hypothesis prediction effects and model hypotheses (Hair 2011, 248; Jogiyanto 2011, 68). Institutional isomorphism mechanism consists of three elements, namely coercive, mimetic and normative, these three elements can overlap and blend into one another, even interact with other variables, institutionalization is an institution and must be an institution (Ashworth 2009, 183; Frumkin 2004, 285; DiMaggio dan Powell 1983, 150; Peters 2000, 15), so that indicators of institutional isomorphism variables are indicated to be latent variable aggregation. (Sholihin 2013, 183-187). The difference in this study lies in the research model, the previous researchers tested the direct effect of exogenous variables on endogenous variables with estimation models, while in this study using mediating variables with predictive models. The predictions are determined by the researcher about the relationship between the expected variables. (Creswell 2010, 197).

The trust of stakeholders is the highest priority challenge in public institutions, trust is identified not

contrary to expectations and will increase public satisfaction with its services, while transparency in financial management is one of the benchmarks in gaining stakeholder trust. Shared trust with transparency is an important indicator in the relationship of satisfaction between government and society and to gain political, social and economic legitimacy (so as)= to ensure the continuity of the organization of public institutions. Thus, the organization must adjust internal characteristics to suit the expectations of stakeholders in the institutional environment.

One of the government's efforts to gain stakeholder trust, by organizing financial management that is transparent and accountable through the process of presenting financial statements comprehensively and making it easier for stakeholders to obtain financial report information by with the needs of stakeholders. This condition will be realized by considering the comvergence of the institutional environment by utilizing the strengths of elements of institutional isomorphism as the main strength of management strategy to achieve organizational goals.

Based on the above arguments, the following problems are examined in this study:

a. Does the application of mechanisms isomorphism institutional pressure and accessibility of financial statements has a positive effect on stakeholder trust?
b. Does the application of financial management transparency mediate influence isomorphism institutional pressure and accessibility of financial statements with stakeholder trust ?

II. Literature Review and Research Hypotheses

Institutional theory presupposes that organizations face pressure to adjust to the right form of behavior because with the existence of violations questioning the legitimacy of the organization influences its ability to protect resources and social support. (DiMaggio and Powell 1983,149; Fennell 1980; Meyer 1979; 2010). Institutional theory is more likely to be used in the public sector and is very relevant to government organizations. (Tagesson 2008; Frumkin 2014; Ashworth 2009). The process and form mechanism that is often faced by an organization is called isomorphism. (Hawley 1968). There are two types of isomorphism, namely: 1). isomorphism competitive, related to market competition, and 2). Institutional isomorphism relates to an organization competing for political support and legitimacy. Isomorphism institutional consists of three elements, namely coersive, mimetic, dan normative. (DiMaggio and Powell 1983:150).

a) Institutional Isomorphism in Government Financial Governance in Indonesia

Isomorphism institutions from the compliance aspect say that regulation is a form of formally accommodated part of public expectations, while informally it is difficult to measure following the uncertainty of stakeholder expectations accompanied by changes in regulation. Regulatory pressure comes from the pressure of the central government with the scope of the national scope as a guideline for the elaboration and implementation of local executive regulations / policies in the scope of the local/regional area. (Dimaggio and Powel 1983 in Amiruddin 2018). Compliance aspects consist of national regulatory pressures, executive policies and public expectations, which can be measured by the tendency of collective action, the number of complaints from the community and community trends to file a lawsuit for violations of the financial management apparatus in an institution to be followed up with an investigation. (Ashworth 2002; 2009; Godfrey 2010; Delmas and Toffel 2004; Molleda 2006; Zhu and Sarkis 2013; Henriques 1996; Chu 2017 in Amiruddin 2018). Forms of compliance with established guidelines are supported by sanctions, fines in cases of non-compliance. (Coglianese dalam Bakar 2016, 90).

Isomorphism institutional from the aspect of comvergency in response to the risk of environmental uncertainty by following other entity's best practices in financial governance which is a source of strength after executive pressure in adopting a strategic management plan to improve institutional performance. (Ashworth 2009; Doh And Goy 2006; Mizruchi and Fein 1999; Tuttle and Dillard 2007; Zhu and Sarkis 2013; Chu and Yu 2017; Jennings and Zandbergen 1995; Henriques and Sadorsky 1996; Delmas and Toffel 2004; Molleda 2006). Institutional leaders must consider relevant agency and risk objectives and establish control structures to deal with risks from the influence of external environmental factors and internal environmental factors. Risk management becomes a strategic need in determining performance improvement, optimal managed risk raises opportunities for organizations to survive and compete and to overcome uncertainty risks by comparing the performance of their institutions with other entities that are considered successful governance. Governance is a combination of processes and structures applied by management to inform, direct, manage, and monitor organizational activities in order to achieve goals. LAN BPKP (2014). The failure of the organization's goals and mission, in governance of government finances can result in distrust, in the worst conditions can cause the organization to be threatened with its operational activities.

Isomorphism institutional from the complimance aspect are related to professional standards and professional associations. Integrity and professional

development strategies are more demanding to initiate compliance with regulations, and will be realized with a strong commitment to implementing a professional code of ethics or compliance scale applied by professional associations. (DiMaggio and Powell 1983; Ashworth 2009; Dacin 2002; Paine 1994; Molleda 2006; Nyahas 2017). In order to provide adequate confidence in the reliability of financial reporting and compliance with legislation, enforcement of integrity and ethical values, commitment to competence, delegation of authority and appropriate responsibilities, sound policies on apparatus resource development, effective supervisory role, good between agencies. (UU no.32/2004 article (129)-(135) and PP no.60/2008).

The implication of institutional isomorphism concept in this research is that the local government as a public institution acts in compliance with the regulations in determining the right decisions to meet the expectations of stakeholders, with its formal structure managing resources supported by technical and managerial capabilities controlling the risk of environmental uncertainty from external and internal environmental factors , designing financial management strategies transparently, involving stakeholders at various levels of the financial management accountability formulation, implementation and evaluation process, with the authority committed to developing professionalization to form management models "good steward " in order to realize institutional goals in order to achieve legitimacy, recognition, positive opini and produce stakeholder trust .

b) Previous Research Review

Previous research relevant to this research is research Pedersen (2013) This type of mixed methods research concludes that coercive isomorphism pressure affects the practice of financial reporting, the pressure of mimetic isomorphism influences to form the homogenization of financial reporting practices, the incompatibility of financial reports with regulatory standards can be caused by normative pressure problems such as lack of commitment, limited resources, misinterpretation. The pressure isomorphism institution influences the disclosure of financial statement information on the organization's website. Research Fardian (2014); Halmawati (2015); Hidayati (2015); dan Yunaz (2016) shows that the application of financial reporting transparency is positively and significantly affected by elements of institutional isomorphism. Unlike the results of the study Dewi (2015) indicates that external pressure (coersive) does not effect on transparency. Purnamasari (2015) shows that management commitment (normative) has no significant effect on the application of transparency in financial reporting. Adha (2014); Kasfauzi (2016); Maksyur (2015); shows that environmental uncertainty (*mimetic)* does not have a significant effect on the implementation of transparency of local government financial reporting.

Results of research Yunaz (2016) shows that the adoption of transparency in financial reporting is positively and significantly affected by elements of institutional isomorphism, and recommends the accessibility of regional financial reports and the presentation of regional financial statements into the research model, while research Amiruddin et al (2018) indicates that the accessibility of financial statements negatively affects stakeholder trust .

Results of research Nurrizkiana (2016) shows that the accessibility of financial statements has a positive and significant effect on the transparency of financial management, and financial management transparency has a positive and significant effect on stakeholders trust. Then, Masyhur (2017) indicates that the accessibility of regional financial statements affects the transparency and accountability of regional financial management.

c) Research Hypotheses

The formulation of the hypothesis that will be tested in this study are:

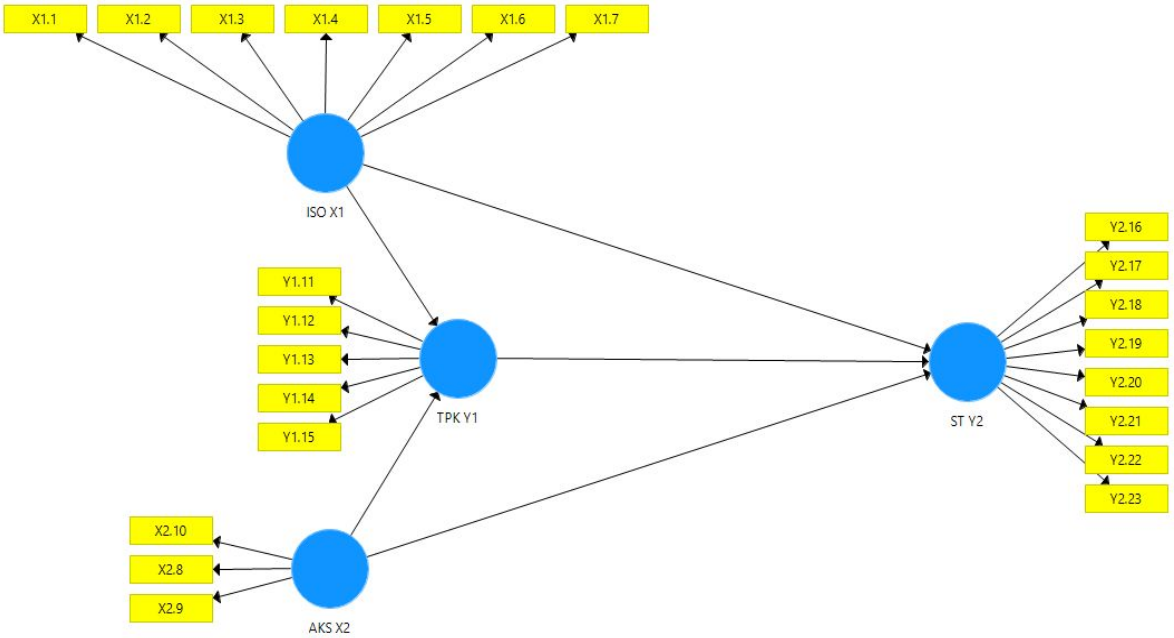
H 1: Isomorphism Institutional Pressure has a positive and significant effect toward Stakeholders Trust.

H 2: Accessibility of regional financial Statements has a positive and significant effect toward stakeholder trust.

H 3: Transparency of regional financial management mediates the effect of isomorphism institutional pressure with stakeholder trust.

H 4: Transparency of financial management mediating the effect accessibility of financial statements with stakeholder trust.

Based on the concepts, literature review, and research hypothesis, the research conceptual framework is described as follows:



Gambar 1: Diagram Path *Outer Loading*

III. Research Methods

This type of research is explanatory research with the aim to test hypotheses that state the causal relationship between two or more variables. (Sukandarrumidi 2006, 105). Some experts say this research is used to develop and refine the theory and have the credibility to measure, examine the causal relationship of two or more variables (Bungin 2005,46). The population in this study consisted of financial management officials and internal supervisory officials at the District/City Regional Governments in West Nusa Tenggara Province with a population of 1,026 people. The technique of determining the number of samples in this study uses Isaac and Michael table which produces a sample of 213 respondents. The sampling technique used is purposive sampling [judgment] sampling, which is the determination of samples using certain considerations to get a representative sample. Sugiono (2010, 122; 2016, 87). Data analysis uses Smart partial least square (Smart PLS 3.0).

a) Operationalization and measurement of variables

The dependent variable stakeholders trust in this study was tested using variable indicators as developed by Nurrizkiana (2016) and has been used in Amiruddin research (2018) measured using 8 (eight) indicators with 8 (eight) questions/statements adopted from Nurrizkiana research (2016). Independent variable isomorphism institutional pressure in this study was tested with variable indicators as developed from the concept (Delmas 2004; Molleda 2006) and has been used in the research of Chu and Yu (2017); Zhu and Sarkis (2007); Nyahas (2017); Amiruddin (2018); measured using 7 (seven) variable indicators and 7 questions/statements adopted and modified from Nyahas (2017) and Ridha (2012). Independent variables of accessibility of financial statements are measured using 3 indicators as developed by Sande (2013) used in Nurrizkiana study (2016) using 3 (three) questions/statements adopted from Sande (2013) research. The intervening variables of regional financial management transparency in this study were measured using 5 (five) indicators as used in the research of Ramadhani (2011); Nurrizkiana (2016) using 5 (five) questions/statements adopted from Nurrizkiana research (2016).

IV. Results and Discussion

a) Descriptive Analysis

This study uses primary data obtained through a list of questions and statements (questionnaires) distributed to financial management officials in 5 (five) regency/city governments in the province of West Nusa Tenggara. Of the 213 questionnaires distributed to respondents, 168 questionnaires were returned or with a response rate of 78.87%. Of these, all questionnaires have been filled in completely so that they can be processed statistically.

In general, respondents were dominated by officials with a male gender of 75.60%. From age, respondents are dominated by financial management officials and auditors with a productive age between 36-45 years with a percentage of 52.38%, in carrying out roles as financial managers and auditors, productive age will be more needed considering the implementation of very complex tasks, respondents

dominated officials experienced in regional financial managers with a percentage of 72.62%. Based on education the majority of respondents have an adequate level of education as financial managers and auditors.

Before testing the hypothesis, the first evaluation of the research model (outer model) to see the validity and reliability of the variable indicators used in the study, variable indicators were evaluated using convergent validity and discriminant validity, while for reliability testing the research instrument used composite reliability and cronbach alpha. Furthermore, evaluation and testing of the structural model or inner model serves to test the ability of model predictions and test hypotheses between latent variables.

Tabel 4.1: Nilai Composite Reliability

Variabel	Composite Reliability	Keterangan
X1 ISO	0.801	Reliabel
X2 AKS	0.918	Reliabel
Y1 TPK	0.840	Reliabel
Y2 ST	0.902	Reliabel

It is known that the value of variable reliability composite is above the minimum value of 0.7. The value of a construct composite reliability is said to be reliable if the composite reliability value is greater than 0.7 (Hair et al. 2014:107), the test results show that each variable has adequate accuracy and consistency. The composite reliability test results indicate the reliability of a measuring instrument in obtaining consistent test results. Test composite reliability is the last step to ensure that the measurement of the outer model has no problem. The construct can be continued with the next test because each variable has been reliable or meets the composite reliability criteria.

b) Structural Model Evaluation and Testing (Inner Model)

i. *Determinant coefficient (R2)*

Determinant coefficient (R2) is used to measure model accuracy or measure the accuracy of model predictions. In other words R2 is used to explain the ability of exogenous variables to influence endogenous variables. The coefficient of determination is used to predict how much influence the influence of exogenous variables on endogenous variables. R2 values of 0.75, 0.50 and 0.25 are categorized as models for strong, medium and weak. The R2 value of this study is presented in Table 4.2 below:

Table 4.2: Coefficient of Value Determinants

Construct	R Square	Category
Y1 TPK	**0.592**	Moderate
Y2 ST	**0.367**	Weak

Sumber: SmartPLS Output

It is known that the R2 value for the financial management transparency construct (Y1 TPK) is 0.592 or in the moderate/moderate category. These results indicate that the construct of isomorphism institutional pressure (X1 ISO), and accessibility of financial statements (X2 AKS) is able to explain financial management transparency variables (Y1 TPK) 59%. While the remaining 41% is explained by other variables outside this research.

Furthermore, the construct of stakeholder trust (Y2 ST) has a R2 value of 0.367 or in the weak category. This means that the financial management transparency variable (Y1 TPK) is able to explain the stakeholder trust (ST) variable by 36.7%. While the remaining 64.3% is explained by other variables outside this study.

c) Predictive relevance (Q2)

The relevance of predictive tests carried out to assess the relevance possessed by exogenous variables. The exogenous latent variable has relevance if the Q2 value approaches 1. While Q2 < 0, the exogenous latent variable does not have a predictive value of relevance. Q2 can be obtained from blindfolding as shown in Table 4.3 below:

Table 4.3: Predictive Relevance Value (Q2)

	SSO	SSE	Q^2 (=1-SSE/SSO)
Y1 TPK	2,960.000	2,213.423	0.252
Y2 ST	4,736.000	3,837.959	0.190

Sumber: output SmartPLS

Based on the results of blindfolding in Table 4.3 above shows that the value of Q2 > 0. So it can be explained that the model in this study has predictive relevance or is feasible to explain endogenous variables. Besides that the Q^2 value can be obtained by the following calculation:

$Q^2 = 1- (1-R1^2) (1-R2^2)$

$Q^2 = 1- (1-0,592^2) (1-0,367^2)$

$Q^2 = 1- (0,649) (0,865)$

$Q^2 = 0,438$

The value of $Q^2 > 0$ means that the model developed has relevant predictive, this indicates that the model in this study has predictive or feasible relevance to explaining endogenous variables.

d) Hypothesis testing

Hypothesis testing is done by bootstrapping method to determine the path coefficient value. Taking into account the T-table value for one-tailed test with alpha 5% is 1.64 hypothesis testing is presented in Table 4.4.1 below:

Tabel 4.4.1: Summary of Test Results for Total Prediction Effects (Total Effect)

	Original Sample (O)	T statistics (O / STDEV)	T table	P Value	Conclusion
X1 ISO -> Y1 TPK	0.115	2.437	1.64	0.008	accepted
X1 ISO -> Y2 ST	0.449	7.479	1,64	0.000	accepted
X2 AKS -> Y1 TPK	0.719	17.194	1,64	0.000	accepted
X2 AKS -> Y2 ST	0.262	4.533	1,64	0.000	accepted
Y1 TPK -> Y2 ST	0.366	3.657	1,64	0.000	accepted

Sumber: Output SmartPLS

Tabel 4.4.2: Summary of Direct Effects Hypothesis Testing Results

	Original Sample (O)	T statistics (O / STDEV)	T table	P Value	Conclusion
X1 ISO -> Y1 TPK	0.115	2.437	1.64	0.008	accepted
X1 ISO -> Y2 ST	0.406	6.582	1,64	0.000	accepted
X2 AKS -> Y1 TPK	0.719	17.194	1,64	0.000	accepted
X2 AKS -> Y2 ST	-0.001	0.010	1,64	0.496	rejected
Y1 TPK -> Y2 ST	0.366	3.657	1,64	0.000	accepted

Sumber: Output SmartPLS

Tabel 4.4.3: Summary of Indirect/Mediation Effect Hypothesis Testing Results

	Original Sample (O)	T statistics (O / STDEV)	T table	P Value	Conclusion
X1 ISO -> Y1 TPK -> Y2 ST	0.042	2.062	1.64	0.020	accepted
X2 AKS -> Y1 TPK -> Y2 ST	0.263	3.586	1,64	0.000	accepted

Sumber: Output SmartPLS

Based on Table 4.4.1, the results of testing the hypothesis for direct influence are as follows:

a. Table 4.4.2, shows that the first hypothesis that states that isomorphism institutional pressure (ISO) has a positive effect on stakeholder trust (ST), results in a path coefficient value of 0.406. Hypothesis test results show that the path coefficient is institutional pressure isomorphism (ISO) with stakeholder trust (ST), has a T statistics value (6.582) > T-Table (1.64), Palues (0.000) with a significance of 5% (one tailed). These results indicate that isomorphism institutional pressure (ISO) has a positive effect on stakeholder trust (ST) and is significant. The positive influence of institutional pressure isomorphism on stakeholder trust means that an increased emphasis on the implementation of institutional isomorphism mechanism will be followed by an increase in

stakeholder trust, and conversely a decrease or weak emphasis on the application of institutional isomorphism mechanism will be followed by a decrease in stakeholder trust at a significance level of 0,000. So it can be concluded that hypothesis 1 (one) is accepted.

b. The results of the second hypothesis test that states the accessibility of financial statements (AKS) have a positive effect on stakeholder trust (ST) resulting in a path coefficient value of -0.001. The hypothesis shows that the path coefficient between accessibility of financial statements (AKS) and stakeholder trust (ST) has a value of T-statistics 0.010 < T-Table (1.64), P values (0.496) with a significance of 5% (one tailed), indicating that accessibility financial statements (AKS) have a negative or negative effect that is not significant to stakeholder trust (ST). While the total effect value produces a value of 0.262. The hypothesis shows that the accessibility of financial statements (AKS) with stakeholder trust (ST) has a value of T-statistics 4,533 > T-Table (1,64), P Values (0,000) with a significance of 5% (one tailed), indicating that the accessibility of financial statements (AKS) has a positive and significant effect on stakeholder trust (ST).

This test results indicate a variable distorter, where initially the relationship between the independent variable (AKS) and the dependent variable (ST) is a positive relationship, but when the third variable (TPK) is presented the relationship becomes weakly negative (Prasetyo and Jannah 2002,71; Abdillah and Jugiyanto 2011, 225-239), by looking at the total effect value (Table 4.4.1), this condition is a desirable condition and a suppressor effect is indicated. The negative influence of the accessibility of relatively small financial statements on stakeholder trust means that the increased accessibility of financial statements will be followed by an increase in stakeholder trust, and vice versa, a decrease or weak accessibility of financial statements will be followed by a decrease in stakeholder trust, and even a negative effect on the significance level of 0.496. So that it can be concluded that hypothesis 2 (two) is accepted.

The results of the analysis of the direct influence on stakeholder trust shows that the direct effect coefficient of institutional pressure isomorphism (ISO) on stakeholder trust is 0.406. These results are greater than the direct coefficient of accessibility of financial statement accessibility to stakeholder trusts of -0.001. Likewise, the direct influence of financial management transparency (TPK) on stakeholder trust (ST) shows a path coefficient of 0.366, a path coefficient with T statistics value of 3,657 > T-Table (1,64), P Values (0,000) with a 5% significance (one tailed), shows that Financial Management Transparency TPK) has a positive and significant effect on stakeholder trust (ST). Thus, it can be concluded that the emphasis on the implementation of an optimal institutional isomorphism mechanism is more powerful in producing stakeholder trust than the accessibility of financial statements and transparency in financial management.

Based on Table 4.4.2 and Table 4.4.3, the results of testing the hypothesis for indirect effects (mediation) are as follows:

c. The results of the third hypothesis testing that financial management transparency (TPK) mediates the relationship of isomorphism institutional pressure (ISO) with stakeholder trust (ST) produces a coefficient of 0.042 with T-statistics (2.062) > T-Table (1.64), P (0.020) with a significance of 5% (one tailed). This means that the hypothesis 3 (three) is accepted. The test results in Table 4.4.2 show the direct coefficient of isomorphism institutional pressure on stakeholder trust of 0.406 and significant. The indirect effect coefficient of isomorphism institutional pressure on stakeholder trust in Table 4.4.3 drops to 0.042 and is significant. These results show partial mediation and almost no mediation because it has VAF below 20%. This shows that to produce increased stakeholder trust, local government management as the reporting entity and accounting entity must increase transparency in financial management, because stakeholder trust can also be generated through the implementation of financial management transparency.

d. The result of the fourth hypothesis which states that financial management transparency (TPK) mediates the relationship of accessibility of financial statements (AKS) with stakeholder trust (ST) produces a coefficient of 0.263 with T-statistics (3.586) > T-Table (1.64), P (0,000) with a significance of 5% (one tailed). This means that the hypothesis 4 (four) is accepted. The test results in Table 4.4.2 show the direct influence coefficient of financial statement accessibility to stakeholder trust of 0,001 and become weak negative. The coefficient of indirect influence of financial report accessibility to stakeholder trust in Table 4.4.3 rises to 0.263 or increased and positively significant indicates the occurrence of suppressor effect or classified as full mediation. This shows that to produce increased stakeholder trust, local government management as the reporting entity and accounting entity in carrying out the accessibility of financial reporting must pay attention to and improve the application of the principles of transparency in financial management, because stakeholder trust is also generated through the implementation of financial management

transparency, accessibility without transparency will result negative opinions and are mere mere formality.

Mediation testing can also be done by looking at the Variance Accounted for (VAF) value. VAF > 80% means that there is full mediation, 20%≤ VAF ≤ 80% means partial mediation, VAF < 20% means no mediation (Hair et.al, 2013: 224). From the test results, TPK has a mediating effect in the research model with status as no mediation, because the VAF value is in the range of < 20%, which is 0.0%. This means that TPK only gives a mediating effect of 0% on the influence of ISO variables on ST, whereas on the effect of AKS variables on ST there is a TPK mediation of 100% or a suppressor effect and categorized as full mediation.

V. Discussion

Hypothesis 1 (one) which states that isomorphism institutional pressure has a positive effect on increasing stakeholder trust. That is, that the prediction of the effect of applying institutional pressure isomorphism mechanism on stakeholder trust has been proven positively and significantly. This shows that the increasing emphasis on the application of institutional isomorphism mechanisms in the District/City Regional Government entities in the West Nusa Tenggara Province has an effect on increasing stakeholder trust. Judging from the results of the research and respondents' answer analysis, the emphasis on the application of institutional isomorphism mechanisms in the West Nusa Tenggara Province as a whole has been good although there are still some elements of institutional isomorphism that have not been optimally implemented.

Based on the results of data analysis, the direct influence coefficient of exogenous variable isomorphism institutional pressure is proven to influence stakeholder trust. This proves that the application of institutional pressure isomorphism mechanism in district/city governments in the West Nusa Tenggara Province is able to influence stakeholder trust. It is proven by the fact that the application of isomorphism mechanism in the implementation of quality financial report information results in a positive opinion on the financial statements of regional governments in the region of West Nusa Tenggara Province with the title of Unqualified Opinion (WTP).

The results of this study provide evidence and contribute to supporting and strengthening the concept of isomorphism institutional with its internal characteristics meeting the expectations of stakeholders with regulations and limits of management norms that are considered acceptable as defined in the concept (DiMaggio and Powel, 1983; Mayer and Rowan, 1977:484). With the fulfillment of the expectations of stakeholders, stakeholder trust in local government entities is increasing. The more capable local government management entities carry out their functions by applying elements of the mechanism of isomorphism in regional financial management, it will result in increased stakeholder trust in local government institutions.

The results of this hypothesis test are in line with the results of the study Bhimani (2016) which shows that institutional isomorphism is positively related to stakeholder expectations. Then Arya and Zhang (2009), Kaur (2015), Midin (2016), concluded that elements of institutional isomorphism were the main driving factors in meeting stakeholder expectations and gaining positive public opinion. And support opinions Ashworth (2009:165) which states that alternative views offered by institutional theory with the main objective of organizational change is not a better substantive performance, but greater legitimacy. As well as the results of this study provide empirical evidence about indications of institutional isomorphism characteristics that are predicted to influence stakeholder trust as defined and supported Mayer and Rowan (1977:484) in concept DiMaggio and Powell (1983).

The results of this study illustrate that the stronger the emphasis on applying institutional isomorphism mechanisms to local government institutions, the more it will increase stakeholder trust. Thus, it is important for local governments in West Nusa Tenggara Province to improve the implementation of institutional isomorphism mechanisms that are realized by compliance with legislation, improve the implementation of internal control systems and the application of risk management governance in overcoming environmental uncertainty, as well as committing to the enforcement of a code of ethics. And professional development so as to further strengthen the institution in meeting expectations and gaining the trust of stakeholders (stakeholder trust).

Variable institutional pressure isomorphism in this study is the ability or ability to apply elements of an institutional mechanism consisting of coercive which emphasizes compliance with external pressure (regulation) with proxy compliance with legislation, mimetic suggests comvergence to environmental uncertainty conditions overcome by proxy the effectiveness of the internal control system and risk management governance, normative implies the existence of complimence management committed to applying a professionalism scale to shape the management model “good steward”. This is related to the management and placement of good resources if it is not supported by reliable organizational personnel, the goals of the organization will not be achieved in meeting the expectations of stakeholders.

Thus, professional development and insights from financial managers must also be increased, the personnel involved must be sensitive to any changes

both from regulations, policies and financial management applications or influences that arise from conditions of environmental uncertainty, so it is necessary to conduct training, comparative studies or reconciliation periodically to be able to meet the demands of stakeholder expectations that will result in increased stakeholder trust in the local government.

Institutional theory predicts that government institutions as reporting entities will become more similar because of institutional pressure, both due to coercive, normative, and mimetic (Di Maggio dan Powell, 1983). Coercive isomorphism always associated with all things connected with the environment around the organization. Isomorphism coercive is the result of formal and informal pressure given to institutions by other organizations where the organization depends on the cultural expectations of the community in which the organization functions (Di Maggio dan Powell, 1983). Mimetic isomorphism is an organization's tendency to model itself on the behavior of other organizations (DiMaggio dan Powell, 1983) emerged as a response to the uncertainties (Mizruchi dan Fein, 1999) will be a certain standard. Mimetic isomorphism includes benchmarking and identifying best practices in the field (Tuttle dan Dillard, 2007).

Uncertainty can be caused by various things outside the organization, such as rapid changes in regulation within a certain time span, the existence of different rules from one another, and so on. Di Maggio and Powell (1983) stated that normative Isomorphism is related to professionalism. Institutional changes can have an impact on the character's character and organizational integrity (Dacin et al, 2002). Paine (1994) stated that the integrity strategy is something broader, deeper, and more demanding than legal compliance initiatives. Compliance with laws and regulations will be realized if followed by a strong management commitment.

New institutional theory presupposes that organizations face the pressure to adjust to the right form of behavior, because with the existence of violations questioning the legitimacy of the organization influences its ability to protect resources and social support. (Meyer 1979, 2010; Fennell 1980; DiMaggio and Powell 1983:149). DiMaggio and Powell, states that the process and form mechanisms that are often faced by organizations are referred to as "institutional isomorphism", the best concept in capturing the homogenization process . (Rachel 2005; Pilcher 2007; Hawley 1968). DiMaggio and Powell (1983:150) describe isomorphism is an inhibiting process that forces one unit in a population to resemble another unit in the face of the same environmental conditions. Thus, it is identified that institutional isomorphism in public sector accounting is a unified process and mechanism that must be applied by the accounting entity unit in a single entity reporting entity similar to other reporting entities in the face of the same environmental conditions on the basis of compliance, comvergence, and complimance pressure, and through publicness of financial reporting in order to realize the principle of transparency in financial management to meet the expectations of stakeholders and generate trust.

Hypothesis 2 (two) which states the accessibility of financial statements has a positive effect on increasing stakeholder trust received. That is, that the prediction of the effect of accessibility of financial statements on stakeholder trusts is proven positively and significantly. This shows that the better the accessibility of financial statements to the entities of the District/City Government in the West Nusa Tenggara Province has an effect on increasing stakeholder trust. Judging from the results of the research and the respondents' answers analysis, the accessibility of the Local Government's financial statements in the West Nusa Tenggara Province as a whole has been good, but the accessibility of financial statements is not enough to satisfy users of financial information, this indicates the influence of other variables/confounding variables (variable distortions) that will support increasing stakeholder satisfaction to generate trust. This is evident from the results of the second hypothesis test which states the accessibility of financial statements (AKS) has a positive effect on stakeholder trust (ST) resulting in a path coefficient value of -0.001. The hypothesis shows that the path coefficient between accessibility of financial statements (AKS) and stakeholder trust (ST) has a value of T-statistics 0.010 < T-Table (1.64), P values (0.496) with a significance of 5% (one tailed), indicating that accessibility financial statements (AKS) have a negative but not significant effect on stakeholder trust (ST). The negative influence of the accessibility of relatively small financial statements on stakeholder trust means that the increased accessibility of financial statements will be followed by an increase in stakeholder trust, and vice versa, a decrease or weak accessibility of financial statements will be followed by a decrease in stakeholder trust, and even a negative effect on the significance level of 0.496. But by entering the total effect value as a comparison (Abdillah and Jugiyanto 2011,230) the total effect value produces a value of 0.262 hypothesis shows that the accessibility of financial statements (AKS) with stakeholder trust (ST) has a value of T-statistics 4,533 > T-Table (1,64), P Values (0,000) with 5% significance (one tailed), shows that the accessibility of financial statements (AKS) has a positive and significant effect on stakeholder trust (ST).

Isomorphism institutional states that publicness is related in the context of the need for public opinion support and social and political legitimacy with the assumption that institutional management informs the public as a legitimate and feasible reporting entity to be supported in making appropriate decisions in financial management so that the sustainability of the institution's

operational activities as reporting entities can survive. Ashworth (2002, 2009). These conditions can be realized by reducing the information asymmetry between the government, politicians and the people, publishing financial statement information that has been audited by an independent institution with the implication of the more reliable financial statements, the better the opinions obtained and gain stakeholder trust.

The concept of isomorphism is in line with the signaling theory, stewardship theory and concepts publicness, who explained that the government institution as the party that was given the mandate from the people, wanted to show a signal to the community. The government will signal to the community by providing quality financial reports, the local government can package achievement information and financial performance more fully to show that the local government has carried out its mandate. The responsibility shown by the local government as the recipient of the mandate (steward) not only in the form of a complete and reasonable presentation of financial statements, but also on how they are able to open access and disclose financial statements for stakeholders with an interest in the financial statements. Local governments as agents will avoid the risk of mistrust public-stakeholders towards their performance. (Safitri 2009).

Accessibility of financial statements is an ease for someone to obtain information about financial statements. The use of effective financial information depends on public access to financial statements that can be read and understood (Nordiawan 2010). The community as a party that gives confidence to the government to manage public finances has the right to get government financial information to evaluate the government (Mardiasmo 2002). The easier it is for people to access regional financial reports, the more transparent and accountable the management of regional finances by agents who have been chosen by the people (principal).

Based on the results of statistical tests showed the second hypothesis which states that the accessibility of financial statements has a positive effect on stakeholder trust, accepted. The results of the study are in line with the results of Nurrizkiana research (2016), Mulia (2016) and Ramadhani (2013) which discloses the accessibility of financial statements affecting stakeholder trust. And the results of this study are not in line with the results of the study Azizah (2017) which reveals that the accessibility of financial statements does not have a significant effect on the accountability of regional financial management, it is suspected that financial reports are published in the mass media provide adequate confidence and completeness of information regarding regional finances. In addition, it is suspected that the local government only publishes information related to financial reports and government performance only through the internet, while in other media it is less effective. finance to obtain information.

The results of this study support the signaling theory and asymmetry theory which states that the existence of information asymmetry allows conflicts between the principal and agent to try to use other parties for their own sake, information asymmetry between managers and outsiders, managers have more complete information about the entity's financial condition is compared with outsiders, thus the regional government must continue to strive to open access to stakeholders who use financial statement information to gain trust. This condition is supported by the concept of isomorphism institutional which tends to meet external needs and expectations or social expectations or expectations factors, confidence in public institutions is enhanced through legislation, standards and administrative regulations relating to the provision of services and information. External pressure from stakeholders forces institutions to improve organizational performance through the legal system and mass media. Zhu and Sarkisz (2013).

Institutional pressure tends to develop where measurement or control is weak or inappropriate, ie where accountability is low. This low level of accountability illustrates the low desire of public organizations to implement transparency of financial reporting. The absence of public transparency will have a very wide negative impact and can harm the community. The negative impact that will arise due to lack of transparency is that it can cause distortion in the allocation of resources, bring injustice to the community, enrich corrupt practices, abuse of authority and power. (Frumkin dan Galaskiewicz, 2004).

Based on the results of data analysis, the direct influence coefficient of exogenous variables on financial management transparency can increase stakeholder trust in the District/City Regional Governments in the West Nusa Tenggara Province. That is, that the prediction of the direct influence of the transparency of financial management on stakeholder trust is proven positively and significantly. This shows that the more transparent financial management of district/municipal government entities in the province of West Nusa Tenggara has an effect on increasing stakeholder trust, then financial management transparency will be predicted to mediate the influence of institutional pressure isomorphism on stakeholder trust.

The fulfillment of the elements of the preconditions for the implementation of transparency in financial management indicates that the local government entity has carried out the mandate of the Inpres no. 4 of 2011 which is part of the direction of the Grand Design of Bureaucratic Reform policy 2010- 2025 stipulated by Peraturan Pemerintah no. 81 of 2010 in an effort to accelerate the realization of good government governance so as to increase public trust in the

government by creating transparent financial management, establishing and improving regulations, presenting financial statements in accordance with government accounting standards and open access to financial statements. The results of this study support the research Nurrizkiana (2016) which shows that the transparency of regional financial management has a positive and significant impact on public-stakeholder trust.

Hypothesis 3 (three) which states the transparency of financial management mediates the effect of institutional pressure isomorphism on stakeholder trust received. That is, that the prediction of the implementation of financial management transparency is able to relate the influence between the application of institutional pressure isomorphism mechanisms to stakeholder trusts to be proven positively and significantly.

This shows that the application of institutional isomorphism mechanisms in the District/City Regional Government entities in the West Nusa Tenggara Province has been good enough to be able to apply the principles of financial management transparency which ultimately have an impact on stakeholder trust. That is, transparency in financial management can be applied well if it is supported by the application of institutional isomorphism mechanisms that will provide opportunities for entities of local government entities to increase stakeholder trust.

Judging from the results of research and analysis of respondents' answers, the application of transparency in financial management to the District/City Regional Governments in the West Nusa Tenggara Province as a whole has been quite good, although there are still several stages that have not been optimally implemented. stakeholders at each stage which includes planning, implementing, administering, reporting, accountability and regional financial supervision.

The results of this research hypothesis test provide evidence and contribute to supporting and strengthening the concept of isomorphism institutional which states that stakeholder involvement initiatives, as well as the nature and level of involvement are influenced by external institutional factors such as legislation and internal factors such as management commitment, elements of isomorphism trigger implementation financial management transparency. (Kaur 2015; Nyahas 2017). The Government has attempted to launch several laws, regulations and standards, aiming to improve disclosure of financial management information. Pressure on isomorphism arises from various stakeholders with an interest in financial reporting information. The important objective is to establish regulations and regulations of government policies to reduce corruption and increase citizen satisfaction, the relationship between corruption and citizen satisfaction is moderated by transparency and partly mediated by trust. Blenkinsoop (2011). Chua and Taylor (2008).

The fulfillment of the elements of the implementation stage of the transparency of financial management indicates that the local government entity has carried out the mandate Per.BPK no.1/2017 and meeting the national financial audit standards that are useful in increasing transparency and accountability, compliance and increasing public trust in the management of state finances. Ferrary (2013) stated that the purpose of the law was to encourage and guarantee transparency in financial management.

The results of this study support the research Ridha (2012), Fardian (2014), Halmawati (2015), Hidayati (2015), Yunaz (2016), shows that the application of transparency in financial reporting is positively and significantly affected by the pressure of institutional elements of isomorphism (coersive, mimetic and normative). As well as supporting research Midin (2016) shows that the role of institutional isomorphism in the disclosure of information to stakeholders influences increasing transparency in the public sector, and research Rawlins (2008) provide strong evidence that trust and transparency are positively related.

Based on the results of value testing variance accounted for (VAF) Financial management transparency provides a mediating effect that is classified as partial mediation between the relationship between institutional pressure isomorphism and stakeholder trust. This means that the independent variable is the institutional pressure isomorphism can directly influence the stakeholder variable trust without having to go through/involve the financial management transparency mediator variables, and/or also the independent variable institutional pressure isomorphism can also involve/involve the mediator of financial management transparency variables.

The results support the new institutional theory which states that the pressure of isomorphism arises from various stakeholders to reduce corruption and increase citizen satisfaction, the relationship between corruption and citizen satisfaction is moderated by transparency and partly mediated by trust. Blenkinsoop (2011). The concept of isomorphism with its characteristics meets the expectations of stakeholders proven to be able to directly influence stakeholder trust without going through mediation, while the presence of partial mediating effects of financial management transparency supports the assumption of research results Ridha (2012:19) which indicates that co-effective isomorphism acts as a trigger for the implementation of financial reporting transparency that requires management's commitment to succeed.

Hypothesis 4 (four) which states the transparency of financial management mediates the influence of the accessibility of financial statements to

stakeholders trust is accepted. That is, that the prediction of the transparency of financial management mediates the influence of the accessibility of financial statements to stakeholder trust is proven positively and significantly. This shows that the District/City Regional Governments in the West Nusa Tenggara Province are able to apply the principles of financial management transparency so that the accessibility of financial statements results in increased stakeholder trust. That is, transparency in financial management supports access to complete financial statement information to users of financial information so as to produce stakeholder trust.

Hypothesis testing results support the assumption of the concept of isomorphism institutional which states that meeting the expectations of stakeholders for the implementation of financial management transparency is triggered by isomorphism institutional. (Arya and Zhang 2009; Kaur 2015). Isomorphism plays a relatively more important role in the application of accountability standards. (Delmas 2011; Bakar 2016), pressure isomorphism plays a role in the practice of financial reporting (Pedersen 2013; Chua 2008; Jang 2005; Judge 2010). The regional government as a public institution must comply with the pressure from stakeholders in taking responsibility for regional financial management. Accounting as an institutional practice explores the relationship between institutions and transparency and accountability. Financial accounting and reporting aims to reflect organizational transparency towards stakeholders, organizations involve stakeholders to increase trust, transparency and accountability. (Beck 2010). Stakeholder involvement in the accounting process and financial reporting to ensure the results of the accounting and reporting process are relevant to stakeholders. The financial accounting and reporting process aims to reflect transparency and is a collaborative process between organizations and stakeholders. (Olesson 2012), failure to engage and fulfill the expectations of stakeholders can weaken the credibility and suitability of financial statements.

The results of this study support the signaling theory and stewardship theory which states that the management as a trustworthy, integrity, honest steward to other parties and responsible, the stewards are not motivated by individual goals but rather aimed at their main objectives for the benefit of the organization in line with isomorphism institutional pressure is a mechanism that must be applied to achieve the goals set by the institution. The stewards of the local government who were given the mandate by the people wanted to show a positive signal to the community. Local governments provide signals by presenting transparent financial reports by providing access to financial statements. Local governments can package achievement information and financial performance more fully to show that the local government has carried out the mandate well.

The results of this study support the results of Nurrizkiana (2016) study which revealed that accessibility has a positive and significant effect on the transparency of financial management and transparency of financial management influences stakeholder trust. The support of the results of this study is predicted because the respondents used have the same characteristics as this research, namely financial managers in local governments. Research conducted by Nurrizkiana (2016) positioned the transparency of financial management as an endogenous variable. In this study, financial management transparency was positioned as an intervening/mediating variable. The results of the study are also in line with the results of research by Rahmawati (2013) which revealed that transparency has a positive effect on satisfaction and trust.

The results of the study illustrate that the accessibility of financial statements will influence stakeholder trust through transparency in financial management. For this reason, it is important for local governments to commit to improving transparency of financial statements through the provision of information systems, publication of financial reports and the provision of performance information and ensuring the accessibility of financial statements covering aspects of transparency, convenience and accessibility.

The results of the study support the concept of isomorphism which states that for survival, legitimacy needs, and public opinion of local government entities must be able to convince the public that a legitimate entity is feasible to be supported in financial management by means of organizational publicity or publishing information that has been packaged with achievements and performance so that the public believes that the local government institutions have made the right decisions in the management of regional finances. The pressure of institutional isomorphism requires entities to disclose financial information to stakeholders. Pedersen (2013). Transparency is one of the values or principles that the government must implement in financial management. Management will gain legitimacy, stability and resources if it is in line with what is expected by the community. Meyer and Rowan (1977) community expectations for the government embody good government governance.

Thus, the hypothesis 4 (four) which states the transparency of financial management mediates the influence of the accessibility of financial statements to stakeholder trust is accepted. That is, the transparency of financial management is a variable that is able to bridge the influence of the accessibility of financial statements to stakeholder trust. These results can be explained from the results of hypothesis testing, accessibility of financial statements directly affect

stakeholder trust and positive significant, and a weak negative influence indicates the existence of variable distortors, where initially the relationship between accessibility variables of financial statements and stakeholder trust variables is a positive relationship, but when presented the transparency variable of financial management of the relationship to be weak negative (Prasetyo and Jannah 2002,71; Abdillah and Jugiyanto 2011, 225-239), by looking at the total effect value (Tabel 4.4.1) then this condition is a desired condition even indicated suppressor effect. Then the indirect effect of the accessibility of financial statements on stakeholder trust and significant positive, and seen from the magnitude of the mediation effect given from the mediator variable control, so that it can be concluded that there is a full mediation effect. This means that the accessibility of financial statements cannot directly influence stakeholder trust without mediating financial management transparency. Thus, access to information on financial statements presented will have an effect on increasing stakeholder trust by applying the principle of transparency in financial management so as to produce accountable financial management accountability.

VI. Conclusions and Suggestions for Future Research

The results showed that isomorphism institutional pressure had a positive and significant effect on stakeholder trust. This means that the increasing emphasis on the application of institutional isomorphism mechanisms will have an effect on increasing stakeholder trust. While the accessibility of financial statements has a positive and significant effect on stakeholder trust. This means that access to information on financial statements has the potential to have a positive influence on increasing stakeholder trust. This study proves that financial management transparency mediates partially the relationship between isomorphism institutional pressure and stakeholder trust. This means that the application of institutional isomorphism mechanisms along with the implementation of financial management transparency will have an impact on the increasing stakeholder trust. This study also proves that financial management transparency fully mediates the relationship between financial statement accessibility and stakeholder trust. This means that the better access to financial statements along with the implementation of financial management transparency will have an impact on the increasing stakeholder trust.

Researchers realize that this study still has some limitations that can influence the results of the study. These limitations are:

1. From the results of the loading factor test related to each indicator in this study there are several indicators that do not meet the convergent validity test. This can occur due to several things, one of which is because the statements in the questionnaire tend to be normative and less able to describe the indicators in this study. Therefore, the researcher can then modify the statement on the questionnaire to be more easily understood and can better describe the indicators..
2. The results of statistical tests regarding the direct effect of exogenous variables on endogenous variables indicate that the R-square value is in the weak category. Therefore, further research is to increase the number of samples to obtain predictive results with high variance and it is recommended to use a standard sample size in the estimation model to be used in PLS so as to produce better predictive effects, and increase the validity and reliability test parameters more conservative to produce predictive effects and high R2 (Jugiyanto 2011; 127). Future research can also explore other factors (exogenous variables) that are predicted to influence stakeholder trust. This study uses transparency of financial management as an intervening variable, in subsequent studies can re-test using other variable indicators such as indicators of transparency of financial reporting as intervening variables on the basis of institutional theory.
3. In this study only involves internal stakeholders, while users of financial statements consist of internal stakeholders and external stakeholders. For this reason, further research advice is to expand the research locus by looking at the stakeholder trust perspective from external stakeholders, such as the Supreme Audit Agency (BPK), institutions/ community organizations, donor agencies, etc.

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Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Keywords

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, “What words would a source have to include to be truly valuable in a research paper?” Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

Numerical Methods

Numerical methods used should be transparent and, where appropriate, supported by references.

Abbreviations

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

Formulas and equations

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

Tables, Figures, and Figure Legends

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.

Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

Preparation of Eletronic Figures for Publication

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

Tips for writing a good quality Management Research Paper

Techniques for writing a good quality management and business research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of management and business then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.

6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.
Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

21. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

22. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.

Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.

- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

The Administration Rules

Administration Rules to Be Strictly Followed before Submitting Your Research Paper to Global Journals Inc.

Please read the following rules and regulations carefully before submitting your research paper to Global Journals Inc. to avoid rejection.

Segment draft and final research paper: You have to strictly follow the template of a research paper, failing which your paper may get rejected. You are expected to write each part of the paper wholly on your own. The peer reviewers need to identify your own perspective of the concepts in your own terms. Please do not extract straight from any other source, and do not rephrase someone else's analysis. Do not allow anyone else to proofread your manuscript.

Written material: You may discuss this with your guides and key sources. Do not copy anyone else's paper, even if this is only imitation, otherwise it will be rejected on the grounds of plagiarism, which is illegal. Various methods to avoid plagiarism are strictly applied by us to every paper, and, if found guilty, you may be blacklisted, which could affect your career adversely. To guard yourself and others from possible illegal use, please do not permit anyone to use or even read your paper and file.

Criterion for Grading a Research Paper (Compilation) by Global Journals

Please note that following table is only a Grading of "Paper Compilation" and not on "Performed/Stated Research" whose grading solely depends on Individual Assigned Peer Reviewer and Editorial Board Member. These can be available only on request and after decision of Paper. This report will be the property of Global Journals.

Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

INDEX

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