Faculty of Commerce
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Credit Risk Management Methodology According to Basel III Accords
An Applied Study on the Egyptian Banking System

منهجية إدارة المخاطر الإئتمانية وفق مقررات بازل III
دراسة تطبيقية علي الجهاز المصرفي المصري

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"بسم اللّه الرحمن الرحيم"

وَمَا تَوْفِيقِي إِلا بِاللَّهِ

"صدق اللّه العظيم"

Dedication

I dedicate this thesis to my dear mother, father, brothers, husband and my dear children: Hamza, Habiba and lily as well as all who helped me finish this task especially;

Professor Dr. Farag Ezzat,

Dr. Shereen Maarouf and

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Abstract

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Credit risk management is considered as a fundamental issue in the process of financial risk management. Banking and financial industry pay greater attention to the credit risk analysis and risk assessment due to the financial turmoil and the changes in the regulations introduced by Basel III.

A combination of capital and liquidity standards has been introduced by Basel III, which aims at increasing the resilience of the financial sector against crisis and stress. Basel III Accord combines enhancements of both the micro and the macroprudential level. At the micro level of financial institutions, it adds some improvements, including strengthening the quality and the level of capital. At the macroprudential level, Basel III promotes the greater stability of the financial system by establishing the appropriate capital level to address the procyclicality of the financial system and to deal with systemic risk.

Banking productivity and efficiency are essential for the survival of banks due to the increased globalization. Over the last decade, the Egyptian banking sector was subject to several reforms which designed to increase both the efficiency and the competitiveness of the banking sector.

The Egyptian authorities have undertaken major banking reforms towards a more liberal system. These reforms are designed for targeting strengthening supervision and regulations of banking activities on the basis of internationally accepted standards to deal with the various risks inherent in the new policy environment.

The impact of Basel III on the Egyptian banks is considered to be limited, thanks to the Banking Reforms introduced and implemented by the CBE, where banks have been restructured, their capital has been raised and their risk management has been strengthened. However, there are fundamental impacts of the implementation of Basel III requirements on business models and the shape of the business done by banks. The negative impact may result due to the limited competition resulted from the crowding out of the smaller banks and much less innovation in financial services.

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Introduction

Banks are among the important financial institutions in the economy of every country, as they are playing an important role in both the economy and society. Financial services are provided efficiently by banks to gain profit. The main role of the banks is making the community's deposits and investments surplus used by lending it to borrowers for various investment purposes. The main role played by banks is the asset transformation.

The main function of banks is to attract funds and to resell or invest it, thus, banks have to take the risk as investing cannot be done without risks. Additionally, banks are required to gain margins, so banks must make a tradeoff between risk and profit, as business grows mainly through taking the risk, therefore, the greater the risk, the higher the profit.[1]

Banks manage their risks for maximizing their profitability and gaining a competitive advantage. Banks have to manage different risks, and risk management requires banks to deal with their risks through different processes including identifying, understanding, measuring, and managing. There are three main sources of risk identified by Basel II Capital Accord, which are: credit risk, market risk, and the operational risk.[2]

Credit risk is among the critical risks faced by banks. A loss may occur to a bank due to the default of a small number of customers, as in terms of potential losses, the credit risk is considered among the most explicit risks by the nature of banks' activity**.** Credit risk management is considered as a fundamental issue in the process of financial risk management. Banking and financial industry pay greater attention to the Credit risk analysis and risk assessment, due to the financial turmoil and the changes in the regulations introduced by Basel II.

[1] Raghavan,R.S.(2003).Risk Management In Banks,Chartered Accountant, p.841.
[2] Basel Committee on Banking Supervision (2006). International Convergence of Capital Measurement and Capital Standards, A Revised Framework. Technical report, Bank for International Settlements,Basel.

Banks are required to have the ability to distinguish between good customers and bad ones to be a successful player in the credit industry and banking. Both the predicting and the mitigating of default events are essential for appropriate credit risk management, which can be solved by employing suitable quantitative models, without depending on human expert for judgments. The implementation of the suitable credit risk model is directly related to the optimal allocation of capital resources and it has driven the interest of both academic and industrial communities. The main target of Basel Capital Accords is to provide an illustration of how credit risk management techniques are transformed into capital adequacy for banks.

There are many problems found in the Basel II Accord especially in credit risk management. Basel II has been criticized for being procyclical, as banks are required to increase their capital during periods of increasing risks. Therefore, banks decrease their lending when capital is scarce, aggravating the financial crisis potentially. In addition to that, the average level of capital required by the Basel II was insufficient. As a result, improvements have been introduced through Basel III in some aspects which claimed for a fundamental contribution to the financial crisis in Basel II. The objective of these reforms is raising the resilience of banks to periods of stress, through enhancing banks' ability to absorb shocks which may arise from financial or economic stress.

Research Problem

A combination of capital and liquidity standards has introduced by Basel III, aiming to increase the resilience of the financial sector against crisis and stress. Basel III accord combines enhancements of both the micro and the macroprudential level. At the micro level of financial institutions, it adds some improvements, including strengthening the quality and the level of capital. At the macroprudential level, Basel III promotes the greater stability of the financial system by establishing the appropriate capital level to address the procyclicality of the financial system.

Basel III accord has made many contributions to risk management in the banking industry; however, there are still some problems in implementing these regulations. Basel III is supposed to have some negative impacts on banking profitability, in addition to the raising barriers to the entrance which may lead to competition reduction. Large banks seem to benefit from Basel III, while it seems to harm the small ones resulting in monopoly establishing in the banking system. Large banks which can meet the new requirements in Basel III will be more profitable due to the fewer competitors.

National authorities are responsible for the Implementation process of Basel III requirements, especially countercyclical capital buffer activation, within the general guidance from the international agreement. Systematic risk will be limited through different tools, as jurisdictions with effective supervision and the international peer reviews will surely ensure international consistency.

The development of an efficient banking sector is crucial for the growth of the economy, as it is the largest conduit for the domestic savings' mobilization, the main external capital's source for firms, and the key player in the payment system. Consequently, the development of an efficient banking sector is essential for the Egyptian banking sector which dominates the financial market and is dominated by public banks.

The Central Bank of Egypt has prepared and implemented the Banking Sector Reform Program, through which banks have been restructured, their capital has been raised, and their risk management has been strengthened. It is worth mentioning that the program was mainly fruitful as regards the program of implementing Basel II in the Egyptian banking sector which has ended successfully. The banking reforms introduced by the CBE have prepared Egypt to absorb the shock resulting from the financial crises. Moreover, its financial sector is quite shallow and less connected to the global financial sector. In fact, the better performance that was temporarily recorded against the financial crisis emanated from a shallow financial sector and a relatively low level of foreign trade, not only to sound economic policies.

In order to acquire the knowledge of the impacts of Basel III implementation on credit risk management and banking sector, the researcher addresses the following questions:

1. What are the main risks faced by the banking institutions and what are the main approaches to risk management?
2. What are the points of weakness in Basel II that are blamed for the occurrence of the financial crisis?
3. What are the impacts of the implementation of Basel III Accord on credit risk management?
4. What are the consequences of the implementation of Basel III requirements on the Egyptian banking sector?
5. What are the impacts of both bank-specific variables, and macro variables on the non-performing loans in the Egyptian banking sector?

Research Hypotheses

1. There is a negative impact of Basel III implementation on the Banking sector.
2. There are no negative impacts of Basel III implementation on the Egyptian banking sector and economy.
3. There is no significant relationship between the non-performing loans ratio as the dependent variable and all the independent variables included in the study.

Research Objectives

1. Highlighting the general features of the Basel III Accord and its requirements.
2. Pointing out the consequences of the implementation of the Basel III Accord.
3. Exploring the impacts of the Egyptian banking sector reform program.
4. Assessing the determinants of Non-Performing loans in the Egyptian banking sector.

Research Limitations

Geographic limitations: the study examines the determinants of Non-Performing loans in the Egyptian banking sector.

Time limitations: the study examines the determinants of Non-Performing loans in the Egyptian banking sector in the time period of (2008-2017) on a quarterly basis.

Research Methodology

The researcher followed the deductive approach through the use of historical, descriptive, and empirical analysis tools.

- Historical analysis: the researcher has traced the developments in Basel Accords, and credit risk management strategies.
- Descriptive analysis: the researcher has described the main changes in the Egyptian banking sector and Basel III requirements.
- Empirical analysis: the researcher has used the ARDL model to examine the determinants of the Non-Performing loans ratio in the Egyptian banking sector.

Previous Studies

Gianni De Nicolò, (2015), **Revisiting the impact of bank capital requirements on lending and real activity**, working paper, International Monetary Fund.

This paper outlines the impacts of changes of capital requirements in Basel III Accord on lending and real activity, by reviewing the earlier empirical literature and the quantitative results from the equilibrium models, and by presenting novel empirical estimates on the short-term and long-term impact of an increase in capital requirements on lending and real activity. The results of this paper show that there is a negative long-term effect of an increase in capital requirements on lending and real activity.

Fan Li, and Yijun Zou,(2014), **The Impact of Credit Risk Management on Profitability of Commercial Banks: A Study of**

Europe, thesis Umeå School of Business and Economics, Umea University.

This study investigates the relationship between credit risk management and profitability. It also investigates whether this relation is stable or fluctuating. A series of statistical tests are performed in order to test if the relationship exists. Other statistical tests are also performed to investigate if that relationship is stable or not.

The findings of the study demonstrate that there is a positive impact of credit risk management on the profitability of commercial banks. Among the credit risk management indicators, NPLR has a significant effect on both ROE and ROA, while CAR has an insignificant effect on both ROE and ROA. However, from 2007 to 2012, the relationships between all the indicators were not stable but fluctuating.

Badrya.Metwally.Halaby**, (2013) Technical Efficiency and Credit Risk Assessment for Commercial Banks under Basel II Accord,** Ph.D. thesis, Statistics, Mathematics and Insurance Department, Faculty of Commerce, Ain Shams University**.**

This study reviews the Egyptian extensive economic reform and structural adjustment program (ERSAP), which aims to transform the economy that is dominated by a highly centralized planned **by** the public sector to an outward-looking economy led by the private sector. It measures the efficiency productivity for a sample of Egyptian commercial banks from 1994-2008, it also determines the determinants of productive efficiency. In addition to that, it outlines the credit risk assessment under the Basel II accord.

This study concludes that the inefficiency of the Egyptian commercial banking sector is because of the technical inefficiency, and the Egyptian commercial banking sector exhibit scale efficiency. Therefore, there is a difference between the efficiency and productivity of public and private banks in the Egyptian banking sector through the study period (1994-2008).

Thao. Nguyen, Thi**, (2013), Basel III and Impacts on Credit Risk Management,** thesis**,** University of Iasi Iasi, Romania.