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Credit Risk Evaluation in National Banks

Khaled Mohamed Ahmed, pHD

I. Introduction

The last decade has unexpected losses of large amounts in the banking industry. Firms that had been performingwellsuddenly announced large losses due to credit exposures that turned sour, interest rate positions taken,or derivative exposures that may or may not have been assumed to hedge balance sheet risk. In response tothis,commercial banks have almost universally embarked upon an upgrading of their risk management andcontrol systems.

National banks are providing services such as accepting deposits, making business loans, and offering basic investment products. It also deals with deposits and loans from corporations or large businesses, as opposed to individual members of the retail banks.Commercial banks have to avoid financial risk with their investments and cash security measures;also they must establish credit risk policies that minimize loan losses.

Credit risk can jeopardize lending and the financial areas of banks and credit unions. In every bank can appear losses occur at every bank; credit risk that is not properly evaluated and managed can lead to excessive loan losses and damaging the financial condition of financial institutions. Properly managing credit risk, along with improving the earnings of the loan portfolio, can prevent excessive financial damage.All lenders must reduce their risk of loan loss. Credit risk management has responsibility to prevent potential loan loss. Borrowers with consistently poor credit reports or excellent credit scores allow lenders to make easier approval and rejection decisions.

The **goal** of this study is to analyze the impact of credit riskmanagement on the financialperformance of commercial banks.

II. Bank loans and liquidity

Modern economies depend on credit to finance all forms of activity, from large commercial credits to retail credit such as mortgages and credit cards. Managing credit and understanding associated risks are as important to consumers as they are to bankers and investors.Commercial banks have a great influence on the growth of a nation's economy. The profitability of commercial banks is largely attributed to the interest charged on loans they advance to their customers. If these loans are defaulted, banks face the risk of collapsing and the entire economy will be threatened. Banks use credit derivatives to protect themselves against credit risk arising from loan defaulters. Loan defaulting has been and continues to be a cause of financial distress in the banking sector locally as well as globally. [1]

[1] Diamond, D W and Dybvig, P H, ‘Bank Runs, Deposit Insurance,and Liquidity’, Journal of Political Economy, Vol. 91(3), June, 1983

Main reasons for bank’s loans:

- Support or expand the productive capacity of businesses
- Utilize domestic inputs and suppliers which help forge strong integration of the economy
- Create the potential for exports and the development of foreign exchange
- Support private sector development

Liquidity for a bank means the ability to meet its financial obligations as they come due. Bank lending finances investments in relatively illiquid assets, but it funds its loans with mostly short term liabilities. Thus one of the main challenges to a bank is ensuring its own liquidity under all reasonable conditions.

National banks differ widely in how they manage liquidity. A small bank derives its funds primarily from customer deposits, normally a fairly stable source in the aggregate. Its assets are mostly loans to small firms and households, and it usually has more deposits than it can find creditworthy borrowers for. Excess funds are typically invested in assets that will provide it with liquidity. The holding of assets that can readily be turned into cash when needed, is known as asset management banking.

In contrast, large banks generally lack sufficient deposits to fund their main business -dealing with large companies, governments, other financial institutions, and wealthy individuals. Most borrow the funds they need from other major lenders in the form of short term liabilities which must be continually rolled over. This is known as liability management, a much riskier method than asset management. A small bank will lose potential income if gets its asset management wrong. A large bank that gets its liability management wrong may fail.

III. Managing risks

Banking operations involves constant level of risk. Effective risk management is critical to any bank for achieving financial soundness. It must be obviously constituted to bank’s organizational structure and business strategy has become integral in banking business. Credit risk is the bank’s risk of loss arising from a borrower who does not make payments as promised.

Credit risk management encompasses identification, measurement, monitoring and control of the credit risk exposures. The effective management of credit risk is a critical component of comprehensive risk management and essential for the long term success of a banking organization.

3.1 Risk management

Risk management focuses on identifying and assessing the risks and managing those risks to minimize the possibility of losses. There are no risk-free financial operations. Risk

management can be defined as a number of procedures and actions that allow managers to identify, assess, monitor and address risks before they transform into problems. It is desirable to identify risks as early as possible and certainly before they become problematic. When the risk is identified, it is necessary to make a decision about the outcome.

3.2 Risk management process

Basically there is managerial equipment that can help companies make better decision in the risk management process. Companies have to make a decision about setting up a goal or risk policy where risk acceptance criteria will be involve.

However, with a good analysis basing on available information's all hazards of the activities shall be identified and the consequences of the risk will be assessed. Thereafter, there shall be risk evaluation comparison with the acceptance criteria. In extreme cases where the risk is not acceptable, there is the need for the companies to make a decision to Composite Risk Index.[2]

The above formula can also be rewritten in terms of a Composite Risk Index, as follows:

Composite Risk Index = Impact of Risk event x Probability of Occurrence

The impact of the risk event is commonly assessed on a scale of 1 to 5, where 1 and 5 represent the minimum and maximum possible impact of an occurrence of a risk (usually in terms of financial losses).

3.3 Basic steps of risk management process

Risk management process is the basic principle of understanding and managing risks. It consists of the severalphases.[3] All steps in this process should be included when dealing with risks, in order perform business with minimal losses.

According to the standard ISO 31000 "Risk management – Principles and guidelines on implementation," the process of risk management consists of several steps as follows:
Risk management contains:

1. identification,
2. measurement,
3. aggregation,
4. planning and management,
5. as well as monitoring of the risks arising in a banking business.

Identification

After establishing the context, the next step in the process of managing risk is to identify potential risks. Risks are about events that, when triggered, cause problems or benefits. Hence, risk identification can start with the source of our problems and those of our competitors (benefit), or with the problem itself.

- ✓ Source analysis- Risk sources may be internal or external to the system that is the target of risk management (use mitigation instead of management since by its own definition risk deals with factors of decision-making that cannot be managed).Identifying the sources of risk by category is another method for exploring potential risk on a project. Some examples of categories for potential risks include the following:
  - Technical
  - Cost
  - Schedule
  - Client
  - Contractual
  - Weather
  - Financial
  - Political
  - Environmental
  - People

Aggregation

When aggregating risks, it is important to take into account correlation effects which cause banks overall risk to differ from the sum of the individualrisks.[4] This applies to risks both within a risk category as well as across differentrisk categories.

Planning and Management

Risk management has the function of planning the banksoverall risk position and actively managing the risks based on these plans. Managingshould be taken to mean the following: the selective limitation of riskpositions as well as the mitigation, or possibly increase, of these positions bymeans of financial instruments or suitable techniques. These instruments ortechniques affect the risk of the individual position and influence changesin the risk position in the overall portfolio as a result of portfolio effects.

The most commonly used management tools include:

- risk-adjusted pricing of individual loan transactions
- setting of risk limits for individual positions or portfolios
- use of guarantees, derivatives, and credit insurance
- securitization of risks
- buying and selling of assets.

Monitoring

Risk monitoring is used to check whether the risks actually incurred liewithin the prescribed limits, thus ensuring an institutions capacity to bear theserisks. In addition, the effectiveness of the measures implemented in risk controllingis measured, and new impulses are generated if necessary.

3.5 Banking risks

[2]Chapman.. C, Ward.. S, Project Risk Management: Processes, Techniques and Insights, John Wiley & Sons, 2007
[3]Smith, N.J., Merna, T. and P. Jobling, Managing Risk in Construction Projects, Oxford: Blackwell, 2006
[4]Shtub, A. & Bard, J. & Globerson, S , Project Management: Process, Methodologies and Economics, Pearson Prentice Hall, USA., 2005

The risks to which a bank is particularly exposed in its operations are: liquidity risk, credit risk, market risks (interest rate risk, foreign exchange risk and risk from change in market price of securities, financial derivatives and commodities), exposure risks, investment risks, risks relating to the country of origin of the entity to which a bank is exposed, operational risk, legal risk, reputational risk and strategic risk.

- **Liquidity risk** is the risk of negative effects on the financial result and capital of the bank caused by the bank's inability to meet all its due obligations.
- **Credit risk** is the risk of negative effects on the financial result and capital of the bank caused by borrower's default on its obligations to the bank.

1. Managing credit risk

The banking essentially provides access to credit. In the lenders case, this includes access to their own savings and investments, and interest payments on those amounts. In the case of borrowers, it includes access to loans for the creditworthy, at a competitive interest rate.[5]Services that are provided by banksare transactional services, verification of account details, account balance details and the transfer of funds, so as advisory services that help individuals and institutions to properly plan and manage their finances.

2. Calculation of risks

Two main methods are used to measure unexpected losses today:

- Value-at-Risk analyses (VaR) or
- scenario techniques

Both methods are intended to measure the banks risk as adequately as possible. However, they differ strongly in their calculation methods and their precision,with the scenario analysis as the simpler method being used in caseswhere a calculation of the VaR is not possible.

Scenario analysis

Under a scenario analysis, the available historical market data and/or internalbank data are used to create scenarios concerning the possible developmentof default rates.

- scenarios for the normal case, in which loss developments are assumed thathave already occurred in a certain historical period under review; and
- worst case scenarios assuming the incurrence of extreme lossesare assumed.

3. Case study of credit risks in Libyan banks

This study will attempt to address another aspect of analysis of the problem through an applied study, in which other previous studies did not address, to illustrate to what extent commercial banks operate in Libya rely on financial analysis in their credit decision.

[5]Duffee, G.R., Zhou, C., Credit derivatives in banking: useful tools for managing risk? Journal of Monetary Economics, 2001

According to the Central Bank of Libya, there are sixteen banks in Libya. Libya's banking system is dominated by four banks which are owned in full or inthe majority by the Libyan Central Bank (Jamahiriya Bank, Wahda Bank, Sahara Bank, Umma Bank and the National Commercial Bank). These banks constitute almost ninety percent of Libyan banking sector assets.

All of these banks have capital of at least 10million Libyan Dinars, and two of them (Wahda Bank and Sahara Bank)were in the process of being privatized in 2006. Frances BNP Paribas acquired 19% of Libyan SaharBank in July 2007, and took operational control of the bank. The deal also includes an option allowing BNP Paribas to purchase additional shares up to 51% of Sahara's capital over the next three to five years. In November 2007, five foreign banks were short listed for the privatization of Wahda Bank, including French, Italian, Jordanian, Bahraini and Moroccan institutions; Arab Bank (of Jordan) was selected. They bid on a 19% of the share of Wahda Bank, with the option to increase their ownership to 51% in three to five years. The Central Bank announced in October 2007 that it would merge Umm bank and Jamahiriya bank into a single entity; that process was completed inyear2000,although there are still branches open under the banner of each bank.

Libyan Banks get most of their funding from customer deposits, which were 83% of their liability base as of Nov. 30 2008. They reinvest most of these funds with the Central bank of Libya in the form of demand and time deposits. Also, loan/deposits ratio has been consistently decreasing going from 41% on Jan 31 2007 to 23% on Nov. 30/2008(Libyan central bank, 2009).

According to the World Bank, financial intermediation continues to be low in Libya compareto other comparable countries.Commercial bankscredit has been decreasing over the past few years because its being crowded out by credit from specialized credit institutions. In 2007, it reached 13 percent of GDP.The availability of financing on the local market is weak. Libyan banks offerlimited financial products, loans are often made on the basis of personal connections (rather than business plans), and public bank managers lack clear incentives to expand their portfolios. Lack of financing acts as a brake on Libya's development is hamperingboth the completion of existing projects and the start of new ones. This has been particularly damaging in the housing sector, where particularly small-scale project often languish for lack of steady funding streams.

REFERENCES

[1] Acharya, Viral V., and Lasse Pedersen, Asset pricing with liquidity risk, Journal of Financial Economics, 2005

[2] Allen, F. and Santomero, A. "The Theory of Financial Intermediation," Journal of Banking and Finance, 1997

[3] Altman, E. "Valuation, Loss Reserves and the Pricing of Corporate Bank Loans," Journal of Commercial Bank Lending, 1993.

[4] Arif, A.; Nauman, A., Liquidity risk and performance of banking system, The Journal of Financial Regulation and Compliance20, 2012

[5] Aspachs, O. E. Nier, M. Tiesset., "Liquidity, Banking Regulation and the Macroeconomy", 2005

[6] Babbel, D. And Santomero, A. "Financial Risk Management by Insurers: An Analysis of the Process," Journalof Risk and Insurance, June 1997

[7] Bank of England, 'The Measurement of Liquidity', Notice toInstitutions Authorized under the Banking Act 1987, July, 1982

[8] Basel Committee on Banking Supervision (BCBS), An Assessment of the Long-Term Economic Impact of Stronger Capital and Liquidity Requirements, 2010

[9] Basel Committee on Banking Supervision (BCBS), Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems, Bank for International Settlements, Basel, 2010

[10] Basel Committee on Banking Supervision (BCBS), Results of the Comprehensive Quantitative Impact Study, Bank for International Settlements, Basel, 2010

[11] Basel Committee on Banking Supervision (BCBS), Revisions to the Basel II Market Risk Framework, Bank for International Settlements, Basel, 2009

[12] Basel Committee on Banking Supervision , 'Sound Practices for Managing Liquidity in Banking Organizations', February, Bank for International Settlements, Basel, 2000

[13] Basel Committee on Banking Supervision , 'Sound Practices for Managing Liquidity in Banking Organizations', February, Bank for International Settlements, Basel, 2000

[14] Berger, A. and Udell, G., "Securitization, Risk, and the Liquidity Problem in Banking," Structural Change in Banking, M. Klausner and L. White, editors, Irwin Publishers, Illinois, 1993.

[15] Bessis, Joel: Risk Management in Banking. 2nd ed. Wiley, 2002.

[16] Bhattacharya, S. and A. Thakor, "Contemporary Banking Theory," Journal of Financial Intermediation, 1993. Economist, "A Survey of International Banking," April 10, 1993.

[17] Bol, Georg (et.al) Ed.: Credit risk: Measurement, Evaluation and Management. Physica, 2003

[18] Bryman, A. and Bell, E., Business Research Methods, Oxford University Press, Oxford UK, 2003

[19] Chapman.. C, Ward.. S, Project Risk Management: Processes, Techniques and Insights, John Wiley & Sons, 2007

[20] Cooper, D., Grey, S., Raymond, G., and Walker, P., Project Risk Management Guidelines: Managing Risk in Large Projects and Complex Procurements,Chichester: John Wiley & Sons, Ltd, 2005

[21] Cossin, Didier & Hugues Pirotte: Advanced Credit Risk Analysis: Financial Approaches and Mathematical Models to Assess, Price and Manage Credit Risk. Wiley, 2000

[22] Davis, E.P., "Market Liquidity Risk**",**paper for the SUERF conference, Dublin, 1994

[23] Diamond, D W and Dybvig, P H, 'Bank Runs, Deposit Insurance,and Liquidity', Journal of Political Economy, Vol. 91(3), June, 1983

[24] Diamond, D., Rajan, R., A theory of bank capital. Journal of Finance 55, 2000

[25] Diamond, Douglas W., and Philip H. Dybvig, Bank runs, deposit insurance, and liquidity, Journal of Political Economy, 1983

[26] Diamond, Douglas W., and Raghuram G. Rajan, Liquidity risk, liquidity creation, and financial fragility: a theory of banking, Journal of Political Economy, 2001

[27] Duffee, G.R., Zhou, C., Credit derivatives in banking: useful tools for managing risk? Journal of Monetary Economics, 2001

[28] Fallon,W., "Calculating Value-at-Risk," Working Paper 96-49, Wharton Financial Institutions Center, The Wharton School, University of Pennsylvania, 1996.

[29] Froot, K., D. Scharfstein, and J. Stein, "Risk Management: Coordinating Investment and Financing Policies,"Journal of Finance,1993

[30] Furash, E., "Organizing the Risk Management Process In Large Banks," Risk Management Planning Seminar,Federal Financial Institutions Examination Council, Washington,D.C., 1994

[31] Gaeta, Gordian: The Certainty of Credit Risk: Its Measurement and Management. Wiley, 2002

[32] Glantz, Morton: Managing Bank Risk: An Introduction to Broad-base Credit Engineering. Academic Press, 2003

[33] Gundlach, Matthias & Frank Lehrbass: CreditRisk+ in the Banking Industry. Springer, Berlin.2004

[34] Jensen M. and W. Meckling, "Theory of the Firm: Managerial Behavior Agency Costs and Ownership Structure," Journal of Financial Economics3, Jorion, P.,Value at Risk: The New Benchmark for Control Market Risk, Irwin Professional Publications, Illinois, 1997.

[35] Kashyap, Anil K., Raghuram G. Rajan, and Jeremy C. Stein, Banks as liquidity providers: an explanation for the coexistence of lending and deposit-taking, Journal of Finance, 2002

[36] Kim, D. and A.Santomero, "Forecasting Required Loan Loss Reserves," Journal of Economics and Business, 1993

AUTHORS

First Author – Khaled Mohamed Ahmed, pHD