International Journal of Engineering Research & Management Technology
ISSN: 2348-4039
Volume 9, Issue-3 May-June 2022
Email: editor@ijermt.org
www.ijermt.org

An Evaluation of the Credit Risk Management of The Financial Institutions

Yashaswee Sharma
Research Scholar Maharaj Vinayak Global University, Jaipur

Dr. Bhushan Agarwal
Supervisor, Maharaj Vinayak Global University, Jaipur
Dept. of Management

ABSTRACT

Credit risk management is central to the success or failure of a banking institution because banks earn the greatest quantum of their interest income from interest on loans which represents a critical component of a bank's profitability Therefore, any negligence in credit risk management inevitably leads to the creation of large amounts of nonperforming loans, which frequently creates the conditions for bank difficulty or failure. Fifty percent of the 120 banks that were technically distressed in the 1990s and especially in 1995 had low liquidity ratios and bad management. For instance, the average bank liquidity ratio was 0.49 in 1995 compared to 58.18 in 2015, while the percentage of nonperforming loans to total loans was approximately 33% in 1995 against 5% in 2015

Keywords: Lending arrangements; Regulatory efficiency; Board of directors; etc.

INTRODUCTION

There is a chance of losing something when there is risk. It often occurs in circumstances where the immediate future's most likely course of events is uncertain. It's an instance where forecasts about what will happen in the future with some degree of confidence can be made based on historical evidence. Risk arises from unpredictable or unfavourable conditions. In the banking sector, a variety of risks, such as operational, liquidity, and credit risks, commonly manifest. Credit risk, which results from the irresponsibility or dishonesty of bank borrowers, poses a serious threat to the banking sector. Credit risk is the possibility that borrowers' loans, advances, and discounts (LADs) won't be paid back entirely or at all. This study looks at the methods Indian commercial banks employ to manage credit risk and tries to shed light on the areas that need improvement. The study will also look at how the credit risk management practises of India's commercial banks have been impacted by the RBI's regulatory initiatives. Policymakers, regulators, and commercial banks in India will find the study's conclusions to be helpful in enhancing credit risk management procedures and preserving the stability of the banking industry. The principle of credit risk management needs to be incorporated into banks' regular operating processes, as the global economic crisis and its impacts have demonstrated.

This is especially true given the current status of the Indian economy. The competitiveness of the market today, social and economic circumstances, market dynamics, and foreign Global trade and currency transactions have raised Indian banks' credit risk. The majority of Indian banks are currently at risk of defaulting on advances and loans for businesses and agriculture. In recent years, the majority of Indian banks have started to diversify their operations and open more branches, notably by launching mutual funds and insurance businesses. But these increases also pose a risk to these banks. Banks need to show that they can continue to develop and maintain their value as a share during periods of high market volatility.

Therefore, it would be crucial for the framework of credit risk management to streamline all risks and maximise profit from the products and services the bank offers. Banks are required to evaluate the level of risk they can take on and make a distinction between Credit risk management evaluation would then involve risk recognition, assessment and all the necessary steps for risk control. Risk control encompasses all the important measures with the aim of avoiding, eliminating or reducing the chances of loss producing events taking place (Okenwa,1999). In the banking enterprise context, risk control involves creating an effective risk management model, appetite and culture within the bank that requires the development of a comprehensive system of risk management controls, with regard to accounting and internal controls, security procedures, and other risk control mechanisms.The main ways to evaluate the effectiveness of bank management are by looking at the level of LADs, quality, bank performance, or profitability—all of which are indicators of management quality. The quality of management, or management competency, is the cornerstone of effective bank management. Credit risk management evaluation is a crucial part in the process, and it should focus on how LADs have performed in relation to the loan's original amount, remaining balance, date of original approval, date of last repayment, and total number of repayments made thus far. The purpose of this study is to investigate the management of credit risk in financial institutions in Ghana.

The study will be basically approached descriptively, as it aims to present descriptive and sound evidence representative of Ghana Commercial Bank Limited. This study will be based on quantitative research and data. The purpose of this study will be explained further as the study progresses, along with the list and explanations of the study's problems and objectives, the hypothesis and other details about the methods it will use. However, it briefly presents and discusses the background of the study. In most banks, loans are the largest and most obvious source of credit risk. However, other sources of credit risk exist throughout the activities of a bank. They include activities in the banking and trading books, and those both on and off the balance sheet. Banks are increasingly facing credit risk or counterparty risk in various financial instruments other than loans. These include bankers' acceptances, interbank transactions, trade financing, foreign exchange transactions, financial futures, swaps, bonds, equities, options and the settlement of transactions.

Objective

1. To research the assessment of bank management effectiveness and credit risk management

2. To talk about the credit risk management strategies used by particular banks.

3. The purpose of this study was to evaluate the relationship between the effectiveness of bank management and the assessment of credit risk management.

Reviews

Banks provide credit facilities which play very significant roles in financing economic and business activities for sustainable national development. Bank facilities are mainly in forms of overdrafts, loans or advances, among others. According to Agbada (2010) overdrafts are credit facilities for the purpose of augmenting the working capital of businesses on very short term basis. Loans on the other hand, are credit facilities granted by banks for some specific purposes that may include; investment, construction, execution of government projects, and the purchase of heavy industrial equipment, among others. Also, advances can involve cheques or drafts purchased or uncleared effects as forms of credit facilities granted to people for a specific time period. Other forms of bank credits include commercial papers or bills, as well as guarantees and indemnities. These facilities run the risk of nonrepayment that can negatively affect the health of the bank, or into a troubled bank. The business of banking is associated with various risks; such as liquidity risk, earnings risk, and credit risk, among others. Credit risk is the risk that the interest or the principal on LADs made to customers will not be repaid as agreed. When

this situation occurs, such LADs, become nonperforming, with principal and interest failing into arrears. As the custodian of depositors' and shareholders' funds, bank management has the responsibility of minimizing credit risk and maximizing returns on shareholders' equity, consistent with the provisions of the prudential regulations. According to the prudential guidelines in order to facilitate comparability of banks, classifications of their credit portfolio, the assessment of credit risks in default, should be based on certain criteria, which includes the borrowers' repayment capacity on the basis of current financial conditions and realizable value of the collaterals provided for the exposures. According to Nzotta (2004) DMBs are required to make adequate provisions for perceived losses based on the credit portfolio to reflect their true financial condition. DMBs are also required to disclose in their annual statements an analysis of their credit portfolio categorized into performing and nonperforming loans (NPLs). DMBs are equally mandated by the prudential regulations to make objective assessment with a view to determining the extent of loss a DMB may likely suffer. A major objective of the regulatory approach is to protect depositors' and shareholders' funds and to ensure that the level of credit risk exposure of a DMB is constantly evaluated, monitored and kept at the barest minimum levels. In categorizing credit risk, the prudential guidelines emphasize that paper profits, which relates to interest accruing on NPLs and credited to the Profit & Loss Account of DMBs are eliminated. A goal of credit risk evaluation and management is to determine the quality of the credit portfolio and make a quantitative judgment on possible losses which the DMBs face and which bank management must accord adequate recognition. For effective credit risk evaluation and management, the prudential guidelines require bank management to categorize risk asset portfolio into: (i) Specially mentioned (ii) substandard (iii) doubtful and (iv) lost. Central Bank of Nigeria (1990)Nkwede and Nwankwo (2012), Jensen (2001), Meshack et al. (2011), Van Greuning and Bratanovic (2003), Alkaleri (1996).

Classification of Loans, Advances and Discounts

Classification process of LADs by the bank management is based either on experience or knowledge of the borrower(s). The term "loan" is used as a generic term to embrace all types of credit facilities like advances, loans, overdrafts, commercial papers, bankers acceptances and bills discounted.

1. Specially Mentored Loans (SM): This category relates to loans with potential problems and weaknesses, which requires the special attention of management. This is imperative because if the problems or weaknesses are not regularized the loan would further deteriorate and result in inadequate protection of the bank's interest at a future date. SM loans basically involve (a) facilities in excess of approved limits, (b) facilities with unrealistic repayment schedule, (c) unauthorized facilities granted by lending managers, (d) lending to borrowers beyond their repayment capacities (e) facilities to customers with record of nonperforming loans in other banks (f) facilities supported by inadequate or imperfect collateral, (g) absence of board borrowing resolution to support corporate debt and (h) adverse trend in borrowers' operations.

2. Substandard loans: This category relates to loans with well-defined weaknesses, which could affect the ability of the borrower to repay. Such loans are often characterized by the distinct possibility that the bank will sustain some loss if the deficiencies are not corrected. The prudential guideline stipulates 10 percent provision against possible losses over substandard loans by bank management.

3. Doubtful loans: This classification under the prudential guidelines involves loans that have all the weaknesses inherent in substandard loans with the additional characteristic that the weaknesses make collection or liquidation in full, on the basis of currently existing facts highly questionable and improbable. In this case, the possibility of loss is very high, and bank management is required to make 50 percent provision for expected losses.

4. Loss loans: Loans classified loss are considered uncollectable and of such little value that their continuance as bankable assets is not warranted and therefore, regarded as lost. Loans classified as lost require 100 percent provision under the prudential regulations.

Recognition of Income

Loans overdue for 90 days or more should automatically be placed on 100 percent non-accrual status, and therefore, interest due thereon should not be recognized as income. The interests on such loans which had earlier been passed into the revenue account in the early life of the facilities should be reversed and credited to a suspense account specifically created for the purpose, while future interest charges should be credited to the account. In line with the provisions of prudential regulations, bank management should not take interest charges on any classified account into the revenue accounts. According to the guidelines, anything contrary is clearly tantamount to overstatement of income and the erosion of shareholders' equity, through payment as dividend (Atoyebi and Simon, 2018).

Board Audit & Risk Assessment Committee

For bank management effectiveness, the BODs of a banking enterprise is statutorily expected to establish audit and credit committees responsible for credit risk evaluation and management. In Nigeria, for example, banks are required to establish Audit Committees in compliance with Section 359(6) of the Companies and Allied Matters Act (CAMA), 1990. Such a Committee has oversight responsibility for the Bank's accounts and financial statements (Onipe et al., 2015). In the specific case of credit risk, well managed banks put in place Executive Committee, Credit (EXCO Credit) and Board Credit Committee that report to Board Audit & Risk Assessment Committee. The EXCO Credit considers loan applications above certain limits, which have been reviewed and endorsed by the Risk & Management Control Directorate. It also considers loan requests above certain limits, which need to be referred to the Board, as well as agreeing changes to the bank's credit policy or risk appetite. On the second-hand, the Board Credit Committee considers loan applications above certain limits and which have been approved by EXCO Credit. It also serves as a catalyst for credit policy changes, going from EXCO Credit to the Board for consideration and possible approval. For effective risk management, the Board Audit & Risk Assessment Committee has oversight responsibility for the internal audit and control, risk assessment, and compliance functions of the bank. In most healthy banks, and for bank management effectiveness, the Chief Internal Auditor (CIA) and the Chief Compliance Officer (CCO) interface with the Chief Financial Officer (CFO) and they have access to this Committee and report directly to the Managing Director/Chief Executive Officer (MD/CEO) of the bank. Audit is crucial in credit risk management because it generally involves an evaluation of portfolio quality and standards for classifying or valuing assets, establishment of reserves, and provisions for losses, and treatment of interest on nonperforming loans. According to Ledgerwood and White (2006) the Board along with top management sets the tone of the bank and establishing, and demonstrating the importance of internal controls. The Board emphasizes the examination of the overall risk-management structure of the enterprise, and is also required through a Board Audit Committee to review any and all reports from the auditors and act on them. This cannot be overemphasized because each director may be held personally responsible, and failure to comply may in some cases be punishable by law.

Method

The ex-post-facto research design was used in this investigation. This design was selected because data for the study were obtained from past records, and not manipulated. According to Asika (2006) expo-facto design involves a systematic empirical study in which the researcher does not in any form control or manipulate the independent variables because the situation for the investigation-already exists or has taken place.

Al-Tamimi (2002) discovered that the banks employed risk rating, appropriate collateral management, credit score utilisation, assessment of credit worthiness, and establishment of credit standards as credit risk management techniques. In 2002, Salas and Saurina conducted a study on the credit risk management practices of Spanish banks. They discovered that a number of factors, including the rate of economic growth, the credit history of the banks, the expansion of their branches, managerial performance and efficiency, the type of credit portfolio, the size and composition of the portfolio, the size of the corporate, net interest margin, and capital adequacy ratios, had an impact on the risk management practices of the banks. Credit risk caused losses for the majority of commercial banks (Bo et al., 2005, When Fan and Shaffer (2004) looked into the US regional banks' efficiency, they discovered. The control of credit risk was the primary factor influencing profit. According to Hanweck and Ryu (2004), commercial banks and other financial institutions would charge higher credit premiums in response to increased credit risk, which will increase the net interest margin.

Model Specification

A relationship is expressed in exact mathematical form through model specification. Koutsoyiannis (1977) asserts that economic theory is unable to identify the functional form of any relationship. This implies that whether a relationship will be stated in linear, quadratic, or cubic form is not something that economic theory specifies. Based on this, it was determined to define the following relationship between credit risk evaluation management (CREM) and bank management effectiveness (BME):

Where:

BAME = Bank management effectiveness

CA = Capital adequacy

MC = Management competence

EA = Earnings

b0 = Common term

b1, b2, b3 = Coefficient attached to

t = Time period

u = Stochastic error term.

Presentation of Result.

Table-1. Comparative Asset Quality of Insured DMBs (1995/2015)

Table-2.

Bank	Total loans advances, and discounts (N)	Variation	Total classified loans, advances and discounts	Variation

Comparative Liquidity Status of Insured DMBs (1995/2015)

	Year	Year		Year	Year	
	1995 (B)	2015 (T)		1995 (M)	2015 (B)	
All	176	13	-163	58	649	-.57
Ratio of NPLs to total loans (%)	33.00	5.00				

Bank	Average liquidity ratio		Loans, advances and discounts to deposit ratio		Number of banks with average liquidity ratio of less than 30%	
	Year		Year		Year	
	1995	2015	1995	2015	1995	2015
All	0.49	58.18	58.40	73.76	50	1

Table-3. Comparative Insured DMBs Capital Adequacy Indicators (1995/2015)

All Banks	Year	
	1995(N'M)	2015 (N'B)
Total qualifying capital	38,835.0	3,239.37
Adjusted shareholders funds'	(8.791.1)	3,239.37
Capital to total risk weighted asset ratio (%)	67.18	17.66

Table-4 . Selected Key Performance Indicators of DMBS for (1995 and 2012 – 2015)

Table-5.

S/N	Descriptions	1995 (%)	2012	2013	2014	2015
i	Total assets (N' Trillion)		24.58	28.79	30.97	31.39
ii	Total deposit (N' Trillion)		14.39	16.77	18.02	17.51
iii	Insured deposit (N' Trillion)		2.31	2.20	2.31	2.66

Comparative Profitability and Earnings Indicators for DMBs (2014-2015)

iv	Total loans & advances (N' Trillion)		8,150.03	10,042.73	12,626.96	13,328.77
v	Non-performing loans (N' Billion)		286.09	321.66	354.84	648.91
vi	Profit Before Tax (N' Billion)		458.78	539.97	601.02	588.86
vii	Adjusted shareholders' fund (Tier) (N' Billion)		2,150.32	2,418.75	2,440.20	2,782.27
viii	Non-performing loans/total loans (%)	33.00	3.51	3.20	2.81	4.87
ix	Non-performing loans / shareholders' fund (%)	496.00	14.34	13.35	12.01	12.79

S/N	Indicators	Year	
		2014	2015
i	Profit before tax (N'B)	601.02	588.86
ii	Net interest income (N'B)	1,296.92	1,443.08
iii	Non-interest income (N'B)	873.17	255.76
iv	Interest expenses (N'B)	819.67	969.11
v	Operating expenses (N'B)	1,596.61	1,394.92
vi	Yield on earning assets (%)	11.71	13.40
vii	Return on equity (%)	20.34	16.93
viii	Return on assets (%)	2.29	2.18

Table-6. DMBs Industry Total Loans By Banks As At 31/12/215)

S/N	Top Eight DMBs (%)	Other DMBs	Total

i	First Bank of Nigeria Plc	71.60%	28.40%	100%
ii	Zenith Bank Plc			
iii	Guarantee Trust Bank Plc			
iv	Access Bank Plc			
v	United Bank for Africa Plc			
vi	Ecobank Nigeria Plc			
vii	Diamond Bank Plc			
viii	Skye Bank Plc			

Table-7. Merger Arrangement Dates

S/N	Date	Acquirer	Target	Type of Merger
i	28/9/11	Sterling bank	Equatorial Trust Bank	Regulatory Assisted (RA)
ii	30/9/11	First City Monument Bank	Finbank	RA
iii	14/10/11	Access Bank	Intercontinental Bank	RA
iv	24/10/11	Ecobank	Oceanic bank	RA

Table-8. Regression Analysis

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.754048	0.126402	-4.218709	0.0003
CA	0.005140	0.019608	0.281720	0.6210
AQ	0.050307	0.012804	3.287307	0.0002
MC	-0.028408	0.040705	-2.309402	0.0320
EA	-0.018703	0.018340	-0.617057	0.3015

R.squared	0.776403	Mean dependent var.	-0.606502
Adjusted R-squared	0.712508	S.D. dependent var.	0.038728
S.E. of regression	0.027405	Akaike info criterion	-3.180102
Sum squared resid.	0.006709	Schwarz criterion	-4.801021
Log likelihood	7.307506	Hannan-Quinn Criterion	-2.181705
F-Statistic	10.09890	Durbin-Watson Stat	1.98205

Conclusion

Credit risk management evaluation is an essential ingredient in sound bank management and effectiveness. However, data gathered between 1995 and 2015 indicates that inadequate credit risk management was a major factor in the high loan losses as of December 1995. For instance, the capital to total risk-weighted asset ratio decreased from approximately 18% in 2015 to approximately 67 percent in 1995. Additionally, a significant improvement in management ability was demonstrated by the average liquidity ratio, which was 58.18 in 2015 compared to 0.49 in 1995. This century's efficient ratio of roughly 71% in 2015 compared to roughly 48% in 2014 paints a picture of effective credit risk management . assessment and the efficiency of bank administration. The body of research on bank management provides ample proof that bad bank performance is a direct effect of non-performing loans (NPLs) caused by low risk appetite. The utilisation of qualified personnel, appropriate recording of bank borrower profiles, and prudent money management are all essential to effective bank management. The BODs are in charge of creating and enforcing suitable credit risk rules as well as making sure that realisable collaterals are acquired for credit exposures. The study used an ex-post-facto research approach, and the findings indicated a substantial positive correlation between the efficacy of bank management and the management of credit risk evaluation.

7. References

1. Agbada (2010). Banking system credit as an instrument of economic growth in Nigeria. Bullion, 34(2): 30-35.
2. Agbada and Osuji, C. (2013). The efficacy of liquidity management and banking performance in Nigeria.
3. International Review of Management and Business Research, 2(1): 223-33.
4. Ahmad-Zaluki, N. A. and Wan- Huassin, W. N. (2012). Corporate governance and earning forecosts accuracy. Asian
5. Here are the references in APA style format:
6. Auronen, L. (2003). Asymmetric information: Theory and applications. Paper presented at the Seminar of Strategy and International Business, Helsinki University of Technology, Helsinki.
7. Barth, J. R., Caprio, G. Jr, & Levine, R. (2004). Bank regulation and supervision: What works best? *Journal of Financial Intermediation, 13*, 205-248.
8. Basel Committee on Banking Supervision. (1999). Principles for the management of credit risk. Consultative paper issued by the Basel Committee on Banking Supervision, Basel.
9. Basel Committee on Banking Supervision. (2004). Bank failures in mature economies. Working Paper No. 13, Basel.
10. Benveniste, L. M., & Berger, A. N. (1987). Securitization with recourse: An instrument that offers uninsured bank depositor sequential claims. *Journal of Banking & Finance, 11*, 403-424.

11. Berger, A. N., & Humphrey, D. B. (1997). Efficiency of financial institutions: International survey and directions for future research. *European Journal of Operational Research, 98*, 175-212.
12. Berger, A. N., & De Young, R. (1997). Problem loans and cost efficiency in commercial banks. *Journal of Banking And Finance, 21*(6), 849-870.
13. Berger, A. N., & Udell, G. F. (1992). Some evidence on the empirical significance of credit rationing. *Journal of Political Economy, 100*(5), 1047-1077.
14. Bester, H. (1994). The role of collateral in a model of debt renegotiation. *Journal of Money, Credit and Banking, 26*(1), 72-86.
15. Bluhm, C., Overbeck, L., & Wagner, C. (2003). *Credit Risk Modeling*. Wiley, New York, NY.
16. Bofondi, M., & Gobbi, G. (2003). Bad loans and entry in local credit markets. Bank of Italy Research Department, Rome.
17. BrownBridge, M. (1998). Financial distress in local banks in Kenya, Uganda and Zambia: Causes and implications for regulatory policy. *Development Policy Review Journal, 16*(2), 173-189.
18. BrownBridge, M., & Harvey, C. (1998). *Banking in Africa*. James Currey, Oxford.
19. Bryant, K. (1999). The integration of qualitative factors into expert systems for evaluating agricultural loans. School of Information Systems and Management Science, Griffith University, Gold Coast.
20. Chijoriga, M. M. (1997). Application of credit scoring and financial distress prediction models to commercial banks lending: The case of Tanzania. *Wirts Chaftsnnversitat Wien (WU), Vienna*.
21. Cornett, M. M., & Saunders, A. (1999). *Fundamentals of Financial Institutions Management*. Irwin/McGraw-Hill, Boston, MA.
22. Derban, W. K., Binner, J. M., & Mullineux, A. (2005). Loan repayment performance in community development finance institutions in the UK. *Small Business Economics, 25*, 319-332.
23. Donaldson, T. H. (1994). *Credit Control in Boom and Recession*. The Macmillan Press, Basingstoke.
24. Greenbaum, S. I., & Thakor, A. V. (1987). Bank funding modes: Securitization versus deposits. *Journal of Banking & Finance, 11*, 379-401.
25. Greuning, H., & Bratanovic, S. B. (2003). *Analyzing and Managing Banking Risk: A Framework for Assessing Corporate Governance and Financial Risk*, 2nd ed. The World Bank, Washington, DC.
26. Haider, A., & Birley, S. (1999). Integrating deductive and inductive approaches in a study of new ventures and customer perceived risk qualitative market research. *An International Journal, 2*(2), 103-110.
27. Heffernan, S. (1996). *Modern Banking in Theory and Practice*. Wiley, New York, NY.
28. Huberman, A. M., & Miles, M. B. (1998). Data management and analysis methods. In N. K. Denzin & Y. S. Lincon (Eds.), *Collecting and Interpreting Qualitative Materials*, 179-210.
29. Hugh, T. (2001). Effect of asset securitization on seller claimants. *Journal of Financial Intermediation, 10*, 306-330.
30. Sure, I'll update the years in the references:
31. Hughes, J. P., Lang, W., Mester, L. J., & Moon, C. (1996). Efficient banking under Interstate branching. *Journal of Money Credit and Banking, 28*(4), 1045-1071.
32. Hughes, J. P., & Mester, L. (1993). A quality and risk-adjusted cost function for banks: Evidence on the 'Too-Big-To-Fail' doctrine. *The Journal of Productivity Analysis, 4*, 293-315.
33. International Association of Insurance Supervisors. (2003). Paper on Credit Risk Transfer between Insurance, Banking and Other Financial Sectors, March.
34. Johnson, B., & Christensen, L. (2004). *Educational Research: Quantitative, Qualitative and Mixed Approaches*, 2nd ed. Pearson Education, Harlow.
35. Jose M.Poster, WP-EC 99-18. Credit risk and efficiency in the European Banking Systems: A Three-Stage Analysis.

36. Kealhofer, S. (2003). Quantifying credit risk I: Default prediction. *Financial Analysts Journal, 59*(1), 30-44.
37. Kimei, C. S. (1998). Sound banking management and macroeconomic stability in Africa. Paper presented at the Seminar for Chief Executives on Monetary Policy Stance in Tanzania.
38. Kitua, D. Y. (1996). Application of multiple discriminant analysis in developing a commercial bank's loan classification model and assessment of the significance of contributing variables: A case of National Bank of Commerce.
39. Koch, T. W., & MacDonald, S. S. (2000). *Bank Management*. The Dryden Press/Harcourt College Publishers, Hinsdale, IL/Orlando, FL.
40. Koford, K., & Tschoegl, A. D. (1997). Problems of bank lending in Bulgaria: Information asymmetry and institutional learning. Financial Institutions Center, The Wharton School University of Pennsylvania, Philadelphia, PA.
41. Kraft, E. (2000). The Lending Policies of Croatian Banks: Results of the Second CNB Bank Interview Project, CNB Occasional Publication – Surveys, CNB, Zagreb.
42. Liukisila, C. (1996). IMF Survey. Healthy Banks are Vital for a Strong Economy, Finance and Development, Washington, DC.
43. Marphatia, A. C., & Tiwari, N. (2004). Risk Management in the Financial Services Industry: An Overview. TATA Consultancy Services, Mumbai.
44. Menkhoff, L., Neuberger, D., & Suwanaporn, C. (2006). Collateral-based lending in emerging markets: Evidence from Thailand. *Journal of Banking & Finance, 30*(1), 1-21.
45. Mester, L. (1994a). How efficient are third district banks? Federal Reserve Bank of Philadelphia, Business Review, January.
46. Mester, L. (1994b). Efficiency of banks in the third Federal Reserve district. Federal Reserve Bank of Philadelphia, Working Paper 94-1.
47. Mlabwa, A. (2004). Usefulness of collateral as a means of mitigating risk by banks in Tanzania: A case study of CRDB Bank Limited.
48. Morse, J. M. (1994). Designing funded qualitative studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research*. Sage, London.
49. Pastor, J. M. (1995a). Eficiencia, cambio productivo y cambio técnico en los bancos y cajas de ahorro españolas: Un análisis frontera no paramétrico. *Revista Española de Economía, 12*, 35-73.
50. Pastor, J. T. (1995b). How to account for environmental effects in DEA: An application to Bank Branches. Working Paper, Departamento de Estadística e Investigación Operativa, Universidad de Alicante, Alicante, Spain.
51. Pastor, J. M. (1996). Diferentes metodologías para el análisis de la eficiencia de los bancos y cajas de ahorro españolas. Fundación FIES. Documento de Trabajo nº 123.
52. Pastor, J. M. (1999). Efficiency and risk management in Banking Firms: A method to decompose risk. *Applied Financial Economics* (en prensa).
53. Pastor, J. T., Lozano, A., & Pastor, J. M. (1997). Efficiency of European banking systems: A correction by environmental variables. Working