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DETERMINANTS OF INTEREST SPREADS IN COMMERCIAL BANKS– A CASE OF CRDB BANK TANZANIA

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Abstract: *A trend analysis of CRDB Banks' interest rate spreads over the period from 2006 to2010 has been strong and persistently showing little signs of narrowing. This study employs panel data techniques to measure the relevance of factors in determining commercial banks' interest rate spreads over the period. The results indicate that the observed spreads can be attributed basically to the, high operating costs, liquid assets and net worth even though the influence of the latter is not as large as that of operating costs. The variables Loan Loss Reserve and statutory Reserves bear negative relationship with interest spreads indicating they are not contributors for increasing spread. The results also showed that there is comparatively highest positive relationship between interest and non-interest income. This may be due to high market share of the bank in the total banking operations of Tanzania.*

Keywords: *determinants, decomposition of spreads, structural impediments, interest spreads. Loan loss reserve, operating costs, statutory reserves, liquid assets, net worth, non interest income.*

Field: *Finance and Banking*

1. INTRODUCTION

The stability, integrity, longevity and prosperity in the development of any society originates from effective play of roles imbibed with out detrimental to the universally accepted virtues like serve and survive, self help through mutual help, fair dealings in transactions with out vested interests, service is for oneness not for disintegration through making divisions and live let others live. Practice of this knowledge is not just for human beings but also preferably to public institutions which are run by group effort of human beings for providing en-mass service to the society. Banking institutions are no exception to this. They assumed the role of serving as an intermediary in financial transactions by way of raising resources encouraging savings of the customers and channelising those funds to productive activities like agriculture, industry, service sector so that the different sectors prosper by providing earning and livelihood to the public at large. In doing so, the banks have to give opportunities to the borrowers to get some margin in their activity which is possible when lending rate is lower then the earning rate. Charging Higher interest rates on lending may lead to not only financial non-viability of the borrowers, but also increase in the general price level, disintegration of society into haves and have

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nots ,dilution in the value system and social unrest. For the role of financial intermediary, the returns received by banks should cover their administrative expenditure including staff costs, interest paid on deposits and borrowings and some reasonable return to the share holders. Cross subsidization, administration inefficiency should not penalize the customers and the society. In the competitive economy effective service and efficiency in utilization of human and technological resources by developing customer tailored products, alone make the banks to survive failing which they need to exit from the market.

The high interest rate spreads of the commercial banking industry in Tanzania have emerged as one of the key issues for the customers and policy setters. Commercial banks being one of the prime sources of financing for industry, agriculture and service activities in Tanzania, therefore, the level of activity development is associated with interest rate spreads. Interest rate spreads signals the efficiency of banks in performing their intermediation role of savings mobilization and allocation.

Large interest rate spreads may act as a disincentive to private investment and may come as one of the bottle neck for development of the country. Inefficiencies in intermediation may emerge from problems like lack of adequate competition, scale diseconomies due to small market size or high fixed operating costs, the existence of regulatory controls, perceived market risks and the unsoundness of banks.

The purpose of this study is to provide an econometric account of some of the main Determinants of the ex-post interest rate spread of CRDB Bank in Tanzania between 2006 and 2010 employing quarterly data.. The paper deals with presentation of an overview of banking sector in Tanzania and the role of CRDB Bank in the banking industry including its operational performance, review of the empirical literature, describing the data ,estimation techniques, empirical results, and discusses the policy implications of the results.

1.1 An Overview of Banking Sector and the Role of CRDB Bank in Tanzania

The Banking sector in Tanzania is experiencing progressive trends in many fronts over previous five years in terms of number of banks, new product lines, technological innovations, increasing focus on retail lending, prospects for corporate lending, agricultural loans and mortgage finance. Out of 23 banks 10 are foreign subsidiaries and 3 banks are listed including CRDB in June 2009 and few other banks have Initial public offers (IPO) in the pipeline. The performance of the Banking sector during the period from 2006 to 2010 can be understood from its increase in Total Assets from Tshs 5,294 Billions to Tshs.12,214 Billions , Loans from Tshs 2,214 Billions to Tshs.5,386 Billions, Deposits from Tshs 4,240 Billions to Tshs.9,655 Billions, Shareholder Capital from Tshs. 525 Billions to Tshs.1,492 Billions ,and Net Income from Tshs 131 Billions to Tshs.192 Billions, signifying a CAGR of 18.2%, 19.46%,17.8%,23.2%, 7.95% respectively. During the same period the net interest income went up from Tshs.332 Billions to Tshs.611 Billions (CAGR 12.97%) and Capital /Assets went up from 9.9% to 12.2%. With The total number of 23 banks, the branch net work has gone up from 285 to 430 and employees from 6167 to 10,137 by the end of 2010.

In spite of remarkable progress the depth of financial intermediation empirically which is measured as total assets/GDP is still quite low in Tanzania at 44.5% in December 2010 due to low level of household savings and lending, much more developed corporate lending but still underdeveloped compared to other peer emerging countries. Further the loans and deposits to GDP ratios at 19.6% & 35.2% respectively are below other peer emerging countries.

1.2 Role of CRDB Bank in the Industry

CRDB Bank, a former government bank, formed as a public limited company in 1996 spreading its banking intermediary service activities all over Tanzania with a net work of 162 Branches and 72 ATMs. It recorded as the largest Bank in Tanzania for the last five years in terms of assets, deposits, loans, shareholders capital. At the end of December 2010 the CRDB bank market share consists of 19% of total assets, 16.7% of total capital, 20.9% of total loans and advances,14.2% of total branches and 25.85% of total net profits of the banking sector of the country. It has 1437 employees, 32000 share holders. Among top five banks in Tanzania the CRDB banks assets consistently stood first over last five years from 2006-2010 increasing from 25% (898/3548) to 33%.(2318/7041). The advances of the bank spread over across Agriculture 28%,Manufacturing 5%,Real Estate 6%,Personal14%,Trade 14%, Utilities 11% Financials 6% Communications 6% Other 1% and Mining 1%.

High interest margin, high administrative expenditure and high non-interest income and low returns on investment signals threat to the role of financial intermediary.

A preliminary study of income statements of CRDB Bank which is the largest bank in the Tanzanian economy reveal that the net interest income which is the difference between interest income and interest expense and non interest income received in the form of fees and commission and foreign exchange income grew significantly showing more than double over a period of five years. The details are presented here under.

The foregoing tables show that the interest spread (ex-poste) during the study period ranged between 8.59 percent to 10.79 which is higher than average interest spread of African countries (7.52) and East African countries (5.05). When, income from other sources is taken into account, the net income on advances and total assets is ranging from 7.47% to 9.7%, and 3.64 % to 5.12 respectively. During the study period the deposits grown three fold per employee where as advances were only doubled. Based on this data, it can be inferred that though the size of transactions compared to other banks grew significantly the efficiency in intermediary function needs consideration and proper direction.

2. LITERATURE REVIEW

In their study Hanson and Rocha (1986) investigated the factors determining large spreads using aggregate data of 29 countries over the period 1975 – 1983 and attributed high operating costs, financial repression, lack of competition and high inflation rates as

Table 1
Financial Data-Income Details Abstract (Tshs. millions)

Item	*2006*	*2007*	*2008*	*2009*	*2010*
Net interest income	52,612	72,167	91,295	109,967	125,005
Net non interest income	26,172	37,117	44,184	54760	69143
Total income	78,784	109,284	145,479	164,727	194,148
Non interest expenditure	39,347	54,969	71,128	85,755	110,214
Net operating income	39,443	54,315	74,351	78,972	83,934
-Net interest income on assets	5.86%	6.32	6.30	5.93	5.33
-Net interest income to advances	12.96	12.26	10.90	11.58	10.94
-Non interest expense on advances	9.71	9.34	8.50	9.03	9.81
-total income to advances	19.41	18.57	17.39	17.42	17.28
-total income to total assets	8.77	9.56	10.03	8.88	8.42
-non operating expenses to total assets	4.38	4.81	4.91	4.62	4.78
EPS	12.2	17.2	19.0	21.0	22.2
Total gross income per employee	79.10	95.28	116.48	125.65	135.01
Non interest expenditure per employee	39.51	47.92	56.94	65.41	76.64
Net income per employee	39.59	47.36	59.54	60.24	58.37
Deposits per employee	794.71	883.46	1019.28	1236.80	2005.42
Advances per employee	407.40	512.94	699.97	724.26	781.19

Source: Financial statements of the CRDB Bank, Tanzania from 2006-2010

Table 2
Interest Spread of CRDB Bank for the Period 2006-2010
(Tshs in Millions)

year	*Interest Income (Tshs) 1*	*Total loans and advances Tshs. 2*	*Interest expenditure Tshs. 3*	*Total deposits Tshs. 4*	*Average interest rate on loans Col. 1/col. 2 5 (%)*	*Average interest rate on borrowings Col. 3/col. 4 6 (%)*	*Interest rate spread Col. 5-col. 6 7 (%)*
2006	66,451	577,354	13,839	785,456	11.51	1.75	9.76
2007	89,145	715,148	17,007	1,013,331	12.47	1.68	10.79
2008	112,233	1046,226	21,070	1,273,601	10.73	1.65	9.08
2009	145,644	1203,495	35,676	1,603,942	12.10	2.22	9.88
2010	160,039	1550,492	35,034	2,019,393	10.32	1.73	8.59

Source: Financial statements of the CRDB Bank, Tanzania from 2006-2010

the main causes of the high spread. Chirwa *et al.* (2004) used panel data techniques to investigate the causes of interest rate spreads in the commercial banking system of Malawi over the liberalized period of the 1990s and concluded that high interest rate spreads were attributable to monopoly power, high reserve requirements, high central bank discount rate and high inflation. Demirguc-Kunt *et al.* (1999) using bank level data for 80 industrial and developing countries over the period 1988-1995 show that differences

in interest margins reflect a variety of determinants such as bank characteristics, macroeconomic conditions, explicit and implicit bank taxes and the overall financial structure. Barajas *et al.* (1998), examine the sources of high intermediation spreads observed in the Colombian banking sector over the pre liberalization period (1974-1988) and the post liberalization period (1991-1996) and found mixed results. Liberalization increased banking sector competitiveness, lowered market power and reduced financial taxation from its high 1970s level. The results also show bank spreads to be more responsive to non-financial costs (wages) and changes in loan quality. Afanassieff *et al.* (2000), using panel data techniques to uncover the main determinants of bank spreads in Brazil, found that macroeconomic factors are the most relevant in explaining the spreads. Ramful (2001) in his study of the Mauritian banking sector found that interest rate spread was used not only to cover the cost of operating expenses and required reserves but also reflected the high degree of market power among banks and the poor quality of loans. For the wider Caribbean, Moore and Craigwell (2000), using panel data techniques, empirically assessed some of the major determinants of commercial banks' spreads over the financially liberalized period of the 1990s and found that market power, provision for loan losses and real gross domestic product to be significant factors influencing bank spreads. As it specifically relates to the ECCU, Randall (1998) devised two approaches to explain various determinants of interest rate spreads using 24 quarterly observations for each of the countries over the period 1991-96, and found that operating costs were a key determinant of interest rate spreads accounting for 23 per cent of the estimated spread. Mahamudu Bawumia (PhD), Franklin Belnye and Martin Enoch Ofori in their paper examines the determination of interest rate spreads in Ghana using two approaches based on an income statement and balance sheet analysis and an econometric model. It concludes that the existence of major structural impediments, such as the market concentration, and the degree of contestability among banking institutions, among others, prevent the financial system from reaching its full level of efficiency. The market share variable is very influential in explaining spreads in Ghana and reflects the lack price competition in the banking industry. The results also show the effect of cross subsidization between interest and non-interest income. High operating cost, non-performing loans and the existence of liquidity reserves, also contribute to the wide spreads, even though the influence of the latter is not as large as that of operating costs and market share.

There has been very little empirical study done in the Tanzania investigating the causes of large bank spreads. These studies reveal that high operating cost, market share, high reserve requirements, provision of loan losses, real GDP, inflation are some of the determinants of the Interest spread in different countries. All these studies are country specific but not bank specific. This study, which is confined to a major bank in Tanzania, attempts to reduce this gap.

3. DATA

This study employs 21 quarters data relating to selected variables of CRDB Bank, Tanzania. The period covers starting from 31st March 2006 to 31st March 2011. All data were sourced from Bank's websites and annual and other periodical reports.

4. METHODOLOGY

The determinants of interest spread of CRDB Bank are identified using multiple regression. Interest spread is taken as dependent variable and six variables such as operating costs, loan loss provision; liquid assets, non-interest bearing income, statutory reserves and net worth are taken as independent variables which influence the interest spread.

The empirical estimation of equation is carried out using absolute variables in millions of Tshs. The econometric estimation is made using SPSS 17. All regressions are estimated using backward method.

4.1 Interest Spread for the Study

Among two approaches to measure interest rate spreads viz; ex- ante approach and the ex- post approach, many researchers favored ex-post spread approach since it represents weighted average interest rate on both deposits and lending. Demirguc-Kunt *et al.* (1999), argue that the ex–post spread is a more encompassing and useful measure because it controls for the fact that banks with high yields and risky credits are likely to face more defaults. It is the difference between the average rate charged on loans and the average rate paid on deposits. The average rate charged on loans is calculated by dividing total interest income received on loans and advances by the average stock of loans and advances, while the average rate paid on deposits is calculated by dividing total interest expense by the average stock of total deposits. This study used exp-post interest spread approach in absolute figures which is the difference between interest income and interest expense.

4.2 Key Variables that Determine Interest Spread

The following table shows the proxies of the hypothesized determinants of commercial banks ex-post interest spreads:

Key Variables and the Expected Impact on Interest Rate Margin

	Proxy	*Predicted coefficient Sign*	*Rationale*
Opportunitycost of non- interestbearing reserves/ statutory reserves	SR: non-interest bearing reserves	Positive	RR↑Opportunity cost↑Margins↑
Liquidity	LIQ: Liquid assets as shown in cash flow statement.	Positive	LIQ↑Liquidity risk↓ Margins'!
Operating Efficiency	OC: Non-Interest expenses	Positive	OC↑Operating efficiency↓Margins↑

	Proxy	*Predicted coefficient Sign*	*Rationale*
Provision for loan losses	PL: Provision for loan losses as per income statement	Positive	PL↑ Cost of bad debts write offs↓ Margins↑
Non interest income	NII: Non interest income	Negative	NII↑Earning capability ↑ Margins↓
Net-worth	NW: -share holders funds	Positive	NW↑ Earning capability↓ Margins ↑
Market power	Share of the bank in total assets, deposits, advances, profits of the banking sector	Positive	MP↑ Competition↓ Margins↑

(i) Regulatory Variable- The Reserve Requirement

Commercial banks are required to maintain a certain percentage of total deposits and other similar liabilities to which reserve ratios are made applicable, as the Monetary Council may determine from time to time. Whereas reserve requirements are used as monetary policy instruments to ensure the safety and soundness of the banking system, these non-interest bearing reserves in essence impose an implicit financial tax on banks thereby reducing commercial banks revenues. Banks can either pass on this loss of revenue to depositors, who will receive lower interest rates on deposits, or they can pass it on to borrowers who will face higher interest rates on loans, thereby increasing the spread between the two rates. Over the study period, the reserve requirement ratio remained unchanged at ten per cent. However, because the reserve ratio is applied to total deposits at a point in time, the TShs. amount that each bank holds with the Central Bank would be different, thus allowing for some variation in the empirical estimations. A positive correlation between such reserves and Interest Spreads is expected, as high liquidity reserve requirements act as an implicit financial tax by keeping interest rates high. Chirwa and Mlachila (2004) explain by noting that, 'the opportunity cost of holding reserves at the central bank, where they earn no or little interest, increases the economic cost of funds above the recorded interest expenses that banks tend to shift to customers.' They further argue that the large pool of resources created by high reserve requirements allow for the financing of high fiscal deficits, and thereby creates an environment of high inflation and persistently high intermediation margins. Because data on required reserves are not widely available, actual reserves of commercial banks are used as a proxy.

(ii) Liquidity

Where there is excess liquidity in the banking system, banks' exposures to liquidity risks is low and this should contribute to increase in interest spread. Hence banks may

tend to increase the spread to cover such risk. Liquidity risk is proxies by the total liquid assets kept in the bank to meet contingency of payments. Such assets normally earn no income as they are balance kept in the bank. The expected sign is positive. Brock and Franken (2002) found that bank liquidity was associated with higher spreads in Chile.

(iii) Operating Costs

Operating costs arise in processing loans and the servicing of deposits. For the aggregate banking system, on average, the operating cost as a proportion of total earning assets ranged from 3.0 per cent in St Kitts and Nevis to 4.7 per cent in Antigua and Barbuda. International standards normally identify 3.6 per cent as an average. In this study this variable is taken as total non- interest expenditure as reported in quarterly financial statements of the bank. A positive relationship between this variable and bank spreads is expected.

(iv) Loan Loss Provisioning

For the aggregate banking system, on average, the ratio of provision for loan losses to total earning assets is below 2 percent. Higher percentage may be attributed to the elevated provision for loan losses following the en-mass crop failures and business losses and natural calamities. A positive relationship is expected between this variable and bank spreads reflecting the notion that banks tend to push the cost of nonperforming loans to customers. For this study the provision for loan losses is used as the proxy for quality of loans.

(v) Market Power Variable

The structure of the market in which banks operate plays an important role in influencing bank spreads. Economic theory posits that competitive pressures that result from conditions of free entry and competitive pricing will raise the efficiency of intermediation by decreasing the spreads between deposits and lending rates. Recent empirical studies, Chirwa *et al.* (2004), tend to support the hypothesis that interest rate spreads are positively related to market power. That is, the more concentrated the banking industry (i.e. the less competitive) the higher the banks' spreads. Due to non availability of market share for thirty periods this variable is not used in the model.

(vi) Non-Interest Income

After economic liberalization banks are increasingly resorting to provide intermediary functions like transfer of funds in different forms, electronic based services by charging fees and commission, leading to substantial increase in non-interest income. This should help bank for cross subsidization and in turn reduce the interest spreads. A negative relationship is expected between non-interest income and interest spread. In this study non interest income derived from foreign exchange, fees and commission etc are taken as proxy.

(vii) Net worth of the Bank

The positive sign of this coefficient suggests that regulatory capital, which provides banks with a cushion to assume broader spectra of risks, is more expensive than debt because of tax. Hence banks with higher Net worth tend to pass this cost on to customers in the form of wider interest margins. For this study the proxy is taken as share holders funds of the bank for 21 quarters.

4.3 Estimation Techniques

The following multiple regression equation is used for identifying the determinants of interest rate spread.

$$ISt = \beta o + \beta 1 SRt + \beta 4\, LIQt + \beta 2 OCt + \beta 3\, PLt + + \beta 5 NIIt + \beta 6\, NWt + Et$$

Where:

ISt is the ex-post spread OF CRDB BANK at time t.

SRt Statutory reserve provision as per BOT guidelines

OCt is the operating cost of the bank

LIQt is the liquidity position of the bank

PLt is the provision for loan losses of the bank

NIIt is the non interest income earned by the bank

NWt is the net worth of the bank

Et is the error term.

5. EMPIRICAL RESULTS

The results from the panel regression analysis on the factors that influence bank spreads in the CRDB Bank are reported in the following table.

	Coefficients			
Variable	*Coefficient*	*'T' Statistics*	*Probability*	*VIF*
Constant	8004.108	4.024	0.001	
SR	- 0.111	-0.286	0.779	6.574
LIQ	0.031	1.298	0.217	20.960
OC	0.052	2.017	0.065	2.044
PL	-0.015	-2.911	0.012	6.499
NII	0.219	0.696	0.499	11.166
NW	0.093	2.579	0.023	39.296
Weighted statistics:	Adjusted R square	0.996	Durbin Watts test	2.308

Source: results of the panel data run on SPSS

The following observations can be made from the table:

1. The adjusted coefficient of determination (R square adjusted) is high at 99.6%. The parameter estimates are also significant at 5 percent significance level as can be seen from the t statistics. The performance of specific variables is sensitive to the definition of interest rate spreads. Further the Durbin Watts test critical value indicate no presence of positive relationship between residuals.
2. The results show that a percentage increase in the operational cost variable induces 0.052 percent increase in interest margins at time t with a 5% significance level. This implies that, interest margin has a positive response to the administrative and other overhead costs. This confirms theoretical expectations about the sign and significance that an increase in the administrative costs implies a higher bank interest margin. This relationship was most pronounced in St Kitts and Nevis. This result speaks to the size and diseconomies of scale in the operations of commercial banks. Enhancing operational efficiencies to exploit scale and scope economies must become an urgent priority of banks. Most studies tend to support a positive and significant relationship between bank spreads and operating costs.
3. With respect to the inverse indicator of loan quality and statutory reserves, the coefficients were negative showing - 0.015 and -0.111 respectively statistically significant at the 5 percent. The negative relationship implies that this bank is no tending to shift the risks associated with non-performing loans and statutory reserves to customers by factoring lagged loan loss provision and statutory reserves into loan asset pricing.
4. The coefficient of the Net worth variable of +0.093 indicates that a percentage increase in the net worth of the bank leads to a corresponding 0.093 percentage increase in interest margins.
5. The coefficient of the liquidity reserve requirement (LIQ), is positive at 0.031 percent and statistically significant at the 5 percent level. This implies a percentage increases in liquidity leads to a 0.03 rise in interest margins. Reserve requirements are a form of financial taxation on the commercial banking system, and commercial banks respond to increases in reserve requirements by increasing the margin between lending and deposit rates.
6. The non-interest income (fees and commissions) variable, FEES, has a significant and positive impact on net interest margin. This could be explained as due to the existence of market power, where banks potentially use monopoly power in setting their lending and deposit rates. Alternatively, it could be due to diseconomies of scale within the sector, where, for instance, due to incompatibility of banks' technology or lack of appropriate linkages among banks, each bank has to originate its own financial/ technological infrastructure restricting operational efficiency.

6. CONCLUSIONS

Intermediation spreads remain generally high in CRDB Bank compared with other countries. The study about determinants of interest rate spreads concludes that as expected

Table
CRDB Data in Millions of TZSS

Quarter/year	*IS*	*PL*	*SR*	*OC*	*LIQ*	*NII*	*NW*	*NPAs to Gross Loans*
I.2006	12057	—	78535	8412	272071	5580	48400	2.00
II.2006	12522	697	78535	8899	272071	5758	55455	2.44
III.2006	14518	865	78535	10198	284214	7937	63403	3.98
IV.2006	13515	816	69805	11838	275491	7876	69406	3.02
I.2007	16024	1464	80064	11581	306044	9486	78132	7.42
II.2007	18540	457	84505	13346	302781	8809	85526	6.58
III.2007	17323	782	99581	13258	303854	9677	94598	6.71
IV.2007	20251	525	135173	17014	297864	10021	104628	6.07
I.2008	21258	1121	92246	14038	307031	9087	115259	7.5
II2008	20958	1041	106466	17598	311243	10955	124551	6.2
III.2008	22322	296	125597	18417	284066	11517	130933	5.5
IV.2008	26896	2237	137811	21636	362537	13376	140933	4.5
I.2009	23978	2607	175359	18496	468048	10384	170780	5.7
II.2009	26261	5581	215823	22123	517154	12892	175677	9.0
III.2009	27890	3365	207108	20443	493011	15740	193690	8.0
IV.2009	31839	6268	242882	25409	456875	16868	207774	6.0
I.2010	26418	1176	207728	23212	723028	14506	220175	6.0
II.2010	27890	3360	187059	24238	872712	18582	235985	10.0
III.2010	31623	9273	271493	29073	739521	20683	231219	12.0
IV.2010	39073	6548	255528	110214	529344	17432	240922	11.0
I.2011	36616	3942	293423	27163	740852	15020	252352	10.0

there is a positive relationship between interest rate spread and change in non interest expense (OC), liquidity position, non-interest bearing income (NII) and net worth. In addition there was inverse relationship between interest spread and loan loss provision and statutory reserves position. Thus it can be inferred that, non-interest expense, net worth, non- interest income and liquidity position are the determinants of interest rate spread.

As against expected, the relationship between net interest spread and loan loss reserve and statutory reserves is negative and between interest spread and non-interest income is positive .As was outlined in the profile, the CRDB Bank is the premier bank in terms of its market share consistently for past five years. The market share variable is very influential in explaining spreads in CRDB Bank Tanzania as the non interest income and spread are moving in positive manner with significant change. In informal discussions, customers endorsed the view that the interest rates as well as fees and commission for other services are high which needs reconsideration.

One of the reasons advocated by the bank officials defending higher interest spread was increasing Loan Loss provision due to funds exposed to agriculture sector (risk sector). But the study indicates that it is not a determinant for higher spread as the relationship between the coefficient of loan loss provision and interest spread was negative instead of positive.

All these effects can be cross subsidized with increasing non interest income so as to bring down the interest spread. Further the assets structure need structural change shifting investments from government sector to industrial sector and service sector so as to improve the efficiency of bank and also the economy of the country consequently reducing the interest spreads. It can also achieve cost savings by offering a broader array of deposit and investment products such as money market accounts, mutual funds and securities underwriting. By producing a more heterogeneous output mix, this bank might be able to capture scope economies. Though the results signals policy implications, it require further study taking into panel date expressed in terms of relationship between total deposits, total advances etc.

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