LOAN PRICING, FINANCIAL INTERMEDIATION AND LOAN COSTS IN UGANDA'S DEPOSIT TAKING INSTITUTIONS

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ABSTRACT
The paper examined individual contribution of loan pricing and financial intermediation to loan costs. Its purpose was to explore the extent to which predictor variables (loan pricing and financial intermediation) explain loan costs in Ugandan Microfinance Deposit Taking Institutions (MDIs). Besides, the study assessed the extent to which MDIs have implemented or enforced the prudential regulations set by Bank of Uganda.
Hierarchical regression was used because of its capacity to indicate precisely what happens to the model as different predictor variables are introduced.
This study established that the two predictor variables are strong predictors of loan costs and they account up to 32 percent of variance in loan costs. More so, prudential requirements implementation is still desired since they are not properly implemented.
Findings can help management to intensify initiatives to encourage greater understanding and acceptance of the concept of loan pricing and financial intermediation so that that competitive loan costs can be set and benefit all stakeholders in the industry.

Keywords: Loan Pricing, Savings Intermediation, Microfinance Deposit Taking Institutions (MDIs) and Loan Costs.
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I. INTRODUCTION

The enactment of Microfinance Deposit Taking Institutions Act (MDI ACT) by the parliament of Uganda in 2003 gave birth to Microfinance Deposit Taking Institutions (MDIs). This act legally allowed the MDIs to mobilize and intermediate savings from the depositors (Kalyango, 2004). Financial intermediation is a process of transferring funds from ultimate source to the ultimate user (Frankline, 1990). The ultimate source and user, in this case, include the savers and borrowers respectively. Gorton and Winton (2002) noted that the intermediation of funds connects financial institutions to borrowers and lenders and reduces the cost of capital to the borrower. Financial intermediation was seen as a strategy to address the challenge of increasing loan costs charged to clients in un-regulated Microfinance Institutions. The savings that are normally availed to MDIs by depositors (lenders) facilitate the intermediation exercise and reduce their overall weighted cost of capital (Pischke, 1991) and the loan costs to the borrowers.

The MDI ACT also called for major reforms in price setting system and management style. Management styles necessitated the implementation of prudential requirements set by Bank of Uganda (Hanning, Alfred & Edward, 2000). In essence, the MDIs are subjected to basic minimum level of prudential regulation and supervision commensurate with the risks they pose to Bank of Uganda (Stefan & Akampurira, 2003). Among other prudential regulation is to ensure that minimum liquid assets in excess of 15% of total deposit liabilities are maintained at all times. More so, all institutions are expected to maintain a core capital equivalent to a minimum paid up capital requirements of Uganda Shillings, Five hundred million as specified in section 15 of the Act. The aim of reinforcing the prudential regulation is to enforce MDIs financial soundness and consumer protection (Hard, Holden and Prokopenko, 2002); which in turn, is expected to promote public confidence and trust in institutions (Kalyango, 2004).

By intermediating savings from depositors, implementing prudential requirements and application of effective pricing, MDIs are expected to achieve their double tasked goal of achieving sustainable performance and lessening poverty among societies (CGAP, 2002; Adongo & Christopher, 2005).

Besides, the implementation of this new law expected the MDIs to increase availability of cheaper funds to the public (interest and other charges). Hardy et al (2002) observed that an institution known to be well regulated and closely supervised is able to attract more deposits from the public and be able to obtain financing at lower cost. However, the actual practice is contrary to expectations of Bank of Uganda and the clients. The interest rates and others charges levied by such institutions have instead continued to increase (Otero, 2006). The interest rate and other associated costs ought to have reduced because of revisions in

pricing and intermediating the savings have instead persistently continued to show an upward trend a move that contradicts the perceived benefits of the transformation. On average Microfinance Deposit Taking Institutions charge annual interest rate of 48% (Microfinance Directory, 2009/10 & Bank of Uganda, 2009) despite the increased savings from clients which are almost cost free as shown in Table 1.

Table I. Trend of deposits or savings from the customers of MDIs

Year	2005	2006	2007	2008
Customers' Savings growth in %age	22.9	24.0	38.7	40.2

Source: ***Uganda Microfinance Industry Assessment 2008.***

The growth in mobilized savings, and the interest rates charged to clients, presents a trend of event that is peculiar. The continued increasing loan costs in the presence of increased savings (customer deposits) raises questions as to whether loan pricing, and financial intermediation are appropriately applied in addressing loan costs. Besides, the extent to which loan pricing and financial intermediation influence loan costs is limited in Microfinance literature. However, this study covered this obscurity by addressing the effect of loan pricing, and intermediation of mobilized savings on loan costs in Microfinance Deposit Taking Institutions (MDIs) in Uganda.

II. LITERATURE REVIEW

Microfinance institutions (MFIs) world over have been identified as critical institutions to nations quest for solutions to the development challenge (CGAP, 2002). Effort to modernize and uplift operations of microfinance institutions gave rise to the formation of Microfinance Deposit Taking Institutions (MDIs) which are regulated under MDI Act 2003 by Bank of Uganda (Kalyango, 2004). According to ADB (2000), and Otero and Maria (2002) the implementation of the policy was deemed important for savings mobilization and proper management of public deposits by enforcing basic minimum level of prudential regulations. Gibbons and Meehan (2000) argued that prudential requirements enable MDIs to manage resources properly and enable them improve their efficiency levels and loan costs. Hardy et al (2004) argued that the premise of the official sanction in the form of licensing and greater operational freedom can prompt the management of MDIs to accelerate development by offering new products and acquiring necessary expertise.

However, it is important to note that setting and implementing/enforcing the prudential regulations are two distinct matters. Whether or not MDIs have appropriately implemented or enforced the procedures or rules set by Bank of

Uganda is the matter that was probed in this study. The following hypothesis was therefore, tested:

H1: MDIs have implemented the appropriate prudential regulations as required by Bank of Uganda

From another perspective, a revision in loan pricing was perceived as an important aspect of loan product design expected to turn-around the loan costs charged by Microfinance Deposit Taking Institutions (Kalyango, 2004). Extant literature takes pricing to mean the process of determining what a company will receive in exchange for its products. In respect to Microfinance Institutions, the exercise involves the establishment of interest rates charged on loaned funds besides other finance charges paid by borrowers. Rosenberg (2002) noted that interest rate is compensation to the lender and an opportunity cost for other useful investment that could have been made with the loaned assets. Ledgerwood (2000) observed that if loan pricing strikes a balance between what clients can afford and the lending organization needs to earn to cover all of its costs, then loan costs will be fair to borrowers. Interest rates in microfinance institutions are normally based on their cost structure which may vary from firm to firm. However, the loan pricing system according to Lidgerwood (2000) encompasses financing costs, operating costs, loan loss provision and cost of capital. In essence, Microfinance Institution's cost structure influences the interest rate charged to clients. For example, McDonald (1998) observed that Microfinance Institutions that loan out clients' compulsory savings are bound to charge low interest rate because of the cheaper cost of funds from the depositors. Thus, the higher the portion of the portfolio funded with client savings, the lower the overall cost of funding which translates into reduced loan costs.

In a related case, Kalyango (2004) observed that the pricing system should be capable of capturing the right operational costs which are part and parcel of the loan costs borne by the clients. This depicts that a transparent and perfect loan pricing system yields cheaper and affordable loan charges to the stakeholders. On the other hand, Sataschen (2003) contends that loan pricing activity should be thorough enough to capture every detail of costs related to the financial service. Despite several studies on price setting in financial institutions, little has been done on the extent to which loan pricing system affects loan costs more especially in MDIs. This study was therefore set to address the knowledge gap by testing the following hypotheses:

H2: Loan pricing system is positively related to loan costs in Ugandan MDIs

H3: Loan pricing system positively affects loan costs in Ugandan MDIs.

Form the different perspective, Microfinance Deposit Taking Institutions' efforts to implement the MDI Act 2003 called for financial intermediation of

clients' deposits. Cecchetti (1999) observed that financial intermediation is the movement of resources between two parties, such as a business and individual. Gorton and Winton (2002) also defined financial intermediation as a process that occurs when a financial intermediary borrows money from one source to loan to another source for investment or funding.

Ledgerwood (2000) argued that finance in the form of savings and credit arises to permit coordination. The availability of savings to financial institutions facilitates the intermediation exercise and reduces its overall weighted cost of capital (Pischke, 1991). Beesi and Wang (1997) extended the debate and noted that since the savings are less costly and form part of the loaned amount to borrowers, the loan charges are expected to be lower. Other scholars such as Winton et al. (2000) noted that the intermediation of funds connects financial institutions to borrowers and lenders and improves the cost of capital to the borrower. Though the extant literature emphases the association between financial intermediation and loan costs, there is far from enough empirical research investing the practical effect of financial intermediation on loan costs in microfinance institutions. Thus, consequence of intermediating clients' deposits on loan costs in a Microfinance Deposit Taking Institutions in Uganda is a matter that is limited in the microfinance institutions' literature. To bridge this gap, we tested the following hypotheses:

H4: Financial (savings) intermediation is positively related to loan costs in MDIs.

H5: Financial (savings) intermediation negatively affects the loan costs in MDIs.

III. STUDY DESIGN AND METHODOLOGY

This study used cross-sectional and quantitative research designs to address the hypotheses covered in the study.

The study covered employees and clients of Microfinance Deposit Taking Institutions in central Kampala. Senior management, loan officers and clients of these institutions provided the data.

The 4 MDIs' employees and clients were considered. On the basis of Ntoumanis (2001) and Field (2006) guidelines, this study covered a minimum of 10 senior staff per MDI. Since clients' sampling frame could not be established, snowball sampling technique was used and 20 clients were targeted per firm giving a total of 80 clients. The total response rate of respondents combined was 63.5%.

All items were anchored on a five-point Likert–type scale ranging from 5 (strongly agree) to 1 (strongly disagree). Questionnaire was validated through expert interviews and a panel of practitioners. All the variables registered content validity index of greater than 0.80.

We further tested the reliability of the instrument (using internal consistency approach) to find out whether it consistently measured the study

variables on the scales used (Anastasi, 1982 & Nunnally, 1978). Item–total reliability (a measure of internal consistency) and Cronbach alpha coefficients of study variables were computed. The Cronbach alpha coefficient results of the variables studied were all above 0.75 signifying that the scales used were reliable. Principal component analysis was performed to identify patterns in data and to reduce data to a manageable level (Field 2006) and varimax rotation was applied.

Quantitative secondary data was extracted from documentary sources particularly the microfinance institutions' published financial reports. Performance ratios obtained supplemented primary data gathered through questionnaires filled by 10 senior managers in every microfinance deposit institution in Uganda.

We addressed common methods bias in order to reduce the measurement error (random and systematic errors) which normally threatens the validity and conclusions about the relationships between measures (Podsakoff, Mackenzie & YeonLee, 2003). Measurement error caused by consistency motif (Johns, 1994; Podsakoff & Organ, 1986) or consistency effect (Salancik & Pfeffer, 1997) was addressed in this study by (i) collecting data from at least five senior managers of each MDI and (ii) sourcing most of the data relating to the dependent variable (loan costs) from financial reports (Archival sources). This approach is supported by Podsakoff et al, (2003) who contend that one way of controlling common methods variance is to collect the measures of both predictor and criterion variables from different sources. We endeavored to reduce the potential effects of response pattern biases by incorporating negatively worded or reversed – coded items on the questionnaires (Hinken 1995 & Drasgow & Idaszak, 1987). According to Hinken (1995) the logic is that reversed –coded items are like cognitive "speed bumps" that require respondents to engage in a more controlled, as opposed to automatically cognitive processing.

Among the instruments used were Self- administered Questionnaires and Document review. The data collected was edited, classified and coded so as to make it ready for analysis. Thereafter-descriptive statistics involving descriptive and inferential Statistics were conducted.

IV. PRESENTATION OF THE RESULTS

Findings on demographic characteristics revealed that 63% and 37% of respondents were males and females respectively. The majority (74%) of the respondents was above 30 years of age and 26% was aged below 30 years. The average employees have worked in Micro deposit taking institutions for more than 5 years (67.4%).

Content validity index (CVI) results were all above 0.80. According to Nunnually (1978), these ratios are acceptable since they are above the cut-off point of 0.70.

The Cronbach's alpha results for the actual study were all above 0.8. These values are in line with results of Bollen et al. (2005), Bontis (1998), and Bin Ismail (2005).

As a way of assessing the level of implementation of prudential requirements, mean scores were derived as indicated in Table 2 below.

Table 2. Prudential requirement assessment

	Minimum	*Maximum*	*Anchor (Likert scales)*	*Mean*	*Std. Deviation*
Minimum capital	2.75	5.00	1 - 5	3.83	.55
Portfolio at risk of < 5%	2.80	5.00	1 - 5	4.12	.56
Reporting requirements	2.00	5.00	1 - 5	3.97	.91
15% of risk weighted assets	2.00	5.00	1 - 5	2.11	.55
Adequacy of liquidity 15% deposists	1.80	5.00	1 - 5	2.46	.76
Adequacy of total assets: 20% of RWA	1.00	5.00	1 - 5	3.21	.79

Source: Primary data

Critical analysis of the results in the above Table reveals that all mean scores of the items in question range from 2.11 to 4.12 with the standard deviations from 0.55 to 0.91. Because of small standard deviations compared to mean values, it is clear that the data points are close to the means and hence calculated means highly represent the observed data. In effect, the calculated means are a good replica of reality (Garson, 2000; Field, 2006 & Saunders et al., 2007). However, it can be seen that microfinance institutions have fairly implemented the prudential requirements because of reasonable mean values that are averagely high except for asset adequacy and liquidity levels whose average is quite low hence violating the Bank of Uganda requirement of keeping 20% of risk weighted assets and 15% of total deposit liabilities respectively. This provides answers to hypothesis 1 (H1).

A. Correlation of study variables

In order to answer the objectives of this study, zero-order correlation analysis was carried out. The aim was to assess whether linear relationships existed between predictor variables (pricing and savings intermediation), and criterion variable (Loan costs). Correlation matrix in Table 3 summarizes the results

Table 3. Correlation Matrix between pricing, intermediation and loan costs

	Mean	*Std Dev*	*Pricing*	*Intermediation*	*Loan Costs*
Loan Pricing	3.37	.67	1		
Financial intermediation	3.65	.75	.13	1	
Loan costs	4.05	.81	.48**	-.21**	1

**** Correlation is significant at the 0.01 level (1-tailed)** *** Correlation is significant at the 0.05 level (1-tailed)**

Source: Primary data

It is evident that there is a significant and positive correlation between pricing and loan costs (r= .48, p< 0.01). This is a sign that a strong relationship existed between pricing and loan costs. This depicts that an effective loan pricing is highly associated with better loan costs that can be afforded by the borrowers. Besides, no significant relationship was established between loan pricing and financial intermediation(r = .13, p > .05). This means that the association between the two variables is weak as indicated in the correlation matrix above.

From another perspective, the results indicate that financial intermediation is inversely and significantly related to loan costs in microfinance deposit taking institutions(r= -.21, p< 0.01). This finding signifies that as the MDIs increase the rate at which clients' savings are intermediated, the firm's loan costs reduce because of the insignificant cost of depositors' savings. In essence, increased financial intermediation is associated with reduced loan costs charged to clients.

B. Predicting power of the variables

We preferred hierarchical regression method because of its clarity in pointing out the contribution of each predictor in the regression model (Field, 2006). Besides, the application of this method helped us to test the theoretical assumptions and examine the influence of loan pricing and financial intermediation variables in a sequential way, such that the relative importance of a predictor is judged on the basis of how much it adds to the prediction of a criterion variable. The regression results are provided in Table 4 below.

Table 4. Hierarchical regression pricing system, intermediating savings on loan costs

	Model 1	*Model 2*	*Collinearity*	
			Tolerance	**VIF**
	B	***B***		
Constant	2.74**	2.92**		
Pricing system	0.32**	0.33**	1.00	1.00
Savings intermediation		-0.30*	0.98	1.02
R	.48	.57	na	na
R squared	.23	.32	na	na
Adjusted R squared	.21	.30	na	na
R squared change		.10	na	na
F statistics	11.88	5.10	na	na
F change	11.88	3.36	na	na
Sig. F change	.00	.03	na	na

In model 1, pricing system accounted for 23 percent of variance in loan costs (F-change = 11.88, $p < .01$) and caused a statistically significant un-standardized coefficient (B =0.319, P <0.01). However, the inclusion of financial intermediation in the model increased its explanatory power by 10 percent. This finding means that financial intermediation accounted for additional 10 percent of the variance in loan costs (F-Change = 5.10, $p < .05$) and caused a statistically significant un-standardized coefficient (B = -0.30, P< .05). All combined, pricing system and savings intermediation explain up to 32% of variance in loan costs. Nonetheless, pricing system carries more weight than savings intermediation in influencing loan costs in microfinance deposit taking institutions. This therefore lends support to hypotheses 4 and 5 (H4&H5)

I. DISCUSSION AND CONCLUSION

This study examined the effect of loan pricing and financial intermediation to loan costs in microfinance deposit institutions of Uganda. The gist of study was to assess the predictive power of the loan pricing system and financial intermediation to loan costs. The move was sparked off by the high loan costs charged by microfinance deposit institutions to the borrowers.

On the basis of the individual mean values of prudential requirements expected by Bank of Uganda, it is evident that the prudential requirements are fairly followed and implemented by microfinance deposit institutions. For instance, many firms have ensured to maintain a minimum capital requirement of 500 millions Uganda shillings. More so, MDIs have also ensured that portfolio quality (PAR) is above required standard of less that 5% and reporting requirements to the supervisor (BOU) have been fulfilled. However, it is evident that the MDIs are not properly managing their assets as required by Bank of Uganda. From Table 2, it can be seen that all mean values of asset adequacy and liquidity requirements are below average a sign that the prudential regulations

have not been properly implemented. Microfinance Deposit Institutions' failure to maintain a minimum liquidity level explains the delays of some MDIs to provide financial services to clients; the current challenge facing microfinance institutions.

Results have further indicated that a positive and significant relationship exists between loan pricing system and loan costs in the industry. This signifies that improved loan pricing system is highly associated with better loan costs. This is true because an effective loan pricing system can lead to better loan costs as earlier pointed by Ledgerwood (2000). This finding also corroborates the works of Rosenberg (2002) who established that loan pricing is strongly related to the interest rates charged to clients of banks.

In a related case, an inverse and significant relationship was established between financial intermediation and loan costs in MDIs. This finding depicts that increased financial intermediation is highly associated with reduced loan costs charged to borrowers by MDIs. This finding is not far from observations by Gorton and Winton (2002) who noted that the intermediation of funds connects financial institutions to borrowers and lenders and reduces interest charges. This finding further coincides with Winton et al. (2002) who also observed that depositors' savings is cost free source of finance which can reduce the firm's cost of capital and loan costs to clients.

In another perspective, research results indicate that loan pricing and financial intermediation significantly impact on the loan costs in microfinance deposit institutions in Uganda. Accordingly, the two predictor variables combined account up to 32 percent of variance in microfinance loan costs. Furthermore, findings have also shown that loan pricing accounts for the bigger variance as compared to financial intermediation of savings. This finding supports the works of Ledgerwood (2000) who found that the loan pricing and intermediation of savings play a very important role in the survival of the business because of the influence they have on loan costs. Beesi et al. (1997) also noted that since the savings are less costly and form the loaned amount to borrowers, the loan charges including interest rates and other services charges are expected to be lower.

II. CONCLUSION

Central to the above findings and discussion, we can conclude as follows: Microfinance deposit taking institutions have fairly implemented prudential requirements; capital adequacy and liquidity requirements have not been given utmost attention they desire.

Besides, strong and significant relationships exist between loan pricing system, financial intermediation and loan costs in MDIs. This was found to be supported by extant literature. Furthermore, loan pricing system and financial intermediation are true predictors of loan costs; but loan pricing system is more

important than financial intermediation in microfinance deposit taking institutions in Uganda.

III. MANAGERIAL IMPLICATIONS

The results suggest a series of issues that need to be considered seriously by managers of MDIs. This study has introduced a clear understanding how the loan pricing and financial intermediation affect loan costs in microfinance industry. This can foster management efforts to improve business performance which can be facilitated through the appropriate management of loan price setting system and financial intermediation. Thus, findings can, therefore, help management to intensify initiatives to encourage greater understanding of proper loan pricing that can yield better loan costs which may be favourable to all stakeholders in the industry.

It is also crucial for management to appreciate that the implementation of prudential requirements is inevitable. Customer deposits (savings) depend on trust and confidence that the depositors will have in the MDIs. It is therefore high time that microfinance firms changed their style of management and enforce fully all prudential requirements set by Bank of Uganda. Otherwise, clients' savings may not be realized as expected.

IV. LIMITATIONS OF THE STUDY

The findings of this study are subject to some limitations that provide the initiatives for future research.

One of the possible reasons for the varied results of the study is the methodology used for measuring the variables. Although the constructs have been defined as precisely as possible by drawing relevant literature and validated by practitioners, the measurements used may not perfectly represent all the dimensions.

Secondly, only a single research methodological approach was employed and future research through interviews could be undertaken to triangulate.

Future studies could use the same basic hypotheses and regression construction, but implement the study in terms of a longitudinal rather than a cross-sectional design. The longitudinal study would need to correct changes in data relative to time element. Despite possible limitations of using single-period data, the results of the present study provide valuable insights into the effect of loan pricing and financial intermediation on loan costs in microfinance deposit taking Institutions.

V. RECOMMENDATIONS

On the basis of the study findings and reviewed literature the following suggestions are pertinent to the success of Ugandan microfinance deposit taking institutions.

For the safety of clients' deposits (savings) and to build confidence in the public, the microfinance deposit institutions should make an effort to respect and enforce prudential requirements. The Bank of Uganda should also strengthen its level of supervision and monitoring roles.

Furthermore, since loan pricing system used has not reached the standard level, MDIs are urged to strengthen it by making it more perfect through addressing weaknesses that are inherent in the system. This can be done by acquiring new or updating current soft ware which may be capable of including genuine operational costs in the computation of interest rates and other charges.

Lastly, MDIs should also make an effort to increase mobilization efforts so that more savings can be got from the public. This can be done by creating more awareness so that the potential and existing clients can become aware of the existing opportunity; besides, interest paid on savings can also be increased to attract more depositors.

REFERENCES

Hardy, D.C., Holder, P., & Prokopenko, V. (2002). Microfinance and public policy: International Monetary Fund Working Paper-WP/02/159

Frankline, A. (1990), Financial Intermediation", *Journal of Financial intermediation*, Vol.2 No.1, pp.23 – 51.

Gorton, G. and Winton, A. (2002), Financial Intermediation. The Wharton School University of Pennsylvania and NBER.

Robert,B.,and Cave, H. (1999), Understanding Regulation Theor***y***, Strategy and Practice. Oxford University Press

Christen R., P. and R. Rosenberg (2000), The rush to Regulate. Legal Frameworks for Micro finance, Occasional Paper 4. Washington, Dc: CGAP. Available from http://www.cgap.org/assets/images/En4occ.pdf.

Kalyango,D.L. (2004), Uganda's experience with Tiered Banking Regulations.BOU.

Alfred, H. and Katimbo, E. (.2000). How to regulate and supervise Micro finance. Key issues in an International Perspective, FSD Series No. 1 Kampala-Uganda.

Ledgerwood.L (2000), Sustainable Banking with the poor. The international Bank for Reconstruction and Development/ The World Bank 1818H Street N, W.

Robert. C., (2002), Key issues in Regulation and Supervision of Credit cooperatives, Finance for the poor 3(4): 1-6

Stefan, S., (1999) Regulation and Supervision of Micro finance Institutions in South Africa. Eschborn, Germany: Deustsche Gesellschaft fur Technische

Diette, M.D. (2000), How do lenders set interest rates on loans?. A discussion of the concepts lenders uses to determine interest rates. Website: http/www.minneapolisfed.org/publications-papers/pub-display.cmf?id =3030. Accessed on 27th June 2010.