April 2011

Determinants of Transformation and Commercialization of MFIs: Non-Experimental Findings

Debadutta Kumar Panda
Xavier Institute of Social Service (XISS), Ranchi, Jharkhand, India

DETERMINANTS OF TRANSFORMATION AND COMMERCIALIZATION OF MFIs: NON-EXPERIMENTAL FINDINGS

Debadutta Kumar Panda*

Abstract

This study was carried out to understand the social performance of deposit taking and deposit non-taking MFIs, the determinants of MFIs' personnel size and their predictions, the possible determinants of women borrowers of MFIs and their consequences, and the determinants of the transformation of MFIs from deposit non-taking to deposit taking. For this study, a sample size of 90 MFIs i.e. 10 MFIs each from 9 countries, were randomly selected from the MIX Market data set. Descriptive statistics and econometric models were engaged in the study. It was found out that the MFIs staff strength is positively and significantly related with the size of active borrowers. The numbers of women borrowers in MFIs are significantly and positively determined by external borrowings of MFIs and their gross loan portfolio. The probability of transformation of MFIs from non- deposit taking to deposit taking is significantly determined by loan portfolio, borrowings, assets and number of active borrowers of MFIs.

INTRODUCTION

Microfinance Institutions (MFIs) are the financial intermediaries who intermediate by accessing finance from the financial wholesalers or donors, and provide the microfinance to the poor and unbankables. These MFIs behave like financial retailers for the clients. MFIs are either regulated or non-regulated entities, subjected to their respective national laws. The sector-wise discussions divide the entire MFIs into three sectors i.e. (i) formal sector including commercial banks, postal saving banks and non banking financial institutions, (ii) semi-formal sectors including NGOs and registered thrift and credit associations or societies or cooperatives and (iii) non-formal sectors including unregistered thrift and credit groups like, village banks, community banks, rotating savings and credit associations, self-help groups, credit unions, money lenders etc. (Ledgerwood, 1999). The prudential regulations of many countries are not subjected and applicable to NGO-based MFIs, hence they remain out of many microfinance operations. The NGO-based MFIs, not being licensed from their national governments, unable to mobilize public savings, hence mostly depend on external sources of money for their operations (Panda, 2009). The external funding pumped into MFIs by development donors often cultivates an unprofessional culture by introducing the flexible

*Faculty Member, Xavier Institute of Social Service (XISS), Ranchi, Jharkhand. E-mail: debaximb@yahoo.co.in

operational system, leading to higher transaction cost and willful defaults. Many a time, the over-dependency of the NGO-based MFIs leads to unsustainable institutions.

There are a number of factors which trigger up the transformation and commercialization of MFIs. Under the transformation process, the non-profit and deposit non-taking MFIs are transforming themselves into for-profit and deposit taking MFIs. Also access to capital for not-for profit NGO-MFIs is becoming an issue since the venture capitalists and financial wholesalers don't find these MFIs trustworthy due to their modus operandi and legal and ownership structure (Dieckmann, 2008; Lauer, 2008; Tulchin, 2004).

Often the development assistance on development lending was questioned (Ellerman, 2007), hence demanded sustainable transformed MFIs who can do the job commercially. Past experiences reveal that the securitization deals between financial wholesalers and transformed MFIs helped the MFIs in accessing capital and transforming risk factors to the banks or the financial wholesalers (Panda, 2009; Mohanty and Panda, 2007). These securitization deals are not found possible for NGO-MFIs due to their legal forms.

Past experiences, even though limited, teach us the positive consequences of transformation and commercialization of MFIs in maintaining transparency, sustainability, financial performance and social performance (Arianto, 2004). The transformed and commercially operated MFIs were also questioned for the mission drift, and their inability in aligning social and commercial performances (Armendariz and Szafarz, 2009). The commercial orientations pull MFIs to profit making motives and access the affluent clients leaving out poor unbankbles (Aubert et al., 2008). Olivares-Polanco (2005) in Latin America observed the existence of trade-off between the profitability and poverty-depth of outreach of MFIs. Similarly, Srnec et al. (2008) observed that the formal MFIs were transparent and professional, but less accessible to the suffering poor. More professional management and operations led MFIs to include costly professional staff, thereby removing the socially motivated old staff members. It has been observed that scaling up and making profit became the sole motive for MFIs (Rhyne, 1998), especially the transformed MFIs. The increased costly professionals and over customization of products and staff incentivized delivery mechanisms led to more transaction cost for MFIs (McKim and Hugart, 2005). Therefore MFIs increase interest rates on lending (Ghate, 2007). There were also negative impacts of these commercialized operations of large MFIs on smaller MFIs as the large MFIs gradually eat away the small ones (Rhyne and Christen) due to their higher impact and effectiveness resulting from higher scale of operations and cost-efficiency. However, studies in India found out that the transformation of MFIs does not affect the poor in a big way; rather it leads to better services and competitive market (Sriram, 2010). Fjigu (2009) studied the Ethiopian MFIs and observed that the large and medium MFIs were good in profitability and sustainability, but poor performers in serving women borrowers.

A limited number of studies were conducted to capture the reasons behind the transformation of MFIs in many countries, and almost all the studies were conducted in case-study approach pertaining to particular MFIs. Again these studies were qualitative in nature, hence found difficult in generalization and universal application. Development professional across countries including Yunus (2007) cited evidences against the mission drift of MFIs as a result of commercialization and transformation. So, this quantitative study is conducted to understand on a broad sense the determinants of transformation of MFIs. Also this study inquires the impact of commercialization and transformation of MFIs on clients, and whether the MFIs undergo mission drift or whether they are able to sustain the double bottom line of sustainability and development. The particular objectives of this study were (i) to examine and compare the social performance of deposit taking and deposit non-taking MFIs, (ii) determinants of MFIs personnel and their predictions, (iii) determinants of women borrowers of MFIs and their consequences, (iv) and the determinants of the transformation of MFIs from deposit non-taking to deposit taking.

METHODOLOGY

This study was broadly conducted by accessing the information on MFIs from Mix-Market. A random selection of 90 MFIs from 9 countries was made from the Mix-Market data-set. From each country, 10 MFIs were randomly selected. The 9 countries selected for the study were Indonesia, India, Bangladesh, Peru, Philippines, Ecuador, Costa Rica, Mexico and Nicaragua. Information on different variables i.e. Assets, Gross Loan Portfolio, Equity, Deposits, Borrowings, Personnel, Active Borrowers, Women Borrowers and Depositors of MFIs were collected and included in the analysis. Descriptive statistics and econometric tools were used for data analysis.

To understand the determinants of personnel size in MFIs, an Ordinary Least Square (OLS) technique with maximum likelihood estimation was used (Seale, 1990; Pitt and Lee, 1981; and Aigner et al., 1977). So the relationship is transformed in the form of a regression equation,

$$P_s = f (L_p, MF_t, A_b, W_b, D, B, D_a),$$

Where,
P_s = Personnel size (numbers)
L_p = Gross Loan portfolio (USD)
A_b = Active borrowers (numbers)
W_b = Number of Women borrower
D = Deposits (USD)
B = Borrowings (USD)
D_a = Depositors (numbers)
MF_t = Type of MFIs; dummy variable, 1 if deposit taking and, 0 if deposit not taking

In the above equation, due to existence of multi-collinearity among the dependent variables, the equation is transformed into,

$$P_t = f (L_p, MF_t, A_b)$$

Finally the equation was constructed as,

$$P_t = C + \beta_{ab} A_b + \beta mft\ MF_t + \beta_{lp} L_p + u \dots\dots\dots\dots\dots\dots\text{equation 1, where}$$

C= Constant
β_{ab} = Coefficient of Ab
βmft = Coefficient of MFt
β_{lp} = Coefficient of Lp
u= Random disturbance term

It was hypothesized that number of women borrowers of an MFI is a function of a set of independent variables i.e., (i) gross loan portfolio, (ii) deposits, (iii) borrowings, (iv) type of MFIs, and (v) personnel. So, an OLS test was made to arrive at the impact of independent variables on the dependent variable. Again due to existence of multi-collinearity among the dependent variables, the equation was transformed into,

$$W_b = f(L_p, B), \text{ which was finally constructed as,}$$
$$W_b = C + \beta_{lp} Lp + \beta_b B + u \dots\dots\dots\dots\dots\dots\dots\dots\dots\text{equation 2, where}$$

C= Constant
W_b= Number of Women borrower
L_p= Gross Loan portfolio (USD)
B= Borrowings (USD)
β_{lp} = Coefficient of L_p
β_b = Coefficient of B
u= Random disturbance term

To understand the determinants and the impacts on the probability of transformation of MFIs i.e. from non-deposit taking to deposit taking, the Probit model was engaged. The dependent variable "type of MFI" is converted in to a dichotomous dummy variable taking binary value i.e. 1 if deposit taking, and 0 otherwise. The Probit model was selected for its suitability in application (Bogan et al., 2007). Initially the Probit equation was formed as, $P_{mft} = C + \beta_{lp} L_p + \beta_b B + \beta_{ab} A_b + \beta_{wb} W_b + u$. But due multiple correlations among the dependent variables, the Probit relationship is transformed into two equations;

$$P_{mft} = C + \beta_{lp} L_p + \beta bB + \beta wbWb + u \dots\dots\dots\dots\dots\dots\text{equation 3, and}$$
$$P_{mft} = C + \beta_a A + \beta_b B + \beta_{ab} A_b + u \dots\dots\dots\dots\dots\dots\text{equation 4, where}$$

P_{mfi} Probability of a deposit taking MFI

C= Constant

L_p= Gross Loan portfolio (USD)

B= Borrowings (USD)

W_b= Number of Women borrowers

A= Assets of MFI (USD)

A_b= Active borrowers (numbers)

β_{lp}= Coefficient of L_p

β_b= Coefficient of B

β_{wb}= Coefficient of Wb

β_a= Coefficient of A

β_{ab}= Coefficient of A_b

FINDINGS

Data presented in Table-1 represent the various financial parameters of MFIs across different countries. The average assets position of MFIs in different countries was USD 575, 35,604.74 with the highest of USD 1728, 96, 642.8 in Mexico and the lowest of USD 10, 92,765.7 in Indonesia. Similar trend was found in case of equity where Mexico topped while Indonesia was at the bottom. From Table-2, it can again be observed that the equity as a percentage of assets remained more or less similar in MFIs across countries, and varied between 10 per cent and 40 per cent. Unlike the first case, the equity as a percentage of assets was the highest for MFIs in Costa Rica followed by Indonesia, Philippines, Peru, Nicaragua, Ecuador, Mexico, Bangladesh and India respectively. Even though MFIs in Indonesia had comparatively less assets and equity, they left behind MFIs in other countries when equity as a percentage of assets was measured. In India, the equity as a percentage of assets was found to be the least as most of the MFIs who were supported by donors with subsidized funding and infrastructure support. The other reason behind this issue could be the commercial capital support from other agencies including funding institutions and venture capitalists. However on an average, MFIs across the countries registered the equity which was 15.40 per cent of the MFI's asset.

The gross loan portfolio was found to be the highest for MFIs in Mexico with USD 1220, 67, 279.7 and was the least for Indonesia with USD 7, 28, 322.1. The average gross loan portfolio of MFIs across these 9 countries was USD 42303899.06. The average gross loan portfolio depends upon the scale of operations and outreach. MFIs having higher assets seem to have higher gross loan portfolio as evident from Table-1. The correlation coefficient between assets and gross loan portfolio was 0.99, which again proves that the MFIs gross loan portfolio increased and/or decreased with assets position. From Table-2, it can be observed that the gross loan portfolio as a percentage of assets was the highest for MFIs in Costa Rica (84.24 %) and the least for Indonesia (66.64 %). However, it can be understood that the gross loan portfolio of MFIs was about 73.53 per cent of the MFIs' assets.

In the sample study, all the MFIs were not deposit taking MFIs. Out of 90 MFIs, 56 MFIs were licensed to mobilize public fund as per their respective countries' prudential regulations. All the MFIs samples from Costa Rica were deposit non-taking MFIs whereas all the MFIs sampled from Indonesia, Bangladesh and Philippines were deposit taking MFIs. The average deposit per MFI was USD 227, 76, 441.47. Even though all MFIs from Indonesia, Bangladesh and Philippines were deposit taking, still Mexican MFIs topped in deposit mobilization (Table-1). The average deposit as a percentage of assets of MFIs across the countries was about 52.10 per cent which means that a substantial capital of MFIs was generated from deposits. The deposits of MFIs were 70.86 per cent of their portfolio. Mexican MFIs again topped in securing the highest percentage of deposits to assets and gross loan portfolio. The Indian and Nicaraguan MFIs had very less deposits as a percentage to assets and gross loan portfolio (Table-2).

MFIs' borrowings as a percentage of assets was found highest in Nicaragua (65.45 %) followed by India (64.24 %) and Costa Rica (57.62 %). Due to high mobilization of public deposits, the Ecuadorian and Mexican MFIs had registered very low borrowings as a percentage of assets i.e. 4.26 per cent and 4.69 per cent respectively. The average borrowing as a percentage of assets of MFIs across the countries was 21.13 per cent. Similar trend was observed in the borrowings as a percentage of equities in MFIs and the average was 137.18 per cent indicating the increasingly external borrowings of MFIs. The highest borrowings as percentage of assets was observed for India (594.03 per cent) followed by Nicaragua (385.91), Philippines (155.52 per cent), Bangladesh (154.98 per cent), Coast Rica (143.63 per cent) and Indonesia (131.76 per cent) respectively. However, the least borrowings as percentage of assets was observed in Ecuador (25.83 per cent) followed by Mexico (31.58 per cent), indicating the ability of MFIs in these countries to generate capital and less dependent on external borrowings. MFIs in India, Nicaragua, Philippines and Costa Rica were found more dependent on external fundings.

Table 1: Means of Various Financial Items of MFIs

Sl. No	Country	Sample Size	Assets (USD)	Gross Loan Portfolio (USD)	Equity (USD)	Deposits (USD)	Borrowings (USD)
1	Indonesia	10	10,92,765.7	7,28,322.1	2,95,707.8	3,53,605.1	3,89,632.7
2	India	10	462,45,394.1	379,22,657.2	50,00,986	12,55,726.9	297,07,162.5
3	Bangladesh	10	1622,00,618.1	1101,60,930.7	220,49,396.9	648,10,063.4	341,73,013.2
4	Peru	10	768,78,485	63,61,5176.5	149,08,377.9	485,02,691.9	102,38,489.8
5	Philippines	10	97,73,100.5	74,02,954.3	22,59,431.1	35,10,939	35,13,821.2
6	Ecuador	10	133,06,270.2	110,30,888.4	22,12,856	101,09,728	5,71,590.3
7	Costa Rica	10	58,27,965.2	49,09,493.8	23,37,770.6	0	33,57,827.4
8	Mexico	10	1728,96,642.8	1220,67,279.7	256,92,348.4	1378,20,926.6	81,13,384.7
9	Nicaragua	10	295,99,201.1	228,97,388.9	50,19,911.3	34,34,355.8	193,72,328.4
Average		10	575,35,604.74	423,03,899.06	88,64,087.33	227,76,441.47	121,59,694.46
Standard Deviation			208,488,708.15	1463,40,990.57	28,379,502.03	1526,72,319.90	356,12,167.77

Table-2: Financial parameters of MFIs across countries

Sl. No	Country	Sample Size	Equity as % of Assets	Gross Loan Portfolio as a % of Assets	Deposits as % of Assets	Deposits as % of Gross Loan Portfolio	Borrowings as % of Assets	Borrowings as % of Equity
1	Indonesia	10	27.06	66.64	32.36	48.55	35.66	131.76
2	India	10	10.81	82.00	2.71	3.31	64.24	594.03
3	Bangladesh	10	13.60	67.92	39.96	58.83	21.06	154.03
4	Peru	10	19.40	82.75	63.09	76.24	13.31	68.68
5	Philippines	10	23.12	75.75	35.92	47.42	35.94	155.52
6	Ecuador	10	16.63	82.90	75.98	91.64	4.26	25.83
7	Costa Rica	10	40.11	84.24	0	0	57.62	143.63
8	Mexico	10	14.86	70.60	79.71	112.92	4.69	31.58
9	Nicaragua	10	16.96	77.36	11.60	15.00	65.45	385.91
Average		10	15.40	73.53	52.10	70.86	21.13	137.18

It had been observed that the average number of personnel per MFI was 979.24 with the highest of 6446.6 in Bangladesh, and the least in Costa Rica with 17.1 (Table-3). The high standard deviation reflects the presence of extreme values in the data set. The average number of active borrowers was 201158.22 following the previous trend i.e. the highest in Bangladesh with 1308740.2 and the least in Costa Rica with 1146.2. This clearly reflects the highest personnel per MFI in Bangladesh due to the highest active borrowers. The lowest personnel per MFIs in Costa Rica were due to the least number of active borrowers. So the number of personnel per MFI was related with the number of active borrowers per MFI as evident of high correlation coefficient of 0.99. On an average 191619.24 number of women borrowers per MFI was observed with the highest in Bangladesh (1308740.2 numbers) and the least in Costa Rica. The inconsistency in the number of women borrowers per MFI can be observed from the high standard deviation. The average number of depositors per MFI was found to be 207878.58.

Table-3: Borrower, depositor and personnel status of MFIs

Sl. No	Country	Sample Size	No. of Deposit Taking MFIs	Personnel (Numbers)	Active Borrowers (Numbers)	Women Borrowers (Numbers)	Depositors (Numbers)
1	Indonesia	10	10	50.2	9014.4	8216.6	9032
2	India	10	3	858.8	264483	243134.8	29295.3
3	Bangladesh	10	10	6446.6	1308740.2	1308740.2	1541191
4	Peru	10	7	268.3	19231.9	19231.9	47515.2
5	Philippines	10	10	396.6	65654.1	64757.5	68058

Sl. No	Country	Sample Size	No. of Deposit Taking MFIs	Personnel (Numbers)	Active Borrowers (Numbers)	Women Borrowers (Numbers)	Depositors (Numbers)
6	Ecuador	10	8	37.3	2918.9	2918.9	13783.5
7	Costa Rica	10	0	17.1	584.6	584.6	0
8	Mexico	10	3	548.3	62488.4	62488.4	149992.8
9	Nicaragua	10	5	190	14500.3	14500.3	12039.4
	Average	10	6.2	979.24	191619.24	191619.24	207878.58
	SD			4506.27	940747.15	940747.15	1099402.10

It has been found that the women borrowers as a percentage of active borrowers was 96.55 per cent for deposit taking MFIs and 90.03 per cent for deposit non-taking MFIs. This shows that the deposit taking MFIs were able to bring more women borrowers in their book as compared to that of the deposit non-taking MFIs. This outcome rejects the common belief that 'the deposit taking MFIs, often the transformed MFIs, are the commercial ones, focus more on male borrowers than the female borrowers'. In Bangladesh among the deposit taking MFIs, the women borrowers as percentage to active borrowers was 100 per cent; and in Philippines and India, it was 98.63 per cent and 97.06 respectively. Women borrowers as percentage to active borrowers among the deposit non-taking MFIs was found the highest in India (91.37 per cent) followed by Peru (87.88 per cent), Nicaragua (75.50 per cent) and Mexico (72.18 per cent) respectively. From Table-4, it can be seen that the active borrowers per personnel for deposit taking MFIs was 198, and the same for deposit non-taking MFIs was 265.91. It shows that the deposit taking MFIs better served the clients. The least number of borrowers per personnel among the deposit taking MFIs and deposit non-taking MFIs were located from Nicaragua (119.23) and Costa Rica (67.02) respectively. India had the highest number of borrowers per personnel among the deposit taking MFIs and deposit non-taking MFIs. Similar trend was observed for women borrowers per personnel where the deposit taking MFIs had 191.13 women borrowers per personnel, and deposit non-taking MFIs had 239.41 women borrowers per personnel. This again provided strong evidence of better services to women members by deposit taking MFIs as compared to that of the deposit non-taking MFIs. The least number of women borrowers per personnel for deposit taking MFIs was traced from Peru (69.06), and the same for deposit non-taking MFIs was found from Costa Rica (34.18). However, Indian deposit taking MFIs and deposit non-taking MFIs recorded the highest number of women borrowers per personnel.

Table-4: Personnel per borrowers

Sl. No	Country	Borrowers as a percentage of Active Borrowers		Active Borrowers/Personnel		Women Borrowers per Personnel	
		Deposit Taking MFIs	Deposit Non-taking MFIs	Deposit Taking MFIs	Deposit Non-taking MFIs	Deposit Taking MFIs	Deposit Non-taking MFIs
1	Indonesia	91.15	nil	179.57	nil	163.68	nil
2	India	97.06	91.37	280.18	311.35	271.95	284.47
3	Bangladesh	100	nil	204.00	nil	204.00	nil
4	Peru	51.46	87.88	134.33	146.89	69.06	129.08
5	Philippines	98.63	nil	165.54	nil	163.28	nil
6	Ecuador	54.08	63.71	143.29	153.35	77.49	97.71
7	Costa Rica	nil	51.00	nil	67.02	nil	34.18
8	Mexico	62.89	72.18	199.39	83.90	125.39	60.56
9	Nicaragua	61.71	75.50	119.23	106.41	73.58	80.34
Average		96.55	90.03	198	265.91	191.13	239.41

The OLS estimates explaining how the size of employees in MFIs is determined by number of active borrowers, type of MFIs and amount of gross loan portfolios, are presented in Table-5. It was found that size of active borrowers is significantly and positively determined by the number of employees in MFIs. That means if the number of active borrowers is more, then the number of employees in MFIs increases significantly. The positive sign of the coefficient of 'Type of MFIs' signifies the positive impact of this independent variable on the dependent variables, but the impact of this independent variable as determinant of 'Number of Personnel in MFIs' was found to be a weaker one (not significant). The increase in gross loan portfolio leads to decrease in the number of employees in MFIs and vice-versa, but this relationship also was found insignificant. This OLS model predicted 97 per cent of the results as evident from the adjusted R-square.

Table-5: OLS estimates explaining relationship of personnel with active borrowers, type of MFIs and loan portfolios

Predictors	Coefficient	Standard Error	t-ratio	p-value
Dependent Variable: Number of Personnel in MFIs				
Constant	-73.2529	123.920	-0.5911	0.5560
Number of active borrowers	0.00476163	0.000100943	47.17	3.02e-063 ***

Predictors	Coefficient	Standard Error	t-ratio	p-value
Type of MFIs 1 if deposit taking, 0 if deposit non-taking	164.492	158.574	1.037	0.3025
Gross Loan Portfolio	-1.81880e-07	6.49265e-07	-0.2801	0.7800
R-squared: 0.975258 Adjusted R-squared: 0.974395 Log-likelihood: -717.9255				

Table-6 shows a positive and significant impact of gross loan portfolio and borrowings of MFIs on the number of women borrowers. If the gross loan portfolio and borrowings of MFIs increase, then the number of women borrowers in MFIs also increases and vice-versa. This means if MFIs wish to increase the number of women borrowers then they must increases the gross loan portfolio and borrowings. However the prediction power of this OLS model is 50 per cent.

Table-6: OLS estimates explaining relationship of women borrowers with Loan Portfolio and Borrowing

Items	Coefficient	Standard Error	t-ratio	p-value
Dependent Variable: Number of Women Borrowers				
Constant	-58046.8	74602.8	-0.7781	0.4386
Gross Loan Portfolio in USD	0.00204411	0.000544360	3.755	0.0003 ***
Borrowings of MFIs in USD	0.0134824	0.00223694	6.027	3.92e-08 ***

[1] Correlation Matrix among Loan Portfolio, Type of MFIs and Active Borrowers
Loan Portfolio   Active Borrower   Type of MFI
   1.0000   0.5875   0.1488 Loan Portfolio
                   1.0000   0.1049 Active Borrower
                                    1.0000 Type of MFI
[2] Correlation (Loan Portfolio, Borrowings) = 0.47070841

MFIs in USD				
R-squared: 0.514377 Adjusted R-squared: 0.503213 Log-likelihood: -1332.596				

The Probit estimate results presented in Table-7 show that the probability of transformation of an MFI from deposit non-taking to deposit taking is significantly determined by Loan Portfolio and borrowings. Evidence of positive relationship between probability of transformation of MFIs and gross loan portfolio (positive coefficient); and negative relationship between probability of transformation of MFIs and external borrowing was found out. More the gross loan portfolio, more is the probability of transformation; and more the external borrowing, less is the probability of transformation of MFIs. A weak evidence of impact of number borrowers on the probability of transformation of MFIs was traced out from the Probit results. However, increases in the number of women borrowers in MFIs lead to less probability of transformation (since the coefficient is negative) but it was found insignificant.

Table-7: Probit Estimates on Probability of Transformation as a function of loan portfolio, borrowings and women borrowers

Items	Coefficient	Standard Error	t-ratio	p-value
Dependent Variable: Type of MFIs; dummy variable, 1 if deposit taking and, 0 if deposit not taking				
Constant	0.220436	0.153391	1.437	0.1507
Loan Portfolio in USD	6.77354e-08	3.89385e-08	1.740	0.0819 *
Borrowings USD	-8.61625e-08	4.50680e-08	-1.912	0.0559 *
Women Borrowers (Nos)	-1.52394e-06	1.40370e-06	-1.086	0.2776
Adjusted R-squared: 0. 42982, Log-likelihood : -53.10234				

From Table-8, it can be observed that the assets and number of active borrowers remained as strong determinants of probability of transformation of MFIs. If the assets of MFIs are more, then MFIs are more likely to be transformed from deposit non-taking to deposit taking due to the positive coefficient. But if the numbers of active borrowers are more, then the MFIs have less probability of transforming from non-deposit taking to deposit taking. The prediction capability of this Probit model presented in Table-8 is 74 per cent as explained by the adjusted R-square.

Table-8: Probit Estimates on Probability of Transformation as a function of assets, borrowings and active borrowers

Items	Coefficient	Standard Error	t-ratio	p-value
Dependent Variable: Type of MFIs; dummy variable, 1 if deposit taking and, 0 if deposit not taking				
Constant	0.11441	0.162171	0.7055	0.4805
Assets (USD)	1.38979e-07	5.04206e-08	2.756	0.0058 ***
Borrowings USD	-2.09036e-07	7.46080e-08	-2.802	0.0051 ***
Active Borrowers (Nos)	-3.53222e-06	1.80383e-06	-1.958	0.0502 *
Adjusted R-squared 0.7444, Log-likelihood -48.65942				

CONCLUSION

The study found higher employees strength in deposit taking MFIs than non-deposit taking MFIs. The size of personnel in MFIs was positively and significantly determined by the number of active borrowers. So MFIs must increase their employee strength if they wish to serve large number of clients. This study rejects the common belief "MFIs transform from non-deposit taking organizations to deposit taking organizations with a motive to achieve higher financial performance, and leave behind the social performance". However the study concluded that MFIs undergo transformation into different deposit taking legal entities from their original NGO status to increase the gross loan portfolio and external borrowings with a motive to serve more women clients. Lesser dependency of MFIs on external borrowings makes them operate in a sustainable way. The probability of transformation of MFIs is more if the amount of external borrowings and the number of active borrowers are less.

Finally the study rejects the traditional belief of the existence of trade-off between social and financial performance between transformed deposit-taking MFIs. To serve an increased number of borrowers in a sustainable manner, the NGO-based MFIs should transform themselves into deposit taking commercialized financial institutions. Further, this study encourages in-depth researches on the trade-off between mission drift and social performance of MFIs using a broad set of social and financial indicators.

REFERENCES

Aigner, D., Lovell, C.A., Knox and Schimidt, P. (1977). "Formulation and Estimation of Frontier Production Function Models", Journal of Econometrics, Vol. 6, pp. 21-37.

Arianto, S.A. (2004). "Commercialization of Microfinance and Linkage Between Microfinance and Commercial Banking", Paper Presentation in International Microfinance Workshop, Phnom Penh, 8th -9th December 2004.

Armendariz, B. and Szafarz, A. (2009). "Microfinance Mission Drift", www.economics.harvard.edu/.../armendariz/.../BA%252BAS_01-3-09_FV.pdf, Accessed on 23rd November, 2009.

Aubert, C., Janvry, A. and Sadoulet, E. (2008). "Designing Credit Agent Incentives to Prevent Mission Drift in Pro-poor Microfinance Institutions", http://are.berkeley.edu/~sadoulet/papers/Credit_2008_10.pdf, accessed on 23rd November 2009.

Bogan, V., Johnson, W. and Mhlanga, N. (2007). "Does Capital Structure Affect the Financial Sustainability of Microfinance Institutions", http://www.cid.harvard.edu/neudc07/docs/neudc07_poster_bogan.pdf., accessed on 20 November, 2009.

Dieckmann, R. (2008). "Microfinance: An Attractive Duel Return Investment Opportunity", Deutsche Bank Research, 25th September, 2008.

Ellerman, D. (2007). "Microfinance: Some Conceptual and Methodological Problems" in Dichter, T. and Harper, M. (eds), What's Wrong with Microfinance, Practical Action, Intermediate Technology Publication Limited, Warwickshire, pp. 149-161.

Fjigu, L. (2009). "Performance Analysis of Sample Microfinance Institutions of Ethiopia" Ph.D. Manuscript, University Business School, Punjab University, Chandigarh, India.

Ghate, P. (2007). Indian Microfinance: The Challenges for Rapid Growth, New Delhi: Sage Publications India Private Limited.

Lauer, K. (2008). "Transforming NGO MFIs: Critical Ownership Issues to Consider", Occasional Paper 13, CGAP, Washington D.C.

Ledgerwood, J. (1999). Microfinance Handbook: An Institutional and Financial Perspective, Washington D.C.: The World Bank.

Ledgerwood, J. and White, B. (2006). Transforming Microfinance Institutions: Providing Full Financial Services to the Poor, Washington D.C.: The World Bank.

Olivares-Polanco, F. (2005). "Commercializing Microfinance and Deepening Outreach? Empirical Evidence from Latin America", Journal of Microfinance, Vol. 7. No. 2, pp. 47-69.

Panda, D.K. (2009). Understanding Microfinance, New Delhi: Wiley India Private Limited.

McKim, A. and Hugart, M. (2005). "Staff Incentive Schemes in Practice: Findings from Global Survey of Microfinance Institutions", Microfinance Network, www.mfnetwork.org/working_groups/staff_incentives.html. Accessed on 22nd May 2009.

Mohanty, J. and Panda, D. (2007). "Innovation Spurs Growth", ESR Review, Vol. 9, Issue. 2, pp. 10-13.

Pitt, M., and L. F. Lee (1981) "The Measurements and Sources of Technical Inefficiency in the Indonesian Weaving Industry," The Journal of Development

Economics, Vol. 9, pp. 43-64.

Rhyne, E. (1998). The Yin and Yang of Microfinance: Reaching the Poor and Sustainability, MicroBanking Bulletin 2, pp. 6-9.

Rhyne, E. and Christen, R. P., Microfinance Enters Market Place, http://www.uncdf.org/mfdl/index.php?_mode=students.readings

Seale, Jr., J. L. (1990) "Estimated Stochastic Frontier Systems with Unbalanced Panel Data: The Case of Floor Tile manufacturers in Egypt", Journal of Applied Econometrics, Vol. 5, pp. 59-74.

Sriram, M.S. (2010). "Commercialization of Microfinance in India: A Discussion on the Emperor's Apparel", Working Paper No. 2010-03-04, IIM, Ahmedabad, India

Smec, K., Divisova, M. and Svobodova, E. (2008). "The Transformation Process in Microfinance Institutions", Agricultura Tropica Et Subtropica, Vol. 41. No. 2, pp. 84-89.

Tulchin, D. (2004). "Positioning Microfinance Institutions for Capital Market". Social Enterprise Associates, Working Paper #5.

Yunus, M. (2007). Creating a World Without Poverty: Social Business and the Future Capitalism, Public Affairs, Perseus Book Group, New York, NY.