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## Sustainability and Mission Drift: Do Microfinance Institutions in Vietnam Reach the Poor?

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### 1 Introduction

Microfinance has long been considered a tool for economic development and poverty reduction (Ledgerwood, 1999; Morduch and Haley, 2002; and Khandker, 2003). Although there are several different perspectives of microfinance (Rhyne, 1998; and Robinson, 2001), it is commonly agreed that the central issue is how to provide financial services to the poor and low-income households on a sustainable basis (Rhyne, 1998; Robinson, 2001; and Gonzalez-Vega, 2003).

There is often a trade-off between social goals of microfinance and financial goals of the microfinance institutions (MFI) (Kanathigoda and Steinwand, 2003; Charitonenko and Rahman, 2002; Gonzalez-Vega, 1998; and Schreiner 1996). Financial goals may force MFIs to deviate, over time, from their original mission of providing loans to the very poor in favour of providing loans to 'less poor' clientele (Woller et al., 1999; and Woller, 2002). This *mission drift*, towards financial sustainability (Ghosh and Van Tassel, 2008) and away from outreach to very poor, is contrary to the primary goal of microfinance (Frank and Lynch, 2008; Schreiner 2002).

Mission drift has been an active research area for some time. (e.g., Cull et al., 2007; Mersland and Strøm, 2008; Mersland and Strøm, 2010; Hermes et al., 2011; Armendariz and Szafarz, 2009; Schreiner 2002, among others). However, empirical identification of mission drift is complicated due to lack of suitable data and the complexity of international bureaucracy under which the microfinance industry often operate.

For instance, the conclusions of a rigorous study such as Mersland and Strøm (2010) could be somewhat misleading due to the omitted variable problem in their model estimation.

In this study, we revisit the mission drift discussion by analyzing firm-level panel data from Vietnam. Our data includes detailed information on 149 People's Credit Funds (PCFs) observed between 2004 and 2009. We offer several contributions to the extant literature. First, by using rich longitudinal information from a single country, we avoid potential noise that may affect most empirical work on mission drift that uses cross-country data (Cull et al., 2007; Nawaz, 2010; Hermes et al., 2011; Chahine and Tannir, 2010; Mersland and Strøm, 2008; and Mersland and Strøm, 2010). Second, recent empirical literature such as Mersland et al. (2011) demonstrate important associations between international influence on MFIs and its degree of social orientation. By focusing on PCFs that are market oriented, cooperative credit unions regulated by the state, we are able to analyze mission drift in a rare environment where MFIs operate with minimal international influences. Third, by using dynamic panel data modelling (a first for this literature), we are able to control for persistence in lending behaviour, endogeneity, and time varying omitted variable bias problem.

The remainder of the paper is organized as follows: Section 2 discusses the current literature on mission drift, Section 3 provides some brief background information on the PCFs in Vietnam, Section 4 introduces the model of mission drift and outlines our methodology, Section 5 presents the results, and Section 6 concludes.

## **2 Recent literature on mission drift**

### **2.1 Alternative views of mission drift**

Before we present our analysis of mission drift in Vietnam, it is worthwhile here to note that there are several views in the literature that contrast with the interpretation of mission drift that we adopt in this study.

The first view considers mission drift to be a natural occurrence for up-scaling MFIs because clients who are financially better off crowd out poorer clients in any credit scheme (Christen and Drake, 2002; Hishigsuren, 2007). MFIs could deviate from their mission due to the cost differentials between the poor and the unbanked wealthier clients as well as other, region-specific heterogeneity in their clientele (Armendàriz and Szafarz, 2009).

The second view is that mission drift is simply a misinterpretation of cross-subsidization or commercialization process. MFIs may reach out

to less poor borrowers who want larger loans in order to cross-subsidize loans for very poor clients. Recently, Mersland (2011) coins the term 'mission expansion' to explain this phenomenon by drawing from similarities between savings bank in the late eighteenth century Europe and MFIs of today. Including the middle class without excluding the poor made the savings bank more sustainable without abandoning their original objective of serving the poor. Moreover, while a commercialized microfinance industry may be more efficient in reaching the poorest customers (Rhyne, 1998; Christen and Drake, 2002), portfolio maturity, a natural outcome of commercialization process, may be misinterpreted as mission drift (Christen, 2000).

A final view is that mission drift is in fact a corporate governance problem. Arena (2008) argues that mission drift does not have to take place as a consequence of the trade-off between FSS and outreach. Good governance<sup>1</sup>, enables MFIs to manage the trade-offs between outreach and FSS, to the detriment of neither. Labie and Mersland (2011) strongly argue for identifying a general framework of governance that can be adapted to different situations and different types of MFIs.

Empirically distinguishing between mission drift and all of its alternative interpretations may be very difficult (Aubert et al., 2009; Aremendáriz and Szafarz, 2009). We provide a non-exhaustive review of the empirical literature on mission drift and on the link between FSS and outreach in the next section.

## **2.2 Empirical literature**

There is an ongoing debate over whether the scaling up of MFIs leads to a drift away from their original poverty alleviation mission. Hishigsuren (2007) identifies three key dimensions of this 'mission drift': depth (the poverty level of clients), quality (the quality of service and level of personal attention provided to clients), and breath (the number of financial and non-financial services provided by the MFI).<sup>2</sup>

There is no strong consensus among empirical studies that examine mission drift. This may be attributed to a variety of research methodologies and metrics to quantify magnitude of mission drift. In order to analyze mission drift, one requires measures of social benefit to MFIs' customers that is very difficult to measure (Zeller et al., 2003; Beisland et al., 2014).

The most commonly used measure of depth of outreach is the average loan size. However, microfinance literature employs a wide variety of measures to determine how well MFIs serve the intended clientele. These measures include lending methodologies, number of borrowers, focus

on rural versus urban clients, proportions of women served, interest rate, size of loan portfolio, financial self-sufficiency (FSS), and average loan size. As mentioned in the previous section, empirical studies to date have found evidence both for and against mission drift which could indicate that differences in methodologies and proxy variables for mission drift influence the results.

In a study of commercialized and transformed MFIs in Latin America, Christen (2001) concludes that mission drift has not taken place. Littlefield et al. (2003) find that programs that target very poor clients perform better than others in terms of cost per borrower. Using archival survey and interview data from stakeholders of an MFI in Bangladesh, Hishigsuren (2007) concludes that the MFI showed no statistically significant evidence of mission drift. Similarly, Nawaz (2010) reports the age of an MFI is not a significant factor in determining outreach, refuting the hypothesis of mission drift.

Cull et al. (2007) used a sample of 124 MFIs in 49 countries and found that MFIs are able to stick to their mission even when they aggressively pursue financial goals. However, those that have managed to achieve profitability while still maintaining notable social goals have been more the exception than the rule. Using cross-country panel data from 1998 to 2008, Mersland and Strøm (2010) focus on average loan size, lending methodologies, main market served, and gender bias. They concluded that higher cost MFIs will seek to find more individual borrowers, focus more in urban areas, and will tend to focus less on female borrowers. The reverse is also true. If MFIs can keep costs down, they will focus on group lending, rural areas, and female borrowers. They conclude mission drift occurs if an MFI seeks higher financial returns, but this effect could be neutralized if the MFI is cost efficient. Hermes et al. (2011) also find that there is a trade-off between efficiency and outreach. The more efficient MFIs have higher average loan sizes and less women borrowers.

Chahine and Tannier (2010) examine the social and financial performance of a cross-country sample of NGOs that have transformed into microfinance institutions (TMFIs). They show that TMFIs are able to increase the number of borrowers, increasing the breadth of outreach while also increasing average loan size, which supports mission drift.

The interest rates may be another important measure to study mission drift (Nawaz, 2010; Tedeschi, 2006; Armendàriz and Szafarz, 2009). However, empirical studies that focus on interest rates are rare. Higher interest rates may be an indication of monopoly power. Monopolistic interest rates paired with low average loan size may be an indication of mission drift (Armendàriz and Szafarz, 2009). Nawaz (2010) shows

a negative association between interest rates and the age of the MFI, which may be an indication of mission drift due to MFIs deviating from riskier (hence poorer) customers.

Our study contributes to the mission drift literature by incorporating various definitions of outreach in a dynamic panel data model that address several econometric problems that may be present in aforementioned empirical studies.

### **3 Microfinance in Vietnam**

Vietnam, with a population of 87 million, is one of the fastest growing economies in the region (average of 8% GDP growth rate in period 2000–2007 and 6.5% in 2008). Nominal GDP per capita of Vietnam was USD 1,060 in 2009. Also, 72% of the Vietnam population lives in rural areas where 94% of the nation's poor also lives. Agriculture accounts for 54% of the national workforce is the economic mainstay. (ADB, 2010)

One major component of Vietnamese government's national poverty reduction program is increasing employment opportunities through geographically dispersed industrialization and SME promotion. Microfinance sector is a major player in this arena.

According to the Asian Development Bank, the results of Vietnam's economic development policies have been remarkable, with population living in poverty reduced from 58% in 1993 to 12.3% in 2009. Vietnam is poised to meet its Millennium Goal of eradicating extreme poverty by 2015. However, poverty distribution remains skewed with 45% of the poor accounted for by ethnic minorities in remote areas, while they comprise only 14% of the population. Among the major constraints in achieving program objectives was the lack of responsive and adequate financial services in the rural areas which has a mere 17% share of the total bank credit and where less than 20% of the population has access to any kind of institutional finance services (ADB, 2010).

The provision of agricultural and rural financial services has always been a major component of poverty reduction measures of government from the onset of transition in 1986. The microfinance providers in Vietnam consist of three main segments: formal (registered) credit institutions, semi-formal sector, and informal sector.

The formal sector consists of six types of credit institutions:

- Few commercial banks downscale their operation in microfinance market, especially Vietnam Bank for Agriculture and Rural Development (VBARD),

- Vietnam Bank for Social Policies (VBSP) – wholly government-owned and provided with subsidized credits to the poor, funds mainly from the state budget,
- People's Credit Funds (PCFs) system with Central People's Credit Fund (CCF) as the apex institution – applying the cooperative model,
- Vietnam Postal Savings Company (VPSC): Providing savings mobilization services only,
- And TYM – the first newly formalized NGO Microfinance Institution that has just been registered in August 2010.

VBARD serves 26% of the total microfinance clients with outstanding loan amounts to 41.1% of the total loans in microfinance industry in Vietnam (Khoa, 2013). The Vietnam Bank for the Poor (VBP), which was established to deliver subsidized credit for poverty alleviation, was reformed as the VBSP in 2003. VBSP serves 61.4% of the total microfinance industry in Vietnam. The third largest player in microfinance industry in Vietnam, is PCF, which was serving 7.7% of the total client by 2009 (BWTP, 2005). NGO-sponsored microfinance programs (NMPs) such as Vietnam Plus, Village Bank, and Solidarity Group Model serve 4.9% of the total clients in Vietnam (Nghiem and Laureceson, 2005; Khoa, 2013).

Informal credit providers include private money lenders, relatives, credit association, and other individuals. The semi-formal institutions on the other hand are the Bank for the Poor, credit cooperative, poverty alleviation program, job creation program, and other programs. A sample of 6,002 households in the Vietnam Living Standard Survey (VLSS) demonstrate that formal and informal sector makes up about 37 per cent and 49 per cent of the total lending respectively and semi-formal credit consists of only about ten per cent of the total loan volume (Pham and Lensink, 2008).

The savings capacity of these microfinance providers is much less than demands for credit. Only PCFs/CCF system and the VBARD operate as commercialized institutions, with main funds of lending raised from savings mobilization using market rates. Three of the biggest microfinance market players are VBARD, VBSP, and CCF/PCFs system. This study focuses on PCFs located in Ha Tay and Thai Binh provinces.

### **3.1 People's Credit Funds**

After the collapse of an earlier cooperative system the PCFs were established in 1993 as savings and credit cooperatives (SACCOs) modelled on the 'Caisses Populaires' credit union system in Quebec, Canada, with support from Development International Desjardins (DID). The network of PCFs is cooperative credit institutions with legal status regulated and

supervised by the State Bank of Vietnam (SBV). There were approximately 900 PCFs in operation as of November 2004, reaching just under 1,000,000 members (BWTP, n.d.).

The SBV promoted setting up the PCFs, to provide commune level financial services. The CCF was also established in 1993 to act as the PCFs apex institution and provide support to the PCFs. The network evolved in three major phases:

- The establishment and initial growth phase, 1993–1998, during which nearly 1000 PCFs as well as the CCF and the Regional Credit Funds (RCFs) were established.
- A consolidation phase, 1999–2002, in which an evaluation was carried out: nearly 100 non-performing PCFs were closed, and the RCFs were integrated into CCF.
- The phase of cautious growth since 2003, reaching a total of 1005 PCFs as of June 2008, with a membership of 1.2 million and total assets of \$888 million.

The PCFs have always been and continue to be market oriented. They are based on the principles of self-help, self-reliance, self-management, and democracy. In more concrete terms, they are formed and developed through the initiative of their local members; they are self-financed through shares, deposits, and retained earnings; they are professionally managed by a team of qualified employees under the control of a board; and the board is democratically elected by the members, all with equal voting rights. Members may be individuals, heads of households, cooperatives, local enterprises, and social organizations. Lending outreach is restricted to the commune where the PCF is located; depositor outreach may extend to neighbouring communes, but it should not exceed 40% of total deposits.

## **4 Data and methodology**

### **4.1 Data**

This study focuses on 149 communes of PCF in Ha Tay and Thai Binh provinces, and the data were collected for the period from 2004 to 2009. With a combined population over 4 million people living in rural areas, Thai Binh and Ha Tay provinces are good representatives of PCF customers in Vietnam. In Ha Tay, some PCFs serve SMEs and better off households with non-farm employment. In Thai Binh, most of members are purely farmers, and the average size of PCFs is small.

Tables 6.1a, 6.1b, and 6.1c describe the variables used in the study and provide summary statistics.

*Table 6.1a* Description of variables

		Mean
Average Loan size	Total Loans outstanding ÷ Number of borrowers	16.09
Number of Borrowers		736.0
Interest Earned	Interest cost to customers (VND million)	861.4
Profit	Total profits of PCF after taxes (VND million) ÷ Number of borrowers	89.40
Cost	Total expenses of PCF (VND million) ÷ Number of borrowers	830.7
Risk	Non-performing loan ratio (%)	0.273
Age	Number of years the PCF has been in existence	11.76
Size	Total assets of PCF at year-end (2004 VND million)	7842.0
yd1-yd6	Year dummies	
d1	Dummy variable for Ha Tay province	

*Table 6.1b* Additional summary statistics

	Median	Std. Dev.	Min	Max
Average Loan Size	11.52883	14.0946	1.952686	127.2809
Number of Borrowers	672.5	530.0931	128	13119
Interest Earned	635.897	783.9355	40.02965	10471.88
Profit	52.44699	100.7941	0.683527	1330.729
Cost	583.6432	876.6013	0	9717.188
Risk	0.048272	0.457403	0	4.650028
Age	12	2.751494	1	17
Size	8649	14930.77	1684.737	176661

*Table 6.1c* Correlation among continuous variables

	Av. Loan Size	Interest Earned	No. Borrowers	Age	Profit	Cost	Risk
Av. Loan Size	1						
Interest Earned	0.7714	1					
No. Borrowers	-0.2344	0.3237	1				
Age	0.2345	0.4385	0.2718	1			
Profit	0.6858	0.7685	0.155	0.1896	1		
Cost	0.6049	0.7698	0.2665	0.3726	0.5517	1	
Risk	-0.0068	-0.0054	-0.0197	-0.0841	0.1107	-0.0948	1

*Note:* All variables except age and risk are in logarithms. Logarithm of cost is calculated as  $\text{LogCost} = \log(\text{cost} + 1)$  due to some PCF reporting zero cost.



## 4.2 Testing for mission drift

The focus in this study is on the depth of outreach as measured by average loan size, as it is an indicator for the degree of outreach of MFIs towards low-income clients.<sup>3</sup> For example, increasing depth of outreach could mean that the MFI reaches more clients in remote areas who represent poorest segments of society. Mission drift occurs when the average loan size of an MFI increases over time suggesting either the clientele has become financially better off resulting in a demand for larger loans or the MFI has moved into a new client segment that is less poor and have the ability to demand relatively larger loans. We also employ two alternative measures to analyze mission drift: interest cost to customers and number of borrowers. Figures 6.1 to 6.3 plot relationship between outreach measures and age of MFIs in our sample.

Casual inspection of Figure 6.1, plot of average loan size against the age of MFIs, shows that average loan size increases with increase in age, only over the latter part of the study period. The overall relationship appears mixed at best, and a discernible pattern indicating possible mission drift cannot be observed. This finding is consistent with Merland and Strøm (2010) where they find no evidence of mission drift in terms of depth analyzing the multi-country MFIs panel data of 11 years span. In Figure 6.2, we plot the number of borrowers against the age of MFI, and it does not show a clear pattern of declining number of borrowers over time to suggest a mission drift. In general, the two figures indicate

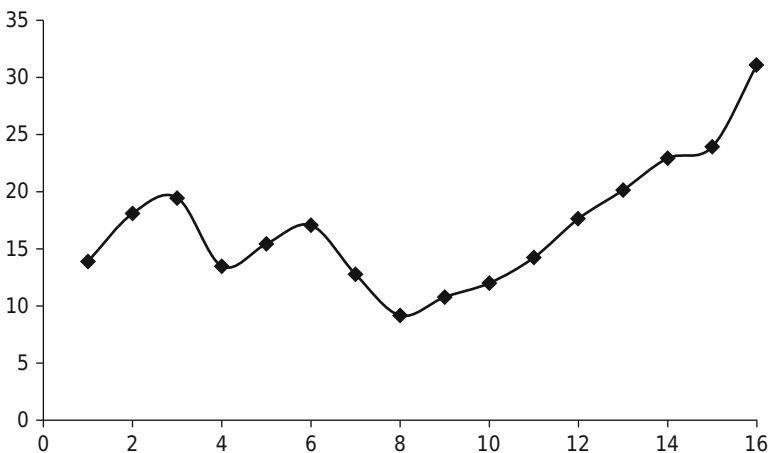


Figure 6.1 Average loan size (in million VND) by Age of PCF (in years)

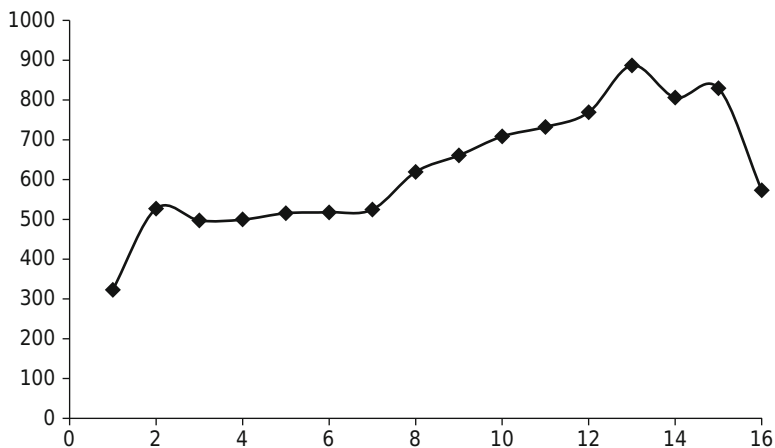


Figure 6.2 Number of borrowers by age of MFI (in years)

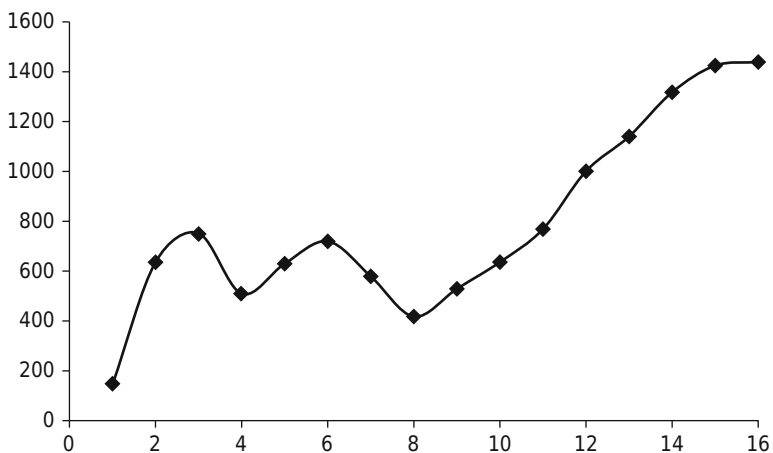


Figure 6.3 Interest earned by age of MFI (in years)

that the oldest MFIs tend to have larger average loan size and have a declining number of clients. Figure 6.3 describes the association of the interest earned by and age of MFI. For relatively ‘young’ MFIs there is no conclusive evidence of mission drift. However, for MFI older than eight years, the interest cost to customer is steeply increasing. As no clear pattern of mission drift emerges from the plots, a more careful

study is required to understand the dynamics and the behaviour of these variables.

### 4.3 Methodology

We employ a panel data analysis to investigate whether the phenomenon of mission drift exists in our data. We use two specifications. The first model is a static model of outreach similar to Mersland and Strøm (2008) and Mersland and Strøm (2010). Following Mersland and Strøm (2008) and Schreiner (2002), we employ alternative definitions of outreach in addition to average loan size. The model for a MFI  $i$  at time  $t$  can be summarized as follows:

$$Outreach_{it} = Profit_{it} + \beta_2 Cost_{it} + \beta_3 Risk_{it} + \beta_4 Size_{it} + \alpha_i + \lambda_t + u_{it} \quad (1)$$

where  $Outreach_{it}$  is one of the following measures of outreach: average loan size, cost to clients (measured by the interest revenue of MFI), or breadth of outreach (measured by number of borrowers). The model regressors consist of average profit per client, average cost per client, Risk (non-performing loan ratio), age, and size of MFI. All variables, except age and risk, are deflated using the national Consumer Price Index.<sup>4</sup> In the raw form, the loan, profit, and cost are measured per credit client and expressed in 2004 Dong.<sup>5</sup> The variable size stands for total asset size in 2004 Dong. We express all continuous variables except age in natural logarithm in the estimations in order to avoid linearity bias.

The time-invariant MFI specific characteristic (e.g., initial level of average loan size, micro-regional differences, etc.) may have significant impact on how loan size evolves over the age of MFI. Panel data models allow us to model this type of heterogeneity (e.g., unobserved time-invariant MFI specific heterogeneity) in the form of an individual specific intercepts,  $\alpha_i$ .

Depending on the assumption on the correlation between  $\alpha_i$  and other observable characteristics in the model (i.e., size, profit, cost, and age), we employ two estimation methodologies. Random effects (RE) estimation assumes that  $\alpha_i$  is uncorrelated with other variables in the model. Fixed effects (FE) estimation relaxes this assumption to let  $E(\alpha_i, X_{it}) \neq 0$ . We also control for time varying shocks that are common to all MFIs in the form of yearly dummy variables,  $\lambda_t$ .<sup>6</sup> Finally  $u_{it}$  is the random error disturbance and is assumed to follow a normal distribution with mean of zero and variance  $\sigma^2$ .

Our second model is a dynamic model of outreach that can be summarized as follows:

$$\begin{aligned} Outreach_{it} = & \gamma Outreach_{it-1} + \beta_1 Profit_{it} + \beta_2 Cost_{it} + \beta_3 Risk_{it} \\ & + \beta_4 Size_{it} + \alpha_i + \lambda_t + u_{it} \end{aligned} \quad (2)$$

Our main purpose of estimating model (2) is to circumvent limited information we are able to include in our model. Omission of relevant variables may mask the true effect of key variables. Although some relevant information might be missing from the model it is safe to assume that the impact of these missing factors are – albeit partially – embedded in the lagged dependent variable. Therefore, by including previous realization of the *outreach* variable as an additional regressor, we can control in large the omitted variable bias. A positive lagged dependent variable coefficient that is smaller than one implies that any exogenous shock that alters outreach will return back to its long run trend, not necessarily declining over time. The speed of ‘recovery’ depends on the magnitude of the parameter; larger lagged dependent coefficient is associated with slower recovery.<sup>7</sup>

The key variable associated with mission drift in the models is the age of MFI (age). When average loan size is the dependent variable a positive coefficient for age is evidence in support of mission drift since it would indicate that as MFIs age they drift towards ‘less poor’ clients. Similarly, a positive coefficient for age when cost to client is the dependent variable can be interpreted as evidence of mission drift in the sense that maturing MFIs limit access to funds by increasing the cost of borrowing. Finally, a negative coefficient of age when number of clients is used as the dependent variable is an indication of decreasing outreach as MFIs ages.

Model (1) and model (2) are estimated by allowing risk, profit and cost to be endogenous. The estimation methodology for the static model follows the 2-Step GLS strategy suggested by Balestra and Varadharajan-Krishnakumar (1987). The dynamic model is estimated using 2-Step System GMM approach suggested by Blundell and Bond (1998). The instrument set consists of exogenous variables in the model and the lagged values of the endogenous variables.

System GMM methodology combines the differenced equation with the levels equation in a stacked form in order to estimate the parameters of the model. The performance of System GMM estimator depends largely on the validity of instruments used. In our results section, we provide Sargan test for over identifying restriction (e.g., J-test) and the test for second-degree serial correlation for the errors.<sup>8</sup>

## 5 Results

Results of estimating the static models (model 1) using the random effects specification are summarized in Table 6.2. The age of MFI is insignificant for all choices of outreach. Thus, the static model with random effects suggests no evidence of mission drift. The impact of cost is significant and positive for the average loan size and interest earned models while profit is only significant at 10% for the interest earned model. Risk variable is not significant in any of the models. Insignificance of risk variable is consistent with the findings of Mersland and Strøm (2010) where they claim that the loan size and risk are not related. Size variable is positively related to average loan size and interest earned but only highly significant for the average loan size model. A positive association between size and average loan suggest that the larger well-established

Table 6.2 Static models of outreach: random effect results

	Average Loan Size	Interest Earned	Number of Borrowers
Profit	0.0848 (0.122)	0.418* (0.241)	0.377 (1.010)
Cost	0.140** (0.0633)	0.147** (0.0663)	-0.119 (0.213)
Risk	-0.193 (0.469)	-0.321 (1.024)	-1.035 (4.289)
Age	-0.0135 (0.0106)	-0.00156 (0.0165)	0.00211 (0.0663)
Size	0.262*** (0.0907)	0.223* (0.132)	0.216 (0.525)
d1	0.527*** (0.0655)	0.0512 (0.0527)	-0.545*** (0.138)
yd2	-0.243*** (0.0899)	-0.333*** (0.0924)	0.118 (0.324)
yd3	-0.191** (0.0769)	-0.234*** (0.0793)	0.206 (0.279)
yd4	-0.0993* (0.0579)	-0.170** (0.0753)	0.0281 (0.292)
yd5	-0.135*** (0.0335)	0.0191 (0.0244)	0.0435 (0.0640)
_cons	-1.010* (0.602)	2.060** (0.865)	4.125 (3.378)
N	692	692	692

Note: Standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . All continuous variables except age and risk are in logarithms. Logarithm of cost is calculated as  $\text{LogCost} = \log(\text{cost} + 1)$  due to some PCFs reporting zero cost.

MFIs tend to provide larger loans. Almost all annual dummies, except ones from the number of borrowers model, are statistically significant indicating shifts in economic environment from year to year.

The results from the static models using the fixed effect specification are presented in Table 6.3<sup>9</sup>. Estimation of fixed effects (FE) models provides no support for mission drift hypothesis for the models that use average loan size and number of borrowers; as the age variable used in these models is not significant. The result from the interest earned model supports mission drift, as the age coefficient is highly significant and positive. This implies that interest cost to its customers increase with the age of the MFI.

A general lack of significance in our static model result leads to the implication that unobserved specific factors of the MFIs are the main drivers of MFIs' lending process. One strong candidate for these unobserved factors is the initial level of average loan size that is unobserved for most of the MFIs in our sample. In order to control for the effect of the initial conditions and other time varying factors that cannot

*Table 6.3* static models of outreach: fixed effect results

	Average Loan Size	Interest Earned	Number of Borrowers
Profit	-0.435* (0.236)	0.333*** (0.100)	0.299 (0.219)
Cost	0.835* (0.429)	0.307* (0.182)	-0.518 (0.397)
Risk	-0.0109 (0.369)	0.0120 (0.157)	0.257 (0.342)
Age	-0.0171 (0.0493)	0.0938*** (0.0209)	0.0259 (0.0457)
Size	-0.0111 (0.223)	0.0988 (0.0946)	0.510** (0.206)
yd3	0.0104 (0.0445)	-0.0219 (0.0189)	-0.0335 (0.0413)
yd4	0.0469 (0.0331)	0.00988 (0.0140)	0.00762 (0.0306)
yd5	-0.185*** (0.0671)	0.0774*** (0.0285)	0.0670 (0.0622)
_cons	-0.690* (0.410)	1.139*** (0.174)	3.564*** (0.380)
N	692	692	692

*Note:* Standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . All continuous variables except age and risk are in logarithms. Logarithm of cost is calculated as  $\text{LogCost} - \log(\text{cost} + 1)$  due to some PCFs reporting zero cost.

be controlled by the static model, we employed a dynamic panel data model.

The dynamic panel data estimation results are reported in Table 6.4. Overall, the models seem to fit the data better than the static models. Lagged dependent variables in all models are highly significant, indicating a strong persistence in how MFI operate. This implies that our dynamic strategy is more appropriate to model mission drift. The positive and significant age coefficient in the model with average loan size

Table 6.4 Dynamic models of outreach

	Average Loan Size	Interest Earned	Number of Borrowers
Lagged Dependent Var.	0.592*** (0.0384)	0.240*** (0.0317)	0.472*** (0.0461)
Size	0.361*** (0.0469)	0.175*** (0.0268)	0.196*** (0.0372)
Profit	0.0299 (0.0338)	0.294*** (0.0295)	-0.0569** (0.0240)
Cost	0.0363 (0.0377)	0.00863 (0.00591)	-0.0983*** (0.0130)
Risk	0.0139 (0.0217)	-0.0859*** (0.0216)	-0.139*** (0.0195)
Age	0.0194* (0.0101)	-0.00441 (0.00516)	-0.0583*** (0.00963)
yd3	-0.0397* (0.0208)	0.0922*** (0.0119)	0.0831*** (0.0172)
yd4	-0.0440 (0.0334)	0.199*** (0.0201)	0.103*** (0.0321)
yd5	-0.252*** (0.0523)	0.378*** (0.0296)	0.121*** (0.0458)
yd6	-0.167** (0.0678)	0.342*** (0.0396)	0.167*** (0.0611)
_cons	-2.697*** (0.310)	2.049*** (0.229)	3.195*** (0.422)
N	692	692	692
#Instruments	56	50	56
<i>Tests</i>			
Sargan	55.34	60.31	52.02
AR(2)	-1.531	-0.919	-0.320

Note: Standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . All continuous variables except age and risk are in logarithms. Logarithm of cost is calculated as  $\text{LogCost} = \log(\text{cost} + 1)$  due to some PCFs reporting zero cost. The models were estimated via System GMM estimator.

as the dependent variable implies that mission drift may be present in our sample. When the number of borrowers is the dependent variable, after controlling for the dynamic nature of the lending behaviour, we find strong evidence that the age and number of borrowers are inversely related thus indicating mission drift. The effects of age on interest earned (interest cost to clients) has the *wrong* sign and is insignificant, which is in contrast to the finding from the static FE model. This suggests that static models may be misspecified and the evidence of mission drift in the static model may be due to omitted variable bias (which is partly controlled for in the dynamic model).

Furthermore, in the dynamic model estimation, the cost and profit are not related, to average loan size but are negatively related to number of borrowers. Unlike the results from the static model where there is no relation, in the dynamic model, risk has a negative relationship with interest cost and number of borrowers. As the risk, measured by the proportion of non-performing loans, increases the interest earned and the number of borrowers are expected to decline. The negative relationship between interest earned and risk is an indication that MFIs are lending to a less risky clientele, thus, implying mission drift. Similarly, the negative relationship between interest earned and age is an indication that MFIs are lending to a smaller client base implying mission drift. Additionally, the model of outreach with number of borrowers indicates similar results suggesting the presence of mission drift.

Inverse relationship between cost, operating costs per borrower, could be due to economies of scale. This, taken together with the inverse relation between the number of borrowers and profit, implies that the revenue per client also has a negative relationship with the number of borrowers. As decline in revenues to the MFIs could be beneficial to their clients, the situation could be consistent with no mission drift. A positive relationship between the number of borrowers and size is consistent with no mission drift as larger size results in larger clientele or outreach. However, risk is inversely related to the number of borrowers implying that MFI are moving towards a lower risk clientele over time suggesting mission drift.

Overall, during the study period, MFIs appear to be drifting away from clients with smaller loans towards having fewer and less risky clients with larger loans resulting in a fewer number of clients.

## 6 Summary and conclusion

While well recognized trade-off between financial sustainability and outreach of MFIs exacerbating the debate on the existence of mission



drift, this study attempted to bring forward some statistical evidence to this debate demonstrating that mission drift could, after all, be the reality in microfinance industry.

This study offers several contributions to the empirical literature on mission drift. First, we avoid potential noise from the cross-country data by focusing on a rich set of information drawn from two rural regions of Vietnam. Second, our sample consists of 149 PCF, small market base credit unions only minimally affected by international influences. Third, in addition to the static models common in the literature, we use dynamic panel data modelling to control for persistence in lending behaviour, endogeneity, and time varying omitted factors.

Our findings from the static model are largely consistent with earlier findings such as Mersland and Strøm (2010), Rhyne (1998), and Christen and Drake (2002), and find no evidence for mission drift. However, when we use a dynamic panel data model, most of our findings are in support of mission drift. When persistency in lending behaviour is controlled for the age of an MFI appears to have a positive impact on average loan size, interest cost to clients, and has a negative effect of number of borrowers. So using dynamic panel data model in the analysis of mission drift is the solid contribution of this study.

It goes without saying that there is much room to improve in current studies, including ours. Given the limitations posed by lack of data to precisely measure the attributes that we wish to model in this context, one has to be mindful of the following caveats when interpreting our results: Although the majority of the clients of PCF are considered to be poor, initially, PCFs are not formed to serve the lowest segment of the income distribution. Therefore, evidence found here is not applicable for the entire microfinance system in Vietnam. Moreover, any analysis of outreach remains incomplete without detailed information on borrowers at the individual level. Therefore, microfinance literature can greatly benefit from incorporating demographic and financial information on borrowers with detailed data on MFIs such as the one used in this study.

## Notes

1. Some of the important tools that can be used to implement good corporate governance are creating better management information systems, properly tailor products to the client needs, efficiently targeting clients, and properly constructing staff and client incentives.
2. See Hishigsuren (2004) and (2007) for more details.
3. Ideally, the average size of the first loans is an indicator of the poverty level of clients. Due to non-availability of data on first loans, we use average of all loans outstanding.

4. Using GDP per capita to standardize did not change the results. Also, removing outliers did not change the results significantly.
5. We use annual CPI to deflate the nominal values. The results were not affected when GDP per capita was the deflator. We also tested the robustness of the result to mission of outliers in the data.
6. We re-estimated models by removing the time dummies. The results were qualitatively similar. Here, we only report models with time dummies. We argue that since our data span multiple years, not controlling for year effects weakens our identification of mission drift. Moreover, time dummies are the only purely exogenous instruments in our model. Without them, Sargan test of over-identification often rejected the validity of instrument for our dynamic specifications.
7. For example, 0.6, implies that PCF with one unit larger average loan in the previous period is expected to have 0.6 unit larger average loan in the current period than a PCF with one unit less average loan in the previous period.
8. Both tests confirm validity of the instrument set used during the estimation.
9. We conducted the Hausman test to choose between random effect and fixed effect models; the test results were inconclusive. For the dynamic model we only ran a fixed effect model.

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