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The relationship between financial and social performances in microfinance: Insights from the provision of agricultural loans in Cambodia

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Abstract

Debates around microfinance have largely covered whether microfinance institutions are able to combine financial and social missions. However, most studies focus on common indicators, including the loan size or the proportion of women served. We suggest an alternative, forgotten measure: the provision of agricultural loans, since rural – and even more agricultural – businesses and individuals are typically more financially excluded and vulnerable. Using data on Cambodian microfinance institutions from 2010 to 2017, we find a positive relationship between profitability and the provision of agricultural loans. Our study suggests that more profitable MFIs tend to dedicate more attention to rural and agricultural clients, a central dimension of the microfinance business and, thereby, that there is a no counter-productive relationship between financial and social performance, when considering this aspect of outreach.

Résumé

La littérature a largement débattu la question de savoir si les institutions de microfinance sont capables de combiner des missions financière et sociale. Cependant, la plupart des études se concentrent sur des indicateurs classiques, notamment la taille des crédits ou la proportion de femmes servies. Nous proposons une mesure alternative et oubliée : l'octroi de crédits agricoles, puisque les entreprises et clients ruraux - et encore plus agricoles - sont généralement plus marginalisés et vulnérables. Via des données sur les institutions de microfinance cambodgiennes de 2010 à 2017, nous trouvons une relation positive entre la rentabilité et l'octroi de prêts agricoles. Notre étude suggère que les IMF plus rentables ont tendance à dédier une plus grande attention aux clients ruraux et agricoles, une dimension centrale du modèle d'affaires de la microfinance et, ainsi, qu'il n'y a pas de relation contre-productive entre les performances financières et sociales, lorsque cet aspect de la mission sociale des IMF est considéré.

1. INTRODUCTION

In the 70-80s', microfinance emerged as an innovative channel to finance poor and unbanked households with new methodologies and principles (Armendáriz and Labie 2011). Today, microfinance is a diverse industry extending formal financial services to low-income families and small businesses (Mersland and Strøm 2013) and serving more than 200 million clients (Reed 2015). More and more, the NGOs that initiated the industry have commercialized and transformed into organizations driven by a double bottom line: pursuing simultaneously financial sustainability and social goals such as financial inclusion or poverty alleviation, among others (Morduch 2000). However, just like for any hybrid organization, this leads to combining a priori opposing objectives (Ménard 2004). One question has thus animated the literature for years: are MFIs able to reach financial sustainability while at the same time targeting the poor, or do they – voluntarily or not – favor either of these goals? Part of the literature has claimed that, while announcing serving the poor, MFIs may deviate from their mission by focusing on wealthier clients, a phenomenon known as mission drift (Armendáriz and Szafarz 2011).

Although the literature has addressed this issue, it is still particularly divided (Reichert 2018). Most papers focus on particular dimensions of outreach, especially the average loan size or the proportion of women clients served. However, using these variables may be tricky and may not perfectly reflect drifts away from social missions. Consequently, we adopt another perspective. This paper addresses the relationship between financial and social performances through the provision of agricultural loans by MFIs. Funding rural and agricultural activities has always been at the core of the microfinance business, but it has also been considered as one of the main challenges and "unmet demands" of the sector (Morvant-Roux 2011). Although non-agricultural or rural clients may still be marginalized, poverty is typically deeper in rural areas (World

Bank 2008). In the meantime, remote rural areas in developing countries typically present lower levels of accessibility and servicing. Additionally, poor households are likely to engage in a mix of livelihoods, including agricultural activities, to reduce vulnerability to shocks (Ellis 2006). Therefore, by providing more agricultural loans, MFIs can reach more marginalized clients, and consequently stick more to their social mission (Schreiner 2002). Yet, the literature is almost silent on the provision of agricultural loans by MFIs and the implications for their business model (Hermes and Hudon 2018).

To address this gap, we applied panel data analysis to detailed data on Cambodian MFIs retrieved from the National Bank of Cambodia. Our results suggest that improved financial performance positively affects the provision of agricultural loans. This suggests that more profitable MFIs tend to dedicate more attention to funding agricultural (and so, rural) activities. Thereby, our study suggests no counterproductive relationship between social and financial outcomes within Cambodian MFIs, when using the provision of agricultural loans. Doing so, we contribute to the financial inclusion and development literature by providing insights to the debate on the relationship between financial and social performance, by mobilizing a barely studied indicator. We also contribute by emphasizing the critical need to support rural areas and agricultural businesses via financial services in the quest for sustainable development.

The rest of the paper is structured as follows. Section 2 presents a literature review on the relationship between financial and social performances in microfinance, the measurement of performance, and the use of the provision of agricultural loans as a dependent variable. Section 3 is then dedicated to research design and hypotheses. Section 4 describes the data. Section 5 presents the results. Finally, Section 6 concludes.

2. MICROFINANCE AND PERFORMANCE DIMENSIONS AND MEASUREMENT: A LITERATURE REVIEW

2.1 MICROFINANCE AND FINANCIAL AND SOCIAL PERFORMANCES: TWO SCHOOLS OF THOUGHT

Just like for many hybrid organizations, the literature is divided on the question of the relationship between financial sustainability and *outreach*, that is, the social impact of MFIs. On the one hand, a first school of thought has argued that both can be pursued simultaneously (Woller, Dunford, and Woodworth 1999; Helms and Reille 2004; Hermes, Lensink, and Meesters 2011; Nurmakhanova, Kretzschmar, and Fedhila 2015). According to this approach, known as *institutionist*, financially sustainable MFIs better achieve their social mission thanks to economic efficiency. In the long-run, this helps MFIs scale-up and provide more excluded people with financial services (Beisland, D'Espallier, and Mersland 2017). Efficiency, especially, enables MFIs to reduce costs and to lower interest rates, to the benefit of poorer clients who benefit from a better access to financial services (Fuertes-Callén et al. 2015; Al-Azzam and Parmeter 2021). Additionally, according to this view, MFIs must become self-sufficient since subsidies may be neither eternal nor unlimited (Hudon and Traca 2011). Muhammad Yunus himself, founder of the pioneer Grameen Bank from Bangladesh and commonly considered as one of the fathers of microfinance, considers that it is possible to both break even and generate a small profit without focusing solely on financial matters (Yunes 2011). Investigating mission drift at a macro-level and using a large multi-country dataset, Mersland & Strøm (2010) found that the sector has not shifted to wealthier clients over time. They even found synergies between financial and social performances. In addition, in their empirical study including both financial sustainability and outreach as endogenous variables, Nurmakhanova, Kretzschmar, and Fedhila (2015) argue that the pursuit of financial performance does not jeopardize the social mission.

On the other hand, another vein of the literature has long been opposed to this view. Serving poorer clients is costlier as unit costs are higher for smaller loans (Conning 1999). According to this view, there is, by nature, a trade-off: MFIs cannot pursue financial sustainability or profitability while, in the meantime, serving the poorest clients. This has been exacerbated in light of scandals related to institutions considered as excessively profitable, the most famous one being the case of "Compartamos" (Hudon 2010). As opposed to institutionists emphasizing financial sustainability as an instrument to achieve outreach, this view is known as the "*welfarist*" approach and focuses on the extent to which an MFI reaches clients as poor as possible (Schreiner 2002). Halilbasic and Crnkic (2010) argue that financial sustainability and growth do not unconditionally mean better benefits for clients. Indeed, diverse factors like competition, commercialization, technological change, regulation or experience drive MFIs to target wealthier clients and to drift away from their social mission to preserve financial sustainability (Assefa, Hermes, and Meesters 2013; Beisland, D'Espallier, and Mersland 2017). On the contrary, focusing on social performance would deteriorate efficiency (Gutiérrez-Nieto, Serrano-Cinca, and Mar Molinero 2009). From an empirical perspective, studies provide evidence that MFIs focus more and more on financial performance, through an increasing attention given to wealthier clients. For instance, Cull, Demirgüç-Kunt, and Morduch (2007) found that larger average loans are associated with lower average costs for institutions using individual as well as group lending, this way advocating for the existence of disincentives for targeting clients as poor as possible. In addition, they show that larger lenders focus on wealthier clients and lend less to women. Kipesha and Zhang (2013) found that focusing on profitability damages East African MFIs' outreach. In addition, Hermes, Lensink, and Meesters (2011) also found that MFIs become less efficient when serving poorer clients.

2.2 PERFORMANCE DIMENSIONS AND THE USE OF AN ALTERNATIVE MEASURE: AGRICULTURAL LOANS

Financial sustainability and outreach are both essential, the first for MFIs' long-term operations, the latter as guarantor

of the social impact. Yet, in spite of the impressive number of papers discussing performance in microfinance, the literature does not present a formal consensus, neither on the relationship between financial performance and outreach, nor on the optimal measures to use, which reveals the current research gap on this issue (Hermes and Hudon 2018; Reichert 2018). Indeed, assessing MFIs' performance is not easy, given the common lack of information, especially regarding social aspects (Gutiérrez-Nieto, Serrano-Cinca, and Mar Molinero 2009). Additionally, both financial and social performances are multi-dimensional (Hermes and Hudon 2018; Reichert 2018).

On the one hand, as for financial indicators, microfinance papers follow the traditional measurement of profitability or portfolio quality from the banking literature, but also relates to microfinance-specific measures, just like by looking at *self-sustainability*, MFIs' ability to cover costs through lending operations. Self-sustainability includes for instance the operational self-sufficiency (OSS) ratio. Portfolio quality is also essential, since a poor portfolio quality will lead an institution to bankruptcy, even more in microfinance, where defaults may rapidly cause "borrower runs" through "contagion effects" (Bond and Rai 2009). Therefore, MFIs generally assess portfolio quality thanks to the ratio of non-performing loans (loans with arrears) on the total of outstanding loans.

On the other hand, social outreach refers to the benefits that MFIs provide to their poor and unbanked clients (Schreiner 2002). Generally, *breadth*, the number of clients reached, and *depth* of outreach, their "level of poverty", are used to measure social performance. Depth is generally proxied by the average loan size or the percentage of female clients. Some authors use the average loan size divided by the gross national income for allowing comparisons between countries (Cull, Demirgüç-Kunt, and Morduch 2007; Ben Soltane 2012). Less frequently, the average size of deposits is considered as an indication of poverty, but it suffers from the low proportion of MFIs allowed to take deposits (Hermes and Hudon 2018).

Although they are common, using these variables may be tricky and not always related to high social performance scores (Beisland et al. 2020). Loan sizes, for instance, can vary for reasons unrelated to poverty levels, including the need for cross-subsidizing[1] loans (Armendáriz and Szafarz, 2011), lending methodologies (Paxton 2007), the use of "*progressive lending*" (Armendáriz and Morduch 2010), or risk-taking strategies adopted by MFIs in response to regulatory changes (Caballero-Montes, Godfroid, and Labie 2021). Additionally, not all MFIs consider targeting women in their mission statement (Mersland, Nyarko, and Szafarz 2019). Moreover, although targeting women has been important in the microfinance industry, outreach goes much beyond this dimension.

We address the relationship between financial performance and outreach through the provision of loans to agricultural businesses. Doing so, we study a central - yet surprisingly forgotten - dimension of the microfinance business (Hermes and Hudon 2018), for several reasons. First, rural areas typically contain deeper poverty than urban ones (Navajas 2000; World Bank 2008). Indeed, rural areas are often considered as areas comprising less than 10 000 inhabitants (Paxton 2007), and they are generally characterized by a low population density, scattered housing, and a lower literacy level (Dellien and Lynch 2007; Lapenu 2008).

Second, given the additional costs and risks they entail, agricultural businesses are more difficult to serve than non-agricultural, rural clients, (Morvant-Roux 2008; Niyongabo and Périlleux 2010; Bastiaensen and Marchetti 2011; Hartarska, Nadolnyak, and Shen 2015). Hence, although most clients of MFIs may be marginalized to a certain extent, rural clients are typically among the most marginalized, and "the majority of peasants in developing countries are still excluded from access to financial services" (Morvant-Roux 2011, 421). Therefore, if MFIs provide more agricultural loans, it is likely that they will increase their depth of outreach and consequently stick more to social objectives (Navajas 2000; Schreiner 2002)[2]. Yet, unfortunately, MFIs tend to locate in districts characterized by higher levels of human development, commercial activity and population density; typically: urban areas (Vanroose 2015). This reflects a potentially more commercial approach and this is a bit of a paradox, knowing that environments with "larger rural population and/or agricultural sector predict dramatically lower default" (Ahlin, Lin, and Maio 2011, 106). Indeed, rural clients generally associate a higher value to financial services (as their access is often more limited) and may have a stronger social cohesion, which benefits to MFIs, especially for lending.

Third, because they are weather-dependent, timely constrained, and hardly adaptable, rural clients are likely to be among the most vulnerable. Indeed, while agricultural businesses often represent one of the main industries in developing countries, they are also often left to poor smallholder farmers, largely exposed to harsh weather conditions and severe losses of livelihoods (Ellis 2006).

Fourth, agriculture has long been pointed at as one of the key sectors for the fight against climate-related vulnerabilities and the increasingly urgent global concern of food security. Given the recent involvement of MFIs in "green" initiatives, including the provision of green microcredit and non-financial services such as awareness raising (Allet and

1 *Cross-subsidization* refers to targeting wealthier customers to compensate the additional costs entailed by serving poorer customers in order to be able to reach more of them.

2 As an example, the rural and agricultural aspects are even included in some social performance evaluation schemes such as Microfinanza Rating's (MFR) social audits, or the Universal Standards established by the Social Performance Task Force.

Hudon 2013), and given the increasing need for providing adapted funding to smallholder farmers (Morvant-Roux 2011), using this alternative indicator may also inform on this other, non-financial aspect of performance.

3. RESEARCH DESIGN AND METHOD

Based on our literature review, we identified two hypotheses reflecting the two schools of thoughts discussing the implications of financial performance for social outreach. Referring to the *welfarist* approach, MFIs may seek to target wealthier clients when getting more profitable or more efficient. Therefore, improved financial performance should be negatively linked to the provision of agricultural loans (*Hypothesis 1*). In such a case, we could argue that the phenomenon of mission drift occurs. On the contrary, referring to the *institutionist* view, financial performance should help MFIs reach more marginalized clients. In this case, better financial performance should be positively linked to the provision of agricultural loans (*Hypothesis 2*). In such a context, mission drift could not be argued, at least when considering the provision of agricultural loans.

To investigate these hypotheses, we use the following model:

$$\begin{aligned} AGRI_{i,t} =& \alpha_{i,t} + \beta_1 ROA_{i,t-1} + \beta_2 OSS_{i,t-1} \\ &+ \beta_3 DISPERSION_{i,t-1} + \beta_4 NPL_{i,t-1} \\ &+ \beta_5 SAVINGS_{i,t} + \beta_6 i,t + \beta_7 SUBSIDIES_{i,t} \\ &+ \beta_8 FOREIGN_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

Where $AGRI_{i,t}$ is the dependent variable and refers to the amount of agricultural loans provided by MFI i in year t, divided by its total loan portfolio in year t. In terms of exploratory variables, we include indicators of several financial performance dimensions:

- $ROA_{i,t-1}$ is the Return on Assets ratio of the MFI i for the year t-1;
- $OSS_{i,t-1}$ is the Operational Self-Sustainability ratio of the MFI i for the year t-1; computed as the operating revenues divided by the sum of financial expenses, loan-loss provision expenses and operating expenses;
- $NPL_{i,t-1}$ is the Non-Performing Loan ratio of the MFI i for the year t-1, computed as the proportion of loans with arrears in total portfolio[3];
- $DISPERSION_{,t-1}$ is a measure of the dispersion strategy of the MFI i for the year t-1, computed as the number of staff divided by the number of branches. The higher the ratio, the higher the concentration of the staff in branches. This shows the proximity an MFI has with clients;

To avoid reverse causality, we lagged all the financial performance variables. This way, it is unlikely that the provision of agricultural loans in year t will influence financial performance in year t-1, while it is likely that financial performance in t-1 influences the lending strategy in year t. Additionally, since ROA and OSS refer to similar concepts applied respectively in the banking and microfinance literatures, we will run two separate models, each of these using either ROA or OSS (Table 3).

Finally, we also considered classical control variables which were available in the data and that control for several organizational aspects that are likely to affect MFIs' lending strategy:

- $SAVINGS_{i,t}$: a dummy indicating whether MFI i collects deposits in year t, a proxy to determine whether MFI is regulated or not.
- $SIZE_{i,t}$: the size of MFI i in year t, measured by the number of branches;
- $SUBSIDIES_{i,t}$: a dummy variable indicating whether MFI i receives grants in year t;
- $FOREIGN_{i,t}$: the percentage of foreign shares in MFI i's capital in year t.

Regarding estimation techniques, we first use standard OLS regressions. Going further, we then ran both Breusch Pagan and Hausman tests, to appreciate whether panel data estimation techniques should be used. While the Breusch Pagan test indicated that panel data are to be used, the Hausman test indicated that the null hypothesis of absence of fixed effects must be rejected. Therefore, we applied fixed-effect regressions for both models.

With this methodological approach, we seek to identify the relationship between key financial performance indicators and the provision of agricultural loans by MFIs. Adopting this causal perspective, we follow a solid part of the literature studying the relationships among different dimensions of performance in microfinance (Cull, Demirgüç-Kunt, and Morduch 2007; Mersland and Strøm 2010; Reichert 2018; Ayayi and Wijesiri 2022), including the literature on trade-offs (Reichert 2018). Indeed, identifying a causal relationship between financial and social performance entails identifying inherent synergies or oppositions between these dimensions (Swain and Ranganathan 2021). Some specific studies use different methodologies, either based on data envelopment analyses (DEA) (Kaur 2016), composite indexes (Paxton 2002), or even more conceptual approaches (Hudon, Labie, and Reichert 2018). Yet, these techniques may primarily pursue a different purpose than our study (i.e. quantifying the level of financial and/or social performance of efficient MFIs), or cannot be used because of variable- or data-related constraints. We still discuss some of these studies in the final part of our paper, in order to suggest some avenues for future research.

3 Here, non-performing loans are computed for the overall portfolio since our dataset does not distinguish loans by type of industry or business. Yet, just like for the other explanatory variables, the overall performance of an MFI is likely to affect its strategic decisions, including the choice of targeting more or less agricultural segments.

4. DATA AND COUNTRY CONTEXT

We focus on the Cambodian microfinance market. Cambodia is one of the countries that developed the most, in recent years, in the microfinance landscape. While it counted around 20 MFIs in the early 2010s, there is now almost 100 MFIs registered under the Cambodia Microfinance Association[4]. In 2018, the microcredit market represented 20% of the money lent in the country (NBC, 2018) and more than 9 billion USD (M-CRIL 2019), almost four times the market's outstanding portfolio from 2012 (Chandran 2019). This development has been supported by the commercialization of the sector in the last decade and the increasing competition in the market. Today, Cambodia is seen as one of the most saturated markets worldwide (MIMOSA, 2015) and, although regulators took some actions to attempt to slow down this potentially excessive growth (Caballero-Montes, Godfroid, and Labie 2021), the lack of client renewal has led observers to alert on indebtedness and related client protection issues (Brickell et al. 2020; Green and Bylander 2021).

The Cambodian market is a relevant case for our research. First, commercialization and the quest for financial sustainability in Cambodia is certainly one of the strongest worldwide. Hence, studying how financial performance affects the business model of MFIs in this country is relevant. Second, Cambodia is a relatively dense country, both in terms of population and in terms of the presence of MFIs. The rural population still represents three quarters of the national population (World Bank 2022), who largely depend on agricultural livelihoods (Suy, Choun, and Chhay 2018). However, while agriculture represents more than 20% of the GDP and is frequently identified as one of the key enablers of the country's (rural) development, access to finance is still the major obstacle to the development of small farmers and agribusinesses, with only 9.4% of formal finance addressed to such businesses[5] (Asian Development Bank (ADB), 2021). In such a context, better understanding how to support agriculture and smallholder farmers is essential for supporting the country's (rural) development. Third, the rapid growth of the sector has led regulators, support international organizations, and academics to alert on the need for not losing sight of outreach and the social mission of the industry.

In order to test the hypotheses mentioned above, we built a panel dataset based on open data retrieved from the National Bank of Cambodia[6] (NBC) for 2010-2017. This dataset gathers MFI-level data for all Cambodian MFIs registered by the NBC. Since a different number of institutions was registered every year, our panel is unbalanced. Each year, the number of MFIs has increased, with 23 institutions in 2010 and 76 in 2017.

Tables 1 and 2 present summary statistics of dependent, explanatory and control variables, and correlations, respectively. We use as outcome variable the provision of agricultural loans by MFIs. As discussed in Section 3, although non-agricultural clients are likely to be marginalized, they are also likely to be less financially excluded and/or poor than their agricultural counterpart, since agricultural loans are typically provided in rural areas. These areas typically concentrate poverty, vulnerability of livelihoods to weather and climatic hazards, remoteness, and costly accessibility (Morvant-Roux 2011). In our sample[7], MFIs dedicate on average 22% of their money lent to agricultural clients. This seems relatively significant, since the other sectors financed by MFIs in our sample are trade and commerce (22%), services (9%), construction (5%), transportation (3%), and other sectors (13%), and since we observe a significant proportion of non-productive loans, with MFIs financing household-related activities for 26%.

Additionally, Cambodian institutions seem to be relatively well performing from a financial point of view over 2010-2017. As Table 1 shows, the average *ROA* is 29%, the *OSS* is above 1, meaning that institutions are on average sustainable, and the *NPL* ratio is relatively low, under 5%. Moreover, the average value for *DISPERSION* is 4,33, meaning that, on average, Cambodian MFIs have at least 4 agents per branch.

5. FINDINGS

Table 3 presents our models and results. First, our findings suggest a positive relationship between financial performance and the provision of agricultural loans. Indeed, in Model 1, no matter which estimation method is used, the ROA has a positive and highly significant influence. This means that a Cambodian institution being more profitable is likely to use this additional profitability to reach out more agricultural businesses. As these clients are more difficult to reach and generally considered as among the most marginalized, it seems that better financial performance allows the institution to improve its outreach. Therefore, we argue that our results suggest a synergistic relationship between both dimensions of MFIs' performance. All in all, from this perspective, the gains Cambodian institutions make through improving their activity seem to be retroceded, at least partly, to agricultural and/or rural clients.

In Model 2 using the OSS as profitability variable, we observe that the ratio has also a significant and positive influence on the provision of agricultural loans in the OLS re-

4 For more details on CMA member MFIs: https://cma-network.org/our-members/member-profile/.

5 The ADB (2021) particularly stresses high collateral requirements, high-interest short-term loans, the lack of credit history, and low financial literacy.

6 For more details on the data: https://www.nbc.org.kh/english/economic_research/mfis_reports.php.

7 Unfortunately, we have MFI- and not client- or loan-level data. This allows us to provide overall details on the proportions of the industries financed, but not on the loans or clients, specifically.

Table 1. Variables: Summary statistics

Variables	Observations	Mean	Std. Dev.	Min	Max
AGRI	352	0,2200	0,2651	0,0000	1,0000
ROA	373	0,2880	1,9715	-0,9155	26,3340
OSS	272	1,0728	0,4432	0,0000	2,6855
DISPERSION	273	4,3364	4,3122	0,0283	27,7568
NPL	214	0,0445	0,0989	0,0001	0,7390
SAVINGS	359	0,2340	0,4240	0,0000	1,0000
SIZE	359	54,426	69,6044	0,0000	374,0000
SUBSIDIES	359	0,1643	0,3711	0,0000	1,0000
FOREIGN	357	0,4611	0,4444	0,0000	1,0000

gression, which confirms our previous result. When using a fixed-effect regression, the coefficient of OSS is not significant, but it is close to the 10% confidence threshold. OSS refers, to a certain extent, to a similar idea as ROA but it may nuance our results since, when institutions are doing better at covering their costs via their operational revenues (typically the interests they earn on loans), it is unclear to what extent they use this increased sustainability to serve clients who are more difficult to reach out and who represent higher costs.

Finally, the coefficient of SIZE is positive and significant throughout all models, suggesting that the larger the institutions, the more they focus on reaching out agricultural businesses. As in any industry, large firms may typically generate economies of scale, allowing them to be more efficient than small-scale operators and, at the end of the day, possibly more profitable. Indirectly, this supports the findings that we observed earlier.

All in all, be it through the ROA, and to a lesser extent the OSS, or indirectly via the effect of SIZE, our findings suggest a positive relationship between some financial performance indicators and the provision of agricultural loans by Cambodian MFIs.

6. CONCLUSION

More and more regulators, practitioners and academics point out the commercialization of MFIs and the risk of drifting away from the social mission they typically pursue. Overtime, the question of the ability to pursue simultaneously financial and social goals has been among the thorniest debates in the microfinance literature. Although there has been a proliferation of studies analyzing this question, the literature is still divided. Yet, addressing this question is key to better understand the impact of the industry and to make sure MFIs do not abandon their social objectives of financial inclusion by focusing too much on profits.

This paper contributes to the literature on microfinance by analyzing this question under the prism of the provision of agricultural loans, and by using data on a specific case: the Cambodian market. Rural – and even more agricultural – clients are among the most marginalized, since they are usually poorer and more financially excluded. Furthermore, MFIs usually consider these clients as costlier and riskier to serve. Agricultural livelihoods being particularly weather-dependent and subjected to climate hazards, such clients are also typically facing significant vulnerability. Lately, with the increasing attention dedicated to green microfinance, the importance of providing smallholder farmers with adapted financial and non-financial services has also been emphasized. Yet, surprisingly, research using the provision of loans to agri-businesses as an indicator to investigate the link between financial and social performances are scarce. Bridging this gap, we regressed the provision of agricultural loans on financial performance measures through various models that we applied to an original panel of Cambodian MFIs. Our results do not allow to argue for the existence of a counter-productive relationship between profitability (measured by the ROA) or self-sufficiency (measured by the OSS) and the provision of agricultural loans by Cambodian MFIs. On the contrary, we find that financial performance strengthens the provision of agricultural loans through direct profitability and, possibly, indirectly via economies of scale allowed by the size of MFIs. Extrapolating these results to the question of trade-offs in microfinance, we tend to argue that these results do not allow us to support the existence of a trade-off relationship between financial and social performances, at least when considering the profitability of a Cambodian institution and the extent to which it targets agricultural clients. On this basis, these results suggest that commercialization, or the search for sustainability, supports the social mission of MFIs.

Still, our research contains some limitations. First, although we used fixed-effect regressions to account for unobserved time-invariant effects, lagged our explanatory variables to avoid simultaneity issues, and mobilized several explanatory variables related to financial performance, further research may look at a larger and more detailed database to confirm the results that we highlighted here, possibly with additional variables, and with more sophisticated regression methods. Second, although the aim of our paper was to investigate the relationship between financial performance and the provision of agricultural loans, our contribution to the trade-off debate is indirect, since we adopted a causal perspective, without quantifying the synergistic relationship *per se*. Further research may deepen

Table 2. Correlations

Variables	AGRI	ROA	OSS	PROD	NPL	SAVINGS	SIZE	SUBSIDIES	FOREIGN
AGRI	1,0000								
ROA	0,1423**	1,0000							
OSS	0,2780***	0,0415	1,0000						
DISPERSION	0,2875***	0,0332	0,1862***	1,0000					
NPL	-0,2006***	0,0195	-0,3**	0,0451	1,0000				
SAVINGS	0,3512***	0,0722	0,1966***	0,4759***	-0,2517**	1,0000			
SIZE	0,3184***	0,0552	0,2524***	0,4952***	-0,2775***	0,6958***	1,0000		
SUBSIDIES	0,3486***	0,0585	0,1425**	0,3569***	-0,1920***	0,6426***	0,5093***	1,0000	
FOREIGN	0,1845***	0,0121	0,0526	0,4131***	-0,1823***	0,4474***	0,4012***	0,3546***	1,0000

Notes: *, ** and *** respectively show the 10%, 5% and 1% confidence levels

Table 3. Regressions of the provision of agricultural loans

	OLS		Fixed effects	
AGRI	Model 1	Model 2	Model 1	Model 2
ROA (lagged)	0.0256***		0.0055***	
	(0.0052)		(0.0005)	
OSS (lagged)		0.1219**		0.0687
		(0.0579)		(0.0451)
DISPERSION (lagged)	0.0058	0.0024	0.0052	-0.0008
	(0.0040)	(0.0044)	(0.0057)	(0.0036)
NPL (lagged)	-0.1821*	-0.0540	-0.0859	-0.0323
	(0.1012)	(0.1117)	(0.1591)	(0.1416)
SAVINGS	0.1010**	0.1036**	-0.0504	-0.0618*
	(0.0371)	(0.0474)	(0.0344)	(0.0370)
SIZE	0.0004*	0.0004*	0.0004**	0.0004**
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
SUBSIDIES	0.0824**	0.0814**	0.0211	0.0192
	(0.0371)	(0.0358)	(0.0335)	(0.0304)
FOREIGN	-.01070	0.0078	0.0745	0.0732
	(0.0320)	(0.0330)	(0.0718)	(0.0730)
Constant	0.1340***	-0.0013	0.1575***	0.1110**
	(0.0273)	(0.0331)	(0.0488)	(0.0478)
Observations	210	209	210	209
R^2	0.2912	0.2659	0.1690	0.1097
Prob > F	0.0000	0.0000	0.0000	0.0152

Notes: * p<0,1; ** p<0,05; *** p<0,01; estimations are robust to heteroskedasticity

our findings by quantifying this relationship, by mobilizing alternative methodologies, as discussed in Section 3, and possibly by investigating other countries and cases. Third, as explained by Hermes and Hudon (2018), social performance may not be fully reflected through unique indicators. Likewise, we think that diverse forms of mission drift may exist, just like gender, disabled, young, agricultural loans, or poverty-based mission drifts. Social performance is a multi-dimensional concept. Consequently, even though we shed some light on the use of an uncommon indicator, future studies may try to use composite indexes referring to diverse indicators of social performance, just like Paxton (2007) or Louis, Seret, and Baesens (2013), in order to have a more general and integrated perception of how financial variables influence social performance.

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