"Surplus Distribution in Microfinance: Differences Among Cooperative, Non-profit and Shareholder Forms of Ownership"

(Previous title: Productivity Surplus Distribution in Microfinance: Does Ownership Matter?)

Working Paper, September 2013

Anaïs Périlleux, Eddy Bloy and Marek Hudon

How do microfinance institutions (MFIs) allocate their productivity surplus to stakeholders? This paper shows that this allocation process varies according to the MFI ownership structure. Non-profit organisations and shareholders-held MFIs exhibit a tendency to largely keep their surplus within the MFI as a self-financing margin (reserve accounts, future investments, and capital increase) rather than transferring it to their clients (interest rates decrease) and their employees (salary increase). Cooperatives however tend to give the largest part of their surplus to the employees and providers. Finally, the paper discusses the importance of those findings for MFIs evaluation by policy makers.

Keywords: Microfinance, Surplus, Ownership, Cooperatives, Governance.

Productivity Surplus Distribution in Microfinance:

Does Ownership Matter?

Anaïs Périlleux

Faculté Warocqué (Université de Mons), CERMi, FNRS

Eddy Bloy

Université Lyon-1

Marek Hudon

SBS-EM (Université Libre de Bruxelles), CERMi, Burgundy School of Business

Abstract

How do microfinance institutions (MFIs) allocate their productivity surplus to stakeholders? This paper shows that this allocation process varies according to the MFI ownership structure. Non-profit organisations and shareholders-held MFIs exhibit a tendency to largely keep their surplus within the MFI as a self-financing margin (reserve accounts, future investments, and capital increase) rather than transferring it to their clients (interest rates decrease) and their employees (salary increase). Cooperatives however tend to give the largest part of their surplus to the employees and providers. Finally, the paper discusses the importance of those findings for MFIs evaluation by policy makers.

Introduction

The microfinance sector has grown spectacularly for the last ten years. Recent evidences show that many large microfinance institutions (MFIs) are becoming more efficient over time (Caudill *et al*., 2009). However, the identification of beneficiaries from these efficiency gains remains unclear. The current release of large databases allowing for the comparison of interest rate policies has challenged the "poverty-reduction focus" of non-profit organisations (NPOs) and their social impact. For instance, Cull *et al.* (2009) highlight that the highest lending rates are not charged by the most profit-oriented institutions but by NPOs, because of their cost structure and mission. Socially oriented NPOs charge more than profit-minded shareholder-firms (SHFs), which questions their legitimacy in the sector. Moreover, in a survey carried out on international practitioners, management quality and corporate governance have been pinpointed as the two main risks, among a list of fifty, facing the microfinance sector (CSFI Banana Skins, 2008).

The literature gives insights on the governance mechanisms at work in the microfinance sector (Hartarska, 2005; Labie, 2001, 2003; Mersland, 2009; Hartarska and Mersland, forthcoming). It elucidates the roles of the different stakeholders (Périlleux, 2008; Ashta and Hudon, 2009), investigates the social output (number of clients or average loan size) and financial performance according to the institutional form (Gutiérrez-Nieto and Serrano-Cinca, 2007; Mersland and Strøm, 2008; Gutiérrez-Nieto and Serrano-Cinca, forthcoming; Hermes *et al*., forthcoming). While this governance literature indicates how benefits are likely to be allocated among stakeholders, direct evidence is needed. Thanks to an original methodology based on the global productivity surplus theory, this paper offers new empirical results on that issue.

Contrasting with standard impact analyses making no distinction between institutional forms, this paper considers separately NPOs, SHFs and cooperatives (COOPs). It makes use of a database on 230 MFIs provided by microfinance rating agencies. The results firstly confirm that MFIs are globally improving their productivity surplus over time, which is in line with previous studies using stochastic-frontier analysis (Caudill *et al.*, 2009). Secondly, the evidences on wealth allocation and interest rate policy are twofold. On the one hand, contrary to COOPs, NPOs and SHFs mainly dedicate productivity surplus generated to gross self-financing margin (GSFM), by putting money in reserve accounts, and to future investments and capital growth. This trend is higher for SHFs than for NPOs. In all institutions though, a significant part of the surplus is allocated to the providers, especially for COOPs. Employees tend to be better paid in SHFs and COOPs than in NPOs, but SHFs' surplus does not go to the staff, unlike in COOPs and NPOs. Although NPOs charge higher interest rates, they tend to slowly decrease those rates when generating surplus, unlike COOPs and SHFs. On the other hand, the differences between NPOs and SHFs are only borderline significant and the trend goes towards harmonisation. As far as COOPs are concerned, differences are found significant and harmonisation is less expectable.

Some policy conclusions can be drawn. We find that NPOs and SHFs tend to largely keep their surplus within the MFI as a self-financing margin in order to grow faster or for their shareholders rather than decreasing their interest rates or increase the salaries. While this strategy may enable MFIs to reach potential borrowers faster, donors and investors should not forget that this can sometimes be detrimental to other stakeholders. As MFIs favour different stakeholders, policy makers and investors should keep away from judging MFIs performances on their impact on one or two key stakeholders, such as the shareholders or the clients. Moreover, the similarity of the benefit allocation principles between NPOs and SHFs indicate that the call for transforming NPOs or COOPs into shareholder-owned firms might well look

pointless. Finally, the GPS methodology could even be exploited as a supplementary methodology to gauge the social impact of MFIs since the various methodologies used until now do not offer similar information.

The rest of the article is structured as follows. Then next section reviews the literature on wealth distribution and the institutional forms of MFIs. Section 3 presents the global productivity surplus theory, its application to the microfinance sector, and its distribution among stakeholders. Section 4 presents the database and Section 5 discusses the empirical results obtained. Finally, the last section draws some conclusions.

1. Wealth distribution and institutional form of MFIs

Banco Compartamos lucrative IPO in 2007 has refuelled a historic debate in microfinance: the distribution of the profit generated by MFIs between their key stakeholders. Some consider that the huge profits of Compartamos enable fast growth, activities scaling-up, and subsequently mission fulfilling, namely offering cheaper credits than moneylenders. Others reply that it is unfair that shareholders get 21 times the paid-in-capital while interest rates charged to the borrowers were above the 80% and argue for a more equilibrated repartition between the MFI stakeholder[1] (Ashta and Hudon, 2009).

Donors, such as CGAP or the IDB, have long argued for the transformation of NGOs into share-capital companies in order to scale-up the microfinance sector (Ledgerwood and White, 2006). According to this view, NPOs and COOPs are weaker governance structures since they lack strong shareholders' control (Jansson *et al.*, 2004).Nevertheless, their weakness is due to two distinct reasons: in cooperatives, it is related to the dilution of the shareholder structure and to free-riding behaviours, similarly to traditional companies with a diluted shareholder

structure; whereas in NPOs, this low vigilance is often due to shareholders lacking personal financial stake in the organisation.

Moreover, NPOs would exhibit insufficient know-how and efficiency. For-profit and shareholders institutions are advocated because of their lower costs, governance designs, and openness to new investors (Mersland, 2009). Such arguments are however debatable as "mission drift" may arise among MFIs tending to work with less poor and more profitable clients.

While "mission drift" has been recently put upfront in the literature (Armendariz and Szafarz, 2009), the few empirical studies have provided contrasting results. Mersland (2009) find that contracts are generally costlier in SHFs than in COOPs and NPOs, while the costs of ownership-practice are lower in SHFs. Gutierrez-Nieto *et al.* (2007) find that NPOs are more cost-efficient in issuing a large number of loans. Caudill *et al.* (2009) similarly show that NGOs are not likely to reduce their cost over time, perhaps because most are not allowed to provide deposit services. Using mean-variance spanning tests, Galema *et al.* (2008) find that adding microfinance NGOs to a benchmark portfolio of international assets does not seem beneficial for a mean-variance investor, contrary to SHF. On the other hand, in her study on corporate governance in Eastern Europe and Central Asia, Hartarska (2005) detects no effect of the type of institution. According to Mersland and Strøm (2008), the differences between microfinance NPOs and SHFs are minimal on outreach and sustainability, and the SHFs' superiority in scale and scope is not related to ownership type but rather to the legal constraints on savings.

The microfinance sector is thus composed of a wide variety of institutions. Starting with COOPs, it evolved with the emergence of non-governmental (NGOs) or NPOs and then with SHFs. Organisational goals and missions often differ within the same ownership type. Nevertheless, they generally share some characteristics in terms of control. Hansmann (2004)

argues that the intrinsic differences between SHFs, COOPs, and NPOs lie in the control of the organisation and who receives the profit from it.

As explained by Mersland (2009), the shareholders of SHFs manage the organisation, decide how the profits are allocated, and are free to sell their privileges. In a COOP, members most often exercise the ultimate control and take the major decisions, through their voting rights. Contrary to SHFs where shareholders receive the proceeds from the operations, in COOPs the members receive proceeds either through dividends or through rebated prices on services. When they grow, large COOPs face the risk that some key persons might take advantage of the MFI at the expense of other members. In a NPO, even if several stakeholders influence the organisation, none of them can legally claim ownership of it or receive residual earnings from it (Labie, 2001; 2003, Mersland, 2009).

The clients-owners feature of COOPs facilitates their development in low-density areas (Chao-Beroff et al., 2000) where the credit business is too costly for NPOs. The commercialisation trend of microfinance activities, favouring SHF, has often put COOPs aside and created tensions in NPOs between their social and financial objectives.

Thus even if they share common goals, MFIs differ regarding the emphasis they put on financial and social missions, especially when they face trade-offs (Hermes *et al.*, forthcoming). The evaluation of MFIs is therefore confronted to finding a composite indicator taking into account the two bottom lines. The notion of surplus can play such as role since it is more extensive than profit. In MFIs the surplus may be captured by some stakeholders, e.g. employees, without any profit increase. Nevertheless, it may also be absorbed by owners or shareholders, if any, and increase profits. All stakeholders may not be fully satisfied since their expectations may differ (Mersland, 2009), those with the highest bargaining power become the most influential. The surplus theory might to some extent consider this variety of

stakeholders and their bargaining powers. The social dimension of MFIs justifies the preference for this *stakeholders* approach (through GPS) to productivity over the classical *shareholders* approach.

Surplus derives from two major sources. The first one is the cost-cutting on a number of factors. The second one is the improvement of productivity: "*the productivity-based surplus*" when an organisation reaches a higher production volume with the same quantity of production factors. It can also be understood as the "rent" extracted from a higher productivity of the input.

The "*global productivity surplus (GPS) theory*" was developed by the "Centre d'Etude des Revenus et des Coûts" (CERC) in order to evaluate the "productivity-based surplus" of public companies. The distribution of the wealth (or the surplus) has been little studied in the past except some studies on public or socially-oriented companies (Courbis and Templé, 1975; Burlaud and Dahan, 1987, Mbangala, 2001). The next section presents the GPS methodology and its application to microfinance.

2. GPS Methodology and its application to microfinance

The "global productivity surplus" (GPS) of a firm at time *t* is defined as the output quantity variation (between t and t-1) valued at the price prevailing in *t-1* minus the input quantity variation valued at the cost prevailing in *t-1*. Hence, GPS provides accounting evidence on the evolution of main cost and resource drivers. Unlike other methodologies traditionally used in microfinance to assess efficiency and productivity, such as input-output matrices, GPS does not require to model supply and demand interactions. Moreover, contrary to stochastic frontier analysis (Hermes *et al*., forthcoming; Hartarska and Mersland, forthcoming), translog cost function with cost share equations (James *et al*., 2009), and DEA (Gutiérrez-Nieto *et al*.,

7

2007), in GPS methodology efficiency (productivity surplus) is not measured against other MFIs but only against the firm itself. A concrete (accountable) distribution of the surplus is sought rather than the calculation of an optimal. Importantly, the GPS methodology provides evidence on how surplus is shared between the MFI's stakeholders, crucial information that other methodologies cannot provide. On the dark side, GPS offers no explanation on surplus performances, whether internal (for instance, due to the mission of the institution), or external (for instance, due to the environment or the donors).

A positive GPS means that the company has increased its productivity by making a better input/output combination: it has produced more than before with the same input quantity or the same as before with fewer inputs. Hence, the "global productivity surplus" formation can be expressed as such:

$$GPS = \sum \Delta Q_t \times p_{t-1} - \sum \Delta F_t \times f_{t-1} = \sum \Delta \text{Output (O)} - \sum \Delta \text{Input(I)} \qquad (1)$$

Where Q_t is the output quantity at time t, p_t is the output price at time t, F_t is the input quantity at time t, f_t is the input cost at time t, $\Delta Q_t = Q_t - Q_{t-1}$ and $\Delta F_t = F_t - F_{t-1}$. $\sum \Delta Q_t \times p_{t-1}$ is the sum of all outputs produced by the organisations, $\sum \Delta F_t \times f_{t-1}$ is the sum of all inputs used to produce the outputs.

Appendix 1 shows that GPS defined by (1) is equal to the surplus distribution:

$$\sum \Delta Q_t \times p_{t-1} - \sum \Delta F_t \times f_{t-1} = -\sum \left[\Delta p \times (Q_{t-1} + \Delta Q) \right] + \sum \left[\Delta f \times (F_{t-1} + \Delta F) \right] + \Delta GSFM = S^1 + S^2 + S^3 \quad (2)$$

Where $\Delta GSFM$ is the gross self-financing margin variation.

GPS thus sums the following elements:

- $-\sum\left[\Delta p \times\left(Q_{t-1}+\Delta Q\right)\right]$, which represents the surplus allocated to the *clients* (S^1). A negative, resp. positive, sign means that an increase, resp. reduction, of the output price generates a loss, resp. a gain, for the clients.

- $\sum\left[\Delta f \times\left(F_{t-1}+\Delta F\right)\right]$, which represents the surplus allocated to the *suppliers* of the company (S^2). A cost increase generates higher revenues for suppliers.

- $\Delta GSFM$, the gross self-financing margin variation, which represents the sum of benefit and depreciation variations (S^3). If this term is positive, it represents an enrichment of the company itself. This money can be put in reserve accounts, for future investments and capital growth, or allocated to the enrichment of the company's *shareholders*.

This analysis stresses the distinction between shareholders, who are the company owners, and stakeholders, who, according to the "General Agency theory", are all parties participating in the "coalition of interest" which permits the existence of the company (Hill and Jones, 1992). We can thus identify a "private value" of the company based on the GSFM variation and a "social value" of the company based on the surplus distribution between the three terms.

The surplus formation and distribution can also be presented under a "surplus accounts analysis". This accounts analysis enables to show the sources and the uses of productivity gains and thus their distribution. It allows to easily identify which stakeholders contribute to the value creation and which benefit from it.

Application to microfinance

We can now apply the GPS methodology to the case of microfinance institutions. We will go through the different concepts we have just explained and adapt them to the microfinance sector.

From (1), the expression of the GPS formation can be deconstructed into two main terms: the output and input variations. The output variation (O), $\sum \Delta Q_t \times p_{t-1}$, represents for MFIs the outstanding loan portfolio variation ΔOL_t at the previous year interest rate charged to the clients (i_{t-1}). We must also take into account the bad debt, i.e. clients who have a repayment delay, and therefore reduce the output. This is done by subtracting $\Delta OL_t \times pr_{t-1}$ from O, where pr_{t-1} is the provision rate for clients who are suspected not to repay.

The input (I), $\sum \Delta F_t \times f_{t-1}$, is composed of the suppliers of MFIs (the different parties bringing some input): funds providers, working force providers and other providers. There are two types of funds providers: savers and lending institutions. Concerning savers, deposits expenses are expressed as follows: $\Delta DE_t \times i''_{t-1}$, the variation of the deposit amount at the previous year deposit interest rate (i''_{t-1}). Concerning lending institutions, funding expenses are defined as follows: $\Delta D_t \times i'_{t-1}$, the variation of the funding amount at the previous year external lending interest rate (i'_{t-1}). Regarding working force providers, the expenses induced by employees can be noted as follows: $\Delta N_t \times s_{t-1}$, the number of employees variation multiplied by the previous year average salary. Finally, concerning other suppliers (the providers according to the accounting definition), it is impossible to make a differentiation between price and quantity variations. Due to this impossibility, these suppliers are not integrated in the calculation of surplus formation but are only considered in terms of value variation in the surplus distribution analysis.

Hence, it becomes for a MFI[2]:

$$\sum \Delta Q_t \times p_{t-1} - \sum \Delta F_t \times f_{t-1} = \left[\Delta OL_t \times i_{t-1} - \Delta OL_t \times pr_{t-1} \right] - \left[\Delta DE_t \times i''_{t-1} + \Delta D_t \times i'_{t-1} + \Delta N_t \times s_{t-1} \right] \quad (3)$$

$$\underbrace{}_{\Delta \text{Output (O)}} \qquad \underbrace{}_{\Delta \text{Input (I)}}$$

The surpluses generated by productivity gains are allocated between the different stakeholders of the MFI. Applied to microfinance, the equation (2) becomes:

$$S^1 = -\left[\Delta i \times (OL_{t-1} + \Delta OL) - \Delta pr \times (OL_{t-1} + \Delta OL) \right] \quad (4)$$

The clients' (borrowers) surplus (S^1) is estimated by the interest rate variation multiplied by the portfolio. The presence of a negative sign means that an interest rate decrease $(\Delta i < 0)$ generates a gain for the clients. This surplus must be corrected by the surplus gained or lost by bad debts: $\Delta pr \times (OL_{t-1} + \Delta OL)$, where Δpr represents the provision rate variation. The result is that an increase of the provision rate generates a gain for borrowers, in the sense that they have the potential to reimburse less.

In microfinance, there are four categories of suppliers: the savers, the lending institutions, the employees and the providers. Thus the surplus allocated to suppliers (S^2) can be deconstructed in:

$$S^2 = \underbrace{\Delta i'' \times (DE_{t-1} + \Delta DE)}_{\text{Savers}} + \underbrace{\Delta i'_{t-1} \times (D_{t-1} + \Delta D_t)}_{\text{Lending institutions}} + \underbrace{\Delta s \times (N_{t-1} + \Delta N)}_{\text{Employees}} + \underbrace{\Delta (f \times F)}_{\text{Providers}} \quad (5)$$

11

The surplus of savers is related to deposits (DE), the surplus of lending institutions to external funds (D) and both to their respective interest rate variations. Thus, an increase in interest rate on savings (i'') and/or on external funding (i') improves the savers' and/or funding institutions' position. The surplus of employees is related to the number of employees (N) and the salary variation (Δs): a salary increase generates a surplus gain for the employees.

The last category of suppliers is the providers. As explained, in this case, we cannot make any distinction between price and quantity variations. Thus we take into account the total variation in value of operating expenses: $\Delta f \times (F_{t-1} + \Delta F) + \Delta F \times f_{t-1} = \Delta(f \times F)$.

Finally, there is the surplus part going to the MFI (**S^3**), which partly represents the shareholders' surplus:

$$S^3 = \Delta GSFM \quad (6)$$

Thanks to this analysis, we can conclude that it is possible to identify the structure profile of productivity gains (sources and uses) of each microfinance institution.

[INSERT FIGURE 1 HERE]

3. Database

The GPS methodology is applied here to the financial statements of 230 MFIs. . The dataset is made of informations gathered by two leading microfinance rating agencies[3]: Microfinanza and PlaNet Rating. The MFIs were rated between 2002-2007 and include the balance sheets and income statement data, in addition to other variables such as the number of borrowers and employees, and indicators of operational and financial sustainability.

For most MFIs, the dataset includes observations for three years. Nevertheless, for the latest year in the sample, the data is not always measured in December. Therefore, in order to avoid

using financial statements from various months, we decided to consider the two most recent full years only. The financial statements we use constitute one of the most trustworthy source of information, since they have all been audited during the rating process (contrary to voluntarily released data provided in other databases).

The MFIs in our sample are amongst the largest and best-managed institutions in the world. Therefore, given the well-established concentration of microfinance clients (Honohan, 2004), our sample should be representative of the universe of microfinance activities. As a matter of facts, basic statistics obtained from our sample appear to be similar to those coming out the largest databases in microfinance. For instance the 890 MFIs in the 17th MicroBanking Bulletin [MBB] (MicroBanking Bulletin, 2008) yield an average Operational Sustainability of 115% compared to ours of 118%. The average number of borrowers is 11,041 for the MBB compared to 10,363 in our database; the average nominal yield of is 30% in the MBB and 34,6% in our database and, finally, the average staff productivity is 112 in the MBB while it is 127 borrowers per staff in our database. However, our database is biased to the disadvantage of smaller COOPs involved in microfinance. The average number of borrowers is over 7,000 borrowers. In comparison, a study including 147 of the largest COOPs in Uganda revealed that they only had 640 members on average.

Among the 230 MFIs in our sample, 113 are NPOs, 71 SHFs and 46 COOPs. Appendix 2 provides descriptive statistics about the performances per institutional type. Similarly to Mersland and Strøm (2008), we find that NPOs and SHFs exhibit close financial performances, especially for OSS and FSS, COOPs have slightly lower ratios. Geographically, 67 are located in Africa, 85 in Latin America, 42 in Eastern Europe, 22 in Central Asia and 14 in Asia.

The surplus for each stakeholder is calculated according to Eq. (3). The GNIs per capita, used to compare average loan sizes and salaries across countries, are taken from the World Development Indicators database.

4. The empirical analysis

The GPS theory makes two analyses possible. Firstly, GPS gauges the efficiency of an organisation in terms of productivity improvement. Namely, the "productivity-based surplus" signals whether the organisation has managed to generate a better input–output combination. Secondly, the surplus distribution analysis provides insights on the "stakeholders' game" and power relationships. Besides, the *productivity-based surplus* can be supplemented by "contributions" (a *non productivity-based surplus*) from some stakeholders registered as a loss in the distribution process.

In what follows, we compare the productivity assessment and the income policy of three types of microfinance institutions: NPOs, which should focus more on the social mission, SHFs, which care more for economic performances, and COOPs which are client-owned organisations.

Productivity assessment: the GPS formation

To compare efficiency across MFIs types, we calculate their respective GPS in US dollars (Table 1). For the three types of MFIs, GPS is positive indicating the presence of productivity gains to be allocated to stakeholders. This result is in line with Caudill *et al.* (2009) who use a mixture of cost functions and find that MFIs generally operate at lower costs over time.

The GPS differs according to the organizational type. On average, SHFs manage better improvements in terms of the input-output combination with a one-year productivity gain of

322 dollars, whereas the productivity gain of NPOs is less than half that amount. The gain for COOPs is slightly higher than for NPOs. Thus, on average, NPOs seem to make a lower effort to improve productivity.

Income policy: the GPS distribution and stakeholders power relationships

Concerning the surplus distribution between stakeholders, we have split the analysis into a static view and a dynamic perspective. Firstly, we examine the initial situation by comparing stakeholders' remunerations in absolute value. Secondly, we analyse the surplus amount gained or lost by each stakeholder across time.

Table 1 shows the values of the key indicators. Consistently with the literature findings, the NPOs significantly provide (on average) higher interest rates on their loans than SHFs. Also, COOPs offer significantly lower interest rates than the other MFIs.[4] Nevertheless, the average loan size (ALS) of NPOs' loans is lower, even when scaled by the GNI per capita. The NPOs loan policy thus generates higher costs (small loans are more costly to manage).

[INSERT TABLE 1 HERE]

Average loan size is often used as a proxy for the clients' poverty level. Thus, Table 2 indicates that NPOs tend to serve poorer clients than SHFs and COOPs. The latter are typically located in rural areas ignored by financial institutions (especially in West Africa) and serve a larger scope of clients sharing a common bond (location and/or activity). Thus they do not especially focus on clients' poverty level. This may explain why COOPs in our sample register a higher average loan size than NPOs and, to a lower extent, than SHFs.

[INSERT TABLE 2 HERE]

Concerning bad debts, Table 1 shows that, on average, NPOs have higher provision rates. This could mean that the risk of default (not being repaid) is higher for NPOs. However, it can also be due to the fact that, in some countries, the legislation imposes higher provision for NPOs.

Except for COOPs, interest rate on savings is not a relevant variable. Indeed, NPOs are generally not allowed to collect savings, and SHFs do rarely fund themselves through savings. In fact, in our sample only 48 out of the 184 non-COOP MFIs collect savings (24 NPOs, 24 SHFs). As far as COOPs are concerned, savings represent an important funding source (on average, 76% of the total liabilities) and a valuable financial service to members. On average, COOPs remunerate savings with an interest rate of 5.7% per year. Regarding external funding, all institutions face similar costs (the differences are not statistically significant).

Table 3 provides staff remuneration taking into account the national average standards of living by dividing salaries by GNI per capita[5]. NPOs hire more probably because they provide smaller loans to a large clients, what is time consuming for the credit officers. The SHFs more generous remuneration policy could be attributed to their need for experienced staff to manage more complex back-office tasks and larger loans. COOPS hire the less, maybe because they often benefit from (hidden) voluntary work. The COOP and SHF salaries look similar. However, this could be due to a selection bias in our sample as the COOPs are the biggest ones only (big enough to be rated by agencies). Branch and Backer (2000) find that COOPs are generally characterised by low remuneration policies and difficulties to attract skilled employees.

[INSERT TABLE 3 HERE]

NPOs exhibit lower "other operating expenses" (operating expenses minus the salaries) than SHFs and COOPs. Their activities thus seem to necessitate more workforce but less material investment. SHFs have higher net income than NPOs and COOPs.

Let us now consider to the dynamic perspective. Table 4 shows that no significant difference is found in the distribution of the surplus within NPOs and SHFs. On the contrary, some significant differences can be found with COOPs. Indeed, in NPOs and, even more, in SHFs the surplus distribution is oriented towards a GSFM increase meaning the possibility for further investments, and an increase in capital or shareholders' remunerations. No such trends are observed for COOPs that rather favour employees and providers.

Differences in scaling-up objectives provide a potential explanation. Actually, it was a major argument used by Compartamos to legitimate high interest rates. Indeed, growth can be seen as a goal in itself for socially-oriented shareholders of NGOs. Developing the MFI could mean reaching more clients and therefore increasing the social impact of its activities (Ashta and Hudon, 2009). This argument could explain why NGOs tend to allocate a large part of their surplus to self-financing margin, the reserve accounts that allow the financing of future investments. The surplus then goes to future clients rather than existing clients. In this case, NGOs behaves similarly to SHFs that also increase their self-financing margin, but as profits. This management policy in NGOs is coherent with their outreach mission, but could however lead to a mission drift in favour of wealthier clients and for-profit rationale.

On the other hand, strong growth objectives would be less present in cooperative management systems. Cooperative members who also own the institution could not have any reason to aim at larger institutions. Growth in the number of clients is often related to the influence of technicians (Fournier and Ouédraogo, 1996).

No significant difference is found in terms of distribution to the clients[6] and bad debts.

Concerning lending institutions, for the three types of MFIs, the surplus amounts are negative. This could mean that the lending conditions for MFIs are improving. This improvement could be due to the higher information transparency of MFIs and the increasing interest of international institutions in the microfinance sector.

[INSERT TABLE 4 HERE]

Regarding staff, COOPs' employees benefit greatly from the surplus distribution (11.47%). Indeed, their surplus is significantly higher than the employees' surplus of the two other types of MFIs. As explained, the literature on COOPs stresses the increase of the discretionary power of the technical staff as a possible consequence of the development of these organisations (Desrochers *et al.,* 2003). This observation can be explained by the ownership dilution with free-riding behaviours and the decrease in members' ability to control the more complex tasks of the employees (Branch and Baker, 2000). This lower staff control by members in wide COOPs can lead to "expenses preference" behaviours (Cuevas and Fischer, 2006). Also, the COOPs in our sample are among the largest ones in the microfinance sector, thus the employees-oriented surplus distribution might be explained by a power differential in favour of this stakeholder category.

Finally, regarding providers, the surpluses are positive for the three types of MFIs but in a higher proportion for COOPs (significantly higher than NPOs). Desrochers *et al.* (2003) stress that one of the main motivations for COOPs to restructure themselves into a network is to facilitate the input acquisition and increase their power of negotiation with providers. Nevertheless, we cannot draw any conclusions about this result because it is impossible to

identify whether it is due to a price increase of the material acquisitions or whether it is because MFIs have decided to acquire higher quantities.

As mentioned previously, the results give us some evidence of the distribution of the surplus but do not provide explanations on this distribution. It however gives some new evidence regarding wealth distribution that was never analysed in benchmarks such as the MicroBanking Bulletin.

5. Conclusion

While the microfinance sector is getting increasingly commercial, for instance through the transformation of some NPOs and COOPs into SHFs, the impact of the institutional form and ownership on social and economic performances is still much discussed in the literature.

We use the GPS methodology to analyse the creation and distribution of the productivity surplus between some main stakeholders of MFIs. The positive sign of the surplus account analysis confirms that MFIs are globally improving their productivity surplus over time, which is in line with other studies using efficiency indicators such as the stochastic-frontier. SHFs, and to a lesser extent NPOs and COOPs, have increased their productivity surplus. We also find that COOPs have significantly lower interest rates than the two other types of MFIs but a higher average loan size. No significant difference is found in terms of distribution to the client. Contrary to COOPs, SHFs and NPOs tend to prefer to keep a larger part of their surplus as self-financing margin. This can help them invest in the future, put it as reserve or probably increase the value of the MFIs. The surplus distribution in COOPs is more in favour of providers and employees. The latter might benefit from a wider discretionary space and the possibility of "expense preference" behaviours thanks to ownership dilution and weak member control in big COOPs.

Our results therefore provide some new insights on the difference between COOPs, NPOs and SHFs. Nevertheless, we acknowledge some limitations due to the methodology and the database. Firstly, while some trends are provided, the GPS methodology does not give any indication on the reasons behind these trends. Secondly, we only consider two years per MFI because of data constraints to have long series of reliable data. Further research, with a larger database could therefore give additional information, for instance on the volatility of the GPS according to the institutional form but also control the robustness of obtained results when we include other determinants of MFI performance.

However, this analysis of the distribution of the productivity surplus may give new food for thought for policy makers or more generally on the evaluation of MFIs. Firstly, while some MFIs prefer to favour one of their stakeholders, donors and investors should not forget that this can sometimes be detrimental to other stakeholders. For instance, NPOs and SHFs principally prefer to keep their surplus within the MFI to grow faster or for the shareholder rather than decreasing interest rates for the borrowers or increasing salaries. Policy makers and investors should thus take the various stakeholders of the MFIs into account and not focus on one or two, such as the shareholders or the clients. Secondly, the similarity of the benefit allocation principles between NPOs and SHFs suggests that the call for transforming NPOs or COOPs into shareholder-owned firms lacks foundation. Thirdly, the GPS methodology could even be used as an additional methodology to assess the social impact in the microfinance sector while the various methodologies used until now do not provide similar information.

Appendix :

Figure 1: Stakeholders interaction – surplus account variation
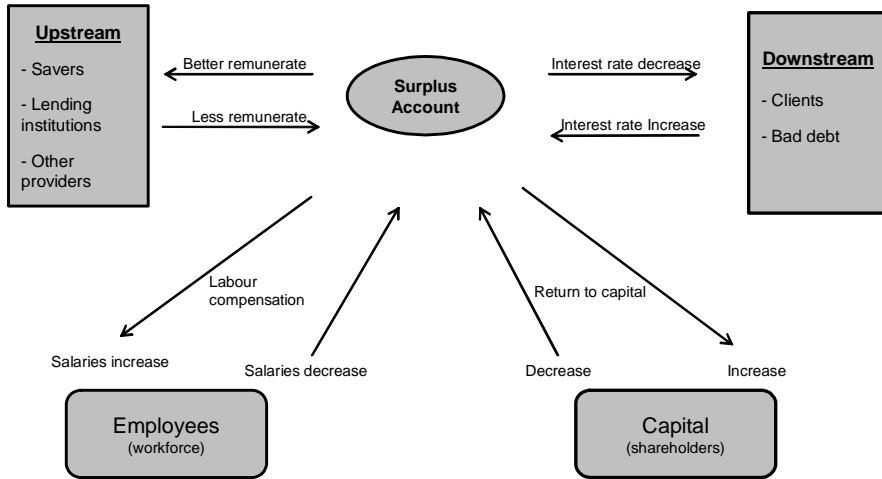
Table 1: Key indicators

	NPO (N= 113)		SHF (N 71)		COOP (N= 47)		Z-stat		
	Mean	Std	Mean	Std	Mean	Std	NPO-SHF	NPO-COOP	SHF-COOP
GSP	142 632	830 343	322 301	431 885	188 407	417 662	3,45***	0,46	1,67*
Interest rate on credit	39,3%	0,2003	33,8%	0,1760	24,7%	0,1978	1,94*	4,19***	2,54**
Provision rate	4,1%	0,0985	2,5%	0,0437	2,9%	0,0548	1,51	0,97	0,43
Interest rate on savings	0,7%	0,0366	1,0%	0,0243	5,7%	0,1567	0,65	2,14	2,02*
Interest rate on external funds	7,8%	0,2449	7,1%	0,1250	10,1%	0,2620	0,26	0,51	0,72
Average salary/employee (USD)	6 349	3 998	7 526	5 154	7 458	17 266	1,64*	0,43	0,03
Other operating expenses (USD)	279 698	374 722	325 406	321 235	402 614	727 947	0,88	1,09	0,68
Net operating income (USD)	141 150	520 369	293 092	614 522	71 305	400 570	1,73*	0,91	2,36**

Significance levels: *10%; **5%; ***1%

- *Interest rate on credit* is the division of the "financial revenue from loan portfolio" by the "outstanding loan portfolio".

- *Provision rate* is the "net loan loss provision expenses" divided by the "outstanding loan portfolio".

- *Interest rate on savings* is calculated by dividing the amount of "interest paid on deposits" by the sum of the different types of deposits ("demand deposits", "compulsory deposits", "short term" and "long term time deposits").

- *Interest rate on external funds (financial debts)* from lending institutions is defined by the sum of the "interest paid on borrowings" and the "other financial expenses" divided by the "financial debts".

- *Average salary/employee* is calculated by dividing the "personnel expenses" by the "number of employees".

- *Other operating expenses* are the "operating expenses" minus the "personnel expenses"

- *Net operating income* is the "financial income" (total financial revenues minus total financial expenses) minus the "net loan loss provision expenses" and the "operating expenses".

Table 2: Average loan size (ALS) per type

MFI type	ALS in US dollars	ALS/GNI per capita
NPO	648	0.19
SHF	914	0.29
COOP	1,496	0.51

Table 3: Staff expenses per type

MFI type	Average salary/employee in US dollars[7]	Salary/GNI per capita	Average number of staff
NPO	6,349	2.04	85
SHF	7,526	2.36	74
COOP	7,458	2.30	65

Table 4: Surplus distribution per type

	NPO (N=113)		SHF (N= 71)		COOP (N=47)			Z-stat	
	Mean	Std	Mean	NPO-SHF	NPO-SHF	NPO-SHF	NPO-SHF	NPO-COOP	SHF-COOP
Clients	3,82%	0,6149	-3,53%	0,8820	-3,86%	0,6141	0,6139	0,7203	0,0246
Doubtful clients (Bad debts)	-5,67%	0,3382	0,16%	0,2454	-2,64%	0,3134	1,3523	0,5454	0,5157
Savers	-0,06%	0,0117	0,39%	0,0562	0,46%	0,1537	0,6696	-0,2311	-0,0282
Lending institutions	-4,04%	0,6297	-0,65%	0,2798	-8,53%	0,6514	0,4998	0,4012	0,7835
Employees	1,39%	0,3481	-8,36%	0,6309	11,47%	0,2542	1,1930	2,0366**	2,3726**
Providers	8,85%	0,3047	12,64%	0,4080	19,89%	0,2903	0,6746	2,1590**	1,1262
GSFM	16,97%	0,4710	21,35%	0,5798	0,35%	0,4061	0,5351	0,5920	2,3124**

Significance levels: * 10%; ** 5%; *** 1%

Appendix 1 : "Global Productivity Surplus" Demonstration

This appendix will demonstrate the following equation based on CERC (1969):

$$\sum \Delta Q \times \text{p} - \sum \Delta \text{F} \times \text{f} = \sum \ [\Delta f \times (F + \Delta F)] + \Delta B - \sum [\Delta p \times (Q + \Delta Q)]$$

We know that the value of the output production is equal to the value of input factors plus the profit. This can be symbolically expressed by the following equation:

$$\sum Q \times \text{p} = \sum F \times f + B \qquad (1)$$

B = the benefit, which is determined by the gross profit after we have subtracted the depreciation value (which is equal to the net profit) and sometimes the estimated value of the non-salaried work (self-employed and home help). B can also be negative and, in this case, be considered as a loss.

For the next year, the annual profit and loss accounts are represented in the same way as above, but the quantities and prices are changed. The prices of the different products are now $p_1 + \Delta p_1, p_2 + \Delta p_2, \ldots, p_i + \Delta p_i, \ldots, p_n + \Delta p_n$. The costs of the different input factors are now $f_1 + \Delta f_1, f_2 + \Delta f_2, \ldots, f_j + \Delta f_j, \ldots, f_m + \Delta f_m$. These variations, Δp and Δf, can be positive (when there is a growth in the price of the products and the costs of the input factors) or negative (when there is a price decline). The variations of the output products and input factors quantities from one year to another can be written $\Delta Q_1, \Delta Q_2, \ldots, \Delta Q_i, \ldots, \Delta Q_n$ and ΔF_1,

$\Delta F_2, \ldots, \Delta F_j, \ldots, \Delta F_m$. Thus, the quantities of the output produced are now in the second year:

$Q_1 + \Delta Q_1, Q_2 + \Delta Q_2, \ldots$, and the quantities of the input factors used $F_1 + \Delta F_1, F_2 + \Delta F_2, \ldots$

The profit also varies from one year to another. Thus, the second year, the profit is $B + \Delta B$. If ΔB is positive, the profit has risen and if ΔB is negative, the profit has fallen.

The equation (1) can be written for the second year as follows:

$$\sum\left[(p+\Delta p)\times(Q+\Delta Q)\right] = \sum\left[(f+\Delta f)\times(F+\Delta F)\right] + (B+\Delta B) \qquad (2)$$

We put in evidence the variation of the output production value from one year to another, which means the difference between the first parts of the both equations, (2) and (1):

$$\underbrace{\sum\left[(p+\Delta p)\times(Q+\Delta Q)\right]}_{\text{first part, } 2^{nd} \text{ year}} - \underbrace{\sum p\times Q}_{\text{first part, } 1^{st} \text{ year}} \qquad (3)$$

Also the variation corresponding to the second part is written:

$$\underbrace{\sum\left[(f+\Delta f)\times(F+\Delta F)\right] + (B+\Delta B)}_{\text{second part, } 2^{nd} \text{ year}} - \underbrace{\left[\sum(f\times F) + B\right]}_{\text{second part, } 1^{st} \text{ year}} \qquad (4)$$

Obviously, the variation of the first part is equal to the variation of the second part. This equality between (3) and (4) is expressed by the equation below:

$$\sum[(p+\Delta p)\times(Q+\Delta Q)]-\sum p\times Q = \sum[(f+\Delta f)\times(F+\Delta F)]+(B+\Delta B)-\left[\sum(f\times F)+B\right] (5)$$

We can simplify the relation as such:

$$\sum(p\times\Delta Q)+\sum[(Q+\Delta Q)\times\Delta p]=\sum(f\times\Delta F)+\sum[(F+\Delta F)\times\Delta f]+\Delta B (6)$$

Regrouping $\sum(p\times\Delta Q)$ and $\sum(f\times\Delta F)$ in the first term, we obtain the "global productivity surplus" (GPS):

$$\sum(p\times\Delta Q)-\sum(f\times\Delta F)=\sum[(F+\Delta F)\times\Delta f]+\Delta B-\sum[(Q+\Delta Q)\times\Delta p](7)$$

The second term shows the allocation of the GPS. It can be used firstly to cope with a cost increase of the input factors: $\sum[(F+\Delta F)\times\Delta f]$, secondly, to allow a growth of profit: ΔB and thirdly, to finance a drop in output price represented by: $\sum[(Q+\Delta Q)\times\Delta p]$.

Appendix 2: Descriptive statistics

	Outstanding Loan Portfolio (in US dollars)	Number of active borrowers	Staff productivity	Portfolio at Risk (30 days)	Operating expense ratio	Return on Assets	Operational Self Sufficiency (OSS)	Financial Self Sufficiency (FSS)
NPO	3 780 189	11 423	129	4,9	36,3	3,0	121,1	99,6
SHF	4 922 091	10 303	134	2,9	34,9	2,1	120,8	99,2
COOP	4 981 231	7 852	111	6,7	17,6	0,1	106,1	91,6
Total	4 372 898	10 363	127	4,6	32,1	2,1	118,0	97,9

Bibliography

Ashta, A and M. Hudon, (2009) To whom should we be fair**?** Ethical issues in Balancing Stakeholder Interests from Banco Compartamos Case Study, Working Papers-CEB Brussels.

Armendariz, A and A. Szafarz, (forthcoming) On Mission Drift In Microfinance Institutions in Armendariz B. and M. Labie (ed), *Handbook in Microfinance*, Scientific Work, London-Singapore.

Branch B. and C. Baker (2000) Overcoming Credit Union Governance Problems in Westley G. and Branch B. (ed) *Safe Money: Building Effective Credit Union in Latin America*, Washington, Inter American Development Bank, pp. 203-226.

Burlaud A. and L. Dahan (1987) Productivity Assessment in Public Sector: Global Productivity Surplus Accounts, *Financial Accountability and Management*, 3(3), pp. 235-247.

Caudill S., D. Gropper, and V. Hartarska, (2009) Which Microfinance Institutions Are Becoming More Cost-Effective With Time? Evidence from a Mixture Model, *Journal of Money, Credit, and Banking*, 41(4), pp. 651-672.

Centre d'Etude des Revenus et des Coûts (CERC) (1969) Surplus de productivité globale et comptes de surplus, Working Paper, 1, Paris.

Chao-Béroff R., TH. Cao, J-P. Vandenbroucke, M. Musinga, E. Tiaro and L. Mutesasira, (2000) A Comparative Analysis Of Member-Based Microfinance Institutions In East And West Africa, Microsave, Nairobi,.

Courbis R. and P. Templé, (1975), *La méthode des comptes de surplus et ses applications macroéconomiques*, Paris, collection de l'INSEE.

Cuevas C, and K. Fischer (2006) Cooperative Financial Institutions – Issues in Governance, Regulation, and Supervision, World Bank Working Paper*, 82.

Cull, R., Demirguc-Kunt, A. and J. Morduch (2009) Microfinance Meets the Market, *Journal of Economic Perspectives*, 23(1), pp. 167–92.

Deshpande, R., Pickens, M., & Messan, H. (2006). *Uganda—country-level savings assessment CGAP savings initiative*. Washington: CGAP.

Desrochers M., K. Fischer and J-P Gueyie (2003) Theory and test on the corporate governance of financial cooperative systems, CIRPÉE Working Paper, 03-34.

Fournier Y. and Ouedraogo A. (1996), "Les coopératives d'épargne et crédit en Afrique : histoire et évolutions récentes", *Revue Tiers Monde*, 37(145), 67-83

Freeman, R. and D. Reed (1983) Stockholders and stakeholders: A new perspective on corporate governance, *California Management Review,* 25, pp. 88-106.

Galema, R., R. Lensink and L. Spierdijk (2008) International Diversification and Microfinance, Available at SSRN: http://ssrn.com/abstract=1286769.

Gutiérrez-Nieto, B. and C. Serrano-Cinca (2007), Factors Explaining the Rating of Microfinance Institutions, *Nonprofit and Voluntary Sector Quarterly*, 36, pp. 439- 464.

Gutiérrez-Nieto B., C. Serrano-Cinca and C. Mar Molinero (2007) Microfinance Institutions and Efficiency, *Omega*, 35(2), pp. 131-142.

Gutiérrez-Nieto, B. and C. Serrano-Cinca (forthcoming), Factors Influencing Funder Loyalty to Microfinance Institutions, *Nonprofit and Voluntary Sector Quarterly*.

Hansmann, H. (1996), *The ownership of enterprise*, Cambridge, Massachusetts, The Belknap Press of Harvard University.

Hartarska, V. (2005) Governance and Performance of Microfinance Institutions in Central and Eastern Europe and the Newly Independent States, *World Development*, 33, pp. 1627-1643.

Hartarska, V. and R. Mersland (forthcoming) What Governance Mechanisms Promote Efficiency in Reaching Poor Clients? Evidence from Rated Microfinance Institutions, *European Financial Management*.

Hermes N., R. Lensink and A. Meesters (forthcoming) Outreach and efficiency of microfinance institutions*, World Development*.

Hill C. and T. Jones (1992) Stakeholder-Agency theory, *Journal of Management Studies*, 29(2), pp.131-154.

Honohan P. (2004) Financial sector policy and the poor: Selected findings and issues, World Bank Working Paper, 43, Washington DC.

Hudon M. (forthcoming) Subsidies and financial performances of the microfinance institutions: Does management matter?, *Journal of International Development*.

Hudon, M. and D. Traca (2009) On the Efficiency Effects of Subsidies in Microfinance: An Empirical Inquiry, Working Papers-CEB Brussels.

James N., V. Hartarska and R. Mersland (2009) Scale Economies and Input Price Elasticities in Rated MFIs, Auburn University Working Paper.

Jansson T., R. Rosales and L. Westley (2004) *Principles and Practices for Regulating and Supervising Microfinance*, Inter-American Development Bank, Washington D.C.

Labie M. (2001) Corporate Governance in Micro-Finance Organizations: A Long and Winding Road, *Management Decision*, 39(4), pp. 296-301.

Labie M. (2003) *Corporate Governance in the Non-Profit Sector: a Framework for Microfinance Organizations*, 19th EGOS Colloquium, Copenhagen Business School.

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

Mbangala M., (2001) L'évaluation de la performance économique des entreprises publiques Africaines par la méthode des comptes des surplus, *Annals of Public and Cooperatives Economics*, 72(2), pp. 183-207.

Mersland R. and R. Strøm (2008) Performance and trade-offs in microfinance organizations - does ownership matter?, *Journal of International Development,* 20**,** pp. 598-612.

Mersland R. (2009) The cost of ownership in microfinance organizations, *World Development,* 37**,** pp. 469-478.

MIX Market (2008) Micro Banking Bulletin, Washington D.C.

Périlleux A. (2008) Les coopératives d'épargne et de crédit en microfinance face aux problématiques de gouvernance et de croissance, Working Papers CEB 08-025, Université de Mons.

<u>Endnotes</u>

---

[1] Freeman and Reed (1983) distinguish between a wide and a narrow definition of stakeholders. The wide definition includes "any identifiable group or individual who can affect the achievement of an organisation's objectives or who are affected by the achievement of an organisation's objectives" (Freeman and Reed, 1983, p. 25). The narrow definition includes "any identifiable group or individual on which the organisation is dependent for its continued survival". In this paper, we use the latter definition.

[2] Where ΔOL_t is the variation of the outstanding loan portfolio, i_t is the interest rate charged by the MFI to the clients, pr_{t-1} is the provision rate for clients who are suspected not to repay, DE_t are the deposits expenses (debt related to the depositors), i''_t is the deposit rate, D_t are the lending expenses (debt related to the loans taken by the MFIs), i'_{t-1} is the lending rate for the MFIs to get funds from the bank, N_t is the number of employees and finally s_{t-1} is the average salary.

[3] Other articles using databases from rating agencies are, for instance, Mersland and Strøm (2008) or Hudon (forthcoming).

[4] Interest rates difference between NPOs and SHFs is only significant at the 10% level, while the interest rates difference between COOPs and both NPOs (Z=4.19) and SHFs (Z=2.54) are significant at the 1% level.

[5] We have divided the average salary given by each MFI by the GNI per capita corresponding to the country of each MFI implantation and the year of MFI data collection.

[6] NPOs' clients gain in the surplus distribution, whereas SHFs' and COOPs' clients register a loss. So, although NPOs charge higher interest rates on average, they improve their clients' situation through time by reducing interest rates on credit, at least when they manage to produce wealth. This difference is however not significant due to the relatively high variance of the clients' surplus.

[7] The average salary is calculated by dividing personnel expenses by the number of employees.