The Microfinance Business Model:

Enduring Subsidy and Modest Profit

Robert Cull (World Bank)
Asli Demirgüç-Kunt (World Bank)
Jonathan Morduch (New York University)

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Abstract

Recent evidence suggests only modest social and economic impacts of microfinance. Favorable cost-benefit ratios then depend on low costs. We use proprietary data on 1335 microfinance institutions between 2005 and 2009, jointly serving 80.1 million borrowers, to calculate the costs of microfinance and other elements of the microfinance business model. We calculate that on average, subsidies amounted to $132 per borrower, but the distribution is highly skewed. The median microfinance institution used subsidies at a rate of just $26 per borrower, and no subsidy was used by the institution at the 25th percentile. These data suggest that, for some institutions, even modest benefits could yield impressive cost-benefit ratios. At the same time, the data show that subsidy is large for some institutions. Counter to expectations, the most heavily-subsidized group of borrowers are customers of the most commercialized institutions, with an average of $275 per borrower and median of $93. Customers of NGOs, which focus on the poorest customers and on women, receive far less subsidy: the median microfinance NGO used subsidy at a rate of $23 per borrower, and subsidy for the NGO at the 25th percentile was just $3 per borrower.

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Introduction

Microfinance institutions aim to serve customers ill-served by traditional commercial banks. The success of microfinance in achieving wide scale – one count includes 211 million customers globally -- has inspired social business initiatives in energy, health, education and other sectors.[1] Microfinance, though, has taken a beating in recent years. Six prominent randomized controlled trials, for example, found only a small average impact of microcredit access on marginal borrowers, though the studies found some "potentially important" (though modest and not clearly robust) impacts on "occupational choice, business scale, consumption choice, female decision power, and improved risk management" (Banerjee et al 2015, p. 14).[2] While perhaps disappointing to microfinance advocates, these modest impacts could nonetheless feed into sizable benefit-cost ratios if the costs are proportionally small too. This is indeed a fundamental premise of microfinance.

[1] Data are as of December 31, 2013, reported as part of the Microcredit Summit's *State of the Campaign Report 2015*. Data are from https://stateofthecampaign.org/data-reported/, accessed 4-15-16.

[2] As Banerjee et al (2015) describe, the six studies do not provide the final word on microfinance/microcredit impacts. Most important, the studies measure impacts only on marginal borrowers. Some borrowers were determined to be not creditworthy and would have been excluded from being served, for example, but were instead served for the purposes of the study. Other studies measured impacts in new regions for the microlenders, or new populations. Still, the studies are not far from earlier studies that credibly attend to selection biases (see, e.g., Armendàriz and Morduch 2010).

By focusing on costs, this study contributes to the missing half of the conversation about the costs and benefits of microfinance. We measure the size of subsidies using proprietary data on 1335 microfinance institutions between 2005 and 2009. The 930 institutions in the 2009 sample served 80.1 million borrowers globally.

We calculate that on average, subsidies amounted to $132 per borrower, but the distribution is highly skewed. The median microfinance institution used subsidies at a rate of just $26 per borrower, and no subsidy was used by the institution at the 25th percentile.

These data suggest that, for some institutions, even modest benefits could yield impressive cost-benefit ratios. At the same time, the data show that subsidy is large for some institutions. Counter to expectations, the most heavily-subsidized group of borrowers are customers of the most commercialized institutions, with an average of $275 per borrower and median of $93. Customers of NGOs, which focus on the poorest customers and on women, receive far less subsidy: the median microfinance NGO used subsidy at a rate of $23 per borrower, and subsidy for the NGO at the 25th percentile was just $3 per borrower.[3]

While most firms earn positive accounting profits, only a minority earn economic profit (which accounts fully for the opportunity costs of inputs). Accounting profit reflects an institution's ability to cover its costs with its revenues, without accounting for implicit grants and subsidies. We find 67 percent of institutions were profitable on an accounting basis (weighted by the number of borrowers per institution; just 58 percent were profitable weighted by institutional

[3] As a robustness check, we estimated these figures on a subset of the sample (814 institutions) for which we had complete data on every variable. Those results are very slightly lower than those reported below (the results from the balanced panel were so similar that we do not report them). With the balanced panel, we calculate that on average, subsidies amounted to $128 per borrower, with a median of $21 per borrower and again no subsidy at the 25th percentile. The average subsidy for commercial banks is $255 per borrower and median of $89. The median (non-profit) microfinance NGO used subsidy at a rate of $21 per borrower, and subsidy for the NGO at the 25th percentile was just $2 per borrower.

assets). Turning instead to economic profit (with the local prime rate as the alternative cost of capital), we find that only 36 percent of institutions were above the profit bar (weighted by the number of borrowers per institution). Just 18 percent of institutions were profitable when weighted by their assets.

The analysis highlights the challenge created by high fixed costs in lending. The median unit cost is $14 in operating expenses for each $100 of loans outstanding, and high fixed costs imply cost advantages when making larger loans (holding all else the same). The median commercial microfinance bank makes loans that are, on average, three times larger than the median NGO (after controlling for local conditions). That helps the median commercial microfinance bank reduce unit costs to 11 percent -- versus 18 percent for the median NGO. Institutions respond by raising interest rates. Consistent with the pattern of costs, NGOs charge more than commercial microfinance banks. After adjusting for inflation, the median microfinance lender charged borrowers 21 percent per year, as measured by the average real portfolio yield. NGOs, the institutions that tend to serve the poorest customers, lent at an average of 28 percent per year after inflation. For-profit commercial microfinance banks, in contrast, charged an average of just 22 percent per year. But these averages are deceiving. Once the data are disaggregated by target market, the analysis shows the opposite: conditional on the scale of lending, for-profits tend to charge higher interest rates and non-profits have been more successful in reducing costs and cutting interest rates and fees. This is consistent with the finding that it is not NGOs, but instead commercialized microfinance banks, that use the most subsidy per borrower.

Finally, the findings contrast with arguments that microfinance subsidies are transitional. Subsidies should play a role in helping institutions get started, according to the argument, but

they should phase out within a decade, allowing the unsubsidized market to take over. (An exception is made for subsidies targeted to institutions serving the poorest and most costly customers.) Our analysis of global data shows that subsidies in fact continue to be important in microfinance, even for older institutions. Summing across the 1335 institutions, the total subsidy – both implicit and implicit -- was $4.9 billion per year.[4] Of the total subsidy, 76% went to the 932 institutions that are older than ten years. Most (99.95%) of the subsidy takes the form of equity grants and cheap capital rather than direct donations. We conclude with reflections on next steps for a more transparent policy conversation around the optimal use of subsidy in the microfinance market.

1. Method and data

The data are from the global database of microfinance institutions collected by the MIX Market. Within the microfinance sector, the MIX Market is responsible for collecting and disseminating financial data on microfinance institutions, and its database is the largest industry data source on the finances of microfinance institutions.[5]

The raw data reflect local reporting standards, and the MIX Market adjusts the data to help ensure comparability across institutions when measuring financial performance. We begin with the MIX Market adjustments and then make further adjustments. MIX Market adjustments are made for inflation, the cost of subsidized funding, current-year cash donations to cover

[4] The data use the most recent observation in the period.
[5] Participation in the MIX database is voluntary, and the microfinance institutions in the sample tend to feature institutions that stress financial objectives and profitability (though the database has become more broadly representative as it has expanded over time). The skew is shown by Bauchet and Morduch (2010) who calculate that the average operational self-sufficiency ratio (a measure of organizational efficiency) of institutions reporting to the larger, socially-focused Microcredit Summit Campaign database is 95 percent, compared to 115 percent for institutions reporting to the MIX Market. Scores above 100 percent reflect "operational self-sufficiency."

operating expenses, donated goods and services, loan write-offs, loan loss reserves and loan loss provisioning. In addition, the MIX reclassifies some long-term liabilities as equity, and reverses any interest income accrued on non-performing loans. We further adjust the data to reflect ideas consistent with economic definitions of profit.

The MIX Market presents a calculation of profitability: i.e., the financial self-sufficiency (FSS) ratio. This notion of financial self-sufficiency is meant to indicate whether an organization can continue operations without external donor funding, but the FSS ratio falls short of accounting for inputs at their opportunity costs. The MIX Market reports that they make a cost-of-funds adjustment to account for the impact of "soft loans." The MIX Market calculates "the difference between what the MFI actually paid in interest on its subsidized liabilities and what it would have paid at market terms." To do that, the MIX Market uses data for shadow interest rates from the IMF's *International Financial Statistics* database, using the country's deposit rate as the benchmark.[6]

Yaron (1994) and Shreiner and Yaron (2001) argue that this adjustment is inadequate and that the FSS thus over-states financial self-sufficiency. The deposit rate provides a benchmark for the cost of borrowing by microfinance banks that is too low: The interest rate spread (the difference between the interest rate charged by banks to private sector customers when lending and the interest rate that the private sector offers to its depositors) is generally over 5 percentage points. (2014 World Bank data, for example, show that the interest rate spread for low income countries as a group was 11.2 percentage points and 6.4 percentage points for middle income countries as a whole.)[7] Moreover, many institutions, are not legally able to collect deposits, and even those

[6] From MIX Market, "Benchmarks Methodology" http://www.themix.org/sites/default/files/Methodology%20for%20Benchmarks%20and%20Trendlines.pdf

[7] The 2014 World Bank *World Development Indicators* Table 5.5 (http://wdi.worldbank.org/table/5.5).

that are able to do so face transactions costs associated with deposit collection. In addition, the FSS calculation implicitly (and implausibly) assumes that an institution's equity-holders seek no real return to their investments.

By using a more appropriate measure of the cost of capital and applying it to equity as well as debt financing, we obtain a clearer view of microfinance profitability and subsidy. Our analyses assume that, if they needed to borrow on the market, microfinance institutions could obtain capital at a country's prime interest rate (the rate offered to banks' safest and most favored customers). This is a conservative correction in that it does not reflect the risks of lending to institutions whose loans are typically only partially secured with collateral, and even this adjustment has large effects.

The definition of economic profit is closely related to the subsidy dependence index (SDI) developed by Yaron (1994) and explored further by Schreiner and Yaron (2001) and Manos and Yaron (2009). But rather than calculate an index, we focus on the distribution of subsidy in the context of the microfinance business model. Key variables include:

Financial Self-sufficiency ratio. The formula that the MIX Market uses to calculate the Financial Self-sufficiency ratio (FSS) is:

> Financial revenue / [Financial expense + Operating expense + Net loan loss + Net inflation adjustment + MIX subsidy adjustment].

The MIX subsidy adjustment uses the IMF deposit rate as the alternative cost of capital:

> MIX subsidy adjustment = total borrowing * deposit rate - interest expense on total borrowings.

If the interest expense actually paid by the microfinance institution exceeds the expense it would incur when borrowing at the deposit rate, the MIX subsidy adjustment is set to zero.

Economic profit. The calculation we use differs in two ways. First, we replace the deposit rate with the country's prime lending interest rate (taken from the World Bank's *World Development Indicators*). For comparison, we also use the US prime interest rate in some calculations.[8] We thus replace the MIX subsidy adjustment with:

Subsidy adjustment = total borrowing * (prime lending rate) - interest expense on total borrowings.

Second, we add an adjustment for implicit subsidies to equity:

Equity adjustment = Total donated equity amount * (prime lending rate)

This gives us a formula for economic profit:

Financial revenue / [Financial expense + Operating expense + Net loan loss + Net inflation adjustment + Subsidy adjustment + Equity Adjustment].

The work here updates our previous work with smaller, earlier samples of MIX Market data. Cull et al. (2009) use a sample of MIX Market data with 346 microfinance institutions in 67 countries covering nearly 18 million active borrowers, drawn from 2002-4. Cull, Demirgüç-Kunt, and Morduch (2007) analyze 124 MFIs in 49 countries.

In the present sample we analyze the most recent data on MFIs between 2005 and 2009. The entire database includes 3845 institution-years, reflecting 291 million borrower-years. We focus on a cross-section with the most recent data for each institution. Most of the most recent

[8] Where the interest rate is not available in the *World Development Indicators*, we use data from country publications. For example, we take India's rates from the Indian government statistics website (Chapter 24 "Banks, Table 24 Money rates in India"). Available at: http://mospi.nic.in/Mospi_New/site/India_Statistics.aspx?status=1&menu_id=14 ".

data are from 2009, a year in which the data includes 930 institutions with a combined 80.1 million borrowers.

The largest sample we use contains data on 1335 institutions: 90 for-profit banks, 235 credit unions and cooperatives, 465 NGOs, 401 non-bank financial institutions (NBFIs), and 102 rural banks. Non-bank financial institutions are a broad range of institutions that generally span the space between NGOs and banks, and we divide the sample between institutions with for-profit legal status (300 institutions) and those with not-for-profit status (101 institutions). In addition, we analyze two aggregate categories defined by the MIX Market: 826 institutions with not-for-profit legal status, and 499 institutions with for-profit legal status.[9]

The key relationships are analyzed by comparing means and distributional parameters of subgroups within the sample. A series of LOWESS (non-parametric smoothed) bivariate regressions describe the distributions of the data, and multivariate regressions are used to control for relevant covariates.

A major focus is how key variables like profit, cost, interest rates, and subsidy vary with the average loan size of microfinance institutions. The average loan size variable is a proxy for the income level of customers, drawing on evidence that poorer customers tend to take smaller loans. The variable is measured at the institution-level and is an average of loan sizes that could vary broadly within the institution. To control for different levels of income and development across regions, we normalize the average loan size variable by dividing it by the country's GNI (gross national income) per capita, measured at the 20th percentile. The step of dividing by GNI per capita is relatively standard, but it creates a potential distortion in countries in which there is

[9] Fourteen institutions were dropped: one "bank" with not-for-profit status and 13 rural banks with not-for-profit status. Because all variables are not available for all institutions, sample sizes vary for some analyses. We have repeated the analysis in a balanced panel of 814 institutions and find very similar results to those reported here.

substantial income inequality, making loan sizes seem relatively small compared to countries at a similar level of average GNI but with lower inequality. We thus normalize by GNI per capita at the 20th percentile of the population to address inequality within countries.

We use the entire sample in regressions (including non-parametric regressions), but we present graphical results only for the segment of the sample containing the bulk of institutions. The figures thus cover normalized loan sizes of 0 through 5. Half of institutions have normalized average loan sizes between 0 and 1. Only a quarter of institutions have normalized average loan sizes larger than 2.5.

Figures 1 and 2 present the data as it varies by normalized average loan size. Figure 1 shows that most South Asian microfinance institutions are concentrated in the 0-1 range. The top panel of Figure 1 shows that institutions in Latin America and the Caribbean and Sub-Saharan Africa are more widely dispersed. The bottom panel of Figure 1 shows that, as expected, non-profits make smaller loans than for-profits, though there is considerable overlap, and some for-profits are found at the lowest ranges.

Figure 2 extends the depiction by turning to three types of institutions: NGOs, non-bank financial institutions (NBFIs) and commercial microfinance banks ("banks"). The NBFIs in the figures combine both for-profit and not-for-profit institutions. NGOs are concentrated heavily at the lowest ranges, between normalized average loan sizes of 0 and 1, with a median of 0.5. NBFIs make larger loans on average (median = 1.1), and banks are still larger (median = 3.4) – at the upper reaches of the sample. There is limited overlap between NGOs and commercial microfinance banks.

2. Analysis

Average loan size and fixed costs

Much of our interest is in the pattern of financial variables across institutions in different market segments. We use (normalized) average loan size as a rough proxy for the income level of customers.

Summary statistics. Table 1 gives summary statistics on the distribution of average loan size. For the full sample, the average loan size (normalized as described above) is 2.4, but the median is substantially lower at 1.0, reflecting a long upper tail. At the 75th percentile, the normalized average loan size is 2.5, so roughly a quarter of the sample is above the sample mean.

Table 1 shows how average loan size varies across types of institutions. The row on NGOs, for example, shows a median of 0.5, a figure substantially below the median for banks (3.6).[10] As in previous analyses, NGOs and banks look and behave differently, a motivation for the disaggregation here. The mean (normalized average) loan size for banks is 6.9 and the mean for NGOs is 1.4. We asserted that NBFIs span the space between NGOs and banks, consistent with the mean average loan size for for-profit NBFIs of 2.8 and the mean for non-profit NBFIs of 2.4. Table 2 shows how different the institutions are by the gender of borrowers. The median commercial microfinance bank serves a base that is 50 percent female. The median NGO, in contrast serves a base that is 80 percent female. The NBFIs are again in the middle.

Interest rates

Figures 4, 5, and 6 show how average loan size matters to the business models of the institutions. Figure 4 gives the real (inflation-adjusted) average portfolio yield of the institution. This is a

[10] Summary statistics vary slightly in the figures and tables since we truncate extreme values in the figures, as described above. The median normalized average loan size of commercial microfinance banks is 3.4 in figure 2, for example, and 3.6 in Table 1.

measure of average interest rates, calculated by dividing the total interest earnings and fees by the size of the loan portfolio. The figure shows that most real interest rates vary between 20% and 40%, with larger loans under 30% and smaller loans above 30%.

NGOS tend to cluster to the left and banks tend to cluster to the right, with NBFIs spanning the middle space. This is consistent with the definition of the x-axis: loan sizes are smaller on the left of the figure and larger moving to the right. Table 1 showed that the median across the sample is 1.0, so half the sample is clustered at the very left end of the figure, where average interest rates are considerably higher than to the right. The figure shows that institutions making the smallest-sized loans charge the highest average interest rates. Taking average loan size as a proxy for poverty levels, the figure shows that the poorest customers in the microfinance sector pay the highest interest rates.

Tables 3 and 4 back this up. Table 3 gives nominal interest rates charged to customers, given by the average portfolio yield (earnings from lending divided by the size of the loan portfolio). The average is 34 percent and median is 29 percent. NGOs tend to charge their customers higher rates than commercial microfinance banks (the mean is 36 percent versus 31 percent), though for-profit NBFIs charge the highest rates on average (mean = 39 percent). These rates are nominal, though, and the more telling data are in Table 4, which gives the real portfolio yield (i.e., inflation-adjusted). The general patterns persist, but the numbers are smaller. The inflation-adjusted average is now 25 percent and median is 21 percent. NGOs again tend to charge their customers higher rates than commercial microfinance banks (the mean is 28 percent versus 22 percent), though for-profit NBFIs now look similar to NGOs (mean = 28 percent).

The data both affirm and complicate a statement made on the CGAP website: "For-profit MFIs … don't generally charge their clients more than non-profit MFIs."[11] Tables 3 and 4 show that for-profits charge slightly more on average, but the distribution of real portfolio yields is largely overlapping. That picture, though, is given nuance in Figure 4. The figure shows that when the data are segmented by customer scale (as given by normalized average loan size), banks charge less because they cluster at larger loan sizes. NGOs charge relatively less when attention is limited to smaller loan sizes. The general picture shows that the CGAP response is based on an apples to oranges comparison. Once the scale of loans is considered, the for-profit providers are seen to charge higher rates in the markets where NGOs tend to cluster.

Regression analysis. The pattern of interest rates holds after controlling for other variables. Table 5 presents regressions that show a quadratic relationship between real portfolio yield and average loan size, controlling for other factors. We estimate the following equation describing variation in yields:

(1) $Y_i = \alpha + \beta_1 \text{Avg Loan Size}_i + \beta_2 \text{Avg Loan Size}_i^2 + \beta_3 \text{Region}_i + \beta_4 \text{Age}_i + \beta_5 \text{Assets}_i + \beta_6 \text{Ownership}_i + \beta_7 \text{Ownership*Loan Size}_i + \beta_8 \text{Ownership*Loan Size}_i^2 + \varepsilon_i$

Where Y_i is the real portfolio yield of microfinance institution *i.* Controls include regional dummy variables; the age and size of each microfinance institution (measured by total assets); and ownership type using the same categories as in the tables presented thus far -- bank (for-profit), credit union/cooperative (not-for-profit), NGO (not-for-profit), NBFI (for-profit), NBFI (not-for-profit), and rural bank. We interact the ownership type indicator variables with average loan size (divided by the per capita income at the 20th percentile of the population) to allow the relationship between loan size and yields to vary across types of institutions. The omitted

[11] CGAP is the Consultative Group to Assist the Poor, the main microfinance donor consortium, based in Washington, DC as part of the World Bank Group. The quote is from "frequently asked questions," available at http://www.cgap.org/about/faq. Accessed 4/10/14.

ownership category is not-for-profit NBFIs. Thus, β_1 and β_2 describe the relationship between loan size and yields for that group of institutions. To assess whether that relationship is significant for other ownership types, we add β_1 to β_7 and β_2 to β_8 (see t-tests at the bottom of the table). β_7 and β_8 also provide tests of the whether the coefficients for the average loan size variables for other ownership types are statistically distinguishable from those for institutions in the omitted category. Standard errors are clustered at the country level.

Table 5 shows that portfolio yields are significantly lower in Europe and South Asia, and for older and larger institutions. In models 2-5, the coefficient for average loan size is negative while that for the square of average loan size is positive, thus confirming the quadratic relationship in Figure 4. In model 5, the lack of statistical significance of the interactions between the ownership type variables and average loan size indicates that the declining quadratic relationship for not-for-profit NBFIs (the omitted category) holds also for other ownership types. This is also confirmed for NGOs, for-profit NBFIs, and credit unions/cooperatives by the significant t-statistics at the bottom of the table. The patterns are similar for rural banks, but the cell size is small and the coefficients are not estimated with much precision. The exception to the declining quadratic relationship between loan sizes and yields is for-profit microbanks. Coefficients for their interactions are significant and of the opposite sign as those for not-for-profit NBFIs, and the t-tests at the bottom of the table indicate a marginally significant declining relationship between loan size and yield for banks, but no significance on the interaction with the square of loan size (and thus less evidence of a quadratic relationship). The less pronounced patterns for banks are also suggested by Figure 4.

Operating expenses

Table 6 gives the operating expense ratio, an institution's total operating expenses divided by the loan portfolio. This is roughly an institution's transactions costs per dollar lent. The patterns mirror the patterns for interest rates: NGOs have higher costs than commercial microfinance banks (a median of 18 versus 11, and a mean of 23 versus 16). Not-for-profits as a group have slightly higher costs but are essentially indistinguishable from for-profits on average.

Costs are partly fixed and partly variable. With high fixed costs, larger-sized loans have lower unit costs, giving a cost advantage (all else the same) to institutions making larger loans. Differences in unit costs emerge when disaggregating by average loan size. Figure 5 shows that unit costs are substantially higher when loans are small, reflecting the relatively large fixed costs involved in microfinance operations. The low-end institutions with higher higher operating expenses also charge higher interest rates. The figures thus show why institutions charging higher interest rates are not necessarily more profitable – and below we show that they are not, generally. Averages again are misleading: the figure also shows that NGOs have brought down costs on the low end, and NGOs have lower costs in the part of the distribution that they dominate (i.e., between a normalized average loan size of 0 and 1).

The regression results in Table 7 show quadratic relationships between operating expenses (per dollar lent) and average loan size, as seen in Figure 5. The regressions replace operating expenses per dollar lent as the dependent variable. Operating costs are lower in the Europe, South Asia, and the Middle East and North Africa. They are also lower for larger and older institutions. Models 2-4 show a quadratic relationship very similar to the one found for yields (a negative significant coefficient for average loan size, positive and significant for its square). That the regression models for both portfolio yields and operating costs line up so well with each other indicates that they are describing related aspects of the business models used by

different institutions, and the environments in which they operate (as reflected in the significant coefficients for the control variables).

One difference between the operating costs and yields regressions is that average loan size and its square are not statistically significant for institutions in the omitted category (not-for-profit NBFIs) in model 5, though the signs and magnitudes for those variables are not far off from those in models 2-4, in which all institutions are grouped together. The coefficients on the interactions between loan size (and its square) and the ownership type variables and the t-tests at the bottom of the table indicate that the quadratic relationship between operating costs and loan size is especially pronounced for the not-for-profit NGOs. Those tests also indicate significant relationships for average loan size and its square for the for-profit NBFIs. The loan size variables are also marginally significant for commercial microfinance banks. In all, there is a strong correspondence between the portfolio yields and operating costs regressions across types of institutions.

Profit: Financial self-sufficiency

We begin with the MIX Market's measure of profitability, the financial self-sufficiency (FSS) ratio. The FSS captures the difference between revenues and expenses, with adjustments made to account for some implicit subsidies.

Summary statistics. Table 8 gives the MIX Market's calculation (as noted above, the MIX Market uses the country's deposit rate, taken from IMF statistics, as the alternative cost of capital). The MIX Market calculations show the FSS to be above 100 (indicating "financial self-sufficiency") for roughly half the full sample, seen by the level of 100 at the median. But there is

considerable variation. At the 25th percentile of the full sample, the FSS ratio is 81 and it is 115 at the 75th percentile.

Turning to sub-samples, there is remarkable similarity in patterns. The median FSS for banks in our sample is 97, for example, and 101 for NGOs. While it might seem that banks would have a higher FSS ratio than NGOs, that is not evident in these data. Similarly, there is little difference between the FSS ratios for not-for-profit institutions (FSS = 100 at the median) and for-profit institutions (FSS = 102 at the median).

In the analyses that follow, we show that these patterns result from the assumptions in the MIX Market formula. Even though the institutions are deemed "financially self-suffient" or close to it, there is still substantial subsidy running through the sector once the shadow cost of capital is defined at a realistic level and applied broadly across financial categories.

Subsidy per dollar lent and economic profit

Tables 9 and 10 give our calculation of the subsidy per dollar lent. The first important step in the calculation is to use the prime rate as the shadow cost of capital. We use the local prime rate, with the idea that the institution would have to turn to local sources for financing if soft loans were not available. The local interest rates reflect regional economic conditions, and they allow us to abstract from currency risk, political risk, and similar concerns when making cross-country financial comparisons.

The second important step is to account for returns to equity. In the MIX Market's FSS calculations, it is assumed that equity donations get zero real return (the only adjustment is for inflation). Table 9 gives the resulting data. The mean subsidy per unit lent is just 10%, and 2% at

the median. The 25th percentile is zero, showing that at least a quarter of the sample is unsubsidized by this measure.

The problem, as noted above, is that it's the wrong measure. Were the donated equity to be replaced with equity provided by commercial investors, a competitive return would be expected. In accord with that logic, donated equity should also be valued at the shadow capital cost (which we, conservatively, take to be the local prime interest rate). The resulting data are in Table 10 which shows modestly larger subsidies. The mean subsidy per unit lent is now 13%, and 5% at the median. Subsidy for the 25th percentile is again zero, showing that at least a quarter of the sample is unsubsidized by this measure.

Turning to categories of institutions shows that the subsidy per dollar is highest for the institutions focused on poorer customers (as proxied by loan size). NGOs have an average subsidy per unit lent of 18 percent and a median of 8 percent. In contrast, commercial microfinance banks have a mean of 15 and a median of 8 percent. In line with these results, not-for-profits have a mean subsidy per dollar lent of 15 and a median of 6, in contrast to a mean of 10 percent and median of 3 percent for for-profit institutions.

Taken together, the results seem to suggest that subsidies are targeted toward poorer households, and that, as a fraction of loans received, the poorest gain most from subsidy. This pattern is clear in Figures 7 and 8, which show that subsidies per dollar lent are the highest for institutions with the smallest average loan sizes, falling sharply for institutions serving better-off customers (as proxied by loan size). These calculations mirror the data in Table 10 and use the same subsidy definition. Figure 9 shows how the data on subsidy per unit lent lines up with the gender-orientation of institutions. The relationship for NGOs is flat. For NBFIs, however, the

largest subsidy per unit goes to institutions that tend to favor men. The curve for banks draws on a small sample (n=46) but shows a generally pro-female orientation of subsidy.

We use regressions to test whether the bi-variate relationships between subsidies and proxies for target market (average loan size and the share of lending to women borrowers) hold when we control for additional variables that could account for the level of subsidies received by microfinance institutions. The equation that we estimate is:

(2) $\text{Subsidy}_i = \alpha + \beta_1 \text{Avg Loan Size}_i + \beta_3 \text{Region}_i + \beta_4 \text{Age}_i + \beta_5 \text{Assets}_i + \beta_6 \text{Yield/Cost}_i + \beta_7 \text{Ownership}_i + \beta_8 \text{Ownership*Loan Size}_i + \varepsilon_i$

The dependent variable, *Subsidy*, is measured as either subsidy per dollar lent or average subsidy per borrower for microfinance institution *i.* The subsidy calculations use the local prime lending rate as the shadow cost of capital, as described above in the text. In equation (2), average loan size is the proxy for an institution's target market. In some specifications, we replace average loan size with the share of lending to women as our proxy for target market. As in the regressions relating average loan size and portfolio yields/operating costs, we include dummy variables for different ownership types, and we also interact those variables with our proxies for target market. Similarly, we include regional dummy variables and the age and size of each institution as control variables.

In our fullest specifications, we include portfolio yields, the ratio of operating costs to assets, and the ratio of capital costs to assets as explanatory variables. These controls are routinely used in regression analyses describing microfinance profitability, portfolio quality, and other outcomes.[12] Given the tight links between average loan size and yields/operating costs described above we expect the inclusion of these variables to substantially reduce the explanatory power of the target market variables in the subsidy regressions. To the extent that

[12] See for example Cull et al. (2007).

this is so, we will view subsidies, loan pricing, and operating costs as elements of a package designed to serve a particular target market. In short, these are related components of a specific business model.

Table 11, model 1 shows that subsidy per dollar lent declines as loan sizes increase. Thus, subsidies are larger (in percentage terms) for smaller loans, which corroborates the bivariate relationships shown in Figures 7 and 8. Both institution age and size are strongly negatively correlated with subsidy per dollar (models 2-4) suggesting that better-established microfinance providers rely less on subsidy than younger, smaller ones. The inclusion of those two variables renders the average loan size variable insignificant in model 2, suggesting perhaps that institutions change target markets as they grow and age, and thus the loan size variable explains little additional variation in subsidy per dollar once those two factors are controlled for.

But model 3 indicates that the situation is more complicated than that. The negative significant coefficient for average loan size indicates that subsidies are strongly declining for institutions in the omitted category, not-for-profit NBFIs. Insignificant coefficients for the interaction between loan size and the NGO, for-profit NBFI, and microbank dummy variables mean that we cannot reject the null that the negative relationship between loan size and subsidy per dollar is the same for them as for not-for-profit NBFIs, although the t-statistics at the bottom of the table indicate that the relationship is much weaker in a statistical sense for those groups. For rural banks and credit union/cooperatives, the interactions suggest that the subsidy per dollar increases with average loan size, but again those comprise a very small share of the institutions in our data set. Finally, when the yields and costs variables are included in model 4, there is no longer a significant negative relationship between loan sizes and subsidy per dollar for any of the

institutional types, suggesting subsidy, operating costs, and loan pricing are an interrelated package designed to target specific market segments.

In contrast, there is not a significant positive relationship between the share of female borrowers and subsidy per dollar in any of the regressions in Table 12. In fact, in the regressions that include interactions with the ownership type variables (models 3 and 4), those coefficients are all negative and are sometimes significant. The t-statistics at the bottom of the table actually indicate a negative and significant relationship between the share of female borrowers and subsidy per dollar for credit unions/cooperatives and for-profit NBFIs. The patterns suggest that women are not the target market supported by subsidies. Of course, these patterns only confirm those shown in Figure 9, in which no ownership type displays a strong positive relationship between subsidy per dollar and the share of lending to women, and NBFIs that lend more heavily to men are those that rely most on subsidy. The regressions in Table 12 merely clarify that for-profit NBFIs are the ones driving the negative relationship between subsidy per dollar lent and the share of lending to women in Figure 9.

Subsidy per borrower

The picture changes when we turn to subsidies per borrower, rather than per unit lent. Table 13 shows that the mean subsidy per borrower is $84 and $10 at the median when assuming that equity-holders only need to keep abreast of inflation. Table 14 shows the data under the assumption that instead equity-holders get a market return. Now the mean is $132 and the median is $26. For commercial microfinance banks, the mean is $275 and the median is $93, while for NGOs, the mean is $101 and the median is $23. For-profit microfinance institutions as a group receive more subsidy per borrower on average, relative to not-for-profits ($178 versus

$108), but the picture switches with the medians ($14 versus $32). The data show that there are some heavily subsidized for-profit institutions, but most for-profits are only modestly subsidized. Still, most for-profits are subsidized.

Figure 10 gives two views of the data. The first gives data using official exchange rates, and the second gives data with purchasing power parity (PPP) exchange rates. The top panel shows a clear upward-sloping line, such that institutions offering the largest-sized loans end up more heavily subsidized than institutions making the smallest loans. The same is true for the data with PPP exchange rates, with a dip to the right in a location with sparse data. Figure 11 shows the parallel figures but disaggregated by the type of borrower. The subsidy per borrower stretches toward $200 for institutions making the largest sized loans. In PPP terms, that is roughly $500. Table 16 which fully accounts for subsidy, shows a mean subsidy of $PPP 248 and a median of $PPP 51 for the full sample. The data on banks are heavily skewed with the 75th percentile showing a subsidy of $PPP 1097 per borrower and the 25th percentile just $PPP 28.

As shown in Figures 10 and 11 the relationship between average loan size and subsidy changes, becoming positive, when subsidy is measured on a per borrower basis. The positive relationship is also confirmed for our overall sample in models 1 and 2 of Table 17. When we introduce interactions between ownership type and average loan size in models 3 and 4, the coefficient for loan size declines from $36-37 to $7-8. This indicates that subsidies per borrower are increasing with loan size for institutions in the omitted category (not-for-profit NBFIs), but at a slower rate than for other ownership types. However, the insignificant coefficients on most of the interactions imply that a similar relationship holds for banks, credit unions/cooperatives, for-profit NBFIs, and rural banks. The exception is for NGOs, whose interaction with loan size has a large and significant positive coefficient ($69-70). Recall from Figure 2, however, that the

largest mass of loans extended by not-for-profit NGOs is 0 to 1 times the per capita income of the bottom 20%. This suggests a modest level of subsidy for the vast majority of borrowers from NGOs.

To this point, we have not emphasized the coefficients on the ownership indicator variables themselves (in part because they were often insignificant), but the large coefficient for banks ($166-174) in models 3 and 4 bears mentioning. It suggests that, on average, subsidy per borrower is high for loans of all sizes from microbanks, and it increases at about the same rate as for other types of institutions (except NGOs) based on the coefficients for the average loan size variables. Since Figure 2 also shows that a large share of microbank loans extend beyond their median loan size of 3.4 times the per capita income of the bottom 20%, the regressions indicate that some borrowers from banks are receiving large loans and a high level of total subsidy. These patterns confirm many of the insights from Figures 10 and 11 and Tables 10-12.

Profitability

Changes in economic profit under different assumptions can be seen in Figure 12. It begins with the left-most pair of columns showing that, in terms of basic operational sustainability, 67 percent of institutions in the MIX Market sample would be seen as profitable on an accounting basis. The figure is weighted by the number of borrowers per institution, so it says that two-thirds of microfinance borrowers were served by institutions earning accounting profits. Just 58 percent were profitable on an accounting basis when institutions are weighted instead by their assets. The adjustments that the MIX Market makes in calculating the Financial Self-sufficiency (FSS) take the percentage that appear profitable to just over half (weighted by the number of borrowers per institution; just 42 percent of institutions were profitable by this

definition when weighted by their assets). As noted, the calculation does not adequately account for the opportunity cost of the institutions' equity and debt.

The third pair of columns makes a modest adjustment, assuming that the appropriate opportunity cost of capital should be given by the US prime lending rate. The perspective is that the donors, most of which are based in richer countries like the US, might see that as their benchmark for lending in the market. Even with this modest adjustment, now only roughly 45 percent of the sample is seen as profitable (weighted by the number of borrowers per institution; just 30 percent were profitable by this definition when weighted by their assets). In the final pair of columns, the most realistic assumption is used: the prime rate in the institutions' local market. This accommodates local inflation and the ability to raise money on local markets. Now, the percentage of institutions that are profitable falls to 36 percent when weighted by borrowers and just 18 percent when weighted by assets.

It is sometimes argued that larger institutions tend to be more profitable than smaller ones. Thus, while there may be many unprofitable institutions, most people are served by profitable institutions and most assets are held by profitable institutions. That possibility is not borne out in the data. The final result shows that, rather than being commercially viable, just over two-thirds of microfinance customers are served by institutions not earning economic profit, and roughly 80 percent of assets in the sector are held by institutions that are not truly profitable –once realistic (but still conservative) assumptions about capital costs are included in calculations.[13]

[13]

Women

The second proxy for the social outreach of institutions is the fraction of active borrowers who are women as a fraction of all active borrowers. Figure 3 shows that average loan sizes and a pro-female focus are negatively correlated, in line with the assumption that smaller loans tend to be made to customers who are poorer and less connected to the broader financial system. As institutions make larger loans, their focus is also more heavily on men. The negative relationship plays out through the relationships for subsidy described below.

Table 2 shows evidence consistent with the idea that smaller loans are associated with a more pro-female orientation of the institutions. While much of the rhetoric of microfinance focuses on expanding access to finance for women, the average percentage female is 63 percent across the sample, which is very close to the median (62 percent). Yet, as with loan size, there is broad variety across sub-samples. The average percentage female is 51 percent for microfinance banks, but 75 percent for NGOs. At the 75th percentile, nearly all NGO customers are women (98%), but for banks in the sample the corresponding percentage is just 64 percent.

Regression analysis. We did not see a significant positive relationship between the share of female borrowers and subsidy per dollar in any of the regressions in Table 12. In Table 18, models 1 and 2 show that, on average, subsidy per borrower is *negatively* linked to the share of lending to female borrowers in our sample. This provides another strong indication that subsidies are not used to target women by the institutions in our sample. However, as in Table 17, the coefficients for the simple ownership dummy variables in Table 18 play an important role. With the exceptions of the rural banks dummy and the not significant coefficient for the omitted category (not-for-profit NBFIs), these are all positive and highly significant ranging from $223 for non-profit credit unions/cooperatives to $630 for for-profit NBFIs. This suggests that

institutions that make no loans to women have very high subsidies per borrower. And the large negative coefficients (in absolute value) for the interaction terms for banks, credit unions/cooperatives, NGOs, and for-profit NBFIs confirm that the average level of subsidy per borrower drops precipitously as institutions devote a higher share of their loans to women. In all, the regressions provide strong evidence that subsidies are not being targeted to support lending to women.

Changes over time

Microfinance experts have argued that institutions should aim to be free from subsidies after roughly seven years from their start. For example, the Consultative Group to Assist the Poor (2006) released a widely-distributed summary document, *Access for All*, which argued that "Donor subsidies should be temporary start-up support designed to get an institution to the point where it can tap private funding sources, such as deposits." (Helms 2006)

To explore this, in Table 19, we break the sample into institutions younger than 10 years and those that are 10 years older or more. The median age in the younger group is 5 years, the median age in the older group is 18. The difference in age is large enough that we ought to see the older group with less subsidy if they follow the expert guidelines.

We show that that the guidelines are routinely violated. The older group has somewhat larger loan sizes (a normalized average loan size value of 2.5 versus 2.2 for the younger group) and smaller subsidies per borrower. They have reduced subsidy, even if it is not eliminated. The subsidy per dollar lent is 20 percent for the younger group and 9 percent for the older group (using the local prime interest rate as the alternative cost of capital and making adjustments to both equity and debt). But when we turn to subsidy per borrower, we see an average of $106 for

the older group and $172 for the younger (and $20 versus $37 in the medians). The differences are not large in an absolute sense, and they clearly counter the notion that subsidy would disappear.

Figure 15 gives results on profitability that disaggregates the results in Figure 12. Using the local prime rate as the opportunity cost of capital, just 41 percent of borrowers of younger institutions and just 36 percent of the borrowers of older institutions are served by profitable institutions. When weighed by assets, the profitability figures fall to ~~21~~12 percent of younger institutions and ~~12~~21 percent of older institutions.[14]

There are good reasons that subsidy does not disappear. First, subsidy may continue to be optimal (e.g., market failure may persist, as may externalities). Second, subsidized credit may continue to be available in quantity, so the institutions take advantage of it – while donors feel pressure to move large amounts of capital to places where it will be invested relatively safely. Third, institutions that are expanding continue to be in start-up mode as new regions and new products develop. Thus the idea that they have a single start-up period does not accord with the reality of institutions that, even at 18 years of age, continue to expand into new markets.

The patterns are generally consistent with the role of subsidy entering through "soft loans" and "soft equity." In that case, the total amount of subsidy tends to increase with scale. Since institutions tend to get larger as they get older, it follows that (all else the same) subsidy per borrower naturally grows over time, rather than diminishing as microfinance rhetoric suggests.

[14] The pattern of old versus young institutions suggests that larger, younger institutions tend to be ~~considerably~~ more profitable than smaller, younger institutions~~.~~ when size is measured by total borrowers.

3. Conclusion

The microfinance business model is challenging by definition: If achieving success was possible with standard banking procedures and products, there would be no need for microfinance.

The finding that subsidies are relatively large and enduring for some commercial microfinance institutions does not imply that microfinance commercialization is a failure or that investors should turn from microfinance. But it reinforces the need for cost-benefit determinations. In a related way, dependence on subsidy does not disappear as institutions get older, and in fact the older institutions continue to use considerable subsidy. The evidence poses a challenge for the narrative that subsidy is helpful at first but will naturally diminish over time.

The greatest challenge is that long-standing rhetoric on subsidy and commercialization – which generally argues against the continued use of subsidy -- appears to be consistently out of alignment with realities in practice. Having a transparent conversation about the uses and patterns of subsidy is an important step to making sure that subsidy is being used optimally. The evidence suggests that subsidy is likely not being used optimally. By tilting away from those who may be able to benefit most from subsidy (poorer customers and women), microfinance subsidy supports institutions that may be worthy of support, though perhaps not the most worthy, at least from the vantage of traditional social analysis.

The findings also point to the importance of pursuing new ways to change the cost structure faced by most microfinance institutions. Digital payments and innovations like mobile money have the potential to create business models that allow for reaching the poorest customers sustainably (Gates and Gates 2015). If hopes prove real, they may provide the elusive path for microfinance to reach its promise as a “social business.”

Finally, the finding that per-borrower subsidy is in fact relatively small for parts of the NGO sector, especially institutions more focused on women and those institutions making smaller loans, reinforces the need for cost-benefit analyses to complement impact studies. Our cost calculations place into context pessimistic conclusions based only on impact studies. In some cases, the findings on cost and subsidy may even reverse those pessimistic conclusions.

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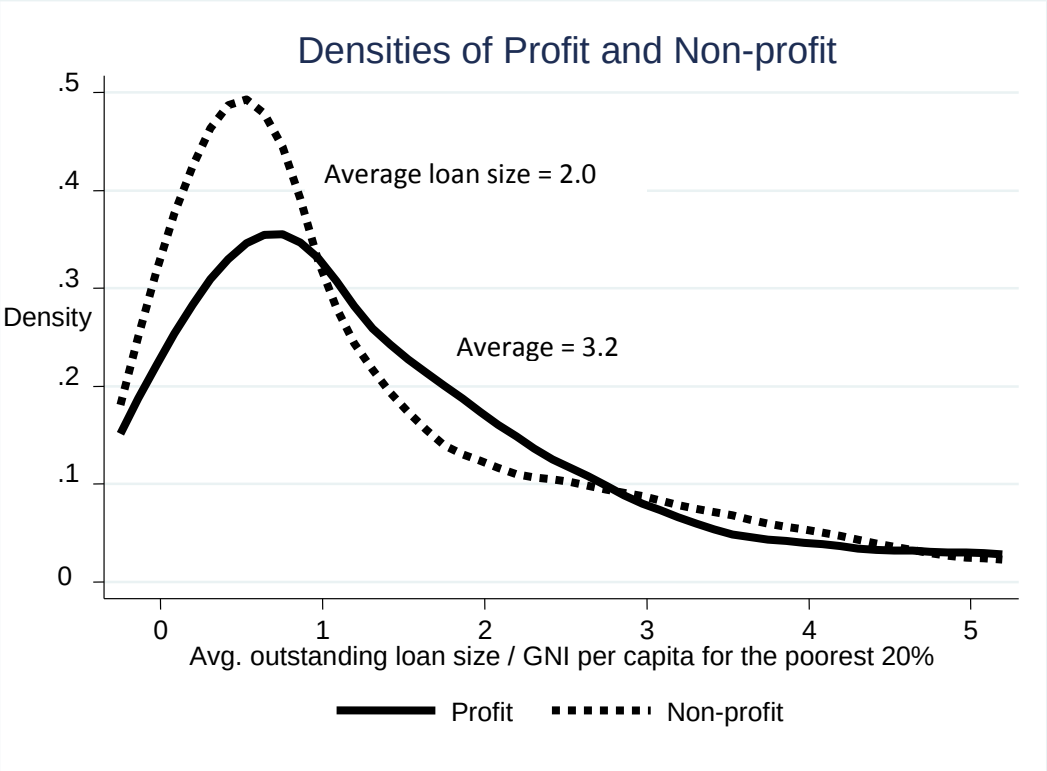

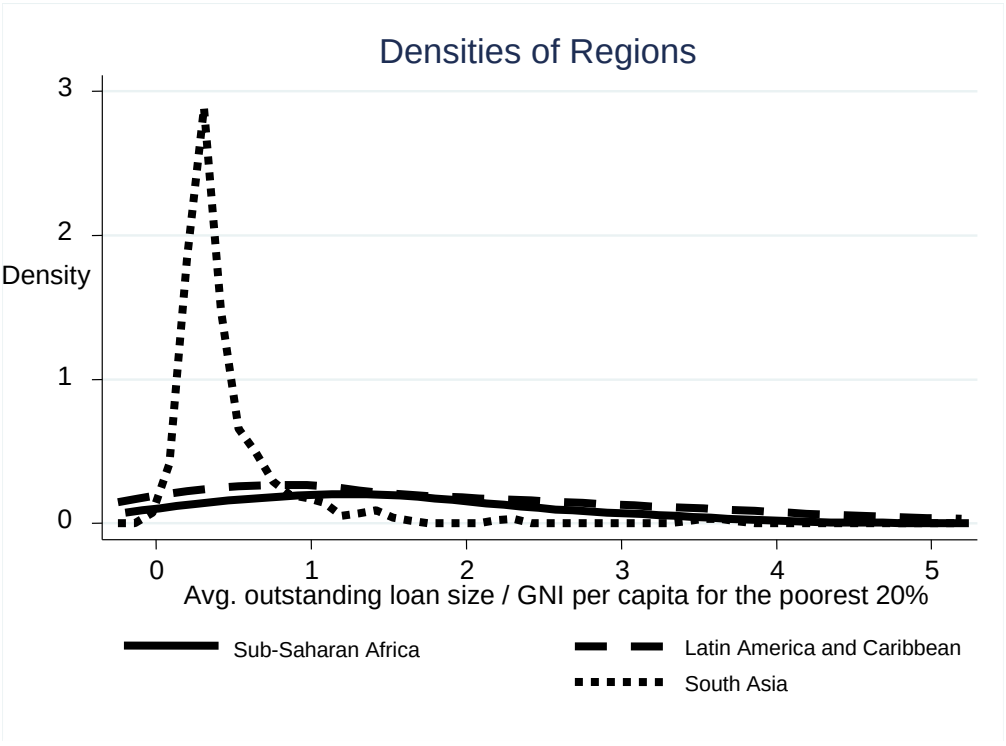

Figure 1: Density of microfinance institutions by region and by profit status

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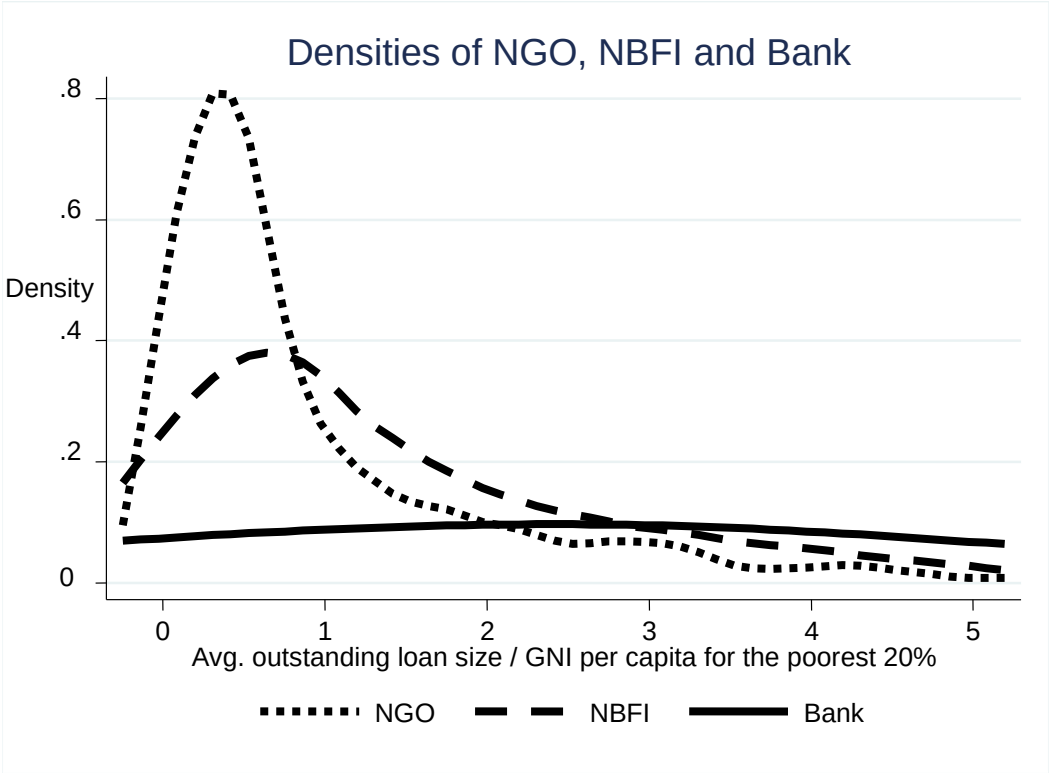

Figure 2: Density of microfinance institutions by institutional type

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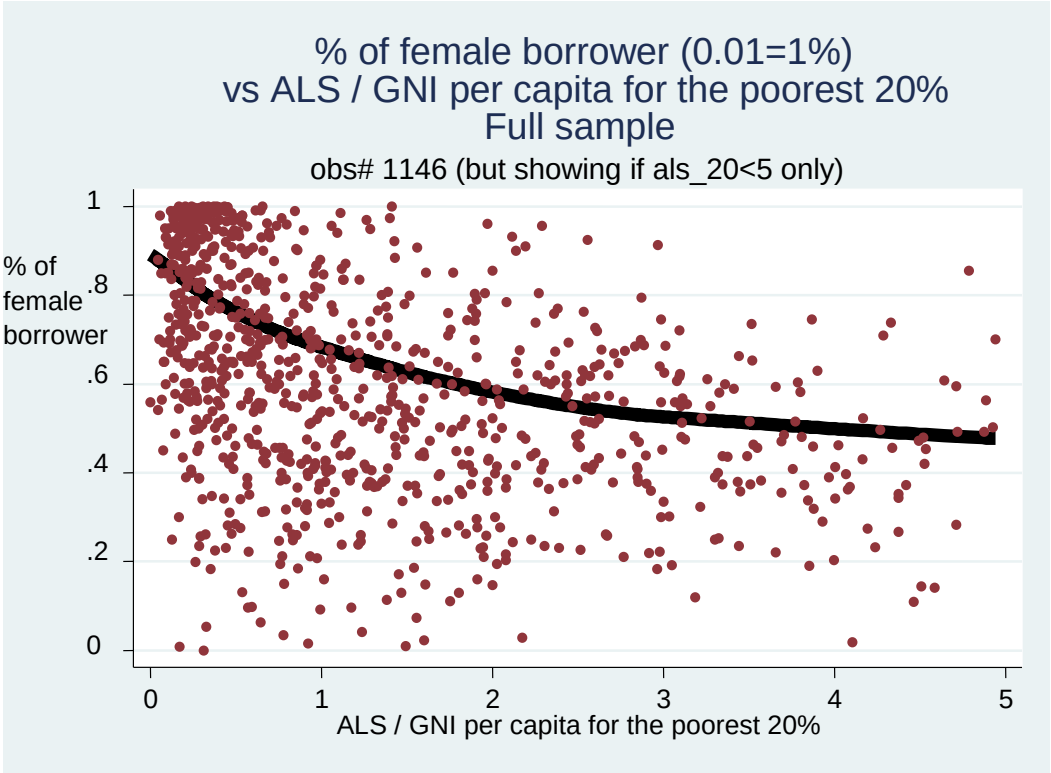

Figure 3: Fraction of female borrowers (n=1146)
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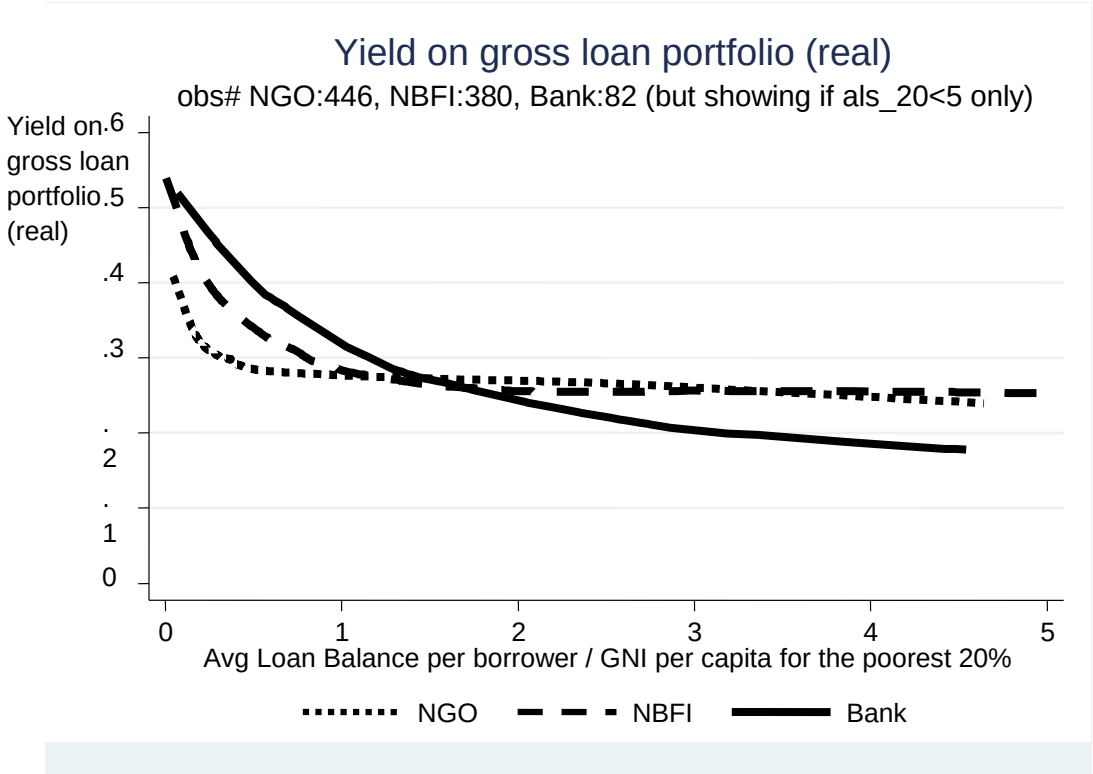

Figure 4: Average Yield on gross portfolio (real)
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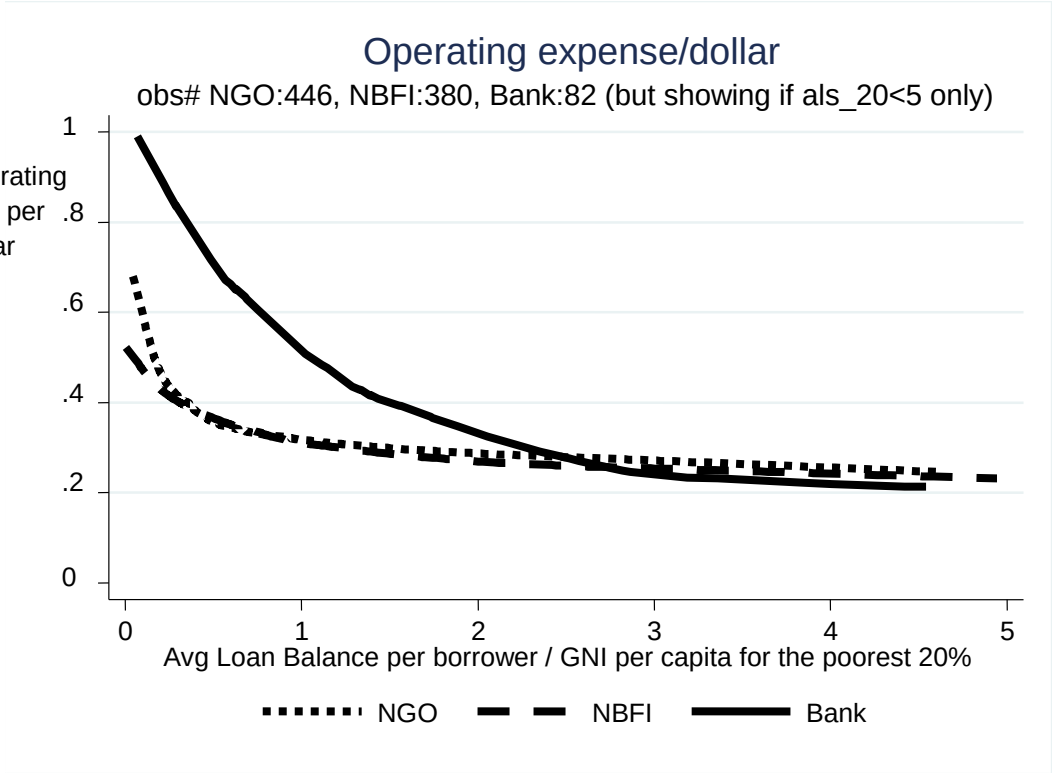

Figure 5: Operating expense per unit lent

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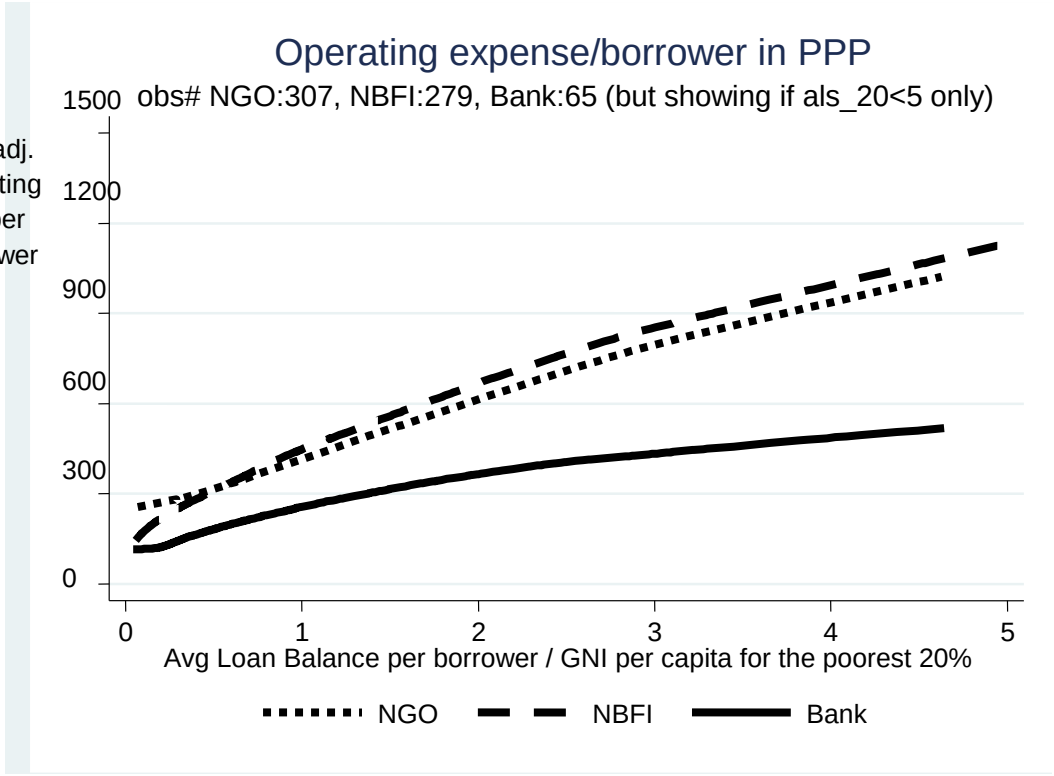

Figure 6: Operating expense per borrower, PPP$

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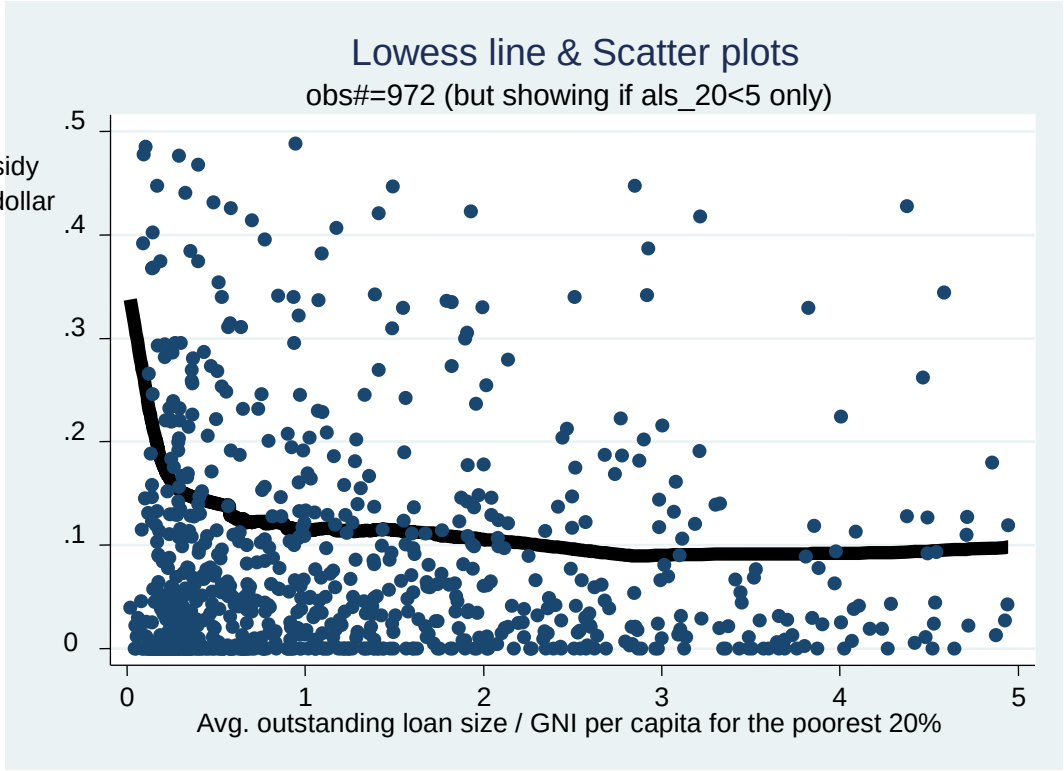

Figure 7: Subsidy per dollar lent
γ=local prime (obs = 972)

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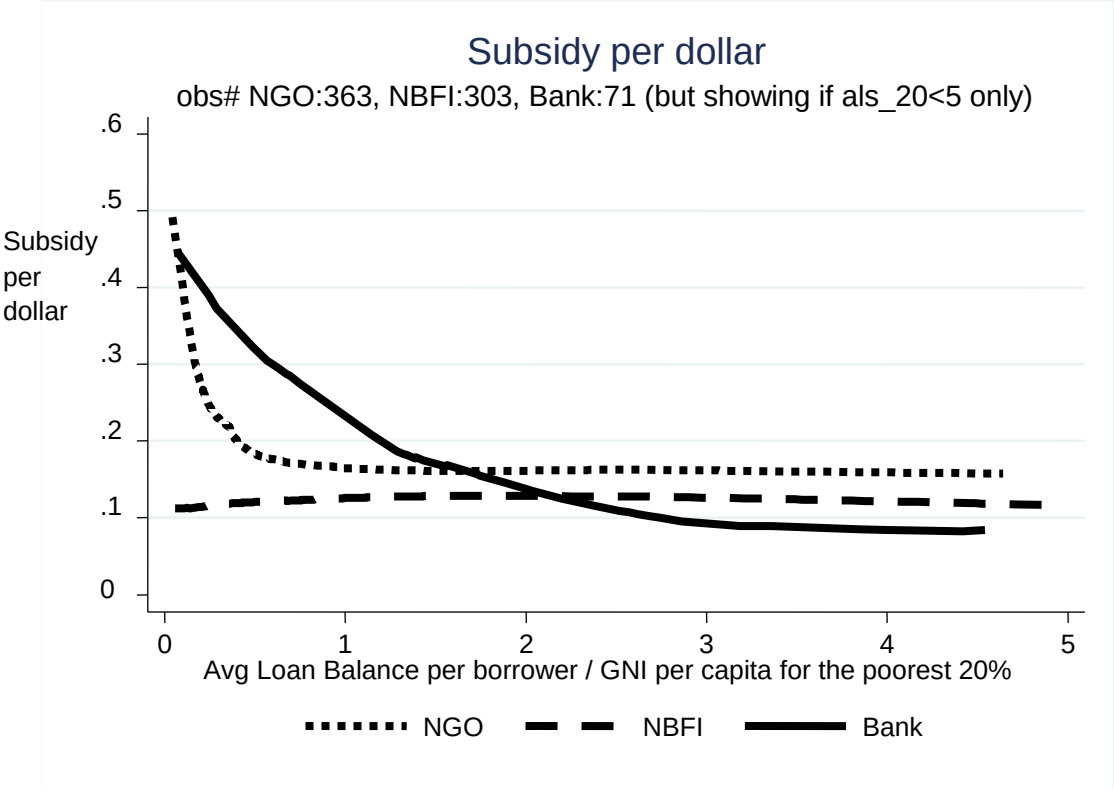

Figure 8: Subsidy: by institution
γ=local prime

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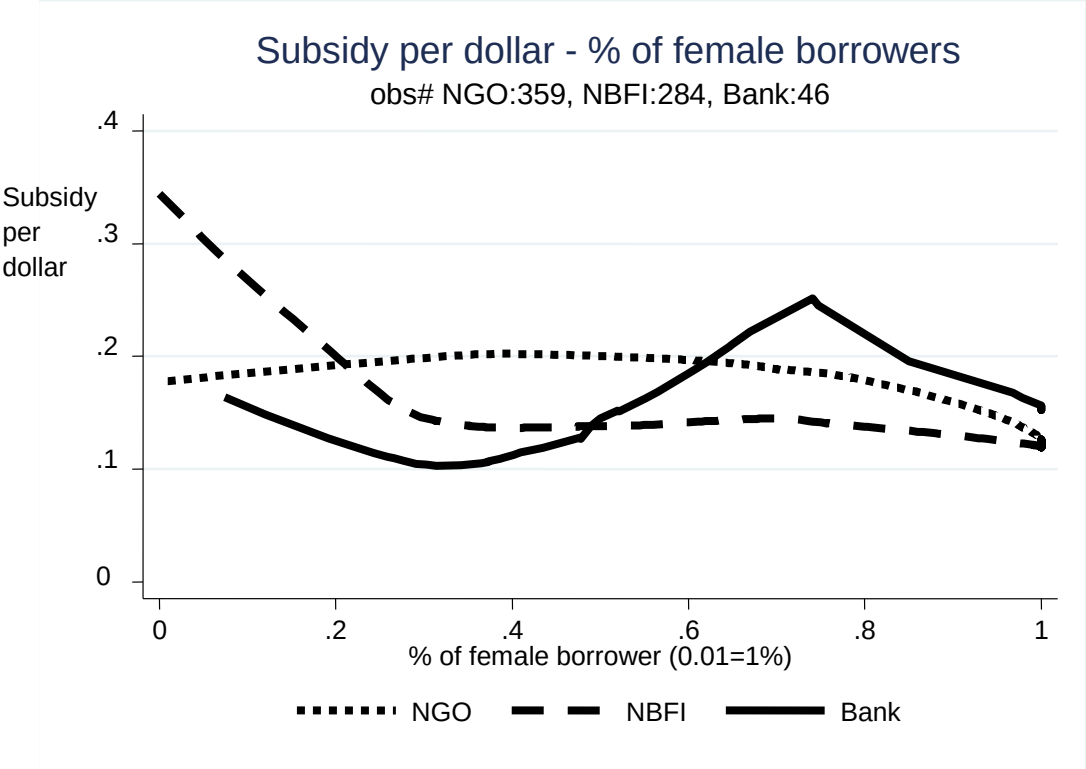

Figure 9: Subsidy per dollar, By institution

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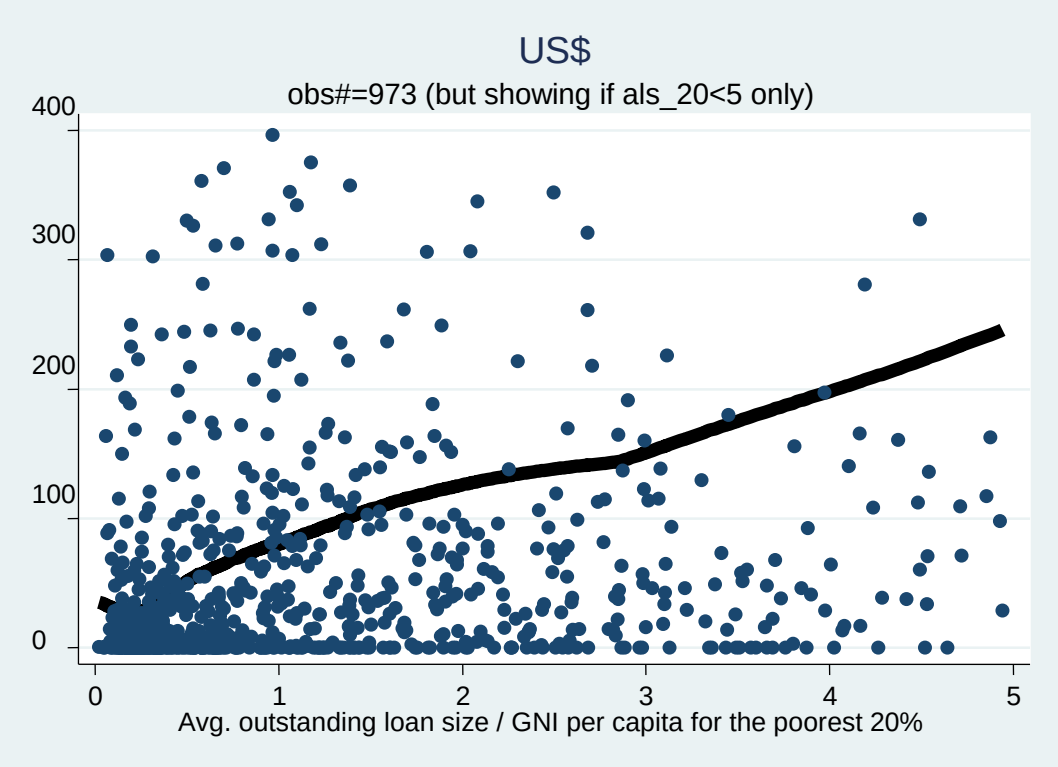

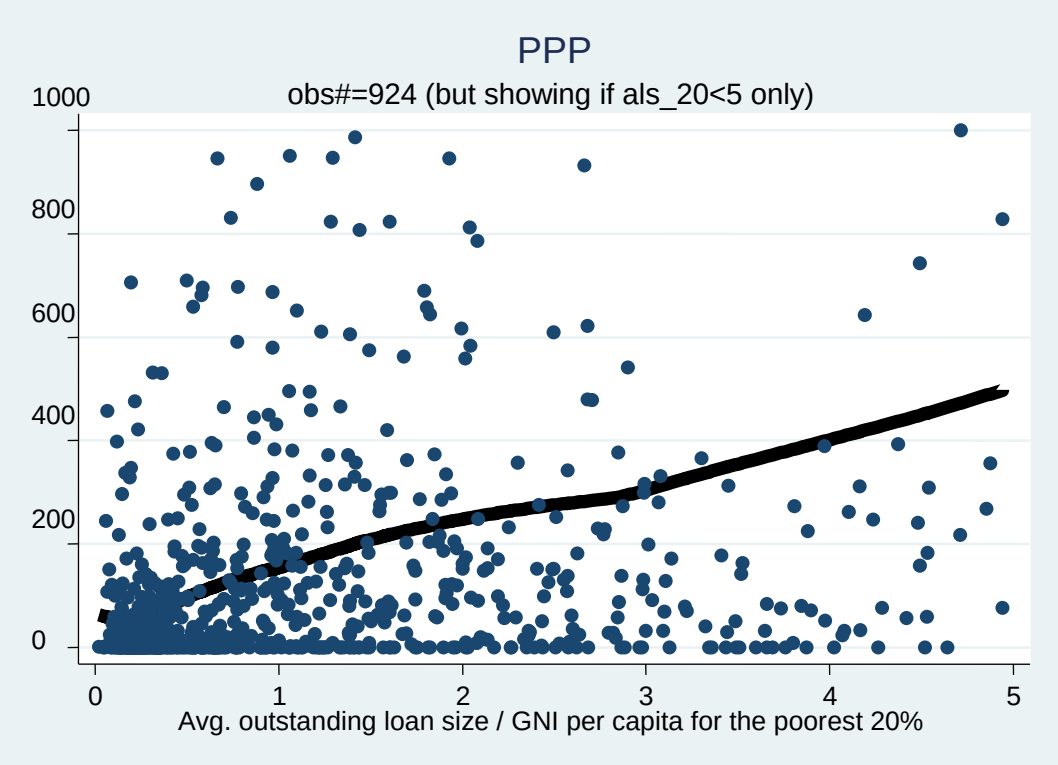

Figure 10: Subsidy per borrower, γ=local prime
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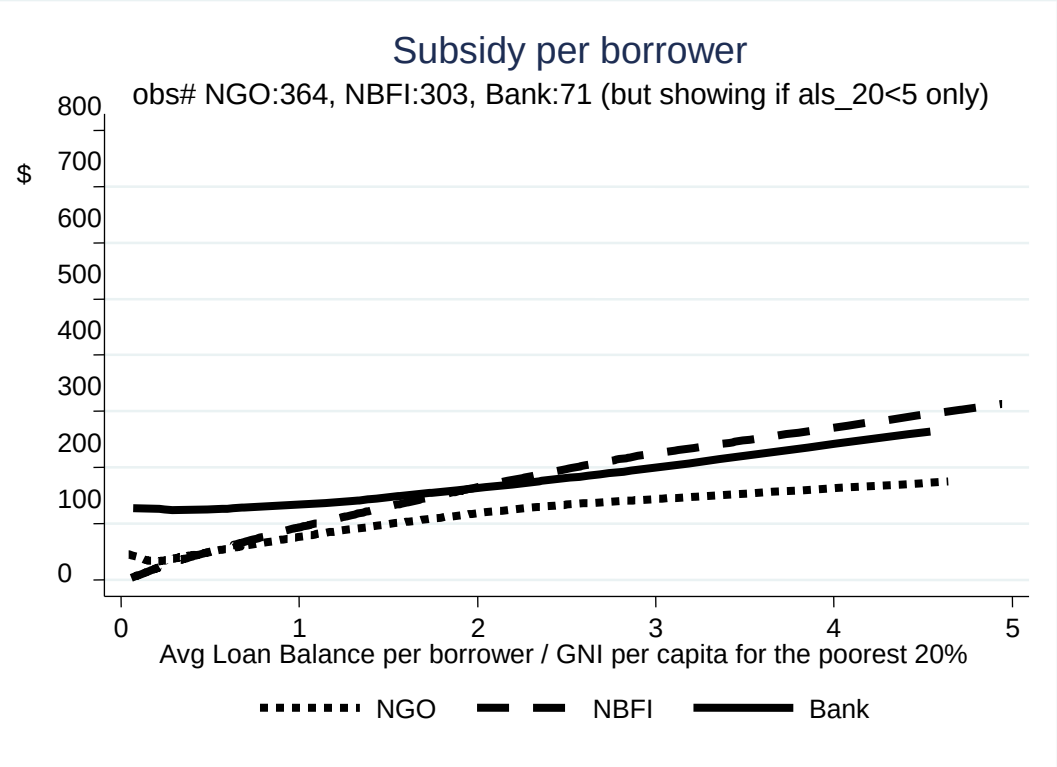

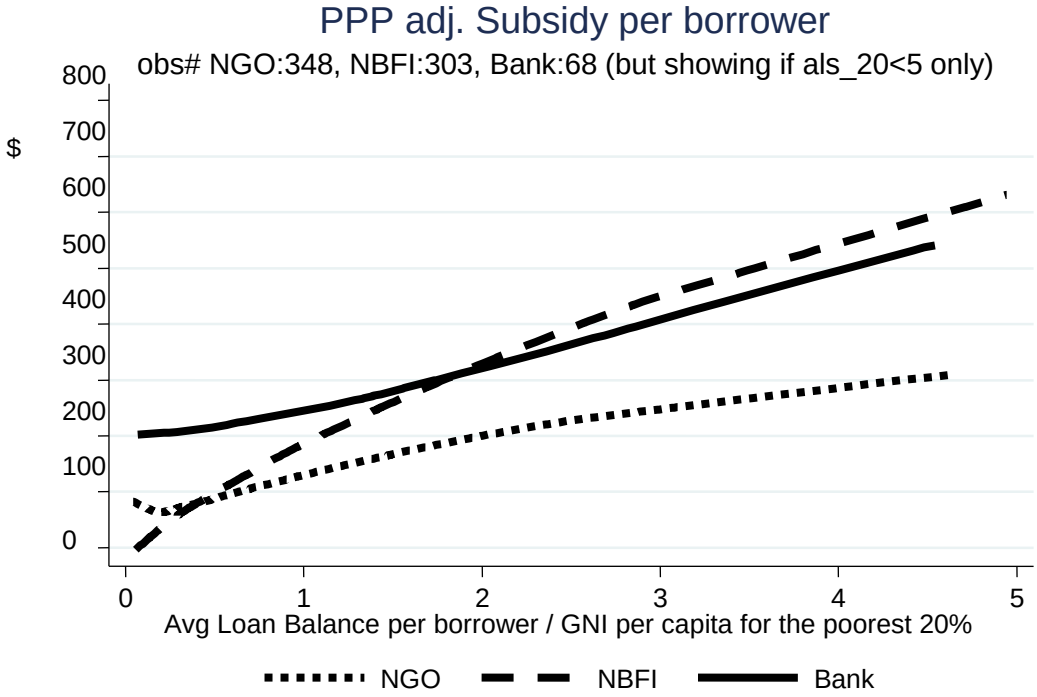

Figure 11: Subsidy per borrower: by institution, γ=local prime
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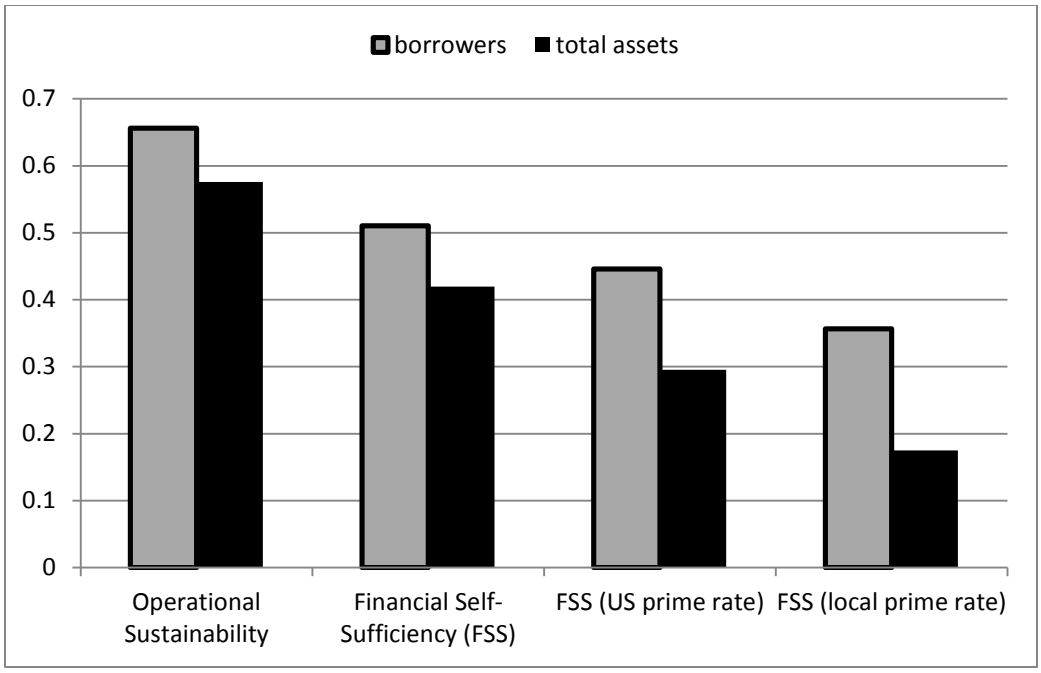

Figure 12: Percent of institutions that are profitable (FSS > 1) under different opportunity costs of capital

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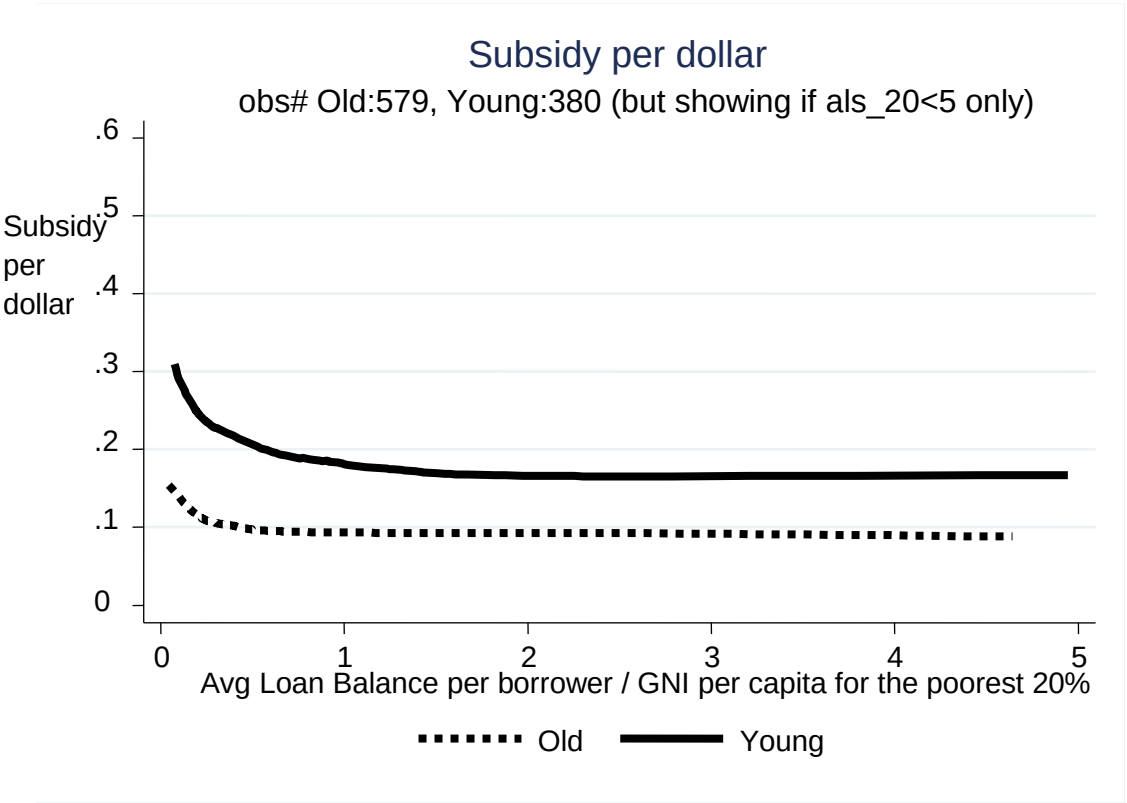

Figure 13: Subsidy per dollar, Old and young institutions

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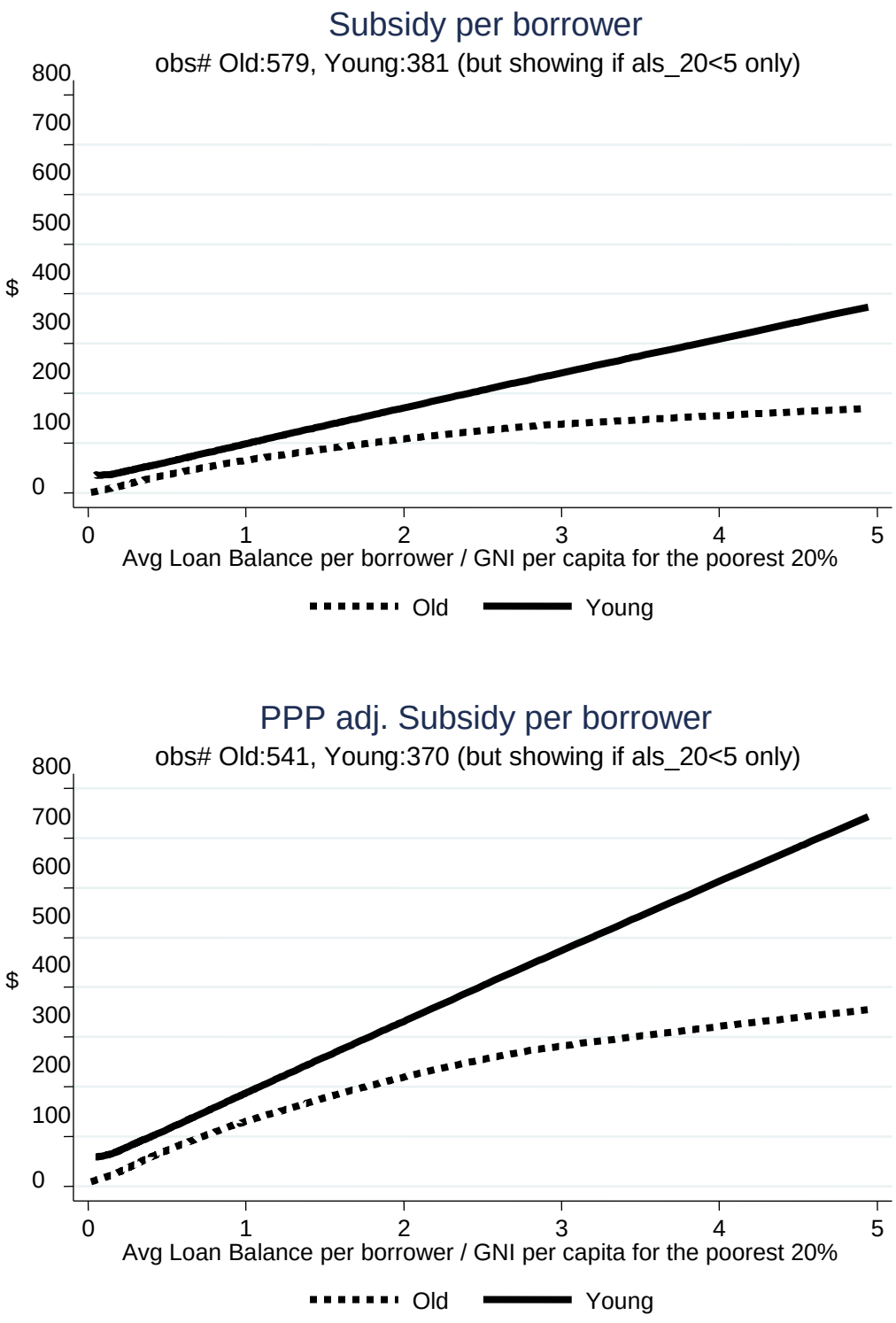

Figure 14: Old and young institutions

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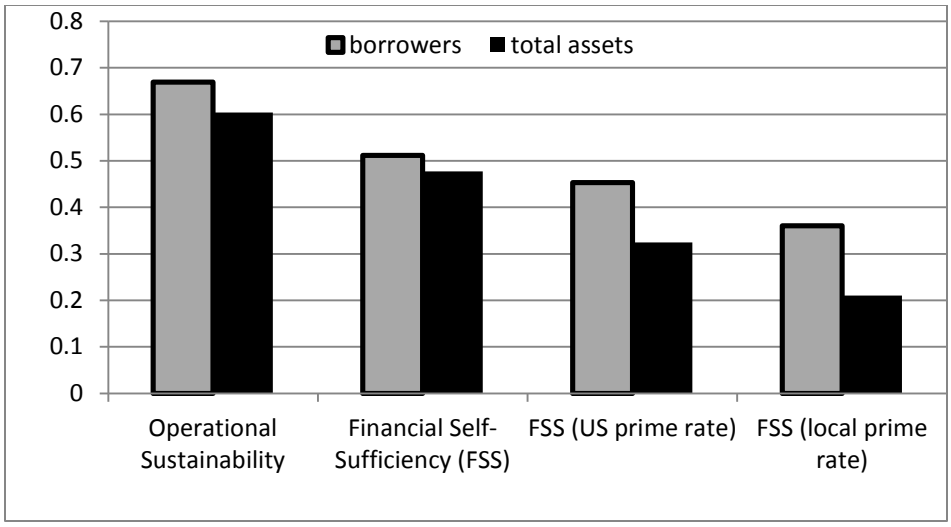
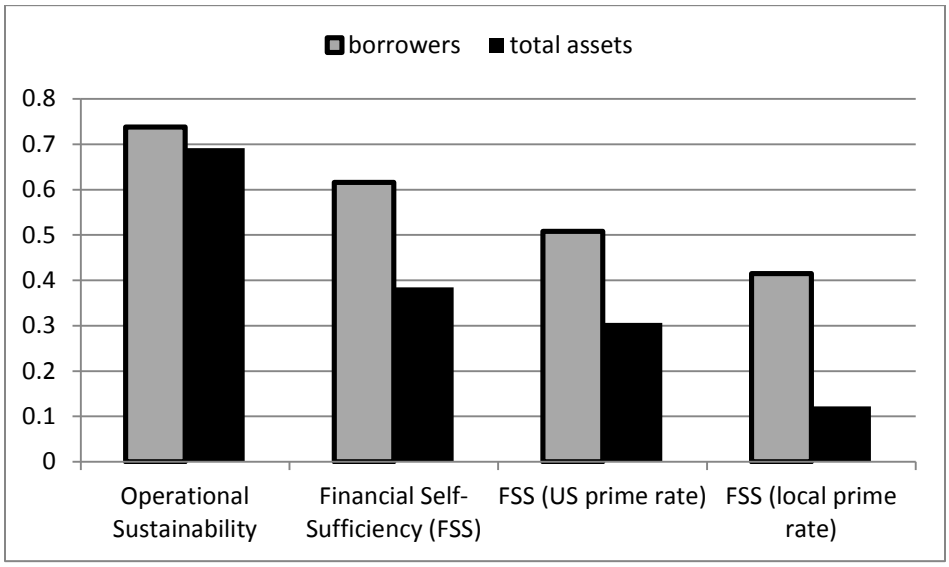


Older institutions (10 years +), n=680



Younger institutions (under 10 years), n=284

Figure 15: Percent of institutions that are profitable under different opportunity costs of capital

Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Sample	Mean	25th percentile	Median	75th percentile	Observations
Full sample	2.4	0.4	1.0	2.5	1279
Bank (For-profit)	6.9	1.4	3.6	8.6	86
Credit union/ Cooperative (Not-for-profit)	2.9	0.7	1.7	3.7	232
NGO (Not-for-profit)	1.4	0.3	0.5	1.4	443
NBFI (For-profit)	2.8	0.4	1.1	2.6	293
NBFI (Not-for-profit)	2.4	0.7	1.2	2.6	92
Rural Bank	1.4	0.7	1.2	1.9	93
For-profit	3.2	0.5	1.3	2.8	479
Not-for-profit	2.0	0.3	0.9	2.3	790

Table 1. Average loan size divided by GNI per capita at the 20th percentile of the population, Most recent observation 2005-2009

Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Sample	Mean	25th percentile	Median	75th percentile	Obs
Full sample	63	42	62	88	1174
Bank (For-profit)	51	37	50	64	57
Credit union/ Cooperative (Not-for-profit)	52	37	50	64	215
NGO (Not-for-profit)	75	57	80	98	438
NBFI (For-profit)	62	41	62	90	268
NBFI (Not-for-profit)	57	40	49	70	93
Rural Bank	43	23	37	60	72
For-profit	58	37	56	81	409
Not-for-profit	66	45	65	91	756

Table 2. Percent female (active) borrowers, Most recent observation 2005-2009

Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Sample	Mean	25th percentile	Median	75th percentile	Obs
Full sample	33.7	21.2	28.7	40.7	1319
Bank (For-profit)	31.4	19.0	24.6	34.6	84
Credit union/ Cooperative (Not-for-profit)	26.8	17.5	22.3	33.9	234
NGO (Not-for-profit)	35.7	22.8	30.1	44.9	462
NBFI (For-profit)	38.5	23.5	32.7	50.0	298
NBFI (Not-for-profit)	31.1	23.0	29.2	37.6	98
Rural Bank	29.6	22.2	28.0	35.7	102
For-profit	36.0	22.6	30.0	43.5	490
Not-for-profit	32.2	20.7	28.0	39.8	819

Table 3. Nominal portfolio yield (percent), Most recent observation 2005-2009

Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Sample	Mean	25th percentile	Median	75th percentile	Obs
Full sample	25.0	13.7	20.7	33.1	1320
Bank (For-profit)	21.9	12.0	16.0	26.9	84
Credit union/ Cooperative (Not-for-profit)	17.9	10.9	16.1	22.1	234
NGO (Not-for-profit)	27.9	15.5	23.5	38.0	462
NBFI (For-profit)	28.3	14.9	24.1	37.9	298
NBFI (Not-for-profit)	24.9	16.8	24.2	33.1	98
Rural Bank	20.5	13.9	19.8	25.8	102
For-profit	26.1	14.1	21.4	34.0	491
Not-for-profit	24.3	13.5	20.2	32.5	819

Table 4. Real portfolio yield (percent), Most recent observation 2005-2009

Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Table 5: Portfolio Yield and Average Loan Size

Dependent variable	Real portfolio yield (0.01=1%)				
	1	2	3	4	5
Average Loan Size / GNI per capita poorest 20%	-0.0053***	-0.0102**	-0.0163***	-0.0139***	-0.0272***
	[0.004]	[0.033]	[0.000]	[0.001]	[0.000]
Sq. Average Loan Size / GNI per capita poorest 20%		0.0001	0.0002***	0.0002**	0.0005***
		[0.131]	[0.009]	[0.019]	[0.001]
Europe and Central Asia			-0.0814*	-0.1108**	-0.0902**
			[0.088]	[0.018]	[0.044]
East Asia and Pacific			-0.06	-0.0496	-0.0373
			[0.284]	[0.424]	[0.596]
Sub-Saharan Africa			-0.0446	-0.0639	-0.0489
			[0.371]	[0.195]	[0.329]
South Asia			-0.2145***	-0.2187***	-0.2340***
			[0.000]	[0.000]	[0.000]
Middle East & North Africa			-0.0599	-0.0745	-0.0854**
			[0.260]	[0.137]	[0.047]
Log of average total assets				-0.0074*	-0.0113***
				[0.075]	[0.003]
Age of MFI				-0.0031***	-0.0018***
				[0.000]	[0.003]
Bank (for-profit)					-0.0194
					[0.609]
Credit union, coop (Not-for-profit)					-0.1077***
					[0.002]
NGO (Not-for-profit)					0.005
					[0.865]
NBFI (For-profit)					0.0203
					[0.557]
Rural banks					-0.0262
					[0.571]
Bank (for-profit) * ALS for the poorest 20%					0.0196***
					[0.004]
Credit union, coop (Not-for-profit) * ALS for the poorest 20%					0.0151*
					[0.091]
NGO (Not-for-profit) * ALS for the poorest 20%					-0.0019
					[0.811]
NBFI (For-profit) * ALS for the poorest 20%					0.0116
					[0.149]
Rural banks * ALS for the poorest 20%					-0.0349
					[0.353]
Bank (for-profit) * Sq. ALS for the poorest 20%					-0.0004***
					[0.001]
Credit union, coop (Not-for-profit) * Sq. ALS for the poorest 20%					-0.0002
					[0.205]
NGO (Not-for-profit) * Sq. ALS for the poorest 20%					0
					[0.852]
NBFI (For-profit) * Sq. ALS for the poorest 20%					-0.0003**
					[0.035]
Rural banks * Sq. ALS for the poorest 20%					0.0027
					[0.732]
Constant	0.2604***	0.2687***	0.3471***	0.5080***	0.5721***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	1,261	1,261	1,261	1,243	1,243
R-squared	0.023	0.03	0.172	0.215	0.279
Adjusted R-squared	0.0222	0.029	0.168	0.209	0.265
Number of countries	91	91	91	91	91

Table 5 (continued): Portfolio Yield and Average Loan Size

Test, H0: ALS 20%+ALS 20%_Bank (profit)=0	**0.0618**
Test, H0: ALS 20%+ALS 20%_Coop (Not profit)=0	0.0405
Test, H0: ALS 20%+ALS 20%_NGO (Not profit)=0	0.000182
Test, H0: ALS 20%+ALS 20%_NBFI (profit)=0	0.0611
Test, H0: ALS 20%+ALS 20%_Rural bank=0	0.0944
OTest, H0: ALS 20%_sq+ALS 20%_sq_Bank (profit)=0	0.292
Test, H0: ALS 20%_sq+ALS 20%_sq_Coop (Not profit)=0	0.059
Test, H0: ALS 20%_sq+ALS 20%_sq_NGO (Not profit)=0	0.000469
Test, H0: ALS 20%_sq+ALS 20%_sq_NBFI (profit)=0	0.129
Test, H0: ALS 20%_sq+ALS 20%_sq_Rural bank=0	0.685

Notes. *, **, *** represent significance at the 10, 5, and 1 percent levels, respectively. The omitted category in model 5 is not-for-profit NBFIs. All models estimated using OLS with standard errors clustered at the country level. Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Sample	Mean	25th percentile	Median	75th percentile	Obs
Full sample	18.8	9.2	14.0	23.0	1336
Bank (For-profit)	15.7	7.7	11.4	20.7	90
Credit union/ Cooperative (Not-for-profit)	12.8	7.5	10.7	15.8	234
NGO (Not-for-profit)	22.8	10.9	17.6	27.9	466
NBFI (For-profit)	21.0	10.4	15.4	27.5	301
NBFI (Not-for-profit)	18.2	10.5	17.0	22.5	101
Rural Bank	11.7	7.6	11.4	14.8	102
For-profit	18.6	9.2	13.6	23.1	500
Not-for-profit	19.0	9.2	14.4	23.0	826

Table 6. Operating expense ratio (percent), Most recent observation 2005-2009

Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Table 7: Operating Expenses and Average Loan Size

Dependent variable	Operating expense per dollar lent (0.01=1%)				
	-1	-2	-3	-4	-5
Average Loan Size / GNI per capita poorest 20%	-0.0056**	-0.0159***	-0.0241***	-0.0166***	-0.0199*
	[0.021]	[0.002]	[0.000]	[0.000]	[0.071]
Sq. Average Loan Size / GNI per capita poorest 20%		0.0002***	0.0003***	0.0002***	0.0003
		[0.003]	[0.000]	[0.000]	[0.136]
Europe and Central Asia			-0.1402**	-0.2052***	-0.1895***
			[0.010]	[0.000]	[0.000]
East Asia and Pacific			-0.1187*	-0.1192	-0.1201
			[0.067]	[0.138]	[0.149]
Sub-Saharan Africa			0.0809	0.0365	0.0447
			[0.185]	[0.524]	[0.425]
South Asia			-0.1870***	-0.1890***	-0.2096***
			[0.007]	[0.004]	[0.001]
Middle East & North Africa			-0.1324**	-0.1523***	-0.1694***
			[0.039]	[0.009]	[0.002]
Log of average total assets				-0.0307***	-0.0419***
				[0.000]	[0.000]
Age of MFI				-0.0049***	-0.0032***
				[0.000]	[0.000]
Bank (for-profit)					0.1446*
					[0.070]
Credit union, coop (Not-for-profit)					-0.1363***
					[0.001]
NGO (Not-for-profit)					0.0292
					[0.452]
NBFI (For-profit)					0.0148
					[0.725]
Rural banks					-0.0626
					[0.295]
Bank (for-profit) * ALS for the poorest 20%					0.005
					[0.697]
Credit union, coop (Not-for-profit) * ALS for the poorest 20%					0.0113
					[0.407]
NGO (Not-for-profit) * ALS for the poorest 20%					-0.0258
					[0.141]
NBFI (For-profit) * ALS for the poorest 20%					0.0007
					[0.951]
Rural banks * ALS for the poorest 20%					0.0078
					[0.695]
Bank (for-profit) * Sq. ALS for the poorest 20%					-0.0001
					[0.533]
Credit union, coop (Not-for-profit) * Sq. ALS for the poorest 20%					-0.0001
					[0.676]
NGO (Not-for-profit) * Sq. ALS for the poorest 20%					0.0005
					[0.123]
NBFI (For-profit) * Sq. ALS for the poorest 20%					-0.0001
					[0.718]
Rural banks * Sq. ALS for the poorest 20%					-0.0059
					[0.149]
Constant	0.2900***	0.3072***	0.3875***	0.9359***	1.1037***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	1,261	1,261	1,261	1,243	1,243
R-squared	0.023	0.128	0.21	0.263	0.263
Adjusted R-squared	0.0212	0.123	0.204	0.248	0.248
Number of countries	91	91	91	91	91

Table 7 (continued): Operating Expenses and Average Loan Size

Test, H0:ALS 20%+ALS 20%_Bank (profit)=0	**0.073**
Test, H0:ALS 20%+ALS 20%_Coop (Not profit)=0	0.185
Test, H0:ALS 20%+ALS 20%_NGO (Not profit)=0	0.00207
Test, H0:ALS 20%+ALS 20%_NBFI (profit)=0	0.00628
Test, H0:ALS 20%+ALS 20%_Rural bank=0	0.486
Test, H0:ALS 20%_sq+ALS 20%_sq_Bank (profit)=0	0.0557
Test, H0:ALS 20%_sq+ALS 20%_sq_Coop (Not profit)=0	0.145
Test, H0:ALS 20%_sq+ALS 20%_sq_NGO (Not profit)=0	0.00241
Test, H0:ALS 20%_sq+ALS 20%_sq_NBFI (profit)=0	0.021
Test, H0:ALS 20%_sq+ALS 20%_sq_Rural bank=0	0.174

Notes. *, **, *** represent significance at the 10, 5, and 1 percent levels, respectively. The omitted category in model 5 is not-for-profit NBFIs. All models estimated using OLS with standard errors clustered at the country level. Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Sample	Mean	25th percentile	Median	75th percentile	Obs
Full sample	99.4	80.6	100.9	115.2	1263
Bank (For-profit)	96.3	79.5	96.8	112.1	83
Credit union/ Cooperative (Not-for-profit)	97.2	83.3	98.9	111.2	229
NGO (Not-for-profit)	97.2	76.4	100.6	112.5	443
NBFI (For-profit)	101.8	77.9	101.2	117.8	286
NBFI (Not-for-profit)	99.4	74.2	99.6	121.9	100
Rural Bank	107.2	97.2	109.6	119.5	89
For-profit	101.8	84.1	101.8	117.7	466
Not-for-profit	97.8	78.5	100.4	113.4	788

Notes: FSS as calculated by the MIX Market.

Table 8. Financial Self-Sufficiency (FSS) ratio, Most recent observation 2005-2009

Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Sample	Mean	25th percentile	Median	75th percentile	Obs
Full sample	10.3	0.0	2.3	9.9	1023
Bank (For-profit)	10.4	0.0	4.3	10.7	73
Credit union/ Cooperative (Not-for-profit)	5.4	0.0	0.9	5.4	160
NGO (Not-for-profit)	15.6	0.0	3.9	14.9	376
NBFI (For-profit)	10.8	0.0	2.9	10.5	226
NBFI (Not-for-profit)	15.1	0.0	3.1	14.2	92
Rural Bank	1.0	0.0	0.0	0.0	67
For-profit	8.7	0.0	1.6	8.9	379
Not-for-profit	12.8	0.0	3.0	11.0	636

Note: Subsidy total= Opportunity costs for equity capital (Inflation rate) - Profit before tax + Adjusted in kind subsidy + Opportunity costs for loan capital (Prime - actual paid rate)

Table 9. Subsidy per dollar lent (percent), Inflation adjustment for implicit equity subsidy. Most recent observation 2005-2009

Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Sample	Mean	25th percentile	Median	75th percentile	Observations
Full sample	13.2	0.0	4.6	13.7	1023
Bank (For-profit)	14.5	1.1	7.9	14.2	73
Credit union/ Cooperative (Not-for-profit)	7.3	0.8	3.0	7.0	160
NGO (Not-for-profit)	18.4	1.7	7.6	23.4	376
NBFI (For-profit)	12.2	0.0	4.7	14.6	226
NBFI (Not-for-profit)	16.8	1.1	7.2	19.6	92
Rural Bank	0.8	0.0	0.0	0.8	67
For-profit	9.9	0.0	2.5	12.2	379
Not-for-profit	15.3	1.3	5.8	15.2	636

Note: Opportunity costs for equity capital (Prime) - Profit before tax + Adjusted in kind subsidy + Opportunity costs for loan capital (Prime - actual paid rate)

Table 10. Subsidy per dollar lent (percent), "Prime" adjustment for implicit equity subsidy. Most recent observation 2005-2009

Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Table 11: Subsidy per Dollar and Average Loan Size

Dependent variables	Subsidy per dollar (Local prime -actual paid rate)			
	1	2	3	4
Average Loan Size / GNI per capita poorest 20%	-0.0047**	-0.0009	-0.0038**	-0.0019
	[0.037]	[0.552]	[0.020]	[0.354]
Europe and Central Asia	-0.0744	-0.1124**	-0.0866**	0.0078
	[0.117]	[0.027]	[0.021]	[0.769]
East Asia and Pacific	-0.1346***	-0.1483***	-0.1562***	-0.0814**
	[0.004]	[0.002]	[0.002]	[0.016]
Sub-Saharan Africa	0.0551	0.0286	0.029	0.0445
	[0.381]	[0.626]	[0.594]	[0.262]
South Asia	-0.0718	-0.0726	-0.0755	0.0101
	[0.255]	[0.241]	[0.179]	[0.783]
Middle East & North Africa	-0.0975*	-0.1144**	-0.1350***	-0.0161
	[0.057]	[0.011]	[0.006]	[0.685]
Log of average total assets		-0.0372***	-0.0447***	-0.0137**
		[0.000]	[0.000]	[0.027]
Age of MFI		-0.0029***	-0.0023***	-0.0014**
		[0.000]	[0.009]	[0.035]
Portfolio yield (nominal)				-0.6510***
				[0.000]
Capital costs assets ratio				0.149
				[0.604]
Operating costs assets ratio				1.3245***
				[0.000]
Bank (for-profit)			0.1039**	0.0355
			[0.038]	[0.416]
Credit union, coop (Not-for-profit)			-0.1282***	-0.0538
			[0.001]	[0.138]
NGO (Not-for-profit)			0.0156	-0.0011
			[0.631]	[0.971]
NBFI (For-profit)			-0.0369	-0.0363
			[0.227]	[0.177]
Rural banks			-0.0519	-0.0078
			[0.210]	[0.808]
Bank (for-profit) * ALS for the poorest 20%			-0.0001	0.0014
			[0.980]	[0.658]
Credit union, coop (Not-for-profit) * ALS for the poorest 20%			0.0142**	0.0121*
			[0.023]	[0.086]
NGO (Not-for-profit) * ALS for the poorest 20%			-0.0008	0.004
			[0.838]	[0.123]
NBFI (For-profit) * ALS for the poorest 20%			0.0037	0.0050*
			[0.199]	[0.082]
Rural banks * ALS for the poorest 20%			0.0223***	0.0176***
			[0.001]	[0.005]
Constant	0.1814***	0.8092***	0.9339***	0.3276***
	[0.000]	[0.000]	[0.000]	[0.006]
Observations	961	948	948	933
R-squared	0.043	0.126	0.157	0.562
r2_a	0.0369	0.119	0.141	0.552
N_clust	75	75	75	75

Table 11 (continued): Subsidy per Dollar and Average Loan Size

Test, H0: ALS 20%+ALS 20%_Bank (profit)=0	**0.209**	**0.844**
Test, H0:ALS 20%+ALS 20%_Coop (Not profit)=0	0.0708	0.12
Test, H0: ALS 20%+ALS 20%_NGO (Not profit)=0	0.233	0.248
Test, H0:ALS 20%+ALS 20%_NBFI (profit)=0	0.965	0.187
Test, H0: ALS 20%+ALS 20%_Rural bank=0	0.0015	0.00918

Notes. *, **, *** represent significance at the 10, 5, and 1 percent levels, respectively. The omitted category in models 3 and 4 is not-for-profit NBFIs. All models estimated using OLS with standard errors clustered at the country level. Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Table 12: Subsidy per Dollar and Share of Female Borrowers

Dependent variable	Subsidy per dollar (Local prime- actual paid rate)			
	1	2	3	4
% of female borrowers	0.0239	-0.0567	0.1004	0.1549
	[0.667]	[0.315]	[0.397]	[0.267]
Europe and Central Asia	-0.0701	-0.1349**	-0.1227***	-0.018
	[0.163]	[0.016]	[0.005]	[0.548]
East Asia and Pacific	-0.1266***	-0.1384***	-0.1306**	-0.0708**
	[0.005]	[0.002]	[0.015]	[0.037]
Sub-Saharan Africa	0.0414	0.0122	0.0076	0.0281
	[0.515]	[0.841]	[0.893]	[0.508]
South Asia	-0.0328	-0.0209	-0.0156	0.0517
	[0.685]	[0.782]	[0.810]	[0.197]
Middle East & North Africa	-0.0906*	-0.1143***	-0.1508***	-0.0446
	[0.068]	[0.010]	[0.003]	[0.348]
Log of average total assets		-0.0419***	-0.0474***	-0.0126*
		[0.000]	[0.000]	[0.092]
Age of MFI		-0.0033***	-0.0030***	-0.0020**
		[0.002]	[0.009]	[0.014]
Portfolio yield (nominal)				-0.6621***
				[0.000]
Capital costs assets ratio				0.3309
				[0.240]
Operating costs assets ratio				1.3324***
				[0.000]
Bank (for-profit)			0.1129	0.0868
			[0.131]	[0.277]
Credit union, coop (Not-for-profit)			0.0172	0.1432*
			[0.834]	[0.093]
NGO (Not-for-profit)			0.0451	0.1088
			[0.585]	[0.226]
NBFI (For-profit)			0.0785	0.1051
			[0.188]	[0.120]
Rural banks			-0.0124	0.1073
			[0.898]	[0.139]
Bank (for-profit) * % of female borrower			-0.1329	-0.151
			[0.507]	[0.485]
Credit union, coop (Not-for-profit) * % of female borrower			-0.2998	-0.3906**
			[0.100]	[0.031]
NGO (Not-for-profit) * % of female borrower			-0.1497	-0.2357
			[0.370]	[0.175]
NBFI (For-profit) * % of female borrower			-0.2758*	-0.2972*
			[0.077]	[0.070]
Rural banks * % of female borrower			-0.1511	-0.2810*
			[0.330]	[0.066]
Constant	0.1556***	0.9226***	0.9757***	0.2585
	[0.009]	[0.000]	[0.000]	[0.106]
Observations	891	880	880	866
R-squared	0.03	0.115	0.151	0.556
r2_a	0.0236	0.107	0.133	0.545
N_clust	77	77	77	77

Table 12 (continued): Subsidy per Dollar and Share of Female Borrowers

Test, H0: ALS 20%+ALS 20%_Bank (profit)=0	**0.829**	**0.981**
Test, H0:ALS 20%+ALS 20%_Coop (Not profit)=0	0.0837	0.0313
Test, H0:ALS 20%+ALS 20%_NGO (Not profit)=0	0.631	0.321
Test, H0:ALS 20%+ALS 20%_NBFI (profit)=0	0.0489	0.0082
Test, H0:ALS 20%+ALS 20%_Rural bank=0	0.556	0.00668

Notes. *, **, *** represent significance at the 10, 5, and 1 percent levels, respectively. The omitted category in models 3 and 4 is not-for-profit NBFIs. All models estimated using OLS with standard errors clustered at the country level. Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Sample	Mean	25th percentile	Median	75th percentile	Observations
Full sample	84	0	10	61	1002
Bank (For-profit)	199	0	64	320	72
Credit union/ Cooperative (Not-for-profit)	64	0	14	66	159
NGO (Not-for-profit)	58	0	10	47	371
NBFI (For-profit)	129	0	11	68	221
NBFI (Not-for-profit)	88	0	14	99	92
Rural Bank	8	0	0	0	59
For-profit	119	0	5	68	365
Not-for-profit	64	0	11	56	629

Note: Subsidy total= Opportunity costs for equity capital (Inflation rate) - Profit before tax + Adjusted in kind subsidy + Opportunity costs for loan capital (Prime - actual paid rate)

Table 13. Subsidy per borrower, Inflation adjustment for implicit equity subsidy. Most recent observations 2005-2009

Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Sample	Mean	25th percentile	Median	75th percentile	Observations
Full sample	132	0	26	102	1002
Bank (For-profit)	275	20	93	417	72
Credit union/ Cooperative (Not-for-profit)	110	9	46	117	159
NGO (Not-for-profit)	101	3	23	75	371
NBFI (For-profit)	201	0	22	117	221
NBFI (Not-for-profit)	133	10	51	147	92
Rural Bank	9	0	0	0	59
For-profit	178	0	14	107	365
Not-for-profit	108	4	32	98	629

Note: Opportunity costs for equity capital (Prime) - Profit before tax + Adjusted in kind subsidy + Opportunity costs for loan capital (Prime - actual paid rate)

Table 14. Subsidy per borrower, "Prime" adjustment for implicit equity subsidy. Most recent observations 2005-2009

Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Sample	Mean	25th percentile	Median	75th percentile	Observations
Full sample	158	0	18	117	929
Bank (For-profit)	417	0	154	705	67
Credit union/ Cooperative (Not-for-profit)	142	0	35	167	128
NGO (Not-for-profit)	102	0	20	93	345
NBFI (For-profit)	214	0	23	122	220
NBFI (Not-for-profit)	196	0	24	158	83
Rural Bank	17	0	0	0	59
For-profit	213	0	12	137	359
Not-for-profit	125	0	22	113	562

Note: Subsidy total= Opportunity costs for equity capital (Inflation rate) - Profit before tax + Adjusted in kind subsidy + Opportunity costs for loan capital (Prime - actual paid rate)

Table 15. PPP adjusted Subsidy per borrower, Inflation adjustment for implicit equity subsidy. Most recent observations 2005-2009

Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Sample	Mean	25th percentile	Median	75th percentile	Observations
Full sample	248	0	51	203	929
Bank (For-profit)	578	28	215	1097	67
Credit union/ Cooperative (Not-for-profit)	243	8	113	273	128
NGO (Not-for-profit)	174	5	51	146	345
NBFI (For-profit)	333	0	47	230	220
NBFI (Not-for-profit)	294	19	84	312	83
Rural Bank	18	0	0	0	59
For-profit	316	0	27	222	359
Not-for-profit	207	7	61	196	562

Note: Opportunity costs for equity capital (Prime) - Profit before tax + Adjusted in kind subsidy + Opportunity costs for loan capital (Prime - actual paid rate)

Table 16. PPP adjusted Subsidy per borrower, "Prime" adjustment for implicit equity subsidy. Most recent observations 2005-2009

Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Table 17: Subsidy per Borrower and Average Loan Size

Dependent variables	Subsidy per borrower (Local prime-actual paid rate)			
	1	2	3	4
Average Loan Size / GNI per capita poorest 20%	35.6559*	37.2541*	7.8046**	7.0342**
	[0.058]	[0.054]	[0.021]	[0.027]
Europe and Central Asia	115.7205	94.0187	155.4196**	173.4702**
	[0.154]	[0.258]	[0.035]	[0.018]
East Asia and Pacific	-68.1446	-70.9165	-37.669	-25.2122
	[0.168]	[0.129]	[0.461]	[0.635]
Sub-Saharan Africa	-87.0423	-101.0891	-75.2204	-72.2872
	[0.157]	[0.104]	[0.176]	[0.204]
South Asia	-54.4177	-56.6548	-31.1592	-32.5178
	[0.294]	[0.273]	[0.508]	[0.509]
Middle East & North Africa	-29.4527	-40.3954	1.3292	15.8682
	[0.570]	[0.449]	[0.981]	[0.789]
Log of average total assets		-14.1986	-21.4005***	-15.3363**
		[0.164]	[0.009]	[0.041]
Age of MFI		-1.8529*	-0.651	-1.1046
		[0.055]	[0.585]	[0.366]
Portfolio yield (nominal)				-377.7644**
				[0.011]
Capital costs assets ratio				-496.2402
				[0.166]
Operating costs assets ratio				434.2736**
				[0.015]
Bank (for-profit)			173.6384***	166.2569***
			[0.005]	[0.006]
Credit union, coop (Not-for-profit)			-73.7119	-48.7737
			[0.387]	[0.479]
NGO (Not-for-profit)			-40.2399	-51.8133
			[0.535]	[0.399]
NBFI (For-profit)			35.2031	35.463
			[0.582]	[0.559]
Rural banks			5.3074	40.0133
			[0.924]	[0.515]
Bank (for-profit) * ALS for the poorest 20%			4.9543	5.4469
			[0.566]	[0.530]
Credit union, coop (Not-for-profit) * ALS for the poorest 20%			21.8309	18.6408
			[0.175]	[0.197]
NGO (Not-for-profit) * ALS for the poorest 20%			69.0765**	70.6424**
			[0.041]	[0.039]
NBFI (For-profit) * ALS for the poorest 20%			31.8264	30.6471
			[0.173]	[0.179]
Rural banks * ALS for the poorest 20%			-4.0476	-17.9311**
			[0.546]	[0.044]
Constant	51.9273	303.2091*	381.9456**	362.3290**
	[0.344]	[0.065]	[0.013]	[0.022]
Observations	962	948	948	933
R-squared	0.21	0.218	0.313	0.342
r2_a	0.205	0.211	0.3	0.326
N_clust	75	75	75	75

Table 17 (continued): Subsidy per Borrower and Average Loan Size

Test, H0: ALS 20%+ALS 20%_Bank (profit)=0	**0.206**	**0.213**
Test, H0: ALS 20%+ALS 20%_Coop (Not profit)=0	0.0555	0.0589
Test, H0: ALS 20%+ALS 20%_NGO (Not profit)=0	0.0232	0.0242
Test, H0: ALS 20%+ALS 20%_NBFI (profit)=0	0.0893	0.0961
Test, H0: ALS 20%+ALS 20%_Rural bank=0	0.501	0.206

Notes. *, **, *** represent significance at the 10, 5, and 1 percent levels, respectively. The omitted category in models 3 and 4 is not-for-profit NBFIs. All models estimated using OLS with standard errors clustered at the country level. Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Table 18: Subsidy per Borrower and Share of Female Borrowers

Dependent variables	Subsidy per borrower (Local prime - actual paid rate)			
	1	2	3	4
% of female borrowers	-392.1088***	-433.3611***	47.0989	110.654
	[0.004]	[0.003]	[0.584]	[0.212]
Europe and Central Asia	78.1647	43.6811	93.1923	115.9377*
	[0.366]	[0.604]	[0.149]	[0.099]
East Asia and Pacific	-142.5360***	-136.8110***	-55.2260*	-56.9046
	[0.009]	[0.009]	[0.080]	[0.149]
Sub-Saharan Africa	-87.7395	-106.6981*	-119.5153**	-111.9374*
	[0.137]	[0.072]	[0.032]	[0.074]
South Asia	-39.1712	-36.7607	-14.9878	-56.8089
	[0.331]	[0.362]	[0.715]	[0.240]
Middle East & North Africa	-93.2517*	-111.4445**	-126.8565**	-128.9878**
	[0.063]	[0.031]	[0.032]	[0.048]
Log of average total assets		-10.3987	-17.3452	-13.1563
		[0.309]	[0.116]	[0.187]
Age of MFI		-2.9495**	-0.9069	-1.7014
		[0.021]	[0.411]	[0.165]
Portfolio yield (nominal)				-476.2301**
				[0.012]
Capital costs assets ratio				-434.7411
				[0.213]
Operating costs assets ratio				380.7513**
				[0.041]
Bank (for-profit)			311.3985*	311.3592**
			[0.062]	[0.044]
Credit union, coop (Not-for-profit)			216.3218*	223.0402*
			[0.082]	[0.061]
NGO (Not-for-profit)			422.4860*	431.9624**
			[0.051]	[0.042]
NBFI (For-profit)			666.1252***	629.8803***
			[0.005]	[0.005]
Rural banks			-10.8898	57.2613
			[0.897]	[0.514]
Bank (for-profit) * % of female borrower			-265.7695	-240.0202
			[0.222]	[0.233]
Credit union, coop (Not-for-profit) * % of female borrower			-482.8427**	-481.2584**
			[0.019]	[0.015]
NGO (Not-for-profit) * % of female borrower			-555.3378**	-570.6836**
			[0.036]	[0.031]
NBFI (For-profit) * % of female borrower			-886.3194***	-817.5478***
			[0.004]	[0.005]
Rural banks * % of female borrower			-46.2286	-105.074
			[0.605]	[0.275]
Constant	401.3283***	638.4459**	364.4423*	378.2524*
	[0.001]	[0.012]	[0.079]	[0.068]
Observations	892	880	880	866
R-squared	0.098	0.104	0.156	0.169
r2_a	0.092	0.0961	0.138	0.148
N_clust	77	77	77	77

Table 18 (continued): Subsidy per Borrower and Share of Female Borrowers

Test, H0: ALS 20%+ALS 20%_Bank (profit)=0	**0.256**	**0.529**
Test, H0: ALS 20%+ALS 20%_Coop (Not profit)=0	0.0217	0.0412
Test, H0: ALS 20%+ALS 20%_NGO (Not profit)=0	0.0479	0.0772
Test, H0: ALS 20%+ALS 20%_NBFI (profit)=0	0.00413	0.00924
Test, H0: ALS 20%+ALS 20%_Rural bank=0	0.986	0.939

Notes. *, **, *** represent significance at the 10, 5, and 1 percent levels, respectively. The omitted category in models 3 and 4 is not-for-profit NBFIs. All models estimated using OLS with standard errors clustered at the country level. Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Sample	Mean	25th pctile	Median	75th pctile	Obs
If age < 10 years					
Age	5.2	3	5	8	562
Average loan size per GNI at bottom 20th percentile	2.2	0.3	0.8	2	529
Subsidy per dollar lent (percent)	20	1	8	22	408
Subsidy per borrower ($)	172	3	37	138	403
If age >=10					
Age	18.4	12	15	21	761
Average loan size per GNI at bottom 20th percentile	2.5	0.5	1.2	2.7	750
Subsidy per dollar lent (percent)	9	0	4	11	615
Subsidy per borrower ($)	106	0	20	82	599

Table 19. Subsidy and age, "Prime" adjustment for implicit equity subsidy. Most recent observations 2005-2009

Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).