The Impacts of Capital Structure on Depth of Outreach in Sub-Saharan Africa

Abstract: The mission of microfinance institutions (MFIs) is two-fold, serving poor clients and financial sustainability. Yet, there is a concern that MFIs have prioritized financial objectives over outreach objectives by adopting characteristics of commercialized capital structure. A growing number of MFIs have transitioned their capital structure from donations and concessional loans to more a capital structure that undertakes commercial financing options, such as loans at market rates and investments. What is the impact on outreach objectives? This paper uses data from 73 MFIs from PlanetRating.com conducting a cross-sectional analysis. This study finds that MFIs that are highly leveraged compromise outreach objectives under the pressures of financial performance. Yet, other variables indicating a commercialized financing structure are found insignificant.

 The mission of microfinance institutions (MFIs) is two-fold, serving poor clients and financial sustainability. In the past, MFIs have often depended on donations or concessional loans from governments. Yet, some actors in the microfinance industry are pushing for market-based capital structures in order to ensure financial performance. Capital Structure is the way that MFIs finance their organization. Many MFIs are taking on further debt and casting aside donations and concessional loans in favor of loans at market interest-rates and investments. MFIs with a capital structure with these traits can be described as commercialized. Studies show that these changes in capital structure improve financial performance, but how does a commercialized capital structure impact outreach?

 Since serving poor clients is part of the microfinance mission, it is essential to understand the way characteristics of a commercialized capital structure impacts reaching poor clientele, or depth of outreach. This study expands upon the work of Makame and Mordine (2006) who examined the impacts of commercialization on outreach in East Africa. Since their findings proved insignificant, it is the task of this study to test an alternative proxy for commercialization. Rather than use measurements of regulation and competition as characteristics of commercialization, it may be more significant to use capital structure, or the way an MFI finances itself.

Theoretical Divide

 Yet, at the heart of this issue is a disagreement on the role MFIs should play in the distribution of services. In 2005, MFIs received over $1 billion in subsidies (CGAP, 2005; Hudan 2011). Is the amount of money that is poured into supporting MFIs a problem that should be addressed or it is simply a consequence of doing-good? Policy-makers and scholars are divided on this issue.

 Welfarists, or the poverty approach, stress the importance of serving poor clients. MFI success should be measured by depth of outreach, or how well the MFI reaches poor clients and mitigates poverty. The ideology rests on the basis that self-employment as a way to empower previously marginalized people. Often times, loans are given to groups of women to enhance feelings of accountability and social capital. Generally, loans to this population are both more costly and risky (Armendariz & Morduch, 2005; Hudan 2011). Makame & Mordine 2006). Loan officers might have to travel to remote, rural areas to reach the poorest clients. Education services and programs might also increase costs. Additionally, poor clients have little collateral to cover default. Therefore, donations, grants, and subsidies often cover the gap between MFI revenue and MFI costs (Schriener 2002; Kar 2011).

 On the other side of the camp, institutionists emphasize the importance of MFI self-sustainability, making enough revenue to cover costs. MFIs in this camp likely to pursue clients that are less risky, have more assets, and are less costly to serve. As Mosley and Hulme (1998) found, households with higher incomes took out larger loans than households with lower incomes. Instituionalist reasoning is based on the profit-incentive theory. By taking on market-rate debt, the MFI is under pressure to perform efficiently, cover operating costs, and to turn a profit (Armendaritz de Aghion & Morduch 2005; Kar 2011).

 Over the past ten years, the instiutionalists approach has been gaining ground over the welfarist approach. Industry leaders have been pushing against the dependence of donations and concessional loans in favor of the use of unsubsidized, market-rate loans; a phenomenon known as commercialization or the “Washington Consensus” (Roy 2010). While scholars generally accept that this change in capital structure increases financial performance, scholars disagree on the impacts to outreach.

 Although microfinance has spread to over 100 million clients globally (Cull, Demirguc-Kunt, and Morduch 2009), 80% of Africa is still unreached (Kyereboah-Coleman, 1999?). Some have argued that the spread of the microfinance market has been limited by MFI access to capital. Since the transition to a commercial financing structure opens up new avenues to capital, Sub-Sahran African MFIs must consider this option (Helms 2006; not Buckely 1987). Therefore, it is relevant to examine how MFIs with characteristics of commercialization have affected outreach objectives. Have MFIs in Sub-Saharan Africa that have characteristics of commercialization maintained depth of outreach? This study will help policy-makers understand the implications of commercialized capital structures.

Data

 The data for this study comes from PlanetRating.com, which has the financial statements of 73 MFIs in Sub-Saharan Africa. These financial statements provide more reliable and detailed information than previous studies that used data from the self-reported website mixmarket.com. By comparison, third-party rating systems have the benefit of being less biased. In addition, PlanetRating.com collects more detailed information about each MFI providing the ability to use new variables. (See also: Olivares-Polanco (2005), Christen (2001))

 The unit of analysis for in study are the 73 publically available financial reports of MFIs in Sub-Saharan Africa available on PlanetRating.com in English and French. GoogleTranslate.com was used when needed and X-changeRates.com was used when needed to convert to the U.S. dollar for consistency. Still, there are limitations to this dataset. First, the observations number is relatively low. Second, the MFIs in this database self-selected to be rated by Planet Rating.

Variables and Hypotheses

 As explained by Shcriener (2002) Morduch (1999) and Navajas et al. (2000), there are many aspects of outreach that can be measured which shed light on the lending practices of MFIs. This study focuses on depth of outreach, or the quality of meeting the goal to reach poor people. Ideally, scholars have pointed out that depth of outreach should be measured by client changes in income or poverty status after borrowing (cite). This speaks to the capacity of the MFI to address poverty. Another method of measuring depth of outreach considers characteristics of the client. Depth of outreach increases when MFIs lend to female clients in rural areas as opposed to male clients in urban areas (cite). This demonstrates that the MFI emphasizes the mission to serve subjugated, if not poorer, clients. Yet, data of this nature is sparse. The studies that are able to employ these measurements are limited to few observations and are often conducted in data-rich nations. Since this study explores regional patterns in Sub-Saharan Africa where data is limited, this study will use a proxy to measure depth of outreach.

 Depth of outreach is the MFI’s average loan size measured by the ratio of gross loan portfolio to the number of active borrowers. Based on the rationality that poorer clients take out smaller loans, the lower the average loan size, the deeper the outreach of the MFI. This proxy has been widely used (Chishty et al. 2011; Hartarska 2005; Mersland and Storm 2009). Yet, the same monetary loan in one country might be substantially different in value than than another country. In order to account for economic variability on a country level, this study divides MFI average loan size/GNI per capita (cite). Data on GNI per capita is captured from the World Bank. GNI is measured by gross national income divided by population. As an MFI demonstrates commercial characteristics within its capital structure, depth of outreach is expected to decrease supporting the findings of Paxton (2011), Chishty et al. (2011), Kar (2011), and Makame and Morinde (2009). In order to account for lagged effects, depth of outreach data is collected from the financial statements of MFIs a year after the values of the independent variables.

 Profit can potentially shed light on the character of an MFI’s capital structure. Profit is measured as the return on assets (ROA), or MFI income over assets. A commonly used indicator of profit, the higher the ROA the more profitable the MFI (Makame and Mordine 2006; Cull et al. 2007). Past research suggests a trade-off between profitability and depth of outreach. Using data from 435 MFIs Hermes, Lensink, and Meesters (2011) found that financial efficiency comes at the expense of depth of outreach. Therefore, MFIs that are less profitable will have greater depth of outreach. (Chishty uses ROE)

 Leverage is a characteristic of capital structure. As an MFI invests its resources in order to turn a profit, it is leveraging their assets, thereby taking on more debt. Leverage can be measured by the ratio of debt/assets in 2005. When debt is greater than assets, the higher the ratio and the MFI is considered highly leveraged. When debt is less than assets, the lower the degree of leverage. As an MFI takes on more debt, their financial risks are higher and the pressure to perform financially increases. Scholars have found that increasing leverage negatively affects outreach. Studying 72 MFIs, Conning (1999) found that finically sustainable MFIs that focus on depth of outreach were less leveraged. Kar (2011) used panel regression on a dataset of 782 MFIs finding that an increase in leverage decreases depth of outreach. If, in fact, the trade-off between financial performance and outreach holds true, then MFIs with higher leverage will pursue less-risky clients, decreasing the depth of outreach (Armendaritz de Aghion; Morduch 2005).

 Donation intensity may also be shed light on the characteristics of a commercialized capital structure. Arguing that guaranteed money creates idleness and inefficiency, proponents of commercialization push towards commercial sources of funding. Donation intensity is measured by the value of donations over assets. Smaller ratios indicate that the MFI does not have a high intensity donation capital structure. As MFIs take on commercialized financing, the pressures to perform financially potentially compromise outreach. The effects of taking on better-off clientele would likely be reflected in the average loan size. It is expected that MFIs with low donation intensity will have higher average loan size, or a lower depth of outreach. Bogan (2012) used this measurement instead calling donations, grants. Using panel data from 6 countries, Bogan (2012) found that MFIs with a higher proportion of grants to assets did not reach significantly more poor clients, yet, it is possible insignificance was due to sample error. Further evidence for this claim comes from Paxton (2012). Conducting a study of 18 MFIs in African and Latin American, Paxton found that MFI dependence on subsidies increases as depth of outreach increases.

 Paid-in capital, or the value of investments, sheds light on the capital structure of MFIs. Unlike donations, paid-in capital is invested into an MFI with expectation of profitable returns. Sometimes in the form of stocks or shares but also in the form of cash, paid-in capital is a way for an MFI to raise money in a similar fashion as a traditional business. While this method of financing can support goals of financial sustainability, it is possible that increased pressures on financial objectives will hinder the outreach objectives of MFIs. To control for varying sizes of MFIs, paid-in capital is measured with regards to assets creating the variable investment ratio. The higher the investment ratio, the lower the depth of outreach. Since donation intensity indicates the welfarist approach to microfinance while investment ratio indicates the institutionalist approach, it is expected that the coefficients of these variables have an inversely proportional relationship, or when one is negative, the other is positive.

 The interest and fees paid on borrowings indicates the type of loans that an MFI uses to finance itself. Loans that are concessional have lower interest rates than the industry standard. Under the assumption that MFIs are providing a national service by improving the wellbeing of citizens, governments have given loans to MFIs at discounted rates. Grameen Bank, the most recognized microfinance institution of them all, started this trend in the 1980s? Yet, counter arguments assert that concessional loans do not build financially sustainable MFIs. Those from the institutionalists camp insist that in order for microfinance to be a viable solution to poverty alleviation, MFIs must not be dependent on external sources of financeing, including discounts (cite). MFIs that adopt the institutionalist viewpoint will accept loan terms with higher interest rates than MFIs who are not interested in commercial sources of financeing and therefore, will be taking on more debt and risk. These financial pressures may have an adverse effect on outreach. (Subsidies through soft loans Yaron 1992, Morduch 1999). Yet, larger MFIs are more likely to spend more money on borrowings. To control for MFI size, this study divides interest paid on borrowings by assets creating the variable, cost of borrowings. MFIs that have a higher ratio of cost of borrowings are expected to have a lower depth of outreach.

 Past research has found that the MFI institution type has an effect on outreach. (see Olivares-Polanco 2005). In order to control for the influence of MFI type, this study will use two dummy variables. MFIs that are registered as companies are likely to pursue financial goals. Companies have stakeholders who often pressure the MFI to perform finically potentially overshadowing outreach objectives. In contrast, non-governmental organizations tend to emphasize social missions rather than financial objectives (Cull et al. 2011). With companies as the reference category, MFIs that are registered as NGOs = 1. NGOs are expected to reach more poor people, reflected in lower loan sizes. Cooperatives are MFIs that are partially, if not fully, owned by their employees or customers. Likely, employees and customers are more connected to the realities on the ground than other decision-makers suggesting that outreach would not be compromised for profit. If true, cooperatives have lower average loan sizes and higher depth outreach. However, institutional laws complicate this matter (Banerjee, Munshi and Duflo 2003?). Many countries in Sub-Saharan Africa (LIST) have enacted laws prohibiting NGOs to practice microfinance. Considering that there would be “ngo-style” MFIs operating as cooperatives, this factor would be reflected in lower loan sizes, or higher depth of outreach. Yet on the other hand, some countries in Sub-Saharan Africa (LIST) have laws that prohibit companies from taking savings. This factor causes “company-style” MFIs to also register as cooperatives, causing the impact of cooperatives to shift the other direction of lower depth of outreach. Makame and Murinde (2006) conducted a study of \_\_\_ MFIs in East Africa finding that cooperatives had a significant and negative affect on outreach.

 I will control for MFI size by the log of total assets. Previous research has found that MFI size is negatively associated with the depth of outreach (Farrington & Abrams 2003; Bogan 2012; Kar 2011). Based on the life cycle theory, scholars have noted the tendency of MFIs to utilize commercial financeing opportunities as they get grow in assets (Bogan 2012; Helms 2006). The more assets MFIs have, the greater the opportunity for commercial lending. As an MFI takes on more commercial debt, the pressures to perform financially overwhelm outreach objectives. Therefore as MFI size increases, the depth of the outreach is expected to decrease.

 I will also control for MFI age by the log of the number of years an MFI has been in operation. Competing theories suggest that this variable may have a positive or negative effect on depth of outreach. The older the MFI, the more established trust within a community, the better the quality of outreach, and the greater the ability to access poor clients (Cite; Kar 2011). If theory holds true, the older the MFI, the greater the depth of outreach. On the other hand, the life cycle theory asserts that most new MFIs will be financeed on donations and subsidies but as an MFI ages it will “transform” its capital structure to commercial financeing opportunities (Farrington & Abrams 2003; Bogan 2012; Helms 2006). If the life cycle theory holds true, then as MFI age increases, the depth of the outreach is expected to decrease.

Descriptive Statistics

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Findings

 This model[[1]](#footnote-1) suggests that MFIs with characteristics of a commercialized financing structure do not always lead to decreased depth of outreach. The adjusted R2 is .1 suggesting that this model[[2]](#footnote-2) explains 10% of the variation of average loan size.

 ROA is positive suggesting that as profitability increases, average loan size increases, and depth of outreach decreases. Yet, this variable is insignificant siding with the institutionalists that there is no trade-off being profitability and outreach.

 As leverage increases, the size of the average loan size also increases, indicating a decrease in depth of outreach. Significant at the .05 level, as an MFI takes on more debt in order to pursue financial objectives, depth of outreach is compromised. Supporting the findings of Conning (1999) and Kar (2011), this cautions the use of debt.

 MFIs with greater donation intensity have a negative affect on the average loan size of MFIs, an indicator of increasing depth of outreach. Yet, this finding is insignificant supporting the findings of Bogan (2012) that MFI that depend on subsidies do not have greater depth of outreach.

 MFIs with higher investment ratios had a positive affect on average loan size, indicating a decrease in depth of outreach. Yet, this finding is insignificant suggesting that MFIs that are under greater pressure to perform financially due to investment obligations do not compromise outreach objectives. However, it is interesting to note that the inverse proportional relationship between donation intensity and investment ratios did surface.

 This model finds that cost of borrowing had a positive impact on average loan size indicating a decrease in depth of outreach. However, this finding is insignificant suggesting that MFIs with higher interest rates were able to maintain emphasis on outreach objectives.

 MFIs that were registered as NGOs demonstrated a negative effect on average loan size, increasing depth of outreach. Yet, since this variable is insignificant, this model suggests that NGOs do not reach poorer clients than companies or cooperatives.

 MFIs that were registered as cooperatives had a positive and significant effect on average loan size, or decreasing depth of outreach. It is possible that the institutional factors that regulate the microfinance industry in Sub-Saharan Africa have caused more “company-style” MFIs to register as cooperatives.

 As MFI size increases, so does average loan size. Yet, since this variable is insignificant, this model suggests that as an MFI grows in size and likely undertakes commercial financing, this does not significantly overshadow outreach objectives.

 Supporting the life-cycle theory, older MFIs have a positive impact on average loan size, decreasing outreach. Although this variable is insignificant, it does not disprove the life-cycle theory. Older MFIs may be taking on more commercialized financing, yet, this action does not significantly decrease outreach.

Regression of Average Loan Size on Explanatory Variables

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| --- | --- |
| Independent Variables | Coef.(S.E.) |
| ROA | .003(.007) |
| Leverage | .303\*(.160) |
| Donation Intensity | -.238(225) |
| Investment Ratio | .080(.786) |
| Cost of Borrowing | .059(.674) |
| NGO | -.369(.440) |
| Cooperative | .671\*(.380) |
| Size | .189(.283) |
| Age | .759(.996) |
| N= 73 Adj R2=.10 |

Note: \*p<.05, one-tailed test

Policy Implications

This model suggests understanding an MFI’s capital structure does not sufficiently capture the characteristics of commercialization.

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1. None of the variables demonstrated a VIF value greater than 5 confirming that this model does not have problems of multicolinearity. [↑](#footnote-ref-1)
2. After conducting Cook’s test, the Christian Network MFI was found to be an influential case and was eliminated. [↑](#footnote-ref-2)