

# MICROCREDIT IN THE CONTEXT OF POLITICAL AND FISCAL DECENTRALIZATION

AYAKO IBA

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## *Abstract*

*A growing number of developing countries are decentralizing, but is decentralization capable of creating a more enabling environment for pro-poor programs? This paper uses microcredit as an example of such a service and employs OLS regressions to examine the effect of political and fiscal decentralization on the operational and social efficiency of MFIs. The results suggest that political decentralization is linked with higher efficiency but it is outweighed by the negative effect of relying on intergovernmental transfers. In less developed countries, political decentralization's positive correlation with MFI efficiency decreases and fiscal decentralization has a less negative effect.*

**Keywords:** *microcredit; decentralization; efficiency; regional development; cross-sectional regression*

**JEL Codes:** *G21, R11 and H77*

## 1. INTRODUCTION

By 2011 over 80 billion dollars' worth of microcredit had been disbursed around the world (Roodman, 2014). Pioneered by Muhammad Yunus in Bangladesh, microcredit extends access to financial services to poor people and has gained significant popularity amongst development practitioners, governments and the financial sector. Today there are about ten thousand microfinance institutions (MFIs) in operation worldwide (Ahlin et al., 2011).

The overall political, socio-economic environment of a country affects the provision of microcredit (Ledgerwood et al., 2013), yet the microfinance sector has been more concerned with two other pressing debates. Firstly, advocates of microfinance are criticized for not having sufficient evidence of contributing to poverty reduction, thus, researchers and practitioners have re-

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cently been investing in randomized control trials (Banerjee et al., 2013; Bauchet et al., 2011; Karlan & Zinman, 2010) and designing surveys to assess the impact microcredit has on the lives of the borrowers.

Secondly, after an initial phase of MFIs operating largely out of donations and subsidies, donors began to put pressure on them to become financially self-sufficient (Bateman, 2010). Donations alone could not guarantee sustainability of what essentially is a financial service and subsidies were claimed to be distorting the financial market (Balkenhol, 2007). This led to a shift in approach amongst MFIs from poverty alleviation to financial self-sustainability (Mayoux, 2005), to such an extent that today a significant portion of MFIs are profit-driven and detached from social objectives (see Etzensperger, 2014).

In the meantime, numerous developing countries decentralized by transferring resources and responsibility to sub-national tiers of government. Local governments are known to be more capable of tailoring development strategies to local needs, because there is less distance between them and the people (Oates, 1972). However, decentralization in developing countries has been associated with higher levels of inequality (Lessmann, 2012). The argument is that, where initial levels of inequality and heterogeneity are high, decentralized local governments encounter more difficulties in mobilizing resources to satisfy those different needs (*ibid.*). Considering that the local needs of developing countries commonly include poverty, it is crucial to analyze the effect a more autonomous local government can have on pro-poor development tools, such as microcredit.

The link between decentralization and microcredit is that they are both designed to operate at the local level, and the former can determine the macro context for the latter. Microcredit aims to support income-generating activities of poor people at the local level, while decentralization brings government closer to the society so that policies can be adapted to the locality. Moreover, while previous studies demonstrate how inequality and heterogeneous populations trouble decentralized governments, MFIs instead target precisely such types of societies.

This paper contributes to the current debate in two significant ways. It fills the gap in the literature about the impact contextual factors have on microfinance by analyzing the effect indicators that represent sub-national contexts have on MFIs, referring particularly to levels of political decentralization, intergovernmental transfers, interregional inequality, and other proxies of heterogeneity.<sup>1</sup> Secondly, I will bring together the above-mentioned concerns and

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<sup>1</sup> This paper refers to heterogeneity for any geographical and socio-economic differences, including inequality.

evaluate their effect on the performance of MFIs, by using indicators for operational and social efficiencies. While operational efficiency regards the sustainability of MFI as an institution, social efficiency instead refers to poverty outreach, i.e. the extent to which MFIs are able to serve the poorest segment of the population.<sup>2</sup> Hence, measuring operational and social efficiencies side by side is useful in understanding whether it is feasible to become operationally self-sufficient and serve the poorest people at the same time.

A cross-country analysis of 461 MFIs in 16 developing countries is conducted with MFI- and country-specific indicators that are mainly representative of the year 2012. Regression analyses are used to verify first the relation between MFI operational and social efficiencies and the country characteristics that represent the existing levels of heterogeneity. Then, different decentralization indicators will be included to assess whether they have any impact on the MFIs. Lastly, by introducing an interaction term, I will assess whether decentralization has different impacts on MFIs depending on the country's development level.

The next section is a literature review that lays out the existing theoretical and empirical studies, the third section is on data, which starts with the hypotheses, data description and finally the model. The fourth section is a discussion on results, where it is confirmed that MFIs tend to operate in unequal, heterogeneous countries, and that the effect of decentralization is similar for both types of efficiencies, but that it varies according to the country's development level. Finally, the last section concludes with reference to further research and policy implications.

## **2. LITERATURE REVIEW**

### **2.1 Decentralization**

Accountability, efficiency and policy innovation are the key advantages associated with decentralization. What ties these benefits together is that sub-national governments have better local knowledge than the central government and thus are able to tailor policies to local needs (Oates, 1972; Tiebout, 1956). This proximity to the local people fosters accountability and transparency, especially when political decentralization takes place and sub-national tiers of government are elected locally. In fact, political decentralization encourages a more participatory democracy, where constituents and lo-

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<sup>2</sup> It is not an indicator of poverty reduction since that cannot be measured solely by using data on MFIs.

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cal stakeholders can be given voice in local policy making (Litvack et al., 1998). An example of this type of democracy is participatory budgeting in Porto Alegre, Brazil, where budgetary issues of the municipality are discussed at public forums held for local residents (Pike et al., 2006).

Under devolution – which is when power is transferred to autonomous sub-national governments - interregional competition increases (Agnew, 2000), because the reduced dependence on the central government pushes local governments to take ownership of their development process and this can result in regions competing against each other, for instance, when trying to secure inward investment. Decentralized local governments can allocate resources better, especially when it comes to the provision of public services, because of their local knowledge and access to cheaper suppliers. Thus, decentralization is a tool to mobilize untapped resources which were not utilized when decisions were taken from the top-down due to insufficient local consultations (Smoke, 2001).

Greater policy innovation can take place under decentralization, because although central governments have more resources, their responsibility towards the whole nation impedes them from taking high risks and the cost of a policy failure at the national level would inevitably be larger than one that is implemented at the local level (Donahue, 1997). Decentralized governments can also design policies in a more participatory manner to ensure that the implemented programs are context-specific to the locality, since the pressure to design one-size-fits-all policies is reduced (Barca et al., 2012).

That being said, decentralization is contested by Prud'homme (1995) amongst others (Tanzi, 1996) because of institutional and capacity issues of sub-national tiers of government. Prud'homme (1995) argues that preferences for basic needs do not differ significantly between regions and that central governments have better economies of scale to design robust policies and redistribute resources. Also, when decentralization takes place before local governments acquire the necessary administrative capacity or resources, there is danger of corruption and capture by local elites (OECD, 2013).

Especially in developing countries, it is common that the transfer of power takes place but not the transfer of financial resources, resulting in more responsibility to deliver for sub-national governments but without an equivalent transfer of funds (*ibid.*). Fiscal decentralization can help local governments to generate their own revenue, but it is rare for local governments to succeed in generating enough revenue to cover their costs entirely (Smoke, 2001). Intergovernmental transfers take a crucial role in filling this funding gap (Litvack et al., 1998; Smoke, 2001) and they can come with strict conditions or as soft loans, but in general, the level of dependence on transfers

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from the central government to the local government can be taken as evidence of its limited autonomy, because the donor can dictate resource allocation (Bardhan & Mookherjee, 2006).

Moreover, decentralization is not always a symmetric process within a country because, as in the case of Colombia, the central government can choose to give more autonomy to some regions and none to others, when some local governments are deemed to have too little capacity to be autonomous (Litvack et al., 1998). Hence, there are conceptual arguments for and against decentralization and empirical studies are necessary to understand which effects of decentralization take place under which circumstances.

General trends that differentiate its impact between developed and developing countries have been found. Lessman (2012) used a panel data of 54 countries between 1980 and 2009 to measure the effect political and fiscal decentralization have on interregional inequality and found that, while in developed countries both types of decentralization help to reduce inequality levels (see also Canaleta et al., 2004; Ezcurra & Pascual, 2008), in developing countries decentralization is correlated with its increase. Where initial inequality levels are high and populations are more heterogeneous, the redistributive capacity of local governments in developing countries is hindered and thus decentralization can contribute to increasing inequality.

Also Rodríguez-Pose and Ezcurra (2010) studied a panel of 26 countries and claimed that political decentralization in developing countries shows a positive effect on reducing inequality, but it does not compensate for the strong negative impact of fiscal decentralization. This is because under decentralization richer regions have more negotiating power so they receive larger intergovernmental transfers and are better able to efficiently deal with the costs of devolution, resulting in concentration of resources in just a few regions (Martínez-Vázquez & McNab, 2003; Rodríguez-Pose & Gill, 2004).

Lastly, the risks for decentralization in developing countries are higher because more autonomy can translate into reduced transfers and public service provision from the central government. Thus, from an institutional perspective initial conditions determine the constraints to institutional change and if local governments do not have legitimacy then more accountable, innovative policy-making cannot be guaranteed under decentralization (Litvack et al., 1998).

## **2.2 Microcredit**

Since the 1990s microcredit has been championed for helping poor entrepreneurs stabilize their irregular income and invest in their microenterprises (Ledgerwood et al., 2013). The idea behind microcredit is to increase access

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to finance for poor excluded people, who face barriers to opening commercial bank accounts due to insufficient collateral or sometimes lack of literacy and numeracy skills. The objective of the pioneer of microcredit, Yunus (2003), was to move away from the top-down approach to development by giving the means for people to invest in their lives in their own way.

Today there are numerous services that the microfinance sector offers, such as microsavings and microinsurance. As a result, the sector has expanded beyond NGOs and non-banking financial institutions (NBFIs) and now commercial banks, private insurance and money transfer companies are part of the sector. Another important development of microfinance is the commercialization of MFIs which came as a reaction to the growing pressure from donors to become financially self-sufficient (Ledgerwood et al., 2013). Making profit through microfinance products continues to be controversial but while the debate goes on, a couple of large MFIs, such as *Compartamos* founded in Mexico, issued an initial purchasing order (IPO) and their profit levels have risen significantly. Hence, the microfinance sector today is composed of institutions with different types of products and legal statuses, so this paper represents only the MFIs that offer microcredit instead of the microfinance sector as a whole.

The three different approaches to microfinance are financial sustainability, poverty reduction and female empowerment (Mayoux, 2005) and they determine the institutional structure, operations and mission of an MFI. Financial sustainability has been advocated mostly by the Consultative Group to Assist the Poor (CGAP), which is against subsidies and claims that by becoming self-sufficient the product quality and outreach can be improved. Also, demonstrating self-sufficiency increases the possibility of attracting new sources of funds, such as social investors (Schreiner, 1997; Etzensperger, 2014). The poverty reduction approach instead focuses on impact at the household level and highlights how women borrowers are more likely to spend money on education and health of children (Dolan, 2005). However, the supporters of the female empowerment approach argue that offering financial services to women also helps also to empower them (Mayoux, 2005), by allowing them to gain economic power which can reduce the male domination over financial management and help female-headed households.

Nonetheless, microcredit has undergone much scrutiny due to the limited proof of its impact on reducing poverty. Also in 2010 SKS, an MFI that operates in Andhra Pradesh, India, was considered to have some role in cases of suicide of their over-indebted beneficiaries ("Discredited," 2010). This put in question the ethical code of MFI operations, and consequently MFIs began to pay more attention to client protection and took measures, such as working

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with credit bureaus to verify that a potential beneficiary is not already overly indebted. Despite the difficulty in measuring the direct impact on borrowers due to exogenous factors, progress has been made to better monitor the impact of services on clients as Grameen Foundation (n.d.) and others have designed country-specific surveys.

On the other hand, the benefit of microcredit for the poorest demographic or women has been brought into question. Microcredit is initially offered to groups as opposed to individuals, because the majority of beneficiaries do not have collateral, so group members are made responsible for making sure everyone pays back their share. This is a way for MFIs to use social capital, because groups are formed by people who know each other and follow norms out of respect (Rankin, 2002). However, relying on social capital can be ineffective, because it does not challenge the status quo and consequently groups may be formed only within the top tier of the local community, leaving the most excluded people behind (Maclean, 2010). Also, Kabeer (2005) and Chant (2014) claim that giving the loan out under a woman's name does not mean that she has control of it and there is evidence that some women are under pressure by their husbands and other family members to obtain the credit. Another perverse effect of microcredit is to put poor women under a double burden because they become responsible for their traditional domestic chores and their income-generating activity (*ibid.*). In all, there is much diversity amongst MFIs and there are benefits and dangers to microcredit; thus, this sector cannot be generalized except for their commitment to financial inclusion and to do no harm (CGAP, 2006).

Because of the difficulty in measuring impact, the majority of empirical work on MFIs is based on their financial performance; quantitative methods traditionally used to study commercial banks have been applied to MFIs to measure their level of efficiency. The study that comes closest to the scope of this research is that of Ahlin et al. (2011), which investigated the contexts that are favorable for MFI growth. They found that labor market opportunities and foreign direct investment are associated with slower MFI growth, but also with bigger loan size, suggesting "complementarity between wage employment and microfinance, via demand spillovers" (Ahlin et al., 2011, p. 112). They used the Gini-coefficient to proxy for inequality and found that it negatively correlates with operational self-sufficiency (OSS) and has no relationship with extensive MFI growth, pointing to the existence of a dualistic economy where the micro-entrepreneurs have a limited growth trajectory due to the lack of linkages to the formal market (*ibid.*). Determinants about starting a business showed counterintuitive results because the credit information index was correlated with slower loan size growth (*ibid.*). These re-

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sults, however, are partially aligned with those of Annim (2010), who claimed that property registration, credit information index and contract enforcement are determining drivers of social efficiency<sup>3</sup> but not of financial efficiency.

Empirical studies on the outreach level of MFIs have been conducted using different control variables and proxies. Gutierrez-Nieto et al. (2009) used data envelopment analysis to measure how operating cost, number of employees and assets determine financial and social efficiencies, which are proxied by gross loan portfolio and financial revenue, number of women borrowers and an indicator they created to represent benefit to the poorest. They find that when a MFI is socially efficient it is also financially efficient (*ibid.*). Nonetheless, because of the issues raised earlier about targeting women their choice of dependent variables should be taken with caution.

Cull et al. (2007) instead used a variable for financial self-sufficiency that is adjusted by taking into account subsidies, which allowed this proxy to stand for fully self-sustained operations and evaluate which institutional characteristics of MFIs have a positive effect on financial performance and outreach. They found that there is a trade-off between profitability and serving the poorest, but that it depends on the institution's lending method. For example, financially sustainable institutions that lend to individuals instead of groups tend to offer smaller loans to more women (*ibid.*). In all, because there is no universally accepted methodology to measure performance or the impact of MFIs, previous studies are not easily comparable and results have been mixed.

### **2.3 Decentralization and Microcredit**

To my knowledge, no empirical study on decentralization and microcredit exists. However, in the local economic development (LED) literature, which targets decentralized local governments with their bottom-up approach to development, microfinance programs are mentioned. White and Gasser (2001), for example, claimed that a part of the LED strategy of the International Labor Office (ILO) is financial intermediation, through the creation or strengthening of existing MFIs. Also, the Central Bank of Lesotho (2005) issued an economic review that regards microfinance and decentralization of public services as important tools for poverty reduction.

On the other hand, Bateman (Bateman & Sinković, 2008; Bateman, 2010) claimed that in Eastern Europe microcredit is encouraging farmers to sell informally and hindering possibilities for their produce to enter the formal

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<sup>3</sup> Annim (2010) defines social efficiency as breadth of outreach, i.e. number of borrowers.



market. He also suggested the market for micro-entrepreneurs quickly saturates because, due to limited mobility and skills, they tend to stick to a small set of business activities (Bateman, 2013). Hence, he argued that microcredit not only leads to zero-sum but that it can dampen opportunities for LED (Bateman et al., 2011).

Nonetheless, Bateman (2010) also claimed that government involvement can help MFIs to become more effective in helping poor people and this is where the role of decentralized governments come in. For example, in Colombia where decentralization occurred after the constitutional reform of 1991, the city government of Medellin has been active in supporting micro-credit programs and created business support centers, called *CEDEZO*, where not only financial literacy and other business-related training is offered but micro-entrepreneurs are advised on which activities to start-up (Escobar Arango et al., 2007). This avoids the concentration of enterprises on just a few activities and enhances the possibility for market diversification and long-term sustainability of the microenterprises.

Assuming that the macro context has an impact on MFI operations, the link between decentralization of government and microcredit is that the former has the potential to favor or hinder the operational and social efficiencies of MFIs. For example, government authorities of territories populated by financially excluded residents can be interested in increasing levels of access to formal finance and therefore be more predisposed to creating a more enabling environment for MFIs.

### 3. DATA AND METHODOLOGY

#### 3.1 Hypotheses

In order to assess the main research question which is how country context, and in particular decentralization, affects the operations and the poverty outreach of MFIs, the following hypotheses will be tested. They are ordered in an incremental manner so that the effect of the general country context will be analyzed to then evaluate whether different levels of decentralization have an effect on MFIs:

**Hypothesis 1: Country-specific contextual factors have an impact on MFIs.** Deriving from the notion that country-specific factors affect both the MFIs' operations and their borrowers' microenterprises (Bateman, 2010; Ahlin et al., 2011 amongst others), I argue that the operations of MFIs are more challenged when working in countries with higher levels of multiple types of inequalities.

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**Hypothesis 2: There is a positive relationship between the level of decentralization and the operational and social efficiencies of MFIs.** I use proxies to separate the different types of decentralization that have been applied, namely political decentralization at the municipal and state level, and fiscal decentralization proxied by vertical fiscal imbalance (abbreviated as vertical imbalance). Because the latter represents an uneven form of decentralization and public administration (see Litvack et al., 1998; Smoke, 2001), MFI efficiency levels are expected to be lower when this variable is large.

**Hypothesis 3: The effect of decentralization on MFI efficiencies turns negative in less developed countries.** Deriving from research that showed how decentralization exacerbates inequality levels in developing countries (Lessman, 2012; Rodriguez-Pose and Ezcurra, 2010), I argue that, also within this paper's sample, decentralization in countries with a higher level of development has a more positive effect on the operations and outreach of MFIs compared to less developed, decentralized countries.

### 3.2 Data Description

I use a sample of 461 MFIs operating in 16 countries and because I am evaluating the effect of country characteristics on MFIs, proxies for both MFIs and countries are included. The control variables that represent MFI characteristics come from the MIX Market website (MIX Market, n.d.)<sup>4</sup> and are observations of the year 2012. While a bigger sample of MFIs would have been obtained had I selected an earlier year, I chose to use this data because the global financial crisis of 2008 reduced funding for MFIs significantly (Annim, 2010) and in 2011 the microfinance sector was subject to heavy criticisms for its alleged role in suicides, as mentioned earlier. For this reason, observations before 2012 would not be representative of how the MFIs are operating today.

The selected 16 countries have the largest number of MFIs that reported to the MIX Market (*ibid.*) in 2012. This country selection best limits the number of missing values for the key variables of this research, especially those that incorporate sub-national data. However, due to the small number of countries, the effect of country characteristics on MFIs should be taken as an indicative study. Descriptive statistics can be found in Table A of the Appendix.

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<sup>4</sup> MIX Market is an organisation, which promotes information flows between MFIs and donors through their publicly available online data set on MFIs worldwide.

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### 3.2.1 Key Variables

#### *Political Decentralization*

I use the World Bank Political Decentralization indicators (2012) on elections at the state and municipal level for the year 2009, due to lack of more recent data. However, the majority of the countries underwent decentralization before 2000. Hence this variable is not time-sensitive. The exception is Russia where I searched for the information separately and found out that local governments are given the option to run local elections but it is not obligatory.

This indicator is split between the state and municipal level because they have different degrees of proximity to the local constituents. For example, especially in a country of medium to large size – such as India - Bardhan and Mookherjee (2006) argued that state governments are not close enough to the local context and that they function more as intermediaries between the upper and lower tiers of government. These indicators are also ordered according to the depth of political decentralization because World Bank (2012) differentiates between electing only the local legislature and electing both the legislature and the executive. The assumption is that deeper political decentralization means more democracy is fostered because local politicians are pressured to be more accountable and transparent in order to obtain more votes.

Amongst the sample countries, only Bangladesh and Guatemala have a centralized government while five countries have decentralized to the deepest level both at the municipal and state tier of government (see Table B in Appendix). Cases of municipal- but not state-level decentralization are present, but half of those countries do not have two tiers of sub-national government. Moreover, there is no state-level decentralization without municipal-level decentralization, hence even where there are multiple tiers of government, political decentralization is most likely to occur at the municipal level. This means that state-level decentralization is nested in municipal-level decentralization, suggesting that the former variable is symbolic of deeper political decentralization but is also likely to confound regression results.

#### *Fiscal Decentralization*

Finding a proxy for fiscal decentralization in developing countries is challenging because data on government finance is often confidential and when reported it is not consistent or comparable, due to the use of local currency and different types of accounting methods. World Bank Fiscal Decentralization indicators (2014) lacks data on the majority of the sample countries and the IMF Government Finance Statistics (2006, 2012) database includes an indicator for intergovernmental transfers only until 1996.

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I use vertical imbalance which represents how much local and state governments rely on transfers from the general government. This indicator helps to see the imbalance that may be caused when the transfer of responsibility is larger than that of resources, i.e. a situation of an unfunded mandate (Bardhan & Mookherjee, 2006; Rodríguez-Pose, 2008). Thus, if a local government becomes responsible for more delivery of services but does not have enough funds for the new expenses then the country's vertical imbalance is likely to increase. Instead, in a centralized country such as Bangladesh local governments have only minor responsibilities for delivery and consequently there are fewer intergovernmental transfers and a smaller vertical imbalance.

I use the equation introduced by the World Bank (2001),

$$\text{vertical imbalance} = \frac{\text{General Government transfers to State and Local Governments}}{\text{Total Expenditure of State and Local Governments}} \quad (1)$$

For seven of the sample countries the data was available in the IMF Government Finance Statistics database (2012). For the remaining countries, the information was retrieved from institutions such as the National Bureau of Statistics, Ministry of Finance and Ministry of Local Governments. I calculated vertical imbalance for 13 countries using 2011 or 2012 data and the information used for the remaining countries dates back to early 2005. This indicator should be used carefully as it is not standardized; however, the calculations were made with values reported using the same currency, year and accounting method from the same data source for every country, and the variable is a proportion.

### 3.2.2 Dependent Variables

#### *Operational Self-Sufficiency*

OSS is an indicator used to assess the sustainability of MFI operations. It is calculated by dividing total revenue by total expenses, including loan loss provisions (Ahlin et al., 2011). Because OSS is not adjusted to exclude subsidies, an MFI that is an NGO can seem more self-sufficient than an MFI that is for-profit, if the former receives a significant amount of grants. While the debate goes on about the pros and cons of subsidies or making enough profit to become financially sustainable, I employ the poverty alleviation approach to microfinance where the focus is on the outreach levels rather than the financial viability of the MFIs. Hence, for the purpose of this research obtaining full OSS regardless of the amount of subsidies they receive is considered sufficient evidence of sustainability.

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### *Social Efficiency*

MFI's have a dual responsibility to satisfy their social and financial role. They have to sustain accountable financial services while maintaining their commitment to the social goals. Gutierrez-Nieto et al. (2009) introduce an indicator for social efficiency that quantifies the benefit to the poorest that each MFI is achieving:

$$\text{social efficiency} = \left(1 - \frac{K_i - \text{Min}(K)}{\text{Range}(K)}\right) \times \text{number of active borrowers} \quad (2)$$

where  $K$  is the average loan balance per borrower divided by Gross National Income (GNI) per capita for MFI  $i$ ,  $\text{Min}(K)$  is the minimum value over all in the sample and  $\text{Range}(K)$  is the maximum value over all minus the minimum value over all. The number of active borrowers, different to Gutierrez-Nieto et al. (2009), was normalized per 1,000 people in this paper because its mean is over 100,000, so it is easier to interpret this way.

Loans offered to the poorest beneficiaries tend to be small in value but they have to be normalized by GNI per capita, because, for example, an average loan credited in Nepal is most likely smaller than the average loan given in Mexico. Moreover, the more borrowers an MFI serves, the wider its outreach level. Hence, by combining values that represent the average loan size and number of borrowers, this indicator is a proxy for both breadth and depth of poverty outreach.

However, although a smaller average loan balance divided by GNI per capita is conventionally accepted to represent outreach to the poorest (Ahlin et al., 2011; Cull et al., 2007) it can also be indicative of an MFI's limited capacity to offer larger loans or more than one credit type. Nonetheless, being able to manage many small loans implies higher operational costs hence, the logic holds that an MFI that has higher levels of social efficiency is more focused on poverty outreach.<sup>5</sup>

A more serious concern about this indicator, and other outreach proxies such as the number of women borrowers, is the possibility that they may be more representative of increased levels of poverty. Even though they are commonly used in the microfinance literature, it cannot be guaranteed that this indicator suggests that the MFI is more able to reach out to the poor and

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<sup>5</sup> Taking into account the number of beneficiaries below the poverty line or the quantity and type of credit offered could be more accurate in measuring outreach, however, such data is not available on the MIX Market website.

not that there are more poor people present thereby making outreach easier. This type of measurement problem is the reason a conventionally accepted indicator for MFI poverty outreach does not exist yet.

### 3.2.3 Control Variables

#### *MFI Characteristics*

It is evident that, depending on what aspect of the MFI operation the researcher is interested in, the variables used differ significantly<sup>6</sup>. Also, including numerous MFI specific indicators can lead to high levels of endogeneity (Ahlin et al., 2011; Gonzalez, 2007). However, where possible, variables previously used in the literature have been tested during the model specification phase in order to select the most viable proxies.

I use gross loan portfolio, age and profit status to account for MFI characteristics. Gross loan portfolio represents the size of an MFI's operations, because it accounts for all outstanding loans. Its data, however, is very skewed, so hence I transformed the values using their natural logarithm. In the MIX Market, the number of years of operation of each MFI is not available and instead there is an age index, which is ordered per *New*, *Young* and *Mature* where *Mature* signifies that the MFI has been in operation for over eight years. After running preliminary regressions, I choose to use only the dummy variable for *Mature* because the remaining two categories for age were highly collinear. In this sample, the average gross loan portfolio is approximately 73 million US dollars; 76% of the MFIs have been operating for more than eight years and 56% are non-profit.

#### *Country Characteristics*

To account for country characteristics that are most likely to affect both the MFI operations and their beneficiaries, I employ variables for ethnic fractionalization<sup>7</sup>, gender inequality, rural population, Ease to Do Business and GDP per capita (see Table B in the Appendix). The ethnic fractionalization data is retrieved from Alesina et al. (2003) while the gender inequality data comes from the UNDP Human Development Index (2014), percentage of ru-

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<sup>6</sup> For example, the number of MFIs over total population could be a good proxy of MFI density, however, not all operating MFIs share their data with MIX. Other indicator that influences microfinance operations are financial development and financial inclusion policies; however, they are beyond scope for this research, which instead focuses on government decentralization.

<sup>7</sup> Alesina et al. (2003) used racial and linguistic characteristics to define ethnic groups and examine the probability that two randomly drawn individuals of one country come from different groups.

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ral population and GDP per capita from World Development Indicators (2013b) and the Ease to Do Business ranking indicator from the Doing Business 2014 database (2013a).

While GDP per capita is a proxy of the level of development, ethnic fractionalization, gender inequality and rural population represent heterogeneity and the multi-dimensional nature of poverty and inequality. The poverty experienced by women or one ethnic minority is not homogenous across their group, because it is the overlap of different types of inequalities and exclusions that develops the worst forms of vulnerability (Balkenhol, 2007); hence, this is why it is important to include these indicators in the model in order to reproduce a comprehensive dimension of inequality.

I include the Ease to Do Business ranking (The World Bank, 2013a) because beneficiaries of MFIs are entrepreneurs, who especially in low-income countries operate in the informal economy. Thus, the extent to which it is easy to do business formally should influence the demand for microcredit and the level of outreach of the MFIs. Because a bigger number for this indicator suggests that it is more difficult to do business in that country I refer to this variable as 'Difficult to Do Business'.

Most importantly, I employ population-weighted coefficient of variation (*wcv*) to take into account interregional inequality. Since this paper is interested in the impact of decentralized local governments on MFIs, it is crucial to take into consideration not just the inequality index representative of the entire nation but also its spatial dimension. For example, where interregional inequality levels are high it is more likely that the incidence of relative poverty in the country is also high. Moreover, if fiscal decentralization is implemented homogeneously across local governments regardless of interregional inequality, the localities with a higher initial level of resources and capacity will benefit more than others.

Following Lessman (2012), *wcv* is measured using this equation:

$$wcv = \frac{1}{\bar{y}} \sqrt{[\sum_{i=1}^n p_i (\bar{y} - y_i)^2]} \quad (3)$$

where  $\bar{y}$  is the average GDP per capita of the country,  $n$  is the number of regions,  $p_i$  is the share of the country's total population in region  $i$ , and  $y_i$  is the GDP per capita of region  $i$ . For seven countries the data was directly retrieved from Lessman (2012) and for the remaining countries the dataset created by Genaioli et al. (2013) was used to calculate the values. For the former countries, the data was cross-checked by re-calculating them with the latter dataset.

I check for multicollinearity using a correlation matrix (see Table 1) and the variance inflation factor test for the regressions. The component that is most collinear is rural population. While this variable is interesting because it represents the limited existence of urban agglomerations, which should hinder the efficiency of MFIs by raising operation costs, it is used as a control; hence, its high correlation with other controls is of minor concern (Berry & Feldman, 1985). Also, this variable links to how LED strategies are more effective in urban areas despite the advocates claim to be able to develop any territory. If microcredit programs are instead specifically catered for rural populations then they can be complementary to LED strategies in the developing world.

### 3.3 Model

My empirical model is designed to analyze if the different aspects of decentralization and the country's context have any effect on the operational and social efficiency of MFIs. This is an exploratory analysis because, to my knowledge, the effect of the selected indicators on MFI efficiency levels have not been investigated yet. For this reason, it is important to first analyze the trends of MFIs to find out in what contexts they are most concentrated, to then follow the investigation with a OLS regression that assesses how the selected country characteristics, including the proxies for decentralization, are associated with the operations and poverty outreach executed by the MFIs.

The unit of analysis is MFIs and the empirical model is as follows:

$$Y_{ic} = \alpha + \beta_1 \text{Decentralisation}_c + \beta_2 \text{Country}_c + \beta_3 \text{MFI}_i + \varepsilon \quad (4)$$

where  $Y_{ic}$  is the operational or the social efficiency of MFI  $i$  in country  $c$ ;  $\alpha$  is the constant;  $\text{Desentralisation}_c$  includes the decentralization variables for country  $c$ , which are the election variable at the municipal level where 0 suggests that no local elections take place, 1 suggests that only the legislature is elected and 2 suggests that both the legislature and executive are locally elected<sup>8</sup>; the election variable at the state or province level uses the same ordered categories as the previous variable; the vertical imbalance in percentage, where the larger the value the more sub-national governments use transfers from the general government to cover their expenses;  $\text{Cauntry}_c$  stands for the characteristics of country  $C$ , i.e. interregional in-

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<sup>8</sup> By using this indicator as an ordinal variable, this paper assumes that the gap between the different levels of decentralization is equal.



equality, the percentage of ethnic fractionalization, gender inequality, rural population, the level of difficulty to do business and GDP per capita normalized per US\$ 100;  $MFI_i$  stands for the MFI controls for MFI  $i$  which are the natural logarithm of gross loan portfolio, the dummy for operating for more than eight years (*Mature*) and profit status; and  $\varepsilon$  is the residual.

At first, the association between the controls for country characteristics and efficiency levels of MFIs is assessed. Then, I include the political and fiscal decentralization variables in different ways to assess how each aspect of decentralization affects MFI efficiency and how one type of decentralization may outweigh the effect of another. Using the regression model in this manner also serves to verify the robustness of the model.

Since decentralization in developing countries is associated with higher inequality (Lessmann, 2012), I include an interaction term to equation (4) to verify whether this argument holds also when using the efficiency of MFIs as the dependent variable. I use the median of GDP per capita to split the sample in two to create a dummy variable for the less developed countries. Russia, Brazil, Mexico, Colombia, Azerbaijan, Peru, China and Ecuador in this sample are more developed than the remaining countries. The extension to the model with the interaction term is as follows;

$$\beta_4 Muni_c \times lessdev_c + \beta_5 State_c \times lessdev_c + \beta_6 vimb_c \times lessdev_c \quad (5)$$

where  $lessdev_c$  is a dummy variable where 1 suggests that country  $c$  is less developed. Collinearity increases when including the interaction term, because state-level decentralization is nested in municipal decentralization and all decentralization variables move in the same direction when accounting for development levels. Thus, different model specifications are presented but those with all decentralization variables are assumed to produce confounding results due to this issue.

## 4. RESULTS

### 4.1 Econometric Issues

The main econometric issue is the limited number of observations that are included in the sample. Despite the fact that data on 461 MFIs are used, there are some missing values which ultimately makes the sample size smaller for the regression model (see Table 2 and 3). Especially when split-

ting the data into groups of countries, the number of observations per country is approximately 20 for about half of them. Hence, the analysis of the country-specific context's effect on MFIs can only be considered preliminary research.

Another empirical challenge in using MFI data is its skewed nature. While the majority of MFIs are small and operate only within the local area, the largest 30 MFIs together account for more than 75% of the beneficiaries served by the whole microfinance sector (Honohan, 2004). As a result, most of the proxies used to control for MFI characteristics have outliers that can influence the results of the regression single-handedly. However, they cannot quickly be omitted because they represent a significant segment of the microfinance sector. Cook's D Test, DFITS and DFBETA were employed, followed by regressions without the most concerning outliers; but neither the direction, the significance of the coefficients, nor the fit of the model changed significantly, and for this, the outliers are kept in the sample. Finally, in order to control for heteroscedasticity regression results are reported using Eicker-*Huber-White* heteroskedastic-consistent standard errors.

#### **4.2 MFI Trends**

As an initial analysis I look into the bivariate relationship between the country-specific predictors and the outcomes. I also add the total number of MFIs in operation per country in the correlation matrix in order to assess MFI density per country characteristic (see Table 1).

Total number of MFIs per country has a positive association with gender inequality, percentage of rural population, difficulty in doing business, and a negative association with GDP per capita, all at less than a 5% level of significance. This suggests that MFIs are most densely populated in poorer countries with higher levels of gender inequality, rural population, and where it is more difficult to do business. Thus, the location of MFIs follows their commonly shared mission to serve the socially and geographically excluded people, which results in them operating in highly heterogeneous environments.

This is an interesting point when evaluating the work of MFIs from the perspective of local development for two reasons. Firstly, decentralization in places with initially high levels of inequality and a more heterogeneous population is associated with increased inequality. Secondly, social capital and institutions are important for local development (Rodríguez-Pose, 2013) but when levels of inequality and heterogeneity are high within a country, the bridging and bonding process of institutions can be hindered (Storper, 2005). Thus, both the decentralization and local development literature point out

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the negative effect heterogeneous societies can have, and if instead MFIs are predominantly working in these complex areas then their work can fill the gap decentralization that LED strategies are struggling to meet. That being said, the mere presence of MFIs in a country does not guarantee any positive results, thus, further research that measures the change in the life of the beneficiaries is necessary. Also, the number of MFIs in a country is negatively correlated with OSS, which suggests that due to heightened competition MFIs are more likely to suffer pressure to lower interest rates and administrative costs. However, the number of MFIs is positively correlated with social efficiency; hence, MFI density contributes to poverty outreach level, albeit by little.

Lastly, this correlation matrix also serves to spot how different dimensions of poverty go together. For example, gender inequality is positively correlated with ethnic fractionalization, rural population and difficulty in doing business, and negatively correlated with GDP per capita. Difficulty to do business and rural population are positively associated as well. However, an interesting result is that interregional inequality has a negative association with rural population and difficulty to do business, and a positive association with GDP per capita.

Since GDP per capita is negatively correlated with the latter variables but not with interregional inequality, this suggests that interregional inequality is higher in more developed countries. Hence, unlike previous studies that found ethnic fractionalization to be inversely associated with per capita GDP growth (Easterly & Levine, 1997), this correlation matrix demonstrates the contrary; therefore, empirical studies should be cautious in mechanically associating developing countries with heterogeneous populations since 2012 data on per capita GDP proves the opposite (see Table 1).

### 4.3 Country Context

Reflecting on the first hypothesis about MFIs and the country context, all country controls and interregional inequality are negatively correlated with OSS *ceteris paribus*, although only interregional inequality and GDP per capita are statistically significant (see Table 2). These results reflect the challenges MFIs encounter in operating in contexts that are not homogenous; however, the correlation between OSS and GDP per capita alludes to the possibility of higher costs of abiding with more regulated financial systems encountered in more developed countries (Ahlin et al., 2011). For every 1% increase in interregional inequality the expected level of OSS decreases approximately by 1.01% and a \$100 increase in GDP per capita is associated with an expected decrease in OSS of 0.46%. However, the explanatory power of this model is

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**Table 1.**  
**Correlation between country context variables and MFIs**

	Interregional inequality (%)	Ethnic fractionalization (%)	Gender inequality (%)	Rural population (%)	Difficult to Do Business	GDPpc (US\$100)	Operational Self-sufficiency (%)	Social Efficiency
Interregional inequality (%)	1.000							
Ethnic fractionalization (%)	-0.241*** (0.000)	1.000						
Gender inequality (%)	-0.065 (0.175)	0.118** (0.011)	1.000					
Rural population (%)	-0.267*** (0.000)	-0.385*** (0.000)	0.611** (0.000)	1.000				
Difficult to Do Business	-0.259*** (0.000)	-0.213*** (0.000)	0.486*** (0.000)	0.518*** (0.000)	1.000			
GDPpc (US\$100)	0.150*** (0.002)	0.188*** (0.000)	-0.702*** (0.000)	-0.851*** (0.000)	-0.604*** (0.000)	1.000		
Operational Self-Sufficiency (%)	-0.096* (0.052)	-0.086* (0.072)	-0.152*** (0.001)	-0.050 (0.293)	-0.040 (0.406)	0.092* (0.055)	1.000	
Social Efficiency	0.021 (0.656)	-0.144*** (0.002)	0.159*** (0.001)	0.163*** (0.000)	0.082* (0.078)	-0.140*** (0.003)	-0.035 (0.460)	1.000
Total Number of MFIs	-0.011 (0.813)	0.073 (0.118)	0.514*** (0.000)	0.345*** (0.000)	0.092** (0.048)	-0.138*** (0.003)	-0.138*** (0.004)	0.097** (0.037)
Significance in parenthesis. ***p<0.01, **p<0.05, *p<0.1								

limited (see R-squared), alluding to a weak association between the selected country characteristics and factors that affect the revenue generation of MFIs, such as loan interest rate and over-indebtedness.

**Table 2.**  
**Country characteristics and MFI efficiency**

VARIABLES	(1)	(2)	(3)	(4)
	Operational Self-Sufficiency (%)		Social Efficiency	
Interregional inequality (%)	-0.924* (0.502)	-1.007* (0.599)	0.842 (0.835)	2.723* (1.396)
Ethnic fractionalization (%)	-0.686* (0.389)	-0.556 (0.358)	-0.484 (0.702)	-1.330 (0.979)
Gender inequality (%)	-0.413 (0.544)	-0.471 (0.896)	8.575*** (2.432)	9.427*** (2.862)
Rural population (%)	-0.410 (0.445)	-0.850 (0.581)	2.376* (1.275)	6.805*** (2.228)
Difficult to do business	-0.0725 (0.200)	-0.256 (0.195)	-0.269 (0.222)	0.353 (0.367)
GDP per capita (\$100)	-0.0437 (0.288)	-0.456** (0.217)	1.650** (0.666)	3.637*** (1.125)
MFI controls		X		X
Constant	237.3*** (74.19)	379.8*** (144.3)	-497.7*** (179.0)	-2,411*** (589.7)
Observations	413	373	434	383
R-squared	0.049	0.080	0.050	0.279
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

With social efficiency, the results are almost a mirror reflection, in that all country-characteristics are positively associated with it, with the exception of ethnic fractionalization and difficulty to do business, which do not have any relationship. This means that holding other variables constant, MFIs have a higher level of poverty outreach in countries with higher levels of interregional and gender inequality and a rural population. The fact that GDP per capita is positively correlated with social efficiency may be related to the fact that, in more developed countries, factors such as better transport infrastructure can help MFIs to reach geographically isolated people. In all, despite the operational difficulties in working in environments with high diversity and inequality, MFIs are issuing smaller loans to more people.

#### 4.4 Decentralization

After observing how the country-specific factors mirror each other in their associations with operational and social efficiencies, I add the political decentralization variables and the percentage of vertical imbalance to the

model. Table 3 column (1) to (5) show that neither political decentralization nor vertical imbalance have a significant association with OSS, while interregional inequality and GDP per capita continue to have a negative effect, *ceteris paribus*. Especially when comparing results across Table 3, the significant coefficient for decentralization at the state level in column (2) is most likely to be confounded, because state level decentralization is nested in municipal level decentralization. Thus, increasing autonomy for local governments seems irrelevant for the operational efficiency of MFIs.

On the other hand, political decentralization is positively correlated with social efficiency (see Table 4). The fact that state-level decentralization takes away the significance of municipal-level decentralization when included in the model perhaps suggests that deeper political decentralization has more significant positive correlation with social efficiency.

Because the administrative capacity of municipal governments is often too limited to detach itself from the central government, this result also shows that - differently from the argument of Bhardan and Mookherjee (2006) about the proximity to local contexts - state-level decentralization has a greater impact on the poverty outreach levels of MFIs than municipal-level decentralization. For example, the state of Tamil Nadu in India has been responsible for decentralized district planning, whereby it follows guidelines set by the national government and is accountable for its delivery, except for the city of Chennai which was granted untied funds for its districts (Government of Tamil Nadu, 2011). Thus, unless municipalities are robust enough to take charge of large-scale projects, such as planning, states are better equipped to deliver results.

Vertical imbalance instead has a negative correlation with social efficiency and the association is more strongly compared to political decentralization, which suggests that the positive effect of political decentralization on social efficiency is undermined by the negative effect of relying on intergovernmental transfers. Thus, these findings highlight how, similar to the findings of Rodriguez-Pose and Ezcurra (2010) about decentralization and disparities in developing countries, social efficiency of MFIs is hampered by decentralization because vertical imbalance outweighs the positive effect of political decentralization.

#### **4.5 Decentralization and Development**

Following the literature about decentralization in developing versus developed countries, I include an interaction term to the model to verify if the difference in development levels matters when assessing decentralization's impact on the efficiency of MFIs. Columns (6) to (13) of Table 3 demonstrate

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**Table 3.**  
**MFI Operational Self-Sufficiency**

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Municipal	6.295 (6.485)			-0.226 (7.165)	-0.730 (6.170)	14.36** (6.828)	7.846 (7.729)	8.181 (7.042)	18.13*** (6.791)	10.60 (8.076)	7.531 (8.378)	7.875 (8.605)	66.55** (32.06)
State		9.518* (5.652)		9.608 (6.377)	10.18 (6.336)		9.509 (6.364)	9.218 (6.448)		7.969 (7.262)	10.05 (6.552)	9.704 (8.198)	-45.95 (28.94)
Vertical imbalance			-11.99 (39.82)		7.654 (39.69)			-3.904 (41.08)	-38.38 (35.53)	-13.70 (36.25)		-3.365 (44.66)	-186.9* (102.7)
Municipal x Less developed						-19.55** (7.975)	-19.41** (7.925)	-19.60** (8.530)	-24.11*** (6.697)	-21.46*** (7.051)	-19.50** (7.580)	-19.65** (8.253)	-43.25*** (14.88)
State x Less developed											-1.093 (10.54)	-0.902 (11.76)	68.89* (40.82)
Vertical imbalance x Less developed									50.77 (46.89)	25.45 (53.37)			368.2** (173.0)
Country controls	X	X	X	X	X	X	X	X	X	X	X	X	X
MFI controls	X	X	X	X	X	X	X	X	X	X	X	X	X
Constant	364.1** (147.6)	396.7*** (147.3)	386.4*** (146.2)	397.4** (156.8)	395.4** (156.6)	394.9*** (149.4)	427.7*** (158.4)	428.9*** (158.4)	412.4*** (152.4)	427.9*** (159.7)	426.9*** (162.0)	428.2*** (163.6)	474.4*** (174.2)
Observations	373	373	373	373	373	373	373	373	373	373	373	373	373
R-squared	0.082	0.089	0.081	0.089	0.089	0.092	0.098	0.098	0.095	0.098	0.098	0.098	0.104

Robust standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0

**Table 4.**  
**MFI Social Efficiency**

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Municipal	52.35*** (18.86)			10.62 (21.31)	34.59 (25.77)	50.42** (21.58)	7.846 (7.729)	39.02 (27.72)	77.81*** (27.54)	22.70 (26.05)	54.73 (38.20)	-11.48 (21.82)	-199.3* (119.4)
State		65.28*** (15.34)		61.05*** (17.65)	32.84* (18.40)		9.509 (6.364)	32.37* (18.26)		58.92** (26.33)	24.43 (21.36)	95.10*** (27.86)	270.1** (118.8)
Vertical imbalance			-427.4*** (137.6)		-372.5** (151.3)			-377.6** (152.7)	-518.2*** (154.3)	-350.1** (147.9)	-441.8** (181.8)		345.3 (366.5)
Municipal x Less Developed						4.776 (27.16)	-19.41** (7.925)	-10.00 (25.76)	-30.29 (31.01)	-12.67 (26.42)	-22.18 (31.60)	0.836 (26.90)	76.56 (46.97)
State x Less Developed										-49.02 (37.16)		-68.16* (39.31)	-314.1** (146.7)
Vertical imbalance x Less Developed									241.8 (156.8)		164.3 (180.7)		-1,399** (709.2)
Country controls	X	X	X	X	X	X	X	X	X	X	X	X	X
MFI controls	X	X	X	X	X	X	X	X	X	X	X	X	X
Constant	-2,549*** (618.1)	-2,302*** (574.0)	-2,176*** (532.0)	-2,337*** (604.1)	-2,243*** (572.7)	-2,556*** (629.0)	427.7*** (158.4)	-2,226*** (577.8)	-2,278*** (567.1)	-2,266*** (586.2)	-2,231*** (579.8)	-2,390*** (626.2)	-2,439*** (610.5)
Observations	383	383	383	383	383	383	373	383	383	383	383	383	383
R-squared	0.283	0.290	0.291	0.290	0.298	0.283	0.098	0.298	0.298	0.299	0.299	0.293	0.302

Robust standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1



how within the more developed countries, political decentralization at the municipal level has a more positive association with OSS than when the countries are not decentralized. For instance, column (9) shows that for MFIs operating in the more developed countries, the expected OSS is 18.13% higher when the country is decentralized at the municipal level than not decentralized at the municipal level. However, for MFIs in less developed countries the expected OSS is 5.98% lower when the country is decentralized at the municipal level. The effect of vertical imbalance on OSS remains negative for MFIs in more developed countries, but it instead has a positive effect in less developed countries; nevertheless, this interaction term is statistically insignificant.

Thus, decentralization has a positive effect on MFI OSS in more developed countries, but a negative effect in less developed countries, which is aligned with its association with interregional inequality in developing countries and confirms Hypothesis 3 in regard to operational efficiency.

For social efficiency, the interaction does not reveal statistically significant results for municipal-level decentralization and vertical imbalance. Column (9) of Table 4 shows how within MFIs that operate in more developed countries, the expected social efficiency is 77.81 units higher under municipal-level political decentralization, while the expected increase is only of 47.52 units amongst less developed countries. Also, for the 1% increase in vertical imbalance the estimated decrease in social efficiency of MFIs in more developed countries is of 518.2 and 276.4 units in less developed countries, but the interaction terms are not significantly different from 0.

However, for state-level decentralization the interaction suggests that the expected increase in social efficiency is of 95.10 units within more developed countries and 26.94 in less developed countries at the 10% significance level (see column (12)). Thus, political decentralization seems to have a reduced positive effect on social efficiency in less developed countries, supporting Hypothesis 3 also for this dependent variable.<sup>9</sup>

These results reveal three important points. Firstly, the hypothesis about a positive association between decentralization and MFI efficiency is supported by the results for social efficiency, while the case for operational efficiency is weaker due to statistically insignificant results. However, when splitting the effect of decentralization between more and less developed countries, it becomes evident that political decentralization is positively cor-

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<sup>9</sup> Results of Table 4 column (15) are not used for analysis but kept in the table to show how putting all decentralization variables together confounds the results, which is evident from the change in direction and strength of the coefficients.

related with OSS at least at the 5% significance level in more developed countries. Vertical imbalance is negatively associated with both MFI efficiencies, in line with Hypothesis 2.

Secondly, the argument that political decentralization has negative consequences for MFIs in poorer countries is sustained by the reduced positive effect on social efficiency and a shift from a positive to negative effect on operational efficiency, when using the interaction term. This result much reflects the lack of administrative capacity found in local governments in less developed countries. However, albeit insignificant, in less developed countries vertical imbalance seems to have a positive effect on MFI OSS and a less negative effect on social efficiency, hinting at the benefits of relying on intergovernmental transfers in such contexts. Thus, instead of regarding vertical imbalance as a sign of weakness for local governments, the results allude to Litvack et al. (1998) and Smoke (2001) who stressed how intergovernmental transfers are an important tool to balance out interregional differences in funds and help the local governments meet their costs, in order to foster overall stability and financial development.

Thirdly, OSS and social efficiency consistently have opposite associations with the MFI and country control variables, but their correlation with the decentralization variables are aligned. Hence, although these two efficiencies seem to be incompatible goals, the effect of decentralization is the same for overall MFI efficiency. In other words, less developed countries should be cautious about decentralizing if they are interested in creating an enabling environment for MFIs, because these results suggest that decentralization can have a less positive or even negative effect on MFI operational and social efficiency.

## 5. CONCLUSION

The aim of this paper has been to contribute to the literature about the effect contextual factors have on microfinance institutions, by analyzing the operational and social efficiency of MFIs in the context of decentralization. Since in developing countries poverty reduction is a high priority, governments consider microfinance to be one of the tools to achieve this objective, by increasing levels of access to finance. Whilst direct government intervention in the microfinance sector has become a controversial issue, the argument holds that decentralized governments should be able to foster an environment that is more conducive to local development; thus, decentralization should have a positive, albeit indirect, impact on MFIs that serve the local micro-entrepreneurs.

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I demonstrate that more MFIs are based in contexts with higher levels of gender and interregional inequality and a rural population. Thus, it is confirmed that MFIs work predominantly in unequal, heterogeneous societies. Moreover, MFIs have better outreach levels in contexts where gender and regional inequality levels and the proportion of the rural population are higher, but their operational sustainability is hindered by the same factors, signaling the presence of a potential trade-off between operational and social efficiency.

When decentralization is taken into consideration, no significant relationship was found in association with OSS, but political decentralization has a positive impact on social efficiency. That being said, the positive impact of political decentralization is outweighed by the negative impact of vertical imbalance on social efficiency. When decentralization interacts with development levels, it becomes evident that political decentralization is more negatively associated with MFI operational efficiency in less developed countries, and it generally has a less positive and statistically insignificant association with poverty outreach levels. The association with vertical imbalance is weaker, but the results indicate that, in poorer countries, its effect is less negative or even positive on the MFIs' operational and social efficiency. Thus, in poorer countries political decentralization does not help to improve MFI efficiencies, but intergovernmental transfers seem to be less harmful.

For future research, including MFIs from more countries into the sample would be the next step, although finding comparable sub-national level data of more developing countries for the interregional inequality and the decentralization proxies is a significant challenge. Another important reason for further research is the lack of data on African countries in this paper. It is the continent where, not only has decentralization gained traction recently (Ndegwa, 2002), but also the microfinance sector has been growing the most and microsaving schemes, in particular, are widespread. Thus, because of the different path dependencies of the countries and trajectories of MFIs in the region, this paper's findings should be taken with caution when applied to the African context.

Due to the pressure to reduce public expenditure, government intervention in pro-poor programs is experienced in a more indirect manner today. However, because decentralization continues to gain prominence in developing countries, the possibility for governments to become more locally tailored facilitators for poverty alleviation and LED exists, whether its policies take the form of improved mobility, security, or business support for micro-entrepreneurs. Hence, even in the specific context of microfinance, it is important to think of the government's role not only as an institution that gives subsidies but as a facilitator.

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This research showed that country context matters for MFIs and that, while operational and social efficiencies have opposite associations with the general country context, decentralization affects them in a similar and negative manner in poorer countries. Hence, governments of such countries should be cautioned about the possible negative effect decentralization can have on microcredit and, potentially, other widely-used pro-poor programs. Nonetheless, further research is required to substantiate this argument with evidence of change in living conditions of microcredit beneficiaries and by analyzing the relationship between decentralization and other programs.

## APPENDIX

**Table A.**  
**Descriptive statistics**

	(1)	(2)	(3)	(4)	(5)
VARIABLES	N	Mean	St. Deviation	Min.	Max.
Operational Self-Sufficiency (%)	439	121.0	67.55	4.150	830.4
Social Efficiency	461	132.4	527.4	-8.30e-17	6,689
Ln(Gross loan portfolio)	461	16.13	2.014	7.590	22.05
Mature	447	0.758	0.429	0	1
Profit status	417	0.436	0.497	0	1
Interregional inequality (%)	434	39.90	13.50	12.67	62
Ethnic fractionalization (%)	461	44.59	19.36	4.540	73.96
Gender inequality (%)	461	45.81	10.31	21.30	61
Rural population (%)	461	44.36	20.26	15.13	82.66
Difficult to Do Business	461	103.9	36.05	39	158
GDPpc (US\$100)	461	68.88	40.86	12.76	151.8
Municipal political decentralization	461	1.453	0.663	0	2
State political decentralization	461	0.868	0.827	0	2
Vertical fiscal imbalance (%)	461	52.82	19.79	15.55	86.73

**Table B.**  
**Country characteristics**

	Municipal elections	State elections	Vertical fiscal imbalance (%)	Interregional inequality (%)	Ethnic fractionalization (%)	Gender inequality (%)	Rural population (%)	Difficult to Do Business	GDP per capita (\$100)
Azerbaijan	1	1	53.37	12.67	20.47	32.30	46.11	71	71.64
Bangladesh	0	0	15.55	N/A	4.54	51.80	71.11	132	7.52
Bolivia	2	0	36.57	25.00	73.96	47.40	32.78	158	25.76
Brazil	2	2	35.02	48.00	54.08	44.70	15.13	118	113.40
China	2	2	40.64	50.00	15.38	21.30	48.22	99	60.91
Colombia	2	2	75.11	43.00	60.14	45.90	24.43	42	77.48
Ecuador	2	0	58.38	23.12	65.5	44.20	32.02	134	54.25
Guatemala	0	0	53.95	54.47	51.22	53.90	49.76	93	33.31
Honduras	2	0	48.76	61.44	18.67	48.30	47.28	125	23.23
India	1	1	33.55	37.00	41.82	61.00	68.34	131	14.89
Mexico	2	2	70.10	55.00	54.18	38.20	21.61	51	97.49
Nepal	2	0	81.61	19.76	66.32	48.50	82.66	103	6.90
Nicaragua	2	0	41.14	46.19	48.44	46.10	42.14	123	17.54
Peru	1	0	86.73	42.00	65.66	38.70	22.42	39	67.96
Philippines	2	2	72.64	62.00	23.85	41.80	50.88	133	25.87
Russia	1	1	72.64	36.00	24.52	31.20	26.00	111	140.37

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