Do institutions matter for microfinance profitability? Evidence from Africa

By

Peter Muriu

Birmingham Business School
University of Birmingham

May 2011

Flat 1, 848 Bristol Road
Birmingham
B29 6HW
United Kingdom
Tel : +441212477787
+447830901640
Email: pwm677@bham.ac.uk
Alternate email: muriupet@yahoo.com

Abstract

There have been profound changes in both political and economic institutions in Africa economies over the last 20 years. These changes vary from one country to another. This study contributes to the literature on microfinance profitability by examining whether profitability depends on the institutional environment of the host country. System GMM Estimator in Dynamic Panel Data Models is applied to determine the extent to which institutions affect microfinance profitability. We test the robustness of the models with different specifications that confirm the general result. Our estimation shows that microfinance profitability is non-negligibly driven by the surrounding institutional environment. Specifically, the results indicate that on average, microfinance institutions (MFIs) are more profitable when there is political stability. Upon interaction with MFI age, we show that political stability may make it more conducive for young MFIs to form relationships with reliable new borrowers. Rule of law is associated with greater MFI profitability while corruption makes it harder for MFIs to realize profits, irrespective of age. Well developed institutions may therefore make it less costly for MFIs to operate in a fully compliant way. Based on the study findings, it is prudent that policymakers prioritize institutional reforms that are critical for microfinance development in Africa.

JEL dassification: E02; G21

Keywords: Micro finance institutions; Profitability, institutional environment; Africa

1. Introduction

Microfinance profitability is an appropriate mechanism for achieving long term viability and sustainability of the microfinance industry. The Microbanking Bulletin 2010[1] however shows that in the last 3 years MFIs operating in Africa have consistently posted negative profits. On the contrary MFIs across the other continents have recorded positive profits over the same time period. Are there constraints unique to Africa environment that hinders MFIs profitability?

The main goal of this study is to investigate the extent to which microfinance profitability depends on institutions of the host country. To achieve this objective, we used a panel data for a broad sample of 167 MFIs across 32 Africa economies from 1997-2008 periods. Researchers use diverse definitions and measurements of institutions which encompass political instability, attributes of political institutions, social characteristics and social capital, and measures of the quality of institutions that affect economic exchange. Some of these institutions attributes reflect on governance. Although the concept of governance is widely used by policymakers and in the academia, there is no strong consensus on a single definition of governance or institutional quality. Various authors have produced a wide array of definitions (Kaufmann 2009). For the purpose of this study, we use governance institutions to proxy country specific institutional environment.

In an attempt to explain differences in the level of microfinance performance, there is a substantial literature focusing on governance. The emphasis has however been limited on corporate governance. Studies on this front include performance and corporate governance (Mersland and Strøm 2009); external control exercised by stakeholders and accountability mechanisms to enforce internal governance (Hartarska 2009); governance history (Mersland 2009a); cost of ownership in microfinance (Mersland 2009b); ownership structure and transparency (Mersland and Strøm 2008); organizational governance—performance based compensation, external directors, auditing, rating, or supervision (Hartarska 2005). There is hardly any rigorous analysis and evidence documented on the influence of country level governance institutions on MFI profitability, while controlling for MFI specific factors and cross-country differences in macroeconomic and financial sector development. This study is a first attempt to quantify this contribution and fill this important research gap.

Good governance is a prerequisite to secure property rights, enforcement of contracts and for the provision of adequate public goods (Dixit, 2009). One would expect a country's institutional environment to remain the same over time, in which case institutional variables might be considered fairly exogenous to MFI profitability. In many developing countries, however, institutional quality can deteriorate sharply and periodically as a result of political instability, terms of trade or climate shocks, policy reversals, or fiscal austerity programs (Aron, 2000) and even historical origin of a country's laws (La Porta et al 2008).

Although a well functioning government is known to influence the performance of the financial sector, there is little evidence linking well-functioning institutions to financial intermediaries' outcomes (Kaufmann et al. 2009). Using stochastic frontier analysis, Lensink et al (2008) examine whether the efficiency of foreign banks depends on the institutional quality of the host country and on institutional differences between the home and host country. Hasan, et al (2009), extends this study by investigating the impact of better institutions on bank efficiency in China. It is however not clear from these studies how institutional development would influence microfinance profitability.

The relationship between microfinance profitability and the institutional environment cannot be extrapolated from results on conventional retail banking industry. There are significant differences. MFIs serve a more economically marginal clientele and finance small and medium enterprises which are mainly informal (Cull, et al 2009a; b). Their service delivery technologies that include screening and monitoring may therefore significantly differ from that

1 http://www.themix.org/publications/microbanking-bulletin/2010/09/microbanking-bulletin-september-2010-issue-no-20-0

of the conventional banks. Moreover, a number of MFIs are subsidized, indefinitely or at least during an initial start-up phase-which explains why MFIs failing to break even for a number of years cease to exist (Armendáriz and Morduch 2010).

Whereas institutional quality may cause poor countries and poor people to stay poor (Pande and Urdy, 2005; Xu, (2010), stylized facts show that financial sectors in Africa economies operate within weak institutional environments (Anayiotos and Toroyan 2009). Additionally, Africa is characterized by weak; judicial system, bureaucracy, law and order, property rights and political incentives (Creane, et al 2004). Of the 30 Africa countries covered in the 2010-2011 Global Competitiveness Index of the World Economic Forum; 25 score below 4, placing them among the worst 58 countries. Among the 10 worst performers in the same competitiveness index, 8 are from Africa. Moreover, 38 of the 44 Africa countries that are covered by the 2011 Economic Freedom Index (of the Heritage Foundation) are considered either "mostly unfree" or "repressed". It is also evident from Table 1.1 that although Africa economies rank poorly globally in terms of institutional development, there is also a wide variation within the same continent[2].

Table 1.1: Ease of doing business-global rankings (2010)

Economy	Ease of Doing Business	Starting a Business	Getting Credit	Protecting Investors	Paying Taxes	Enforcing Contracts	Closing a Business
Mauritius	17	10	87	12	12	66	73
South Africa	34	67	2	10	23	85	76
Botswana	45	83	43	41	18	79	27
Namibia	66	123	15	73	97	41	55
Rwanda	67	11	61	27	59	40	183
Tunisia	69	47	87	73	118	77	34
Zambia	90	94	30	73	36	87	83
Ghana	92	135	113	41	79	47	106
Kenya	95	124	4	93	164	126	79
Egypt	106	24	71	73	140	148	132
Ethiopia	107	93	127	119	42	57	77
Seychelles	111	81	150	57	34	70	183
Uganda	112	129	113	132	66	116	53
Swaziland	115	158	43	180	54	130	68
Nigeria	125	108	87	57	132	94	94
Lesotho	130	131	113	147	63	105	72
Tanzania	131	120	87	93	120	31	113
Malawi	132	128	87	73	24	142	130
Madagascar	134	12	167	57	74	155	183
Mozambique	135	96	127	41	98	129	136

Source: The World Bank (http://www.doingbusiness.org/)

We therefore seek to address the following question; does the institutional environment matter for MFI's profitability? Put differently, do MFIs perform better in the context of well-developed institutions, or do good institutions crowd MFIs out? These are broad questions that do not find unambiguous answers in economic theory. This is the focus of this study.

2 North (1990:110) argues that Third World countries are poor because the institutional constraints define a set of payoffs to political/economic activity that does not encourage productive activity. Such rules affect both individuals and organizations, defined as political organizations (city councils, regulatory agencies, political parties, tribal councils), economic organizations (firms, trade unions, family farms, cooperatives, rotating credit groups), educational bodies (schools, universities, vocational training centers), and social organizations (churches, clubs, civic associations).

The data available, allow us to illuminate these important questions for the first time in a large cross country study. Beyond evaluation of MFI profitability, answers to these questions may provide indirect evidence on how microfinance fits into the process of development in line with Ahlin and Jiang (2008), theoretical postulations. While we do not fully solve potential omitted variable issues, our goal is to investigate the nature and magnitude of MFI dependence on the institutional context.

This study makes contributions to policy and existing literature fivefold. First, it is timely in view of the broader issue of how governance may affect access to financial services, especially among the poor. Additionally, it broadens and deepens our understanding on the impacts of well developed institutions on MFI profitability.

Second, it is of policy interest to the regulators and the MFI management since any evaluation on microfinance performance would be incomplete if institutional environment is found to robustly predict profitability. MFIs may for instance require a lower risk contribution on their investment in economies with strong institutions. If there is clear evidence that weak political and economic institutions significantly hamper profitability, policymakers might propose measures that strengthen institutions in particular ways or that encourage more appropriate political structures.

Third, although most MFIs use joint liability or informal mechanisms to secure high levels of repayment, MFIs that employ the standard individual lending contract might benefit from adherence to the rule of law and well-functioning supporting institutions that help to enforce contracts such as courts to improve on their profitability. While this proposition seems straightforward, no serious and rigorous empirical work has been carried out in microfinance to support it.

Fourth, microfinance has become attractive to foreign capital investment (CGAP, 2009) and foreign investors place a greater emphasis on institutional development when selecting an investment location (Bevan et al. 2004).

Fifth, we employ a rigorous analysis that tackles endogeneity problem that has largely been ignored by the existing literature. Most of the literature makes use of a static linear panel framework with a few exceptions. An abnormal or monopoly profit realized in one period could disappear in the next, rendering intervention by government or other regulatory agencies unnecessary. We adopt dynamic panel methods (system GMM) to control for the persistence of profitability and endogeneity in the model.

The rest of this study proceeds as follows. In the next section we review the related literature. Section 3 describes data and the measurements of our variables of interest. Section 4 outlines the conceptual framework and the model specification. Section 5 outlines econometric methodology. In section 6 we present the empirical results and explore a number of robustness checks. The final section presents the results, draws some policy implications, and offers directions for future research.

2. Previous evidence

How does this study relate to the existing academic literature? The influential study of North (1990) raised awareness of the role of institutions in establishing incentives for economic activity in general and for investment in particular. Unfortunately, hardly any empirical evidence has been provided on this issue in the microfinance front.

Most of the existing literature on MFI performance has focused on institutions' success or otherwise with a view of arriving at best practices. See, for example, Patten, et al (2001), Mosley and Rock (2004), Kaboski and Townsend (2005), Cull, Demirgüc-Kunt and Morduch (2007), Hartarska and Nadolnyak (2008b), Caudill, et al (2009), Armendáriz and Morduch (2010) and Ahlin et al. (2011). This study however differs from previous ones in focusing on the institutional environment, rather than micro-institutional, or macroeconomic determinants of MFI success. Ahlin et al. (2011) in particular focus on macroeconomic environment and macro-institutional environment. But whereas their focal MFI performance indicators are operational

self-sufficiency (measured as the ratio of annual financial revenue to annual total expense) and extensive and intensive MFI growth; our focal outcome is profitability. Operational self-sufficiency as a measure of MFI performance can be misleading as it lumps together genuine operating net revenue with transfers and financial sustainability does not imply profitability (Armendáriz and Morduch 2010).

Another study that has utilized institutional environment as a control variable is Hartarska and Nadolnyak (2007) but whose focus is on the impact of regulation on MFI sustainability. With regard to institutional environment, our paper makes a point related to Ahlin et al. (2011) and Hartarska and Nadolnyak (2007), but differs from both mainly in our econometric methodology that uses a richer set of MFI controls. We view the results as complementary and in agreement where they overlap.

The law and finance theory holds that in countries where legal systems enforce private property rights, support private contractual arrangements, and protect the legal rights of investors, savers are more willing to finance firms and financial markets flourish. Second, the different legal traditions that emerged in Europe over previous centuries and were spread internationally through conquest, colonization, and imitation help explain cross-country differences in investor protection, the contracting environment, and financial development today (La Porta et al 1998).

There are however, countervailing theories and evidence that challenge both parts of the law and finance theory. Qian and Strahan (2007), investigate how financial contracts respond to the legal and institutional environment, and consistent with the law and finance theory (La Porta, et al 2000, 2002), they find that strong creditor rights seem to enhance loan availability as lenders are more willing to provide credit on favourable terms. For countries with similar financial liberalization efforts, McDonald and Schumacher, (2007) find that countries with stronger legal institutions and information sharing have deeper financial development in Africa.

While corruption in delivery of public goods and services is expected to have negative impact on bank credit, the role of corruption in lending is not straightforward. Corruption may make loans less profitable, if MFIs are forced to ignore the commercial viability and riskiness of the projects they finance for the political elite. Corruption will thus reduce the loans-assets ratio, but may nevertheless suppress asset and liability growth (Demetriades and Fielding 2011). On the contrary, bureaucratic corruption may not necessarily be bad for business (Pierre-Guillaume and Sekkat 2005). Corruption may benefit bank lending via bribes given by borrowers to influence their chances of receiving loans. This assumption may be validated particularly in the presence of pronounced risk aversion by banks, resulting in greater reluctance on the part of banks to grant loans. Bribes can ameliorate the deadweight cost of government intervention by directing scarce resources toward higher bidders. This strand of theoretical work suggests that corruption might serve to "grease the wheels of commerce", by reducing transaction cost and lowering the cost of capital.

There is however large empirical literature suggesting that corruption undermines confidence in, and the functioning of, democratic institutions, (see Clausen, et al 2009) for a recent contribution, and a thorough discussion of the identification problem in that context. Evidence at both micro and macro level on the impact of corruption on bank lending has been documented by Weill (2010). They show that while the overall effect of corruption is to hamper bank lending, it can alleviate firm's financing obstacles. Further evidence of corruption is discussed in Dreher and Schneider (2010) and in West Africa by Demetriades and Fielding (2011). Cross-country micro evidence on the role of corruption in bank lending to firms is documented by Bartha et al (2009). Evidence for a link between corruption and confidence in public institutions is discussed in Bianca, et al (2009) while that of corruption and competition in public administration is documented in Gioacchino and Franzini (2008). Direct evidence on the link between bribes and companies' operating cost is documented by Ng, (2006). Their finding confirms Gelos and Wei (2006) who finds lower country transparency to be associated with lower investment from international funds. Corruption also imposes substantial economic costs,

particularly in less developed economies (Olken, 2007; Lambsdorff, 2007; Cho, et al 2007; Chang, et al 2006; Ito 2006; Catterberg and Moreno 2005; Svensson, 2005; Anderson, and Tverdova 2003). This provides some validation for firm-level theories of corruption which posits that corruption retards the development process to an even greater extent than taxation (Raymond and Jakob 2007). Beck et al. (2005) find that a supervisory strategy that focuses on empowering private monitoring of banks by forcing banks to disclose accurate information to the private sector tends to lower the degree to which corruption of bank officials is an obstacle to firms raising external finance.

Efficient economic regulation reduces government and market failures while assuring that the markets function without distortions (Djankov, 2009; Crafts, 2006; Klapper, et al 2006). This is important for the development of private investments. This argument is consistent with numerous studies that show that at the country level regulations and the quality of their enforcement impacts upon the protection of investor rights. Djankov, et al (2007) investigate credit institutions in 129 countries over 25 years and show that contract rights and enforcement institutions influence the development of financial markets. Their finding is consistent with Djankov et al. (2006) who evidence that secure property rights are a significant predictor of firm reinvestment. Along the same vein and using firm-level data, Cull and Xu (2005) show that expropriation risk, contract enforcement all appear to matter for Chinese firms' reinvestment decisions.

Further evidence of economic regulation has been documented by Nicoletti and Scarpetta (2006), who shows that a flexible regulation of product markets in OECD countries favours the development of domestic and foreign investments in these countries. Acemoglu and Johnson (2005), also highlight the importance of property right institutions. Besley and Burgess (2004) show that the Indian states that amended the regulation of the labour market in favour of workers are those that experience a slow growth of investment in the formal manufacturing sector. Demirgüc-Kunt, et al (2004) finds that rigid regulations on bank entry and bank activities lead to an increase of the cost of financial intermediations.

There also a few studies that have examined the role of political stability in the financial intermediation process. Roe and Siegel (2009) for instance, draws a link between political stability; economic growth and financial development, which is consistent with the argument advanced by Rajan and Zingales (2003) in exploring political economy as determinants of financial development. Evidence on the possible link between political stability and rule of law on the access to finance in many Africa economies is provided by Anayiotos and Toroyan (2009). Gani and Ngassam (2008) also finds rule of law, political stability, government effectiveness, and regulatory quality as the main drivers for financial development.

Using firm-level data from 52 countries Demirgüç-Kunt, et al (2006), investigate how a country's institutions and business environment affect firm's organizational choices, access to finance and growth. They find evidence of higher growth of incorporated businesses in countries with good financial and legal institutions.

The literature survey presented in this section underscores the importance of institutional reforms for financial intermediation. Institutions matter for microfinance profitability because they influence the costs of transactions and the efficiency of production. In section 4, we review several a priori arguments that suggest a positive relationship between good institutional environment at the country level and MFI profitability, while controlling for the macroeconomic context.

3 Data set, description and measurement

3.1 Data description

Our data sample contains 2,004 observations corresponding to 167 MFIs for the period 1997-2008 that varies from a minimum of 10 in 1997 to a maximum of 167 in 2005 based on their financial accounts. This spans across four different regions namely West (67), East (53), Central (17) and Southern Africa (30). Our panel is unbalanced[3] since not all MFIs have information for every year—some MFIs may have closed as others enter the market. The dataset was assembled from four sources namely the MIX Market database, World Development Indicators (WDI) and World Bank World Governance Indicators[4] (WGI). We also used complementary institutional data from the Heritage Foundation.[5] Our focal measurements of economic performance control variables are per capita GDP growth and private credit as a fraction of GDP. Auxiliary indicators, include inflation and rural population share (in 1990). These are all taken from the WDI. We merge the MFI level dataset with country-level data from WDI on macroeconomic variables and institutional development indices from WGI, for each of the countries and years corresponding to MFI's in the dataset.

The WGI aggregate indicators for all periods, as well as virtually all of the underlying indicators, are described and discussed in Kaufmann et al. (2009) and available at www.govindicators.org. These indicators are based on a broad series of individual variables measuring perceptions of governance, taken from 31 separate data sources. For some years in our WGI sample, data is missing. Consistent with Lensink et al (2008), we proxy values for the missing years by interpolating data. The units in which WGI are measured follow a normal distribution with a mean of zero and a standard deviation of one in each period. This implies that virtually all scores lie between -2.5 and 2.5, with higher scores corresponding to better outcomes[6]

A key advantage of the WGI is that the authors are explicit about the accompanying margins of error, whereas in most other cases they are often left implicit or ignored altogether.[7] It is worth noting that over time the standard errors have been reduced due to the increase in the number of sources utilized. Indeed, while average standard errors in 1996 averaged 0.34 across the 6 indicators, in 2005 the figure was reduced to 0.21. Despite these margins of error, the WGI are sufficiently informative that many cross-country comparisons result in statistically significant differences in estimated governance. This highlights the fact that governance can and does change even over relatively short periods of time.

WGI are based exclusively on subjective or perceptions on governance reflecting the views of a diverse range of informed stakeholders, including tens of thousands of household and firm survey respondents, as well as thousands of experts working for the private sector, NGOs, and public sector agencies.

3 We opt for an unbalanced panel not to lose degrees of freedom.

4 Governance can be broadly defined as the set of traditions and institutions by which authority in a country is exercised. This includes (1) the process by which governments are selected, monitored and replaced, (2) the capacity of the government to effectively formulate and implement sound policies, and (3) the respect of citizens and the state for the institutions that govern economic and social interactions among them (Kaufmann, et al 2009)

5 http://www.heritage.org/index/) that capture the business environment

6 These boundaries correspond to the 0.005 and 0.995 percentiles of the standard normal distribution. For a handful of cases, individual country ratings can exceed these boundaries when scores from individual data sources are particularly high or low.

7 The only other governance-related indicators that we are aware of that now report margins of error are the Transparency International Corruption Perceptions Index and the Global Integrity Index.

3.2 Definition and measurement of the variables

The way in which the institutional measures are categorized is important for interpreting their effects. It is always difficult to measure institutions[8]. Additionally Institutional variables in most African countries are correlated with financial stability, and therefore difficult to identify precisely (Demetriades and Fielding 2011). Dietsche (2007) observes that 'good' institutions can sometimes have 'bad' outcomes, and that very different institutional arrangements can lead to the same outcomes, making it very difficult to measure institutional quality. Researchers have used diverse measures[9] to proxy institutional environment.

Institutions data on Africa are very limited. Researchers have typically used either of the measures or a combination of both[10]. Why do we use subjective measures as opposed to objective indicators? Kauffman et al (2009), show that perceptions matter because agents base their actions on their perceptions, impression, and views. If citizens believe that the courts are inefficient or the police are corrupt, they are unlikely to avail themselves of their services. Firms similarly base their investment decisions on their perceived view of the investment climate and the government's performance. Moreover, in many areas of governance, there are few alternatives to relying on perceptions data. This is more so for corruption, which leaves no documentary evidence that can be captured by purely objective measures. Even when objective or fact-based data are available, often such data may capture a de jure notion of laws 'on the books' that differs substantially from the de facto reality that exists 'on the ground'[11].

One of the limitations of subjective measures provided by the risk-rating agencies and widely used in the literature is that these indexes may be subject to biases through herd effects (Aron 2000), which implies that MFIs management judgments maybe too optimistic or too pessimistic for long periods. Another issue to contend with is the often-arbitrary aggregation of different components of many of the indexes. Typically, components are simply added or averaged with the same weights. When there are many components, factor analysis—a technique that aggregates components with unknown weights is a convenient and superior alternative. At the least, the weighting assumptions employed should be tested (Knack and Keefer 1995).

We analyze the impact of country specific institutional development on MFI profitability using WGI as compiled by Kaufmann, et al (2009)[12] for the period 1997-2008. These include (i)

8 Descriptions of the features of political and economic institutions, such as the presence or absence of constitutional rights, say nothing about how well such institutions perform. On the contrary, measures of the quality of formal and informal institutions indicate how effectively the existing institutional rules or norms are implemented. For example, measures of the quality of formal institutions include subjective rankings of the effectiveness of property rights and of the bureaucracy (that is, the ease of doing business), often drawn from cross-country surveys conducted by risk agencies. Such measures are proxies for the transaction and transformation costs of production that may affect the volume and efficiency of investment and hence profitability.

9 Literature, however, provides different measures of governance. One is a subjective measurement in which people's opinions about institutions are evaluated through a survey and then aggregated into a quantitative index. The alternative is an objective measurement based on statistical facts on the effects of institutions. For example, the wait time for obtaining government approval to start a business can be observed and used as a measurement for institutions. Kaufmann and Kraay (2008) observe that virtually all measures of governance and the investment climate rely on judgment in some measure, so that the distinction between 'subjective' and 'objective' data is somewhat of a false dichotomy.

10 Many of the institutional indexes used in Table A1 are ordinal. An ordinal index ranks countries on some criterion without specifying the degree of difference between countries and associates a number with the rank position. To be used meaningfully in a regression, such an index needs to be transformed into a cardinal index, which is an index where the degree of difference matters, not just the ordering. There is no reason to presuppose that the transformation from an ordinal to a cardinal index should be one-for-one (that is, linear): for instance, the difference in the quality of the judiciary in the United States and South Africa may be much smaller than that between South Africa and DR Congo, even though the same differential is measured on an ordinal scale of 1 to 10. Such possible nonlinearities, however, can be addressed using various techniques

11 Kaufmann, Kraay and Mastruzzi (2005) documents sharp divergences between de jure and de facto measures of business entry regulation and find that corruption explains a good deal of the extent to which the former are subverted in practice.

12 Starting in 1996, these authors have aggregated a large number of subjective assessments of institutional quality into broad indices.

Voice and Accountability (VA) (ii) Political Stability (PS), (iii) Government Effectiveness (GE) (iv) Regulatory Quality/ light regulatory burden (RQ), (v) Rule of Law (RL)[13] (vi) Control of Corruption (COR). Studies that have used similar data include; Ahlin et al (2011), Demetriades and Fielding (2011), Cull et al (2011, b), Arun and Annim (2010), Lensink et al (2008).

Voice and Accountability measures the extent to which country's citizens are able to participate in electing their government, as well as freedom of expression, freedom of association, and a free media.

Political Stability (PS) and Absence of Violence/Terrorism measures the perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including domestic violence and terrorism.

Government Effectiveness (GE) measures the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

Regulatory Quality (RQ) measures the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

Rule of Law (RL) measures the extent to which agents have confidence in and abide by the rules of society, in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence.

Finally, our measure of the extent to which a country is corruption-free is the "control of corruption" (COR) index. This measures the extent to which public power is exercised for private gain, including petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. For MFI i in year t, COR_{it} indicates the value of the index for the country in which the MFI operates. Apart from control of corruption, the rest of the governance indicators capture the ease of contract enforcement.

Complementary business environment measures from Heritage foundation capture two aspects of institutional development. Business freedom[14] (BF) is a quantitative measure of the ability to start, operate, and close a business that represents the overall burden of regulation as well as the efficiency of government in the regulatory process. The business freedom score for each country is a number between 0 and 100, with 100 equalling the freest business environment. The score is based on 10 factors, all weighted equally, using data from the World Bank's Doing Business indicators. Business freedom is a composite index equivalent to the doing business indicators indices used by Ahlin et al (2011).

Property rights (PR) is a composite Index ranging from 10 (Private property is rarely protected) to 100 (Private property is guaranteed by the government). Countries that fall between two categories receive an intermediate score. It measures the degree to which a country's laws protect private property rights and the degree to which its government enforces those laws. It also assesses the likelihood that private property will be expropriated and analyzes the independence of the judiciary, the existence of corruption within the judiciary, and the ability of individuals and businesses to enforce contracts.

Most of the MFI specific control variables are the same as those used in the other studies of MFI performance (Ahlin et al, 2011; Cull, et al, 2007; 2009b; 2011). Additional MFI-specific characteristics are captured by controls for share of lending to women. Existing literature with respect to share of lending to women remains contestable. Several studies shows that MFIs with

13 These aspects include: enforceability of private contracts, assessment of the strength and impartiality of the legal system, whether existing laws are actually implemented in a reliable and impartial fashion, quickness of court decisions, trust in police and courts, judicial independence from the state and other powerful groups, impact of crime on business, etc.

14 The composite index includes; Starting a business—procedures (number), Starting a business—time (days), Starting a business—cost (% of income per capita), Starting a business—minimum capital (% of income per capita), Obtaining a license—procedures (number), Obtaining a license—time (days), Obtaining a license—cost (% of income per capita), Closing a business—time (years), Closing a business—cost (% of estate), Closing a business—recovery rate (cents on the dollar)

a higher share of lending to women report better repayments, which lowers risk and increases profitability (D'Espallier et al 2011, Pham and Lensink 2007; Pitt, Khandker and Cartwright 2006; Khandker 2005; Kevane and Wydick 2001; Pitt and Khadker 1998). Indeed Armendáriz and Morduch (2010), points that Grameen Bank originally had a majority of male clients but decided to concentrate almost entirely on women due to repayment problems related to male clients[15] and perhaps because female entrepreneurs face tighter credit availability compared to men (Fletschner 2009), even though they do not pay higher interest rates (Bellucci, et al 2010). On the contrary, MFIs that focus on women usually make use of smaller loans, which increases their operational costs (D'Espallier et al 2010; Balkenhol, 2007). The net result is that MFIs with a female focus have, on average, similar overall profitability measures. We therefore predict an indeterminate effect on profitability *a priori*.

Deposits to assets ratio measures the relative portion of deposit-taking MFI's total assets that is funded by deposits and gives an informed analysis of the role of deposits as a funding source. Portfolio to assets ratio is measured as the ratio of adjusted Gross Loan Portfolio/Adjusted Total Assets. Gearing ratio (GR) or debt to equity ratio is measured by the ratio of debt and debt-like instruments to capitalization namely short term debt + long term debt divided by total shareholders' equity or simply the Debt/Equity ratio. It is a measure of the percentage of capital employed that is financed by debt and long term finance.

The regressions also include a number of country-level controls. We use two proxies for the *macroeconomic environment*; inflation and GDP per capita growth. We use GDP per capita[16] growth which is arguably the most informative single indicator of economic progress. It can be considered an approximate summary statistic for the various institutional, technological, and factor-accumulation related ingredients of development. Inflation expectation is measured at time t-1 annual % change of the GDP deflator at market prices for each country where the MFI is located for each year.

Further country-level controls include rural population share (in 1990). Microfinance is heavily dependent on personal contact for its execution which is very time-consuming and resource intensive. MFI clients may however often live in inaccessible locations[17]. Group lending may be more difficult in sparsely populated areas and contact between borrowers and individual lenders that are not located nearby is likely to be problematic. We also include rural population growth (since 1990). McIntosh, de Janvry and Sadoulet (2005) found that most of the microfinance entry in Uganda in the 1990s occurred in rural areas. On the contrary, Arun and Hulme, (2008) shows that the provision of MFIs mainly focuses on the cities, towns and major rural trading centres. We therefore control for the possibility that rapidly growing rural areas may attract MFIs with a different profitability profile. We finally control for persistence of profitability.

The impact of competition by conventional banks on MFI profitability is measured by the ratio of amount of domestic credit to the private sector, divided by GDP. It is arguably the most common measure of financial development in the finance and growth literature, and it is included to proxy the overall financial depth of the country in which the MFI operates (see e.g Levine, 2005).

We explore the impacts of country specific institutional measures on MFI profitability using return on assets (ROA) as our focal outcome. ROA is more appropriate since MFI equity

15 The proportion of female clients of the Grameen Bank steadily increased from 44 per cent in October 1983 to 95 per cent in 2001 (Armendáriz and Morduch, 2010).

16 Ahlin et al (2011) use a similar measure. Demirgüc-Kunt and Huizinga (2000) used the annual growth rate of GDP and GNP per capita to identify such a relationship, while Bikker and Hu (2002) used a number of macroeconomic variables such as GDP, the unemployment rate and interest rate differentials.

17 Long distances raise transport costs and reduce factor mobility. The average population density on the continent (77 people per square kilometre) is among the lowest in the world (World Bank, 2009). With such high unit costs, it is hard for MFIs to make small loans without relying on explicit or implicit subsidies.

in Africa is abnormally low (Lafourcade, et al 2006) and ROA is a more comprehensive measure of profitability. It is also widely used in the literature, which allows comparison with previous studies. Debt/equity levels also differ considerably between MFIs. Hence, ROA is more appropriate than ROE when measuring financial results across different institutions. The Microfinance Financial Reporting Standards also recommends the use of ROA and ROE as measures of MFI profitability rather than Operational Self-Sufficiency (OSS) and Financial Self-Sufficiency (FSS). As such, it is more useful regardless of the legal status or mission of an MFI.

4 Conceptual framework and empirical specifications

4.1 Theoretical predictions

Economic governance is important because markets, economic activity and transactions more generally, cannot function optimally in its absence. Good governance is a prerequisite to secure property rights, enforcement of contracts and for the provision of adequate public goods and the control of public "bads." Without this assurance, citizenry lose the incentive to save and invest (Dixit, 2009). Overall political stability and the quality of contract enforcement in the country may affect the extent of moral hazard that MFIs face when advancing loans. Institutions promoting the rule of law may enhance MFIs' ability to enforce loan contracts, and hence increase MFIs growth (Messick, 1999). This has implications on profitability.

The gains on MFIs profitability emanating from institutional environment come through various transmission channels. Institutions[18] affect performance of financial intermediaries because they influence the costs of transactions and the efficiency of production (Aron, 2000). The Voice and Accountability (VA) index defines the ability of citizens to hold politicians accountable, including freedom of press, association, and media. Conceptually, therefore VA and corruption (COR) are either related by definition or causally related. Higher transparency of government policymaking would especially benefit foreign MFIs operating within Africa. We predict a positive relationship between voice and accountability and MFI profitability.

Political parties or players with a long time horizon (PS) will not support highly ineffective government (GE) and prefer the rule of law (RL) to the rule of the jungle. When government transitions are decided by well-defined and long-lived rules, rather than perennial coups, government officials are more likely to have a longer time horizon, and to seek investment for growth rather than corrupt transfers (COR). Thus, PS is related to COR, RL and GE either causally or by definition. Higher values of the PS indicator impacts positively on MFIs profitability especially if MFIs have relatively high loan loss provisions because of the inherent security costs associated with unstable political regimes[19]. We therefore postulate a positive relationship between PS and MFI profitability.

Effective governments (GE) make transfers that are not hidden from the public (VA). Similarly, effective governments use public resources, often for public gain, so that the spending is not a deadweight loss (RQ). Effective governments charge for services provided to the citizens, implying again no or minimal deadweight loss. Indeed the Global Competitiveness Report 2009-2010 (see http://www.weforum.org/) indicates government inefficiency as the most problematic for doing business in most Africa economies. Foreign MFIs are assumed to face more difficulty in dealing with the host economy bureaucracy. We therefore expect a positive relationship between government effectiveness and MFIs profitability.

18 In the empirical literature the term institutions encompass a wide range of indicators, including institutional quality (the enforcement of property rights and governance), political instability (riots, coups, civil wars), characteristics of political regimes (elections, constitutions, executive powers), social capital (the extent of civic activity and organizations), and social characteristics (differences in income and in ethnic, religious, and historical background). Economists often rely on several of these types of indicators to capture the features of institutions, although each has a potentially different channel of impact on the dependent variable under scrutiny.

19 This is particularly so if MFI is not domestic as domestic MFIs may be more willing to take on higher levels of risk because of moral hazard. Foreign MFIs may also run a higher risk of becoming a victim of violence.

The impact of the rule of law (RL)[20] is felt through the effectiveness and predictability of the judiciary. This is crucial when it comes to contract enforcement or costly state verification. Rule of law is intended to create a stable environment within which micro borrowers operate; but it may also make it harder for small and medium enterprises to operate thus avoiding regulations and tax (COR). Corrupt activities are typically illegal, indicating rule of law weaknesses. Thus, RL and COR are also related by definition or causality. When going to court is time consuming, particularly if it takes years to realize collateral on real estate, this translates to higher costs. Cheryl (2010) for instance, shows that when a higher percentage of business disputes are resolved through the court system, firms tend to have higher investment rate. We predict a positive relationship between effective rule of law and MFI profitability.

Corrupt deals (COR) are typical of a black market, where contracts are enforced not by public law but by private players. Corruption undermines the rule of law thereby damaging the legitimacy of the political process (Knox 2009). Higher levels of corruption may also hinder small and medium enterprises ability to operate and grow (see e.g. Fisman and Svensson, 2007). On the contrary, when corruption does not hinder micro-enterprises directly, its main effect may be lowering wages (Ahlin, et al 2011) and pushing more households toward small-scale self-employment, allowing for faster MFI extensive growth. Controlling corruption implies a reduction in the use of public resources for private gain. Corruption is a costly, hidden (in the absence of VA) and usually illegal (in the absence of RL) transfer of revenues. Government officials often collect bribes as an ex-officio tax, fee in exchange for a license or service (for example, utility connection), or for exemptions to rules or taxes (implicating GE). We therefore anticipate a positive relationship between effective control of corruption and MFIs profitability.

When governments establish numerous barriers to conducting business (regulatory quality (RQ), it creates opportunities for public officials to collect bribes before delivering a service (COR). By definition, corrupt governments set up entry barriers so that public officials can act as gatekeepers, and collect (hidden) bribes and pocket the transfer before opening the gate to the briber-client (in the absence of VA). Quality regulation implies there are no excessive rules, and that rules are efficiency enhancing. Thus, RQ cause COR, RL and VA. Burden of government regulation, inefficiency of legal framework in settling disputes and inefficiency of legal framework in challenging regulations will all translate to higher implicit costs on MFI performance. We therefore predict a positive relationship between quality regulatory practices and MFIs profitability. The governance indicators are highly correlated with each other, so fitting a model with two or more indicators may not produce significant coefficients.

Turning to the country level controls, the level of financial deepening can either complement MFI profitability or crowd it out. Although McIntosh, de Janvry, and Sadoulet (2005) do not test whether entry into the MFIs activities by a conventional bank affects incumbents' profitability, they do show that repayment rates declined in areas where entry was most pronounced, which should have a negative impact on MFI profits. Competition should also depress profits since MFIs are likely to lose some of their better customers to commercial banks. We thus expect a negative relationship between financial deepening and MFI profitability. All of these factors are relevant to most African countries where the quality of institutions, is poor albeit with some disparities between the different economies (Creane et al, 2004).

4.2 Interaction of variables

Microbanking is heavily dependent on personal contact for programs execution. Political stability may make it more conducive for young MFIs to form relationships with reliable new

20 Rule of law implies an open and transparent market, where contracts are enforced by a 'rule' that is publicly known to parties outside the contract and applied equitably no matter who the enforcer or the contract parties are

borrowers. In this case, the impact of stability on deposits mobilization or growth of portfolio-assets ratio will decline with MFI age. Put differently, If young MFIs face high costs in identifying reliable borrowers, then the growth in portfolio-assets following a rise in political stability may outstrip their capacity to make new loans, in which case their loans-assets ratio may fall, even if that of older MFIs is rising. This leads to a decline in profitability. To this end we interact age with political stability (AgxPS).

The impact of corruption on MFI profitability may also vary with MFI age. Some older MFIs with ties to the political establishment may benefit from corruption, in so far as overcoming government bureaucracy is concerned. On this perspective, controlling corruption will raise older MFIs operational costs, but may benefit younger MFIs with weaker ties to the political establishment. We therefore interact corruption with age (CORxAg). Portfolio-assets ratio may also depend on control of corruption. Controlling corruption should encourage all MFIs to lend a larger fraction of their assets. We thus interact corruption with portfolio-assets ratio (CORxPAsse).

The impact of rule of law (RL) on MFI profitability may also depend on the age of MFIs. Mature or old MFIs may have established relationship lending particularly those that employ joint liability contracts. Costly state verification may be more of a problem on young MFIs, who has less information capital to overcome the adverse selection effect. We thus interact age with rule of law (AgxRL). The specific definition and source of all explanatory variables is presented in Table 4.1

Table 4.1: Summary of variables, measurement and predicted effect

Variable	Notation	Measure	Predicted effect	Source of data and period of availability
Dependent variable				
Return on assets	ROA	Net profits after taxes/Assets		The MIX 1997-2008
Institutional environment				
Governance measures				
Voice and Accountability	VA	Measures the extent of political and civil rights	Positive	WGI-World Bank 2008,2007,2006, 2005,2004, 2003,2002,2000, 1998,1996
Political Stability	PS	Measures the likelihood of violent threats or changes in government,	Positive	
Government Effectiveness	GE	An indicator of the competence and the quality of public service delivery	Positive	
Regulatory Quality	RQ	Measures the incidence of market-friendly policies	Positive	
Rule of Law	RL	A proxy for the quality of contract enforcement, the police and the courts, as well as the likelihood of crime and violence	Positive	
Control of Corruption	COR	Measures the exercise of public power for private gain, including both soft and grand corruption and state capture	Positive	
Other complementary business environment measures				
Business freedom	BF	The score is based on 10 factors, all weighted equally, using data from the World Bank's Doing Business Indicators (2010)	Positive	Heritage Foundation 1997-2008
Property rights	PR	Composite Index ranging from 10 (Private property is rarely protected) to 100 (Private property is guaranteed by the government)	Positive	
MFI-specific				
Capital	CAP	Equity/Assets	Positive	The MIX 1997-2008
Debt to equity ratio (gearing)	GR	Debt/equity ratio	Indeterminate	
Deposits to assets	DepAsse	Voluntary Deposits/Adjusted Gross Loan Portfolio	Positive	

Portfolio to assets	PAsset	Adjusted Gross Loan Portfolio/Adjusted Total Assets	Positive	
Age	Ag	Age of the MFI in years	Indeterminate	
MFI Size	S	Log of total assets in period *t*	Indeterminate	
Portfolio at Risk	PAR-30	Outstanding balance, portfolio overdue> 30 Days + renegotiated portfolio/Adjusted Gross Loan Portfolio	Negative	
Efficiency	Eff	Adjusted Operating Expense/Adjusted Average Gross Loan Portfolio	Negative	
Loan size	LS	Average Loan Balance per Borrower/GNI per Capita (outreach measure)	Positive	
Share of lending to women	WOM	Share of MFI borrowers that are women	Positive	
Country specific variables				
Inflation Expectations	INF	Inflation, consumer prices (annual %) in period *t-1*	Indeterminate	World Bank (WDI) 1997-2008
Per capita Income growth	GDP	Gross Domestic Product (at current US$) divided by midyear population in period *t-1*	Positive	
Domestic credit to private sector	PCRED	Domestic credit to the private sector, divided by GDP.	Indeterminate	
Rural population (%)	RPOP	Rural population share (in 1990)	Negative	

4.3 Design of the model

Our empirical specification takes the following general form:

$$\Pi_{ict} = \alpha + \eta\Pi_{ict-1} + \sum_{j=1}^{J}\beta_j X_{ict}^{j} + \sum_{n-1}^{N}\beta_n X_{ct}^{n} + \sum_{m=1}^{M}\beta_m X_{ct}^{m} + \varepsilon_{ict} \quad \text{.....(4.1)}$$

Where Π_{ict} is the profitability of MFI *i* located in country *c*, at time *t*, with i=1, . . .,N, t=1, . . ., T; α is the regression constant, X_{ict}^{j} is a vector of MFI-specific characteristics (*j*) of MFI *i* in country *c* during the period *t* which varies across time and MFIs; X_{ct}^{n} is a vector of institutions quality indicators (*n*) in country *c* during the period *t*; X_{ct}^{m} is a vector of country-specific variables (*m*) in country *c* during the period *t*; and $\varepsilon_{itc} = \upsilon_i + \mu_{itc}$ is the disturbance, with υ_i the unobserved MFi-specific effect/heterogeneity across MFIs, which could be very large given the differences in corporate governance and μ_{itc} the idiosyncratic error. This is a one-way error component regression model[21], where $\upsilon_i \sim IIN(0,\sigma_\upsilon^2)$ and independent of $\mu_{it} \sim IIN(0,\sigma_\mu^2)$.

Due to the significant differences that exist in the Africa economies microfinance industry, we test for potential country effects. Additionally, it is possible that, within the twelve years time frame of our analysis, certain developments might have taken place in the Africa microfinance industry and therefore time effects may be present in the error component of the model. We contend that failure to account for these two effects is likely to bias our estimates. We test for country and time effects by including time and country specific dummies, respectively, in equation (4.1). The econometric model is therefore expanded as follows,

21 The work horse for unbalanced panel data applications is the one-way error component regression model (see Baltagi and Song 2006)

$$\Pi_{ict} = \alpha + \eta\Pi_{ict-1} + \sum_{n-1}^{N} \beta_n X_{ict}^{n} + \sum_{j=1}^{J} \beta_j X_{ict}^{j} + \sum_{m=1}^{M} \beta_m X_{ct}^{m} + \delta D_{c-1} + \varepsilon_{ict} \quad \text{.....(4.2)}$$

$$\varepsilon_{ict} = \upsilon_i + \gamma_t + \mu_{ict}$$

Where, D denotes the country-specific dummy variables. $\varepsilon_{ict} = \upsilon_i + \gamma_t + \mu_{ict}$ is the disturbance; γ_t is the unobservable time effects, where υ_i is the unobserved complete set of MFI-specific effect and μ_{ict} is the idiosyncratic error. η, β, δ are the coefficients to be estimated. Π_{ict-1} is the one-period lagged profitability and η is the speed of adjustment to equilibrium. Thus, apart from state dependence (Π_{ict-1}) and observed heterogeneity (X_{ct}^{n}, X_{ict}^{j} and X_{ct}^{m}), the model also accounts for MFI-specific unobserved heterogeneity, and random idiosyncratic errors.

The augmented model becomes an unbalanced two-way error component model. We test country and time hypotheses separately as well as jointly, by H0: $\gamma_2 = \gamma_3 = \ldots\ldots = \gamma_T = 0$ and we present the results in Table A-1 (see in the Appendix). The Lagrange Multiplier (LM) tests show that for Africa microfinance industry, both country and time specific dummy variables are insignificant. We experimented with many country dummies and it turned out that none was significant. We therefore should neither include year-specific nor country specific dummies. Hence, we proceed with the estimation of model 4.1

5. Empirical methodology

5.1 Estimation and testing

MFI profitability is predicted in linear regressions by the institutional context indicators, country level and MFI-level control variables. Given the nature of the data, we focus on estimation approaches that are robust to outliers. When estimating equation (4.1), several econometric problems may arise. First is endogeneity: If it is possible that good institutions drive MFI profitability, it is also possible that countries that experience sustained growth in microfinance activities and performance are also likely to offer well-developed institutions. Because causality may run in both directions, these regressors may be correlated with the error term.

Second, because of the subjective nature of institutional quality measurement, one cannot exclude the possibility that measurement errors in the various indices of institutional quality bias our results. Third, countries equipped with good institutions can also have other factors favourable for microfinance profitability, the omission of which adds another potential layer of endogeneity. There may be other factors, such as geography, that affect both institutions and MFI performance. If omitted factors determine both institutions development and MFI profitability, one could erroneously infer the existence of a relationship between them.

Finally, a common empirical regularity in data suggests that MFI profitability could be very persistent due to imperfect competition, informational opacity, and serial correlation in regional/macroeconomic shocks (Berger et al, 2000). The presence of the lagged dependent variable Π_{ict-1} gives rise to autocorrelation.

Because of the endogeneity of institutions, the OLS estimate of the effect of institutional measures on MFI profitability is biased[22]. In order to obtain a consistent estimator, it is necessary to use an instrumental variable for country specific institutions. Since we utilize panel data and most instrumental variables for institutions are constant over time, we do not have suitable instruments to correct for endogeneity. We resolve these problems by moving beyond the methodology currently in use in the empirical literature of bank profitability (mainly fixed or

22 The estimation methods based on the OLS principle are vulnerable to the omitted variable bias if some important determinants of MFI profitability are not included among the regressors.

random effects). We resort to the system GMM method of Blundell and Bond (1998) which allows us to use internal instruments; namely, lagged levels and lagged differences.

MFIs profitability outcomes may be highly persistent so their lagged levels might be very weak instruments for the first differenced equations. In this situation, the first-differenced GMM estimator potentially suffers from a downward bias (Blundell and Bond, 1998) so the additional set of first-differenced instruments and equations in levels make the system GMM estimator more efficient by overcoming the weak instrument problem inherent to the first-differenced GMM estimator. We instrument for all regressors except for those which are clearly exogenous. In particular, we assume that strictly exogenous variables have no correlation to the individual effects, while the endogenous variables are predetermined. The system GMM estimator also controls for unobserved heterogeneity.

The last challenge is the risk of omitted variables. To that end, we follow a general to specific strategy by estimating an equation with all possible regressors according to the existing literature and Africa specific characteristics. We, then, test through a Wald test the joint hypothesis that the coefficients of the variables that are not significant individually are equal to zero. If not rejected, we re-estimate the model only with the controls which were significant in the general regression. Otherwise, we test a less restrictive hypothesis but still trying to reduce the number of non-significant regressors to the maximum extent possible. We stop reducing the number of regressors when we can reject that the remaining set of coefficients of the control variables is equal to zero. The coefficients obtained in this way are even more efficient as the number of regressors is reduced to the minimum.

Finally, to confirm the validity of the instruments, we perform Hansen's or Sargan test of over-identifying restrictions, which is asymptotically distributed as $\chi^2(k)$ where k denotes the number of over-identifying restrictions and a test of serial correlation among the residuals. We also test whether Arellano-Bond orthogonality conditions are fulfilled.

In order to allow for comparison with previous studies, we conduct robustness tests with fixed effects and OLS. The use of OLS and fixed effect regressions can also be considered as a robustness test for the results with the GMM system method, at least for the sign of the coefficients. Moreover, by comparing the results of fixed effect model with those of the GMM system, we can identify the source of endogeneity in the data. Such simple models also help account for the fact that a large sample is needed for the properties of the GMM estimator to hold asymptotically.

5.2 Univariate analysis

Table 5.1 shows that governance indicators are normalised so that the mean of each is equal to zero across the worldwide sample. Negative means in our sample indicate that Africa economies perform below the worldwide average in terms of governance. It is a matter of considerable concern that governance institutions in Africa are on average quite weak. The minimum values are a clear indication that governance is highly negatively skewed, which may impede on MFIs performance. This is consistent with studies that have found strong positive effect of governance on development using governance indicators (See e.g Ritzen et al., 2000; Kaufman and Kraay, 2002).

Table 5.1: Descriptive and summary statistics

Variable	Notation	Obs	Mean	Median	Standard Deviation	Minimum	Maximum
Return on assets	ROA	946	-0.016	0.007	0.121	-0.851	0.830
Log Age	AG	945	2.180	2.197	0.607	0	3.7
Log Size	S	947	15.02	14.79	1.821	7.86	20.71
Efficiency	EFF	914	0.379	0.294	0.285	0.025	1.92

Portfolio at Risk	PAR	937	0.066	0.037	0.093	0	0.737
Capital	CAP	945	0.369	0.307	0.279	-0.983	1.000
Debt to equity ratio (gearing)	GR	844	0.257	1.602	1.348	-6.215	3.218
Deposits to assets ratio	DepAsse	382	0.386	0.329	0.255	0.000	0.960
Portfolio to assets	PAsset	805	0.659	0.673	0.173	0.057	0.990
Loan size	LS	847	0.790	0.569	0.709	0.000	3.541
Share of lending to women	WOM	764	0.604	0.615	0.260	0.000	1.000
Rural population share	RPOP	950	0.687	0.684	0.132	0.390	0.910
GDP Per capita	GDP	784	0.998	2.837	0.845	-2.43	2.37
Lagged Inflation rate	INF	951	0.672	0.062	0.063	-0.090	0.431
Domestic credit to private sector	PCRED	959	0.1347	0.1306	0.0768	0.000	0.442
Voice and Accountability	VA	963	-0.454	-0.385	0.619	-1.766	0.846
Political Stability	PS	963	-0.666	-0.408	0.823	-2.638	0.712
Government Effectiveness	GE	963	-0.649	-0.584	0.429	-1.893	0.951
Regulatory Quality	RQ	963	-0.539	-0.444	0.431	-2.369	0.635
Rule of Law	RL	963	-0.686	-0.616	0.424	-1.897	0.242
Control of Corruption	COR	963	-0.668	-0.717	0.406	-1.576	0.595
Business freedom	BF	806	55.25	55.0	5.33	32	67.1
Property rights	PR	806	37.78	30.0	11.28	10	70.0

This Table presents the summary statistics. A detailed description of the definition and sources of the variables is given in Table 4.1. Data has been winsorized at 10%

The Correlations

Correlations among MFI specific variables are significant but the level of correlation is very low (see Table 5.2). The bi-variate relationships follow expectations based on the existing literature that uses this or similar data. Of particular concern however are the correlations among the institutional factors. The six WGI variables show very high and significant bivariate correlations. This correlation may be due to a causal impact from one variable to another (in either direction) as discussed in the theoretical framework (see *section 4.1*), or it may reflect the effect of some unobserved confounding factor such as "good government". Intuitively, one might argue that an absence of democratic accountability (VA) might foster corruption (COR). Licht et al. (2007), for instance show that some aspects of 'national culture' affect COR, RL and VA. Roe and Siegel, (2011), Damania et al. (2004), show that political instability impairs rule of law, in turn stimulating corruption. Alence (2004) finds that democratic contestation and executive restraints affect RQ, GE and COR. This perhaps explains the high correlations among the institutional variables and therefore good governance correlates with positive development outcomes. Panel regression analysis allows us to investigate the strength of these correlations after controlling for other relevant covariates. The multicollinearity between these governance indicators precludes

the inclusion of more than one of these variables in the regression equation, so we fit a series of regressions, each with a single variable of these governance indicators. The section that follows explains how we deal with the multicollinearity of the governance indicators.

Table 5.2 Correlations

	ROA	DepAsse	PAsse	GR	CAP	AG	S	EFF	PAR	LS	WOM	RPOP	GDP	INF	PCRED	VA	PS	GEF	RQ	RL	COR	BUSF	PR
ROA	1.000																						
DepAsse	.066	1.000																					
PAsse																							
GR	.172**	.339**		1.000																			
CAP	-.101**	-.541**		-.367**	1.000																		
AG	.142**	.254**		.110**	-.204**	1.000																	
S	.111**	.213**		.124**	-.142**	.351	1.000																
EFF	-.524**	-.189**		-.130**	.216**	-.190**	-.086**	1.000															
PAR	-.046	.209**		.101**	-.062	.056	.007	.019*	1.000														
LS	.178**	.322**		.058	-.242	.052*	.133**	-.198**	-.002**	1.000													
WOM	-.179**	-.415**		-.154**	.201**	-.094	-.149	.273	-.084	-.309	1.000												
RPOP	-.072	-.156**		-.097**	.099**	-.094**	-.011	.046	-.078*	.063	-.081*	1.000											
GDP	-.035	-.266**		-.070*	.132**	-.090**	-.003	.139**	.088**	-.016	.016	.254**	1.000										
INF	.011	-.119*		-.017	.130**	-.052	-.052	.227**	.102**	-.120**	.197**	-.081**	.294**	1.000									
PCRED	.050	.002		-.006	-.125**	.112**	.106**	-.210**	.023	-.027	-.012	.271**	.003	-.148**	1.000								
VA	-.011	.098		-.012	-.018	.152**	.116**	.058	-.067*	.006	.079*	-.328*	-.076*	-.001	-.061	1.000							
PS	-.054	.077		-.028	.003	.022	-.006	.019	-.085**	.170**	-.036	-.210**	-.143**	-.039	-.131**	.683**	1.000						
GEF	.000	-.003		-.038	.079**	.033	.157**	.090**	-.145**	-.014	-.020	-.092**	.140**	.038	-.196**	.708**	.535**	1.000					
RQ	.011	.184**		.010	-.070*	.175**	.184**	.063	-.124**	.050	-.012	-.049	-.071**	-.076**	-.194**	.706**	.492**	.771**	1.000				
RL	-.025	.020		-.060	.019	-.015	.058	-.006	-.145**	.086**	-.067	-.038	.065**	-.046	-.156**	.707**	.691**	.815**	.730**	1.000			
COR	-.026	.101**		-.020	.015	-.027	.063**	-.007	-.095**	.125**	-.106**	-.120**	.022	-.071*	-.210**	.588**	.615**	.756**	.627**	.849**	1.000		
BUSF	-.007	-.037		-.114*	.167**	-.050	.099**	.120**	-.019	.027	-.032	.149**	.168**	.034	-.006	.242**	.050	.402**	.299**	.317**	.245**	1.000	
PR	.000	.082		-.092**	.115**	.033	.078*	.102**	-.028	.027	.049	.107**	-.027	.048	-.091**	.369**	.195**	.496**	.575**	.477**	.386**	.510**	1.000

**Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed). Where ROA=Return on Assets; AG= Age of the MFI; S= Size; CAP= Capital; GR=Gearing;DepAsse=Deposit to Assets ratio; EFF= Efficiency; PAR=Portfolio at Risk; WOM=Share of lending to women; RPOP=Rural population share; INF=Lagged Inflation; GDPI= Growth of per capita income; PCRED=Domestic credit to private sector; VA=Voice and Accountability; PS=Political Stability; GE=Government Effectiveness; RQ=Regulatory Quality; RL=Rule of Law; Control of Corruption; BF=Business freedom; PR=Property rights

6 Empirical results and discussion

The main aim of this study was to determine the extent to which microfinance profitability depends on institutional environment of the host country. Since the governance indicators are highly and significantly correlated (perhaps for the reasons elucidated in *section 4.1*), we fit a series of regressions, each with a single of these governance indicators. We start by regressing profitability on the general model and report the results in the Appendix (see Table A-2). We then narrow down to the specific model and report the results in Table 6.1. It is important to note that the robustness of system GMM to omitted variable bias helps us in this setting, since exclusion of some insignificant variables does not affect the consistency of our results. The results are reasonably good. The overall Wald test statistic rejects the null hypothesis of joint insignificance of parameters. The hypothesis of over identifying restrictions can't be rejected based on the Sargan-test. The Arellano-Bond test for serial correlation in the first-differenced residuals is not significant in all specifications supporting the appropriateness of our empirical specification. We comment on all regressions together.

The results suggest that institutional environment is relevant for MFI profitability in Africa economies. Political stability, government effectiveness, rule of law, regulatory quality and corruption are quantitatively strong predictors of microfinance profitability. As predicted, the results indicate a positive and significant coefficient on political stability. On average, MFIs are more profitable when there is political stability. Perhaps in more stable environments there is higher demand for credit, which is channelled to higher-growth activities. Upon interaction with age, the results show that political stability may make it more conducive for young MFIs to form relationships with reliable new borrowers. In this case, the impact of stability on MFIs profitability through deposits mobilization and/or growth of portfolio-assets ratio will decline with MFI age. Our findings complements Anayiotos and Toroyan (2009), who finds that political stability determines access to finance in many Africa economies.

Our results show a statistically significant positive coefficient on the rule of law variable (RL) and a statistically significant negative coefficient on the interaction term AG·RL. Results are consistent with the conjecture that young MFIs face high costs in contract enforcement and costly state verification. Therefore, rule of law may create the stable environment micro-borrowers need to succeed. Profitability of young MFIs rises when the rule of law improves, while that of older MFIs falls. A key problem facing MFIs is the high degree of information asymmetry between them and the borrowers (Amitrajeet and Beladi 2010; Berger, Frame and Ioannidou 2011). Our results are consistent with the conjecture that young MFIs face high costs in identifying reliable borrowers, as opposed to the older MFIs who may have established relationship lending particularly those that employ group lending. Intuitively young MFIs may not have accumulated enough information capital to overcome the adverse selection effect. Consistent with this finding, Behr, Entzian and Güttler (2011) show that relationship intensity between MFIs and their borrowers helps to overcome existing information asymmetries. Access to credit improves and that the loan approval process takes shorter time. Additionally, borrowers further profit from a more intense relationship through lower guarantee requirements.

Results also suggest that government effectiveness may reduce the costs of doing business for both MFIs and micro-borrowers. Indeed the Global Competitiveness Report 2009-2010 points to government inefficiency as the most problematic for doing business in Africa economies.

Table 6.1 provides strong evidence that growth of portfolio to assets ratio may be slower where there is more corruption which is consistent with corruption acting as a barrier to micro-enterprise activities, at least in start-up if not on subsequent growth.

This has implications on profitability. Intuitively, high corruption taxes micro-enterprise operations and creates barriers to their expansion, reducing demand for and quality of microloans. Upon interaction with portfolio to assets ratio, the results suggest corruption may make it harder for MFIs to boost their asset base.

The positive coefficient of regulatory quality is an indication that a lighter burden of government regulation, efficiency in settling commercial disputes and in challenging regulations may all translate to lower implicit costs on MFI operations with improved profitability.

Voice and accountability is however not significant in explaining MFI profitability. The conjecture that a higher level of media independence would increase the quality of information on local developments and transparency of government policymaking is not supported here.

A plausible interpretation of our findings is that well-developed institutions and government may actually make it less costly for MFIs to operate in a fully compliant way which would be consistent with arguments that favour relaxed regulations for MFIs. Contrary to Hartarska and Nadolnyak, (2007), we do not find evidence that business environment measures as proxied by business freedom and property rights influence profitability perhaps due to low variability of data. Our findings are inconsistent with Ahlin et al (2011), who although their focus is not on profitability; they do not find MFI self-sufficiency to be significantly influenced by governance measures. Our findings are also inconsistent with Arun and Annim (2010) who while investigating the effect of external governance structure and functioning on the outreach and profitability of MFIs and conclude governance does not cause changes in the profitability of MFIs. Similar inconsistent findings were arrived at by Cull et al (2009b) who while controlling for the same governance indicators for the period 1996-2006 arrive at inconsistent findings. One major shortcoming with these previous studies is that they do not attempt to control for endogeneity. Our findings are consistent with Hallward-Driemeier (2009) who using new panel data from 27 Eastern European and Central Asian countries to test the importance of five areas of the business climate on firm exit, and concludes that inefficiency of government services, endemic corruption, regulatory burdens, less developed financial and legal institutions all raise the probability that more productive firms exit.

Table 6.1: The impact of institutions of the host country on profitability (including Interaction terms)

Variable	Variant of model specifications					
	1	2	3	4	5	6
Lagged ROA	0.2278*** (9.18)	0.2086*** (11.76)	0.2133*** (10.94)	0.2039*** (9.30)	0.2124*** (11.08)	0.2109*** (10.88)
Log Age	-0.0072 (-0.38)	-0.0039 (-1.35)	-0.0033 (-1.24)	-0.0033 (-1.27)	-0.0036 (-1.34)	-0.005 (-1.28)
Log size	0.0353*** (2.63)	0.0096*** (2.57)	0.0036*** (2.74)	0.0033*** (2.96)	0.0049*** (3.35)	0.0048*** (3.11)
Capital	0.1332*** (9.33)	0.1412*** (6.27)	0.1391*** (12.11)	0.1410*** (12.33)	0.1492*** (7.08)	0.1415*** (14.01)
Gearing	0.0067*** (4.97)	0.0062*** (3.13)	0.0068*** (4.51)	0.0069*** (4.07)	0.0074*** (4.46)	0.0071*** (4.04)
Deposit/Asset	0.1630*** (13.84)	0.0797*** (4.73)	0.1457*** (9.25)	0.1318*** (8.51)	0.1539*** (12.00)	0.1366*** (8.97)
Portfolio/Asset	0.0610*** (3.22)	0.0330** (2.32)	0.0342*** (3.09)	0.0305** (2.40)	0.0263** (2.23)	0.0340*** (2.67)
Efficiency	-0.2984*** (-15.17)	-0.2863*** (-10.55)	-0.2890*** (-12.50)	-0.2865*** (-14.02)	-0.2875*** (-14.12)	-0.3039*** (-14.56)
Portfolio at risk	-0.2347*** (-8.28)	-0.1549*** (-4.23)	-0.2607*** (-8.93)	-0.2364*** (-8.18)	-0.2509*** (-9.62)	-0.2208*** (-8.89)
Voice and	0.0053					

Accountability	(0.14)					
Political Stability		0.0277*** (3.02)				
StabilityXAge		-0.0005*** (-4.03)				
Government Effectiveness			0.0643** (3.24)			
Regulatory Quality				0.0332*** (4.95)		
Rule of Law					0.0463*** (5.68)	
Rule of lawXAge					-0.0136*** (-4.55)	
Control of Corruption						-0.0254*** (-3.28)
CorruptionXAge						0.0038 (1.53)
CorruptionXPortfolio-assets						0.0387*** (4.39)
Business Freedom	-0.0004 (-0.45)	-0.0001 (-0.18)	-0.0008 (-1.00)	-0.0002 (-0.22)	-0.0004 (-0.52)	-0.0002 (-0.21)
Property Rights	-0.0008 (-0.65)	-0.0009 (-0.77)	-0.0007 (-0.61)	-0.0011 (-0.88)	-0.0008 (-0.64)	-0.0012 (-1.03)
Wald-test	$\chi2(12)$= 313.01 Prob>chi2= 0.000	$\chi2(13)$= 321.80 Prob>chi2= 0.000	$\chi2(12$= 316.29 Prob>chi2= 0.000	$\chi2(12)$= 304.55 Prob>chi2= 0.000	$\chi2(13)$= 315.45 Prob>chi2= 0.000	$\chi2(14)$= 323.44 Prob>chi2= 0.000
Sargan-test[a]	$\chi2(45)$= 38.29 Prob>chi2= 0.86	$\chi2(45)$=32.55 Prob>chi2= 0.92	$\chi2(45)$= 40.9 Prob>chi2= 0.89	$\chi2(45)$=37.54 Prob>chi2= 0.92	$\chi2(45)$= 33.29 Prob>chi2= 0.90	$\chi2(45)$=36.40 Prob>chi2= 0.89
AR(1)[b]	Z=-1.6665 p-value=0.009	z= -2.020 p-value=0.004	z =--1.6067 p-value=0.000	z =-1.88 p-value=0.006	z =-1.93 p-value=0.005	z =-1.7884 p-value=0.007
AR(2)[c]	z=1.1036 P-value = 0.2698	z=1.1161 P-value = 0.2644	z =0.98211 p-value = 0.3260	z = 1.44 p-value = 0.3402	z =1.09 p-value = 0.2236	z =1.245 p-value = 0.2131
Number of instruments	55	56	55	55	56	57
Observations	303	336	303	303	303	341

This Table presents estimations performed using Blundell and Bond (1998) two-step system robust GMM estimator. For the definition of the variables see Table 4.1. Robust z values are in parentheses and significance at the 10%, 5%, and 1% level is noted by *, ** and *** respectively.

The Wald test is a test of the null hypothesis that the coefficients in the given equation are all zero (Greene, 2008). A low value indicates null hypothesis rejection.

[a] Test for over-identifying restrictions in GMM dynamic model estimation.

[b] Arellano-Bond test that average autocovariance in residuals of order 1 is 0 (H0: no autocorrelation).

[c] Arellano-Bond test that average autocovariance in residuals of order 2 is 0 (H0: no autocorrelation).

Turning to the control variables in the profitability equation, most results are in line with expectations. This basic result does not change even when external factors are incorporated into the variant model specifications. We do not find evidence that the size and development of the financial sector affects microfinance profitability. Our hypothesis that competition from banks reduces the profits of microfinance institutions is not supported here. It is plausible that a well-developed financial sector complements microfinance by perhaps providing incentives to maintain good credit histories. This finding is consistent with Ahlin et al (2011), who do not find any empirical support to the

effect that financial deepening impact on MFI's self-sufficiency. Cull et al (2009b), similarly finds no significant evidence that greater bank penetration in the overall economy is associated with lower microfinance profitability[23]. This suggests that banks' decisions to expand their branch networks are perhaps made independent of the presence and activities of microfinance institutions.

6.1 Robustness check

In order to test the robustness of the results, we perform some alternative regressions. We estimate fixed effect regressions as a robustness test for the results with the GMM system method, at least for the sign of the coefficients and report the results in Table 6.2. Using fixed effect regressions does not fundamentally change the picture. The significance and the direction of influence of the governance variables shown in the estimations are preserved. Since the proxies for institutional difference are highly correlated, and qualitatively yield the same result, we present only results for one of the proxies.

Table 6.2: Robustness results (dependent variable: ROA)

Variable	Notation	Fixed effects model
Intercept		1.0475 (1.14)
Log Age	AG	-0.0021 (-0.82)
Log size	S	0.0164*** (2.77)
Capital	CAP	0.2466*** (5.37)
Gearing	GR	0.0058*** (2.39)
Deposits to assets	DepAsse	0.1530* (1.75)
Efficiency	EFF	-0.3512*** (-7.58)
Portfolio at risk	PAR	-0.1391*** (-2.82)
Loan size	LS	-0.0122 (-0.70)
Share of lending to women	Wom	0.0508 (1.14)
Control of Corruption	COR	-0.1410*** (-2.91)
Business Freedom	BF	-0.0003 (-0.43)
Property Rights	PR	-0.0003 (-0.24)
Share of rural population	RURALPOP	-0.0164* (-1.81)
Inflation expectations	INF	0.1235 (0.98)
GDP Per capita	GDP	0.0022 (1.16)
Domestic credit to private sector	PCRED	-0.2147 (-1.64)
R2		0.6287

23 Their findings indicate that the standard measures of financial development (private credit/GDP), are statistically significant in only one of twelve possible cases.

Hausman specification test		chi2(16) = 88.32 Prob>chi2 = 0.0000 Ho: difference in coefficients not systematic
Number of obs		228

This table presents the results from regressions conducted to determine the determinants of profitability for Africa MFIs. Estimations were performed using fixed effects OLS estimation. t-statistics are in parentheses and significance at the 10%, 5%, and 1% level is noted by *,** and *** respectively. For the notation of the variables see Table 4.1

6.7 Conclusions and policy implications

This study has taken a first empirical step to examine the role of institutional context affecting microfinance profitability especially in Africa economies. At the outset, we sought to address two questions. Does the institutional environment matter for MFI's profitability? This question highlights an important, but relatively under-examined channel through which well developed institutions may influence MFI profitability. This study is pioneering in using dynamic GMM estimators and in using the two-step estimation method, in analyzing the impact of host countries institutional environment on microfinance profitability. Our contribution relative to the existing literature is our treatment of potential endogeneity biases. Our results provide the first empirical justification for the hypothesis that microfinance profitability is non-negligibly driven by the surrounding institutional environment.

Our results suggest that older MFIs suffer less from political instability and weak enhancement of the rule of law, which is consistent with accumulation of information capital and relationship lending all other things equal. Perhaps our most interesting result is that corruption makes it harder for MFIs to realize profits, irrespective of MFI age. Results also indicate that growth of portfolio to assets ratio may be slower where there is more corruption which is consistent with corruption acting as a barrier to micro-enterprise activities, at least in start-up if not on subsequent growth.

While the usual caveats about drawing strong policy conclusions from cross-country analysis applies, the evidence presented in this paper has clear implications for MFIs and policy makers. Well developed institutions and government may actually make it less costly for MFIs to operate in a fully compliant way which would be consistent with arguments that favour relaxed regulations for MFIs. This evidence may help guide the sequencing of institutional reforms to promote microfinance development. However, due to limited resources and cultural factors, institutions can only be reformed slowly. It is therefore prudent that policymakers prioritize the institutional reforms that would steer microfinance development. A policy prescription geared towards MFI specific factors and institutional environment may invigorate the MFI industry and subsequently profitability.

Given the important role that the microfinance sector plays in the expansion of the private sector, future research should be directed on country-specific studies that would provide country-level policy conclusions. For example, one could explore whether the impact of institutions is approximately the same within a country as the effects are unlikely to be universal for all countries. A similar analysis could be done for regions or for all developing economies to draw country, inter and intra regional comparisons. We also contend that further research should carry out an analysis by contract design or lending methodology. For instance are MFIs employing standard lending contract affected in the same way as those employing joint liability contracts? These are important considerations for microfinance development in Africa.

References

Acemoglu, D and Johnson, S (2005). Unbundling Institutions, *Journal of Political Economy,* **113:**949–95.

Ahlin, C and Jiang, N (2008). Can micro-credit bring development? *Journal of Development Economics*, **86:**1–21

Ahlin, C., Lin, J and Maio, M (2011). Where does microfinance flourish? Microfinance institution performance in macroeconomic context, *Journal of Development Economics,* **95:**105-120

Alence, R. (2004). Political institutions and developmental governance in sub-Saharan Africa. *The Journal of Modern African Studies*, **42:**163.

Amitrajeet A. and Beladi, H (2010). A model of microfinance with adverse selection, loan default, and self-financing'' , *Agricultural Finance Review,* **70:**55-65

Anayiotos, G and Toroyan, H., (2009). Institutional factors and financial sector development: Evidence from Sub-Saharan Africa, IMF Working Paper No. 09/258

Anayiotos, G and Toroyan, H., (2009). Institutional Factors and Financial Sector Development: Evidence from Sub-Saharan Africa, IMF Working Paper No. 09/258

Anderson, C., and Tverdova, Y (2003). Corruption, political allegiances, and attitudes toward government in contemporary democracies, *American Journal of Political Science*, **47:**91-109.

Armendáriz de Aghion, B. and J. Morduch (2010). *The Economics of Microfinance, second edition* MIT Press, Cambridge, Massachusetts.

Aron, J (2000). Growth and Institutions: A review of the evidence, the *World Bank Research Observer,* **15:**99-135

Arun, T and Hulme, D (2008). Microfinance-A way forward, Brooks World Poverty Research Institute Working Paper No.54, The University of Manchester.

Balkenhol, B (2007). 'Efficiency and sustainability in microfinance in "Microfinance and public policy; outreach performance and efficiency", ILO, Palgrave Edition, New York.

Bartha,J, Lin, C, Lin, P and Song, F (2009). Corruption in bank lending to firms: Cross-country micro evidence on the beneficial role of competition and information sharing. *Journal of Financial Economics,* **91:**361-388

Beck, T., Cull, R. and Jerome, A. (2005). 'Bank privatization and performance: empirical evidence from Nigeria', *Journal of Banking and Finance*, **29:**2355-79.

Behr, P., Entzian, A., Güttler, A (2011). How do lending relationships affect access to credit and loan conditions in microlending? *Journal of Banking and Finance,* doi:10.1016/j.jbankfin.2011.01.005

Bellucci, A., Borisov, A and Zazzaro, A (2010). Does gender matter in bank–firm relationships? Evidence from small business lending, *Journal of Banking and Finance,* **34:**2968-2984

Berger, A., Bonime, S.D., Covitz, D.M., Hancock, D., (2000). Why are bank profits so persistent? The roles of product market competition, information opacity and regional macroeconomic shocks. *Journal of Banking and Finance,* **24:**1203–1235

Bergera, A., Espinosa-Vegab, M., W, Frame, and Miller, N (2011). Why do borrowers pledge collateral? New empirical evidence on the role of asymmetric information, *Journal of Financial Intermediation,* **20:**55-70

Besley, T., and Burgess, R. (2004). "Can labour regulation hinder economic performance? Evidence from India." *Quarterly Journal of Economics*, **19:**91–134.

Bevan A, Estrin S, Meyer K (2004). Foreign investment location and institutional development in transition economies. *International Business Review,* **13**:43–64

Bianca, C., Kraay., A and Nyiri, Z (2009). "Corruption and confidence in public institutions: Evidence from a global survey". World Bank Policy Research Department Working Paper No. 5157, Washington, DC, World Bank

Blundell, R and Bond, S. (1998). 'Initial conditions and moment restrictions in dynamic panel data models,' *Journal of Econometrics,* **87**:115-143.

Catterberg, G and Moreno, A (2005). The individual bases of political trust: trends in new and established democracies, *International Journal of Public Opinion Research,* **18:**408-443.

Caudill, S, Gropper D, and Hartarska V. (2009), "Which microfinance institutions are becoming more cost-effective with time? Evidence from a mixture model," *Journal of Money, Credit, and Banking*, **41:**651-672.

CGAP (2009). Microfinance Investment Vehicles (MIV) survey, market data and peer group analysis, Washington, DC, World Bank

Chang, E and Chu, Y (2006). Corruption and trust: exceptionalism in Asian democracies? *The Journal of Politics*, **68:**259-271

Cheryl, L. (2010). Does the rights hypothesis apply to China? *Journal of Law and Economics,* 53 (4)

Cho, W and Kirwin, M (2007). A Vicious cycle of corruption and mistrust in institutions in Sub-Saharan Africa: A Micro-Level Analysis, Afrobarometer Working Paper, No. 71, Michigan State University.

Clausen, B., Kraay, A and Nyiri, Z., (2009). Corruption and Confidence in Public Institutions Evidence from a Global Survey, Policy Research Working Paper 5157, the World Bank

Crafts, N. (2006). Regulation and productivity performance. *Oxford Review of Economic Policy,* **22:**186-202.

Creane, S., Goyal, R., Mushfiq M, Randa S., (2004)."Financial Development in the Middle East and North Africa," IMF Working Paper 04/201 (Washington: International Monetary Fund).

Cull, R. and Xu, L (2005). "Institutions, ownership, and finance: The determinants of profit reinvestment among Chinese firms." *Journal of Financial Economics,* **77:**117-146.

Cull, R., Demirgüc-Kunt, A and Morduch, J. (2007). 'Financial performance and outreach: a global analysis of leading microbanks', *Economic Journal*, **117:**F107-F133.

Cull, R., Demirgüc-Kunt, A and Morduch, J. (2009a). 'Microfinance meets the market' *Journal of Economic Perspectives*, **23:**167-192.

Cull, R., Demirgüc-Kunt, A and Morduch, J. (2011). The effect of regulation on MFI profitability and outreach, *World Development,* **39:**doi:10.1016/j.worlddev.2009.10.016.

Cull, R., Demirgüç-Kunt, A., Morduch, J. (2009b). Banks and microbanks, *World Bank Policy Research* Working Paper Series No 5078, The World Bank

Cull, R., Demirgüç-Kunt, A., Morduch, J., (2009b). Banks and microbanks, *World Bank Policy Research* Working Paper Series No 5078, The World Bank

D'Espallier, B., Guérin, I and Mersland, R (2010). Gender bias in microfinance, *World Development,* forthcoming

D'Espallier, B., Guérin, I and Mersland, R (2011) 'Women and Repayment in Microfinance'. *World Development*, **39:**758-772

Damania, R., Fredriksson, P.G. and Mani, M. (2004). The persistence of corruption and regulatory compliance failures: theory and evidence. *Public Choice*, **121:**363–390.

Demetriades, Panicos and D. Fielding, (2011). Information, institutions and banking sector development in West Africa. *Economic Inquiry*, DOI: 10.1111/j.1465-7295.2011.00376.x

Demirguc-Kunt, A., Inessa L., and Maksimovic, V. (2006). Business environment and the incorporation decision. *Journal of Banking and Finance,* **30:**2967-93.

Demirgüc-Kunt, A., Laeven, L., Levine, R (2004). "Regulations, Market Structure, Institutions, and the Cost of Financial Intermediation", *Journal of Money Credit and Banking*, **36:**593-622

Dietsche, E. (2007). The quality of institutions: a cure for the 'resource curse'? July, Centre for Energy, Petroleum and Mineral Law and Policy, University of Dundee, Oxford Policy Institute.

Dixit, A. (2009). 'Governance institutions and economic activity'. *American Economic Review*, **99:**5-24.

Djankov, S. (2009). The regulation of entry: A survey. *World Bank Research Observer,* **24:**183-203.

Djankov, S., McLiesh, C., and Shleifer, A (2007). Private credit in 129 Countries, *Journal of Financial Economics*, **84:**299–329.

Djankov, S., Y. Qian, G. Roland and E. Zhuravskaya (2006). "Who are China's entrepreneurs?" *American Economic Review*, **96:**348-352.

Dreher, A and Schneider, F.G (2010). Corruption and the shadow economy: an empirical analysis, *Public Choice,* **144:**215-238

Fisman, R and Svensson, J (2007). Are corruption and taxation really harmful to growth? Firm-level evidence. *Journal of Development Economics,* **83:**63–75.

Fletschner, D. (2009). Rural women's access to credit: market imperfections and intrahousehold dynamics, *World Development,* **37:**618-631

Gani, A. and Ngassam, C (2008). Effect of institutional factors on stock market development in Asia, *American Journal of Finance and Accounting*, **1:**103–120.

Gioacchino, D and Franzini, M (2008). Bureaucrats' corruption and competition in public administration, *European Journal of Law and Economics,* **26:**291-306

Hallward-Driemeier, M (2009). Who survives? The impact of corruption, competition and property rights across firms, *World Bank Policy Research Working Paper* 5084

Hartarska V. (2009).The impact of outside control in microfinance, *Managerial Finance*, **35** (12)

Hartarska V. and Nadolnyak, D (2008). "An impact analysis of microfinance in Bosnia," *World Development*, **26:**2605-2619.

Hartarska, V. (2005). "Governance and performance of microfinance institutions in Central and Eastern Europe and the Newly Independent States," *World Development,* **33:**1627-1643.

Hartarska, V., and D. Nadolnyak (2007). 'Do regulated microfinance institutions achieve better sustainability and outreach? Cross-country evidence', *Applied Economics,* **39:**1207-122

Hasan, I., Haizhi, W, and Mingming, Z (2009). "Do better institutions improve bank efficiency? Evidence from a transitional economy", *Managerial Finance*, **35:** 107-127

Ito, H. (2006). Financial Development and Financial Liberalization in Asia: Thresholds, Institutions and the Sequence of Liberalization, *The North American Journal of Economics and Finance,* **17:**303–327.

Kaboski, J., and Townsend, R. (2005). 'Policies and impact: An analysis of village-level microfinance institutions', *Journal of the European Economic Association*, **3:**1-50.
Kaufmann, D. and Kraay, A. (2002). Growth without governance. *Economica*, **3:**169–229.
Kaufmann, D., Kraay, A., Mastruzzi, M., (2009). Governance Matters V: Governance Indicators for 1996-2008. Available from :http://info.worldbank.org/governance/wgi/resources.htm
Kevane, M and Wydick, B. (2001). 'Microenterprise lending to female entrepreneurs: Sacrificing economic growth for poverty alleviation?' *World Development*, **29:**1225-1236.
Khandker, S.R. (2005). 'Microfinance and poverty: evidence using panel data from Bangladesh', *The World Bank Economic Review*, **19:**263-86.
Klapper, L., Laeven, L and Rajan, R (2006). Entry regulation as a barrier to entrepreneurship." *Journal of Financial Economics*, **82:**591-629.
Knack, S and Keefer. P (1995). "Institutions and economic performance: cross-country tests using alternative institutional measures." *Economics and Politics*, **7:**207–27.
Knox, C. (2009). Dealing with sectoral corruption in Bangladesh: developing citizen involvement, *Public Administration and Development*, **29:**117–132.
La Porta, R., F. Lopez-de-Silanes, A. Shleifer and R. Vishny (2002). Investor Protection and Corporate Valuation, *Journal of Finance*, **57:**1147-1170.
La Porta, R., Lopez-de-Silanes, F and Shleifer, A. (2008). The economic consequences of legal origins. *Journal of Economic Literature*, **46:**285-332.
La Porta, R., Lopez-de-Silanes, F.., Shleifer, A and Vishny, R. (1998). "Law and Finance," *Journal of Political Economy*, **106:**1113–1155.
La Porta, R., Lopez-de-Silanes, F.., Shleifer, A and Vishny, R. (2000). "Investor Protection and corporate governance." *Journal of Financial Economics*, **58:**3-28.
Lafourcade, A.C., J, Isern., P, Mwangi and M, Brown (2006). Overview of the outreach and financial performance of microfinance institutions in Africa, Microbanking Bulletin, April
Lambsdorff, J (2007). The institutional economics of corruption and reform. Theory, evidence, and policy, Cambridge: Cambridge University Press.
Lensink, R., Meesters, A., Naaborg, I (2008). Bank efficiency and foreign ownership: Do good institutions matter? *Journal of Banking and Finance*, **32:**834-844
Levine, R, (2005). In: Aghion, Philippe, Durlauf, Steven N. (Eds.), Handbook of Economic Growth. Finance and growth, volume 1A. Elsevier Press.
McDonald, C and Schumacher, L (2007). Financial Deepening in Sub-Saharan Africa: Empirical evidence on the role of creditor rights protection and information sharing, International Monetary Fund, Working Paper 07/203.
McIntosh, C., De Janvry, A and Sadoulet, E. (2005). 'How rising competition among microfinance institutions affects incumbent lenders', *The Economic Journal*, **115:**987-1004.
Mersland, R (2009a). The governance of non-profit micro finance institutions: lessons from history, *Journal of Management and Governance* doi: 10.1007/s10997-009-9116-7
Mersland, R (2009b). "The cost of ownership in microfinance organizations," *World Development*, **37:**469-478
Mersland, R and Strøm, R. (2009). 'Performance and governance in microfinance institutions', *Journal of Banking and Finance*, **33:**662-669
Mersland, R and Strøm, R., (2008). Performance and trade-offs in microfinance organisations-does ownership matter? *Journal of International Development*, **20:**598-612.

Messick, R. (1999) "Judicial reform and economic development: a survey of the issues," *World Bank Research Observer,* **14:**117-136.

Mosley, P. and Rock, J. (2004). 'Microfinance, labour markets and poverty in Africa: A study of six institutions', *Journal of International Development*, **16:**467-500.

Ng, D. (2006). 'The impact of corruption on financial markets'. *Managerial Finance,* **32:**822-836

Nicoletti, G., and Scarpetta, S. (2006). "Regulation and Economic Performance: Product Market Reforms and Productivity in the OECD." In T. Eicher and C. García-Peñalosa (eds.) Institutions, *Development and Economic Growth.* Cambridge, Mass.: MIT Press.

North, DC (1990). Institutions, institutional change and economic performance. Cambridge University Press, Cambridge

Olken, B (2007). "Monitoring corruption: Evidence from a field experiment in Indonesia." *Journal of Political Economy* **115:**200-249.

Pande, R., and Urdy, C. (2005). Institutions and development: A view from below. In R. Blundell, and T. Persson (Eds.), Proceedings of the 9th world congress of the econometric society. Cambridge, UK: Cambridge University Press.

Patten, R., Rosengard, J and Johnston, D (2001). Microfinance Success amidst Macroeconomic Failure: The Experience of Bank Rakyat Indonesia During the East Asian Crisis *World Development*, **29:**1057-1069

Pham, T and Lensink, R. (2007). 'Lending policies of informal, formal and semiformal lenders. Evidence from Vietnam'. *Economics of Transition*, **15:**181-209

Pierre-Guillaume, M and Sekkat, K (2005): Does corruption grease or sand the wheels of growth? *Public Choice,* **122:**69-79.

Pitt, M. and S. Khandkher (1998). 'The impact of group based credit programs on poor households in Bangladesh: Does the gender of the participants matter?' *The Journal of Political Economy,* **106:**958-996.

Pitt, M., S. Khandker and J. Cartwright (2006). Empowering women with microfinance: Evidence from Bangladesh, *Economic Development and Cultural Change,* **54:**791-831.

Qian, J and Strahan, P (2007). How law and institutions shape financial contracts: The case of bank loans, *Journal of Finance,* **62:**2803-2834.

Rajan, R and Zingales, L (2003). The Great reversals: The politics of financial development in the Twentieth Century, *Journal of Financial Economics,* **69:**5-50.

Raymond, F and Jakob, S (2007). Are corruption and taxation really harmful to growth? Firm-level evidence. *Journal of Development Economics*, **83:**63–75

Ritzen, J., Easterly, W. and Woolcock, M. (2000). On 'good' politicians and 'bad' policies: social cohesion institutions, and growth. World Bank Policy Research Working Paper 2248, Washington, DC, World Bank.

Roe, M. and Siegel, J. (2011). Political Instability: Its effects on financial development, its roots in the severity of economic inequality, *Journal of Comparative Economics,* doi:10.1016/j.jce.2011.02.001

Svensson, J., (2005). Eight questions about corruption. *Journal of Economic Perspectives,* **19:**19-42.

Weill, L (2010). Does corruption hamper bank lending? Macro and micro evidence, *Empirical Economics*, DOI: 10.1007/s00181-010-0393-4

Appendix

Table 1: Tests for time and country-specific effects

Model	LM test	P-value
$D_2 = D_3 = ...D_C = 0$	$\chi 2$ (30) = 126.20	0.8200
$\gamma_2 = \gamma_3 = ...\gamma_T$	$\chi 2$ (11) = 4.19	0.7990
$D_2 = D_3 = ...D_C = \gamma_2 = \gamma_3 = \gamma_t = 0$	$\chi 2$ (41) = 35.44	0.8910

Where D_c represent country dummies and γ_t time dummies.

Table 2: The impact of governance on MFI profitability (including Interaction terms)

Variable	Variant of model specifications					
	1	2	3	4	5	6
Lagged ROA	0.2300*** (2.49)	0.2050** (2.22)	0.2089*** (2.59)	0.1972** (2.11)	0.1798** (2.04)	0.1711** (1.99)
Log Age	-0.0036 (-1.38)	-0.0039 (-1.35)	-0.0033 (-1.24)	-0.0033 (-1.27)	-0.0036 (-1.34)	-0.0035 (-1.28)
Log size	0.0354*** (2.64)	0.0304*** (2.32)	0.0394*** (3.04)	0.0342*** (2.61)	0.0364*** (2.84)	0.0390*** (2.99)
Capital	0.2404*** (5.53)	0.2171*** (5.00)	0.2365*** (5.63)	0.2443*** (5.75)	0.2262*** (5.35)	0.2309*** (5.38)
Gearing	0.0076*** (3.72)	0.0058*** (3.89)	0.0074*** (3.53)	0.0078*** (3.70)	0.0072*** (3.40)	0.0079*** (3.69)
Deposit/Asset	0.3168*** (3.91)	0.2580*** (3.29)	0.2876*** (3.86)	0.2788*** (3.56)	0.2497*** (3.22)	0.2931*** (3.89)
Portfolio/Asset	0.0642*** (3.41)	0.0611*** (3.34)	0.0634*** (3.17)	0.0642*** (3.25)	0.0624*** (3.31)	0.0671*** (3.14)
Efficiency	-0.3003*** (-3.95)	-0.3475*** (-5.41)	-0.3145*** (-5.24)	-0.3098*** (-5.06)	-0.3166*** (-5.28)	-0.3103*** (-5.10)
Portfolio at risk	-0.2404*** (-2.42)	-0.2386*** (-2.47)	-0.1918** (-1.93)	-0.2356*** (-2.41)	-0.1865** (-1.88)	-0.1905** (1.87)
Loan Size	-0.0182 (-0.85)	-0.0234 (-1.11)	-0.0218 (-1.04)	-0.0228 (-1.07)	-0.0180 (-0.86)	-0.0241 (-1.13)
Women	-0.0211 (-0.44)	-0.0023 -0.05)	-0.0103 (-0.22)	-0.0111 (-0.23)	-0.0061 (-0.13)	-0.0096 (-0.20)
Voice and Accountability	0.0053 (0.14)					
Political Stability		0.0550*** (2.27)				
StabilityXAge		-0.0009*** (-5.14)				
Government Effectiveness			0.0746** (2.22)			
Regulatory Quality				0.0601* (1.81)		
Rule of Law					0.0821*** (2.35)	
Rule of lawXAge					-0.0159*** (-5.29)	
Control of Corruption						-0.0290** (-2.29)
CorruptionXAge						0.0044 (1.51)
CorruptionXPortfolio-assets						-0.0424*** (2.83)
Business Freedom	-0.0002 (-0.27)	-0.00002 (-0.03)	-0.0005 (-0.66)	0.00001 (0.02)	-0.0003 (-0.35)	0.0001 (0.06)

Property Rights	0.0006 (0.45)	0.0004 (0.31)	0.0005 (0.41)	0.0004 (0.31)	0.0006 (0.48)	0.0003 (0.22)
Share of rural population	-0.0055 (-0.52)	-0.0047 (-0.63)	-0.0048 (-0.61)	-0.0040 (-0.62)	-0.0036 (-0.69)	-0.0044 (-0.66)
Inflation expectations	0.0741 (0.78)	0.1040 (1.15)	0.0591 (0.66)	0.1285 (1.32)	0.1786 (1.68)	0.1173 (1.24)
GDP Per capita	0.0013 (0.69)	0.0003 (0.14)	0.0008 (0.45)	0.0006 (0.32)	-0.0016 (-0.82)	0.0009 (0.48)
Domestic credit to private sector	-0.1377 (-1.06)	-0.1258 (-0.98)	-0.0960 (-0.74)	-0.1209 (-0.93)	-0.1125 (-0.88)	-0.1509 (-1.18)
Wald-test	χ2(18)= 333.03 Prob>chi2= 0.000	χ2(18)= 344.80 Prob>chi2= 0.000	χ2(18)= 346.39 Prob>chi2= 0.000	χ2(18)= 334.74 Prob>chi2= 0.000	χ2(18)= 350.45 Prob>chi2= 0.000	χ2(18)= 336.69 Prob>chi2= 0.000
Sargan-test[a]	χ2(30)= 32.22 Prob>chi2= 0.75	χ2(30)= 29.01 Prob>chi2= 0.86	χ2(30)= 31.47 Prob>chi2= 0.77	χ2(30)= 34.74 Prob>chi2= 0.92	χ2(30)= 33.48 Prob>chi2= 0.59	χ2(30)= 36.40 Prob>chi2= 0.89
AR(1)[b]	z=-3.8406 p-value=0.000	z=-3.8406 p-value=0.000	z =-3.6658 p-value=0.000	z =-3.7941 p-value=0.000	z =-3.7252 p-value=0.000	z =-3.8153 p-value=0.000
AR(2)[c]	z=0.5776 *P*-value = 0.5635	z=0.5003 *P*-value = 0.6168	z =0.3409 *p-value* = 0.7332	z =0.5478 *p-value* = 0.5838	z =0.3861 *p-value* = 0.6994	z =0.4658 *p-value* = 0.6413
Observations	179	179	179	179	179	179

This table presents estimations performed using Blundell and Bond (1998) two-step system robust GMM estimator. For the definition of the variables see Table 4.1. Robust z values are in parentheses and significance at the 10%, 5%, and 1% level is noted by *, ** and *** respectively.

The Wald test is a test of the null hypothesis that the coefficients in the given equation are all zero (Greene, 2008). A low value indicates null hypothesis rejection.

[a] Test for over-identifying restrictions in GMM dynamic model estimation.

[b] Arellano-Bond test that average autocovariance in residuals of order 1 is 0 (H0: no autocorrelation).

[c] Arellano-Bond test that average autocovariance in residuals of order 2 is 0 (H0: no autocorrelation).

Table 3: Description of the panel (MFIs per year)

1997	10
1998	19
1999	30
2000	42
2001	90
2002	125
2003	146
2004	159
2005	186
2006	178
2007	155
2008	167

Table 4: Type of MFIs used in the study and their regional distribution 1997-2008

MFI Name	Country	Region	Year of inception	MFI type	Regulated	Accepts deposits
ACEP	Senegal	WA	1987	CU	Y	Y
ACFB	Benin	WA	2004	CU	Y	Y
ACODE	Chad	CA	1996	NGO	Y	Y
ACSI	Ethiopia	EA	1995	NBF	Y	Y

ADCSI (Addis Credit & Savings Institution)	Ethiopia	EA	2000	NBF	Y	Y
ADEFI	Madagascar	SA	1995	CU	Y	N
AE&I (Afrique Emergence & Investissements)	Ivory Coast	WA	2003	NBF	Y	N
Akiba (Akiba Commercial Bank Ltd)	Tanzania	EA	1997	BK	Na	Y
Alidé	Benin	WA	2001	NGO	N	N
Alliance MFB (Alliance Microfinance Bank Limited)	Nigeria	WA	2005	NBF	Y	Y
APED	Ghana	WA	2001	NGO	N	Y
AVFS (Africa Village Financial Services)	Ethiopia	EA	1998	NBF	Y	Y
BG (Buusaa Gonofaa	Ethiopia	EA	1999	NBF	Y	Y
BIMAS	Kenya	EA	1997	NGO	Y	Y
BOM (Banco Oportunidade de Moçambique)	Mozambique	SA	2004	BK	Y	Y
CACOEC SUDUDIAWDI	Mali	WA	1998	CU	Y	N
CamCCUL (Cameroon CUerative Credit Union League Limited)	Cameroon	CA	1968	CU	Y	N
CAPEC Dahra	Senegal	WA	1994	NGO	Y	N
Capitec Bank	South Africa	SA	2001	BK	Y	Y
CBDIBA/RENACA	Benin	WA	1990	NGO	Y	N
CDS	Cameroon	CA	1997	CU	Y	Y
CECA	Togo	WA	1990	CU	Y	Y
CECIC S.A	South Africa	SA	1995	NBF	Y	N
CEDA	Sierra Leone	WA	2002	NGO	N	N
Centenary Bank (Centenary Rural Development Bank Ltd.)	Uganda	EA	1983	BK	Y	Y
CETZAM (CETZAM Opportunity)	Zambia	SA	1998	NBF	N	Y
CFE	Rwanda	EA	2003	NBF	Y	Y
CFF (Cedi Finance Foundation)	Ghana	WA	1999	NGO	Y	Y
CMCA (Crédit Mutuel de Centrafrique)	Central Africa Republic	CA	1994	CU	Y	Y
CML	Uganda	EA	2000	NBF	Y	N
CMMB	Benin	WA	1997	CU	Y	Y
CMS (Crédit Mutuel du Sénégal)	Senegal	WA	1988	CU	Y	Y
CODES	Benin	WA	1997	CU	Y	N
CUEC CAMEC MN	Democratic Republic Of Congo	CA	1988	CU	Y	N
CUEC HINFANI DOSSO	Niger	WA	2005	CU	Y	N
CUec Nyawera	Democratic Republic Of Congo	CA	1972	CU	Y	N
CUEDU	Kigali	CA	1998	CU	Y	N
COSPEC	Burundi	EA	2001	CU	Y	N
CRAN	Ghana	WA	1994	NGO	N	Y
CRG (Credit Rural de Guinée)	Guinea	WA	1989	NBF	Y	Y
CUMO	Malawi	SA	2003	NGO	N	Y
CVECA Kita/Bafoulabé	Burkina Faso	WA	1991	CU	Y	Y

DEC	Nigeria	WA	1987	NGO	Y	Y
DECSI (Dedebit Credit and Savings Institution)	Ethiopia	EA	1997	NBFI	Y	Y
DJOMEC	Senegal	WA	1999	CU	Y	Y
Duterimbere	Rwanda	EA	2005	NBF	Y	Y
Equity Bank (Equity Bank)	Kenya	EA	1984	BK	Y	Y
Equity Bank (Equity Bank)	Uganda	EA	19997	BK	Y	Y
Eshet (Eshet)	Ethiopia	EA	2000	NBFI	Y	Y
FADU (Farmers Development Union)	Nigeria	WA	1989	NBF	N	Y
FAM (Fonds d'Actions Mutuelles)	Congo	CA	1998	CU	Y	N
FASL	Ghana	WA	1996	NBF	N	Y
Faulu - KEN	Kenya	EA	1992	NBF	Y	Y
Faulu - TZA (Faulu - Tanzania)	Tanzania	EA	2002	NBF	N	Y
Faulu - UGA	Uganda	EA	1995	NBF	Y	Y
FCC (Fundo de Credito Comunitario	Mozambique	SA	1994	NGO	N	Y
FDM (Fundo de Desenvolvimento da Mulher)	Mozambique	SA	1996	NGO	Y	Y
FECECAM (Fédération des caisses d'épargne et de crédit agricole mutuel)	Benin	WA	1977	CU	Y	Y
FIDEVIE	Benin	WA	2002	NGO	Y	N
FINADEV Guinée	Guinea	WA	2005	NGO	N	N
FINCA - DRC	Democratic Republic Of Congo	CA	2003	NGO	N	Y
FINCA - MWI	Malawi	SA	1994	NGO	N	Y
FINCA - TZA	Democratic Republic Of Congo	EA	1998	NGO	N	N
FINCA - UG	Uganda	EA	1992	NBF	Y	Y
FINCA - ZMB	Zimbabwe	SA	2001	NBF	Y	Y
FINCORP	Swaziland	SA	1996	NBF	N	N
FUCEC Togo	Togo	WA	1983	CU	Y	Y
Gasha	Ethiopia	EA	1998	NBFI	Y	Y
GRAINE sarl	Burkina Faso	WA	2006	NBF	Y	Y
Hluvuku	Mozambique	SA	2001	NGO	Y	N
HOFOKAM	Uganda	EA	2003	NGO	N	Y
Hope Micro	Sierra Leone	WA	2002	NGO	N	N
ID-Ghana	Ghana	WA	1998	NGO	N	Y
IMF HOPE RDC	Democratic Republic Of Congo	CA	2004	NBF	Y	N
Jemeni	Mali	WA	1995	CU	Y	N
KADET	Kenya	EA	2002	NBF	Y	Y
Kafo (Kafo Jiginew)	Mali	WA	1987	CU	Y	Y
KixiCredito	Angola	SA	1999	NGO	N	Y
KOKARI (KOKARI)	Niger	WA	1994	CU	Y	Y
Kondo Jigima (Kondo Jigima)	Mali	WA	1991	CU	Y	Y
KPOSB	Kenya	EA	1978	BK	Y	Y
K-Rep (K-Rep Bank)	Kenya	EA	2000	BK	Y	Y
KSF (Kraban Support Foundation)	Ghana	WA	1996	NGO	N	Y

KWFT (Kenya Women Finance Trust)	Kenya	EA	1982	NBF	Y	Y
KYAPS	Uganda	EA	1999	CU	N	N
LAPO (Lift Above Poverty Organisation)	Nigeria	WA	1987	NGO	Na	Y
Maata-N-Tudu	Ghana	WA	1993	NGO	Y	Y
MAL (Micro Africa Limited)	Kenya	EA	2000	NBF	Y	N
MBT (MicroBankers Trust)	Zambia	SA	1996	NBF	Y	N
MC² (Réseau MC²)	Cameroon	CA	1992	CU	Y	N
MDB	Benin	WA	1995	CU	Y	N
MDSL	Kenya	EA	1999	NBF	Y	N
MEC Bosangani	Democratic Republic Of Congo	CA	2002	CU	Y	Y
MEC FEPRODES	Senegal	WA	1997	CU	Y	Y
MECBAS	Senegal	WA	2001	CU	Y	Y
MECREF	Nigeria	WA	1996	CU	Y	Y
MED-Net	Uganda	EA	1997	NGO	Y	Y
Meklit (Meklit)	Ethiopia	EA	2000	NBF	Y	Y
Metemamen	Ethiopia	EA	2002	NBF	Y	Y
MFSC	Uganda	EA	2001	CU	N	Y
MGPCC dekawowo	Togo	WA	2000	CU	Y	Y
MICROFUND	Togo	WA	1998	CU	Y	Y
Microloan Foundation - MWI	Malawi	SA	2002	CU	Y	N
Miselini (Miselini)	Mali	WA	1994	NGO	Y	Y
MRFC	Malawi	SA	1993	NBF	Y	N
Mutual Alliance S&L	Nigeria	WA	1992	NBF	Y	N
NovoBanco	Mozambique	SA	2004	BK	Y	Y
NovoBanco - MOZ	Mozambique	SA	2000	BK	Y	Y
Nyesigiso	Mali	WA	1990	CU	Y	N
OCSSC	Ethiopia	EA	1999	NBF	Y	N
OIBM	Malawi	SA	2002	BK	Y	N
OISL	Ghana	WA	2004	NBF	Y	N
OMO	Ethiopia	EA	1997	NBF	Y	Y
OPIC-TOGO	Togo	WA	1997	NGO	Y	N
Otiv Alaotra	Madagascar	SA	1996	CU	Y	N
Otiv Sambava	Madagascar	SA	1998	CU	Y	N
Otiv Tana	Madagascar	SA	1996	CU	Y	N
Otiv Toamasina	Madagascar	SA	1995	CU	Y	N
PADME	Benin	WA	1993	NGO	Y	Y
PAIDEK	Democratic Republic Of Congo	CA	1996	NGO	Y	N
PAMECAS	Senegal	WA	1995	CU	Y	Y
PAPME	Benin	WA	1993	NGO	Y	Y
PASED	Sudan	EA	2001	NGO	N	N
PEACE	Ethiopia	EA	1999	NBF	Y	Y
Pharma-crédit	Congo	CA	2002	NBF	N	N
PRIDE - TZA	Tanzania	EA	1994	NGO	N	Y

PRIDE- ZMB	Zimbabwe	SA	2000	NGO	N	N
ProCredit - GHA	Ghana	WA	2002	NBF	Y	Y
ProCredit Bank-DRC	Democratic Republic Of Congo	CA	2005	BK	Y	Y
PTF (Presidential Trust Fund)	Tanzania	EA	1984	NGO	N	N
Pulse	Zambia	SA	2001	NBF	N	N
RCMEC	Ivory Coast	WA	1997	CU	Y	N
RCPB	Burkina Faso	WA	1992	CU	Y	Y
RECEC-FD	Senegal	WA	2001	CU	Y	N
RENAPROV Finance SA	Cameroon	CA	1996	NBF	N	N
Réseau KARABARA	Mali	WA	1997	CU	Y	N
RML (Rwanda Microfinance SARL)	Rwanda	EA	2004	NBF	Y	N
SAILD (SAILD Microfinance)	Cameroon	CA	2000	NGO	Y	N
SAT	Ghana	WA	1994	NGO	Y	N
SEAP	Nigeria	WA	1998	NGO	Y	Y
SEDA (Small Enterprise Development Agency)	Tanzania	EA	1996	NGO	N	Y
SEF-TZ	Tanzania	EA	2000	NGO	N	N
SEF-ZAF (Small Enterprise Foundation)	South Africa	SA	1991	NGO	Y	N
SEM Fund	Senegal	WA	2004	NGO	Y	N
SFPI (Specialized Financial and Promotional Institution)	Ethiopia	EA	1998	NBF	Y	Y
Sidama (Sidama)	Ethiopia	EA	1998	NBF	Y	N
SIPEM	Madagascar	SA	1990	NBF	Y	N
SMEP	Kenya	EA	1975	NBF	Y	N
SOCREMO (SOCREMO - Banco de Microfinanças de Moçambique)	Mozambique	SA	1998	BK	Y	Y
SOFINA	Cameroon	CA	1996	NBF	Y	N
Soro Yiriwaso (Soro Yiriwaso)	Mali	WA	2000	NGO	N	Y
Tchuma	Mozambique	SA	1998	NBF	Y	N
TEBA (Teba Bank)	South Africa	SA	1976	BK	Y	N
TIAVO	Madagascar	SA	1997	CU	Y	Y
Turame Community Finance	Burundi	EA	2004	NBF	Y	N
UCEC/MK	Chad	CA	1993	CU	Y	N
U-IMCEC	Senegal	WA	2001	CU	Y	N
UMECTO	Togo	WA	2001	CU	Y	N
UNICECAM	Madagascar	SA	2000	CU	Y	N
Union des CUECs Umutanguha	Rwanda	EA	2005	CU	Y	N
UOMB	Rwanda	EA	1997	BK	N	N
U-Trust / UWFT	Uganda	EA	1984	NBF	Y	Y
Vital Finance (Vital Finance)	Benin	WA	1998	NGO	Y	Y
WAGES	Togo	WA	1994	NGO	N	N
Wasasa	Ethiopia	EA	2000	NBF	Y	Y
Wisdom	Ethiopia	EA	1999	NBF	Y	Y

Yehu (Yehu Microfinance Trust)	Kenya	EA	2000	NGO	N	N

Source: complied by the author from the MIX Market
Note: EA-East Africa; WA-West Africa; CA-Central Africa; SA-South Africa
Y-Yes; N-No
BK-Bank; Cooperative/credit unions; NBF-Non-bank financial institutions; NGO-Non-governmental Organizations (NGO's). There are 167 total MFI's, of which 15 are banks, 55 are Cooperatives/credit unions, 54 are non-bank financial institutions, and 43 are non-profits (NGO's). These are drawn from 31 countries