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Microfinance and Poverty Reduction: How Risks Associated With Government Policies Affect Whether Microfinance Alleviates Poverty in Latin-America

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MICROFINANCE AND POVERTY REDUCTION: HOW RISKS ASSOCIATED WITH GOVERNMENT POLICIES AFFECT WHETHER MICROFINANCE ALLEVIATES POVERTY IN LATIN-AMERICA

by

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Dedication

I dedicate this work to my wife, Candice, for her unwavering love, patience and support throughout this process. Her encouragement helped sustain my motivation to press forward when the project seemed too daunting. I couldn't have done it without her.

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Abstract

The expansion of financial services to the poor, now widely referred to as microfinance, quickly saw tremendous success in Bangladesh beginning in the 1970's and was exported to a number of other countries. For a time microfinance was spoken of as a panacea, in part because it is more detached from governments than other forms of poverty alleviation. I develop a model based on expected utility theory that looks at how risks associated with government policies and characteristics affect whether this mechanism eases poverty. Using a large N analysis of Latin-American states from 1990-2010 and a case study analysis to examine the economic and political development of Brazil, I find that risk of political and economic instability helps explain the effects of microfinance on poverty alleviation. However, rather than stability in the political and economic system making microfinance more efficient for poverty reduction, it appears that microfinance has the greatest poverty reduction effect under conditions of instability. This may be because the type of people who borrow from microfinance institutions during higher risk times are using loans as an informal insurance mechanism, or because higher risk functions as a selection mechanism either selecting for the most lucrative uses of microfinance or selecting for people who are near or above the poverty line and not those who are well below.

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List of Abbreviations

FDI ..... Foreign Direct Investment

GDP ..... Gross Domestic Product

GDPppp..... Gross Domestic Product, Purchasing Power Parity

MFI ..... Micro-Finance Institution

MIX ..... Microfinance Information Exchange

ODA ..... Official Development Assistance

CHAPTER 1

Introduction

Microfinance is a topic about which there are many debates regarding its effectiveness, purpose, and ideal and legitimate forms. While there are many important questions that yet remain unanswered, one of the key questions is whether microfinance actually helps the people it is said to help - those who live below or near poverty levels. The debate is illustrated by the following two stories.

The first story was originally told by Muhammad Yunus, founder of the Grameen Bank and recipient of the Nobel Peace Prize for his work on poverty alleviation.

> *Murshida was born to a poor family and married an unskilled factory worker when she was 15 years old. Her husband had a gambling problem and was physically abusive. His gambling got so bad that he sold the roof off of their humble house to pay his debts. When Murshida confronted him about his neglecting her and their three children he went into a rage, beat her and divorced her on the spot. Murshida took her children to her brother's house where she found some work spinning. When the Grameen Bank came to her village she persistently sought out a small loan.*
>
> *"At first Murshida borrowed 1,000 taka [about $30] to purchase a goat and she paid off the loan in six months with the profits from selling the milk. She was left with a goat, a kid, and no debt. Encouraged, she borrowed 2,000 taka, bought raw cotton and a spinning wheel, and began manufacturing lady's scarves", which she sells for 50-100 taka each. She also employs up to twenty-five other women from her village during peak season. She also used a Grameen Bank housing loan to build a house on an acre of farmland and set up her brothers in business trading saris and raw cotton* (Roodman 2012).[1]

[1] This story and the next are both paraphrased from David Roodman's (2012) book *Due Diligence: An Impertinent Inquiry into Microfinance*.

The next story was documented in a film by Tom Heinemann called *The Micro Debt*:

> *Razia, a woman living in a small village in the northern part of Bangladesh had a relatively comfortable life style, with her own house, cows, and jewelry. She took a loan from Grameen Bank to pay for her daughter's education, but found herself unable to repay the loan.*
>
> *"I had no money to pay the installments. So I decided to sell the house. These [microfinance] organizations never stop. They really pressed me. They come and stay until they get their money. They press us to sell our belongings. So I sold the house to pay the debt." After selling the house her family built, she lamented "…I have nothing left to sell, except the kitchen pots" (Roodman 2012).*

In reading these two very different stories about how microfinance affected peoples' lives, one cannot help but question why the two outcomes were so dramatically different. Of course, these are complex processes and there are a variety of contributing factors. Many scholars have studied microfinance in order to better understand what those factors are and how the processes work. The two stories above show that microfinance can be a powerful tool, either for good, helping to improve the quality of life of customers, or for harm, stripping from the near poor their thin cushion against poverty and leaving them entirely destitute. If microfinance generally follows the pattern displayed in the first story, wide and extensive implementation should help improve the quality of life for the poor all over the world. On the other hand, if it tends to follow the pattern in the second story, global implementation could be disastrous.

Why Study Microfinance?

In 2000, the United Nations (UN) held the Millennium Summit, which adopted the UN Millennium Declaration. The declaration represents a commitment to improve the quality of life of people in the developing world. The declaration and subsequent negotiations and summits outlined a number of specific goals, one of which was to

reduce poverty by half by 2015. In 2010, states met again to work on the Millennium Development Goals (MDGs) and pledged more than $40 billion in resources to help achieve the desired outcomes. Unfortunately, in 2012 it does not look like the world is very likely to achieve the MDGs by 2015, but that has not deterred development efforts. The global community continues to strive to eliminate poverty and hunger. One of the greatest obstacles in this struggle, however, is the lack of consensus on how to reduce poverty and help the poorest countries develop.

A survey of popular titles by economists over the last decade tells the story. From Paul Collier's *The Bottom Billion: Why the Poorest Countries Are Failing and What Can Be Done About It* (2007), to Jeffrey Sachs' *The End of Poverty: Economic Possibilities for Our Time* (2005), or William Easterly's titles *The Elusive Quest for Growth: Economists' Adventures and Misadventures in the Tropics* (2001) and *The White Man's Burden: Why the West's Efforts to Aid the Rest Have Done So Much Ill and So Little Good* (2006). There are a number of posited solutions, of course, which tend to drive the debate on. Some scholars, like Sachs, argue that digging wells, building dams, and highways, donating computers to schools and all of the other projects typically associated with development are necessary to help the developing countries make their way on to the global playing field as viable competitors. On the other side are economists like William Easterly who does not hold such a rosy view of the world. He ridicules traditional development aid as “utopian blueprints” that sound revolutionary but which never fully accomplish what they set out to do (Easterly 2006, 367). He argues instead that development must proceed in a more natural, even biological process, that can be fed a healthy diet of laissez faire policies and political stability, but which follows a unique

path to maturity because no two countries face the same constraints on the political system, society or economy. Finally, foreign aid is hailed in some circles as the way forward, as proposed in *Aid that Works: Successful Development in Fragile States* (Manor 2007), but in other circles it is questioned or even dismissed as ineffective or as *The Aid Trap* (Hubbard and Duggan 2009).

Clearly, the economic development literature is far from achieving consensus on how to help poor countries grow, or how to help poor people in those countries achieve higher standards of living. While a great deal of research has examined the intricacies of foreign aid, foreign direct investment (FDI), loan forgiveness, and membership in organizations such as the International Monetary Fund (IMF), much less research has examined microfinance and its effectiveness. This may be in part because microfinance, at the scale we see today, is a relatively new phenomenon (Roodman 2012). Although it has not received as much attention as other approaches to economic growth and poverty alleviation, it is, in many ways, a unique approach.

Microfinance is especially interesting because it is an economic development technique that relies far less on the state than most others. Foreign aid, for example, is often given from the government of one state to the government of another state (Hubbard and Duggan 2009). Alternatively, it might be given directly to villages or spent directly on development projects. Still, it is generally only distributed with the recipient government's permission and it might merely substitute for government spending in that area, thus allowing the government to spend its funds elsewhere. Similarly, FDI is highly subject to the whims and policies of the recipient state. A recipient state might decide to appropriate investments within its borders. It might also seek bribes or engage in other

rent seeking behavior from the investors (Bueno de Mesquita and Smith 2011). It might also simply impose high taxes in one form or another on FDI (Busse and Heffeker 2007; Daude and Stein 2007; Kolstad and Villanger 2008).

The relationship between microfinance and the state, however, is far more tenuous. The government might be able to affect the microfinance industry through regulations, but that is often the extent of its control over this market. Much of the activity in microfinance occurs at the individual level. Individuals are engaging in financial relationships with companies or organizations and could potentially never interact directly with the government in any form. In fact, microfinance is really a formalized, and generally more benevolent, form of an activity that takes place under the state's radar in almost every society; money lending. This makes microfinance a unique and interesting approach to poverty alleviation that may or may not coincide with the patterns seen with aid, FDI, and other types of programs.

An Introduction to Microfinance

To help the reader understand some of the nuances of microfinance and its evolution, this section will describe in broad-brush strokes the major actors, processes and organizations generally involved. Beginning in 1974 Muhammad Yunus and the Grameen Bank started fighting poverty in Bangladesh differently from the typical approach of the time, by offering financial services to households deemed unworthy of credit by commercial institutions or those who could not afford to pay commercial fees. The expansion of financial services to the poor, now widely referred to as microfinance, quickly saw tremendous success in Bangladesh and was rapidly exported to a number of other countries. Logic suggests that if the poor can obtain lump sums of money in order

to take advantage of opportunities when they arise, their quality of life will improve. For a time microfinance seemed to be a panacea, and a group of literature popped up singing praises to its ability to fight poverty, with titles like *Fighting Poverty with Microcredit* (Khandker 1998), *Microfinance and Poverty Alleviation* (Remenyi and Quinones 2000) and *The Poor Always Pay Back* (Dowla and Barua 2006). The microfinance movement received great distinction in 2006 when Yunus was awarded the Nobel Peace Prize for his work that started with the Grameen Bank. Over the last few years, however, scholars have begun to question both the exportability and the depth of the success reported in the microfinance literature (Brau and Woller 2004; Ault and Spicer 2009; Roodman 2012).

The problem microfinance faces is that the poor generally have no collateral for loans, cannot afford the fees required for most formal financial services, and often carry out a lot of their economic activity in the grey market, so there is no record of income or credit. Nevertheless, buying houses, paying for education, or building a microenterprise requires an accumulation of capital that a poor household might not be able to achieve on its own, even when the payoff for doing so might be significant (Armendariz de Aghion and Morduch 2005). Formal financial institutions often have little or no information about the risks associated with lending to individuals in these conditions because, for example, there are no credit history agencies. Even if the lender knew something about the borrower's credit worthiness, the loan sizes would be so small as to be unprofitable. Yunus and the Grameen Bank, and many other microfinance institutions, tried to work around these problems to make financial services for the poor at least sustainable so that they do not have to rely on continual infusions of capital, and perhaps even profitable.

One approach often relied on by microfinance lenders is to lend to groups. The loan agent goes to a village and offers a small loan to a group of perhaps 5-15 individuals with a promise that if it is repaid on time, another, larger, loan will be dispersed to the group, followed by another and another according to the group's needs. The benefit of this approach is that the villagers have much better information about who can be trusted, and can effectively apply social pressure to ensure that loans are repaid (Armendariz de Aghion and Morduch 2005). Indeed, some microfinance institutions see repayment rates exceeding 98%, which is higher than many traditional financial institutions in wealthy countries (Dowla and Barua 2006).

Another approach is to wait to offer loans to customers while requiring them to make minimum deposits into a savings account for some period of time to show that they are reliable and capable of making payments. When the lender holds the money until the borrower repays the loan, at which time the savings is made available to the borrower. This doubles the effect of the loan since the customer gets the loan money and the savings in lump sums, while also giving the lender a degree of collateral against default. In a similar vein, MFIs generally require regular repayments, which might begin as little as one week after the loan is disbursed. This is said to help the borrower to be financially disciplined, since the customer has to save a small amount of money every week or every month to pay installments (Armendariz de Aghion and Morduch 2005). Presumably this is easier for the borrower than saving the money on their own and paying it all back in a lump sum when the loan comes due. MFIs mix and match the various mechanisms to serve their needs and their customers' needs.

Early successes reported by the Grameen Bank in Bangladesh, and by BancoSol in Bolivia led to something of a microfinance revolution. Today there are microfinance institutions across the world. They take various shapes. Some look and function similarly to the early Grameen Bank, while others, including the Grameen Bank itself, have undergone significant innovations, adapting and adopting the various mechanisms to achieve their objectives most efficiently. While some microfinance institutions remain non-profit organizations, many for-profit MFIs have entered the market too. This is one of the more important distinctions among MFIs. Either not-for-profits keep interest rates and fees just high enough to cover costs, or they dump all of their revenue back into loans in order to extend outreach or cover loan loss. Both NGOs and governments might run these. For-profit MFIs tend to have higher interest rates and fees, which put more of a burden on the customers who are already at or near poverty levels, but it also fills a niche in the market, since investors can put money into MFIs that will return a profit. This allows them to expand more quickly and opens doors for commercial sources of funding that might not be available to non-profit MFIs. There are pros and cons to each of these, and they often exist simultaneously in any given state or region, depending on government regulations and the market.

With all of these innovations, microfinance has gained recognition in the development community. TheMIX.org, a non-profit organization that collects data on microfinance institutions for policy makers and researchers to use, reports data for over 2000 microfinance institutions in 67 countries, each of which self-identifies as a microfinance institution of some sort and self-reports data to theMIX. It estimated that

the total global gross loan portfolio for microfinance was over $65 billion dollars in 2009 (theMIX.org).

Microfinance has caught on among the public in wealthy countries too. Kiva.org, for example, makes it possible for anybody to lend money through a microfinance project. The organization collects stories about their borrowers, or entrepreneurs as they are called by the organization, so that lenders can see who the money is going to. This approach has been quite successful. Kiva has attracted over a million lenders who have jointly lent out nearly $500 million in zero interest loans since the organization was founded in 2005.

In spite of all of the innovations and adaptations in microfinance over the years, or perhaps because of them, not all ventures are successful. Depending on the definition of success, there are numerous examples to illustrate this. The stories presented above illustrate one failure to improve the quality of life of a customer. Some studies suggest that Razia's story is not uncommon, or at least that Murshida's story is not necessarily the norm. Microfinance may fail at the institutional level, or at the state level as happened in Thailand or Andrha Pradesh province in India (Mahajan 2007; Islam 2009; Imai, Arun and Annim 2010; Roodman 2012). This project will advance our understanding of microfinance and how it can be used successfully.

Research Question

The empirical puzzle that is driving this project stems from the observation that while microfinance appears to be quite successful in some cases, such as in most of Bangladesh, it appears to have failed miserably in others, such as northern Thailand, which despite having considerable access to financial services available for the poor has

seen no improvement in poverty rates or quality of life among the poor (Imai, Arun and Annim 2010). I suspect that the government plays a significant role by implementing policies and agreements that shape the regulations and the market for microfinance. The primary research question, then, is 'how does the government affect the ability of MFIs to reduce poverty?' This question can be divided into two distinct questions, but it also spawns a number of corollary questions. First, the question might be reworded as 'does better governance create economic conditions that make microfinance a more efficient mechanism for reducing poverty?' This question addresses where, or under what types of political conditions a dollar of microfinance capital has the greatest impact on poverty reduction. This might be a question that a philanthropist asks herself when considering a donation to an MFI somewhere in the world if she wants her donation to have the largest impact possible on global poverty. Alternatively, an entrepreneur or financial firm considering opening a commercial MFI might be equally interested in the answer to this question.

While some people focus on poverty reduction at the global level, others are interested in poverty reduction in a particular country. They might want to know how to reduce poverty in a specific geographic area or state. For this group the original question might be reworded as 'what policies can a government introduce to make microfinance more effective at reducing poverty within its borders.' In other words, the results of this study will have real world implications for philanthropists, investors, MFI managers, entrepreneurs and policy makers. Although microfinance has been found to be a useful tool for combating poverty in some cases, we need to understand it more thoroughly in order to use it effectively. We have learned much since Yunus began making micro-loans

in 1974, but there are still aspects about which we have little empirically substantiated understanding.

Many scholars have studied various aspects of microfinance, and several have even examined how government policies and bureaucracy might affect microfinance. The difference between those works and this one is that they have looked at things like whether the MFIs were able to grow (Ault and Spicer 2009), or how efficiently the MFIs functioned in terms of repayment rates or other measures of the financial health of institutions (Duflos and Imboden 2003; Meagher et al 2006). This project will focus specifically on how government policies and bureaucracy affect whether or not microfinance actually improves the lives of the poor.[2]

This project has merit beyond the policy and business worlds too. Although the development and growth literature has studied microfinance from a number of angles, that which addresses how government regulations and bureaucracy affect the individual level impact of microfinance is still sparse (see Hagard and Tiede 2011 for an exception). This project will add to the theoretical literature as it synthesizes across several disparate literatures to answer the questions raised above. It will bring together research from the governance and rule of law literature in political science, the growth and development literature, and the foreign direct investment (FDI) literatures from economics. It will also

[2] Many political scientists would simply call this "governance". However, in the microfinance literature "governance" refers to the management of MFIs, not to the management of the state. Therefore, in order to avoid confusion I depart from the political science norm and use the more cumbersome terms "bureaucracy" and "institutions".

add to the body of empirical work on microfinance that is still trying to understand its impact more precisely.

The major theoretical contribution I expect to make is to look at microfinance through the lens of a political scientist interested in governance. This will give me leverage over a problem that has some important real world implications for billions of people living below or near the poverty line around the world and who might benefit from microfinancial services. Understanding what makes microfinance work and what does not makes it a more precise tool in the hands of policy makers and investors. The more information policy makers have about microfinance, the better they can tailor policies that will encourage the efficient allocation of resources.

There are several possible outcomes from this project. One is that the state affects the poverty alleviation capabilities of microfinance, either positively or negatively. As indicated above, this would be an important finding because it might suggest where microfinance investments could be used most effectively for poverty alleviation and where other approaches might be efficacious. This is likely a complex set of relationships, though. This project would be the first deep plunge into understanding the intricacies of the conditions under which the relationships exist. It would almost certainly open up a fruitful avenue for future research. It might also help policy makers and NGOs, IGOs or partner states help shape policies and bureaucracy in a poor state to maximize poverty alleviation from microfinance.

Another potential outcome is that the state has no effect on microfinance. This would be a surprising result since virtually all other efforts at poverty alleviation are, at

least somewhat, influenced by the state.[3] A finding that the state has no effect on poverty alleviation through microfinance would present a shocking anomaly in economic development and international political economy literatures.

Structure of the Dissertation

The next chapter discusses several groups of literature that are related to the research question presented above. The first group of literature discusses previous research on microfinance, with an emphasis on impact studies. Many experts have examined the effect that microfinance has on the poor. Much of the literature has found that it is helpful, although some has found either no discernible effect or even a negative effect on the poor. This dichotomy is one of the primary motivations for this project. Other literatures discussed include risk and how it is used to understand decision making, the effect of political and economic instability on other poverty alleviation and development mechanisms, and Popkin's rational peasant argument, or the ability of the poor to make strategic decisions about their personal financial situations (Popkin 1980).

Chapter three presents a theory of the effects government and stability might have on the poverty reduction effect of microfinance. It first argues that microfinance should have at worst a neutral effect on poverty since the poor are not required to take loans and are only likely to do so if it improves their quality of life in some way. It then discusses how political institutions and political or economic instability might affect whether a microfinance borrower is actually able to improve her quality of life by taking advantage

[3] The popular titles by well-known economists mentioned earlier all give some attention to the functioning of the state, as do many other academic and policy oriented research papers.

of microfinance services. It sets out three hypotheses to be tested in the subsequent chapters.

Chapter four is the first empirical test of the theory. It examines a panel of all Latin American states for which there is data over a 20 year time period. It employs linear regression to determine whether there is support for the hypotheses developed in chapter three. The results support the connection between microfinance and poverty reduction. Political institutions and even political stability do not seem to change the relationship between microfinance and poverty alleviation, but economic and financial instability do, though not in the way the theory from chapter three expects.

Since political institutions did not seem to have any effect on the relationship between microfinance and poverty alleviation, the next empirical chapter focuses on the effects of instability. Chapter five is a case study which looks at the political developments in Brazil from about 1930 to the present. It discusses the economic environment in Brazil when microfinance began to take hold on a large scale and how changes in the political and economic conditions appear to influence the relationship between microfinance and poverty reduction. This chapter also finds that the economic environment seems to be important, but less so for the political environment.

The final chapter summarizes the findings of this project. It then discusses the theoretical contributions of this project. These contributions include further evidence on the impact of microfinance, but, more importantly, it illustrates one reason that there may be discrepancies in between others' findings. It also lends support to the rational peasant argument and those who suggest that development is best served when the poor are given the power to make choices. This chapter also points out the implications these findings

might have for microfinance practitioners. The most obvious is that microfinance probably works better in some conditions than in others. It also suggests that microfinance providers might do well to expand risk reduction services, or insurance, and not just lending. The chapter concludes by discussing where future research might further our understanding of these phenomena.

CHAPTER 2

Previous Research

The research question relates to several other areas of research. While this project is unique in its focus and approach, the main themes to be addressed here have been studied by many scholars and experts before, and this project is a piece of a much larger puzzle. One of the primary themes is, of course, microfinance. Though microfinance is a relatively new phenomenon – it has only really been a global phenomenon since the 90's – it has garnered a lot of attention and has been examined from three general perspectives. These include the repayment of microloans, the potential for profitable microfinance and the effect microfinance has on poverty. Each of these will be discussed in turn. Another key theme is risk. Economists, psychologists and other experts have been studying risk and how it affects decision makers for a long time. There are different ways of thinking about risk but the approach adopted here has been employed and analyzed since von Neumann and Morgenstern first wrote about expected utility theory in the mid-1940s (Copleand 1945). A third topic deals with other poverty alleviation and development mechanisms, and, more precisely, how they are affected by stability. The final topic has its roots in Samuel Popkin's Rational Peasants Theory and deals with the economic decisions of the poor (Popkin 1980).

Microfinance

Before Yunus created the Grameen Bank, commercial lending institutions did not lend to the poor for two reasons. First, it was unprofitable. The poor did not need or want large loans. By the time the bank paid a loan officer to process the loan application for the small loan a poor borrower might be interested in, the cost of processing the loan was more than the profit from interest on the loan was worth (de Aghion and Morduch 2005). Banks would lose money by making micro loans to the poor, even assuming away all default.

The second reason banks did not loan to the poor was because there was no guarantee that the impoverish borrower would repay the loan. Often, there are no credit rating agencies in developing countries, or if there is a credit rating agency, coverage is far from universal. Either way, banks likely have no reliable way of knowing what sort of credit history a potential borrower from a poor household might have. Moreover, without a credit rating that would suffer if the borrower defaulted on the loan, the bank assumed, perhaps wisely, that the borrower would have no incentive to repay the loan.

It is possible to overcome this lack of information if the borrower has collateral she can offer against the loan. In that case, the borrower is essentially paying a fee to turn a non-liquid asset temporarily into a liquid asset. This is virtually impossible for the poor in most developing countries because they, of course, have very few possessions. Those few possessions they do have that might be valuable enough to be acceptable as collateral, such as a house, the poor household likely has no proof of legal ownership, or, perhaps, any legal rights (Galiani and Schargrodsky 2010). Therefore, the poor effectively have no credit history to show that they are reliable borrowers or which can be

damaged if they default. Nor do they have any collateral a bank could hold against a loan in the event of default. Clearly, then, banks have no incentive to offer credit to the poor. They cannot make any money on it, and they have no reason to believe that the borrower would not default.

Microfinance institutions have come up with clever ways to deal with these problems, as described previously. Some of these methods include group lending to people from the same village or neighborhood who know each other's financial situations, forced savings that are relinquished upon repayment, and graduated loan schemes to encourage repayment. One of the early questions, though, was whether these approaches to lending worked. Consequently, much of the microfinance literature is devoted to addressing this question by looking at repayment rates or return borrower rates to try and understand the conditions under which borrowers were likely to repay loans (Collins et al 2009; Dowla and Barua 2006; Field and Pande 2007; Hermes and Lensink 2007; Hulme and Arun 2011; Marconi and Mosley 2006; Remenyi 2000; Shoji 2010). The consensus is that, given a properly administered MFI, microfinance borrowers consistently repay their loans, and often at higher rates than in the general consumer credit market.

Another big question in the microfinance literature is whether microfinance could become first sustainable, and then profitable. Many of the first MFIs, such as the Grameen Bank in Bangladesh or Banco do Nordeste in Brazil were started either by government actors or other non-profit entities (Duflos and Imboden 2003; Mukherjee 1997). This, in and of itself, is not necessarily a problem. The problem comes from being able to scale up. If the only actors who have incentives, or are permitted to open and

operate MFIs are non-profit actors, that severely limits the number of entities that might be willing to engage in micro-lending. Also, if it falls to governments to create and operate MFIs, those countries most in need of poverty relief would be the ones least likely to get it, since the states with the worst poverty problems generally have governments that are either incapable or uninterested in addressing poverty. This would then leave it up to non-governmental organizations (NGOs) such as the Grameen Foundation, or inter-governmental organizations (IGOs) such as the Inter-American Development Bank to create and operate all of the MFIs. The number of these organizations is somewhat limited and their resources are generally quite limited since they both rely on donations. So expanding the number and scope of MFIs to be able to offer financial services to the poor all over the world would be out of the question due to the dearth of operators and funds.

Also, although group lending makes up some of the difference between loan processing costs and interest earned on micro-loans by processing several loans for little more effort than processing a single loan, group lending has its limits. It quickly became apparent that trying to lend to too large of a group caused more problems than it solved (de Aghion and Morduch 2005; Roodman 2012). So, this problem left two avenues open. MFIs could charge enough interest and fees on their loans to cover their lending and operating costs or they could remain dependent on donations and contributions from third parties. The latter option would mean that scaling up microfinance would be very difficult, since it would depend, once again, on donations (Greely 2007).

The other option, to charge higher interest and fees has its own problems. While this approach would make MFIs independent of continued donations, thereby allowing

them to expand without the need for increased donations, the annualized interest rates might have to be as high as 80% APR, or more, to cover costs (Roodman 2012). It is important to remember that most of these loans are short term loans, often with loan periods of just a few months. This means borrowers are not actually repaying the loans 1.8 times, but having to pay that kind of interest would severely cut in to any economic advancement a borrower might make. In other words, a lot of people have argued that for-profit microfinance is usury and is just another way the rich are trying to get richer off of the backs of the poor (Schicks 2007). While this is, perhaps, not an unfair critique, making microfinance profitable is the best way to create a microfinance industry that has a chance of growing to meet global demand and thereby reach out to the millions of poor who do not currently have access to financial services.

The question many researchers asked, though, is whether charging those sorts of interest rates, considered usurious in commercial banking, would deter the poor from borrowing (Demirguc-Kunt and Morduch 2011; Imai and Annim 2010; Mahajan 2007). The answer is clearly that it does not. For-profit MFIs have plenty of customers. On the other hand, they also might not be reaching out to the poorest of the poor because the MFI is looking for larger returns (Imai, Arun and Annim 2010).

As microfinance became more popular in development circles, Yunus and other microfinance advocates and practitioners offered convincing anecdotes of people dramatically improving their quality of life by having access to financial services. An example is the story of Murshida told at the beginning of Chapter 1. Some people seemed to take it for granted that microfinance reduced poverty. Of course, stories of disappointment, like Razia's, eventually surfaced too so researchers began questioning

whether microfinance is actually beneficial. On the one hand, there are a number of case studies which show that microfinance can be very beneficial (Beck, Demirguc-Kunt and Levine 2007; Dupas and Robinson 2010; Gulyani and Talukdar 2010; Hulme 2000; Imai 2010; Imai, Arun and Annim 2010; Imai et al 2012; Islam 2009;Khandker 1998; Montgomery and Weiss 2011; Odell 2011; Remenyi and Quinones 2000). On the other hand, there are also a number of studies that do not find convincing evidence that microfinance is beneficial (Karlan and Zinman 2009; Navajas et al 2000). Others find that it might be helpful, but only under specific and limited conditions (Duvendak et al 2011; Hulme and Arun 2011; Mahajan 2007; Roodman 2012).

Risk

Another of the key themes is risk. Probability theory is the foundation of risk assessment (Chavas 2004). Studying risk is really a study of decision making behavior. One of the oldest formal models of decision making that involves risk was first developed by Von Neumann and Morgenstern in 1945 (Copeland 1945; Gollier 2001). Von Neumann and Morgenstern created the expected utility model which simply creates a view of the world in which actors must make decisions about events that occur with some degree of probability. Assuming that people are interested in maximizing their utility, they will make choices that will maximize their probable utility. That is, since nothing is certain, a person cannot know with perfect confidence whether a particular course of action will yield the utility she might hope. So choosing an option that has the potential to yield a great deal of utility, but which is not very likely might not be as beneficial as an option that has the potential to yield slightly less utility, but with a much greater.

Expected utility theory, then, is little more than assuming that decision makers are utility maximizers who understand probability theory, at least at an instinctual level.

While expected utility theory can be quite useful, and has often been employed by scholars throughout the years, others have raised questions about its validity. One of the most prominent modifications to expected utility theory was developed by Khanneman and Tversky (1979). Khanneman and Tversky discovered, through a whole series of laboratory experiments, that people do not seem to strictly follow expected utility theory (Tversky and Khanemann 1991). Rather, people seem to be risk neutral, or perhaps even risk acceptant at relatively low values, but become risk averse at high values. They also demonstrated that most people value things differently depending on how they conceive of them in relation to themselves. For example, people tend to place higher value on things they think of as already owning and which might be lost, than they do on things that they think of as something that might be gained (Tversky and Khanneman 1981; 1992).

Despite the abundant evidence that expected utility theory is not precisely accurate, many researchers continue to use it because it is an elegant approach to thinking about decision making involving risk and the added precision of later modifications, such as Khanneman and Tversky's, considerably complicates the model without adding concomitant value to the prediction value of the model (Binswanger 1980; Cox and Harrison 2008; Cukierman 1980). It is enough to keep in mind that decision makers are generally risk averse, especially when they are dealing with what they think of as a lot of money or value.

Political and Economic Stability

The third major theme discussed in this work is the effect of governance and political or economic stability on poverty alleviation and development efforts. This is the source of risk which might affect potential microfinance customers' decisions. Few researchers have written about the effects of poor governance on microfinance, but there is a strong body of research dealing with how instability affects economic growth, foreign aid, and foreign direct investment. There is a mountain of evidence that instability inhibits economic growth and interferes with the effectiveness of poverty alleviation efforts (Chauvet and Guillamont 2003; Chong, Gradstein and Calderon 2009).

Political stability might affect foreign aid effectiveness because the recipient government diverts resources away from programs that would promote development or economic growth in order to shore up the state and maintain the integrity of the government. In other cases, when states face social instability they address it by expanding government to create a vast bureaucracy that allows many actors to skim off the top. Allowing more actors to engage in rent seeking behavior may placate enough people to forestall more serious instability. The problem for aid is that with so many actors skimming off the top, those individuals have little incentive to innovate and grow the economy since they can just engage in rent seeking, and the rest of society has little ability to do so because all of the skimming leaves little profits for the producer (Hubbard and Duggan 2009). It might also simply be that those states which tend to be susceptible to instability also often suffer from corruption, which eats away at peoples' incentives to innovate and try to improve their economic situation because they receive a relatively

small portion of their economic output (Collier 2007; Easterly 2001; Easterly 2006; Hunt and Laszlo 2012).

While foreign aid is probably the development mechanism that most people are familiar with, the potential economic growth and poverty reduction effects of FDI are more relevant to the research question than is foreign aid. Foreign direct investors are profit driven actors who carefully study the political and economic climate of a country in which they have or are considering and investment in order to manage their risk. In some industries there is a significant efficiency advantage to have a portion of a production process in another country (Balaam and Dillman 2009). This might be because wages or taxes are lower there, because it is closer to the production inputs, or for a number of other reasons. There is always a possibility that those advantages could be erased by unfavorable economic or political conditions. For example, if exchange rates swing wildly between the investor's home state and the target state, a rather profitable FDI prospect could quickly turn into an unprofitable investment. The risk of something like government appropriation of an industry, a conflict that shuts down production, or an inadequate response to a natural disaster could all have a major impact on the profitability of FDI. Consequently, numerous studies have found that FDI is sensitive to stability (Busse and Hefeker 2007; Daude and Stein 2007; Dutta and Roy 2010; Kolstad and Villanger 2008). Other studies find that FDI is sensitive to the quality of institutions in the target state (Globerman and Shapiro 2002; Li and Resnick 2003).

An extreme example of this phenomenon is when a state expropriates the holdings of a foreign firm. In some historical cases states have simply taken control of entire industries, often with little or no compensation for foreign investors' losses. During the

first half of the twentieth century, the U.S. was heavily involved with the Cuban economy. U.S. firms invested in Cuba and many Americans travelled to and owned property in Cuba. When Castro's government expropriated foreign held firms and properties after the Cuban Revolution ended in 1959, the Foreign Claims Settlement Commission created by the U.S. Congress certified that U.S. firms and American citizens lost a total of nearly $7.5 billion worth of assets (Travieso-Diaz 1995).[1]

While the likelihood of a government expropriating foreign firms is relatively low, it has happened and could happen again. More importantly, it illustrates the risk for foreign investors. A more realistic example is civil war. In Collier's discussion of the poverty traps that inhibit economic development, the traps he discusses include the war trap, the natural resource trap, land-locked with bad neighbors and bad governance in a small state (Collier 2007). Some research suggests that civil war might reduce economic growth by about 2.3% per year (Collier 2007; Haggard and Tiede 2011). That means at the end of a seven year war, the economy will be 15% small that it would have been with no war. For states with otherwise strong economies, this makes for rather modest growth. These states more likely have relatively weak economies already, so civil war may well put the economy into recession. Wars cause massive damage and destruction of physical capital, human capital, the natural environment and the social environment, not to mention the opportunity cost of fighting rather than producing (Harris 1999). Collier provides a startling perspective on ubiquity of wars in the poorest of the poor states. Dividing history up into five year segments, a poor state, or what Collier calls a "Bottom

[1] The figure is converted 2013 constant dollars to account for inflation, but does not include interest on those assets.

Billion" state, has a one in six chance of experience war in any given five year period (Collier 2007).

The natural resource trap is when a state relies on natural resource extraction as an easy source of revenue. It requires little investment in human capital or infrastructure, and has the potential to pay big dividends. It also tends to subject the economy to great instability because the national economy relies so heavily on just a few outputs and natural resource markets tend to see wild swings in prices (Balaam and Dillman 2011). It is good to be a major exporter of a natural resource when commodity prices are high, but when prices slump it can be very damaging.

Institutions affect economic growth too. For example, Rodrik and Wacziarg find that democracy promotes economic growth because it reduces uncertainty by taking the jumpiness out of the growth curve (Rodrik and Wacziarg 2004). It is not uncommon to see poorly governed states experience spurts of economic growth. An example is the Brazilian growth miracle from 1967-1973 during which time Brazil was under military rule. The economy grew at double digits for six years before it began to fizzle, then, eventually, plummet into a decade of abysmal economic performance. So, it seems that institutions are necessary for short-term economic growth, but sustained economic growth is rather unlikely without good institutions (Green 2011; Rodrik 2006; Rodrik 2008). To be fair, improving institutions will only help in states where the quality of institutions is the constraining factor.

Rational Peasants

The final area of previous work that is relevant to the research question is that which address the business and investment acumen of the poor. Samuel Popkin wrote that

peasants are rational actors who are driven by financial well-being rather than social or cultural ties (Popkin 1979). Popkin's peasants are analogous to potential and actual microfinance customers. When Popkin wrote in 1980, he was trying to debunk a long standing claim that peasants were more concerned with maintaining their culture, than with pursuing economic gains (Popkin 1980). The basis of his argument was that peasants are rational and intelligent enough to know that when they do not have other prospects, their best option is to rely on the communal village structure to ensure the well-being of the group. However, when a better opportunity arises, a peasant will abandon the other villagers in pursuit of her own economic interests. This line of argument contradicted previous literature, which claimed that villagers put great value on the communal village structure, and it was only influence from outside, what scholars today might call globalization, which caused villagers to cut their ties and adopt a new, independent financial path. The basic premise of this argument is that peasants, who are generally not very well educated, would be able to make those kinds of decisions with enough accuracy to be of benefit.

The essence of Popkin's argument is that peasants are rational, economically motivated actors. In other words, peasants are rational consumers and strategic investors. This idea agrees with the basic premise of microfinance, that the poor are able to make strategic decisions about their financial situations and prospects. Some poverty alleviation and development approaches do not make this assumption. Foreign aid, for example, does not put the onus of rational decision making on the poor. It relies, instead, on decision makers within the governments of the donor state and the recipient state to make the decisions about the application of those resources. This is where Easterly argues

that aid tends to fail (Easterly 2006). Decision makers at the governmental level, whether in the donor state or the recipient state, have a terrible track record for making decisions about the allocation of resources in order to bring about discernible improvements in the quality of life or economic well-being of the poor on a large scale. Likewise, FDI, when directed to a less-developed state, generally reserves decision making for the wealthy investors from a developed state (Balaam and Dillman 2011).

The basic premise of microfinance, on the other hand, is that the poor are intelligent enough, and educated enough to make efficient financial decisions. This is an idea that numerous scholars have embraced. Amartya Sen, the Nobel laureate in economics, argued on many occasions that freedom is key for development (Sen 1999). Sen argued that true development occurs when people in poor countries are given the opportunity to pursue their own best interests. When people have the freedom to pursue their personal political interests, as in a democracy, they choose leaders who champion their causes. In the same fashion, people who have the freedom to access financial services, to borrow money in order to start or expand a microenterprise, or to invest in human capital or in making a home operate more efficiently, will improve their quality of life and their own productivity. After all, nearly everybody and virtually every country was dismally poor just a few hundred years ago, relative to today's standards (Easterly 2001). Many of them were able to rapidly increase their incomes rather quickly at some point. It seems reasonable, then, to assume that peasants in Thai villages or the poorer classes in Latin American societies might be able to do the same when the constraints on their economic productivity are alleviated. Microfinance is an attempt to alleviate what might be a constraint for many people in developing countries by providing them

opportunities to expand their growth potential beyond what their present incomes allow by leveraging their income. After all, leveraging is how the wealthy generally increase their wealth.

Moreover, there is considerable evidence that the poor in modern societies are quite rational. Collins, et al (2009) conducted a study in which they tracked the financial transactions of poor households for approximately two years. Researchers asked each household in the study about their income, expenditures, and how they saved and borrowed money on a bi-weekly basis over the course of 12 – 24 months. One of their most important findings was that poor households in the countries they studied often engaged in rather complex financial interactions with friends, neighbors and family members, employers, retailers and occasionally loan sharks, in order to meet their financial needs. They point out that poor people in most countries are likely to have facilities in their towns or villages which provide public services, such as schools or health clinics. It is likely, though, that those public services do not function very well. Those same people are considerably less likely to have an institution in their municipality which offers financial services that they can access. "Microfinance's advantage in this race is that it can pursue the task of delivering reliable and affordable services to the poor independent of public resources. It can also operate with less dependence on political will…" (Collins et al 2009, 176).

Conclusion

The research question raised in the first chapter touches several fields of study. This chapter has presented and discussed the major connections to the different groups of

previous research that are relevant to this project. The major groups of literature include previous research and approaches to studying microfinance, different ways of thinking about risk and how it affects decision making behavior, political and economic stability and their relationship to poverty alleviation and development efforts, and, finally, the rational peasant argument and how it applies to microfinance.

The microfinance literature was divided into three groups. The early literature tended to focus on how to get loan money to people with no credit history and no collateral in such a way as to incentivize them to repay their loans. Another group of literature focused on the development of and differences between non-profit microfinance, as from an NGO, and profit driven microfinance. The final group of microfinance literature, and the group that is most closely related to the research question here, address the impact of microfinance. It tries to determine whether microfinance improves the quality of life of the poor, or not.

The section on the risk literature discussed the development of expected utility theory, which is the method used to discuss risk in subsequent chapters. It also addressed one of a handful of critiques of the expected utility model, but showed that many scholars still rely on the expected utility model because subsequent modifications introduced a considerable degree of complexity without making predictions all that much better. The following section on instability showed that other mechanisms for poverty alleviation and development tend to be sensitive to the functioning of the state and markets. There are some reasons to believe that microfinance might not respond to instability in the same way that foreign aid does, for example.

The last section of this chapter discussed Popkin's rational peasant argument and related it to a variety of development efforts (Popkin 1980). Some of these development efforts, such as foreign aid, give the decision making power to elites and policy makers. Microfinance, on the other hand, allows the poor to make the decisions about their own financial lives. This section also discussed the work of other scholars who have argued and shown that the latter approach may be more efficient.

CHAPTER 3

A Model of Poverty Reduction

In this chapter I set out to develop and explain a model of how government bureaucracy and policies influence the microfinance industry within a state and the effects on poverty reduction. The model will then inform the empirical analyses in chapters four and five. The model, once constructed, will reveal how I expect the various moving parts to fit together and interact with one another. More precisely, it will clearly explain how I believe government actions, or inactions, affect microfinance and poverty. By implication, it will also reveal where microfinance should be most effective based on the assumptions I employ.

Key Terms and Concepts

There are some key terms and concepts that came up in the first chapter and which will continue to appear throughout the rest of this work. They are common terms, though used with specific meanings here. Before moving into a discussion of the model itself, this section will discuss these terms and their precise meanings for this study.

The first term is government. When government is mentioned herein, it is a reference to the ruling authority of the state, generally with references to the actions taken by said party. Political scientists and economists often use the term “governance”, as evidenced by the World Bank's data set of World Governance Indicators; a group of

indicators that generally measure the quality or functioning of the bureaucracy in a state. The indicators include measures of the rule of law and functioning of the courts. These are precisely the things that might affect microfinance and poverty, however, in the microfinance literature governance often refers to an MFI's management and leadership (Thapa 2010; Roodman 2012). So calling them by a term that includes "governance" could get confusing. I recognize that describing these institutions and their actions as government policy and bureaucracy is cumbersome, but for the sake of clarity I choose to employ the more cumbersome term and for the sake of clarity I avoid the use of "governance" altogether.

Another important term for clarification is microfinance. Although the early roots of the microfinance movement, which was often accurately called micro-credit, and which focused on non-profit organizations making small, short-term loans to groups of people, microfinance has evolved considerably. MFIs today often accept or even require customer's deposits into a savings account. Some offer forms of insurance, education and health care to their customers as well. Moreover, MFIs today might choose to offer loans on an individual basis, or for terms that go well beyond a few weeks or months as in the early days of the Grameen Bank (Armendariz de Aghion and Morduch 2005; Dowla and Barua 2006; Collins et al 2009; Roodman 2012). Another significant shift includes the rising involvement of for-profit organizations in the microfinance industry. Some commercial banks and other types of investors have begun establishing operation in the

microfinance sector and earn profits by doing so.[1] While lending is still the primary activity of most MFIs, it is all part of microfinance.

The third term is poverty reduction. In the economics and political science literatures, not to mention the policy world, there are many measures and definitions of poverty. Some rely on thresholds that cut across cultural divisions, economic variations and all other differences, such as the $1/day threshold. The precise measurement of poverty is an issue for the next chapter, suffice it to say that the poor are those who struggle to meet basic needs, such as sufficient nutrition, clean water, clothing and shelter. There is little dispute about who scholars are talking about when they mention the poor, but there is more disputation about what poverty reduction means. Some focus exclusively on economic characteristics such as whether a family lives on less than $1/day per person. In this study I take poverty reduction to include anything that improves the quality of life of the poor, or even near poor. I prefer a broad understanding because much of the economic life of the poor, especially those in poorer countries, occurs in the grey market where it is difficult or impossible to track by quantitative statistics. Also, it is easy to imagine mechanisms for improving the quality of life of an individual without changing her economic status. For example, smoothing a person's income reduces the temptation to spend extra income during good times and the stress of finding food during difficult times. Improving health might not have any discernible

[1] These for-profit MFIs often have a "double bottom-line". That is, they are meant to be profitable, but that is not their only objective. They also try to improve the quality of life of the poor.

effect on a person's income, but most people would agree that feeling physically well improves quality of life. It is not difficult to think of many more examples.

What We 'Know' So Far

This project is by no means the first to delve into microfinance, poverty alleviation, or the economic effects of government actions. This project jumps off from a platform created by other researchers. Research suggests, for example, that government has a significant effect on foreign aid. Significant instances of political instability, such as coups d'etat decrease not only economic development but also the effectiveness of foreign aid (Chauvet and Guillamont 2003; Hubbard and Duggan 2009). The same is true of FDI, although it is also affected by corruption, regulation, state capability, rule of law, and much more (Driver et al 2004; Busse and Hefeker 2007; Daude and Stein 2007; Kolstad and Villanger 2008; Hunt and Laszlo 2012).

If foreign aid and FDI are both sensitive to government actions, it seems likely that microfinance should be as well. There are two ways of looking at this though. On the one hand, microfinance is another financial mechanisms that is hoped, or suggested, to be able to help the poor. This is accurate as far as it goes. On the other hand, microfinance occurs at the individual level, rather than the state level as in foreign aid and FDI. This unique feature casts doubt on the assertion that microfinance follows the same pattern as foreign aid and FDI.

Previous research has also made clear that poverty reduction is an elusive objective. Quite often, $millions are spent on aid with no perceptible change in poverty (Easterly 2006; Collier 2007; Hubbard and Dugan 2009). Researchers continue to try and

understand why this is the case, but there seem to be a host of factors that impede poverty alleviation. Collier (2007) calls them the poverty traps; these are often structural characteristics that make development and economic growth nearly impossible, such as being land-locked with poor neighbors. Poor governance and recurring conflict also seem to inhibit economic success. Even where conditions seem to be ripe for economic growth, poverty alleviation and development still lie only along a hard fought road (Dowla and Barua 2006; Moser 2007).

Finally, recent research by Collins et al (2009) offers strong evidence that the poor need, and often use financial services. In some cases they use it to smooth consumption when income is uneven, as for farmers, and even many factory workers. They also use financial services to make large lump sum purchases and even to invest money for the future. The poor do all of this while calculating their risks, if only crudely. For the poor face many of the same risks the rest do, such as illness, poor harvests, slow business cycles or death. However, they are in an even weaker position to deal with risks than the rest because a single illness could cost them everything (Krishna 2010; Roodman 2012). Despite all of this and the fact that the poor tend to be poorly educated, they are generally well aware of their finances and often manage them rather astutely (Collins et al 2009).

The Major Players

There are three major players in the function of microfinance that are the focus of this study. The first is the government. The government has the role of choosing to regulate or not regulate the microfinance industry. Some governments, such as in Bolivia, take a very laisse faire approach (Roodman 2012; Accion.org). The policies and regulations the Bolivian government has established have been designed to be of mutual

benefit to MFIs and customers. On the other hand, states like Nicaragua and India have taken a very different approach, imposing interest rate caps or limiting the amounts and durations of loans. Another important characteristic of the government which has already been mentioned, is the capability and will to create a well-functioning bureaucracy. Whether the bureaucracy is inefficient because of limited state capability or a lack of political will makes no difference. The outcome is the same. The government also determines whether the state is at war, either internally or externally, the nature of the state's economic and political relationships. All of which might affect the strength of the economy and the investment climate.

Second, are MFIs. This is, perhaps, the most obvious player in the microfinance industry, especially if one assumes that there are plenty of poor people who need financial services and are simply price takers. Under those assumptions it falls to the MFIs to determine how to structure their services to maximize profits, outreach or impact. Indeed, depending on the state, MFIs often have endless configurations of loan sizes, durations, installment structures, requirements for subsequent loans, group dynamics and more. In some cases they are part of an international network of financial institutions. In other cases they are independent of other institutions. Quite often they are the product of an NGO, or sometimes they are an auxiliary of the state. In any case, it is the MFI that provides the services; its managers and investors must decide whether and how to fund it and the shape and nature of its business.

The third actor whose decisions matter is the customer. Customers, I assume, are not mindless machines who will take loans at any price because their discount rate is so high. Rather, customers are generally cautious individuals who are aware of how saving

and borrowing money affects them over the short and long-terms (Collins et al 2009). This makes sense when one realizes that the poor generally have access to micro-credit by borrowing money from loan sharks, but avoid doing so because it is so expensive.

The choices and actions of these three players are at the root of the structure of microfinance in countries around the world. More importantly for this study, the government and MFIs affect the poverty or quality of life of the customer. The MFI is regulated, or not, by the government and is generally designed to serve the poor. The customer is often the target audience for the regulations the government might impose on the microfinance sector and the clientele and purpose of the MFI.

How It All Fits Together

The remainder of this chapter will discuss how the key actors behave; their motivations and decision making calculus. First, I will discuss assumptions about the actors that are key to understanding how they behave. Second, I explain why risk is key in microfinance decision making and how it shapes the actors involved. The final section details how all of this translates to the real world; what the relationships should look like and how they should function.

Assumptions

It becomes useful to make a few simple assumptions about the actors. All actors are assumed to fit the patterns typical of economic theories. Microfinance customers are assumed to be homeconomicus, driven to any and all actions by the desire to maximize utility. They understand that an action A leads to an outcome Y with a certain degree of probability P. They know the cost of A and their valuation of Y, but P presents an unknown. Therefore, individuals make decisions based on an expected utility, or the

value of Y less the cost of A, and discounted according to the degree of uncertainty accorded by P. An actor, though rational, might not seek her most desired outcome, even when the cost of doing so is small, if the probability of the desired outcome is too low. MFIs and states are equally engaged in maximizing their utility. Their objectives and calculations are similar to those of the individual.

I also assume that all actors involved have a reasonably accurate understanding of the effects of policies, political events and economic conditions. Individual customers are almost certainly uneducated in the formal study of economics, but it is not unreasonable to assume that they understand the ins and outs of their industry of employment. For example, a factory worker understands that, depending on the industry, there might be busy times when income will be good, and there might be slow times when income will be poor (Collins et al 2009). A farmer knows that income arrives when he sells his crops, and he will likely get a better price if he can wait until several months after the harvest when supply begins to wane before he sells his produce (Sen 1999). The street merchant understands that if the government implements a law that requires street vendors to have a permit of some sort it might be worth shirking on the permit and paying bribes to local officials that will allow him to continue vending. It is clear that the poor, like most members of the working class worldwide, are familiar with their industry and have a certain degree of understanding about how government policies, political events and economic conditions might affect their incomes.

The Role of Risk

Risk is the key to understanding the concerns and motivations that drive the decisions of MFIs and their customers. It can come from a number of sources and plagues

all parties to a greater or lesser degree. Consider first the MFI. Its purpose is to provide financial services to the poor. One of the key services upon which most focus a great deal of their attention is the provision of credit. Extending credit has always been a risky venture. This is the case for MFIs as well. Risk is inherent in giving loans because the lender cannot know for certain whether the borrower will repay the money. Lenders try to mitigate the uncertainty by ascertaining the borrower's income, or ability to repay, or whether she has a history of repaying debts according to contract.

This is often more difficult for MFIs because this information is rarely formally available. The states in which MFIs often operate are unlikely to have functioning credit bureaus that track an individual's credit history. So the MFI can't know whether a potential borrower has failed to repay past loans, or is already heavily indebted, thus making him unlikely to be able to repay an additional loan. To exacerbate the situation, the poor often work in the informal sector, so there are no formal records of income. Therefore, the MFI cannot verify a customer's income and whether she is likely to be able to pay the agreed upon installments.

Traditional lenders also mitigate risk by holding some sort of collateral. Collateral might be in the form of a title to a vehicle or a deed to a house. But, again, with MFIs this is not generally an option since the poor have very little of value, and what they do have may well not be a formally owned, moveable property.

The key to microfinance's success is finding innovative ways to work around these problems. They often get around the lack of information about credit history and ability to repay loans by using a group lending mechanism. Then the group leverages

information about other village members to select for those who are most reliable and sufficiently able to make installments.

Group lending also helps overcome the problem of a lack of collateral. Especially when coupled with lending schemes that allow for increasingly larger and more favorable loans. Then the other members of the group often have an incentive to repay a loan, even pressuring a shirking member or covering his payments if necessary, in order to secure future loans. MFIs might also rely on forced savings or other similar mechanisms to ensure that customers have a real incentive to repay their loans and an accrued collateral if they do not.

Despite these and other mechanisms MFIs have developed and implemented to counter uncertainty, they cannot eliminate it. None of these mechanisms is fool-proof. Moreover, there is yet another source of uncertainty against which there is little an MFI can do to insulate itself. That is the uncertainty of future conditions. The MFI cannot know whether the economy will fall into recession and make loan repayment impossible for its customers. It cannot know whether the government will institute policies such as Nicaragua's *No Pago*! (“I won't pay”) campaign that could wipe out large portions of their capital. Some of these events might be predicted as a possibility, but many are unforeseen.

When investors consider putting money into an MFI in a given country these are all things they must consider. They look at the economic outlook for the state and think about whether micro-enterprises will be successful and the economy stable. They look at whether there exists a reliable credit bureau or similar institution, whether the legal system is mature enough that the MFI would be able to rely on courts to enforce contracts

and whether the legal system acknowledges private property rights and such. All these concerns play into the calculus of the investor.

Risk also generally influences the poor in their decisions whether to borrow or not and whether to repay or not. While some of the poor borrow money without regard for their ability to repay it in the future, most are well aware of their finances and what they are capable of (Dowla and Barua 2006; Collins 2009). A poor person, who is a potential customer for an MFI faces risk from multiple sources. First, there is a risk that stems from the inherent uncertainty surrounding the types of employment in which they often engage. Street vendors have good days, when their goods sell well and they make a good profit, and bad days, when they make little or no profit. Another common employment in some countries is that of taxi driver, whether bicycle taxi, motorcycle taxi, or otherwise. There are good days and bad days. Farmers deal with the uncertainty which stems from the variability in weather conditions. Not enough rain and the crops wither, but too much and they don't do well either. Or even the right amount of rain but at the wrong times can kill a crop or at least decrease harvest. The same is true of temperatures and other natural phenomena.

All of these uncertainties create risk. There is a risk that the harvest will not be as large as expected, or that the taxi will need unanticipated repairs, or even that income earners will be unable to work for some reason. All of these are unknowns that the customers have to consider (Collins et al 2009). A portion of this risk is passed on to the MFI as well, since the customer might be unable to repay loans. Fortunately, some MFIs have become quite adept at creating products that account for these uncertainties and

allow some flexibility in repayment schedules and lending terms that allow customers to repay when they are able (Dowla and Barua 2006).

The poor also face uncertainties at the state level. Poor economic conditions caused by bad governance or simply unfavorable policies to their industry could drive down incomes. Many of the poor and near-poor work in factories in some countries. Often these factories export their products overseas which means they are subject to the political-economic relationships of the states involved. A souring of relations could mean the factory decreases production and lays off workers, or at least decreases hours. Even general slowing of economic growth among trade partners could have the same effect. Moreover, poor countries are far more likely than wealthier, more stable states to be subject to intra-state conflicts that might upset the economic lives of citizens in the country (Collier 2007).

Another source of risk comes from functioning of the bureaucracy in many poor states. Entrepreneurs are often obliged to pay bribes in order to get licenses or permits, or to avoid even greater fines (Hunt and Laszlo 2012). The poor might also violate ordinances that are only rarely or weakly enforced in order to increase their profits, but doing so generally involves the risk of being punished for the violation. Aside from corruption and its inefficiencies is the question of state capability. In many of the poorest states the government is not always able to enforce the rule of law all of the time. Collins et al (2009) tell a story about a rickshaw taxi driver who worked for another person who owned the rickshaw taxis. The driver received from an MFI a loan large enough to buy a new rickshaw, which he suggested would increase his profits by as much as 50%. He did

not buy his own taxi though, because he had nowhere safe to keep it over night and was afraid that it would be vandalized or stolen during the night.

A single illness could be the difference between a stable, if modest, lifestyle and abject poverty (Krishna 2010). In fact, one study reports that as much as 1/3 of people living in poverty in some countries were not born into poverty but fell into it through a series of unfortunate events (Thapa 2010, 145). The death of an income earner could have the same effect as a major illness in a family (Collins et al 2009; Roodman 2012).

Risk and uncertainty is inherent in life, whether a person is rich or poor. The difference lies in the ability to manage risk. An average middle-class American has an insurance policy to cover nearly every aspect of life – auto, home, life, health, perhaps disability, or other types of insurance. She also has access to a number of financial services that can be used as informal insurance, such as credit cards for when unforeseen costs arise. Home equity lines of credit or personal loans can be used to cover major expenses, like life cycle events (i.e. weddings, deaths, etc.). The poor, on the other hand, rarely have access to, or can afford formal insurance. Nor do they always have access to the variety of legitimate financial services that middle-class Americans do.

Building the Theoretical Model

Answering the research questions posed in the first chapter requires one to think about microfinance at the individual and the state levels. First, a customer must decide for him or herself whether to deposit savings, take out a loan or buy insurance with a MFI. Assuming that these individuals are rational actors, they will take advantage of the services offered by MFIs only if they believe it is in their own best interest. Since MFIs generally direct their services to the poor, the customers' interests should be easy to

deduce. Accepting Maslow's hierarchy of needs as universally applicable, and taking what we know of the poor in developing countries, those individuals are struggling to secure their most basic needs, the physiological needs and safety needs (Maslow 1943). Their behavior should be very predictable; they will do whatever they think is going to secure those needs. In fact, Collins et al. document this struggle in Portfolios of the Poor (2009). The families they followed over the course of a year often went to great lengths to borrow money when necessary, to ensure that their basic needs were met.

Many studies have tried to understand how microfinance affects poverty. Different studies have come to different conclusions. Some, like David Roodman (2012) find no significant impact on poverty in randomized controlled trials (Karlan and Zinman 2009; Duvendak 2011), but others are optimistic and find that microfinance improves the quality of life of customers on a number of different measures (Brau and Woller 2004; Ahlin and Jiang 2005; Latifee 2011; Odell 2011). The nearly universal problem, though, is that it does not make sense to think about how microfinance affects poverty in isolation; governmental policies and regulations must be considered as well. Indeed, many researchers have addressed the relevance of the state (Duflos and Imboden 2003; North et al 2008; Rodrik 2008; Collins et al 2009).

There are two distinct, but related effects a state can have. First, the government plays a role in policy making and regulation of the microfinance industry, which affects the sustainability and viability of microfinance. Second, governance also affects the calculus and expectations of poor individuals who might take advantage of microfinance opportunities. The customer alone must determine whether a micro-loan will be of benefit when it is available. So the effect of governance is felt at two different stages, first it

affects the microfinance industry itself, and second, it affects whether the poor are able to benefit from microfinance.

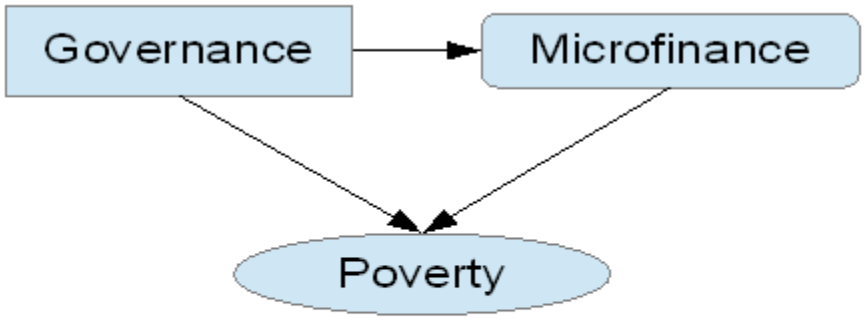

Figure 3.1: The governance-microfinance-poverty relationship in visual format

Relationship 1

Although there is a great deal about economic development that scholars do not yet understand very well (Acemoglu 2008), there are some relationships that are generally accepted and over which the government of a state has some degree of control. First, government has some degree of influence of the macro-economic stability of the national economy. Well-functioning states can use a number of tools to control inflation and money supply. A Keynesian approach to economics helps the government ameliorate the sting of recession by borrowing against periods of high growth. This smoothes the sharp ridges and troughs out of the growth curve, making it easier to predict the future state of the economy with greater accuracy (Gilpin 1987). This makes it easier for investors and entrepreneurs to begin ventures because they can be more confident about

future profit margins than in an economy prone to wide swings between growth and recession.

Second, the government also controls international trade, at least that which occurs in the formal market. International trade, while it may not have a direct impact on microfinance, matters for the poor because when terms of trade are more favorable some industries grow while others do not. The industries in which the state has a comparative advantage should come to favor large firms and attract FDI and other industries will likely remain small and relatively insignificant (Barro 1997). Having a stable trade relationship also means that workers in the trade industry are more likely to have steady, or at least predictable, incomes. Also, the spillovers of knowledge and technology often spur growth forward and make it easier for domestic firms to compete in the global market (Frieden 2006).

Third, governments can spend money on infrastructure to accommodate industrial growth. Although more important for some industries than others, a good infrastructure makes economic growth and stability much more likely (Collier 2007). The ability to transport labor to production facilities and goods to market, or to work continuously without interruption of electricity or other critical production inputs are crucial for many industries. Ports, highways and electrical grids tend to be major selling points for investors because, again, it removes some of the uncertainty of business and allows them to predict success with greater accuracy.

Fourth, government can invest in human capital. Classical growth models suggest that expertise, or knowledge, or human capital should be positively correlated with economic growth (Barro 1997; Easterly 2001). Although the data do not strongly support

this notion, greater educational opportunities are an element of a higher standard of living since it opens doors to more careers, not to mention increasing people's ability to understand and negotiate financial matters.

Finally, implementing social safety net programs reduces poverty directly by offering food, housing, money or other resources to the poorest in a society. This increases the probability that basic physical needs are being met, and in so doing relieves a great deal of stress for those who would be at risk of falling deeper into poverty.

Hypothesis 1: Regardless of the microfinance industry, governments with quality institutions will have lower poverty levels than governments with poor institutions.

hypothesis 1a: greater economic stability will lead to less poverty

hypothesis 1b: states with better international economic relations will have less poverty

hypothesis 1c: states with better infrastructure will have less poverty

hypothesis 1d: states with better educational opportunities will have less poverty

hypothesis 1e: states with better social safety nets will have less poverty

Relationship 2

Offering financial services to the poor will improve their standard of living if for no other reason than that it gives them options. Collins et al (2009) tracked more than 250 households for a full year, interviewing them at least twice each month to find out as much as they could about their financial lives. It is difficult for people living in developed, industrialized states to imagine how households living on less than $2 a day per head could have money to manage, but it turns out that they are often involved in savings groups or self-help groups, such as Rotating Savings and Credit Associations (ROSCAs), borrowing money from friends, family or neighbors and sometimes instead of, sometimes in addition to borrowing from informal moneylenders. The authors say that

"money management is, for the poor, a fundamental and well-understood part of everyday life" (pg 3). Those who are able to do it well are much more likely to improve their quality of live compared to those who are not as adept. They also say they often found that "poor households are frustrated by the poor quality – above all the low reliability – of the instruments that they use to manage their meager incomes" (pg 3).

Microfinance, whether it is heavily regulated or not, is a formal financial option for the poor, an option that they probably would not have without the locally operating MFI.[2] If an MFI opens a branch in a new village, the villagers may choose not to patronize the MFI if it is an inferior option to those they already use. However, if it is a better option, access to financial services through the MFI should make it easier to manage finances. Logic suggests that if a poor household is relying on being able to borrow money from friends and family when necessary, or have loaned money and are relying on it being repaid when necessary, there will be a good deal of uncertainty with these interactions. As discussed before, one of the greatest challenges that the poor often face is the irregularity of incomes. A factory slow down, a poor harvest, or a slow day at the market could mean little or no income for days or weeks. A formal financial institution introduces a degree of stability. Customers of those MFIs with inflexible repayments can take loans when they are needed and plan ahead to pay installments. Often, though, MFIs have flexible repayment schedules to accommodate the irregularity

[2] In fact, many poor still do not have access to MFIs or their services, either because no MFI has established a branch in their village, or because of constructed social limitations (Armendariz de Aghion and Morduch 2005).

of income that tends to plague the poor. The poor still get the loans when they need them, but can pay when they have income without putting friends or family in a bad situation.

Of course, it is also possible that customers to those MFIs with inflexible payment schedules might not adequately plan ahead and find themselves subject to collectors with no ability to pay. Although MFIs seem to be shifting away from those brutal collection tactics, there is anecdotal evidence that some households have been left much worse off because they were unable to repay their loans (Roodman 2012). Moreover, it may be possible for poor households to become over-indebted when they borrow from several MFIs, or are unable to repay one loan so they take a second to pay the first and a third to pay the second and so on into financial ruin.

Loans are not the only services that MFIs offer though. Perhaps one of the most important is savings services (Ahlin and Jiang 2005; Barro 1997; Dupas and Robinson 2010; Islam 2009). Whether because of family members with little self-restraint, or friends and neighbors wanting to borrow money, poor households often have trouble holding onto their savings. A jar of money sitting on the mantle is more easily spent than money that is not easily accessible. To counteract the lack of restraint that most people tend to struggle with, poor households will sometimes ask other people to hold their savings for them, or else they loan it to somebody who needs it now, but agrees to repay before the owner will need it. The problem is that both of these mechanisms are unreliable. Collins et al (2009) reported, unsurprisingly, that loans were not repaid on time, or the person holding the money spent it. Once again, having a formal savings mechanism would remove a great deal of the uncertainty and provide a balance against

the lack of self-restraint most people suffer from. Admittedly, however, many MFIs are legally precluded from accepting deposits, and therefore are limited to micro-credit.

Hypothesis 2: Regardless of the quality of government institutions, greater microfinance outreach will lead to lower poverty levels

While my theoretical reasoning for this project focuses on the role of risk and uncertainty, which suggest hypothesis 2, the counter argument can, and has been made. Many experts have suggested that the beneficial effects of microfinance might be washed out by the harm MFIs do to some households (Karlan and Zinman 2009; Nazrul 2009; Roodman 2012). Many researchers, both in academia and those working in the private sphere, have conducted innumerable impact studies to try and determine the precise effect of microfinance. In fact, guides have been written explaining all of the things a researcher should consider when conducting an impact study. The results, however, as indicated previously, have been mixed. The results from the empirical investigation in the next chapter will by no means constitute a conclusive declaration, but will provide a baseline against which to compare models that examine the quality of institutions.

Clearly, though, when the government is properly regulating the microfinance industry and maintains appropriate, well-functioning institutions, the effect of microfinance should be even greater. Where the rule of law is strictly enforced, for example, the rickshaw taxi driver from the anecdote above would not have to forego buying his own rickshaw for fear that it would be vandalized or stolen. There are some specific institutions that might make microfinance more effective, as well as some institutional characteristics within the government that might explain microfinance

effectiveness. Some of the specific institutions that might matter because they affect risk and uncertainty include credit bureaus or similar institutions, effective law enforcement, and functioning courts. Some characteristics of governmental institutions that matter for the same reasons include the origin of the legal system, state capability, the state's approach to regulating microfinance, and political and economic stability.

The existence of credit bureaus is something that many people in industrialized states take for granted. In fact, in the United States there are three such credit bureaus which track individuals' credit histories and several others which track commercial entities' credit histories. An entire cottage industry has arisen around these institutions claiming to be able to help improve an individual's credit rating, or protecting credit ratings in the event of identity theft or other forms of fraud. In many developing states, there is no such institution. Where the government has difficulty simply tracking vital statistics and where much of the economy is in the informal sphere, tracking credit histories would be nearly impossible. When a lender knows little or nothing about a potential borrower and has no way of knowing the borrower's credit history, the lender would quickly meet financial ruin if it lent them money. For one thing, the borrower would have no incentive to repay the loan since she could simply go to another lender the next time she needed money. For another, even if the borrower were honest and genuinely planned to repay the loan, the lender still would not be able to calculate the appropriate loan size, installments and duration, or interest rate. The uncertainty would almost necessarily lead to inefficiencies, either the lender charging too much, thus hurting the borrower, or charging too little, and hurting itself.

The only assurance a borrower could offer a lender would be collateral. This could come in many forms including titles or deeds to property, or valuable possessions. The problem with this is that the poor have nothing valuable enough to use as collateral for loans of any meaningful size. Even their homes are often located on land they do not own and constructed such that their financial values are little more than a heap of scrap wood and sheet metal. As discussed before, MFIs have come up with innovative ways around these problems, but their solutions are not always ideal. For example, group lending models almost inherently require a certain rigidity in their repayment schedules since if the group were allowed to miss or delay payments, group members would have less incentive to pressure each other to make their individual contributions. Late payments by individuals and the group would spiral out of control and fall into a tragedy of the commons. The rigid schedules, though, do not allow an MFI to tailor a financial service to a specific customer's needs. Since the poor often struggle with inconsistent incomes, rigid repayment schedules reduce the utility of a micro-loan. All of this could be avoided if the MFI knew more about the individual's financial history and how well she maintained her finances, and had a mechanism for punishing defectors who do not repay loans.

Other institutions, such as the rule of law, which might also be stated as a functioning, reliable, honest police force, likely augment the effect of microfinance. The rule of law and corruption both deal with predatory behavior that distorts the market and decreases efficiency and competitiveness (Hall and Jones 1999). The rule of law mitigates violence and ensures the security of the person, protects property rights through contract enforcement and efficient institutions. It also serves as an institutional check

against government to counter the government's ability, and perhaps its incentive, to renege on agreements, regulates private capture and limits corruption by ensuring equal treatment and avoiding rent-seeking behavior (Haggard and Tiede 2011). While some people engage in productive behavior, such as farming, others might engage in predatory behavior such as stealing the farmer's crops, or bureaucratic corruption by eliciting bribes to allow the farmer to sell his crops at the local market without interference. So the rule of law should help reduce at least a portion of predatory behavior, and thereby reduce the portion of productive labor devoted to guarding against thieves and such. Likewise, corruption reduces the farmer's efficiency since bribes must be paid from what would otherwise be profits (Mauro 1995; Shleifer and Vishny 1993).

The final institution mentioned here is the court system. An efficient legal system is crucial for economic progress because it ensures that an individual has recourse if property or productive capacity should be damaged (Globerman and Shapiro 2002; Hall and Jones 1999). For the farmer described above, if somebody should manage to steal his crops, or, depending on how well established the legal system is, if there arose a dispute over a contract to sell his crops, the farmer can take the grievance to the courts for compensation. An efficient system will hear the farmer's complaints and make a decision based on the merits of the case rather than the judge's political or financial interests. This ensures the farmer that even if something bad should happen, he will be able to seek reparations. It also ensures all parties involved that they can make formal agreements in the form of contracts, and the courts are available to fairly and efficiently arbitrate disputes.

The legitimate functioning of each of these institutions should increase the poverty reduction effectiveness of microfinance. Each institution has a direct effect on the entities involved in microfinance and their proper functioning would decrease uncertainty and risk, thus making the relationships more efficient and profitable. However, it is not only the existence of certain institutions that matters. Certain characteristics of these and other institutions, indeed the bureaucracy as a whole, will likely impact microfinance.

The first of these characteristics is the origin of the legal system. The origin of the legal system has a major impact on property rights, creditor rights and the development of the banking sector (Beck 2002; La Porta et al 1999). Common law was developed in England and relies heavily on court decisions to interpret the law and protect the rights of Parliament and property owners from the sovereign and its attempts to regulate, or even expropriate (La Porta et al 1999). Civil law, on the other hand, was developed more by the sovereign, beginning with the Roman civil code and later the French civil law, to be used as an instrument of state building and economic control (Garner 2001). Beginning with Adam Smith in 1776, economists have often said that protection of property rights is crucial to a well-functioning economy. Moreover, the French legal tradition tends to be relatively rigid while the common law tradition, by virtue of allowing judges to interpret laws under unanticipated circumstances, is much more flexible. More flexibility allows the legal system to adapt to the constantly changing world while the French system does not (Beck et al 2002).[3]

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3 Germany, although it adopted a civil law tradition, embraced the need for jurisprudence and sought to create a legal system that was responsive to change. So although it is a civil law system, it more closely resembles English common law than French civil law.

In terms of microfinance this means that countries with more flexible systems will be better able to make decisions concerning disputes based on the merits of the case rather than simply relying on existing laws. Again, this has generally led to stronger protection of private property, which should give MFI customers a greater degree of certainty regarding their possessions. Perhaps more importantly, the characteristics of the common law tradition offer the MFIs greater certainty. They can be more confident that their property will be protected and that courts will recognize them as something different from a traditional, highly capitalized bank. A higher degree of certainty for the MFI allows them to operate more efficiently, and they can pass those savings on to customers in one form or another.

Another important characteristic is the degree of stability. Political and economic stability are intimately related since the government plays a major role in promoting economic stability and economic stability often plays a major role in promoting satisfaction with the government and, therefore, its longevity. Economic stability includes a whole host of variables from the stability of the currency to the stability of interest rates, exchange rates, tax rates and so on. It also includes the degree of variation in economic growth rates. All of this matters because of its effect on risk and uncertainty. The more interest rates or inflation go up and down, the less confident a micro-entrepreneur or a household can be that it is either getting a better rate now than it could if it waited a few months, or that an investment now will be an asset rather than a liability in a few months. This relationship is quite straightforward and needs little explanation or clarification. Economic stability is the justification for all kinds of economic manipulation by governments around the world. They overspend during recessions,

knowing they will have to underspend later to compensate, in effect borrowing from tomorrow's economic growth to ease today's recession (Heilbroner 1999). It is the reason governments manipulate monetary policy, because they fear deflation like the plague and rampant inflation like the flu. It was the reason for the provision of a gold standard under the Bretton Woods system (Gilpin 1987). It is all done for the sake of economic stability. The more certain an actor can be of future profits, the more efficiently she can maximize the efficiency of her investments today. Governments play a major role in promoting, even creating, economic stability and economic stability plays a major role in individual or household level financial decisions.

Stability plays an important role because it serves as the primary indicator of future conditions. If the government retains power the farmer knows more or less what to expect in terms of the costs of production and the values or prices paid for certain goods. If the government is unstable, on the other hand, the farmer's uncertainty about the future will act as a deterrent against behavior with any associated risk.

Potential customers or entrepreneurs should be more hesitant to start a microenterprise if they are uncertain whether they will be able to turn a profit and repay their loan on time if the business climate should sour (Islam 2009). What might be a safe business venture in a stable economy becomes a risk with potentially large losses, and probably no greater profits, in an unstable or unpredictable economy. The expected utility, based on the probability of success and the likely payoffs from either outcome, quickly shrinks to zero or goes into the negative when uncertainty increases risk (Driver et al 2004; Most and Starr 1989).

In traditional finance and investment, investors only make risky investments if the payoff is large enough to balance the risk. At the same time, both theory and history have shown that investing too much in a risky venture can be devastating (Ferguson 2009). Wise investors prefer, instead, to diversify their portfolios; they put some money in sure fire investments with low yield, and some in higher risk investments that might be high yield if the investment is successful. For micro-credit borrowers, however, the loans offered to them often represent large investments relative to their regular income. Since the poor, by definition, do not have other large investments, they have a lot riding on their ability to successfully improve their standard of living with the loans they take. Theory and experience both suggest that they should be very sensitive to risk (Ferguson 2009). I assume that they have good information about risk since they are presumably investing in a venture with which they are already familiar or even already involved (de Aghion and Morduch 2005).

General economic theory has been making these connections for several years (Easterly 2001; Easterly 2006; Haggard and Tiede 2011; Murphy, Shleifer and Vishny 1993; Shleifer and Vishny 1993). Although there are only a few examples of researchers making this connection in the microfinance literature (see Ault and Spicer 2009 as an example), the FDI literature has clearly established the empirical link between the quality of government institutions and investment, both in terms of its prevalence and its success (Driver et al 2004; Daude and Stein 2007).

An uncertain market is typically not one that attracts investment because investors find it more difficult to predict their expected utility. That is to say, with any investment there is a risk of loss. Generally the return on the investment, call it a payoff, must be

high enough that an investor is willing to take the risk, which might also be called the possibility of failure. A safe bet, such as a US treasury bill, which carries virtually zero risk, pays little interest so the payoff is small (Ferguson 2009). On the other hand, investing in a start-up technology company is quite risky, but the potential payoff is quite large. When the market experiences high uncertainty it is, by definition, difficult to calculate the risk. In terms familiar to quantitative scholars, risk is a point estimate while uncertainty is a confidence interval. Political instability might both cause the confidence interval to expand and change the point estimate of the risk, although it is impossible to know by how much since the confidence interval is even larger than normal. Stated another way, when there is little instability an investor knows what he does not know, risk, but when uncertainty is high, the investor cannot be sure about what he does not know. Uncertainty generally compels investors to delay investment while they gather additional information (Cukierman 1980). This is especially true for poorer individuals who might be risking a great deal when they take a loan from an MFI (Binswanger 1980). I expect microfinance to be no exception.

Hypothesis 3: The higher the quality of governmental institutions, the greater the poverty reduction effect of microfinance.

> *hypothesis 3a: the existence of a credit bureau should increase the poverty reduction effect of microfinance*
>
> *hypothesis 3b: the higher the institutional quality of the police force in a country the more effective microfinance should be for poverty reduction*
>
> *hypothesis 3c: the higher the institutional quality of the court system in a country the more effective microfinance should be for poverty reduction*
>
> *hypothesis 3d: states with English and German legal origins should reap greater benefit from microfinance than states with French legal origins*
>
> *hypothesis 3e: states whose laws and regulations promote microfinance should see greater benefit to the poor than states that focus exclusively on*

protecting the poor from MFIs

hypothesis 3f: states with greater economic/political stability should see more poverty reduction from microfinance than less stable states

Conclusion

In chapter one I raised a research question; how might a government affect whether and how much microfinance reduces poverty? This chapter discussed the mechanisms by which governments could be influencing the microfinance industry and how it influences the lives of the poor. Risk and uncertainty are key to understanding these relationships. They are an integral part of any rational investment decision, whether made by a bank or non-banking financial institution (NBFI), an enterprise, or a household. All must ask themselves, 'what if the worst should happen?' The response to such a question, along with its associated probability and the expected utility of the investment, colors the investor's willingness and expectations. I make the case that greater certainty leads to more efficient investments and vice versa.

The key point made in this chapter, though, is that governments can have a major impact on uncertainty and risk. The quality and functioning of institutions such as credit bureaus, police forces and legitimate courts decrease risk. Likewise, the institutional characteristics within the state matter too. Such characteristics as legal origin, and political/economic stability can change the risk calculus as well.

In the next two chapters I will test these relationships using empirical data. In chapter four I rely on quantitative data sets to perform large N statistical analyses of the hypotheses and in chapter five I elaborate on the mechanisms and relationships discussed in this chapter through a case study analysis. Together they will provide some

information about whether or not governments affect microfinance through their institutions, and if so, how.

CHAPTER 4

Quantitative Analysis

In the case of microfinance, it seems very likely that the quality of governance at the state level, and the institutions and conditions within which the MFIs must operate, influence the intended outcomes of microfinance. However, it would also be very interesting to find that governance does not affect microfinance. I find mixed results. Some hypotheses are supported by the empirical evidence while others are not supported. More precisely, political institutions and political stability do not seem to have a much effect on microfinance, but economic and financial stability do.

Operationalizing Microfinance, Governance and Poverty

Before moving on to discuss the data and results, I will first explain how the concepts discussed in the previous chapter will be measured for the analyses below. Key to the theory detailed in chapter three is the concept of microfinance. Discussing microfinance as a component of a dynamic relationship is simple, but measuring it is a bit more difficult. Many past studies, when they discuss microfinance, focus on the strength of the industry. Scholars have looked at microfinance profitability, durability, loan repayment information, and much more (Brau and Woller 2004; de Aghion and Morduch 2005; Schicks 2007; Ault and Spicer 2009). The relationships described in the previous chapter are clearly focused on individual level effects for the microfinance customers. Measures of industry wide characteristics, then, are inappropriate for this analysis.

Microfinance can impact individuals in two ways. First, it matters whether or not individuals who want loans are able to get them. Some sort of measure that captures, if not the precise probability that the individual gets a loan when she needs it, then an approximation of that data. Getting the perfect data would require an extremely extensive survey of not only microfinance customers, but also non-customers who might or might not have desired a loan at some time. Such an undertaking would be very useful, but is beyond the scope of the current project. For now, I approximate this data by examining the number of borrowers within the microfinance industry as a percentage of the total population of each country in each year.

Admittedly, there are problems that make this measure less than ideal. For example, many customers, depending on the MFI and the country, might take and repay multiple loans in a given year, possibly from multiple MFIs. That is not captured by this measure. It also does not provide any information about people who would like to get a loans, but are unable to do so. On the other hand, it is a useful measure because it provides an indication of how extensive the microfinance industry is. Where the industry is tenuous, few loans will be offered to fewer customers. A country where relatively more people are able to secure loans indicates that loans are relatively easier to get. Therefore, this measure approximates the desired information.

Another characteristic of microfinance that is important for this analysis is how meaningful those loans are. Where the industry is weak or nascent and lacks resources, loans are likely to not only be less common, but smaller too (de Aghion and Morduch 2005; Roodman 2012). The MFIs are unable to open additional branches, advertise their services, or offer more loans. Where the MFIs have the resources, though, the

microfinance industry can grow according to demand. The value of assets across the entire microfinance industry within a country-year captures this nicely. To keep the measure consistent across states, it is divided by GDP to account for variations in the size of economies.

Table 4.1: Summary Statistics I

Variable	Observations	Mean	Standard Deviation	Min	Max
Infant Mortality	420	27.893	13.442	7.7	83.5
Improved Sanitation	405	73.689	18.157	18	100
Improved Water Source	405	87.499	7.881	52	100
Risk for Exchange Rate	549	7.353	2.608	0	10
Risk for GDP Growth	546	6.349	2.360	0	10
Risk for Inflation	512	6.432	2.656	0	10
Risk for per capita GDP	549	1.943	1.056	0	8
Imports	400	18932.22	43928.33	210.57	339464
Exports	400	18524.85	41021.57	91.37	291343
FDI	432	0.031	0.041	-0.192	0.398

Both of these indicators, as well as the measure of outreach – or the degree to which MFIs are servicing the very poor or rural populations, as opposed to the not-so-poor, nearly-poor, and urban populations – used to test *hypothesis 2* all come from one of the primary source of data on microfinance; the Microfinance Information Exchange (MIX). The MIX collects extensive data on microfinance institutions from around the world. Most of the data is self-reported, though it is often spot-checked to verify its accuracy. It is possible that this data collection process may introduce some skewed information, but it is widely regarded as valid and commonly used in microfinance research (de Aghion and Morduch 2005; Ault and Spicer 2009; Morduch 2010; Thapa

2010). If there is any bias in the data, it is likely only a slight under-representation of smaller MFIs (Demirguc-Kunt and Morduch 2011).

These are the key explanatory variables, but there are other important concepts whose operationalizations deserve discussion. Beginning with *hypothesis 1*, in sub-hypothesis A economic stability is captured using two indicators, inflation of consumer prices and and GDP per capita growth, in other words, the change in GDP from the previous year. To test sub-hypothesis B I use two indicators to capture the quality of economic relationships; they are international trade, both imports and exports, and FDI flows. In sub-hypothesis C the percentage of the population with access to improved sanitation facilities and improved water sources are used to capture the quality of infrastructure in the state.

I use factor analysis, a latent variable model, to simplify these concepts from several indicators down to a single measure for each. The logic behind factor analysis is that there is a latent variable that causes the indicators that are directly measured. From the data on the indicators it is possible to get an idea of what the latent variable driving the indicators looks like (Agresti and Finlay 2002). It is then possible to test the concepts against one another without getting lost in how one indicator might affect another indicator.

The ratio of female to male primary enrollment is a proxy for the quality of educational opportunities for sub-hypotheses D. Finally, public health expenditures as a share of total health care costs proxies for the extent of social safety nets in a state. All of these data come directly from the World Bank or the Penn World Tables (Heston, Summers and Aten 2012).

Table 4.2: Factor Loadings and Uniqueness

	Infrastructure	Economic Stability	Economic Relations
Improved Sanitation Facilities	0.786 0.383		
Improved Water Source	0.786 0.383		
Risk for Exchange Rate		0.807 0.350	
Risk for GDP Growth		0.773 0.402	
Risk for Inflation		0.647 0.582	
Risk for Per Capita GDP		-0.343 0.883	
Imports			0.986 0.028
Exports			0.982 0.037
FDI			0.764 0.416

Note: factor loadings above and uniqueness below

In testing hypothesis 3 I draw on the World Bank for data on private and public credit bureau coverage; the World Bank's World Governance Indicators for the rule of law indicator; the Economist Intelligence Unit for measures of the microfinance regulatory environment (Economist Intelligence Unit 2011); and the commercially produced International Country Risk Guide for measures of political, economic, financial and composite risk.

All of these data are collected to test the variables' hypothesized relationships on poverty. While poverty seems like a simple concept at first blush, measuring it turns out to be a bit complicated. The first hurtle any measure of poverty must address is what poverty line to adopt. For example, the national poverty line in a developed state, such as a the US, is far different from the poverty level in an under-developed, sub-Saharan African state. Some scholars and organizations rely on global poverty lines of perhaps $1/day per person, or $1.25 or $2. Others rely on official national poverty lines. Still more create their own poverty measures based on measures of the cost of living or of average income (*see* Brau, et al 2004; *or* Imai, et al 2012 *for a thorough discussion of poverty measures*).

After solving how to account for the varying cost of living around the world, the next challenge is to address the depth of poverty. Having a large population slightly below the chosen poverty line who struggle to make ends meet, but in the end only occasionally have to skip meals or delay seeking medical help when needed is probably not the same as having a large population far below the same poverty line. Those far below the poverty line will likely miss far more meals, and might never be able to seek qualified medical assistance when needed. Poverty has at least two dimensions, breadth and depth. Measuring either one is complicated by the tendency for poor in most developing economies to engage heavily in the informal grey market, where transactions are not tracked or reported. Capturing one of these dimensions precisely is difficult enough, but capturing both is a herculean task.

An elegant solution has been suggested by respected scholars though (Girod 2011). Rather than attempt to measure poverty based on income, I follow these innovative

scholars and measure the direct effects of poverty. Infant mortality is directly affected by all aspects of poverty. People living slightly below the poverty line have higher-than-normal infant mortality rates, and infant mortality rates for those who are far below the poverty line are higher still. Moreover, infant mortality rates are much easier to track than income based measures of poverty.

Results

The theory developed in the previous chapter suggests a relatively complex set of results. There are three relationships that it addresses and for which it generated testable hypotheses. The first relationship is between government and poverty, the second is between microfinance and poverty. The third relationship is the joint relationship of government and microfinance on poverty. Each relationship and each hypothesis is tested and results are discussed in turn.

The Simple Effect of Government

Recall from the previous chapter that hypothesis 1 addressed the effect of government on poverty and had several sub-hypotheses. The hypothesized relationships are born out by the data. Table 4.3 shows the regression results. The first sub-hypothesis is that greater economic stability decreases poverty. The Economic Stability factor is significant and has the expected sign. That is, greater economic stability leads to lower infant mortality. It is difficult to get a direct interpretation of the factor since the latent variable is not directly measured, but increasing economic stability from its mean to +1 standard deviation is predicted to decrease infant mortality by 2.33.

Economic relations have a statistically significant, though substantively very small effect on infant mortality. Infrastructure, on the other hand, has a rather large effect. Significant at the 0.001 level, the same standard deviation increase in the infrastructure variable yields a predicted decrease of 9.79 deaths per thousand live births.

Table 4.3: The Effects of Institutions on Poverty

	Mortality rate, infant (per 1,000 live births)	Effect of +1 S.D. change
Economic Stability	-2.649***	-2.33
	(0.758)	
Economic Relations	-0.413*	-0.41
	(0.168)	
Infrastructure	-11.54***	-9.79
	(0.810)	
Health expenditure, public (% of total health expenditure)	0.0762	1.03
	(0.0404)	
Ratio of female to male primary enrollment (%)	-0.726***	-2.79
	(0.185)	
Constant	94.58***	
	(17.63)	
Observations	227	
Adjusted R^2	0.663	

Robust Standard Errors in parentheses; *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Educational opportunities also matter. Increasing the ratio of female to male primary enrollment is expected to lead to a decrease of .726 in infant mortality. To put that into context, the same standard deviation increase as has been discussed in connection with the factor variables, is predicted to yield a decrease of 2.79 in the

dependent variable. This makes sense, of course, since the more educated women are the better their prospects for employment and the more information they have about anatomy and biology, and healthy choices for themselves and their babies, the more likely they are to be able to take care of themselves and their babies.

Finally, public health expenditures, as a portion of total health expenditures, proxies for social welfare policies. Surprisingly, it is not quite statistically significant at the 95% level. The relationship may be suggestive, but the substantive results are modest. The standard deviation increase is only expected to decrease infant mortality by little more than one.

Table 4.4: Summary Statistics II

Variable	Observations	Mean	Standard Deviation	Min	Max
Economic Stability	507	0	0.881	-2.254	1.250
Economic Relations	392	0	0.990	-0.441	6.896
Infrastructure	405	0	0.848	-2.983	1.388
Health Expenditure	320	54.53	13.508	23.808	90.805
Ratio of enrollment	331	97.62	3.657	85.560	114.935
MF Assets	573	0.010	0.028	0	0.299
Number of Borrowers	573	7.370	18	0	114.602
Out Reach	573	0.240	0.441	0	2
Foreign Aid	420	0.050	0.098	-0.005	0.830
FDI	432	0.030	0.041	-0.192	0.398
Polity2	323	7.501	1.958	-3	10

All of this suggests strong support for Hypothesis 1, that governments with good institutions will have less poverty than governments with poor institutions. Although the substantive effect for sub-hypothesis B on economic relations was rather weak, and the test on social policies was not conclusive, the results strongly supported the notion that institutions matter and some types of institutions matter a lot. At this point it is clear that in order to study the effect that government institutions might have on microfinance's impact on poverty requires that the direct effect those institutions have on poverty must also be accounted for in order to get a more accurate result.

The Simple Effect of Microfinance

Knowing that government institutions affect poverty, it is now important to determine whether microfinance also reduces poverty, as so many scholars and practitioners have suggested. Many scholars have suggested that microfinance reduces poverty, even under the worst political conditions (Dowla and Barua 2006; La Torre and Ventino 2006). If this is true it would be unique in many ways. Other common poverty reduction techniques depend on the cooperation and smooth functioning of the recipient government. Development aid, for example, has been found by some to help in certain situations (Sachs 2005; Manor ed. 2007) while others argue that it never really helps (Easterly 2006; Hubbard and Dugan 2009). The benefits of FDI for improving economic growth and development have been well-documented (Barro 1993; Collins et al. 2009; Dutta and Roy 2010). Hypothesis 2 is that microfinance reduces poverty, regardless of the quality of government institutions. That is, while it might be more or less effective under certain conditions, it will reduce poverty under all conditions.

The empirical results show that the hypothesis is also strongly supported. The number of borrowers remained highly significant and negatively related to infant mortality across dozens of specifications. Table 4.5 shows the results of a baseline model for further analysis of the microfinance-poverty relationship under different political institutions. It is noteworthy that microfinance assets is positive and highly significant. That is, a larger number of borrowers is negatively related to poverty, but high value MFIs are positively related to poverty. The literature suggests that receiving a small loan might help a struggling family a little bit today, but larger loans, or at least access to larger loans, would be more meaningful in the long run. This does not seem to be the case. Rather, it might be that simply having access to loans creates a degree of security for the borrowers, allowing them the flexibility and security to take more risks that could be financially beneficial because they know they have the loans they can fall back on for insurance (Collins et al 2009).[1] In fact, larger average loan balances might suggest a couple of things. First, it might be that the customers are struggling financially more than normal, and so are taking more and larger loans. In other words, it is not necessarily the case that the loans are making them worse off, but rather, because they are worse off, they need or want larger loans so that the relationship is reversed; poverty attracts higher value MFIs. Second, it might also suggest that there are some customers who are ill-equipped to manage their finances, so taking loans does leave them worse off because they use the

[1] Average loan balance is divided by GNI per capita to control for variations across economies, so it is not simply an issue of the variable somehow acting as a proxy for the strength of the economy, and, therefore, development.

loans unwisely, producing no growth, and then have to repay interest too, which increases financial strain.

Table 4.5: The Effects of Microfinance on Poverty

	Mortality rate, infant (per 1,000 live births)
MF Assets	137.4***
	(34.26)
Number of Borrowers	-0.168**
	(0.0520)
Out Reach	2.461
	(1.273)
Foreign Aid	82.11***
	(8.062)
FDI	-21.32
	(17.05)
Polity2	-1.092***
	(0.314)
Constant	30.48***
	(2.401)
Observations	304
Adjusted R^2	0.346

Robust Standard Errors in parentheses; *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

This finding contradicts the findings of Roodman (2012) and many of the studies he cites which find that microfinance has no statistically significant effect on poverty reduction. The question is where the difference comes from. The randomized controlled trials (RCTs) appear scientifically sound. They generally work with an MFI that is going to offer services to a segment of the population that has not previously had access to formal financial services, generally because of geography. Of those potential customers

who apply for loans, they randomly assign some to a control group that receives no loans, and others to test groups who receive loans. After a certain period of time, they ask the customers questions about physical or financial well-being. Roodman argues that most RCTs find no effect or, in a few cases, a slight effect, but in the wrong direction (see Karlan and Zinman 2009 as an example).

Table 4.6: Summary Statistics III

Variable	Observations	Mean	Standard Deviation	Min	Max
Private Credit	152	40.53	31.78	0	100
Public Credit	155	12.32	11.38	0	37.9
Law and Order	549	2.73	1.13	0	6
Political Risk	530	60.8	10.96	30	83
Economic Risk	549	31.37	6.43	2.5	44.5
Financial Risk	549	32.32	8.09	6	46
Composite Risk	549	62.09	11.03	26	83

There are some problems with RCT research designs that are not immediately apparent though. RCTs can only be performed in areas that have not had access to microfinance in the past or there is risk of contamination. That is, customers who are denied loans during the experiment may have already received loans in the past and are doing well despite not receiving a loan through the RCT rather than because they did not receive the RCT loan (Odell 2011). Contamination might also occur within even the most carefully designed RCT. Collins et. al. (2009) showed that within poor communities, a loan made to one person might benefit someone else through lending on or repayment of previous private loans.

For similar reasons, RCTs nearly always operate on short time frames because it is difficult to withhold microfinance for a long time. This casts doubt on the validity of an RCT over a longer term because it may be that it takes a while before the effects of the loan, such as a growing micro-enterprise, are felt (Odell 2011). Meanwhile, more and more of the control group are likely to get access to other sources of financial services. Therefore, RCTs cannot look at aggregate effects. They look only at a specific geographical region for a relatively brief time frame. Eliminating poverty is generally, by all indications, a long, slow, cumbersome process that can be affected by dozens of other variables, both cross-sectionally and over time. Only by looking at the relationships over several years and across many instances can we create an accurate picture of the intricate relationships involved.

Interactions Between Government and Microfinance

The next question is whether the quality of governance and institutions modifies the effect of microfinance for the poor. Hypothesis 3 has several sub-hypotheses that address different aspects of this question. The first states that the existence of a credit bureau should increase the poverty reduction effect of microfinance. The argument here is based on the availability of information. The more a MFI knows about a potential customer, the better able they are to efficiently allocate loans and to avoid risky borrowers. This allows them to offer loans to more prospective customers when they do not have resourced tied up in delinquent loans.

It is also a benefit to the customers because the MFIs are able to help avoid over-indebtedness. Some customers might know how much they can afford to borrow, but many might not know what a safe debt-to-income ratio might be. Having a functioning

credit bureau would help the MFI better serve the customers' needs. Also, having a functioning credit bureau would allow MFI customers to court different financial service providers. A customer might start with one MFI that offers small loans, then move on to another institution that offers larger loans once the customer has proven herself a reliable borrower. Some scholars argue that graduating borrowers to larger loans with more profitable terms as income grows should be an objective of all MFIs (Ahlin and Jiang 2005). Microfinance is for the poor to relieve the pain of poverty and to help remove them from poverty. If this is to happen, at some point they will need financial services from other institutions, but in order to be considered for financial services, they will need some way of proving that they are a reliable customer.

Credit bureaus can be either publicly operated or privately operated. Both public and private credit bureaus are negatively associated with infant mortality, as shown in the first column of Table 4.7. Regardless whether the credit bureau is public or private, knowledge about borrowers should make the system more efficient. To test this relationship the second and third columns on Table 4.7 include interactions between credit bureau coverage and the number of microfinance borrowers.[2] Neither interaction term is significant, suggesting that, while credit bureaus might be helpful for commercial lending, they do not change the poverty reduction effect of microfinance.

[2] Interactions with *Assets* were also performed but were not significant. Since *Assets* was not significant in the baseline model, that interaction is not reported. Results were similar to those reported, though less statistically significant.

Table 4.7: Hypothesis 3; Credit Bureaus and Law and Order

	Credit Baseline	Private * MF	Public * MF	Law and Order	Law * MF
MF Assets	128.4***	122.5***	126.3***	135.7***	136.1***
	(20.07)	(21.43)	(22.29)	(33.57)	(33.65)
Number of Borrowers	-0.0701*	-0.0835	-0.0657	-0.147**	-0.124
	(0.0304)	(0.0444)	(0.0491)	(0.0471)	(0.106)
Private credit bureau coverage (% of adults)	-0.0626***	-0.0768***			
	(0.0182)	(0.00471)			
Public credit registry coverage (% of adults)	-0.187***		-0.231***		
	(0.0475)		(0.0681)		
Number * Private		0.000201			
		(0.000704)			
Number * Public			0.000305		
			(0.00217)		
Law and Order				-1.668**	-1.592*
				(0.568)	(0.655)
Number * Law					-0.00747
					(0.0319)
Foreign Aid	49.13***	54.82***	66.40***	83.54***	83.90***
	(11.54)	(12.19)	(12.31)	(8.007)	(8.164)
FDI	-72.45***	-68.09***	-77.88***	-15.05	-14.86
	(15.95)	(16.91)	(17.68)	(16.98)	(17.02)
Polity2	0.203	0.0961	-0.0944	-0.964**	-0.963**
	(0.301)	(0.333)	(0.324)	(0.317)	(0.317)
Constant	23.46***	22.85***	23.42***	34.90***	34.62***
	(1.989)	(2.120)	(2.195)	(2.481)	(2.743)
Observations	127	127	130	304	304
Adjusted R^2	0.604	0.553	0.560	0.357	0.355

Panel Corrected Standard Errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4.8: Hypothesis 3; Political, Economic, Financial and Composite Risk

	Political Risk 1	Political Risk 2	Economic Risk 1	Economic Risk 2	Financial Risk 1	Financial Risk 2	Composite Risk 1	Composite Risk 2
MF Assets	122.1***	141.9***	127.5***	121.0***	124.9***	105.1**	126.7***	130.6***
	(33.47)	(35.69)	(33.78)	(33.48)	(33.90)	(34.63)	(33.61)	(33.03)
Number of Borrowers	-0.142**	-0.661*	-0.123**	-0.604***	-0.124**	-0.583**	-0.129**	-1.328***
	(0.0471)	(0.334)	(0.0470)	(0.179)	(0.0474)	(0.198)	(0.0468)	(0.352)
Political Risk Rating	-0.233**	-0.307**						
	(0.0887)	(0.100)						
*Number * Political*		0.00792						
		(0.00505)						
Economic Risk Rating			-0.207	-0.397*				
			(0.144)	(0.158)				
*Number * Economic*				0.0140**				
				(0.00502)				
Financial Risk					-0.120	-0.120		
					(0.140)	(0.140)		
*Number * Financial*						0.0127*		
						(0.00531)		
Composite Risk							-0.229*	-0.410***
							(0.109)	(0.119)
*Number * Composite*								0.0176***
								(0.00513)
Foreign Aid	78.69***	77.53***	72.39***	74.63***	79.41***	83.62***	71.12***	74.77***
	(7.923)	(7.938)	(9.422)	(9.351)	(9.264)	(9.359)	(8.915)	(8.821)
FDI	-12.93	-13.61	-18.03	-16.35	-19.89	-18.94	-15.39	-14.45
	(17.15)	(17.11)	(17.13)	(16.95)	(17.14)	(17.01)	(17.15)	(16.85)
Polity2	-0.747*	-0.716*	-1.137***	-1.025**	-1.199***	-1.188***	-0.970**	-0.853**
	(0.352)	(0.352)	(0.313)	(0.312)	(0.313)	(0.310)	(0.327)	(0.323)
Constant	43.85***	48.52***	38.67***	44.18***	32.13***	36.01***	45.89***	57.16***
	(5.077)	(5.875)	(5.218)	(5.528)	(5.526)	(5.717)	(7.029)	(7.643)
Observations	304	304	304	304	304	304	304	304
Adjusted R^2	0.353	0.356	0.343	0.357	0.338	0.349	0.348	0.371

Panel Corrected Standard Errors in parentheses, $*p < 0.05$, $** p < 0.01$, $*** p < 0.001$

The fourth column of the same table shows that Law and Order affects poverty. Where the police enforce laws and the courts punish violators, infant mortality rates are lower. The results are robust. Stronger rule of law and more microfinance customers both drive down infant mortality rates. However, there does not appear to be any interaction between the two. As with credit bureaus, including the interaction term does not change the substantive results for the individual effects, and it reveals that neither significantly modifies the others' relationship to the outcome. Sub-hypotheses 3a and 3b are unsupported by the data.

One of the primary assertions from chapter three was that political instability, with all of its uncertainty and market disruption, is expected to undermine microfinance effectiveness. The models in Table 4.8 test this assertion using four different indicators of stability. The expected result is that microfinance will be significant and negative, as will the measures of stability, and the interaction terms will be significant with either positive or negative coefficients.

Political Risk, Economic Risk, Financial Risk, and Composite Risk, all purchased from the commercially produced *International Country Risk Guide* are all used to examine the key hypothesis of this study, that greater or lesser stability, at the micro-level changes the way microfinance customers use their loans. All four measures are highly negatively correlated with poverty. The interaction terms, which are the real tests of the theory, are mostly significant too. Since the risk variables are index measures, and therefore have no direct interpretation, I again rely on standard deviation increases to compare the effects of different types of risk.

Beginning with political risk, lower political risk, that is, higher values on the risk rating, significantly decreases poverty. Political risk rating has the largest substantive effect of the three individual risk ratings. A one standard deviation increase in the risk rating, that is stability, is predicted to decrease the dependent variable by 6.512, compared to Economic Risk Rating (5.518) and Financial Risk Rating (3.907). The composite rating has the largest effect though, at 8.264.[10] All of these are meaningful though, and compare favorably to the results show in Table 4.7.

The interaction terms for economic risk, financial risk and composite risk are statistically significant at the .05 level. Figures 4.1 - 4.4 show the microfinance-poverty relationship broken down by risk levels for each type of risk. While the theory laid out in chapter three suggested that more stable conditions should help microfinance to better alleviate poverty, that does not appear to be the case. In fact, the reverse is true. In Figure 1, the lines are relatively flat for all levels of risk except *Very High Risk*, which has a steep downward slope. In other words, under conditions of great political uncertainty and risk, microfinance helps alleviate poverty more than in more stable conditions.

This appears to be more or less the case for economic stability too; where only *very high risk* is clearly discernible from other levels of risk. It appears that only under conditions of very high economic risk does microfinance decrease poverty. Figure 3 supports this same finding, although here it appears that *high risk* is also discernibly different from the lower levels of risk. The results for composite risk as represented in

[3] Based on parameter estimates for the models that include the interaction terms.

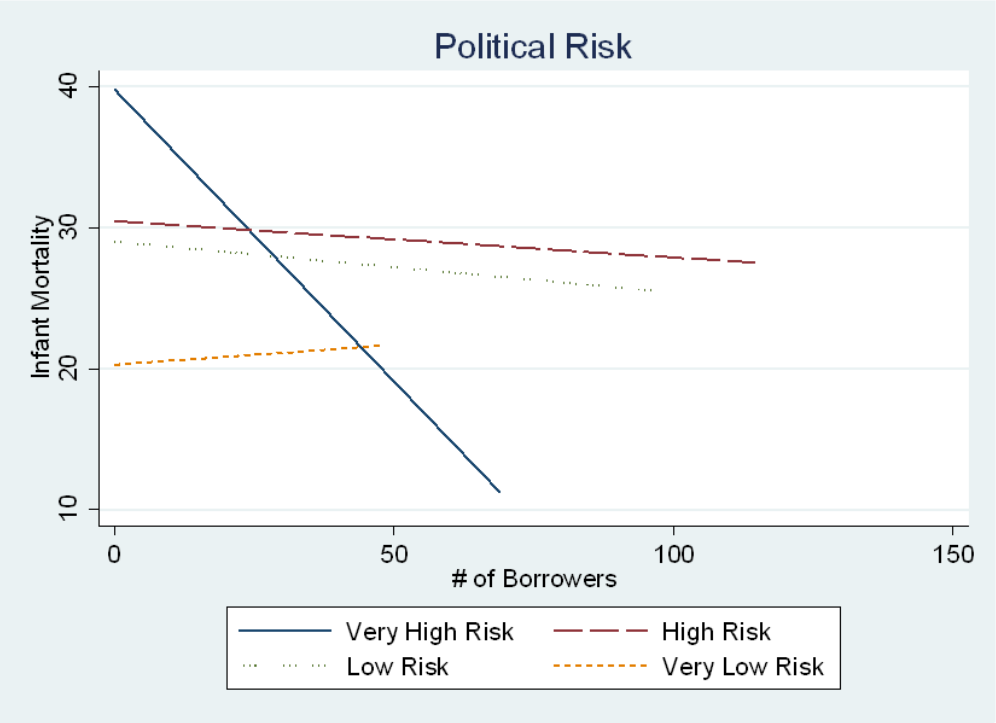

Figure 4.1 Political Risk

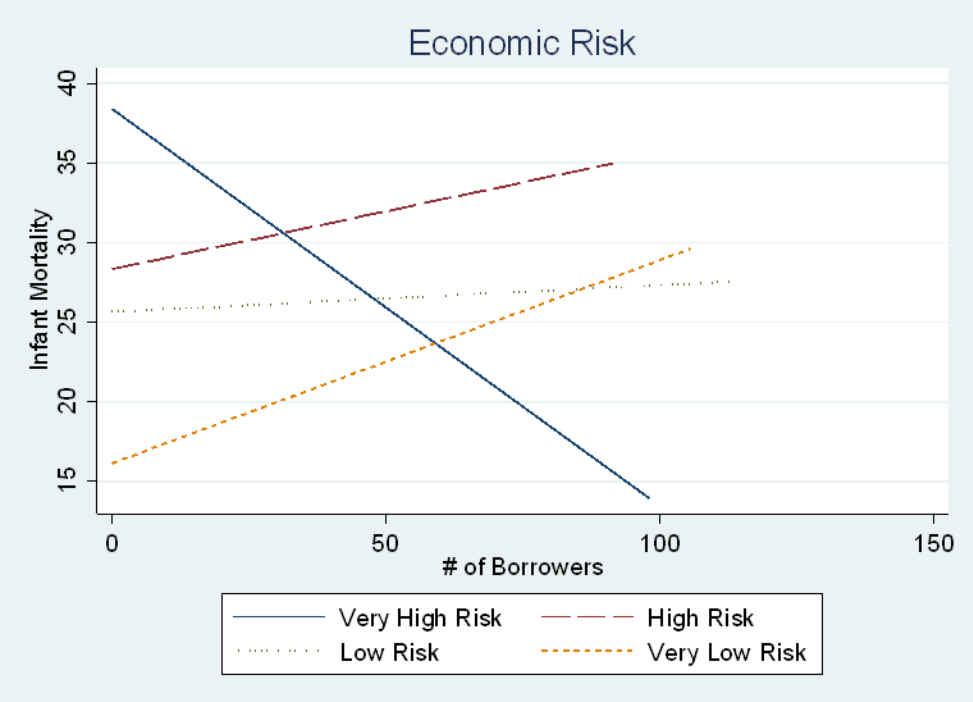

Figure 4.2 Economic Risk

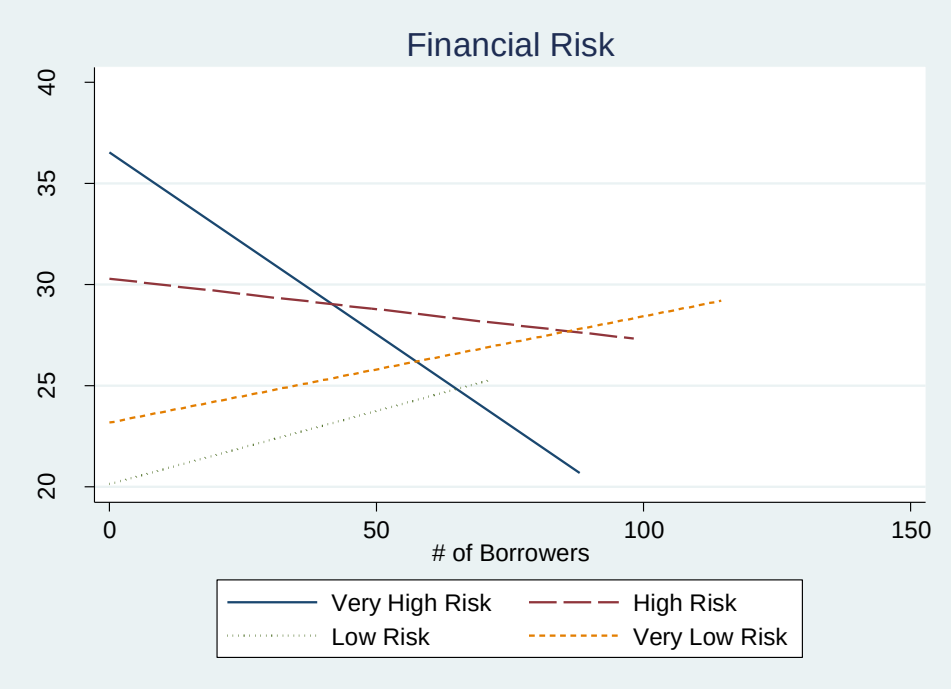

Figure 4.3 Financial Risk

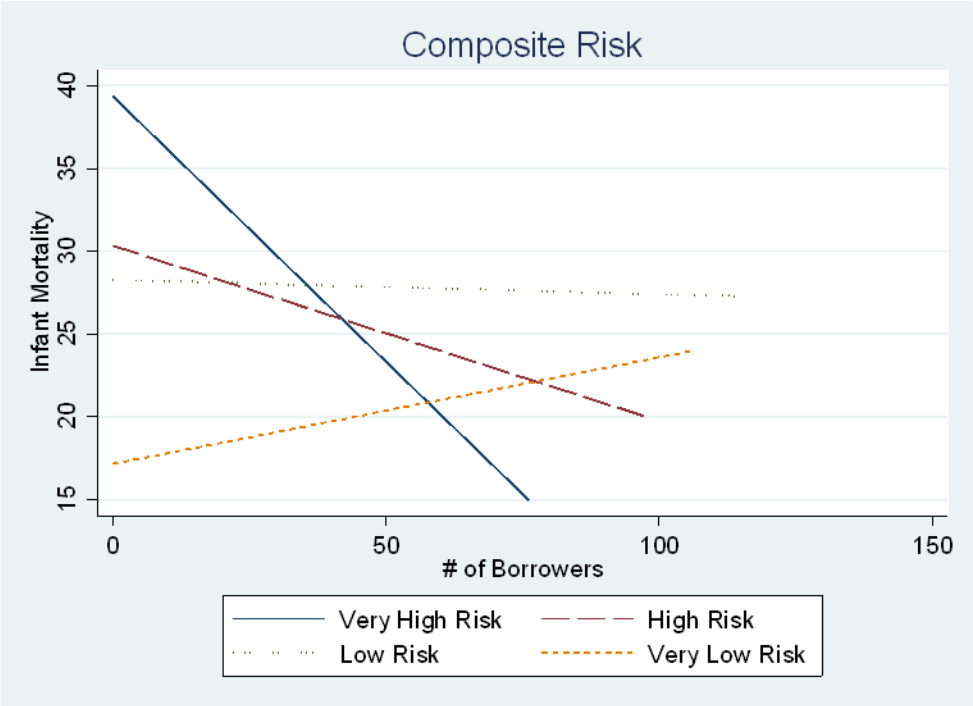

Figure 4.4 Composite Risk

Figure 4 tell the story most clearly though. The highest level of risk has the strongest negative relationship between infant mortality and the number of borrowers. The relationship is flatter for each successive increase in the level of risk rating until, finally, the lowest level of risk rating actually shows a clearly positive relationship between risk and poverty.

Discussion

Tests of hypothesis 1 reinforce that there are a host of economic and policy variables that affect poverty as measured by infant mortality. They generally have the expected relationships. In a nut shell, more stable, better functioning states have less poverty. In the context of the theoretical argument laid out in chapter three, well-functioning government and poverty tend to be significantly, negatively correlated. The theory would suggest that the relationship is causal, that poor governance and instability make actors more cautious and require more hedging to avoid overwhelming losses if inflation should spike or if a primary income earner in the household should find herself out of work.

Microfinance affects poverty too. The evidence up to this point, based on theory, suggests that greater stability and certainty about the future allows borrowers to better utilize microfinance. At first glance, the logical conclusion is that microfinance should be most effective when it is unhampered by instability. The empirical evidence does not bear this out though. Rather than finding that greater stability and lower risk allow for more efficient use of microfinance, it seems that greater risk and instability create the conditions under which microfinance has a detectably positive impact on poverty.

It might be that where instability is high the composition of microfinance customers is different. The instability causes uncertainty and the uncertainty makes borrowing too risky for the very poor because, although the loan might still be successful, the greater margin of error, and consequently, the lower expectation of success deters those who would be risking the most. The nature of microfinance is that MFIs must streamline the lending process in order to be self-sustaining and avoid charging inaccessibly high rates and fees. This means that loans are offered in predetermined sizes, without discriminating based on income or assets. In other words, the very poor and the not-so-poor get the same size loans. The not-so-poor could see the loan fail and perhaps still recover while the very poor might be borrowing too much to be able to recover from if the loan fails. So when instability is high, the very poor are less likely to borrow from MFIs and the not-so-poor might be more likely to borrow from MFIs because the loans are smaller than those likely to be offered by traditional commercial lenders. This could be important because, the not-so-poor are more likely to have the skills that will allow them to make better use of the loans (Getubig et al 2000). Having those skills might allow them to get or keep the virtuous circle moving forward (Remenyi 2000; Easterly 2001).

It might also be that for most microfinance investments an investor cannot be sufficiently confident of a positive outcome to make an investment under instability, but the most profitable investments might still balance out the risk involved. This works on the same principle as the person who only buys a lottery ticket when the jackpot climbs above $200 million. The investor knows that it is risky, but the possible reward is tempting enough to take the chance.

The difference is that when playing the lottery the investor knows her probability of success. The only uncertainty is how many other winners she might have to split the winnings with. Microfinance under political instability has a good deal more uncertainty. The investor might not know the answer to simple questions like whether the local market will be open when she is ready to sell her product or to larger questions like whether the police will confiscate her goods, whether she will have to flee violence or whether the government itself will be functioning in the future.

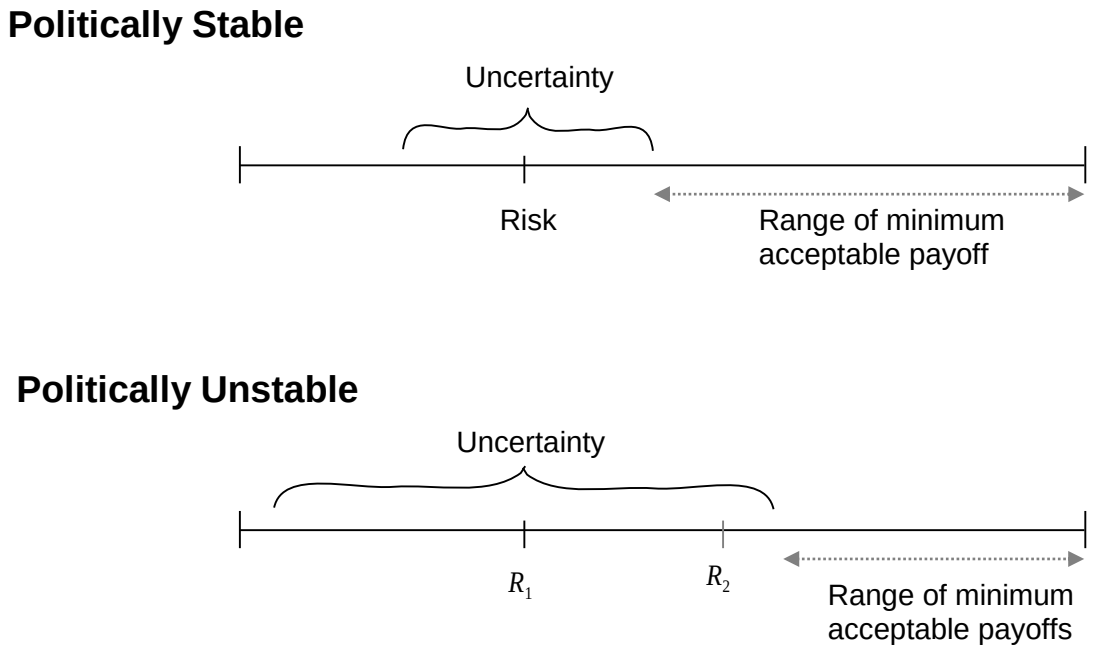

Figure 4.5 Stability and Risk

From the investor's perspective uncertainty effectively transforms risk in the risk-reward balance from a point to a range. The investor has to assume that risk – specifically the risk of, or the probability of, failure – might be anywhere in that range and will only

invest if she thinks the potential payoff is large enough to balance risk if risk is at the high end of uncertainty. It is possible that risk has increased along with political instability and uncertainty although it is not necessarily so. Risk might remain the same while only uncertainty increases. Uncertainty, then, obscures the true risk. The investor, by definition, cannot know where in the range of uncertainty the risk point lies. The result is that microfinance customers in an unstable regime are actually likely to make more beneficial, although fewer, investments than under a politically stable regime. The MFI is unable to know the payoff for any given investment, so it falls to the borrower to determine whether the payoff outweighs the risk and uncertainty. When it does, she will take the loan. Fewer people, then, should be taking loans under political instability, but those that do should see just as high a rate of success and the success should be greater because this selection mechanism favors the most profitable investments. The effect on poverty is that fewer people will benefit, but their rewards will be greater.

A third possible explanation for the results is that borrowers rely on microfinance as an informal insurance mechanism. They use loans to fill troughs in the income and repay loans at peak income levels. Where income is most uncertain, that is, under conditions of high political or economic risk, households desperately need help smoothing their income distribution. Microfinance fills that gap, and in so doing dramatically improves the quality of life for the savvy MFI customers. Finally, it is also possible, of course, that more than one of these effects is at play simultaneously.

Conclusion

This chapter tested, and found evidence for, the hypothesis that the quality and effectiveness of political institutions affect poverty directly, as well as the relationship

between microfinance and poverty. Both were found to be rather robust. The primary contribution of this project, though, is examining how governance affects the relationship between microfinance and poverty reduction. The results did not support the theoretical expectation that greater stability would lead to a stronger downward effect of microfinance on poverty. Instead, it seems to be under conditions of instability where microfinance has the strongest negative effect on poverty.

This finding might be explained as an artifact of potential borrowers' risk assessment under uncertainty. Unfortunately, however, the data is not fine grained enough to tease out those effects. Testing the explanations proposed above will likely require studying the phenomenon at the individual level. In the next chapter I will examine these relationships in the Brazilian context.

CHAPTER 5

Microfinance In Brazil: A Case Study

Results from the previous chapter indicated that microfinance most effectively reduces poverty under conditions of uncertainty about the future; that is, where risk for political, economic or financial instability is high. The theory described in chapter three suggested that because risk increases uncertainty about the future, potential clients should be wary of undertaking ventures, such as microloans, when risk is high because it could lead to financial problems down the road when loan payments are due. If a potential client does not pursue a microloan because risk is high and the future is uncertain, she might be avoiding possible future financial ruin, but she cannot improve her quality of life through microfinance either. Therefore, the finding that microfinance has the largest impact on poverty under conditions of high risk was unexpected.

This chapter will examine these relationships at a different level. Where chapter four approached the topic from a large N statistical perspective, studying all of Latin America over approximately 20 years, this chapter focuses on a single case. The case to be studied here is Brazil. Brazil was selected in large part because its political climate has undergone considerable changes over the past few decades, and economic and financial risk factors have varied along with the political changes. This provides useful data for scrutiny and analysis. Brazil is an interesting case to study because its risk factors vary widely over time as well as geography. Brazil's industrial and economic development has

been a tumultuous process. In the most recent phase of this process, during most of the 1990's and the first few years of the 2000's, Brazil was given relatively high risk scores across the board. During the middle of that decade scores improved significantly, only to drop again before recovering towards the end of the decade.

Also, as a federal state there are sub-units within Brazil that can be studied independently, thus allowing for a deeper analysis. Geographically Brazil developed very unevenly. Consequently it is often broken into five regions; the Northeast, the poorest and generally most unstable; followed by the North and Centralwest; and the Southeast and South have been the industrial and financial center of the country for generations, with relatively robust economies and low poverty rates. This makes for useful comparisons between the different regions of Brazil.

Where chapter four studied all three hypotheses derived from the theory in chapter three, this chapter will focus on the third hypothesis which deals with the three risk factors and their effects on poverty reduction through microfinance. As in the previous chapter, I assume that instability and risk for future instability are good indicators of the quality of governmental institutions since good institutions should be able to minimize risk.

Hypothesis 3: The higher the quality of governmental institutions, the greater the poverty reduction effect of microfinance.

A Brief History of Recent Political Changes in Brazil

Although Brazilian history extends back to the 16th century, from the time that the aristocracy lost control of the leadership in Brazil, the country experienced cycles of

tremendous economic growth and periods of severe mismanagement. Getúlio Vargas became the country's provisional president in 1930. Before that time Brazil had been primarily an agricultural economy, exporting tropical and sub-tropical products, primarily to the North-Atlantic states (Skidmore 1967). Some of these products include rubber, coffee, tobacco, cocoa, cotton and tropical fruits. Coffee was a uniquely important cash crop that the federal government depended on for tax revenue. The trouble was that the world market price of coffee began to decline considerably around Vargas' time. Vargas continued the policies of his predecessors, trying to manipulate the world coffee market in order to maintain higher prices for coffee. The government regularly purchased large quantities of coffee to withhold from the market, assuming that global demand was relatively inelastic (Baer 2001). Where this strategy had only been moderately successful before 1930, it seems to have been more successful during the depression years. The result was a current account surplus for Brazil during the mid to late 1930s.

Although Vargas was a proud *Gaucho* from the southern state of *Rio Grande do Sul*, as interim president, and then dictator after 1937, he was concerned with making all of Brazil more productive and stable (Skidmore 1967). He was the first president to travel to many of the rural regions of the North and Centralwest plains, and the first to show any real interest in the North-east since the demand for Brazilian sugar had all but died nearly a century before. Vargas encouraged increased agricultural productivity, but he also advocated for industrialization. With the current account surplus largely from coffee receipts from the mid-1930s Brazil began to buy industrial technology and equipment (Baer 2001). Vargas also courted FDI, which helped industrialize the country as investors brought in new technology, equipment and best practices (Amann 2003; Levine 1998).

Celso Furtado, perhaps Brazil's most recognized and distinguished economist, said that this period, beginning in 1930, is when the industrial system was implanted in Brazil (Dulles 1967).

Another of Vargas' legacies was his attention to the plight of the poor. He created a meritocratic hiring process for the civil service in which anybody and everybody could take civil service exams (Levine 1998). Hiring was based on qualifications, regardless of race. Vargas did not go out of his way to hire people of color, but neither did he discriminate against them which they saw as a welcome change. This meant that an entire cohort of the population had opportunities opened to them that had never been available before. Vargas also instituted a minimum wage and mandatory benefits for salaried workers (Dulles 1967; Skidmore 1967). He organized *Sindicatos*, or officially recognized unions to represent workers (Levine 1998; Skidmore 1967).

Vargas' close relationship to US President Roosevelt during the war years meant that Brazil cooperated fairly extensively with the United States. Roosevelt sent US Army maintenance personnel to improve airports and construct buildings and roads all over Brazil (Levine 1998). Brazil increased production of iron ore, rubber and other raw materials for the Allied war effort. Steel mills and chemical plants were built and rail lines and other infrastructure were improved so Brazil could begin producing steel, petrochemicals and fertilizer for the Allies as well (Novelli and Galvão 2001). Brazil grew its industrial sector with export profits and through state investments.This represents the first period of import substitution industrialization (ISI).

However, because of the massive US spending in Brazil, and her exports to other Allied states, Brazil got its first taste of inflation, which would become a recurring

problem in the Brazilian economy for the following 50 years (Baer 2001). Vargas adjusted the minimum wage to account for inflation and authorized congress to punish speculators in food stuff in order to keep prices on essential goods in check (Dulles 1967). These policies were moderately effective, preventing inflation from leaving the poor in complete destitution, but were unable to reduce inflation to levels that would be conducive to real growth. By the end of the war Brazil had several state of the art steel mills, paper mills, petrochemical plants, and had discovered oil. Nonetheless, the authoritarian Vargas was pushed out of office and a new democratic regime was created.

The first post-war election brought in General Dutra. Politically, Dutra was rather bland. Economically he began by liberalizing the economy, removing trade barriers and liberalizing exchange rates. The result was that by 1947 Brazil had virtually exhausted its foreign exchange reserves and gone from huge current account surpluses to major current account deficits (Skidmore 1967). He subsequently reintroduced exchange controls and spent the rest of his term in office addressing short-term issues. Regardless of his apparently stumbling policies, Brazil continued to industrialize through the late 1940s until Vargas returned to the capital in Rio de Janeiro as the democratically elected president in 1950.

Vargas and his successors continued many of the same economic policies as before, courting FDI to promote industrialization. ISI continued, often helped along by foreign exchange controls, which shifted over time in response to waves of inflation, exhausted foreign reserves, and government budgetary deficits (Skidmore 1967). Although industrialization moved forward, urbanization, inflation and growing inequality together countered many of the benefits of industrialization for the working

poor (Baer 2001). Prices on basic consumer goods, like food and housing outstripped wage growth so that real wages declined. The national poverty rate in 1970 reached 68%, one of the highest ever recorded by Brazil's *Instituto de Pesquisa e Economia Aplicada* (IPEA).

In 1964 the military took control of the state once again, riding a wave of support in large part due to the economic pressure many Brazilians were facing and their dissatisfaction with the democratic regime. The military regime quickly moved to try and improve the economy since it was the risk of working class militancy that gave legitimacy to the 1964 coup (Meade 2003). General Emilio Medici launched what has often been called the "Brazilian Miracle". The regime made a renewed effort to court foreign investment in order to boost manufacturing and to build infrastructure. Brazil also opened its borders to trade in a way it never had before (Baer 2001). The result was that GDP more than tripled from 1965-1980 (Frieden 1987). Steel production and automobile manufacturing increased by factors of 3 and 5 respectively (Meade 2003). The true "Miracle Years" were 1968-1973 during which the economy saw double digit growth and inflation held below 20% (Moreira Alves 1985). Most of the miracle was in the industrial sector, but tax deductions for capital gains also spurred the stock market as well. Foreign investments grew from $11.4 million in 1968 to $4.5 billion by 1973.

The problem was that all of these gains were made on the back of foreign investment. Initially the economy was able to export enough to service debt obligations, but as debt continued to increase, and more and more Brazilians moved to the cities to look for work, combined with the oil crises of the 1970's, the system's weak foundation quickly began to fracture. Between 1980 and 1983 GDP per capita fell by 15% and the

capital goods industry finished out 1983 at 60% of what it had been just three years earlier (Frieden 1987). Needless to say, many Brazilians suffered when the "Brazilian Miracle" turned into the Brazilian nightmare.This was also a period of tremendous inequality with the wealthy capturing most of the profits from growth and the poor uninsulated against the downward slide of the economy (Baer 2001). Inequality persisted despite the ups and downs of the economy (Amann 2003).

Reported poverty rates improved considerably from 1970-1980, although it was still rather high in 1980 at nearly 40%. Also, some of the improvement was the result of the miracle growth years, but some of it was the result of under-reporting poverty (Moreira Alves 1985). In 1975 an estimated 25 million children were living without the most basic needs, and 68% of children in one study reported working more than 40 hours/week to supplement the family's income (Moreira Alves 1985).Hunger became a serious concern for many Brazilians. The World Bank commissioned a report on hunger and undernourishment in Brazil which concluded was the cause of 40% of infant mortality, which was at an astonishingly high 87.3/1000 live births. The same report found that 79.5% of Northeasterners consumed less than the UN established minimum caloric intake for human development, as well as 87.4% of people in Northern states, and even 57.9% in Southeastern and Southern states. Despite an increase in minimum salaries in 1983, a minimum salary was not enough to pay for the basic caloric needs of an adult man, much less housing, clothes, transportation, or the needs of an entire family. Much of the pain the poor were facing during this time was the result of inflation and government over-indebtedness (Baer 2001; Bresser-Pereira 2002).

In 1985 a popular movement forced the military rule out to make way for a new democratic regime. A series of unfortunate events prevented potentially successful leaders from making meaningful changes for nearly another decade. President elect, Tancredo Neves, who many people thought was capable of turning the economy around, died before taking office. Consequently, his vice president, José Sarney who was not nearly as popular or prepared to fill the role, was made president (Amann 2003; Roett 2010). Brazil suffered from rampant inflation, a stagnating economy, and lingering human rights abuses being perpetrated by government actors, even after the democratic transition (Meade 2003). Government debt approached 55% of GDP in 1988, one of the highest debt to GDP ratios in the world at that time (Martone 2003). The economy was also racked with inflation which worsened over time. The military government grew the economy via a massive influx of borrowed capital, but when debt obligations began to outstrip the government's ability to raise revenue the economy went into a tail spin of ever increasing inflation as the state printed cash to try and cover its debt. In the 1970's inflation was around 74%, which grew to 428% in the '80s, and reached 1400% from 1990-1994 (Gordon 2001, 3). Inflation, of course, eroded real wages which quickly drove the prices of key commodities, especially food, out of reach for many Brazilian households (Bresser-Pereira 2009). The price index change topped out at 1061.5% in 1988 (Amann 2003).

In response to the economic problems that were tearing the country apart, the new democratic government developed and rolled out the *Cruzado* Plan. The plan created a new currency, the *Cruzado*, which replaced the old *Cruzeiro*. The plan also froze prices, wages, rents and mortgage payments and guaranteed wage increases along with the

consumer price index in order to control inflation. Conditions improved for the average Brazilian rather quickly. With higher wages and lower prices on everyday commodities, Brazilians were happy. The price freeze was critical to making the plan work, but also guaranteed that the plan would eventually fail because it also led to over-consumption, near zero investment, massive capital flight and wide ranging skepticism among many investors and economists (Roett 2010). The *Cruzado* Plan was announced in February of 1986 but by the time elections were over in November of the same year, the problems the plan had created were quite prominent (Bresser-Pereira 2009). The government almost immediately announced a new plan before the end of the year, with the clever name *Cruzado* II.

The *Cruzado* II realigned prices on middle-class consumer goods and increased taxes on those goods. The objective was to reduce consumption and encourage saving and investment. The outcome, however, was to simply divert expenditures to substitute goods. Inflation ensued shortly thereafter. By February 1987 the Central Bank of Brazil announced a moratorium on existing debt obligations because its reserves had been depleted (Gordon 2001). This, of course, killed any investor confidence that might have remained up to that point. Brazil's private capital account hit an all-time low with a deficit of about $10 billion in 1989 (Goldfajn and Minella 2007).

The next set of policies was the Bresser Plan, which failed almost from the beginning. With inflation at 81% per month by March of 1990, and GDP growth barely over 1%, something needed to be done. The Bresser Plan adopted new price and wage caps and removed the mechanism that forced wage increases. Due in part to fiscal irresponsibility, and in part to the new constitution of 1988 which transferred a great deal

of power and resources from the federal government to the states, the Bresser Plan went the way of its predecessors (Roett 2010). As did the subsequent plan, the *Cruzado Novo* (or New Cruzado), which was a cheap copy of the previous plans but with new price and wage caps and another new currency, the *Cruzeiro*; the fourth currency in four years and the eighth since 1940 (Novelli and Galvão 2001; Rohter 2010). By this time the Brazilian public was so frustrated and angry with Brasilia that President Sarney rarely left the capital, and relied on a military escort to ensure his personal safety at all times (Roett 2010). Those who supported the democratic transition of 1985 must have begun to reconsider (Lincoln 2001). Those who had supported the transition were having their legs cut out from under them by the abysmal economic performance. The economy under the military regime, as bad as it had been, was still better than what the democratically elected government had produced in nearly five years. The national poverty rate in 1990 was still well over 40%, with no relief in sight.

Fernando Collor de Mello was the first directly elected president of the new regime. He initiated a broad liberalization program which set the stage for later developments. He created the Collor plan, which confiscated savings and investments to try and stabilize the economy. The plan was unsuccessful and he was impeached in 1992 for corruption (Kinzo and Dunkerly 2003). Mello's vice president, Itamar Franco, took over until the next election in 1994. Franco appointed Fernando Cardoso as Finance Minister who then introduced the *Plano Real*. This plan included another new currency, but also liberalized the economy and weakened state monopolies. Economic growth ensued, though income equality and poverty reduction did not immediately follow (Bresser-Pereira 2002; Rohter 2010).

Cardoso declared the “end of the Vargas Era” in 1994, indicating the Brazil was following sound and sustainable liberal economic principles and abandoning ISI (Novelli and Galvão 2001). As president from 1994-2002 Cardoso was able to get the country through several trying years, which included abandoning a key part of the Real Plan, the currency peg, as well as an IMF package to underpin the Real. Improvements in the economy initially benefited the wealthy, but the poorer classes continued to suffer greatly during this time from the lingering effects of decades of economic turmoil (Baer 2001). So although the economy was beginning to look healthier from the macro perspective, with consistent positive growth, improving trade relationships, acceptable levels of inflation and so on, a large portion of the population was still very dissatisfied. The *Plano Real*, however, is really what put Brazil on track to later be included with Russia, India and China when Jim O’Neill coined the term BRICs for the four middle-income countries that have the capability of dramatically changing the global economy in the coming decades (O’Neill 2012; Rohter 2010). Finally, with the economy stabilizing in the late 90s, Cardoso initiated programs that were designed to directly address the needs of the poor, such as the *bolsa escolar;* he simply did not have enough time to get them off the ground before the 2002 election cycle.

From the 1960s up to this point real interest rates had been very high, often upwards of 25%, and at times as high as 65% (Segura-Ubiergo 2012). These high interest rates were almost certainly a result of the inflation that plagued Brazil over the decades. When inflation is high interest rates must also be high in order to stay ahead of inflation. If not, creditors lose money every time they lend. Consequently, it was rather costly to borrow money. Large enterprises, such as those created and grown through ISI policies,

were often able to borrow internationally at much lower rates, but small and medium enterprises, as well as households, generally did not have that option. The steep price of credit put it out of reach for most microentrepreneurs and households. So when microfinance was introduced it met a tremendous, long-standing, unfulfilled demand for credit that was accessible for small actors (Chaves 2011; Mezzera 2002).

Luiz Inácio Lula da Silva, or just Lula, campaigned explicitly against the neo-liberal policies that Cardoso had enacted (Rohter 2010). He even went so far as to say that as president he would not pay Brazil's foreign debts until the Brazilian people were taken care of.[1] His rhetoric made investors and creditors very nervous during the run up to the 2002 election cycle, but because so many Brazilians had been suffering economically for so long Lula won solidly. In the final weeks of the campaign, however, Lula alienated some of the fringe of his party in order to move more towards the center on economic policy. Once in office his fiscal policies were so conservative, especially compared to his campaign rhetoric, that many began calling it Cardoso's third term (Roett 2010).

Lula did begin some of his promised reforms right away though. For example, the *Bolsa Escola* which was already in place in 2003 merged with the *Bolsa Família* to help over 11 million Brazilians by 2009 (Soares, Ribas and Osório 2010). The economy settled down to a steadier growth rate, inflation was within an acceptable range of about 3-8% and investment was flowing into Brazil. By 2008 Brazil was given investment grade status on its foreign debt, one of only 14 sovereign states worldwide to receive such

[1] Lula did not actually follow through with this threat.

a high rating (Roett 2010). In 2010 Brazil had the fourth largest stock market in the world and three of the 10 largest banks in the world, in terms of market capitalization. It also had a booming energy sector, and was growing its industrial and agricultural production.

Microfinance in Brazil

While all of this was occurring, microfinance efforts spread throughout Brazil. There were programs to make small loans to microentrepreneurs as early as 1973 though the programs were relatively small and isolated (Lopez and Macedo 2010; Meagher et al 2006). The long history of poverty and inequality for many Brazilians almost certainly made them eager to embrace anything that would help them break out of that cycle. Commercial microfinance made its way to Brazil during the late 1980s and early 1990s. By the late 1990s microfinance was expanding rather quickly to offer many different products and services to millions of Brazilians (Mandelli 2012; Schonberger 2001). Households' ability to break loose from the shackles of poverty, however, was influenced by turbulence in government bureaucracy and economic policies, as described in the following pages.

An important element of the economic growth model during the late 1990s and early 2000s was the result of a need to attract foreign financing to cover Brazil's external payment imbalances (Medialdea 2013). The government raised interest rates to deter domestic borrowing and attract foreign investment. While this strategy had the intended effect, the unintended effects were that many Brazilians found it nearly impossible to access credit. Only 10% of small and medium enterprises were able to obtain the bank loans they applied for in 1999 (Medialdea 2013, 431). This then led to decreased consumption, salaries and employment.

Many experts expected microfinance to play a major role in Brazil because it seemed that all of the conditions were right for the microfinance industry to flourish; from a growing economy, to high inequality, a liberalizing market, and a commercialized banking sector (Chaves 2011; Nichter et al 2002; Schonberger 2001; Vanroose 2010). In fact, microfinance grew very quickly for a few years after the MFI CrediAmigo was established in 1997. By the end of its first full year it had as many customers as all other MFIs in Brazil combined and by 2001 it had reached more than 85,000 active borrowers (Meagher et al 2006). CrediAmigo served the North East of Brazil, where poverty was especially high. In fact, while the national poverty rate in 1999 was just over 35%, the poverty rate in the Northeast was generally over 60% with Piauí the highest at over 66%.

Figure 1 shows that the effect of microfinance is difficult to discern in Brazil. This is likely because so few Brazilians are able to actually take advantage of microfinancial services (Chaves 2011; Vanroose 2010). Even in the states with the highest concentrations of microfinance borrowers, only about 0.8% of the population is taking advantage of microfinance at any given time. Often it is far less than that. So, while microfinance might have a significant impact on borrowers, it has a limited impact at the national scale. Consequently, there is no obvious relationship between the number of microfinance borrowers in Brazil and infant mortality rates over time. This is also because infant mortality is affected by a number of factors that have nothing to do with microfinance, such as advancements in technology and medical expertise. Nor is it immediately apparent that microfinance reduces poverty rates, for many of the same reasons. Looking at the national level of risk in Figure 2 does not help either. It would be

difficult to convince anybody, based on this evidence, either that microfinance matters or that it is interacting with risk.

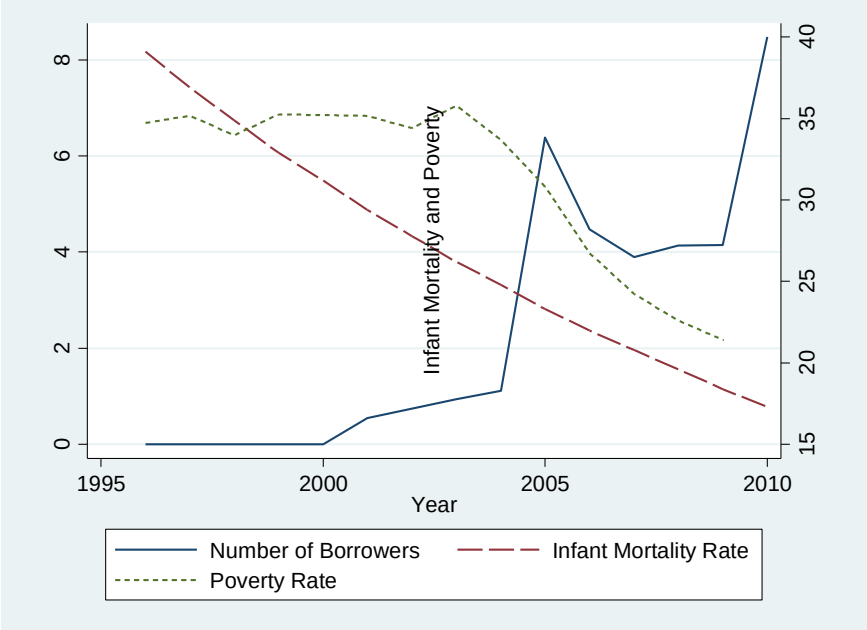

Figure 5.1: Poverty and Microfinance in Brazil

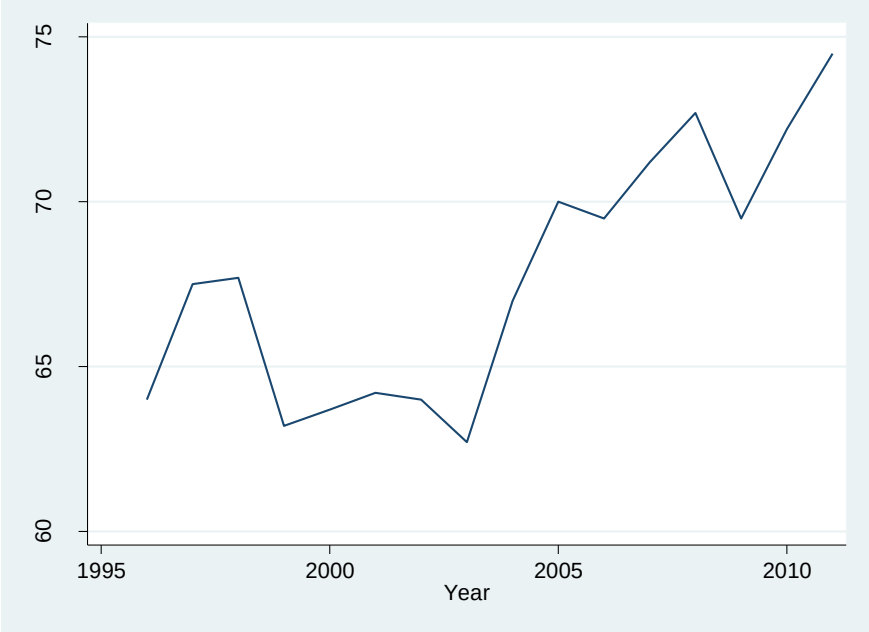

Figure 5.2: Composite Risk Time-series in Brazil

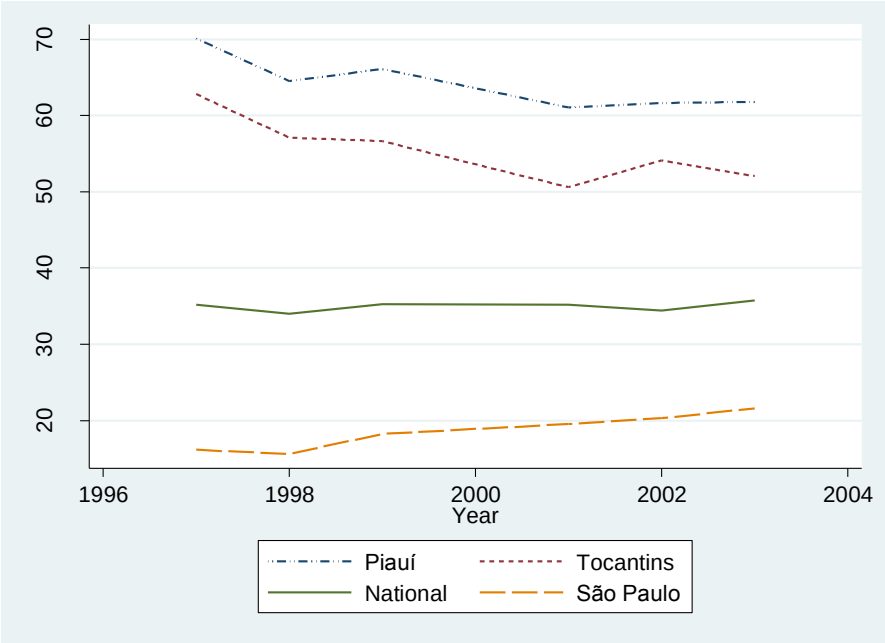

Figure 5.3: Changes in Poverty

Constraints on credit, taken together with the high poverty rate in the Northeast and the political and economic turmoil causing uncertainty in the system seem like the perfect conditions for microfinance to do its work. The national poverty rate remained nearly stagnant, fluctuating between 33.9% in 1997 and 35.79% in 2003. The poverty rate for much of the country increased during this time though, likely as a result of the credit crunch, frozen wages and high unemployment (Medialdea 2013). Most states in the Southeast and South saw stagnant or mildly increased poverty rates over this time. No other state in the South or Southeast saw poverty increase as much as São Paulo did though, rising from about 16% to 21.6%, although several of the Northern states saw s imilar increases in the poverty rate. Roraima, for example, a relatively small state sandwiched in between Amazonas state, Venezuela and Guyana, saw poverty rates increase from just less than 27% in 1997 to about 48% in 2002. In the Northeast, however, where CrediAmigo served more than 80,000 customers, poverty rates neither

stagnated nor increased. The poverty rate in Piauí dropped from 70.1% in 1997 to 61.8% in 2003 for a total reduction of 12%, and in Maranhão it dropped from 72.5% to 65.9%, a total reduction of about 9%.

From the "Brazilian Geography and Statistics Institute" (IBGE)

Figure 5.4 Regions of Brazil

For additional context, consider Table 5.1 below. The level of microfinance varied considerably across regions. In the Southeast, for example, there were only 1577 total reported microfinance borrowers in 2003 which meant that there were about .02

borrowers per thousand residents.[2] The Northeast had around 345,000 borrowers for a rate of about 7 borrowers per thousand residents. The south was somewhere in between with just less than one borrower per thousand residents.[3]

Table 5.1: Changes in the number of Borrowers by Region

	2003				
	Borrowers	Population	Microfinance/ 1000 pop		
North	-	13,504,599			
Northeast	345,274	48,845,112	7.069		
South	21,818	25,734,253	0.848		
Southeast	1,577	74,447,456	0.021		
	2009				
	Borrowers	Population	Microfinance/ 1000 pop	% Growth	% Growth in MF/pop
North	159	15,142,684	0.011	--	--
Northeast	460,839	53,088,499	8.681	33.5	22.8
South	129,042	27,497,970	4.693	491.4	453.5
Southeast	94,955	80,187,717	1.184	5021.2	4590.2

Within a few years, however, regulations changed which may have slowed the growth of microfinance. In 2002 the Cardoso administration passed usury laws that limited interest rates on loans to the poor, capping most loans at 2% (Helms and Reille

[2] Microfinance information was not recorded at the state level in Brazil until the government agency PNMPO began tracking it in 2007. This microfinance data comes from theMIX.org which collects information at the MFI level, not the state level. This makes it impossible to determine precisely how much microfinance there is in each state because many MFIs serve more than one state. Dividing microfinance by region is more manageable though.

[3] There are some MFIs that serve multiple regions. Those were excluded from these calculations since it is impossible to know how it was divided among the regions. Since the point of the discussion is to compare across regions and those that operate inter-regionally do not consistently offer more services in one region than another, I do not believe that this biases the results.

2004). The law was intended to protect the poor from predatory lending practices, but in an industry where 70% APR interest rates are often necessary just to cover costs, the 2% cap likely discouraged many private investors from entering the market (Armendariz de Aghion and Morduch 2005; Kumar 2005). The legislation package included provisions intended to loosen credit for microfinance, but it also discouraged new microcredit lending, especially privately funded lending. The problem became so pronounced that at one point roughly 50% of banks were shirking the legislative requirement to set aside funds for microfinance, opting instead to hold the money in zero interest accounts rather than put the money at risk of default for very modest profits (Meagher et al 2006). Although the usury legislation was intended to protect the poor, it acted as a market bruising regulation (Helms and Reille 2004). Although microfinance continued to grow over the following years, without these regulations there would likely have been more of a private investor presence in the market and, therefore, more MFIs lending to more customers, with additional funds (Chaves 2011; Nichter, Goldmark and Fiori 2002; Olsen 2010). Today there are more than 60 MFIs in Brazil, but most of them are funded through government institutions or NGOs.

Government involvement in microfinance may have further stunted the industry when the *Banco Nacional de Desenvolvimento* (National Development Bank), which was supposed to disburse funds to approved MFIs according to a piece of 2003 legislation, failed to do so on time. The belated funds caused slow-downs in service among the MFIs (Meagher et al 2006). This meant that clients did not receive the loans they needed when they expected them. This seemed to reduce loan renewals and, apparently, incentives to repay loans. The difficulties this presented to MFIs were exacerbated by years of

constantly changing regulations (Chaves 2011). Moreover, most MFIs in Brazil are severely limited in the types of services they are legally allowed to provide to their customers. Except for government operated MFIs, they can only provide credit (Helms and Reille 2004). This prevents them from being able to take advantage of some of the innovations that MFIs in other countries use, like tying loans to forced savings accounts, or offering insurance options along with, or even instead of loans.

This same period is also a focal point because Brazil saw a change in risk trends. Recall from Figure 2 above that the environment in Brazil was growing riskier from about 1997 until 2003. After 2004 risk began receding. This is in part due to fluctuations in the value of the Real during the first time period, bouncing from less than $R1/dollar to well over $R3.5/dollar from 1996 to 2003. From early 2004 the Real appreciated until in 2008, just before the global recession hit Brazil, the exchange rate was nearly $R1.5/dollar again. For Brazilian businesses the 2004-2008 time period was a good one; much better than the 1997-2003 time period. For the poor in the less stable states, however, that is not the case. So microfinance was held back and risk decreased after 2003.

While poverty generally decreased more quickly in the Northeastern states than for most other states during 1997-2003 (T1), the reverse is true for 2004-2009 (T2). During T1 recall that São Paulo saw poverty increase by 34%, but it was nearly cut in half during T2 from 20.58% to 11.01%. Paraná, another southern state, saw poverty decrease from 22.7% to 12.37% for a total reduction of 46% during T2 compared to a mere 14% reduction during T1. The Northeastern states also saw a jump in poverty reduction during T2. In Piauí poverty decreased by 12% during T1 and by 36% during

T2. For Maranhão the T1 reduction was 9% and T2 reduction was 35%. The differences in the rate of change from T1 to T2 for most of Brazil are rather dramatic. In São Paulo the rate of reduction swung wildly from a 30% increase to a 50% decrease. In Paraná the swing was 32%, much closer to the national average. In the Northeastern states the changes were more modest. In Piauí the swing was only 24% and 25% in Maranhão.

It is important to look at differences in the growth of microfinance across these regions too. Microfinance increased in every region, but it did not increase evenly across regions. From 2003 to 2008 microfinance grew by only 23% in the Northeast, a rather modest increase considering the growth over the previous five years from nearly zero to more than 345,000 borrowers. In the South it grew by about 450% and in the Southeast it grew by around 4600%.

To understand the meaning of these changes in poverty we must keep in mind that there are many causes that affect poverty and microfinance is just one of them. Lula's *Bolsa Familia* program began to function effectively around the beginning of T2, which almost certainly contributed significantly to national poverty reduction. The economy was stronger and more stable, so businesses grew. Official unemployment shrank from over 12% to under 8%. Wages, instead of shrinking, began to grow again. GDP per capita PPP (purchasing power parity) grew from less than $8,000 at the beginning of 2004 to more than $9,500 in 2009. There were a lot of reasons for poverty to decrease during T2, but the fact that it decreased for the Northeastern states during the economically painful and tumultuous years of T1 and stagnated for the rest of the country is interesting because microfinance was also quite robust in the Northeast during that time. Combined with the

observation that the rest of the country saw much larger shifts in the rate of reduction during T2 while the Northeast saw only modest reductions in poverty, very modest increases in microfinance, and much smaller shifts from T1 to T2 is suggestive that microfinance played an important role in Brazil at least from 1997-2003, and possibly thereafter as well. These observations parallel the conclusions from chapter four.

Rational Peasants in Brazil

The beginning of this chapter started by discussing the findings of the previous chapter and pointing out that because risk increases uncertainty about the future, potential clients should be wary of undertaking ventures, such as microloans, when risk is high because it could lead to financial problems down the road when loan payments are due. If a potential client does not pursue a microloan because risk is high and the future is uncertain, she might be avoiding possible future financial ruin, but she cannot improve her quality of life through microfinance either. Therefore, the finding that microfinance has the largest impact on poverty under conditions of high risk might catch some by surprise.

On the other hand, scholars such as Samuel Popkin would not be surprised by this result. Popkin's *Rational Peasant* argument (1980) is that peasants continually make efforts to improve their quality of life through long and short term public and private investments (Popkins 1980, 413). This clearly fits well with microfinance since it provides peasants the opportunity to pursue short and medium term private investments. Many peasants might not be able to secure themselves against risk of severely damaging loss when uncertainty is high, but if some can, and they foresee the possibility of

"measurably improving their position", they are likely to accept the risk (Popkins 1980, 425).

The Brazilian constitution of 1988 strengthened local governments, giving them more autonomy and resources in order to make decisions based on the needs of their own people. Most of these states existed before 1988, though not all of them, and there was considerable variation between them in terms of the nature and health of the economy, bureaucracy and level of human development. The new constitution gave states the power to develop unique approaches based on their individual situations.

Although each state has the autonomy to develop unique policies, and they often do, there are similarities within each region. The Brazilian news outlet *Veja* recently released a series of info-graphics that illustrate the disparities across the country. Each region is given a score from 0-100, where 100 represents the best possible environment, based on data from the *Economist Intelligence Unit*. For the productivity of labor the Southeast scored 81.3 while the Northeast scored 19.4. For the number of university graduates per capita, the Southeast scored 87.5, while the Northeast scored 36.1 and the North 10.7. When it comes to corruption, the South scored 50 while the Northeast scored only 25, the North only 21.4 and the Centralwest only 18.8. Turning to demographics, São Paulo alone accounted for more than 40% of GNP and more than 25% of national population in 1995 (Selcher 1998). The poverty rates in 2010 range from a high of 60.45% in Alagoas, a Northeastern state, to a low of 10.5 in Santa Catarina, a Southern state (IBGE). Although there are some regions in the North with very high poverty rates, the Northeast generally gets the most attention in discussions of poverty reduction for two reasons. First, the Northeast has consistently high poverty across the region and has

Table 5.2: Microfinance Loans, Population and Loan Value

State	Value of Loans	Population x 1000	Loan Value/ capita	Avg Loan Size	Cost of Living	Loan Size/ Cost of Living
Northeast						
Alagoas	3.10E+07	3,169	9.7825	1230.35	1223.94	1.005
Bahia	6.90E+07	14,021	4.9210	1435.91	1993.93	0.720
Ceará	1.40E+08	8,448	16.5719	1275.73	1431.96	0.891
Maranhao	1.10E+08	6,570	16.7436	1628.95	1466.96	1.110
Paraíba	4.80E+07	3,767	12.7428	1269.84	1725.14	0.736
Pernambuco	5.40E+07	8,796	6.1391	1265.79	1777.54	0.712
Piauí	6.90E+07	3,119	22.1224	1172.53	1619.73	0.724
Rio Grande do Norte	3.40E+07	3,168	10.7319	1301.44	1680.96	0.774
Sergipé	3.00E+07	2,068	14.5066	1244.76	1809.83	0.688
South						
Rio Grande do Sul	6.20E+06	10,696	0.5797	2447.69	2962.4	0.826
Santa Catarina	3.80E+07	6,250	6.0803	3964.94	3509.58	1.130
Paraná	3.20E+06	10,440	0.3065	4900.46	2818.42	1.739
Southeast						
Esperito Santo	1.50E+06	3,512	0.4271	1556.02	2569.92	0.605
Minas Gerais	2.60E+07	19,595	1.3268	1496.23	2596.65	0.576
Rio de Janeiro	4.60E+06	15,994	0.2876	3330.92	3386.78	0.984
São Paulo	5.40E+06	41,252	0.1309	2666.67	3337	0.799
Centralwest						
Goiás	3.00E+06	6,004	0.4997	3115.26	2428.04	1.283
Mato Grosso	2.00E+06	3,034	0.6592	2155.17	1908.74	1.129
Mato Grosso do Sul	1.10E+06	2,449	0.4491	6214.69	2459.46	2.527
North						
Rondônia	577105	1,561	0.3698	6484.33	2344.82	2.765
Pará	5.70E+06	7,588	0.7512	1451.12	2011.31	0.721
Acre	~	734			1973.21	
Amapá	~	670			2544.64	
Amazonas	~	3,484			1791.6	
Roraima	~	450			1596.51	
Tocantins	~	1,383			1966.8	

~ Microfinance data not available

had since the Brazilian sugar industry collapsed in the middle of the 19th century (Meade 2003). Second, the Northeast has a drastically higher population density than the North, the other high poverty region, which means there are more poor people in the Northeast who need help than there are in the North.

Not surprisingly, Northeastern states consistently rank among the worst for political environment and are the nine lowest ranked states for economic environment according to the study just mentioned. Nonetheless, microfinance flourishes in the Northeast. Most of the first MFIs in Brazil, such as CrediAmigo, began in the Northeast and have survived the economic and political turmoil the country has faced over the years. Every Northeastern state has more MFI clients per capita than any other state.[4] The state with the highest value in loans per capita is Piauí, which competes with Alagoas for the title of poorest state in the union. In fact, with one exception, every Northeastern state has a higher loan value per capita figure than any other state in the union despite the repressed economy in that region.[5] Moreover, the size of the average loan in the Northeast is comparable to loans in other parts of the country once the cost of living is accounted for.

To be fair, receipt of loans does not necessarily mean that the loans are being used productively. There are two obvious ways to figure out if loans are being used

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[4] Data on state level microfinance comes from the Brazilian *Programa Nacional de Microcrédito Produtivo Orientado*.
[5] The exception is Santa Catarina, which is uniquely saturated with microfinance outside of the Northeast.

productively. The first and most straightforward is to track it directly either by asking borrowers what they are doing with their loans and how the loans are affecting their finances or by following their financial transactions in the way Collins et al. (2011) do. This would, of course, require resources and time and is not a feasible option for this project. The second method, which is slightly less precise but far more cost effective, is to infer it from the aggregated data. Assuming that repayment rates are a reasonable proxy for the borrowers' finances after taking the loan provides a picture of how productive the loans are. The logic behind this inference is that a borrower that used the loan money productively would be able to repay the loan easily since she has more money coming in than she had before. A borrower that did not use the loan productively, on the other hand, might find it difficult to repay the loan since she has no more money coming in than before, but has an additional expense. Not all of these unproductive borrowers are going to default, but those who do default were almost certainly unproductive borrowers. So states or regions with higher default rates can be assumed to have a less productive microfinance sector.

As an example of what a productive borrower might look like, a study of the MFI *CEAPE-PB* (Center for Support of Small Enterprises – in Paraíba) found that 88% of its customers in 2004 operated in the commercial sector, 8% in production and 4% in the service sector (Pereira 2005). Among those operating in the commercial sector, 70% sold clothing. Selling clothes is likely an attractive option for many microentrepreneurs because it requires relatively little capital to get started. At the lowest end of the spectrum, some microentrepreneurs have carts they park on street corners from which they might sell shorts, t-shirts and dresses. Several sets of these in three or four sizes

might be all a microentrepreneur needs to get started. She can buy more stock as need with the proceeds from previous sales. Alternatively, virtually every Brazilian city has an open air market. Vendors are generally required to pay a minor fee for the privilege of setting up shop in the market, but the market is often the primary shopping area for customers who do not want to pay higher prices for name brand clothes at traditional retail outlets. The vendor who starts off by selling t-shirts from her cart on the street corner might take a loan to expand her stock, buying larger quantities for lower average prices, and thereby capturing more profits. The microentrepreneur might continue to expand by increasing the types of goods she sells, or by renting a booth in the local market. She might even eventually open a small shop of her own. With each step up the commercial ladder the microentrepreneur might need a loan to make the jump. Once she has made the jump, though, her earning potential increases. On the other hand, if she takes a loan and makes a bad business choice, she might not have any more profit than before, or might even reduce her profits, but she has an additional expense in the loan repayments of capital plus interest.

So the average percentage of the loan portfolio with payment delays of 90 days or greater and, therefore, by common definition at risk of default, tells an important story. When the loan portfolio at risk is weighted by the number of borrowers, the region with the lowest default rate in 2009 was the Southeast at 2.15%.[6] Next was the Northeast with a weighted default rate of 3.41%. Last was the South, which is dominated by Santa

[6] These default figures may seem low considering these loans are generally made without any collateral, often to the poorest members of society, but they are actually quite normal for microfinance globally (De Aghion and Morduch 2005).

Catarina, the one state that compares to the Northeast in terms of microfinance saturation, at 3.67%. The implication is that borrowers in the Northeast are just as good at using microloans as people in other regions of the country. In fact, accepting the assumption above there is a broader conclusion from the data. Microfinance borrowers are better than average borrowers at using loans productively considering the rate of payment delays of 90 days or more for personal credit nationwide is consistently over 5.5%, according to Brazilian Central Bank press releases (bcb.gov.br).

The fact that microfinance appears to be flourishing in the poorest parts of Brazil despite the poor political and economic environment suggests that Popkin is right. Peasants appear to be quite capable of taking risks and making investments. Microfinance borrowers in the poorest regions are no different in their ability to use loans productively than borrowers in other regions, but microfinance borrowers as a whole seem to be more able to use loans productively than average borrowers. Based on the information presented in the previous section it appears that they often improve their position through these investments as well since poverty decreased in the parts of Brazil that had higher levels of microfinance in T1 when the economy was suffering.

Conclusion

This chapter examines the industrial and economic development in Brazil from1930 to the present, paying particular attention to the role of the state in the development process. Over the past 80 years Brazil has seen periods of significant growth and periods of suffocating stagnation, debt and poverty. With that background two distinct periods in the development of Brazilian microfinance are compared. The first

period, 1997-2003, was a period of great uncertainty and generally modest economic performance for the country. Poverty alleviation in the Northeast, where microfinance was primarily concentrated at the time, declined much more quickly than the rest of the country. During the second time period, however, 2004-2009, risk was low, the economy was generally robust and microfinance had spread outside of the Northeast. While poverty reduction advanced more quickly in the Northeast during the first time period, it advanced more slowly than the rest of the country during the second time period.

The implication, relative to this study, is that, as in chapter four, the empirical evidence contradicts the theory from chapter three. Instead, it looks like microfinance works best, not when conditions are stable and uncertainty is held to a minimum, but when risk, and therefore uncertainty, is highest. The evidence is convincing, if not entirely conclusive. The end result is that this examination of how microfinance and political and economic risk factors affect poverty rates in Brazil stack up in favor of the same conclusions arrived at in chapter four. Microfinance as a poverty alleviation mechanism is indeed sensitive to risk of political, economic and financial turmoil, but rather than being hindered by risk, it is most effective under higher risk conditions.

The final section of this chapter addressed Popkin's rational peasant hypothesis (Popkin 1980). Popkin argued that peasants are rational actors whose primary interest is securing their individual long term economic well-being. As such, they are capable of, and willing to make investments and take risks in order to improve their position, despite having very little income. Chapter four and chapter five both suggest that the poor are indeed capable of making their way out of poverty by taking risks and making investments through microfinance.

The theoretical and policy contributions of these conclusions are discussed in the final chapter of this work. These conclusions were unanticipated at the outset of this project and may play an important role in the development of microfinance in the future.

CHAPTER 6

The Future of Microfinance

At the beginning of this project I presented microfinance as a poverty alleviation mechanism that was qualitatively different from other mechanisms typically discussed by the development community. Foreign Aid, for example, might function as a poverty alleviation mechanism when it is used to build infrastructure, fund education or provide critical resources like food and water. Aid is generally given from one government to another. Its effectiveness as a poverty alleviation mechanism depends on the recipient's ability and desire to use it for productive purposes, but all too often it is used to line the pockets of the leadership while those who sincerely need help see little or no benefit from it (Hubbard and Duggan 2009). Aid also comes with strings attached in most cases. For example, the donor state might require the recipient to spend the money on goods and services originating from the donor state, which limits the recipient's ability to use the aid effectively (Easterly 2006). Moreover, because the donor states usually put a low priority on aid relative to domestic concerns, aid can be inconsistent during times of economic stress and this inconsistency can dramatically reduce its effectiveness for poverty alleviation (Kodama 2012). Finally, there is evidence that political instability reduces the effectiveness of aid for poverty alleviation (Chauvet and Guillamont 2003).

This should not be surprising since aid is also often seen by donor states as a cheap way of influencing the recipient state. If a donor state can buy the recipient state's attention for $20 million, the donor's policy gains might well more than compensate for the money given in aid. Hans Morgenthau argued that all foreign aid is political, with the occasional exception of disaster relief aid (Morgenthau 1962). He also explained that foreign aid should be accepted as part of foreign policy; it fills a gap that military action and traditional diplomacy cannot. It is an example of coercion via carrots rather than sticks. Aid that is given for political purposes likely does not have development as the objective since successful development would weaken the donor state's influence through giving aid.

Foreign investment, whether direct or portfolio investment, has been promoted as a mechanism for poverty alleviation since it can create jobs in factories or mineral extraction companies while also spurring the economy forward through capital accumulation and knowledge dispersion in productive sectors of the economy. Investment is also closely connected to the state. It tends to be carefully regulated by the state and can be subject to taxes and restrictions. Its effectiveness for poverty alleviation and durability are sensitive to currency fluctuations, monetary policy, fiscal policy and political and economic stability (Busse and Hefeker 2007; Daude and Stein 2007). Portfolio investment tends to be flighty, departing at the first hint of trouble, often at the moment when the state most needs a stable economy. Because of its flightiness, foreign investment has been dubbed the "electronic herd" by Thomas Friedman, alluding to its tendency to stampede without warning, destroying whatever might get in the way of profits (Friedman 2005). Debt forgiveness programs, structural adjustment loans and joint

development projects are all subject to the same whims of the donor state as aid and investment (Balaam and Dillman 2011; Easterly 2006).

Microfinance is different. Governments can regulate microfinance, but they do not generally disperse it. Governments sometimes fund microfinance, but they do not usually benefit directly from it. Where aid usually operates at the state level, and investment operates at the societal level, microfinance operates at the individual or household level. Once an MFI is properly funded and operated it often does not require continued support from a donor or investor. Perhaps most importantly, the funds are given directly to the poor and decisions about how to use the money are made by the recipients, the poor households who desperately need financial help. If we assume that the poor are able to make strategic financial decisions as well as anybody else, this means they may become uniquely suited to addressing their most binding constraints when financial services are made available.

Since microfinance has a qualitatively different relationship to the state than do foreign aid and most forms of foreign investment, many scholars who study microfinance have assumed that the relationship is negligible. This assumption does not seem, at first glance, to be too unreasonable, and perhaps for some aspects of microfinance it is not. The puzzle that motivated this research project is the discrepancy between findings of various microfinance impact analyses. Many studies have found that microfinance is always, or nearly always positive (Brau, Hiatt, and Woodworth 2004; Brau and Woller 2004; Imai, Arun and Annim 2010; Schicks 2007). Based on conversations with reports by experts who work with microfinance through international organizations like the development focused iNGO, ACCION, or the Inter-American Development Bank, most

practitioners seem to believe that microfinance, at worst, has no effect, and at best can dramatically change poor people's lives for the better by providing them with a stepping stone from which they can eventually make their way out of poverty and onto solid financial ground.[1] On the other hand, a number of other scholars have found evidence that microfinance is at best ineffective and at worst very damaging (Karlan and Zinman 2009; Roodman 2012).

These opposing results, both from some carefully planned and executed research designs, suggest a couple of possible conclusions. Some scholars have suggested that there are cultural factors that have not yet been accounted for (Epestein and Uthas 2010), that microfinance is not always being properly managed and implemented (Field and Pande 2007; Hermes and Lensink 2007), or that it has to do with the demographics of the customers (Remenyi and Quinones 2000), among others. The argument I made at the beginning of this project is that one of the factors that matters is governance; political institutions and political and economic stability. The argument is based on the notion that greater certainty about the future makes investment decisions easier and more efficient, and that instability will complicate those decisions. It has long been accepted that uncertainty in the state or the economy makes investment riskier and, therefore, generally less efficient since investors would be risking too much to safely maximize leverage on their assets (Pindyck 1993).

[1] Phone conversation with Mark Wenner of the *Inter-American Development Bank*, May 21, 2012. Phone conversation with Valerie Kindt of *ACCION* June 20, 2012.

The results of the empirical analyses indicate that stability indeed matters. However, the evidence did not support the argument that more stable states create an environment more conducive to the poverty alleviation effects of microfinance than instable states. Rather, it appears that political stability has little or no effect on whether microfinance reduces poverty. The risk factors that seem to matter are economic and financial risk. Although economic, financial and political risk are all correlated, the evidence is not very convincing that political risk plays much of a role. Also, whereas the argument made at the beginning predicted that greater risk for instability would make microfinance less effective at poverty reduction, the evidence supports the opposite conclusion. That is, greater risk of economic and financial instability seems to make microfinance more effective at poverty alleviation. The results from both chapter four, which used regression analysis to study a panel of Latin American states over about 20 years, and chapter five, the case study of Brazilian microfinance, supported the same conclusions.

In chapter four I used regression analysis to examine the interaction between the number of microfinance borrowers in a state for a given year, and different measures of institutional quality and stability to predict infant mortality, the proxy for poverty. None of the interactions between microfinance and political institutions was significant. Two of the measures of instability which included political, economic, and financial stability were though. The interaction with political stability did not meet the 95% confidence threshold, though the other two did. Since point estimates are not useful for interpreting interaction terms, I graphed microfinance against infant mortality at four levels of each type of instability. These visual approximations of the interaction terms showed that more

unstable conditions tended to have a stronger negative relationship between microfinance and infant mortality. More stable conditions, on the other hand, tended to have a weaker or even positive relationship between microfinance and infant mortality. This means that microfinance is more effective at reducing poverty under greater levels of instability.

Chapter five presented a case study of Brazil. The chapter discussed the political and economic turmoil that plagued Brazil from the 1930s up through 2012. It then examined how the microfinance industry developed and evolved in Brazil. Once microfinance gained a significant presence, around the late 1990s, those states within Brazil which had more microfinance saw poverty reduction far superior to those in the rest of the country during about a five year period of relative economic instability. During a period of greater stability, however, those states which housed most of the microfinance industry saw poverty reductions very similar to the rest of the country. Again, the implication is that microfinance seems to work best under conditions of instability.

Theoretical Implications

The results of this study have two major theoretical implications. First, risk and uncertainty do not appear to be significant hindrances in the microfinance sector the way they are in other development related sectors. Second, studies like David Roodman's (2012) which found that microfinance is not helpful, and studies like Imai, Arun and Annim's (2010) which found that microfinance generally reduces poverty at the household level, are both only partially correct. Third, the conclusions support Popkin's rational peasant argument that the poor make investments, even under risk, in order to improve their economic situation.

Since Foreign Aid and FDI are both sensitive to risk and instability, it makes sense that microfinance should be too (Busse and Hefeker 2007; Chauvet and Guillamont 2003; Hubbard and Duggan 2009; Kolstad and Villanger 2008). Risk indeed affects microfinance, but it has the opposite effect. Three explanations for this divergence were offered at the end of chapter four. First, it could be that when and where instability is high, the composition of microfinance customers is different. Perhaps the very poor are reticent to take loans because they recognize that they are only one financial shock away from total ruin (Krishna 2010). If the very poor take a loan and the intended productive use does not pan out, the individual is left with an additional demand on her resources as she tries to repay the loan, but no additional income with which to do so.

This would be useful information for the continued development of microfinance because it suggests that a risk hedging approach might be more effective than an asset accumulation approach to microfinance services (Islam 2009). That is, microfinance institutions would have a greater effect on poverty by offering insurance services that would reduce risk for the very poor, so that if an income earner is put out of work or the economy slows, the household still has the means to meet their basic needs. This does not directly provide a poor household with assets that can be invested to increase income, but it might allow the household to reallocate assets away from rainy day savings, which are often zero interest and held in the home or with a friend or family member, and invest them in productive capital (Collins et al 2009).

A related and perhaps complimentary explanation is that when risk of instability is high, an average investor cannot be sufficiently confident of a positive outcome to make an investment under instability, but the most profitable investments might still

balance out the risk involved. From the investor's perspective uncertainty effectively transforms risk in the risk-reward balance from a point to a range. The investor has to assume that risk – specifically the risk of or the probability of failure – might be anywhere in that range and will only invest if she thinks the potential payoff is large enough to balance any probable degree of risk. It is possible that risk has increased along with political instability and uncertainty although it is not necessarily so. Risk might remain the same while only uncertainty increases. Uncertainty, then, obscures the true degree of risk. The investor, by definition, cannot know where in the range of uncertainty the risk point lies. The result is that microfinance customers in an unstable regime are actually likely to make more beneficial, although fewer, investments than under a politically stable regime. The MFI is unable to know the payoff for any given investment, so it falls to the borrower to determine whether the payoff outweighs the risk and uncertainty. When it does, she will take the loan. Fewer people, then, should be taking loans under political instability, but those who do should see just as high a rate of success, and the success should be greater because this selection mechanism weeds out the less profitable investments. The effect on poverty is that fewer people will benefit, but their rewards will be greater. This would show up in the data as a measurable effect on poverty.

A third possible explanation for the results is that borrowers rely on microfinance as an informal insurance mechanism. They use loans to fill troughs in their income and repay loans at peak income levels. Where income is most uncertain, that is, under conditions of high political or economic risk, households desperately need help smoothing their income distribution. Microfinance fills that gap, and in so doing

dramatically improves the quality of life for the savvy MFI customer. The data used in this project, unfortunately, is not fine grained enough to study whether any of these posited relationships represents reality, but future research might reveal the nature of customers' decision making processes.

The second major theoretical contribution of this work is to present a key consideration that might modify the results of many past studies. Some scholars have found evidence that microfinance is useful for poverty alleviation and others have found that it is not. They might both be partially correct. The research here shows that microfinance can be both effective and ineffective at poverty alleviation. Variations can occur from one country to the next and they can occur within the same country at different points in time depending on whether there are significant changes in risk and instability. Once again, the data used here is too limited to determine whether the relationships discovered here resolve the discrepancies between the different findings, but future research could do so by expanding the current analysis to encompass additional states. This would be a major step forward for microfinance research. It would help move the debate from whether microfinance works to how to make it work more effectively.

Finally, Samuel Popkin argued that peasants are rational (1980). More specifically he showed that peasants do not have romantic perceptions of their positions as laborers, but rather they are primarily interested in securing their long-term economic well-being. Peasants, though poor, are often willing to invest what little they might be able to scrape together if they believe it will improve the future economic position. The results from chapters three and four support Popkin's argument. They also show that the poor are able to effectively invest and take risks, even in uncertain environments, in order to improve

their economic standing. In fact, based on loan repayment rates, microfinance borrowers, that is the poor, do this at least as well as, and perhaps better than average debtors.

Implications for Microfinance Practitioners

Microfinance practitioners are aware that microfinance has the ability to improve the quality of life of their customers. There is plenty of anecdotal evidence that peoples' lives improve when they have access to financial services (Roodman 2012). Simple logic suggests that this should be the case if one assumes that potential customers are wise enough to know when they can improve their position through financial services and when they cannot. If a poor person needs access to financial services and an MFI is operating in her village, and that MFI offers the type of services the individual needs, then she can utilize those services to her benefit. If there is an MFI in a person's village, but that person cannot improve her quality of life by patronizing its services, then she will not do so and no harm is done. On the other hand, if there is no MFI, or the MFI does not offer the types of services the person needs, then an opportunity to improve her quality of life is missed. Therefore, a good deal of the conversation about microfinance effectiveness among practitioners revolves around the types of services MFIs offer and their target audiences. When practitioners acknowledge the role of the state, it is generally to discuss regulations that affect the MFIs' ability to innovate and offer the kinds of services the poor need.

If practitioners become aware of the results of this research, they should realize at least three things. First, microfinance can be used more efficiently at some times and places than at others. Second, risk reduction services, like life or health insurance, might

be needed more than many people have realized. Third, microfinance can only be a part of the development puzzle.

This research shows that microfinance can range from quite effective as a mechanism for poverty alleviation, to ineffective and even counter-productive. There are certainly other factors that influence microfinance effectiveness, but risk is an important piece of the puzzle. Rather than withdrawing from the market during periods of high economic and financial risk, MFIs that are motivated by poverty alleviation should continue operations and allow potential customers to screen themselves. It certainly would not hurt to offer or even require business management training for loan recipients during these times, as many MFIs already do, but this research suggests that customers are already pretty good at determining whether they will be able to repay loans without suffering under an unprofitable financial burden when it is time to repay the loan. Collins et al. (2009) show that the poor generally have a good understanding of their finances and how best to manage them.

Similarly, for those organizations that are interested in poverty reduction at the global level, microfinance can be used more effectively in some places than in others. States with higher levels of risk may be more fertile grounds for poverty reduction than states with less risk. This should be welcome news for microfinance practitioners since other poverty alleviation mechanisms tend not to be very effective in those states. Microfinance on the one hand and Aid and FDI on the other might be both be used effectively, but operating most effectively in polar climates.

Of course, this also means that microfinance is an important part, but it can only be one part, of the development puzzle. In a typical developing country with high poverty and risk, and a struggling economy, microfinance might be very useful for poverty reduction. When microfinance has done its job, however, there would need to come a transition point at which risk declines and the economy picks up and stabilizes. At that point the state is not out of the woods in terms of development, but microfinance would no longer have the same effect as before. This is not to say that Aid and FDI are necessarily perfect complements to microfinance, or even that there is a perfect complement. Only that microfinance can only go so far in promoting development.

Also, risk reduction services might be more needed than many people have realized. If the very-poor are not taking loans during times of high risk because it puts them too close to financial ruin, perhaps what they need are not loans but insurance policies. If this is the case, insurance hedges against the negative effects of risk (Islam 2009). Each time a customer made a claim it would be combatting poverty by preventing that household from slipping further into poverty (Krishna 2010). Unfortunately, some states, like Brazil, impose stiff regulations on the microfinance industry. The objective is generally to protect the poor, but the effect is too often to prevent MFIs from catering to the needs of potential customers.

All of this should be considered valuable information to individual MFIs, as well as the sundry international organizations that address poverty and development. The beginning of this project mentioned the UN's Millennium Development Goals. Understanding how poverty alleviation mechanisms work is critical for achieving those goals. Allowing microfinance to continue on as it has up to this point is not making

enough progress towards those objectives because although microfinance can reduce poverty, it might also exacerbate poverty under the wrong conditions. Thus, significant resources intended to combat poverty are tied up in programs that potentially aggravate it. We will never approach success without better policies, which requires a better, more complete understanding of the tools being used.

Future Research

While this research goes a long way in answering some important questions about microfinance, it is clearly not conclusive. This is only one test of these relationships, and the findings do not fit with the anticipated results which were discussed at the outset. Additional research should study these relationships in other states to determine if they hold outside of Latin America. Future research might also examine these relationships using different data to verify that the findings are not simply the result of anomalies in the data used here. The concepts studied in the previous chapters can be operationalized in many ways and alternative measures might be employed to test the robustness of these findings. All of this will help clarify our understanding of microfinance and its potential for poverty alleviation.

As is often the case, in the act of answering one question, this project has raised several more questions. One important question asks why this relationship is what it is. This project studied the what, but to fully understand the implications of the microfinance-risk-poverty relationship it would be beneficial to get some idea of why microfinance seems to work best under conditions of high risk. Three solutions have been posited, but without empirical analyses they are only guesses. In order to create good

policy on microfinance and to advance the theoretical literature it is important to find some evidence one way or the other. This might be accomplished through surveys or interviews of microfinance borrowers by asking them about their motivations to pursue microfinance. It should also ask about perceptions of risk and reward and how those perceptions might have affected borrowers' decisions. Additional clarifying questions might ask about borrowers' perceptions of the state, and the political, economic and financial environment and how they might have affected borrowers' decisions to pursue microfinance services. The more difficult part of this type of research would be to collect a rounded sample of people who chose to take loans and people who chose not to. Finding people who might have considered courting microfinance but decided not to would be much more difficult than finding people who chose to take loans from an MFI. All of this will require field work in the countries where microfinance is prominent. Will require some variation in political conditions as well, in order to see how different environments might affect people's choices.

Other questions this project has raised include whether the composition of microfinance borrowers is different for some reason when risk is higher? If that is the case, how do they compare to borrowers when risk is low and why do those low-risk borrowers not see the same changes in poverty reduction as the high-risk borrowers? Hopefully future research can answer all of these questions and thereby further our understanding of microfinance and how to approach poverty reduction.

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