Does Microfinance Reduce Poverty? A Study of Latin America

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Does Microfinance Reduce Poverty? A Study of Latin America

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Abstract

Microfinance has been heralded as the solution to global poverty by optimists in the development field. Many regard the practice of extending unprecedented financial access to the poor through small loans as a necessary and important tool in the development process. The industry has grown and changed shape over the last two decades and recently has come under fire. The new face of microfinance has included for-profit lenders, usurious interest rates, loan sharks, and suicides. Many critics are beginning to question the ethics, practices and efficacy of microfinance. They claim that microfinance cannot make more than a marginal impact on poverty, and more serious development efforts should address structural causes of underdevelopment. This paper will examine the effects microfinance on extreme poverty as defined by the poverty headcount ratio at $2 a day and $1.25 a day. The study will focus on the Latin America and Caribbean. Through regression analysis, this paper measures the effects of microfinance on the poverty rate while controlling for structural economic changes. We will conclude that microfinance has a statistically significant effect on extreme poverty in this region. These results are an important response to critics who posit that the costs of microfinance outweigh the benefits.
Microfinance and Poverty

Nearly half of the people in the world live in extreme poverty and survive on less than $2.50 a day. 1.4 billion of those people live on less than $1.25 a day (World Bank, 2009). In 2000, world leaders came together at the United Nations and pledged to work toward eliminating poverty by adopting the Millennium Development Goals. The developing world has made progress on the goal of halving poverty and owes much of that success to microfinance. Microfinance is the practice of providing much of the poor in the developing world with access to financial services they would otherwise be forced to do without. The world’s poor operate almost exclusively in the informal sector, which generally involves subsistence living and informal savings, trading, and credit. The rapid growth of the Microfinance industry over the last 40 years (and even more so last 10 years) has helped fill the financial void for the world’s poor and ultimately reduce world poverty.

This paper will provide evidence supporting that microfinance has been effective in reducing poverty in Latin America. First, we will examine the history and beginnings of microfinance, including why it is needed, how it functions, and how it has been changing in recent years. Next, we will explore criticisms of microfinance that question the ethics and efficiency of the practice. The final portion of this paper will include a case study of microfinance in Latin America. Through OLS regression analysis, we will demonstrate the effects the growing microfinance movement has had and continues to have on poverty rates in the region. Ultimately, the results will give credence to the claim that microfinance is an effective tool for reducing poverty in the developing world.
History

The origins of microfinance as we know it today are rooted in the history of its founding father, Muhammad Yunus. Yunus is often referred to as the “Banker to the Poor” after the title of his books by the same name. Born in Bangladesh, he grew up surrounded by extreme poverty and the informal economy. He went on to become a Fulbright scholar and earn a Ph.D. in Economics at Vanderbilt University before returning to his home country and getting involved in the fight against poverty (Yunus, 2003). Inspired by the famine of 1974, Yunus committed his efforts to poverty alleviation and in 1976 traveled to Jobra where he loaned his first microcredits from his own pocket. Yunus loaned $27 to 42 women for a profit of $.02 on each loan.

The success of his first loan to the poor women of Jobra and the desperate need for financial services in the village lead to Yunus’s creation of what would come to be named the Grameen Bank in 1976. He received a loan from the government with which he made loans to the poor in Jobra and the concept quickly grew. By 1982, the Grameen Bank was serving 28,000 members. Since then these numbers have grown astronomically reaching 3.12 million members in 2003 and by 2009 was approaching 8 million (Grameen Bank, 2011).

Around the same time Yunus was starting the microcredit movement in Asia, ACCION was beginning a similar movement halfway around the world in Latin America. In 1973, ACCION began extending microcredit to poor entrepreneurs in Recife, Brazil where the term “microcredit” was first used for a United Nations Project (Fiori,

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1 See “First loan he gave was $27 from own pocket.” (2006, October 14). The Daily Star. Front Page.

Goldmark, Assumpção, Darzé, & Cardoso, 2004).\textsuperscript{3} By 2001, ACCION estimated that there were over 17 million small and micro businesses using the financial services of microfinance institutions (MFIs). Since its first implementations not 40 years ago, microfinance has exploded in popularity in the developing world and today there are over 120 million accounts with MFIs worldwide (Christen, Rosenberg, & Jayadeva, 2004).

Apart from its obvious success in the developing world, microfinance has received increasing support from the international community. The United Nations declared 2005 the International Year of Microcredit in praise of its continued work to bring financial services to the underserved poor. UN Secretary General Kofi Annan expressed the importance of microfinance to the developing world in a speech saying, “the greatest challenge before us is to address the constraints that exclude people from full participation in the financial sector” (Barr, Kumar, & Litan, 2007). Microfinance directly addresses this challenge and continues to close the gap between the formal sector and the “unbankable” informal sector. In 2006, the international community continued to laud the industry by awarding The Grameen Bank and its founder Muhammad Yunus the Nobel Peace Prize.\textsuperscript{4} Despite more recent criticism of microfinance, the industry continues to grow and reach underserved people in the poorest areas.

\textbf{Why do we Need Microfinance?}

Much of the world’s poor live and function in the “informal economy.” They do not hold formal wage-paying jobs and are forced to diversify their income among

\textsuperscript{3} The United States House of Representatives may have first formally used the term “microfinance” or “microenterprise”. See The Library of Congress (H.R.5918.IH) 101st Congress.

\textsuperscript{4} See Tom Wright, “Yunus says borrowers are core of Grameen Bank”, 2011 for Yunus’s take on his recent sacking from his position as managing director of the Grameen Bank.
different types of labor and entrepreneurship. They lack access to savings accounts and formal credit. Any lending that takes place among the poor are either among family and close friends or through usurious money lenders that charge extremely high interest rates.

Why are the poor forced to live in this informal economy? Formal sector banks refuse to lend to them. The poor lack capital to use as collateral on loans, such as land or substantial consumer goods. The banks would have nothing to seize if a borrower were to default. The poor lack credit history, which would allow the banks to know the difference between a risky and safe loan. Information regarding potential borrowers and their histories drives the formal banking market. That is to say, in the poor communities of the developing world, there is too little reliable information for banks to take a gamble. Obtaining this information costs time and money. People in the informal economy often live in rural areas, so for a bank to ensure against *ex ante* and *ex post* moral hazard, they must frequently send employees to monitor the financial activities of the borrowers.\(^5\)

Since they typically demand very small loan sizes (less than $100 or so) the banks cannot reasonably cover their costs through interest rates unless the rates are prohibitively high. For many formal banks it is simply not feasible or good business to take a chance on loaning to the “informal sector” (Barr et al., 2007).

**Microfinance incentivizes repayment.**

Microfinance has stepped in to fill this void of financial services for millions of people all over the world and has overcome many of the circumstances that restrict the participation of the formal banks in this niche market. The microfinance industry has

\(^5\) *Ex ante* moral hazard exists in microfinance when a borrower receives a loan and makes a riskier investment than was previously proposed. *Ex post* moral hazard exists when a borrower’s investment is successful, but then reported as unsuccessful and default when they could actually make repayments (Di Mauro, 2002).
developed unique strategies that deal with the informational problems that have led to the exclusion of many from financial services. Microfinance issues small and uncollateralized loans with an almost immediate repayment schedule. Borrowers begin to repay their loan as soon as one week after receiving it and continue to make weekly or monthly repayments (Wright, 2000). One of the important features of microfinance is the relationship built between the borrowers and the MFIs. As borrowers make timely repayments and build credit history with the institutions, they are granted opportunities to increase the size of subsequent loans. This feature is especially important for borrowers who use the loans for micro and small businesses. As the size of the loans they are eligible for increases, microentrepreneurs can grow their businesses. MFIs benefit from this feature because it builds incentives into the repayment structure. Borrowers now have something to lose if they default; the opportunity for future loans.

**Group lending overcomes formal banks’ challenges.**

Group lending is another important mechanism for addressing the challenges of financial service extension to the poor. Microfinance in Latin America uses the practice of group lending to hedge against the risk of default and to reduce monitoring costs. Potential borrowers form groups with four or so other potential borrowers and approach MFIs together. These groups typically comprise neighbors and close family relatives that generally live near each other. The MFI grants the first loan to one member of the group. Once that member repays her loan, but not before, the next member of the group receives her loan. Each subsequent loan is contingent on the ability of the other members of the group to repay. Group members assume responsibility for each other’s loans and pledge their personal liability for everyone’s loans. If one person struggles to make a payment
on time, the rest of the group is forced to help make the payment on time or face losing future opportunities to borrow (Wright, 2000).

This strategy has a number of built-in mechanisms that hedge against the problems that exist when lending to the informal sector. The first feature is the collateralization of social-capital. Since the groups formed typically comprise borrowers with close ties, such as neighbors and relatives, each member is putting their relationships with others in the group on the line for their loan. There is a strong incentive to repay because default means that the individual cannot continue to borrow and her close friends and family suffer through her own fault. The group lending structure turns social ties themselves into collateral. Another feature of group lending is the way it ensures only the best potential borrowers are approaching the MFI for a loan. The group collective selects the other members, keeping in mind that the actions of their fellow members will determine whether or not the rest of the group can receive their loans. This incentivizes people to form groups with people they believe are least likely to default. MFIs avoid adverse selection because the groups minimize that risk before the first loan is granted (Ghatak & Guinnane, 1999).

Group lending also assumes the monitoring costs that would otherwise be the burden of the banks. *Ex ante* moral hazard is protected against because the other members of the group are close enough to each other that they can monitor and impose pressures to ensure each member is not making riskier investments than they claimed they would. *Ex post* moral hazard is avoided because the other members would know if someone is withholding returns on their investments and claiming they were unsuccessful. The looming negative pressures from the group protect against
irresponsible behavior. At the same time, the group can be viewed as a safety net for the members. Each member wants the other members in the group to succeed because of both their close ties, and more importantly because of what their success or failure means to their personal ventures. This fosters support among the group members for exchanging business advice and assisting each other when one member falls on hard times and struggles to repay her loan. In this way, bailing one of the group members out is not an entirely selfish move, but rather is a function of the safety net the group structure builds for any one of the borrowers should they have a slow month (Wright, 2000).

A possible drawback to the group lending structure is that it may hamstring some lenders’ business growth. Regardless of the group making payments on time, one borrower’s investments could be paying off very quickly and her need to expand becomes greater than that of the other members. If this person were borrowing as an individual she could repay her loans very quickly and begin taking loans of larger size to accommodate her needs. In the group lending structure, that borrower would have to wait to receive her loans longer than necessary and would have to increase her loan size incrementally and comparably with those of the rest of the members in the group.

**Microfinance overcomes structural obstacles.**

Formal banks may face other, more basic obstacles to lending to the poor. Banks are simply not located within reasonable distance of those living in extreme poverty. It is unreasonable for either lenders or borrowers to travel such great distances to make and monitor these transactions. Additionally, financial literacy may make it difficult for many people to understand and obtain loans. The poor are often poorly educated and
may have difficulty filling out the paperwork and understanding their responsibilities. Most formal banks are not in the business of financially educating the poor. The roots of the lack of financial access lay as deeply as physical and educational obstacles (Klein, 2008).

Microfinance has also worked toward overcoming these problems. At its inception, one of the primary goals of microfinance was to provide borrowers with financial and business advice. MFIs aimed to provide their customers with financial training and work closely with them on business proposals. These practices have largely taken a back seat to MFI expansion in an attempt to reach more people. Through the 1980s and 1990s, MFIs began to scale back the training and educating of their borrowers and focused more on efforts to reach a greater number of potential borrowers. Both of these practices attempt to address some of the most basic shortcomings of financial access for the poor (Barr et al., 2007).

**New Face of Microfinance**

Since the mid 1990s, microfinance has seen unprecedented growth in the number of institutions and borrowers. Many countries in Latin America have seen almost exponential growth in the number of microfinance borrowers in the last decade or so. As we see in Figure 1, the number of borrowers has been increasing fairly steadily with a few exceptions of recent tail-offs in Nicaragua, Ecuador and Brazil. Argentina, Colombia and most Mexico continue to see dramatic increases in the number of microloan borrowers.
Figure 1. Number of active microfinance borrowers in Latin America

Additionally, the number of borrowers as a proportion of the population has increased in most Latin American countries as seen in Figure 2. The proportion of each country’s population that is a borrower of a microfinance loan is represented in each of these maps. The darker blues represent a higher percentage of the population borrowing from MFIs. As we can see, many of the countries in Latin America have experienced an increase in the percentage of their population using microloans.

These figures represent the growing trend of both microfinance institutions and formal banks expanding their services. One of the chief goals of microfinance is to help the poor pull themselves out of poverty. Since microfinance aims to provide the poor with services that the formal sector will not, poverty alleviation will lead to eventual formal access for those people.
Figure 2. The maps show the proportions of the population borrowing microloans in Latin America in 1997 (left) and 2008 (right).

So in theory, the mark of microfinance’s success will be when it puts itself out of business, having elevated the poor to a level where formal banks see them worth lending to. Upgrading and downscaling are two financial sector changes that represent this theory coming to fruition.

**Non-profit decide to upgrade.**

Upgrading is the process of microfinance institutions “formalizing” their practices and operating more like traditional banks than NGOs. This process is often done with the guidance or partnership of formal banks (Berger, Goldman, & Miller-Sanabria, 2006). Upgraded MFIs are regulated, monitored and held to the same standards as traditional banks in terms transparency and how they operate. MFIs upgrade so that they can provide higher quality service to the poor and broaden their reach. They are able to offer
a wider variety of financial services such as savings accounts and larger scale loans. Upgrading does not mean that the MFIs are shifting focus from the poor, but instead means that they are more capable of providing high quality services. These MFIs benefit from greater funding and stability, but function as for-profit entities with double bottom lines (Berger et al., 2006). The willingness of the upgraded institutions to incorporate both profits and social mission into its operations demonstrates that is possible and can be profitable.

Widely regarded as the poster child for microfinance in Latin America, Banco Compartamos is one of the best examples of an NGO upgrading and formalizing its practices. After becoming Mexico’s largest microfinance lender from 1990 to 2000, Compartamos “upgraded” to a for-profit institution in 2000. At that time the bank had just over 60,000 borrowers. Six years later Compartamos had over 600,000 borrowers and in 2007 went public. The Mexico City-based bank started with an initial investment of $6 million and today is valued at more than $1.5 billion (Lewis, 2008). Investors around the world are starting to see microfinance as a lucrative business opportunity and the industry is possibly starting to turn away from its original goal.

**Formal banks decide to downscale.**

The unanticipated success of microfinance and the extremely low default rates (as small as 1% at the Grameen Bank) have attracted the attention of formal banks as well. Taking note of the returns that newly upgraded MFIs have been able to bring in, many formal banks are now interested in joining the party. Downscaling is the practice of formal banks that extend their services to what was traditionally considered the

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6 A “double bottom line” refers to a company meeting both positive financial and social goals (Bernardez, 2009).
microfinance sector. While instances of formal banks actually serving the microcredit market are few, their presence alone is enough to demonstrate that microfinance is growing its reach and popularity. The goal of extending financial access to those who don’t have it is being realized. Banks downscale for a variety of reasons. Some banks see downscaling as a savvy opportunity to profit in a “niche” market. Other banks see value in diversifying their products. Also, microfinance borrowers have proven to be less likely to default even in times of wide scale financial crises (Von Stauffenberg, 2009). Some banks just see the social mission of providing financial access to the poor as reason enough to downscale.

Both upgrading and downscaling of banks have been spurred on by the impressive returns yielded by the industry’s most successful MFIs. In 2004, a study was conducted to assess the profitability of the microfinance industry and found that many MFIs were operating with profits near or above those of traditional banks (Barton, Herrero, Quelch, & Rangan, 2007). The study took a three year mean from 2002 to 2004 and found that the average return on equity (ROE) of the top twelve performing MFIs in Latin America was over 33% and the highest was 52%. To put this into perspective, the average ROE for formal banks over the same period was only 11%. Seventeen MFIs boasted a ROE higher than those of Citigroup. The consistency of MFIs to bring in returns like this has led to wider confidence and acceptance of the industry as part of the financial sector. Table 1 shows the average ROE of the twelve MFIs in the Barton et al. study over the 2002-2004 time span. Compartamos had the highest with an astonishing 52.2 percent.
Table 1

**Top Performing MFIs in Latin America**

<table>
<thead>
<tr>
<th>MFI</th>
<th>Country</th>
<th>Average ROE (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compartamos</td>
<td>Mexico</td>
<td>52.2</td>
</tr>
<tr>
<td>BancoSol</td>
<td>Bolivia</td>
<td>26.3</td>
</tr>
<tr>
<td>Credife (Banco de Pichincha)</td>
<td>Ecuador</td>
<td>50.9</td>
</tr>
<tr>
<td>Confia Banco Procredit</td>
<td>Nicaragua</td>
<td>39.3</td>
</tr>
<tr>
<td>Banco del Trabajo</td>
<td>Peru</td>
<td>33.8</td>
</tr>
<tr>
<td>Findesa</td>
<td>Nicaragua</td>
<td>32</td>
</tr>
<tr>
<td>Fundacion WWB/Cali</td>
<td>Colombia</td>
<td>31.5</td>
</tr>
<tr>
<td>Edpyme Crear Arequipa</td>
<td>Peru</td>
<td>29.7</td>
</tr>
<tr>
<td>BanGente</td>
<td>Venezuela</td>
<td>29</td>
</tr>
<tr>
<td>Banco Solidario</td>
<td>Ecuador</td>
<td>25.2</td>
</tr>
<tr>
<td>FIE</td>
<td>Bolivia</td>
<td>25.2</td>
</tr>
<tr>
<td>Sogesol</td>
<td>Haiti</td>
<td>23.4</td>
</tr>
<tr>
<td><strong>Traditional Banks</strong></td>
<td></td>
<td><strong>11.2</strong></td>
</tr>
</tbody>
</table>

Source: Marulanda and Otero, 2005; Worldscope.

**The Dark Side of Microfinance**

As microfinance gained a higher profile in the last decade, studies have begun to doubt the industry’s mission and efficacy. The increasing number of for-profit microfinance transactions has resulted in questionable practices. As more and more institutions begin to use microfinance for profits, it begs the question whether these institutions are upholding the original aim of providing financial access to the poor. Beyond just access, the end goal is to improve the lives of the poor and help them pull themselves out of extreme poverty. Today, microfinance has taken on a different appearance complete with loan sharks, usurious high interest rates, and extreme social pressures.

Microfinance institutions have always charged high interest rates. Most NGOs had to charge rates averaging about 30% in order to cover the risk of default and transaction costs (Epstein & Smith, 2007). Since each loan is so small, the interest
payment must be proportionately larger in order to recover the administrative and informational costs. Today, MFIs sometimes use this as an excuse to charge unreasonably high interest rates. The interest rates charged by for-profit banks to microfinance borrowers range between 50 and 120 percent. Banks justify these interest rates by claiming that interest payments fund future outreach and allow them to expand to accommodate more people in poverty. They also point out that the borrowers are made aware of the interest rates before they receive their loans and there continues to be growing demand for the loans.\(^7\) Lastly, banks justify their excessive interest rates by contrasting their rates to those of informal moneylenders and loan sharks that used to monopolize the market for loans to the poor. Not only were these moneylenders dangerous, they also frequently charged interest rates of up to 300\% (Epstein & Smith, 2007).

As profits continue to rise, banks look to their own loan sharks to ensure that payments keep coming in and default stays low. In some extreme cases, the microfinance loan sharks have been more vicious and detrimental than earlier moneylenders may have been. Even the Grameen Bank has been accused of questionable practices after going public. One former loan shark who retired early after speaking out against the Grameen’s practices claims he was forced to mistreat the borrowers. His job was to intimidate and insult the borrowers and even was forced to encourage people to sell their clothes or their children (The crushing burden of microcredit, 2008). Loan agents of Banco Azteca in Mexico have publicly shamed borrowers who were late on payments by posting their personal information with flyers that say “Do Not Lend to This Person” in public places.

\(^7\) See, however, Rosenberg (2007) points out that borrower demand does not necessarily indicate that they benefit. People often make unwise decisions regarding credit.
Social pressures like this and those associated with group lending can have disastrous effects on the lives of some poor who fall behind on their payments. It is not uncommon for borrowers to take out loans from moneylenders to pay for their microfinance loans. They pay for their credit with credit and are unable to escape the cycle. In October 2010, 54 suicides were attributed to microfinance related pressures in the Indian state of Andhra Pradesh. Some of the country’s most popular microfinance institutions have been cited for grossly mishandling their practices. The MFIs are accused of verbally harassing the families of the borrowers, using vulgar language towards the wives of the victims, and even demanded that one borrower repay his debt by prostituting his sixteen year old daughter (International Business Times, 2010).

Another important caveat to the recent success of for-profit microfinance institutions is whether or not it is appropriate to be profiting from the poor. While the high returns are great for shareholders, they are being generated by excessive interest rates paid by those who can least afford it. Many in the microfinance industry are troubled by the fact that such large profits are being generated by the poor and transferred to Wall Street investors. Profits mark the fundamental shift in purpose that many MFIs in the industry took while upgrading. While extending financial access to the poor and alleviating poverty were once the primary foci of the microfinance industry, maximizing returns and profits are rapidly becoming just as, if not more, important for MFI managers. Mohammad Yunus has been highly critical of MFIs profiting from the poor and said:

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MFIs accused of contributing to the string of suicides include SKS Microfinance, Spandana Microfinance, SHARE, Asmitha, L&T’s microfinance and BASIX Microfinance.
“Microcredit should be seen as an opportunity to help people get out of poverty in a business way, but not as an opportunity to make money out of poor people” (MacFarquhar, 2010). Another important criticism is that as profits are filtered off to Wall Street, they are being taken out of the communities in which they were generated. This result may even be worse than local moneylenders who would presumably spend their profits (albeit derived from usurious interest rates) back in the community, filtering back through and stimulating the local economy (Korten, 2011).

On the other hand, advocates of profit-generating MFIs argue that the poor are ultimately better off with their service. One of the most important functions of the larger for-profit MFIs is that they are more financially stable, which enables them to broaden their reach. They are able to provide regulated access to credit to more people living in poverty, which was always a focus of the industry. One study by Gutierrez-Nieto, Serrano-Cinca, and Mar Molinero (2009) found that increased access to financial markets (particularly more efficient financial markets) is required to achieve social efficiency. This relationship can be seen in Figure 3. Financial efficiency is measured along the x-axis (ACE-WP) and social efficiency is measured along the y-axis (ACE-LR). The data clearly demonstrates an upward trend indicating that as MFIs and the microfinance industry becomes more financially efficient, they are able to achieve higher social efficiency.

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9 Gutierrez-Nieto et al. (2009) explain social efficiency to be the second line of a double bottom line business. They assess how MFIs perform in regard to their social efficiency using tools such as the social return on investment (SROI) and the CGAP’s Poverty Assessment Tool (PAT) among others.
Microfinance Does Not Reduce Poverty

Criticisms of microfinance extend beyond the bad practices and behavior of certain MFIs and question whether the industry is serving its purpose at all. A number of scholars in the field posit that microfinance does not address the root of the problems the poor suffer from and rather addresses the symptoms. Other critics suggest that microfinance hasn’t been and will not be a useful tool for poverty alleviation. While it may be true that microfinance has been oversold as a panacea for poverty, that should not discredit its entire efficacy.

Wright (2000) asserts that microfinance addresses the symptoms of poverty and not the actual root of the problem. He explains that microfinance cannot reasonably
address structural problems to economic development such as poor infrastructure, health services, or education systems. Structural changes in these areas are required for large-scale economic growth, which is not something that microfinance can provide. Skeptics throughout the development field echo these sentiments. Posner (2006) finds that microfinance success has been more of a case-by-case truth than a universal one. He is skeptical of the idea that the poor can “borrow their way out of poverty” and suggests that it would be impossible for a nation to do so. Becker (2006) supports this thought by asserting that economic growth is driven by improvements in education, fair government and regulations, strong property rights and openness to trade. Microfinance cannot affect the structure of poverty the way changes in these things can.

Perhaps surprisingly, some claim that microfinance has made women more vulnerable to domestic abuse. One of the original goals of microfinance was to promote the status of women by lending to them almost exclusively. What often occurs is the women receive the loan in name only and instead of using it for their own investment purposes, pass it off to their husbands to use (Wright, 2000). Some argue, however, that even though women give their loans to their husbands to invest, it does not necessarily mean that women are giving up their power. The women are still the ones who attend the training meetings that are mandatory for most MFIs and they are still in charge of the loan repayment. Ultimately, women have the final say on who gets to do what with their loan since they are responsible for repayment and continuing the family’s access to credit.

The most important criticism of microfinance to address is whether or not it works at all. Some claim that the amalgamation of these drawbacks has actually resulted
in a lower quality of life for the poor and has not done much, if anything at all, to alleviate poverty (Karlan & Zinman, 2007). This is an important question to ask because so many of the world’s poor rely on microfinance. What I intend to do next will examine the claim that microfinance has no effect on poverty and attempt to measure what effect microfinance has had on poverty rates in Latin America.

**Hypothesis**

Few people would suggest that microfinance is a cure all for poverty in the developing world. While many have hyped the industry as revolutionary to development economics to the extent that it would bring about the end of extreme poverty, much of the euphoria has worn off. Yunus (2007) recognizes that microfinance alone will not alleviate poverty, but asserts that it is an important tool in development economics to raise the poor up to a level where other development measures can pick up and have a more meaningful impact. Klein (2008) finds that the positive effects of microfinance are best seen over longer spans of time. He argues that financial access for the poor improves the overall well-being of households and reduces income inequality. Beck, Demirguc-Kunt, and Levine (2005) report similar findings that financial development leads to more rapid economic growth and thereby reducing poverty, specifically when measured at the $1.25 and $2 a day poverty headcount ratios.

Beck et al. (2005) also show that increased financial development has a disproportionately larger positive effect on the poor than it does for other demographics. Increased financial access is related to faster income growth for the poor, rapid narrowing of the poverty gap, and quicker decreases in the poverty rate. Barr et al. (2007) point out
the social benefits to increased financial access for the poor such as credit, savings, risk management and payment services, all of which contribute to lower poverty rates.

As previously stated, this case study will examine the effects of microfinance on poverty rates in Latin America. This study aims to find empirical evidence to support the claim that microfinance is, in fact, lowering the poverty rate in the region. The research will focus on microfinance activity and levels of extreme poverty as measured as the proportion of the population living at or below $2 a day and $1.25 a day. Since microfinance is directly aimed at the most poor, we should see the effects of increased microfinance activity best in these demographics. Also, as these borrowers repay and gain positive credit histories and bonds with the MFIs, they can increase their loan sizes and pull themselves out of poverty. Consistent with logic that supports the efforts of microfinance, the hypothesis posits that as microfinance activity increases, the number of people living in extreme poverty will decrease.

Method

This study will examine the effect of microfinance on those living in extreme poverty in Latin America by performing a panel-data analysis to capture effects over time and across countries. The data set includes data from 17 countries from Latin America and the Caribbean over the time span of 1996 to 2008. The countries examined include Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, and Venezuela.

The Microfinance Information eXchange (MIX Market) provides high quality information and data on microfinance institutions from around the world. They have
standardized the industry to make comparisons and benchmarking possible, and thus have overcome one of the greatest challenges of the industry (Mixmarket, 2007). The data that this study uses provided by the MIX Market include total borrowings, gross loan portfolio, number of active borrowers, and the number of women borrowers for each of the countries listed above. Using this data, the study examines average loan size, the percent of borrowers who are women, the percent of the population who are borrowing microfinance loans, and the number of women borrowers as a percent of the population. This data will be the primary benchmarks by which microfinance activity is measured and will provide insight into how microfinance is changing in relation to poverty.

In order to measure microfinance’s impact on poverty, the study uses two separate poverty headcount ratios. The poverty headcount ratio is used to measure extreme poverty in the developing world and is calculated as the proportion of the population that is living on less than $2 a day and $1.25 a day. The World Bank publishes comprehensive yearly data in its World Development Indicators data set. The data set includes the poverty headcount ratio at both the $2 and $1.25 a day levels for all of the countries listed above over the 1996-2008 time span.

To control for other factors that may be causing economic growth and thereby reducing the poverty headcount ratios, the study examines a diverse array of development indicators to represent different major structural contributors to development. As suggested by many critics of microfinance, poverty is most affected by

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10 The MIX Market provides data on specific MFIs in each country. In order to use the data in cross-country analysis, total borrowings, gross loan portfolio, total borrowers and total women borrowers were summed together from each individual MFI.

11 Data on average loan sizes was generated by dividing total borrowings by the number of active borrowers.
education, government regulation, and the health of the local economy. For this, the study also uses the World Development Indicators database for the following variables: the cost to start a business (as a percent of GNI per capita), the expenditure on secondary education (as a percent of GDP per capita), the female labor participation rate (as a percent of the female population), the lending interest rate (as a percent), expenditure on research and development (as a percent of GDP), the time required to enforce a contract (number of days) and the perception of crime as a constraint to business (as a percent of managers surveyed).

Empirical Model

This study uses Ordinary Least Squares (OLS) panel regressions to examine how microfinance affects poverty across countries over time. The 17-country data set includes nations all from the Latin America and Caribbean region. There are, however, vast differences among the countries in terms of development. It is reasonable to suspect, then, that changes in certain development indicators and microfinance activity may not affect all countries in similar ways. To account for some of these differences, we split the countries into two sub-groups by their wealth. The World Bank separates countries into four wealth categories: Low Income, Lower Middle Income, Upper Middle Income, and High Income. The categories are determined by GNI per capita and each of the countries in this data set fall into the two Middle Income levels. The Upper Middle Income set is defined as countries with GNIs per capita between $12,195 - $3,946 and comprises Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Mexico, Panama, Peru and Venezuela. The Lower Middle Income set is defined as countries with GNIs per capita between $3,945 - $996 and comprises Bolivia, Ecuador, El Salvador,
Guatemala, Honduras, Nicaragua and Paraguay. Figure 4 shows how the countries are divided into the two income sub-groups.

![Figure 4. This map shows the locations of Upper Middle Income Countries (left) and Lower Middle Income Countries (right).](image)

The poverty headcount ratios at the $2 a day (PHCR_2) and the $1.25 a day (PHCR_125) levels are used as the dependent variables. Once the countries were divided into two sub-groups, we ran panel-data OLS regressions for each sub-group at both poverty headcount ratios. Table 2 shows the summary statistics. The proportion of the population living in extreme poverty at both levels is, on average, much higher in the Lower Middle Income countries.

---

12 The data for the poverty headcount ratios was incomplete. Data was often recorded every other year for this variable. In order to allow for more observations, we filled in the missing data with the averages of the preceding and succeeding years.
Table 2

*Poverty Headcount Ratio*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHCR @ $2 (% of pop)</td>
<td>130</td>
<td>16.35869</td>
<td>7.582142</td>
<td>2.38</td>
<td>31.66</td>
</tr>
<tr>
<td>PHCR @ $1.25 (% of pop)</td>
<td>130</td>
<td>7.854477</td>
<td>4.762913</td>
<td>2</td>
<td>18.41</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHCR @ $2 (% of pop)</td>
<td>91</td>
<td>27.26957</td>
<td>6.244769</td>
<td>12.82</td>
<td>38.47</td>
</tr>
<tr>
<td>PHCR @ $1.25 (% of pop)</td>
<td>91</td>
<td>15.16759</td>
<td>4.501718</td>
<td>4.69</td>
<td>24.7</td>
</tr>
</tbody>
</table>

Each regression included some measure of microfinance activity. The microfinance independent variables include the average loan size per borrower as calculated as total borrowings divided by the number of active borrowers \((\text{AvgBorrow})\) and another proxy as calculated as the gross loan portfolio of MFIs in a country divided by the number of active borrowers \((\text{GLoan\_Borrow})\). The former is a closer approximation of the average loan size per borrower; however, there were much fewer observations available than the latter. We assume that the \((\text{GLoan\_Borrow})\) variable is a close proxy for average loan size per borrower because it is in the interest of MFIs to lend the full extent of their portfolios. Potential borrowers cannot benefit from excess portfolios if they are not given the money to invest and MFIs cannot benefit from interest rates if the money is not being lent out. By accounting for average loan size per borrower, we are trying to measure the possibility of economies of scale in the industry. As we already have indicated, as borrowers make timely repayments on their initial loans and build a credit history with their MFIs, they are approved for increasingly larger loans. The sizes of the loans are important to examine because it represents an increase in
income to the borrowers, directly affecting poverty rates. Figure 5 shows time series data of average microloan sizes for a selection of countries from this data set from 2002 to 2008.\textsuperscript{13} As the chart shows, the average loan size per borrower has been increasing quickly and steadily in the last decade. There is a clear upward trend in the data, which could signify economies of scale in the microfinance industry.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{average_loan_size.png}
\caption{Average loan size per borrower in Latin America from 2002 to 2008.}
\end{figure}

The next microfinance-specific independent variable measures the percent of borrowers who are women, \texttt{(Percent\_women\_borrowers)}. The study also uses two measures that capture the proportion of the overall population using microfinance loans. The \texttt{(Log\_micro\_activity)} variable is defined as the logarithm of the number of microfinance borrowers divided by the country’s total population. Similarly, the \texttt{(Log\_womenmicro)} variable is defined as the logarithm of the number of female

\footnote{\textsuperscript{13} The average loan size here is calculated as total borrowings divided by the total number of active borrowers.}
microfinance borrowers divided by the entire population. These variables will attempt to measure the scale to which microfinance is being utilized.

It is important also to think about the effects of a rapid increase of microfinance borrowers on the average loan size of a region. Since we know that first time borrowers are typically offered smaller loans compared to more frequent borrowers, we should expect average loan sizes to be pulled down by an influx of new borrowers. Let's look again to average loan sizes in Brazil, now in Figure 6. In 2005, average loan size in the country dips drastically and then is followed by sharp increases over the next two years.

Figure 6. Average loan size and total borrowers in Brazil from 2003 to 2008.

The dip corresponds to a tremendous increase in the number of borrowers in the country and the rapid rise in the average loan size corresponds with a rapid decrease in the

\[14\] We use the log of these variables because they are not linearly related to the poverty headcount ratios. This makes intuitive sense because microfinance has been growing so rapidly and it is likely that its presence spread as more people understood what it is and saw people in their towns benefiting.
number of borrowers. The total number of borrowers seems to be weighing down the average loan size. As the microfinance industry grows, it is possible that the numbers are masking the success of some borrowers who are achieving economies of scale with growing loans and micro businesses.

Table 3

*Summary Statistics of Microfinance Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Upper Middle Income</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Obs</td>
<td>Mean</td>
<td>Std. Dev.</td>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td>Average Borrowings</td>
<td>64</td>
<td>565.7257</td>
<td>558.8124</td>
<td>42.3071</td>
<td>2280.2</td>
</tr>
<tr>
<td>Women (Percent of Borrowers)</td>
<td>96</td>
<td>0.5267082</td>
<td>0.224919</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Gross Loan Portfolio per Borrower</td>
<td>96</td>
<td>1082.17</td>
<td>924.3376</td>
<td>54.3543</td>
<td>4448.35</td>
</tr>
<tr>
<td>Women Borrowers / Population</td>
<td>92</td>
<td>0.0049309</td>
<td>0.0077183</td>
<td>0.0000193</td>
<td>0.038585</td>
</tr>
<tr>
<td>Borrowers / Population</td>
<td>96</td>
<td>0.0100243</td>
<td>0.0175254</td>
<td>0.0000475</td>
<td>0.0936307</td>
</tr>
</tbody>
</table>

| Variable                           | Lower Middle Income |         |         |       |       |
|                                    | Obs  | Mean   | Std. Dev. | Min  | Max   |
| Average Borrowings                 | 47   | 335.3939 | 212.3253  | 20.4176 | 830.563|
| Women (Percent of Borrowers)       | 79   | 0.5375118 | 0.2395491 | 0 | 1 |
| Gross Loan Portfolio per Borrower  | 79   | 757.7692  | 446.1072  | 50.872 | 1884.49|
| Women Borrowers / Population       | 74   | 0.0136528 | 0.0136895 | 4.15E-06 | 0.0546495|
| Borrowers / Population             | 79   | 0.0227548 | 0.0232789 | 8.31E-06 | 0.0949444|
Table 3 shows the summary statistics for the microfinance variables used in this study and is broken down by income group. As might be expected, levels of both average borrowings and gross loan portfolio per borrower are higher for borrowers in the Upper Middle Income countries. Also, the Lower Middle Income countries boast higher proportions of the female and total borrowers to the total population. This follows the logic that a lower percentage of the population needs to use microfinance to access financial markets. Finally, the percent of women borrowers at any MFI is near the same in both country groups, since there wouldn’t seem to be a reason for lower or higher income countries to treat women borrowers any differently.

The regression analysis uses a number of development indicators as independent variables to account for other sources that may be driving down the poverty headcount ratios. The first variable is expenditure on secondary education as a percent of GDP, \((Ed\_Expend\_2)\). The next is the percent of GDP spent on research and development in each country \((RnD)\). These measures represent investments in human capital, which is a driving factor in economic development. The variable \((Startup\_Cost)\) measures the average cost to start a business as a percent of GNI per capita. The variable \((LendInterestRate)\) is each country’s lending interest rate in percent as provided by the World Bank. \((WLaborforce)\) measures the female labor participation rate as a percent of the female population. These variables capture aspects of market health in each country. \((ContractEnforce)\) is defined as the number of days required to enforce a contract. And finally, \((BCrime)\) is a binary variable that takes the value 1 if more that 25 percent of managers in a country feel that crime was a constraint to business and 0 if otherwise. These variables capture the role of the government in fostering an economic environment
conducive to growth and activity. Controlling crime and establishing efficient legal structures are the responsibility of the government and essential to economic growth.

Table 4

<table>
<thead>
<tr>
<th>Variable</th>
<th>Upper Middle Income</th>
<th>Lower Middle Income</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Obs</td>
<td>Mean</td>
</tr>
<tr>
<td>Startup Cost (GNI per Capita)</td>
<td>60</td>
<td>20.21</td>
</tr>
<tr>
<td>Female Labor Participation Rate (% of female pop)</td>
<td>130</td>
<td>45.47462</td>
</tr>
<tr>
<td>Lending Interest Rate (%)</td>
<td>129</td>
<td>23.2975</td>
</tr>
<tr>
<td>R &amp; D (% of GDP)</td>
<td>75</td>
<td>0.4015231</td>
</tr>
<tr>
<td>Time Req. to Enforce a Contract (Days)</td>
<td>60</td>
<td>658.25</td>
</tr>
</tbody>
</table>
Table 4 shows the summary statistics for each development indicator variable and divides them into the two income sub-groups. The variables that measure human capital, R & D and Expenditure on secondary education, were on average higher in the Upper Middle Income countries, as should be expected. Lending interest rates and female labor participation rates were about equal on average for the two sets. However, the variable that measures business start up costs shows great variation between sub-groups. Since the variable is measured as a percent of GNI per capita, the data suggest that starting a business would cost an average of 97 percent of per capita income in the Lower Middle Income set as opposed to just 20 percent in the Upper Income set. This means that starting a business is a much greater undertaking for the average person in lower income countries and is possibly a constraint to growth. The time required to enforce a contract is also longer on average in the lower income countries, which can make business ownership and economic activity more arduous. Although not listed in Table 4, it is important to note that the variable (BCrime) takes a value of 1 for two of the ten countries in the Upper Middle Income set. By contrast, the variable takes a value of 1 for five of the seven countries in the Lower Middle Income set.

This set of variables is has been greatly trimmed down from the original set. We ran preliminary regression with a number of different proxies for the different types of structural development. The variables presented in this paper were consistently more statistically significant and remained in the final results. Among the variables that did not prove to be significant that are worth noting include growth in GDP, inflation, remittance payments, foreign direct investment, unemployment, and the percent of the

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15 In 2003, 80 percent of managers in Guatemala surveyed by the World Bank felt crime was a serious constraint to business.
population working in the industry, service, and agricultural sectors. The variables initially tested are not limited to this list. These other development indicators did not prove to be statistically significant.

**Results**

Using the variables outlined above, we run Ordinary Least Squares (OLS) panel regressions with heteroskedasticity-robust standard errors. We run four separate sets of regressions as the data is separated into two income categories and we examine two distinct levels of extreme poverty (poverty headcount ratio at $2 and $1.25). Tables 5 through 9 show the results.

Table 5 shows the models estimating the effects of microfinance on the $2 Poverty HCR for Upper Middle Income Countries. Both microfinance variables, (GLoan_Borrow) and (Log_womenmicro), have negative coefficients that are statistically significant at the 1% level. This indicates that a dollar increase in the gross loan portfolio per borrower will decrease the poverty HCR by .00317 percent (Model 3). Also, as the number of women borrowers as a proportion of the population increases, the proportion of the population in extreme poverty at the $2 level decreases. Similarly, the coefficients on the human capital variables, (RnD) and (Ed_Expend_2), are negative and statistically significant at the 1% level indicating that an increase in human capital leads to a decrease in the poverty HCR. As in Model 3, a 1% increase in the amount invested in R & D results in a 10.89 percent decline in the $2 poverty HCR. Also, a 1% increase in expenditure on secondary education results in a .957 percent decrease in the $2 poverty HCR. A 1% increase in the lending interest rate increases the poverty rate by 0.115 percent (Model 3). The time required to enforce a contract increases the poverty HCR by
.0189 percent (Model 3) for an increase in one day. Finally the \textbf{(Wlaborforce)} variable increases the poverty HCR by .189 percent (Model 3) for a 1% increase in women participating in the labor force. These coefficients were all statistically significant.

Table 5

\textit{OLS Regressions of Poverty HCR at \$2 for Upper Middle Income Countries}

\begin{tabular}{lccc}
\hline
Dependent variable: PHCR & 2 &  &  \\
\hline
\text{Model} & (1) & (2) & (3) \\
\hline
GL\text{loan} B\text{orrow} & -0.00361*** & -0.00377*** & -0.00317***  \\
 & (-4.15) & (-5.66) & (-5.46)  \\
RnD & -13.32*** & -15.18*** & -10.89***  \\
 & (-7.45) & (-14.81) & (-5.11)  \\
LendInterestRate & 0.190*** & 0.217*** & 0.115**  \\
 & (-4.82) & (-11.94) & (-2.73)  \\
Ed\_Expend\_2 & -0.862*** & -0.834*** & -0.957***  \\
 & (-13.08) & (-9.76) & (-9.69)  \\
ContractEnforce & 0.0162*** & 0.0165*** & 0.0189***  \\
 & (-10.57) & (-22.99) & (-18.6)  \\
Log\_women\text{micro} & -0.537*** & -0.478***  \\
 & (-3.35) & (-4.73) &  \\
Wlaborforce & 0.189** &  \\
 & (-2.58) &  \\
\_cons & 22.18*** & 18.66*** & 9.780**  \\
 & (-14.27) & (-14.81) & (-2.61)  \\
\hline
\text{Summary Statistics} &  &  &  \\
R\_sq within & .8369 & .8195 & .8520  \\
R\_sq between & .9826 & .9971 & .9992  \\
R\_sq overall & .9619 & .9776 & .9853  \\
N & 19 & 19 & 19  \\
\hline
\end{tabular}

Note: t statistics in parentheses
\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001
Table 6

**OLS Regressions of Poverty HCR at $1.25 for Upper Middle Income Countries**

<table>
<thead>
<tr>
<th>Dependent variable: PHCR_125</th>
<th>Model (4)</th>
<th>Model (5)</th>
<th>Model (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLoan_Borrow</td>
<td>-0.00175***</td>
<td>-0.00194***</td>
<td>-0.00175***</td>
</tr>
<tr>
<td></td>
<td>(-9.49)</td>
<td>(-6.79)</td>
<td>(-9.74)</td>
</tr>
<tr>
<td>RnD</td>
<td>-4.777***</td>
<td>-2.663***</td>
<td>-3.016***</td>
</tr>
<tr>
<td></td>
<td>(-3.51)</td>
<td>(-4.75)</td>
<td>(-12.17)</td>
</tr>
<tr>
<td>Ed_Expend_2</td>
<td>-0.693***</td>
<td>-0.567***</td>
<td>-0.697***</td>
</tr>
<tr>
<td></td>
<td>(-7.38)</td>
<td>(-14.10)</td>
<td>(-10.16)</td>
</tr>
<tr>
<td>ContractEnforce</td>
<td>0.0120***</td>
<td>0.0139***</td>
<td>0.0141***</td>
</tr>
<tr>
<td></td>
<td>(-7.49)</td>
<td>(-36.63)</td>
<td>(-40.43)</td>
</tr>
<tr>
<td>Wlaborforce</td>
<td></td>
<td>0.159***</td>
<td>0.147***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-9.03)</td>
<td>(-7.24)</td>
</tr>
<tr>
<td>Log_womenmicro</td>
<td></td>
<td></td>
<td>-0.372**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-2.75)</td>
</tr>
<tr>
<td>_cons</td>
<td>12.82***</td>
<td>1.751</td>
<td>1.565</td>
</tr>
<tr>
<td></td>
<td>(-9.1)</td>
<td>(-1.25)</td>
<td>(-1.12)</td>
</tr>
</tbody>
</table>

**Summary Statistics**

<table>
<thead>
<tr>
<th></th>
<th>R-sq within</th>
<th>R-sq between</th>
<th>R-sq overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
</tbody>
</table>

Note: t statistics in parentheses
* p < 0.05, ** p < 0.01, *** p < 0.001

Table 6 estimates the effects of similar variables at the $1.25 poverty HCR also for the Upper Middle Income countries. Consistent with the findings above, the microfinance and human capital variables yield statistically significant negative coefficients that suggest decreases in the poverty rate. A one-dollar increase in (GLoan_Borrow) decreases the poverty HCR at $1.25 by 0.00175 percent (Model 6).
One percent increases in *(RnD)* and *(Ed_Expend_2)* result in 3.016 percent and .697 percent decreases in the poverty HCR (Model 6). The time required to enforce a contact increase the poverty HCR by .0141 percent per extra day required (Model 6). Again, women’s increased participation in the labor force increases the poverty rate by .147 percent (Model 6).

Table 7

*OLS Regressions of Poverty HCR at $2 for Lower Middle Income Countries*

<table>
<thead>
<tr>
<th>Model</th>
<th>(7)</th>
<th>(8)</th>
<th>(9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLoan_Borrow</td>
<td>-0.00730***</td>
<td>-0.0061</td>
<td>-0.0062</td>
</tr>
<tr>
<td></td>
<td>(-3.75)</td>
<td>(-1.54)</td>
<td>(-1.63)</td>
</tr>
<tr>
<td>Startup_Cost</td>
<td>0.0532*</td>
<td>0.0556</td>
<td>0.048</td>
</tr>
<tr>
<td></td>
<td>(-2.38)</td>
<td>(-1.77)</td>
<td>(-1.59)</td>
</tr>
<tr>
<td>Ed_Expend_2</td>
<td>-0.755***</td>
<td>-0.665***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-4.45)</td>
<td>(-4.07)</td>
<td></td>
</tr>
<tr>
<td>Log_womenmicro</td>
<td></td>
<td>-0.668*</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-2.42)</td>
<td></td>
</tr>
<tr>
<td>_cons</td>
<td>26.48***</td>
<td>31.41***</td>
<td>28.85***</td>
</tr>
<tr>
<td></td>
<td>(-9.07)</td>
<td>(-5.64)</td>
<td>(-4.45)</td>
</tr>
</tbody>
</table>

Summary Statistics

<table>
<thead>
<tr>
<th></th>
<th>(7)</th>
<th>(8)</th>
<th>(9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-sq within</td>
<td>0.8178</td>
<td>0.9025</td>
<td>0.9134</td>
</tr>
<tr>
<td>R-sq between</td>
<td>0.3758</td>
<td>0.5207</td>
<td>0.4244</td>
</tr>
<tr>
<td>R-sq overall</td>
<td>0.4879</td>
<td>0.7013</td>
<td>0.6395</td>
</tr>
<tr>
<td>N</td>
<td>42</td>
<td>18</td>
<td>18</td>
</tr>
</tbody>
</table>

*t* statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001

Table 7 shows the results for the regressions run on the $2 Poverty HCR for the Lower Middle Income Countries. In this group, microfinance is measured by the *(GLoan_Borrow)* variable. This variable also results in a decrease in the poverty rate.
A one-dollar increase in average borrowings decreases the poverty rates by 0.0073 percent (Model 7). The other microfinance variable included, (Log_womenmicro), also yields a negative coefficient (Model 9). To measure human capital in this group we use (Ed_Expend_2), which causes a 0.665 decrease in the poverty rate with a 1% increase (Model 9). Conversely, as the cost to start a business as a percent of GNI per capita increases by 1%, the poverty rate increases by 0.0532 percent (Model 7).

Table 8 shows the results of the final regression set that measures the effects on the poverty at the $1.25 level for the Lower Income Countries. The microfinance measures continue to be statistically significant and decrease the poverty rate as microfinance grows. A dollar increase in (AvgBorrow) from Model 11 decreases the poverty rate by 0.0096 percent. In Model 11, a 1% increase in the percent of borrowers who are women decreases poverty by 0.1012 percent. In the same model, a change in (Log_micro_activity) results in a 2.26 percent decrease in the poverty rate. Changes in secondary education spending have the greatest impact on the poverty rate of any group as a 1% increase in education expenditure results in a 1.39 percent decrease in the poverty rate (Model 11). Again, the labor force participation rate of women plays a significant role and yields a 1.084 percent increase in the poverty rate for a corresponding 1% increase in labor force participation. (LendInterestRate) also yields a statistically significant increase in the poverty rate as it increases. A 1% increase in the lending interest rate results in a 0.163 percent increase in the poverty HCR.
Table 8

*OLS Regressions of Poverty HCR at $1.25 for Lower Middle Countries*

<table>
<thead>
<tr>
<th>Dependent variable: PHCR_125</th>
<th>(10)</th>
<th>(11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log_micro_activity</td>
<td>-1.557***</td>
<td>-2.266***</td>
</tr>
<tr>
<td></td>
<td>(-3.46)</td>
<td>(-3.69)</td>
</tr>
<tr>
<td>Percent_women_borrowers</td>
<td>-0.06602*</td>
<td>-0.1012***</td>
</tr>
<tr>
<td></td>
<td>(-1.97)</td>
<td>(-4.92)</td>
</tr>
<tr>
<td>Ed_Expend_2</td>
<td>-1.068***</td>
<td>-1.391***</td>
</tr>
<tr>
<td></td>
<td>(-3.79)</td>
<td>(-5.45)</td>
</tr>
<tr>
<td>WLaboreforce</td>
<td>0.968***</td>
<td>1.084***</td>
</tr>
<tr>
<td></td>
<td>(-6.1)</td>
<td>(-5.69)</td>
</tr>
<tr>
<td>AvgBorrow</td>
<td></td>
<td>0.00967*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-2.25)</td>
</tr>
<tr>
<td>LendInterestRate</td>
<td></td>
<td>0.163*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-2.35)</td>
</tr>
<tr>
<td>_cons</td>
<td>-26.61***</td>
<td>-35.85***</td>
</tr>
<tr>
<td></td>
<td>(-4.03)</td>
<td>(-4.15)</td>
</tr>
</tbody>
</table>

**Summary Statistics**

- R-sq within: 0.1382, 0.306
- R-sq between: 0.6251, 0.8085
- R-sq overall: 0.6105, 0.6876
- N: 32, 26

* t statistics in parentheses
* p < 0.05, ** p < 0.01, *** p < 0.001

**Discussion**

The results are largely consistent with the hypothesis presented earlier.

Microfinance does have a statistically significant effect on reducing poverty at both the $2 and $1.25 a day levels. Other important development indicators also yield results that suggest important implications for poverty rates. The results show that microfinance
DOES MICROFINANCE REDUCE POVERTY? A STUDY OF LATIN AMERICA

makes a substantial contribution to decreasing poverty when combined with other, more structural, contributors to economic development. Human capital, healthy markets, and sensible government regulations also have significant roles in development in this study.

Comparing the coefficients of the different variables is a bit difficult. The coefficients on the human capital variables appear to signal a much larger effect on reducing poverty than different measures of microfinance do. However, (RnD) and (Ed_Expend_2) are measured in percent of GDP per capita. Obviously, a 1% change in either of these variables will yield a much larger effect on poverty than a one-dollar change in average loan size per borrower or gross loan portfolio per borrower. The amount of money spent to increase either (RnD) or (Ed_Expend_2) by 1% is enormous compared to the one-dollar change in the average loan size variables. For this reason, the coefficients on the microfinance variables should not be written off as “too small” to have a real impact. Average loan sizes have been increasing steadily in Latin America over the last decade on a scale that would make an important contribution to the decline in poverty rates.\(^{16}\)

Consistent through each group, the variables that account for market health have positive coefficients. The intuition here is easy to follow. Increases in the lending interest rate can cause more poverty for a number of reasons. It makes it more costly to run businesses and can be prohibitively costly for small and micro enterprises. It also disincentivizes taking out loans or limits financial market access, which as we have seen is an important factor for development and poverty reduction. As business start-up costs increase, this should also increase the poverty rate and the models reflect that. High start

\(^{16}\) See Figure 5.
up costs limit the number of people who can afford to start their own business and grow their wealth. The time required to enforce a contract can also hinder economic growth if the duration is too long. It is the responsibility of governments to build a functioning and efficient framework in which economic development can occur. Increases in the number of days required to enforce a contract result in higher poverty rates. Interestingly, the variable that measures women’s labor force participation is positively correlated with the poverty headcount ratio. This suggests that as the percentage of women working increases, so too does the poverty rate. This may be explained by the intuition that women are relied upon even more to work when a family is living in extreme poverty. Not unlike the economic situation of the settlers in America’s western frontier, the women’s work is essential to survival in desperate conditions. These variables represent the “structural” aspects of an economy that many suggest are the only way to combat poverty. Including these variables in the regressions is essential to control for structural changes that may also be affecting poverty.

Conclusions

Microfinance is not a panacea for global poverty. While the industry was occasionally extolled as the end of poverty as we know it, few studies and development economists would support the claim. Microfinance is, however, an important first step to alleviating poverty.

Some have suggested that microfinance can never have more than a small impact on poverty. When compared to large changes in structural factors of economic development such as infrastructure and human capital, this is likely correct. However, microfinance can be interpreted as an important structural change in economic
development for the poor. Microfinance opens up opportunities for credit to entire populations that had previously never had access. Even though the industry was spearheaded by NGOs, it still fundamentally changed the economic conditions of the poor.

The most difficult aspect to lowering extreme poverty is getting over the hump, out of the poverty trap. The trap that exists is the lack of access to formal banking institutions. The poor are cut off from the formal economy and forced to live in their own economic spheres. While large scale structural changes in infrastructure, government regulation and human capital can help the country as a whole develop, those benefits do not necessarily trickle down to those living on less than $2 and $1.25 a day. Microfinance has started the processes of integrating the poor into the rest of the economy. Upgraded MFIs and downscaling commercial banks are finally beginning to bridge the gap between the formal and informal economies.

As mentioned earlier, upgraded and downscaled microfinance brings up the important ethical question of profiting from the poor. What have been most troubling are not slightly higher interest rates, it has been questionable practices and usurious interest rates on many MFIs. Loan sharks and social pressures have escalated, causing problems for microfinance borrowers. Public shamings and suicides have headlined recent news about MFI practices. Borrowers are taking loans out from moneylenders to pay for their microloans. Profits that are generated locally are now being whisked away to Wall Street investors instead of filtering back into the local economy. Any number of criticisms can be made about the practices of some for-profit microfinance institutions, but that should not spoil the benefits of the industry on the whole. While it may be true that some
families and borrowers have been made worse off, microfinance continues to be a positive force in the lives of many.

Regardless of the criticisms of the practices of certain MFIs, the important question to ask is, does it work? Is microfinance actually making a contribution to the global decrease in poverty or is it just making marginal improvements in the daily lives of some borrowers? This study found that microfinance has had a significant impact on poverty rates in Latin America and the Caribbean. The effects may certainly be smaller than the effects of large-scale structural economic changes, but they are nevertheless important in reducing poverty. As microfinance continues to grow and reach more of the world’s poor, it will give them an opportunity to take charge of their own economic situation and work their way out of poverty.
References


- (2006, October 14). First loan he gave was $27 from own pocket. The Daily Star, Front Page.


