Centre Emile Bernheim
Research Institute in Management Sciences

Solvay Brussels School
Economics & Management

Poverty penalty and microfinance

Carlos Serrano-Cinca, Begoña Gutiérrez-Nieto, Beatriz Cuéllar Fernández and Yolanda Fuertes-Callén

A poverty penalty arises when the poor pay more than the non-poor to access goods and services. An example is the cost to access credit. While still high, microcredit interest rates are lower than the interest rates charged by moneylenders. Microfinance Institutions (MFIs) usually justify the high interest rates on grounds of the high risk involved in microcredit, the high fixed cost associated with small loans and the high financial expenses borne by MFIs given their difficulty in deposit collection. After identifying and quantifying poverty penalty in different countries, this paper focuses on the Colombian case. The study questions the above justifications because the causes are more closely related to a lack of efficiency, and sometimes, to an eager desire for profits.

Keywords: Microfinance, poverty penalty, mission drift, banking

CEB Working Paper N° 13/029
2013

Université Libre de Bruxelles - Solvay Brussels School of Economics and Management
Centre Emile Bernheim
ULB CP114/03 50, avenue F.D. Roosevelt 1050 Brussels BELGIUM
e-mail: ceb@admin.ulb.ac.be Tel. : +32 (0)2/650.48.64 Fax: +32 (0)2/650.41.88

ULB

Poverty penalty and microfinance

Carlos Serrano-Cinca,
Begoña Gutiérrez-Nieto*
Beatriz Cuéllar Fernández
Yolanda Fuertes-Callén

Department of Accounting and Finance
University of Zaragoza, Spain

Abstract

A poverty penalty arises when the poor pay more than the non-poor to access goods and services. An example is the cost to access credit. While still high, microcredit interest rates are lower than the interest rates charged by moneylenders. Microfinance Institutions (MFIs) usually justify the high interest rates on grounds of the high risk involved in microcredit, the high fixed cost associated with small loans and the high financial expenses borne by MFIs given their difficulty in deposit collection. After identifying and quantifying poverty penalty in different countries, this paper focuses on the Colombian case. The study questions the above justifications because the causes are more closely related to a lack of efficiency, and sometimes, to an eager desire for profits.

Keywords: Microfinance, poverty penalty, mission drift, banking

Acknowledgements: This work was supported by grant ECO2010-20228 of the Spanish Ministry of Education, and the European Regional Development Fund and by grant Ref. S-14/2 of the Government of Aragon.

* Corresponding author. Gran Vía 2, 50005 Zaragoza, Spain. Telephone: +34 876 554643. Fax: +34 976 761 769. E-mail: bgn@unizar.es

Poverty penalty and microfinance

Introduction

Caplovitz (1963) found that the poor usually pay more than the non-poor for goods and services. One such example occurs when microcredit interest rates are higher than other loan interest rates. This, as a form of a financial poverty penalty, can have negative outcomes. For example, the poverty penalty can lead to a poverty trap, a self-reinforcing mechanism that causes poverty to persist, Barnett et al. (2008). However, Microfinance Institutions (MFIs) justify their high interest rates with several arguments such as the high risk of microcredit, the high fixed costs associated with small loans, the high MFIs' financial expenses, and their need for profits to be sustainable and no dependent on donors. The aim of this paper is to determine whether the reasons provided by the MFIs are convincing or simply a pretext.

Several research questions are formulated. The first attempts to confirm the existence of a poverty penalty and its magnitude. Several authors have studied microcredit interest rates, Morduch (2000), Dehejia et al. (2012) and Roberts (2013). There is a debate regarding the sustainability of MFIs and whether such sustainability would justify their high interest rates or whether it would be better to subsidize MFIs' high interest rates. While Adams et al. (1984) affirm that access to cheap credit gives no incentive to save, Yunus (2007) warns of loan sharks, those MFIs that charge interest rates close to usury. Rosenberg et al. (2009) recognizes that some MFIs are charging their clients rates that are so high that they are difficult to justify from a development perspective. One of the more serious problems for the microfinance sector is the profit orientation of a number of MFIs, according to the annual study by the Centre for the Study of Financial Innovation (CSFI, 2012). This paper tries to shed light on the above debate, testing if microcredit interest rates are higher than those of other financial products.

The second research question tests whether the high interest rates are justifiable. The first justification for high interest rates is based on microcredit risk: if lending to the poor involves a high level of non-repayment, it is sensible to compensate this risk by increasing interest rates. On the other hand, Mersland and Strøm (2010) argue that giving many small loans is a way of diversifying risks for any financial institution. The second justification is based on financial expenses, which can be high because non-regulated MFIs cannot access deposits, a cheap funding

source, Hartarska and Nadolnyak (2007). However, many MFIs receive donations and subsidized funds that lower their funding costs. The third justification is based on the administrative costs associated with small loans; because a microcredit involves high fixed costs, Aleem (1990) and Gonzalez (2010). Finally, the fourth justification is the need for profits to be self-sustainable, Cull et al. (2007). Beyond sustainability, several socially oriented MFIs are drifting to maximize profits by charging excessively high interest rates, as warned by Augsburg and Fouillet (2010).

Many recent studies on MFIs use information from annual statements. Mersland and Strøm (2009) confirm the high portfolio yield of MFIs (defined as interest revenue to loan portfolio) and also find that MFIs financial performance is related to their governance. Ahlin et al. (2011) find that the mean of the interest markup (defined as the difference between the average financial revenue per dollar loaned and the average financial expense per dollar loaned) is 34.7%. Tchakoute-Tchuigoua (2010) finds that the profit margin (net operating income to financial revenue) does not differ significantly among MFIs by legal status. Rosenberg et al. (2009) analyze the country distribution of the interest yield (the sum of costs and profits of the loan portfolio). The study by Gonzalez (2010) finds a clear relationship between interest yield and operating efficiency.

The previous studies have the restriction of solely using information on margins extracted from the annual accounts of MFIs. Accordingly, they do not analyze the Effective Annual Interest Rates (EAR), which are the actual interest rates paid by clients,. One of the paper's contributions is the use of the EAR, taken from Mftransparency.org, a non-governmental organization that collects information on microcredits and their prices. To the best of our knowledge, there is no previous study about microfinance poverty penalty. After analyzing 17 countries, a single country, Colombia, was selected for the empirical study to avoid cross-country comparison problems and because the microfinance industry is well developed in Colombia. In addition to analyzing the data relative to effective rates, the paper analyzes financial statements of MFIs and commercial banks, some of which offer microcredits. This allows for a comprehensive study of the whole financial sector.

The rest of the paper is structured as follows. The first section reviews the literature on financial poverty penalty. The second section presents the hypotheses. The third section contains the empirical study, and the final section presents discussion and conclusions.

1. Financial poverty penalty

Mendoza (2011) asserts that the poverty penalty is the relatively higher cost shouldered by the poor compared to the non-poor for their participation in certain markets. One of the first authors to use the poverty penalty term was Caplovitz (1963), who demonstrates its presence in different products and services. Hartwell (1947) finds that loan size is negatively correlated with interest rates. Several authors identify clear examples of a financial poverty penalty. Prahalad and Hart (2002) claim that Indian money lenders charge daily interest rates above 20 percent. Rosenberg et al. (2009) study 1,400 MFIs and find that while the median interest rate for microcredits is 26%, it can reach as high as 85%. Driouchi and Mertou (2012) study the informal housing transactions in Morocco and confirm that the poor are charged interest rates that exceed the formal credit markets rates. Bertrand and Morse (2011) find that payday loans are indeed expensive, with annual percentage rates usually over 400%. Valenzuela (2002) finds that the interest rates charged by commercial banks entering the microcredit market are higher for microcredits than they are for small business products, which serves as an example of price discrimination.

To analyze in depth the causes of the poverty penalty, the first stage is to know how interest rates are set. This is an issue largely studied by economists, since Adam Smith's work, which notes that interest rates in the colonies were remarkably high and which also discusses the usury phenomenon. In the microfinance field, Hudon (2007) explains how clients' interest rates are fixed according to four theories: the procedural approach, the perfect market approach, the credit right approach and the consequentialism approach.

The procedural approach affirms that any interest rate is fair to the extent that it is the result of a free negotiation process where the client is neither coerced nor deceived, Hudon (2007). Small companies have less negotiation power than large companies facing financial institutions, Dietrich (2012). In the case of microfinance, many poor clients are not even in a position to allow for any type of negotiation. The reason lies in their lack of financial literacy and their low financial inclusion, both of which are typical in countries where MFIs operate, Demirgüç-Kunt and Klapper (2012). Bertrand and Morse (2011) illustrate the case of payday borrowers who fail to add up the total cost of lending over time.

According to the perfect market approach, the fair interest rate is agreed upon by the MFI and its poor clients in a perfect financial market. However, as MFIs operate in imperfect markets,

different country studies find evidence of tacit collusion, such as Okeahalam and Adams (2000) in Namibia and Galindo and Jaramillo (2011) in Colombia.

Advocates of the credit right approach affirm that providing money to the poor is not enough, arguing that the provision must be cheap money, Yunus (2007). Hudon (2009) wonders if access to credit should be a right while warning that credit also has potential negative consequences, including over-indebtedness and abusive collection practices by lenders.

Finally, according to the consequentialist approach, MFIs' interest rates should maximize the utility of the lender and the borrower, rather than only maximizing the MFIs' profits, as microcredit is justified by poor empowerment, Hudon (2007). However, many authors are in favor of high interest rates as a way to achieve MFI financial sustainability and to avoid donor dependence. Having sound MFIs also benefits poor customers who can gain stable financial access, though at high prices, Dehejia et al. (2012).

2. The hypotheses

This section addresses the main arguments generally provided by MFIs to justify their high interest rates, such as the high risk involved in microcredit, the high financial costs associated with microcredit, the high administrative costs of microcredit and the need for profits in light of the lack of donations. Instead, we think that the reasons have more to be with inefficiency and, in some cases, with profit seeking. Abnormally high prices, in our case, high interest rates, are typical of imperfect markets where clients have low negotiating power.

H1 on risk. Lending to the poor, who lack collateral, seems a risky business despite the proverb, *the poor always pay back*. Moreover, a bank cannot financially sanction poor people who default on a loan, Ghatak and Guinnane (1999). If microcredit risk was higher than risks for other financial products, higher interest rates would be justified. Yunus (1999), founder of the pioneer Grameen Bank, implemented solutions to minimize the risks associated with lending to the poor. MFIs have developed different mechanisms to address microcredit risk, such as group lending, Morduch (2000). A recent survey identifies client over-indebtedness as a primary risk within microfinance, CSFI (2012). Basel banking accords (BIS, 2010) recommend differentiating microcredit risk according to the type of collateral and establishing adequate loan provision levels

and capital requirements.

The relationship between risk and loan size has been studied by Mersland and Strøm (2010). Some authors affirm that as the loan size decreases, the risk grows. Jiménez and Saurina (2004) argue that institutions study large loans more carefully. But Mersland and Strøm (2010) affirm that having many small loans is a way of diversifying and minimizing risk. Though theory may offer arguments for both sides, empirical studies show that, in general, default rates are very low in microfinance, at approximately 1.9 percent according to Rosenberg et al. (2009). These authors further affirm that MFI interest rates are not being inflated by unreasonable loan losses.

Credit risk is not the sole risk faced by financial institutions. Many banks have gone bankrupt for investing in products that proved to be toxic assets or for investing in derivatives or in the real estate market. MFIs, which do not generally operate complex products, have a solid balance structure with a high level of equity that includes donations. In fact, due to the nature of the microcredit business, Krauss and Walter (2009) advise international investors to include microfinance in their portfolios to reduce the volatility of their portfolios. McShane and Sharpe (1985) find that the relationship between solvency (an indicator related to the degree of risk aversion) and margin is positive with respect to banks. It is expected that the solvency of MFIs will be higher than the solvency of other financial entities. Therefore:

Hypothesis 1. Risk levels, measured in terms of client defaults, are expected to be similar for microcredit and other loans. Risk levels, measured in terms of internal solvency, are expected to be higher for MFIs than for other financial institutions. Thus, risk does not justify high interest rates.

H2 on financial expenses. The banking business is based on margins where money, a standardized product, is sold and bought. The price of money matters. As many MFIs are not regulated, they cannot collect deposits, a cheap funding source, as noted by Hartarska and Nadolnyak (2007) and De Sousa-Shields and Frankiewicz (2004). However, MFIs do receive donations. Hermes and Lensink (2011) affirm that 70% of the microfinance programs depend on subsidies. It could be questioned whether the amount of donations (at subsidized or even zero cost) is enough to compensate for the lack of deposits. D'Espallier et al. (2013) empirically studied subsidized and non-subsidized MFIs and found that African and Asian MFIs compensate for non-subsidization by charging their clients higher interest rates, while in other areas some unsubsidized MFIs target less poor clients, thereby drifting from their social mission. Bogan (2012) affirms that

MFIs that receive donor funds are pressured to obtain sustainability. According to Armendariz and Morduch (2005), many MFIs use subsidies to cover the costs of serving their poorest clients in rural areas. Therefore:

Hypothesis 2. Financial expenses are expected to be similar in MFIs and other financial institutions. The lack of deposits does not justify the high interest rates of MFIs if they are compensated by the low cost of donations.

H3 on efficiency. In every financial institution, processing a loan involves fixed costs, which are costs that do not depend on loan size. Fixed costs are among the most important costs for the lender. According to Maudos and Solís (2009), operating costs are the most relevant determinants of the intermediation margin for financial institutions. These costs can justify microcredit high interest rates. Aleem (1990) found that half of the amount of the loan is spent on operating costs. In a survey conducted by Jenkins (2000), 40% of the respondents state that "higher administrative costs" discourage banks from entering the microcredit market. Gonzalez (2010) affirms that the high operating costs necessary to process and deliver small loans are the main reason for the high microcredit interest rates. While the correlation between administrative costs and interest rates seems clear, the real explanation may actually be low efficiency, as reported by Servin et al. (2012), who studied the relationship between the type of institution and efficiency. Their results show that non-governmental organizations have much lower technical efficiency than banks. Moreover, it is important to compare microcredit interest rates to other small loan interest rates, such as consumer credit. High operating costs would justify high interest rates in microcredits if these interest rates were similar to other loans of the same size. Though Rosenberg et al. (2009) compare MFI rates with consumer lending rates; their results are inconclusive as they depend on the country. Accordingly, further evidence is needed. Therefore:

Hypothesis 3. Administrative costs are expected to be higher in microfinance institutions than in other financial institutions, which, in turn, results in low efficiency of MFIs compared to other financial institutions.

H4 on profits. One of the historical debates in microfinance focuses on sustainability. Advocates of the financial system approach emphasize sustainability, Adams et al. (1984). If the aim is sustainability, this could be obtained via margins, which would then justify the high interest rates associated with microcredit. However, concern for profits seems to collide with the social

mission of many MFIs, particularly those with non-profit legal status. Advocates of the poverty lending approach claim that subsidies should lower interest rates, Hudon (2007). According to Hermes and Lensink (2011), the proponents of the financial systems approach appear to have won the debate in the last several years. Empirical studies find no significant difference in profitability between MFIs according to their legal status, Tchakoute-Tchuigoua (2010). Mersland and Strøm (2009) also show that the legal status of MFIs has no significant effect on profitability.

In microfinance, however, sustainability must be differentiated from a greed for profits. Accordingly, MFIs should not follow the example of commercial enterprises whose main objective is to earn large profits, a practice denounced by Yunus (2007). There are notorious cases such as the MFI Compartamos that imposed interest rates above 85% and thereby produced an annual return of 55 percent to its shareholders, Rosenberg et al. (2009). González (2010) explains, however, that this is an exceptional example and that the reason for the high interest rates is not the thirst for profit but rather the associated operating costs. Rosenberg et al (2009) reinforces this idea: they find that while, on average, MFIs have higher returns on assets than commercial banks, they generate lower returns on equity for their owners. Roberts (2013) finds that a strong for-profit orientation is associated with high interest rates. However, this does not contribute to higher profitability because a stronger profit orientation is also associated with higher MFI costs. D'Espallier et al. (2013) do not find differences in profitability between subsidized and non-subsidized MFIs. Morduch et al. (2003) find a low correlation between the profitability of MFIs and the average loan size, results that are similar to those of Cull et al. (2007). In our opinion, if MFIs are social entities that are not profit oriented, obtaining profit levels that exceed those of commercial banks would not be justifiable. A low efficiency should lead to low profits. However, the lack of competition allows MFIs to charging their clients high interest rates. To summarize, the microfinance business is as profitable as other financial businesses. Therefore:

Hypothesis 4. MFI profitability levels are expected to be similar to those of other financial institutions.

3. Empirical study

The first research question attempts to prove the existence of a poverty penalty and its magnitude. The Mftransparency.org database publishes the effective rate of interest (EIR) of 394

MFIs from 17 countries. The EIR is the real price of a microcredit, including not only interest payments but other charges and fees received by the lender, and it takes into account the effect of compounding. Each MFI commercializes different type of loans, and for each type of loans scanned original documents containing repayment tables are available. In all, 1,416 financial products are analyzed, and for each, approximately 5 samples are collected to ensure accuracy. Table 1 shows the 2011 microcredit country's EIR as calculated using the average data from MFIs in the country, which is available at Mftransparency.org. It also shows the 2011 country's lending interest rate, according to The World Bank and the Central Intelligence Agency. In all the countries, the microcredit interest rate is higher than the country's lending interest rate. The data reveal the existence of a poverty penalty as, on average, microcredit borrowers pay double or triple the country's lending interest rates.

**** Table 1 ****

To examine the causes of the poverty penalty, a single country will be analyzed as a study that analyzes all countries encounters many difficulties, as shown by Rosenberg et al. (2009). The country effect is relevant because some countries establish caps on interest rates while other countries may subsidize microfinance institutions. Furthermore, the level of financial inclusion also differs among countries as does the development of countries' financial sectors. Colombia was selected because the microfinance industry in Colombia is consolidated. In this country, a significant number of NGOs offer microcredit; there are also banks that offer microcredit and there are MFIs that have upgraded to become regulated institutions. All regulated financial institutions are supervised by the Financial Superintendence, the Colombian financial regulatory authority. An important number of MFIs disclose their annual statements in the MIX Market, a specialized microfinance database.

Microcredit in Colombia is subject to different regulations, particularly under Act 590/2000, which was modified and improved with various decrees regarding different issues, such as the maximum loan amount to be considered as microcredit. Further, usury is punishable by law, and there are also interest rate caps in place. As for the level of financial competition in the country, Galindo and Jaramillo (2011) not only found tacit collusion but also found that consumer, mortgage and micro loan prices tend to concentrate near the usury rate. According to The World Bank survey on financial inclusion, 30% of Colombians over 15 years of age have an account at a formal

financial institution, 19% of them have an account that is used to receive wages, and 10% of them have a credit card. These data place the country in the medium range.

The sample includes 6 years of financial information, from 2006 to 2011. The last year analyzed includes 87 financial institutions. The sample includes all 61 Colombian regulated financial institutions and their associated data from the Colombian Financial Superintendence. Of the 61 institutions, 13 are banks that do not offer microcredit (Pure Banks), and 6 are downscaled banks, which means that they are entities that have entered the microcredit business (Down Bank). Five of the 61 are MFIs that have upgraded to become banks and are now regulated (Reg MFI), while 23 are specialized sectoral financiers (SSF), mostly dealing in leasing operations, and another 6 are financial cooperatives (COOP). The Colombian regulated financial sector also contains 8 second floor banks (SECOND) whose main purpose is to channel funds to productive sectors using other financial institutions as intermediaries. Finally, the sample is completed with 26 non-regulated MFIs (NGO MFI) whose financial information has been captured from the MIX Market database.

Table 2 shows the 2011 average EIR of 6 different financial products (preferential loans, ordinary loans, consumer loans, overdrafts, credit cards and microcredits) offered by the 11 Colombian regulated institutions that offer microcredit (the 6 downscaled banks and the 5 regulated MFIs) using data from the Colombian Financial Superintendence. The highest EIR from all the products corresponds to microcredit. This EIR is above the EIR for credit cards and consumer loans. Further, it is double the ordinary loan EIR and triple the preferential loan EIR. Note that the ordinary loan EIR is 10.87%, which is very similar to the Colombian lending interest rate of 11.20% as reported by The World Bank in Table 1. The 6 downscaled banks have given 59,727 microcredits in 2011, with an average EIR of 35.01%. The 5 regulated MFIs have given 181,705 microcredits, with an average EIR of 35.24%. Note, again, the closeness of the rates for these two categories. These rates are below the average EIR of the MFIs analyzed using the Transparency.org, which is 40.9% according to Table 1.

*** Table 2 ***

Table 2 incorporates the Colombian usury rate evolution. Note that the 2011 average microcredit EIR (35.18%) is well above the usury rate of 26.75%. This is because Colombian law sets a different usury rate for microcredit, which for 2011 is 45.64%. While this is a high rate, it

must be noted that though usury is illegal in Colombia, moneylenders do exist, as can be evidenced every morning in any Colombian market. The usual rate for these moneylenders is a monthly 10%, which in annual terms would be an EIR of 231%. However, as their rates can be set at 10% per day, it is clear that microcredit is cheaper than borrowing from moneylenders.

Once the poverty penalty has been identified and what the poverty penalty means in quantitative terms has been defined, the justification of microcredit high interest rates will be analyzed. With this aim, financial information published in annual statements will be analyzed. Table 3 displays the 9 financial ratios that are related to the hypotheses.

**** Table 3****

Table 4 shows the results of an exploratory analysis that compares the 7 types of Colombian financial institutions. The median and the results of a non-parametric Mann-Whitney U test are displayed. This test is useful for determining whether the means of two groups are different from each other. It is used to determine if there are statistically significant differences among the various types of financial institutions (group 1) and the rest of the institutions (group 2). Given the small size of the sample, especially in the first years analyzed, test results must be interpreted carefully. Figure 1 visually shows the evolution of the type of entities that are of interest for this study, that is, NGO MFIs, downscaled banks, regulated MFIs and pure banks.

**** Table 4 ****

**** Figure 1 ****

To test Hypothesis 1 on risk, the ratio loan provisions to portfolio (RISK) and the ratio total equity to total assets (SOLVENCY) are used. NGO MFIs have the lowest level of bad debts (2% in 2011) compared to commercial banks at 3.4% and regulated MFIs at 4.8%. No statistically significant differences among groups are found. NGO MFIs have the highest solvency at 34.1% compared to pure banks at 13.7% and regulated MFIs at 17.8%. The differences are statistically significant for the group of NGO MFIs. These entities have a solid balance structure with relatively high equity and low-leverage ratios compared to banks.

Inspired by the Basel guidelines, Colombian regulated entities weight their loans according to different risk categories: normal (A), acceptable (B), appreciable (C), significant (D) and bad debts (E). Table 5 shows the portfolio share for each category, in average terms, of the Colombian financial regulated sector. For the year 2011, 8 different financial products are displayed. These include microcredit, housing loans, consumer loans, business loans, consumer credit cards, business credit cards, acquisition, development and construction loans, and car leasing. The type of collateral has been detailed when necessary. The 93.79% of microcredits with appropriate collateral belong to the lowest risk category (A), and the percentage is similar to other financial products, such as housing loans (94.56%), ordinary consumer loans (93.45%), and car leasing (91.40%). The lowest percentage in the A category corresponds to acquisition, development and construction loans with other collateral (76.47%). The product with the highest level of bad debts is microcredit, especially with other collateral (3.80%), while the rest of the products barely approach 2%. This is consistent with the results in Table 4 regarding the provisions level. However, the percentage of portfolio at risk is low and does not justify the high interest rates charged by microcredit. If the bad debt level of a given portfolio grows from around 2% to 4%, this would justify an increase in the EIR of slightly less than 1% to compensate for the incurred loss. To justify the current level of the financial poverty penalty, the bad debt level should be close to 50%. These facts, along with the high solvency of MFIs, lead to the acceptance of Hypothesis 1: according to the Colombian data analyzed, no significant differences in risk exist to justify the high interest rates for microcredit.

**** Table 5 ****

Hypothesis 2 addresses financial expenses as measured by the ratio of financial expense to loan portfolio. The advantage of the use of this ratio is that it allows for a comparison with the lending rate because the ratio can be considered as a proxy for the interest rate paid by the institution. The 2011 financial expense is 4.5% for NGO MFIs and 4.4% for regulated MFIs, expenses that are similar to those for pure banks at 5.2% and 7.2% for specialized sectoral financiers (which do not capture deposits). The differences are not statistically significant. The financial costs of NGO MFIs are low, although they lack deposits. The explanation lies on donations. Table 4 indicates that NGO MFIs are the only group to receive donations. MFIs' annual statements reflect little donations, although many NGOs register donations under an off balance third party operation account. For example, a city council created a microcredit fund to be managed

by an NGO MFI. The NGO MFI did not register it as a donation but as an off balance third party operation, following Colombian accounting rules. Hypothesis 2 is accepted. That is, according to the Colombian data analyzed, there are no significant differences in financial expenses that justify the high interest rates associated with microcredit.

Hypothesis 3 addresses efficiency. The ration of administrative expense to financial revenue is clearly higher for NGO MFIs (29.9%) compared to pure banks (8.2%), and regulated MFIs (17.6%). The differences are statistically significant. Personnel expenses are clearly higher for NGO MFIs (31.2%) compared to pure banks (10.2%) and regulated MFIs (26.7%), and the differences are statistically significant. A lack of efficiency associated with a labor-intensive business model (based on credit officers) that is inundated with paperwork and that is not automated is clearly apparent. Hypothesis 3 is accepted based on the analysis of the Colombian data.

It can be debated whether the cost of processing small loans justifies the high interest rates. To do so, microcredit interest rates have been compared to consumer lending rates. Data were taken from MFTransparency, which collects data on different financial products offered by MFIs. The sample selected only contains Colombian MFIs that offer both microcredit and consumer loans. The sample includes 40 microcredits and 45 consumer loans. For each product, loan size and EIR are available. Two means tests, a parametric (ANOVA) and a non-parametric (Mann-Whitney), were performed. Table 6 shows the results. No statistically significant differences were found with respect to loan size. However, statistically significant differences were found with respect to interest rates, which, on average, is 34.89% for microcredit and 21.13% for consumer loans.

**** Table 6 ****

To summarize, the same MFIs charge higher interest rates for microcredit borrowers than for consumer borrowers even though the loan sizes are not significantly different. Rosenberg et al. (2009) also compares microcredit and consumer lending rates using data from 36 countries and find that MFI rates appear lower than consumer credit rates in many countries, although they did not find differences in Colombia. It must be noted that their study included credit cards in the consumer lending category, which usually charge one of the highest interest rates. When microcredit rates are higher than consumer loan rates, Rosenberg et al. (2009) justify the high rates arguing that micro

lending requires a more labor-intensive relationship between the loan officer and the client than do consumer loans. In our opinion, what matters is not the loan size but the loan methodology.

We question whether the costs associated with microcredit evaluation and its management justify its high interest rates. A specific Colombian institution advertises three types of loans on its webpage: a loan to finance a Mercedes-Benz car at 15.39%, a consumer loan at 26.75% and a microcredit at 45.64%, the latter being just below the Colombian usury rate for microcredit. The fees and charges booklet indicates an establishment fee of 62 USD for a microcredit, 19 USD for a consumer loan and 19 USD for a commercial loan for the same 7,000 USD loan. In the case of a consumer loan, charging an establishment fee of 62 USD would justify a new EIR of 29.50%. For smaller loans, this institution can charge a special fee, issued by law, of a maximum 7.5% for high risk loans. This fee covers the cost involved in the feasibility business study, the establishment of the loan, and inspection or service fees. This fee is not included in the 45.64% rate for microcredit. If included, the EIR would be even higher. While this is just an example, with respect to this institution, the fees do not justify the high interest rates charged to microcredit clients.

Hypothesis 4 on profits analyzes three ratios. The yield on gross loan portfolio is 25.4% for NGO MFIs, which is double that of pure banks at 13.6%. Regulated MFIs have a yield of 18.4%. If Hypothesis 3 reveals the low efficiency of MFIs, this lack of efficiency is compensated here with high margins, which are then transferred to clients. Is the aim of this margin to cover costs or to obtain more profits for shareholders? Among all entities, the highest Return on Equity (ROE) corresponds to regulated MFIs at 15%, while the NGO MFIs ROE is 12.8% Pure banks report a 10.1% ROE. Another interesting financial ratio relates profits to revenues. This ratio helps to determine what share of the financial revenues remunerates capital. The highest ratio corresponds to NGO MFIs at 17.7%, compared to 6.8% for pure banks and 12.1% for regulated MFIs. Differences in profitability ratios are not statistically significant within the groups analyzed. Hypothesis 4 is accepted based on the analysis of the Colombian data. The case of NGO MFIs is remarkable given their non-for-profit mission, as their profit share is the highest among all the analyzed entities. Accordingly, the argument of the lack of profit does not justify their high interest rates.

In addition to the statistical analysis, we have analyzed separately each of the 26 Colombian NGO MFIs. The analysis identified 8 NGO MFIs that provide small loans to poor people, which are funded at a cost below the Colombian average, receive donations, charge interest rates above the

country average and obtain a ROE above the country average. Though this behavior is not representative of the whole microfinance sector, it is disconcerting because it may be a sign of an eager desire for profits among certain MFIs. The extreme example is an MFI in the sample with a 30% ROE and a 40% share of profits to financial revenues and whose microcredit borrowers pay an average EIR of 40%, even though its financial expense is below 5%, its non-repayment is less than 1%, its efficiency rate is average and it also receives donations. Consistent with this, Rosenberg et al. (2009), analyzing worldwide data, find that the most profitable 10% of the worldwide microcredit portfolios produced ROEs above 34%. They further contend that this level is undoubtedly high enough to raise concerns about its appropriateness. We encourage the use of external social audits, as a tool useful for identifying practices that conflict with the microfinance social mission. Donors may stop contributing funds and instead channel them to other entities that are clearly more socially driven. Donors may also oblige MFIs to use donations to lower the EIR rather than to perpetuate the inefficiencies of the MFIs. The analysis has also identified MFIs that charge their clients an EIR of approximately15%, thereby realizing modest profits, awarding small loans and not drifting from their mission.

Another aspect to be improved is the transparency of the MFIs and the financial literacy of the clients. Bertrand and Morse (2011) analyze payday loans in a field experiment and find that clear information about finance costs results in less borrowing. They further suggest a better disclosure policy to remedy payday borrowing. Meier and Sprenger (2012) find that individuals who choose to participate in a financial counseling program are given lower discount rates than those who choose not to participate. Finally, a higher level of competitiveness among the Colombian financial sector would be preferable, as this sector suffers from tacit collusion, according to Galindo and Jaramillo (2011), and, as found by Demirgüç-Kunt and Huizinga (1999), financial entities that face higher competition within a given country reduce their margins.

Conclusions

This paper confirms that a financial poverty penalty does exist. That is, the poor pay more than the non-poor when borrowing. The Colombian case was examined by empirically analyzing the Effective Interest Rate (EIR) of several financial products offered by different financial institutions, including MFIs and commercial banks. The study finds that microcredit interest rates are higher than other financial product rates, though they are far from moneylender rates.

The common justifications offered for this practice are: the high risk involved in microcredit, the high financial expenses associated with microcredit, the high administrative costs of microcredit and the need for profits due to the lack of donations. This study has analyzed accounting information from financial entities and finds that these justifications are not sufficiently convincing. With respect to Colombia, microcredit is not especially risky, and its level of bad debts is not significantly higher than that of other financial products. In fact, MFIs have a solvent balance structure that is even better than that of banks, and the financial costs borne by MFIs are not especially high. Although NGO MFIs cannot capture deposits given their non-regulated nature, the amount of donations received are high enough to compensate for the lack of deposits, a cheap funding source.

Products of similar size, such as consumer loans, have lower interest rates than microcredit, and the level of administrative tasks involved in microcredit does not seem to justify this difference. An explanation lies in the low efficiency of MFIs, which is transferred to the clients in the form of higher interest rates. While in a perfect market, this type of institution would be eliminated from the market, the joint presence of a lack of concurrence, a lack of financial literacy and the null negotiating power of microcredit clients make this situation more common than desired.

Finally, the study has identified some MFIs that claim to have a social mission and give small loans to poor people. Their funding costs are low, they receive donations, they charge the poor with interest rates above the microcredit market average and they obtain profits that exceed those of banks. Because they are clearly profit driven, donors should identify them.

References

Adams, D., Graham, D. and J. Von Pischke (1984), Undermining Rural Development with Cheap Credit, Westview Press, Boulder.

Ahlin, C., Lin, J., Maio, M., 2011. Where does microfinance flourish? Microfinance institution performance in macroeconomic context, Journal of Development Economics 95 (2), 105-120.

Aleem, I (1990). Imperfect Information, Screening, and the Costs of Informal Lending: A Study of a Rural Credit Market in Pakistan. *World Bank Economic Review, 4(3),* 329-49.

Armendariz, B. and Morduch, J., 2005. The economics of microfinance. MIT Press, Cambridge, MA.

Augsburg, B., & Fouillet, C. (2010). Profit Empowerment: The Microfinance Institution's Mission Drift, *Perspectives on Global Development and Technology, 9(3-4)*, 327-355.

Barnett, B. J., Barrett, C. B., & Skees, J. R. (2008). Poverty traps and index-based risk transfer products. World Development, 36(10), 1766-1785.

Basilea (20109 de Actividades de Microfinanciación BUSCAR

Bertrand, M, and Morse. A (2011) "Information disclosure, cognitive biases, and payday borrowing." The Journal of Finance 66.6, 1865-1893.

BIS (2010). Microfinance activities and the Core Principles for Effective Banking Supervision. Basel committee on Banking Supervision Consultative Document. Bank for International Settlements. Basel, Switzerland.

Bogan, V. L. (2012). Capital structure and sustainability: An empirical study of microfinance institutions. Review of Economics and Statistics, 94(4), 1045-1058.

Caplovitz D. 1963. The Poor Pay More: Consumer Practices of Low Income Families. Free Press of Glencoe: Toronto, Ontario.

CSFI (2012). *Microfinance Banana Skins Report 2012, The CSFI survey of microfinance risk*. Centre for the Study of Financial Innovation, London.

Cull, R., Demirguç-Kunt, A., & Morduch, J. (2007). Financial performance and outreach: a global analysis of leading microbanks. *Economic Journal, Royal Economic Society, 117(517)*, F107-F133.

D'Espallier, B., Hudon, M., & Szafarz, A. (2013). Unsubsidized Microfinance Institutions. Working Papers CEB, 13.

Dehejia, R., Montgomery, H., & Morduch, J. (2012). Do interest rates matter? Credit demand in the Dhaka slums. Journal of Development Economics, 97(2), 437-449.

Demirgüç-Kunt A., Huizinga, H., 1999. Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence. World Bank Economic Review 13(2), 379-408.

Demirgüç-Kunt, A., Klapper, L.F., 2012. Measuring Financial Inclusion: The Global Findex Database. World Bank Policy Research Working Paper 6025.

De Sousa-Shields, M., and Frankiewicz, C., 2004. Financing Microfinance Institutions: The Context for Transitions to Private Capital. Micro Report 32, Accelerated Microenterprise Advancement Project, USAID.

Dietrich, A. (2012). Explaining loan rate differentials between small and large companies: evidence from Switzerland. Small Business Economics, 38, 481–494.

Driouchi, A., & Mertou, A. (2012). High Implicit Interest Rates in the Context of Informal Traditional Housing Transactions: Evidence from Morocco (No. 38732). University Library of Munich, Germany.

Galindo, A., & Jaramillo, C. (2011). A Hellbound Road Paved with Good Intentions: Usury Laws and Bank Competition in Colombia. Available at SSRN 1757994.

Ghatak, M. & Guinnane, T. W. (1999). The economics of lending with joint liability: theory and practice. Journal of Development Economics vol. 60(1), pages 195-228.

Gonzalez, A. (2010). Analyzing Microcredit Interest Rates: A Review of the Methodology Proposed by Mohammed Yunus. *MIX Data Brief 4(February)*, 1-6.

Hartarska, V., & Nadolnyak, D. (2007). Do regulated microfinance institutions achieve better sustainability and outreach? Cross-country evidence. Applied Economics, 39(10), 1207-1222.

Hartwell, J. M. (1947). Interest rates by loan size and geographical region. Journal of the American Statistical Association, 42(238), 242–245.

Hermes, N., & Lensink, R. (2011). Microfinance: its impact, outreach, and sustainability. World Development, 39(6), 875-881.

Hermes, N., Lensink, R., & Meesters, A. (2011). Outreach and efficiency of microfinance institutions. *World Development, 39(6)*, 938-948.

Hudon, M. (2007). Fair Interest Rates When Lending to the Poor. Ethics and Economics, 5(1), 1-8.

Hudon, M. (2009). Should access to credit be a right? Journal of Business Ethics, 84(1), 17-28.

Jenkins, H. (2000). *Commercial Bank Behavior and Performance in Micro and Small Enterprise Finance*. Harvard Institute for International Development Discussion Paper No. 741. Harvard University.

Jiménez, G., & Saurina, J. (2004). Collateral, type of lender and relationship banking as determinants of credit risk. *Journal of Banking & Finance, 28(9)*, 2191-2212.

Krauss, N., & Walter, I. (2009). Can Microfinance Reduce Portfolio Volatility? *Economic Development and Cultural Change, 58(1)*, 85-110.

Maudos, J., Solís, L., 2009. The determinants of net interest income in the Mexican banking system: An integrated model. Journal of Banking & Finance 33, 1920-1931.

McShane, R.W., Sharpe, I.G., 1985. A time series/cross section analysis of the determinants of Australian trading bank loan/deposit interest margins: 1962–1981. Journal of Banking & Finance 9, 115–136.

Meier, S., & Sprenger, C. D. (2012). Discounting Financial Literacy Time Preferences and Participation in Financial Education Programs. Journal of Economic Behavior & Organization.

Mendoza, R. U. (2011). Why do the poor pay more? Exploring the poverty penalty concept. *Journal of International Development, 23(1),* 1-28.

Mersland, R., Strøm, R.Ø., 2009. Performance and governance in microfinance institutions. Journal of Banking & Finance 33, 662-669.

Mersland, R., & Strøm, R. Ø. (2010). Microfinance mission drift?. World Development, 38(1), 28-36.

Morduch, J. (2000). The microfinance schism. World development, 28(4), 617-629.

Morduch, J., Hashemi, S., & Littlefield, E. (2003). *Is Microfinance an Effective Strategy to Reach the Millennium Development Goals?* CGAP Focus Note 24. Washington, D.C.: Consultative Group to Assist the Poor.

Okeahalam, C. C., & Adams, D. W. (2000). Banks and Micro-Finance in Namibia. South African Journal of Economics, 68(1), 52-64.

Prahalad, CK., and SL. Hart. "The Fortune at the Bottom of the Pyramid." Strategy and Business (2002): 54-54.

Roberts, P. W. (2013). The profit orientation of microfinance institutions and effective interest rates. World Development, vol. 41, issue C, pages 120-131

Rosenberg, R, Gonzalez, A and Narain, S (2009), The new moneylenders: Are the poor being exploited by high microcredit interest rates? Consultative Group to Assist the Poor (CGAP), Occasional Paper 15 (Washington D.C.).

Servin, R., Lensink, R., van den Berg, M., 2012. Ownership and technical efficiency of microfinance institutions: Empirical evidence from Latin America. Journal of Banking & Finance 36(7), 2136-2144.

Tchakoute-Tchuigoua, H. (2010). Is there a difference in performance by the legal status of microfinance institutions?. The Quarterly Review of Economics and Finance, 50(4), 436-442.

Valenzuela, L. (2002). Getting the Recipe Right: The Experience and Challenges of Commercial Bank Downscalers. In D. Drake, & E. Rhyne (Eds). *The Commercialization of Microfinance: Balancing Business and Development* (pp. 46-74). West Hartford, Conn.: Kumarian Press.

Yunus, M. (1999): Banker to the poor: Microlending and the battle against world poverty. Public Affairs, New York

Yunus, M. (2007). *Creating a World Without Poverty: Social Business and the Future of Capitalism.* New York: PublicAffairs.

	Lending interest rate		*EIR microcredit*				*Poverty Penalty*	
	World Bank	CIA prime rate	Min	Mean	Max	StDev	Difference	%
Azerbaijan	19.0%	19.00%	32.2%	38.9%	48.1%	4.99	19.92	104.8%
Bolivia	10.9%	10.92%	16.2%	32.7%	64.5%	11.81	21.74	199.1%
Bosnia and Herzegovina	7.4%	7.14%	8.5%	26.6%	41.6%	6.92	19.43	272.1%
Cambodia	-	15.22%	27.7%	35.5%	54.0%	5.67	20.26	133.1%
Colombia	11.2%	11.22%	11.7%	40.9%	61.0%	11.25	29.65	264.3%
Ecuador	-	8.35%	14.9%	25.9%	41.0%	6.72	17.55	210.2%
Ethiopia	-	16.00%	12.8%	21.1%	46.3%	9.12	5.06	31.6%
Ghana	-	18.20%	25.8%	89.3%	236.8%	35.85	71.15	390.9%
India	10.2%	10.19%	18.0%	28.4%	49.7%	5.42	18.17	178.3%
Kenya	15.0%	15.05%	10.1%	35.5%	44.1%	9.61	20.43	135.7%
Malawi	23.8%	23.80%	17.1%	60.8%	119.1%	28.30	36.96	155.3%
Mozambique	19.1%	19.10%	33.9%	71.3%	117.3%	22.33	52.21	273.3%
Philippines	6.7%	6.66%	36.2%	50.2%	137.8%	21.65	43.5	653.1%
Rwanda	-	17.40%	18.1%	45.3%	95.3%	20.24	27.88	160.2%
Tanzania	15.0%	14.96%	28.4%	62.0%	160.9%	26.41	47.03	314.4%
Uganda	21.8%	21.83%	29.8%	58.0%	120.8%	20.27	36.17	165.7%
Zambia	18.8%	18.84%	28.2%	87.2%	275.2%	63.38	68.41	363.1%
Mean	14.91%	14.93%	21.75%	47.61%	100.81%	18.23	32.68	235.6%

Table 1 Country lending interest rate vs microcredit country Effective Interest Rate (EIR). Source: Mftransparency.org, The World Bank and Central Intelligence Agency. Last columns calculate the poverty penalty.

	2007	2008	2009	2010	2011
Preferential loan	12.35%	14.71%	10.59%	6.85%	7.91%
Ordinary loan	15.71%	16.93%	14.00%	11.15%	10.87%
Consumer loan	22.36%	25.76%	23.12%	17.92%	18.25%
Overdraft	24.93%	29.84%	26.18%	21.34%	24.32%
Credit cards	25.35%	31.57%	28.24%	22.35%	26.41%
Microcredit	28.71%	31.01%	30.93%	31.10%	35.18%
Usury rate	29.57%	32.36%	28.76%	22.73%	26.75%
Usury rate for microcredit	33.93%	33.93%	33.93%	34.66%	45.64%

Table 2. Colombian average Effective Interest Rate (EIR) of 6 financial products offered by the Colombian regulated institutions offering microcredits. Source: author's calculations based on data from the Colombian Financial Superintendence.

Variable	Definition
RISK	Provision for loan impairment / Gross Loan Portfolio
SOLVENCY	Total Equity / Total Assets
FINANCIAL EXPENSES	Financial expense / Gross Loan Portfolio
DONATIONS	Donated equity / Gross Loan Portfolio
ADMIN. EXPENSE	Administrative expense / Financial Revenue
PERSONNEL EXPENSES	Personnel expense / Financial Revenue
YIELD	Yield on gross portfolio. Interest and Fees on Loan Portfolio / Gross Loan Portfolio
ROE	Return on equity. Net Income / Total Equity
PROFIT-TO-REVENUES	Net Income / Financial Revenue

Table 3. Variables and their definitions.

	2006	2007	2008	2009	2010	2011
RISK						
Microfinance Institutions (NGO MFI)	0.013	0.016**	0.036	0.025	0.02	0.02
Commercial Banks (Pure Bank)	0.034	0.04	0.046	0.054	0.034	0.034
Downscaled Banks (Down Bank)	0.034	0.036	0.045	0.051	0.041	0.033
Regulated MFIs (Reg MFI)	0.056	0.062	0.058	0.069	0.06	0.048
Specialized Sectoral Financiers (SSF)	0.041	0.056	0.06	0.043	0.043	0.03
Financial Cooperatives (COOP)	0.042	0.052	0.059	0.045	0.045	0.031
Second floor banks (SECOND)	0.032	0.013	0.022	0.027	0.027	0.021
SOLVENCY						
Microfinance Institutions (NGO MFI)	0.365***	0.311*	0.303**	0.357**	0.27	0.341***
Commercial Banks (Pure Bank)	0.104***	0.118	0.109***	0.137***	0.122***	0.137***
Downscaled Banks (Down Bank)	0.122***	0.123***	0.111***	0.122***	0.133***	0.132***
Regulated MFIs (Reg MFI)	0.079	0.075	0.08	0.098	0.097	0.178
Specialized Sectoral Financiers (SSF)	0.107***	0.12	0.13	0.16	0.16	0.147
Financial Cooperatives (COOP)	0.194	0.215	0.204	0.179*	0.179	0.18**
Second floor banks (SECOND)	0.214	0.21	0.224	0.167	0.167	0.118
FINANCIAL EXPENSES						
Microfinance Institutions (NGO MFI)	0.054**	0.072	0.07	0.057*	0.05	0.045
Commercial Banks (Pure Bank)	0.063	0.073	0.089	0.085***	0.046	0.052
Downscaled Banks (Down Bank)	0.062	0.068	0.08	0.071	0.042	0.046
Regulated MFIs (Reg MFI)	0.062	0.061	0.07	0.062	0.045	0.044
Specialized Sectoral Financiers (SSF)	0.086***	0.11	0.101	0.064	0.064	0.072
Financial Cooperatives (COOP)	0.05	0.07	0.063	0.046	0.046	0.047
Second floor banks (SECOND)	0.037***	0.064	0.049	0.035	0.035	0.049
DONATIONS						
Microfinance Institutions (NGO MFI)	0.106	0.09	0.162**	0.309**	0.115**	0.081
Commercial Banks (Pure Bank)	0.006	0	0	0	0	0.001
Downscaled Banks (Down Bank)	0.007	0	0	0	0	0
Regulated MFIs (Reg MFI)	0.008	0	0	0	0	0
Specialized Sectoral Financiers (SSF)	0	0	0	0	0	0.009
Financial Cooperatives (COOP)	0	0	0	0	0	0.005
Second floor banks (SECOND)	0	0	0	0.001*	0.001*	0.078
ADMIN. EXPENSE						
Microfinance Institutions (NGO MFI)	0.247***	0.266***	0.307***	0.28***	0.265***	0.299***
Commercial Banks (Pure Bank)	0.075***	0.068***	0.056***	0.06***	0.078***	0.082***
Downscaled Banks (Down Bank)	0.111	0.087	0.079***	0.088***	0.061	0.058
Regulated MFIs (Reg MFI)	0.183	0.148	0.116	0.118	0.129	0.176
Specialized Sectoral Financiers (SSF)	0.062	0.043*	0.062**	0.077	0.077	0.067***
Financial Cooperatives (COOP)	0.153	0.167	0.162	0.161	0.161	0.151
Second floor banks (SECOND)	0.017**	0.009***	0.013***	0.014***	0.014**	0.014

PERSONNEL EXPENSES						
Microfinance Institutions (NGO MFI)	0.297***	0.286***	0.286***	0.333***	0.312***	0.312***
Commercial Banks (Pure Bank)	0.129**	0.102	0.072	0.106	0.103	0.102***
Downscaled Banks (Down Bank)	0.141	0.111	0.105	0.095	0.09	0.092
Regulated MFIs (Reg MFI)	0.176	0.163	0.148	0.163	0.19	0.267
Specialized Sectoral Financiers (SSF)	0.088	0.089*	0.09*	0.114	0.114	0.113
Financial Cooperatives (COOP)	0.176	0.221	0.192	0.22	0.22	0.254
Second floor banks (SECOND)	0.053*	0.036**	0.039*	0.067	0.067*	0.046*
YIELD						
Microfinance Institutions (NGO MFI)	0.212***	0.212	0.304**	0.26***	0.25***	0.254
Commercial Banks (Pure Bank)	0.128	0.139	0.166	0.174	0.118	0.136
Downscaled Banks (Down Bank)	0.141	0.153	0.176	0.165	0.139	0.12
Regulated MFIs (Reg MFI)	0.173	0.171	0.196	0.2	0.183	0.184
Specialized Sectoral Financiers (SSF)	0.099**	0.105**	0.103**	0.095***	0.095**	0.094**
Financial Cooperatives (COOP)	0.19	0.22	0.21	0.189	0.189	0.193
Second floor banks (SECOND)	0.082	0.105	0.082	0.062	0.062	0.14
ROE						
Microfinance Institutions (NGO MFI)	0.129	0.134	0.077	0.078	0.089	0.128
Commercial Banks (Pure Bank)	0.096	0.106	0.081	0.092	0.078	0.101
Downscaled Banks (Down Bank)	0.104	0.129	0.127	0.118	0.099	0.116
Regulated MFIs (Reg MFI)	0.268*	0.245	0.23	0.192	0.16	0.15
Specialized Sectoral Financiers (SSF)	0.099	0.082	0.062	0.098	0.098	0.114
Financial Cooperatives (COOP)	0.064	0.105	0.088	0.091	0.091	0.141
Second floor banks (SECOND)	0.08	0.116	0.134**	0.071	0.071	0.074
PROFIT-TO-REVENUES						
Microfinance Institutions (NGO MFI)	0.176	0.091	0.088	0.069	0.084	0.177
Commercial Banks (Pure Bank)	0.059	0.059*	0.04**	0.065	0.068	0.068
Downscaled Banks (Down Bank)	0.08	0.101	0.078	0.091	0.094	0.093
Regulated MFIs (Reg MFI)	0.154	0.139	0.127	0.121	0.116	0.121
Specialized Sectoral Financiers (SSF)	0.064	0.051	0.046*	0.066	0.066	0.084
Financial Cooperatives (COOP)	0.103	0.134	0.078	0.087	0.087	0.167
Second floor banks (SECOND)	0.109	0.135	0.19*	0.104*	0.104	0.147
N= number of entities						
Microfinance Institutions (NGO MFI)	12	16	23	25	22	26
Commercial Banks (Pure Bank)	9	11	11	11	9	13
Downscaled Banks (Down Bank)	5	5	5	5	5	6
Regulated MFIs (Reg MFI)	2	2	2	2	2	5
Specialized Sectoral Financiers (SSF)	24	26	26	20	20	23
Financial Cooperatives (COOP)	6	8	8	8	8	6
Second floor banks (SECOND)	9	7	6	6	6	8

Table 4. Exploratory analysis showing the median and a Mann-Whitney U test, * p<0.1 ** p<0.05 ***p<0.01.

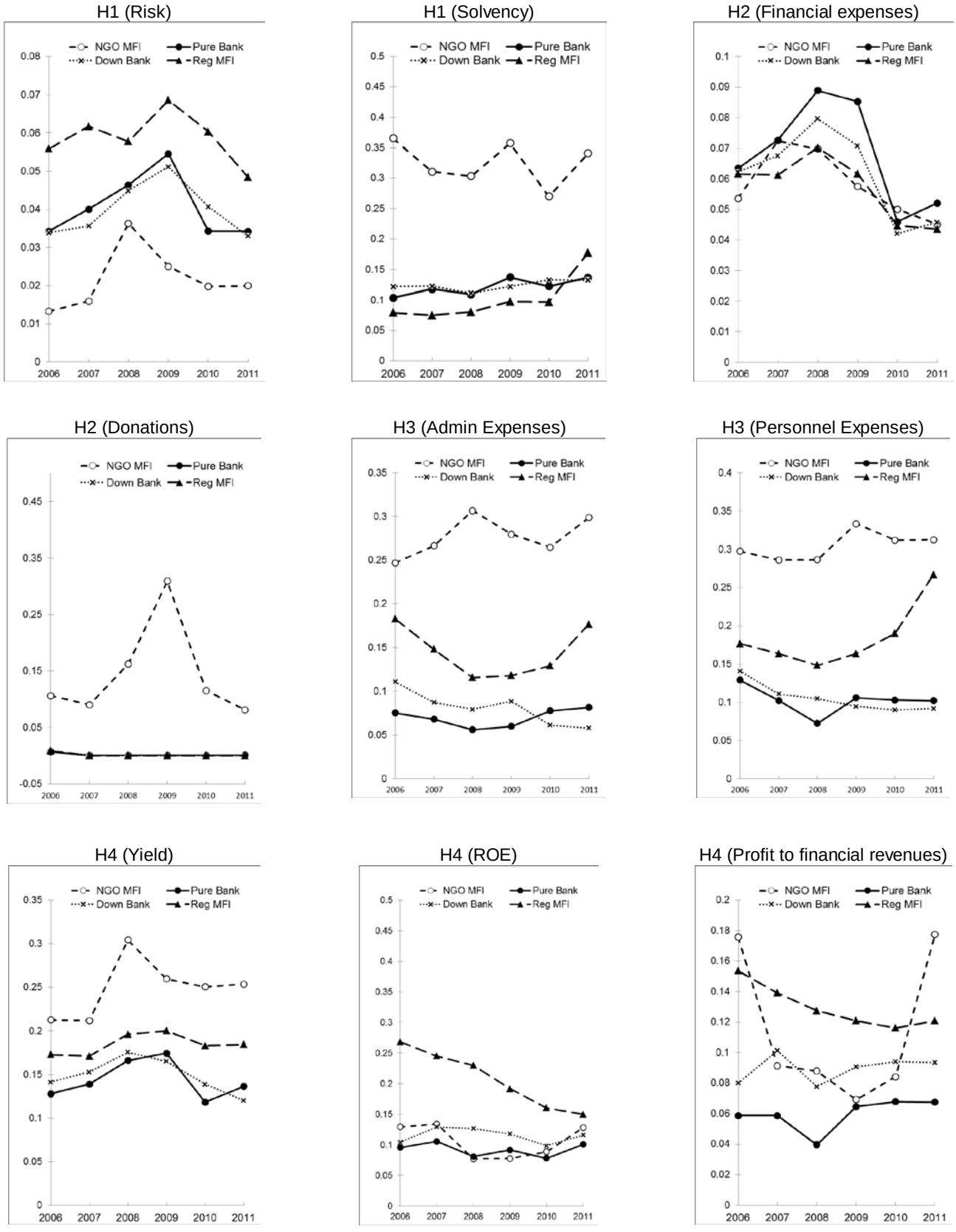

Figure 1. Time evolution of the four groups' median: NGO MFIs, pure banks, downscaled banks and regulated MFIs for each of the 9 financial ratios analyzed.

Type of loan	*Risk categories*				
	Normal (A)	Acceptable (B)	Appreciable (C)	Significant (D)	Bad debt (E)
Microcredit (appropriate collateral)	93.79%	1.72%	1.22%	0.82%	2.45%
Microcredit (other collateral)	91.23%	2.35%	1.82%	0.80%	3.80%
Housing loans	94.56%	2.78%	1.06%	0.52%	1.08%
Ordinary consumer loans (appropriate collateral)	93.45%	2.30%	1.53%	1.63%	1.10%
Ordinary consumer loans (other collateral)	93.22%	2.22%	1.40%	1.94%	1.22%
Consumer credit cards (appropriate collateral)	90.03%	4.86%	1.24%	2.21%	1.65%
Consumer credit cards (other collateral)	91.92%	2.98%	1.50%	2.47%	1.13%
Ordinary business loans (appropriate collateral)	90.36%	4.35%	1.79%	2.79%	0.71%
Ordinary business loans (other collateral)	95.07%	2.42%	1.12%	0.68%	0.71%
Business credit cards (appropriate collateral)	85.57%	9.75%	1.26%	3.27%	0.15%
Business credit cards (other collateral)	90.22%	4.98%	1.45%	2.62%	0.72%
Acquisition, development and construction loans (appropriate collateral)	93.75%	2.76%	1.34%	1.28%	0.88%
Acquisition, development and construction loans (other collateral)	76.47%	20.75%	0.34%	0.96%	1.48%
Car leasing (appropriate collateral)	91.40%	5.75%	0.70%	1.41%	0.75%
Car leasing (other collateral)	95.82%	2.94%	0.10%	0.03%	1.12%

Table 5. Portfolio share of each of the 5 risk categories, in average terms, of the Colombian regulated sector, using data from the Financial Superintendence.

Variable		*Type of loan*		*Test of means*	
		Microcredit (n=40)	*Consumer (n=45)*	*ANOVA F (Sig.)*	*Mann-Whitney U (Sig.)*
Loan size (USD)	Mean	4,232	6,015	2.968 (0.186)	751 (0.189)
	Min.	104	75		
	Max.	22,100	20,800		
	Std Dev.	5,642	6,574		
Effective interest rate	Mean	34.89%	21.13%	5.049 (0.000)	83 (0.000)
	Min.	15.6%	9.6%		
	Max.	40.8%	27.8%		
	Std Dev.	6.10	4.35		

Table 6. Study of the relationship among loan size, effective interest rate and type of loan (microcredit vs consumer loan). In parentheses, the p values.