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The Poverty Penalty and Microcredit

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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. Microfinance Institutions (MFIs) usually explain their high interest rates on the grounds of the high risk involved in microcredit, the high fixed cost associated with small loans and the high financial expenses borne by MFIs due to difficulties in deposit collection. The paper finds that a poverty penalty exists. After identifying drivers of the poverty penalty in a sample of MFIs from 17 countries, this paper focuses on the Colombian case. Operating costs is the most important factor explaining effective interest rates. Other factors, such as risk, cost of funds, or profitability, are relevant in some regions. This paper encourages transparent pricing as a keystone for ethics in these entities.

Keywords Microfinance · Poverty penalty · Mission drift · Banking

1 Introduction

Caplovitz (1963) found that the poor usually pay more than the non-poor for goods and services, introducing the concept of the poverty penalty. The high microcredit interest rates could be considered a form of financial poverty penalty, because most microcredit users are poor and financially excluded (Carbó et al. 2005). Microfinance Institutions (MFIs) usually explain 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 not dependent on donors (Fernando 2006).

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The aim of this study is to quantify poverty penalty and to identify the factors explaining microcredit interest rates. This paper analyzes an original dataset comprising annual accounts and the effective annual interest rate (EIR), the price of money.

Several research questions are formulated. The first attempts to confirm the existence of the poverty penalty and its magnitude. Several authors have studied microcredit interest rates (Morduch 2000; Hudon and Sandberg 2013; Roberts 2013), and there is a debate regarding the sustainability of MFIs and whether such sustainability would account for their high interest rates or whether it would be better to subsidize MFIs' interest rates. While Adams et al. (1984) affirm that access to cheap credit provides no incentive to save, Yunus (2007) warns of loan sharks—those MFIs that charge interest rates close to usury. Rosenberg et al. (2009) recognize that some MFIs are charging their clients rates that are so high that they are difficult to understand from a development perspective. As Hudon and Sandberg (2013) state, the most salient criticism of MFIs in recent years concerns the comparatively high interest rates they charge. This paper tries to shed light on the above debate, testing whether microcredit interest rates are higher than those of other financial products.

The second research question studies the drivers of these high interest rates and the poverty penalty. First, microcredit risk is analyzed: if lending to the poor involves a high level of non-repayment, it is sensible to increase interest rates. However, Mersland and Strøm (2010) argue that giving many small loans is a way of diversifying risks. As a second driver, financial expenses are analyzed, 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. Next, operating costs associated with small loans are analyzed because microcredit involves high fixed costs (Aleem 1990; González 2010). Finally, profits are analyzed, which are needed 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). Ahlin et al. (2011) find that the mean of the interest markup is 34.7 %. Tchakoute-Tchuigoua (2010) finds that the 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. González (2010) finds a negative relationship between interest yield and operating efficiency.

The previous studies have the restriction of solely using information on data extracted from the annual accounts of MFIs. They employ the yield ratio, obtained by adding up interest and fees divided by gross loan portfolio. However, yield is not always a good indicator for measuring the poverty penalty because a low yield for the MFI does not imply a low EIR for the borrowers. For example, borrowers in a given MFI can pay high EIRs, but if delinquency is high, interest income and yield will be low (Dorfleitner et al. 2013).[1]

[1] EIR and yield can be very different due to delinquency. Bhaduri (1977) developed a model on the relationship between EIR and yield. Let portfolio yield be the earning of lending divided by the Gross Loan Portfolio (GLP). The earning is obtained as loan payments minus loan principal. Not all the loans are reimbursed, let LLR be the loan loss ratio. Hence, yield is calculated as follows:

$$Yield = \frac{(1 + EIR) \times (1 - LLR) \times GLP - GLP}{GLP} = EIR \times (1 - LLR) - LLR$$

If delinquency is low, for example a LLR of 2 % and yield is 10 % then EIR is 12 %: EIR and yield are very close. If delinquency is high, for example a LLR of 50 % and yield is 10 % then EIR is 120 %. For this reason, the use of yield as an EIR proxy could be inappropriate.

The yield is also sensitive to the sequence of payments, for example: schedules with principal first and interest last, loans with grace periods or re-scheduling caused by delayed payments. Compulsory savings, which require borrowers to keep a percentage of their loan on deposit with the MFI, enlarge the difference between yield and EIR. Finally, income recognition practices by NGO MFIs can differ from accounting standards. For example, some entities do not include some fees in the yield, but they do it later to reduce their operating costs. This way, the MFI yield appears low and its operating costs seem also low, although the net income remains the same. One of this paper's contributions is the use of the EIR, taken from MFTransparency, a non-governmental organization that collects information on microcredits and their prices. To the best of our knowledge, there is no previous study about the microcredit poverty penalty.

After identifying drivers of the EIR and poverty penalty in a sample of MFIs from 17 countries, the third research question of the paper is to compare microcredit rates with banking rates. This has been done by using data from a single country, Colombia. This is necessary to avoid statistical problems from the aggregation of data across countries. 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 the discussion and the conclusions.

1.1 Literature review

Poverty penalty is the relatively higher cost shouldered by the poor compared to the non-poor for their participation in certain markets (Mendoza 2011). A particular case is the financial poverty penalty, which happens when the poor pay more than the non-poor for financial services. There are no specific studies on the microcredit poverty penalty, but several authors identify clear examples of a financial poverty penalty. Rosenberg et al. (2009) study 1400 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 with interest rates that exceed the rates of the formal credit market. Bertrand and Morse (2011) find that payday loans are indeed expensive, with annual percentage rates usually over 400 %. Prahalad and Hart (2002) claim that Indian moneylenders charge daily interest rates above 20 %. 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.

Another line of research related to the poverty penalty tries to explain its causes. Prahalad and Hammond (2002) show examples of a poverty penalty; one of them is diarrhea medication costing $2 in an upper-class community and $20 in a suburb. Once they identify the poverty penalty, they try to explain its causes: poor distribution, poor infrastructure, strong traditional intermediaries, or local monopolies, among others. But the fact of finding a justification, even a reasonable one, does not eliminate the existence of a poverty penalty. A particularly disturbing case is the existence of price discrimination. Price discrimination is present when two or more similar goods or services are sold at prices that are in different ratios to marginal costs (Stigler 1987); in other words, whenever a microcredit is sold at a price in excess of its marginal cost. Price discrimination arises naturally in the theory of monopoly and oligopoly, and under imperfect competition. An

example would be a financial institution that fixes interest rates looking at the maximum price the borrower is willing to pay, and takes into account neither costs nor social issues.

To analyze the causes of the financial poverty penalty in depth, the first step is understanding how interest rates are set. This has been an issue largely studied by economists since Adam Smith's work, which notes that interest rates in the colonies were remarkably high (Smith 1937). 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. 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 (Demirgüç-Kunt and Klapper 2012). 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 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; see, for example, Tsai et al. (2016). 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).

Microcredit is costly but some attempts at regulation, such as interest rate caps, did not work well (Sama and Casselman 2013), and new methodologies to offer microcredit at fair prices still need to be developed. In the US, the Community Reinvestment Act was an attempt to avoid discriminatory credit practices against low-income neighborhoods. However, high-risk loans can lead to credit bubbles and over-indebtedness. Gains in MFIs financial efficiency help to reduce microcredit interest rates (Basharat et al. 2015). If operating costs are reduced, credit prices should be more a matter of risks than a matter or costs (Edelberg 2006).

1.2 The hypotheses

This section addresses the main arguments generally provided by MFIs to explain their high interest rates. According to Fernando (2006), four key factors determine microcredit rates: cost of funds, operating expenses, loan losses, and profits to ensure sustainability.

1.2.1 Risk

Lending to the poor, who lack collateral, seems to be a risky business despite the proverb *the poor always pay back.* From a theoretical point of view, there is a positive relationship between EIR and risk. The model has been developed by Bhaduri (1977)[2]. If delinquency is high, high interest rates are justified. But, if delinquency is zero, then EIR is equal to

[2] Yield is calculated as follows:

$Yield = EIR \times (1 - LLR) - LLR$

. Hence, at equilibrium, EIR depends on LLR and $\partial \text{EIR}/\partial \text{LLR} > 0$.

yield and the reason for the poverty penalty has to be found in other causes. For this reason, empirical studies are needed to know if delinquency is a relevant factor to explain high EIR and poverty penalty or not. Empirical studies show that, in general, default rates are low in microfinance, at approximately 1.9 % according to Rosenberg et al. (2009), and 5 % according to Dehejia et al. (2012). The hypothesis tested is as follows:

Hypothesis 1 The relationship between EIR and risk in microfinance is positive.

1.2.2 Solvency

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. Taking into account the origin of most MFIs, NGOs which started from funds set up by social investors, MFIs generally exhibit a solid balance structure with a high level of equity that includes donations, and they do not generally offer complex financial products. However, a solid balance structure implies low leverage, which means a low number of outstanding loans in the assets. The banking business consists of lending money while taking risks. An accounting identity states the breakdown of profitability into margin and leverage.[3] Following this identity, if a given MFI wants to keep profitability to be sustainable and its leverage is low, its margin should be high. In this sense, the empirical results by Saunders and Schumacher (2000) find an important policy trade-off between assuring the solvency of a financial entity and lowering the cost of financial services to clients. This high margin can result in a high EIR for customers. Therefore:

Hypothesis 2 The relationship between EIR and solvency in microfinance is positive.

1.2.3 Financial expenses

MFI's financial structure and its relationship with the EIR can be explained with the Profit-Incentive Theory by Bogan (2012). This theory affirms that sustainability is one of the main aims of MFIs and their revenues have to be sufficient to cover all their expenses. The higher the financial expense, the higher the financial revenue should be to keep operational self-sufficiency, holding the rest of the variables constant.[4]

The banking business is based on margins where money is sold and bought, and the cost of money matters. As many MFIs are not regulated, they cannot collect deposits, a cheap funding source, as noted by Hartarska and Nadolnyak (2007). However, MFIs do receive donations. It could be questioned whether the amount of donations is enough to compensate for the lack of deposits. Hermes and Lensink (2011) affirm that 70 % of the microfinance programs depend on subsidies, while Morduch (1999) highlights the role of subsidies in lowering the cost of funds. Mia and Chandran (2016) affirm that MFIs are

[3] The DuPont equation breaks down profitability as follows:

$$Profitability = \frac{Net\ Income}{Equity} = \frac{Net\ Income}{Assets} \times \frac{Assets}{Equity} = Margin \times Leverage$$

[4] Operational self-sufficiency (OSS) is measured as:

$$OSS = \frac{EIR \times Gross\ Loan\ Portfolio}{Financial\ expense + Operating\ expense + Loan\ loss\ provision\ expense}$$

driving hard to achieve their financial goals to appease the interests of donors and private actors rather than fighting against poverty. In this sense, D'Espallier et al. (2013) empirically study subsidized and non-subsidized MFIs and find 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. Monzurul et al. (2011) affirm that MFIs should reduce their funding cost and that this would result in affordable loans to the poor. High financial costs could impact their borrowers' high interest rates. Therefore:

Hypothesis 3 The relationship between EIR and financial expenses in microfinance is positive.

1.2.4 Efficiency

Processing a loan involves fixed costs, which are costs that do not depend on loan size. According to Maudos and Solís (2009), operating costs are the most relevant determinants of the intermediation margin for financial institutions. These costs can explain microcredit high interest rates. Aleem (1990) finds 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. While the correlation between administrative costs and interest rates seems clear (González 2010), the real explanation may actually be low efficiency, as reported by Servin et al. (2012). Their results show that NGO have much lower technical efficiency than banks. Microcredit needs a more labor-intensive relationship between loan officers and clients than consumer loans. Watkins (2010) reviews MFIs' administrative processes and internal controls and finds several redundancies in the processes and a lack of standardization in internal controls. This leads to high operating costs. Therefore:

Hypothesis 4 The relationship between EIR and operating expenses in microfinance is positive.

1.2.5 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 account for the high interest rates associated with microcredit. Then, the higher the EIR, the higher the profitability is.[5] However, concern for profits seems to collide with the social mission of many MFIs. Advocates of the poverty lending approach claim that subsidies should lower interest rates (Hudon 2007). Empirical studies find no significant difference in profitability between MFIs according to their legal status (Tchakoute-Tchuigoua 2010; or Mersland and Strøm 2009).

In microfinance, however, sustainability must be differentiated from profit orientation. Accordingly, MFIs should not follow the example of commercial enterprises whose main objective is to earn large profits, as denounced by Yunus (2007). There are notorious cases

[5] The higher the EIR, the higher the ROE is, as the following formula states:

$$ROE = \frac{(1 + EIR) \times (1 - LLR) \times GLP - GLP}{TE}$$

such as the MFI Compartamos, which imposed interest rates above 85 % and thereby produced an annual return of 55 % to its shareholders (Rosenberg et al. 2009). González (2010) explains, however, that this is an exceptional example. Roberts (2013) finds that a strong for-profit orientation is associated with high interest rates. Therefore:

Hypothesis 5 The relationship between EIR and profitability in microfinance is positive.

2 Empirical studies

2.1 Poverty penalty magnitude

The first research question attempts to prove the existence of the poverty penalty and its magnitude. The MFTransparency database publishes the effective rate of interest (EIR) of 394 MFIs from 17 countries.[6] Each MFI commercializes different type of loans, and for each type of loans, original documents containing repayment tables are available. In all, 1416 financial products are analyzed, and for each, approximately 5 samples are collected to ensure accuracy.

Table 1 shows the 2011–2014 microcredit country's EIR calculated using the average data from the MFIs in the country. It also shows each country's 2011 Lending Interest Rate (LIR), collected by the International Monetary Fund (IMF). LIR is the bank rate that usually meets the short- and medium-term financing needs of the private sector. The IMF affirms that countries use a variety of reporting formats, sample designs, interest compounding formulas, averaging methods, and data presentations for data series on interest rates, limiting their comparability, but the general recommendation is that LIR data should reflect "effective (rather than nominal) interest rates" (International Monetary Fund 2000, p. 5).

Poverty penalty can be measured, in absolute terms, as the difference between the EIR paid by the borrower and the LIR. Then, $PP_d = EIR - LIR$, as in Table 1, column "difference". The poverty penalty can also be measured in relative terms: $PP_r = EIR/LIR$, as in Prahalad and Hammond (2002), see Table 1, column "PP ratio", or in percentages: $PP_p = (EIR - LIR)/LIR$, as in Mendoza (2011). In this case $PP_p = PP_r - 1$. MFTransparency.org analyzed 29 countries, but it did not publish data of all of them, but only of 19 countries. MFTransparency decided to withhold all West African Economic and Monetary Union pricing data from publication pending clarifications on the formula used for the price cap. Table 1 contains data from 2011 to 2014 for all the countries with available information at MFTransparency. Results show that many MFIs have gradually failed to collaborate with MFTransparency (Waterfield 2015). In all of the countries, the microcredit interest rate is higher than the country's lending interest rate. The data reveal the existence of a poverty penalty because, on average, microcredit borrowers pay double or triple the country's LIR. 2011 is the year having more available data, including 17 countries, and for this reason it was the year chosen in the rest of the study.

2.2 Poverty penalty drivers

In this subsection, the drivers of microcredit high interest rates will be analyzed. With this aim, financial information published in annual statements will be analyzed. The MIX

[6] The web page is http://www.mftransparency.org.

Table 1 Country Lending Interest Rate (LIR) vs. microcredit country Effective Interest Rate (EIR)

	Lending interest rate (LIR) (%)	EIR microcredit				Poverty penalty	
		Min (%)	Mean (%)	Max (%)	SD	Difference	PP ratio
2011							
Azerbaijan	19.00	32.2	38.9	48.1	4.99	19.92	2.05
Bolivia	10.92	16.2	32.7	64.5	11.81	21.74	2.99
Bosnia & Herzegovina	7.14	8.5	26.6	41.6	6.92	19.43	3.72
Cambodia	15.22	27.7	35.5	54.0	5.67	20.26	2.33
Colombia	11.22	11.7	40.9	61.0	11.25	29.65	3.64
Ecuador	8.35	14.9	25.9	41.0	6.72	17.55	3.10
Ethiopia	16.00	12.8	21.1	46.3	9.12	5.06	1.32
Ghana	18.20	25.8	89.3	236.8	35.85	71.15	4.91
India	10.19	18.0	28.4	49.7	5.42	18.17	2.78
Kenya	15.05	10.1	35.5	44.1	9.61	20.43	2.36
Malawi	23.80	17.1	60.8	119.1	28.30	36.96	2.55
Mozambique	19.10	33.9	71.3	117.3	22.33	52.21	3.73
Philippines	6.66	36.2	50.2	137.8	21.65	43.5	7.53
Rwanda	17.40	18.1	45.3	95.3	20.24	27.88	2.60
Tanzania	14.96	28.4	62.0	160.9	26.41	47.03	4.14
Uganda	21.83	29.8	58.0	120.8	20.27	36.17	2.66
Zambia	18.84	28.2	87.2	275.2	63.38	68.41	4.63
Mean	14.93	21.75	47.61	100.81	18.23	32.68	3.19
2012							
Azerbaijan	18.21	30.97	45.77	64.70	8.82	27.56	2.51
Ethiopia	14.50	21.80	24.49	56.22	13.89	9.99	1.69
India	10.29	23.93	23.70	43.32	4.18	13.41	2.30
Malawi	46.01	10.90	61.56	159.48	45.09	15.55	1.34
Mozambique	15.32	53.88	76.55	118.94	29.79	61.23	5.00
Rwanda	16.49	20.64	66.57	97.48	21.40	50.08	4.04
Uganda	23.25	26.74	75.61	120.83	22.18	52.36	3.25
Zambia	9.52	71.22	99.47	191.59	48.66	89.94	10.45
Mean	17.5	32.51	59.17	106.57	24.25	40.02	3.82
2013							
Bolivia	11.05	9.10	29.88	100.18	11.65	18.83	2.70
Cambodia	12.48	14.37	33.54	50.57	5.37	21.06	2.69
Ghana	28.83	24.53	89.86	359.40	56.77	61.03	3.12
India	10.29	22.27	28.63	41.27	3.45	18.34	2.78
Kenya	17.31	20.97	53.95	166.80	24.54	36.64	3.12
Malawi	46.01	65.78	144.51	304.83	87.56	98.50	3.14
Morocco	6.30	12.40	38.18	47.53	9.84	31.88	6.06
Mozambique	15.32	30.84	76.66	117.57	27.24	61.34	5.00
Pakistan	12.41	15.77	37.27	56.00	8.26	24.86	3.00

Table 1 continued

	Lending interest rate (LIR) (%)	EIR microcredit				Poverty penalty	
		Min (%)	Mean (%)	Max (%)	SD	Difference	PP ratio
Tanzania	15.83	27.08	84.40	193.58	41.01	68.57	5.33
Uganda	23.25	31.37	35.01	38.97	3.26	11.75	1.51
Mean	18.10	24.95	59.26	134.25	25.36	41.16	3.50
2014							
Azerbaijan	17.86	25.45	35.96	39.95	3.79	18.10	2.01
India	10.25	27.25	27.28	28.00	0.53	17.03	2.66
Tanzania	16.26	56.00	72.07	91.53	11.86	55.81	4.43
Uganda	21.53	35.16	64.30	87.82	18.16	42.77	2.99
Zambia	11.57	74.61	84.94	88.52	6.99	73.37	7.34
Mean	15.49	43.69	56.91	67.16	8.27	41.42	3.89

LIR source: International Monetary Fund; EIR source: Mftransparency.org. The column labeled "Difference" shows the difference between the country EIR microcredit mean and the LIR. The "PPratio" column shows EIR divided by LIR

(Microfinance Information eXchange) database provides financial information of MFIs based in different countries. Table 2 displays the 9 financial ratios that are related to the hypotheses.

To test Hypothesis 1 on risk, the ratio provision for loan impairment to gross loan portfolio (RISK) is used, following Hermes et al. (2011). To test Hypothesis 2 on solvency, the ratio of total equity to total assets (SOLVENCY) is used. This ratio is a common measure used to analyze a banks' capital adequacy (Basel Committee 2013). Hypothesis 3 analyzes financial expenses as measured by the ratio of financial expense to loan portfolio (FINANCIAL EXPENSE). This ratio can be considered a proxy for the interest rate paid by the institution. The importance of donations is measured using the ratio of donated equity to gross loan portfolio (DONATIONS). Operating expense is the sum of personnel expense, administrative expense and depreciation and amortization expense. Hypothesis 4 analyzes efficiency using the ratio of administrative expense to financial revenue (ADMIN. EXPENSE) and the ratio of personnel expense to financial revenue (PERSONNEL EXPENSES). It has to be noticed that in the microfinance sector, depreciation and amortization expense are very low, and for this reason they were excluded. Hypothesis 5 on profits analyzes three ratios: yield on gross loan portfolio (YIELD), return on equity (ROE), and profits to revenues (PROFIT-TO-REVENUES), which helps to determine what share of the financial revenues remunerates capital.

EIR and PP have been regressed on measures of risk, financial expenses, administrative and personnel costs, profitability and donations. EIR data were only available for 2011. The sample includes EIR data from 200 MFIs pooled in five regions. Table 3 shows the results of a correlation analysis between EIR, PP and MFIs' financial ratios. The correlation coefficient between PP and EIR is 0.696, between PP and yield is 0.424, and between EIR and yield is 0.623. There is a high correlation between EIR and administrative costs (0.577) and between EIR and personnel costs (0.492). There is also a positive

Table 2 Financial ratios and their definitions

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

correlation between EIR and risk (0.281). The correlation coefficient between PP and profitability (ROE) is −0.159, negative and significant, although at a 0.05 level.

Although yield is generally used as an EIR proxy, some differences arise, which can be observed in several regression models (Table 4). The models take financial ratios as independent variables. Yield is the dependent variable in the first column, PP in the second, and EIR in the rest of the columns. The first three columns introduce the independent variable in a univariate way. The fourth column shows the parsimonious model that better explains EIR, including data from all of the countries. The analysis includes dummy variables to control for regional effects. Five regions have been considered (East Asia, South Asia, Latin America, Africa and East Europe Central Asia). The following columns in the Table are EIR models, using data from the 5 regional subsamples (models 5–9).

Administrate and personnel costs are the most important factors explaining yield, PP and EIR. Therefore, Hypothesis 4 is accepted in all of the regions. Solvency also has a positive effect, although its significance level is low. Therefore, Hypothesis 2 is partially accepted. Financial expenses and donations do not appear to be relevant for EIR or yield, at least when considering the full sample. Financial expenses are relevant only in South Asia. Therefore, Hypothesis 3 is accepted only in that region. This result is coherent with Kumar (2013), who studied the cost components of interest rates charged by Indian institutions. Profitability appears to be relevant for EIR only in the case of East Europe and Central Asia, but the subsample is too small to draw conclusions. It is found a negative relationship between ROE and poverty penalty, while the relationship between ROE and yield is not significant. We cannot conclude from here that profitability explains EIR, and Hypothesis 5 is not accepted. Risk explains EIR, but does not explain yield. It seems justifiable that MFIs charge high interest rates for high-risk loans. However, this high risk implies defaults, which means lower income and lower portfolio yield. Therefore, Hypothesis 1 is accepted.

2.3 The Colombian case

Table 4 shows that EIR determinants are different among regions, but sample size does not allow for the drawing of robust conclusions. Hence, the empirical study focuses on one

Table 3 Correlation coefficients among Effective Interest Rates (EIR), Poverty Penalty and financial ratios using a sample of 200 MFIs from 17 countries

	SOLVENCY	FINANCIAL EXPENSES	DONATIONS	ADMIN. EXPENSE	PERSONNEL EXPENSES	YIELD	ROE	PROFIT-TO-REVENUES	EIR	POVERTY PENALTY
RISK	0.048	−0.081	0.104	0.155*	0.052	0.206	−0.055	−.140	0.281***	0.225***
SOLVENCY	1	−0.111	0.125	0.224***	0.357***	0.260***	−0.304***	−0.019	0.156*	0.073
FINANCIAL EXPENSES		1	−0.233***	−0.256***	−0.112	−0.062	−0.101	−0.237***	−0.044	0.039
DONATIONS			1	0.141*	0.186**	0.147*	−0.020	0.069	0.033	0.068
ADMIN. EXPENSE				1	0.748***	0.661***	−0.227***	−0.231***	0.577***	0.427***
PERSONNEL EXPENSES					1	0.615***	−0.237***	−0.210***	0.492***	0.388***
YIELD						1	0.095	0.074	0.623***	0.424***
ROE							1	0.835***	−0.108	−0.159**
PROFIT-TO-REVENUES								1	−0.111	−0.199**
EIR									1	0.696***
POVERTY PENALTY										1

*** Significant at the 1 % level; ** Significant at the 5 % level; * Significant at the 10 % level

Table 4 Regression analysis for the determinants of yield, Effective Interest Rates (EIR) and Poverty Penalty (PP)

Dependent variable	Model 1 YIELD	Model 2 PP	Model 3 EIR	Model 4 EIR	Model 5 EIR	Model 6 EIR	Model 7 EIR	Model 8 EIR	Model 9 EIR
Sample	All regions	All regions	All regions	All regions	Latin America	East Asia Pacific	Africa	South Asia	East Europe Central Asia
RISK	0.147	7.191**	0.926***	0.8***	2.991***	2.329**			
SOLVENCY	0.172***	2.039*	0.200*				0.379***		
FINANCIAL EXPENSE	−0.017	−0.911	−0.034					0.184**	
DONATIONS	0.054	0.957	0.095						
ADMIN. EXPENSE	1.298***	18.168***	2.567***	2.445***		2.066***	2.226***		1.499**
PERSONNEL EXPENSE	1.008***	9.177***	1.118***		0.995***				
ROE	0.013	−0.936**	−0.052						0.385***
PROFIT-TO-REVENUES	0.005	−0.523	−0.052						
Intercept	–	–	–	0.177***	0.186***	0.099	0.073	0.294***	0.167***
Region dummy	Yes	Yes	Yes	Yes	–	–	–	–	–
N obs	165–170	165–170	165–170	165–170	51	33	14	39	14
R2	–	–	–	–	0.438	0.485	0.824	0.141	0.606

*** Significant at the 1 % level; ** Significant at 5 % the level; * Significant at the 10 % level

country: Colombia. Colombian microfinance industry is considered as one of the most advanced in the region. Prior and Argandoña (2009) provide a comprehensive description of the microfinance sector in Colombia.

The database combines data from three different sources: the Colombian Financial Superintendency (CFS), the MIX database, and MFTransparency. The CFS provides, for all of the regulated institutions, its financial information, its average EIR charged in the different products, and its risk. The sample has 50 Colombian institutions: 24 regulated institutions (13 pure banks that do not offer microcredit, 6 downscaled banks and 5 regulated MFIs) and 26 NGO MFIs, whose financial information has been captured from the MIX database.

Table 5 shows the 2007–2011 average EIR for six different financial products (preferential loans, ordinary loans, consumer loans, overdrafts, credit cards and microcredits) offered by the 11 regulated Colombian institutions that offer microcredit (the six downscaled banks and the five regulated MFIs) using data from the CFS. The highest EIR from all of the products corresponds to microcredit. Microcredit's EIR doubles the ordinary loan EIR and triples the preferential loan EIR. Table 5 incorporates the evolution of the Colombian usury rate. 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 is 45.64 % for 2011.

Financial information from a sample of Colombian financial institutions has been used to analyze EIR drivers. Figure 1 visually shows the time evolution from 2006 to 2011, which compares the four types of Colombian financial institutions. Table 6 shows the results of an exploratory analysis, using the sample period (6-year) average. The sample contains 233 observations. A column has been included showing the results from a *t* test to assess mean differences between NGO MFIs and the other institutions. These results show that there are no statistically significant differences between NGO MFIs and the rest of the Colombian financial institutions in terms of profitability and risk. NGO MFIs are more solvent, have lower funding cost, receive more donations, have higher administrative and personnel costs and have a higher yield than the rest of the Colombian financial institutions.

Colombian regulated entities weight their loans according to different risk categories from A (normal) down to E (bad debts). Table 7 shows the portfolio share for each category, in average terms, of the Colombian financial regulated sector. For the year 2011, four different financial products are displayed: microcredit, consumer loans, consumer credit cards, and business loans. The 93.79 % of microcredits with appropriate collateral

Table 5 Colombian average Effective Interest Rate (EIR) for 6 financial products offered by regulated Colombian institutions offering microcredit *Source* author's calculations based on data from the Colombian Financial Superintendency

	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

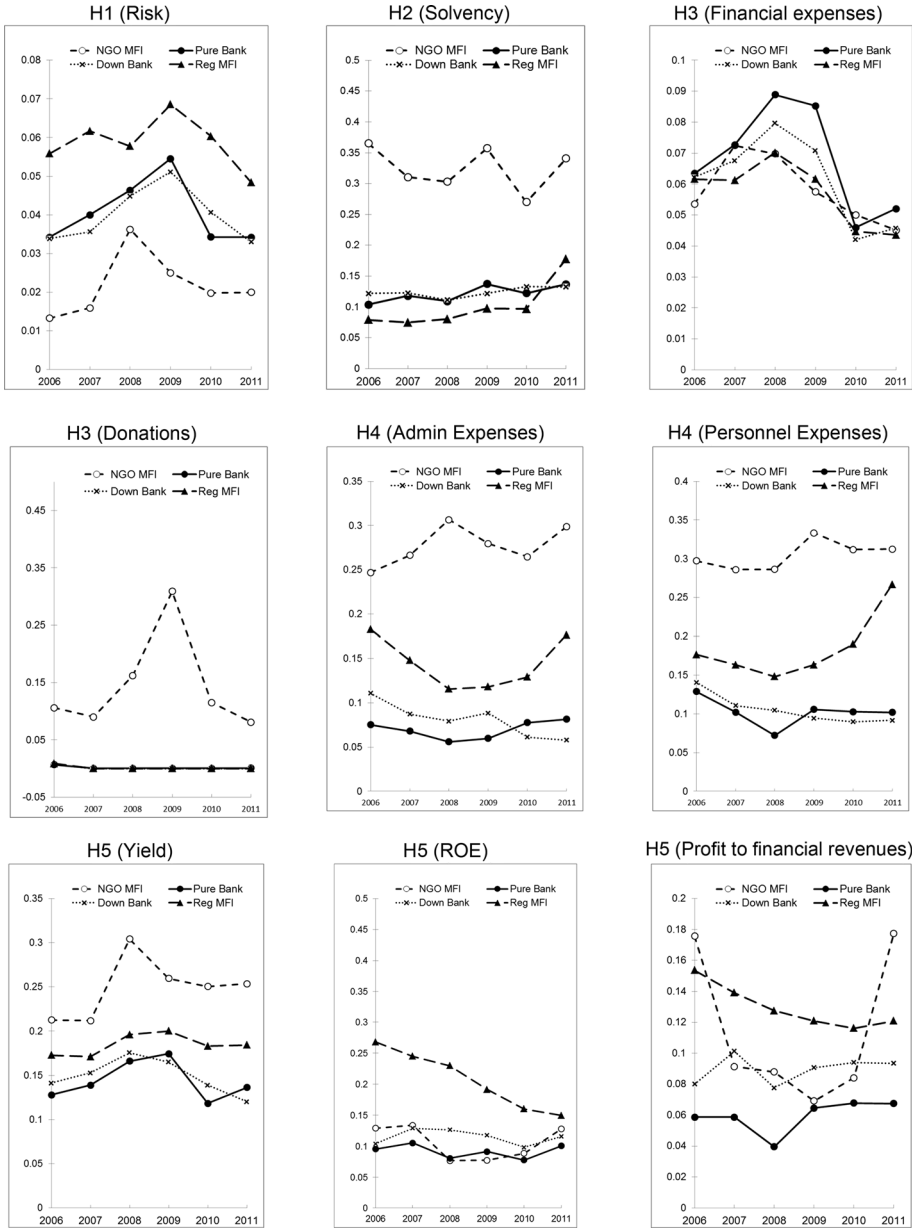

Fig. 1 Time evolution of the four groups' median: NGO MFIs, pure banks, downscaled banks and regulated MFIs for each of the 9 financial ratios analyzed

belong to the lowest risk category (A), and the percentage is similar to other financial products, such as ordinary consumer loans (93.45 %). The product with the highest level of bad debts is microcredit, especially with other collateral (3.80 %), while the rest of the

Table 6 Exploratory analysis showing the median of the four groups for the Colombian case

	NGO microfinance institutions (NGO MFI) N = 123	Commercial banks (Pure Bank) N = 64	Downscaled banks (Down Bank) N = 31	Regulated MFIs (Reg MFI N = 15)	NGO MFI versus other institution (p value)
RISK	0.022	0.042	0.041	0.062	(0.210)
SOLVENCY	0.321	0.120	0.123	0.089	(0.000)***
FINANCIAL EXPENSES	0.054	0.066	0.064	0.049	(0.000)***
DONATIONS	0.152	0.001	0.001	0.001	(0.000)***
ADMIN. EXPENSE	0.281	0.073	0.087	0.146	(0.000)***
PERSONNEL EXPENSES	0.307	0.102	0.107	0.199	(0.000)***
YIELD	0.249	0.143	0.146	0.181	(0.000)***
ROE	0.092	0.094	0.127	0.158	(0.474)
PROFIT-TO-REVENUES	0.115	0.059	0.091	0.121	(0.573)

The analysis uses a sample period (6-year) average, from 2006 to 2011. The last column shows the results of a t test to assess mean differences between NGO Microfinance Institutions and other institutions

*** $p < 0.01$

Table 7 Portfolio share of each of the 5 risk categories, in average terms, of the Colombian regulated sector, using data from the Financial Superintendency

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
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

products barely reach 2 %. The percentage of portfolio at risk is low and does not account for the high interest rates charged by microcredit.[7]

NGO MFIs have the highest solvency at 32.1 % compared to pure banks at 12 % and regulated MFIs at 8.9 % (Table 6). The differences are statistically significant for the group of NGO MFIs. NGO MFIs entities have a solid balance structure with relatively high equity and low-leverage ratios compared to banks. The average financial expense is 5.4 % for NGO MFIs, 4.9 % for regulated MFIs, and 6.6 % for pure banks (Table 6). The financial costs of NGO MFIs are low, although they lack deposits. The explanation lies in donations. MFIs' annual statements reflect few donations, although many Colombian NGOs register donations under an off-balance third-party operation account. The ratio of administrative expense to financial revenue is clearly higher for NGO MFIs (28.1 %) compared to pure banks (7.3 %) and regulated MFIs (14.6 %) (Table 6). The differences are statistically significant. Personnel expenses are clearly higher for NGO MFIs (30.7 %) compared to pure banks (10.2 %) and regulated MFIs (19.9 %), and the differences are statistically significant (Table 6). A lack of efficiency associated with a labor-intensive business model, due to the current microcredit loan methodology, is clearly apparent.

It can be debated whether the cost of processing small loans explains their high interest rates. To do so, microcredit interest rates have been compared to consumer lending rates. Data were taken from MFTransparency. 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 8). 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. Fernando (2006) warns against comparing banks to MFIs because loan size is different. We have found that microcredit EIR is higher than consumer loans EIR, even for loans that do not differ in size.

Rosenberg et al. (2009) argue that micro lending requires a more labor-intensive relationship between the loan officer and the client than do consumer loans. It can be questioned whether the costs associated with microcredit evaluation and management account for the high interest rates. A specific Colombian MFI 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. There are also some fees left to calculate the operation's EIR. 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 7000 USD loan. For smaller loans, this institution can charge a special fee, issued by law, of a maximum 7.5 % for high risk loans. The MFI claims that this fee covers the cost involved in the feasibility business study, the establishment of the loan, and inspection or service fees. But this fee is not included in the 45.64 % microcredit rate. It can be questioned whether the administration costs associated with microcredit explain the high interest rates or the MFI is

[7] Let us imagine a MFI with 1000 loans and a bad debt level of 2 % charging the Colombian lending interest rate (11.22 %, see Table 1). If its bad debt level rises from 2 to 4 % (new 20 defaults), this would lead to an increase in the EIR of less than 1 % (from 11.22 to 11.43 %) to compensate for the incurred loss, by applying the formula:

$$New\,EIR = EIR \times \frac{Loans - Expected\,defaults}{Loans - Real\,defaults}$$

Table 8 Study of the relationship between loan size, effective interest rate and type of loan (microcredit vs. consumer loan), for the Colombian case

Variable	Type of loan		Test of means	
	Microcredit (n = 40)	Consumer (n = 45)	ANOVA F (p value)	Mann–Whitney U (p value)
Loan size (USD)				
Mean	4232	6015	2.968 (0.186)	751 (0.189)
Min.	104	75		
Max.	22,100	20,800		
SD	5642	6574		
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 %		
SD	6.10	4.35		

The p values are shown in parentheses

maximizing its profit by charging the highest interest rate allowed by law. This could be known by only accessing the MFI's cost accounting system and calculating customer account profitability.

The yield on gross loan portfolio is 24.9 % for NGO MFIs, which is almost double that of pure banks at 14.3 %. Regulated MFIs have a yield of 18.1 % (Table 6). If Hypothesis 4 reveals the low efficiency of MFIs, this lack of efficiency is compensated here with high margins. Among all entities, the highest ROE corresponds to regulated MFIs at 15.8 %, while the NGO MFIs' ROE is 9.2 % and pure banks report a 9.4 % ROE. The highest profits to revenues ratio corresponds to regulated MFIs at 12.1 and 11.5 % for NGO MFIs, compared to 5.9 % for pure banks. The case of MFIs is remarkable given their not-for-profit mission.

Once the causes are known, solutions can be proposed. MFIs have high operating expenses, which are associated with the microcredit loan methodology. Gains in efficiency, by means of lower operating expenses, would reduce EIR (Prior and Argandoña 2009). As for solvency, the banking business consists of borrowing to lend money: the higher the leverage of the institution, the lower its solvency is. A way of keeping profitability in the presence of low leverage is charging high interest rates. The Basel III Accords recommend a minimum value of 3 %. In the sample analyzed, the ratio is 12 % for pure banks and 32.1 % for NGO MFIs (Table 6). The low leverage of NGO MFIs also explains their high interest rates. However, high leverage can be harmful for MFI solvency. In fact, many MFIs' solvency has been questioned, often caused by loose credit, as Wichterich (2012) studied in India. A balance is needed.

In addition to the statistical analysis, we have separately analyzed 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 may be a sign of a profit orientation 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. But the analysis has also identified MFIs that charge their clients an EIR of approximately 15 %, thereby realizing modest profits, awarding small loans and not drifting from their mission.

The methodology proposed in the paper to identify abusive interest rates is based on identifying MFIs with low costs, receiving donations, charging the poor with interest rates far above the microcredit market average, and obtaining profits that exceed those of banks. We encourage the use of external social audits as a tool useful for identifying practices that conflict with the microfinance social mission. Disclosing the EIR or providing sample loans will not be more complicated or more expensive than disclosing annual accounts. We think that it is an incentive problem: financial audits are simply compulsory in some circumstances, or in bond issues that require a rating. Some countries, such as Ecuador or Zambia have adopted rules similar to the European Union's, which obliges to disclose the EIR in any financial product brochure. Maybe this can be the solution.

The paper has some limitations. The comparison of different databases is one limitation of the paper. Although all of them try to reflect the EIR, they use different methodologies that can imply some bias. Comparing banks to MFIs is problematic and the study does control for variables such as size and risk. It would be desirable to control for more variables, such as the composition of the loan portfolio, but it was not possible due to the lack of internal data from MFIs. These data are not facilitated to government agencies responsible for supervision of the microfinance sector.

Another limitation is that the last study uses data from a single country, Colombia, which limits the robustness of the results. It would be interesting to extend the study to other countries, but MFTransparency closed in 2015, so it will be difficult to have more price data for MFIs. Waterfield (2015) argues that the main dilemma with voluntary pricing transparency from the perspective of the MFI can be described as "I potentially suffer if I do publish my prices, and I'm safe if I don't". However, our study shows that, in many cases, there is a reason justifying high EIRs. We encourage MFIs to disclose EIR as a key social indicator. Although MFTransparency is now closed, there are other remarkable initiatives such as CERISE, a non-profit service provider, incorporating price transparency as part of their social performance assessment tool for microfinance institutions (Waterfield 2015).

3 Conclusions

This paper confirms that a financial poverty penalty does exist. That is, the clients of microcredit pay more for their loans than do other formal financial services users. MFIs explain their high interest rates with several arguments, such as the high risk involved in microcredit, the high financial expenses, the high personnel and administrative costs of microcredit and the need for profits due to the lack of donations. The paper finds that operating costs is the most important factor explaining effective interest rates. Other factors, such as risk, cost of funds, or profitability, are relevant in some regions.

The case of Colombia was examined in depth by empirically analyzing the effective interest rate (EIR) of several financial products offered by different financial institutions, including MFIs and commercial banks. The Colombian microcredit level of loan losses is

not significantly higher than that of other financial products. Moreover, MFIs have a solvent balance structure that is even better than that of banks. The low leverage of NGO MFIs is one of the factors explaining their high interest rates. Higher leverage, which also leads to a higher loan portfolio, would imply lower EIRs, which regulated MFIs are already getting. However, this would also lead to taking higher risks. The financial costs borne by MFIs are not especially high. Although NGO MFIs cannot capture deposits because of their non-regulated nature, the amount of donations received is 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. An explanation lies in the low efficiency of MFIs, which is transferred to clients in the form of higher interest rates. This low efficiency is caused by high operating costs of microcredit, which uses a different lending methodology than consumer lending. While in a perfect market, this type of institution would be eliminated from the market, the joint presence of a lack of competition, a lack of financial literacy and the null negotiating power of microcredit clients make this situation more common than desired. Finally, this 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. The use of external social audits would be useful for identifying these practices. High EIR could be justified in many cases; however, the lack of transparency in disclosing EIR data is not justifiable. We encourage transparent pricing as a key issue in social MFIs and a keystone for ethics in these entities.

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References

Adams, D., Graham, D., & Von Pischke, J. (1984). *Undermining rural development with cheap credit*. Boulder: Westview Press.

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), 329–349.

Augsburg, B., & Fouillet, C. (2010). Profit empowerment: The microfinance institution's mission drift. *Perspectives on Global Development and Technology, 9*(3–4), 327–355.

Basharat, B., Hudon, M., & Nawaz, A. (2015). Does efficiency lead to lower prices? A new perspective from microfinance interest rates. *Strategic Change, 24*(1), 49–66.

Bertrand, M., & Morse, A. (2011). Information disclosure, cognitive biases, and payday borrowing. *The Journal of Finance, 66*(6), 1865–1893.

Bhaduri, A. (1977). On the formation of usurious interest rates in backward agriculture. *Cambridge Journal of Economics, 1*, 341–352.

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*. Toronto, Ontario: Free Press of Glencoe.

Carbó, S., Gardener, E. P., & Molyneux, P. (2005). *Financial exclusion*. Basingstoke, UK: Palgrave MacMillan.

Committee, Basel. (2013). *Consultative document revised basel III leverage ratio framework and disclosure requirements*. Basel, Switzerland: Basel Committee on Banking Supervision.

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. *Economic Letters, 120*(2), 174–176.
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. & Klapper, L.F. (2012). Measuring financial inclusion: The global findex database. World Bank Policy Research Working Paper 6025.
Dorfleitner, G., Leidl, M., Priberny, C., & von Mosch, J. (2013). What determines microcredit interest rates? *Applied Financial Economics, 23*(20), 1579–1597.
Driouchi, A. & Mertou, A. (2012). High implicit interest rates in the context of informal traditional housing transactions: Evidence from Morocco. MPRA paper 38732. University Library of Munich, Germany.
Edelberg, W. (2006). Risk-based pricing of interest rates for consumer loans. *Journal of Monetary Economics, 5*(8), 2283–2298.
Fernando, N. A. (2006). Understanding and dealing with high interest rates on microcredit. Asian Development Bank, 13. http://www.microfinancegateway.org/sites/default/files/mfg-en-paper-understanding-and-dealing-with-high-interest-rates-on-microcredit-a-note-to-policy-makers-in-the-asia-and-pacific-region-2006_0.pdf.
Galindo, A. & Jaramillo, C. (2011). A hellbound road paved with good intentions: Usury laws and bank competition in Colombia. Available at SSRN 1757994.
González, A. (2010). Analyzing microcredit interest rates: A review of the methodology proposed by Mohammed Yunus. *MIX Data Brief, 4*, 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.
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.
Hudon, M., & Sandberg, J. (2013). The ethical crisis in microfinance: Issues, findings, and implications. *Business Ethics Quarterly, 23*(4), 561–589.
International Monetary Fund. (2000). *Monetary and financial statistics manual*. Washington, D.C: International Monetary Fund.
Jenkins, H. (2000). Commercial bank behavior and performance in micro and small enterprise finance. Harvard Institute for International Development Discussion Paper 741. Harvard University.
Kumar, N. (2013). Cost components of interest rate charged by Indian self help groups financed by not-for profit microfinance institutions. *Journal of Global Economy, 9*(4), 302–322.
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.
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.
Mia, A., & Chandran, V. G. R. (2016). Measuring financial and social outreach productivity of microfinance institutions in Bangladesh. *Social Indicators Research, 127*(2), 505–527.
Monzurul, H., Chishty, M., & Halloway, R. (2011). Commercialization and changes in capital structure in microfinance institutions: An innovation or wrong turn? *Managerial Finance, 37*(5), 414–425.
Morduch, J. (1999). The role of subsidies in microfinance: evidence from the Grameen Bank. *Journal of Development Economics, 60*(1), 229–248.
Morduch, J. (2000). The microfinance schism. *World Development, 28*(4), 617–629.
Prahalad, C. K., & Hammond, A. (2002). Serving the world's poor, profitably. *Harvard Business Review, 80*(9), 48–59.
Prahalad, C. K., & Hart, S. L. (2002). The fortune at the bottom of the pyramid. *Strategy and Business, 26*, 1–54.
Prior, F., & Argandoña, A. (2009). Best practices in credit accessibility and corporate social responsibility in financial institutions. *Journal of Business Ethics, 87*(1), 251–265.
Roberts, P. W. (2013). The profit orientation of microfinance institutions and effective interest rates. *World Development, 41*, 120–131.

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

Sama, L. M., & Casselman, R. M. (2013). Profiting from poverty: ethics of microfinance in BOP. *South Asian Journal of Global Business Research, 2*(1), 82–103.

Saunders, A., & Schumacher, L. (2000). The determinants of bank interest rate margins: an international study. *Journal of International Money and Finance, 19*(6), 813–832.

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.

Smith A. (1937). The Wealth of Nations. New York (1st publ. 1776): Modern Library.

Stigler, G. (1987). *The theory of price* (4th ed.). New York: Macmillan.

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.

Tsai, M.-C., Dwyer, R. E., & Tsa, R.-M. (2016). Does financial assistance really assist? The impact of debt on wellbeing, health behavior and self-concept in Taiwan. *Social Indicators Research, 125*(1), 127–147.

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.

Waterfield, C. (2015). Advocating transparent pricing in microfinance: A Review of MFTransparency's Work and a Proposed Future Path for the Industry. MicroFinance Transparency.

Watkins, T. A. (2010). A framework for innovation roadmapping in microfinance information systems. *Contemporary Studies in Economic and Financial Analysis, 92*, 251–269.

Wichterich, C. (2012). The other financial crisis: Growth and crash of the microfinance sector in India. *Development, 55*(3), 406–412.

Yunus, M. (2007). *Creating a world without poverty: Social business and the future of capitalism*. New York: Public Affairs.