

Analyzing Microcredit Interest Rates

A Review of the Methodology Proposed by Mohammed Yunus¹

Adrian Gonzalez, Lead Researcher, Microfinance Information Exchange, agonzalez@themix.org

The interest rates charged on microcredit is one of the most-discussed issues in microfinance, capturing the attention of both the media and industry analysts alike. As the financial crisis brings global attention back to lending and credit risk, and microfinance is scrutinized as a tool for providing credit in developing countries, interest rates have once again captured public interest,² and alternative models for looking at interest rates and operating costs have received renewed attention.³ At the heart of this discussion is the question of how microfinance institutions (MFIs) can fulfill their social missions while charging their clients interest rates that are higher than those offered by non-microfinance financial institutions, such as traditional commercial banks. A rhetorical question usually follows: Are high micro credit interest rates not a sign that these institutions that proclaim development objectives are in fact gouging the poor?

In his 2007 book *Creating a World Without Poverty*, Muhammad Yunus (Nobel Peace Prize Laureate and founder of Grameen Bank, one of the largest microfinance providers in Bangladesh), proposed a new methodology for the evaluation of microcredit interest rates. The proposed methodology is based on an *interest rate premium*, defined as the difference between the interest rate charged by the MFI

and the cost of funds at the market rate paid by the MFI.⁴ In particular, this methodology defines three zones:

- Green Zone: $(\text{Interest Rate} - \text{Cost of Funds}) \leq 10$ percentage points. According to Professor Yunus, these are the “poverty-focused” microcredit programs.⁵
- Yellow Zone: $(\text{Interest Rate} - \text{Cost of Funds}) \leq 15$ percentage points.
- Red Zone: $(\text{Interest Rate} - \text{Cost of Funds}) > 15$ percentage points. Professor Yunus labels institutions operating in this zone as “profit-maximizing” MFIs, adding that these programs are “commercial enterprises whose main objective appears to be earning large profits for shareholders or other investors.”⁶ He also refers to this zone as the zone of moneylenders and loan sharks.

The proposed methodology is appealing because of its simplicity. This note analyzes global microfinance institutions using this methodology, and determines characteristics of MFIs that do fall into the different zones. The main conclusions from this analysis are:

- Three out of four microfinance institutions worldwide fall into the ‘red zone.’
- The categorization can almost entirely be explained by operating expenses, rather than profits, since operating expenses represent 62 percent of all expenses that need to be covered by the average *yield* and 80 percent of expenses covered by the *premium*, as defined in the methodology.

1. The author appreciates the comments and suggestions from Elizabeth Downs, Scott Gaul, Elizabeth Larson, Mårten Leijon, Sergio Navajas, Richard Rosenberg, and Blaine Stephens. All errors and omissions remain my own responsibility.

2. Nicaragua is one of the most serious cases, where even the President of the Republic, Daniel Ortega, has called microfinance borrowers to stop paying back their loans. See <https://nacla.org/node/6180> and <http://www.elnuevodiario.com.ni/nacionales/37308>.

3. Gonzalez, Adrian (2007), “Efficiency Drivers of Microfinance Institutions (MFIs): The Case of Operating Costs,” *MicroBanking Bulletin*, No. 15, September (<http://www.themix.org/sites/default/files/MBB%2015%20-%20Efficiency%20Drivers%20of%20MFIs.pdf>), and Rosenberg, Richard, Adrian Gonzalez and Sushma Narain (2009), “The New Money Lenders: Are the Poor Being Exploited by High Microcredit Interest Rates?” Occasional Paper No. 15, CGAP, February, available at <http://www.cgap.org/p/site/c/template.rc/1.9.9534/>.

4. Yunus, Muhammad (2007), *Creating a World Without Poverty*, Public Affairs, New York, p. 96.

5. Yunus (2007), p. 69.

6. Ibid.

- Looking across the broad universe of MFIs, there is no evidence that institutions in any ‘zone’ are taking super-normal profits. Removing all profits from all MFIs would not substantively change the distribution of MFIs into green, yellow and red zones.
- Most MFIs that have low average loan sizes (suggesting they reach poorer clients), are being mislabeled as in the ‘red zone.’
- Non-profit NGO MFIs are more likely to be in the red zone than for-profit MFIs (like banks) and credit unions.

Combined, these factors suggest that the proposed methodology is an imperfect tool for understanding the operations of an institution and identifying solutions for bringing affordable credit to the poor. The main challenge for the industry remains to improve operating efficiency, within feasible levels.

In particular, the proposed methodology is not accurate for sorting out which MFIs are not serving the poor and which MFIs have abusive interest rates. Rather, it sorts out MFIs whose clients are easy to serve from those whose clients are harder to serve, as measured by the operating (i.e., administrative) cost per dollar lent.

We do not mean to imply that differences in administrative costs are driven entirely by the inevitable—and therefore legitimate—costs required to serve difficult-to-reach clients (for instance, the very poor or those who live in sparsely populated areas). Not all MFIs are as efficient as they could be. This is inevitable in a young industry where most MFIs are still learning their way. But we know that the age of the MFI is linked strongly to better efficiency, and that as a result, administrative costs appear to be declining rapidly.⁷

Methodology

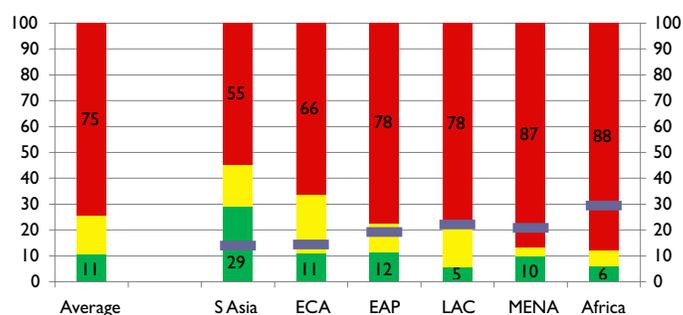
We analyzed 1,008 MFIs reporting data to Microfinance Information Exchange, Inc. (MIX) for 2008.⁸ MIX does not collect data on the effective interest rates paid by microcredit borrowers on particular loan products. Rather, the analysis here is based on the portfolio yield, which MIX defines as all interest and fee revenue from loans, expressed as a per-

7. Gonzalez (2007).

8. The dataset used for this analysis is available at <http://www.themix.org/publications/yunus-methodology-data-set>.

centage of average gross loan portfolio (GLP). In other words, yield is the weighted average interest rate actually received by the MFI as a whole.⁹ The *premium* is defined as the difference between an MFI’s interest rate and its cost of funds, but the suggested methodology is not explicit about how to calculate cost of funds. Using MIX data, we could divide financial expenses by average assets or by average gross loan portfolio. Since both methodologies produce similar results, this paper will discuss only those based on financial expense as a percentage of average loan portfolio.

Figure 1
Percentage of MFIs by Zone in 2008



Horizontal lines indicate median operating expense as a percentage of average GLP.

How poverty-focused are MFIs, according to the methodology proposed by Professor Yunus?

This section describes the known microfinance universe using the three-zone methodology as the general framework for analysis. Most MFIs around the world fail the poverty-focus test by the proposed methodology, with 75 percent of them landing in the red zone and only 11 percent in the green (Figure 1). South Asia is the region with the largest percentage of MFIs in the green zone (29 percent), followed by East Asia and the Pacific (EAP), Eastern Europe and Central Asia (ECA),

9. As illustrated by Microfinance Transparency (www.mftransparency.org), the industry pricing transparency advocate, there are many instances where average yields underestimate the actual effective interest charges in borrowers’ loan contracts. For instance, some borrowers don’t repay their loans, which will automatically make the interest yield (i.e. the actual cash received by the MFI) lower than the contract rate (i.e., the cash the borrower should have paid). If effective interest rate data had been available for enough MFIs, an analysis based on such data would have put even more MFIs into the red zone, making the interest premium test even more implausible. David Roodman discusses the issue here: http://blogs.cgdev.org/open_book/2009/10/more-reflections-on-transparency-not-about-kiva.php.

and the Middle East and North Africa (MENA), all of which fall around 10-12 percent. Latin America and the Caribbean (LAC) and Africa are the regions with the lowest percentage of MFIs in the green zone (5-6 percent). Strictly applying the proposed methodology, this would mean that three out of four MFIs in the world are not poverty-focused and their main objective is to earn profits for their shareholders.

Table 1 below summarizes the results for Bangladesh and the nine best countries by the proposed methodology; they have either the largest percentage of MFIs in the green zone, or the smallest percentage of MFIs in the red zone, if we restrict the analysis only to countries with at least 7 MFIs. The table is sorted by the percentage of MFIs in the red zone, from lowest to highest. Consistent with Figure 1, most of the countries in the table (five out of nine) are from Asia.

Main Components of Yield and Premium:

In order to understand what is driving these results, a useful step is to identify the main components of both *yield* and *premium* based on the accounting identities. In general MFIs use their revenue from interest to cover costs, and the difference between income and costs is profit (or loss). The full accounting identity between profits and costs as employed by MIX is:

Revenues = Expenses, where:

*Revenues = Financial revenue from loans (interest and fee income from loans)*¹⁰

+ *Other operating revenue (not from retail loans)*

Expenses =

Financial expense (interest and fee expense on deposits and borrowed funds)

+ *Operating expense (personnel and administrative expenses)*

+ *Net loan loss provision expense (to cover write-offs and changes in provisioning, net of recoveries)*

+ *Tax expenses*

+ *Profit (loss)*

Based on this identity, the interest margin can be defined as:

Interest Margin =

(Financial revenue from loans – Financial expense) =

(Operating Expense + Net loan loss provision expense + Tax expenses + Profit (loss) – Other operating revenue)

In other words, the interest rate premium is basically the interest *yield* minus the financial expense. Using this breakdown of accounts, Figure 2 shows that operating expenses explain the majority of both *yield* and the interest rate *premium*. Professor Yunus seems to be concerned that a

10. This is the numerator used to calculate yields.

Table 1
Best Countries by Professor Yunus Methodology plus Bangladesh

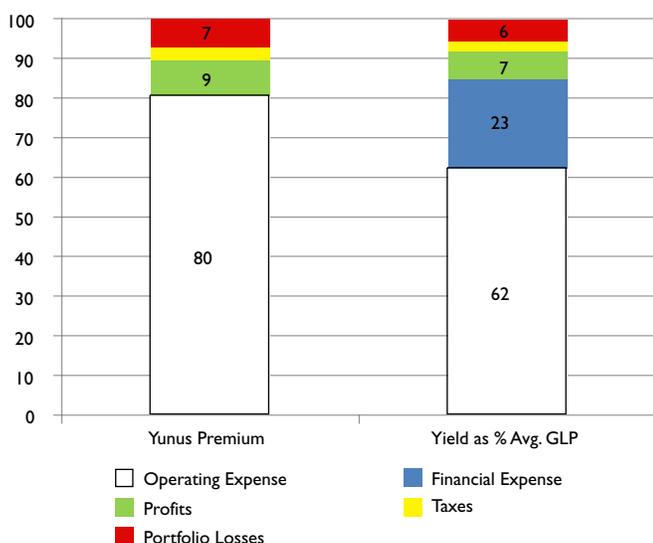
| Region | Country | Number of MFIs | | | | Percentage of MFIs | | |
|--------|------------|----------------|--------|-----|-------|--------------------|--------|-----|
| | | Green | Yellow | Red | Total | Green | Yellow | Red |
| S Asia | Nepal | 12 | 8 | 4 | 24 | 50% | 33% | 17% |
| EAP | Vietnam | 12 | 0 | 3 | 15 | 80% | 0% | 20% |
| EAP | China | 2 | 6 | 3 | 11 | 18% | 55% | 27% |
| ECA | Bulgaria | 3 | 12 | 8 | 23 | 13% | 52% | 35% |
| LAC | Bolivia | 5 | 9 | 9 | 23 | 22% | 39% | 39% |
| S Asia | Sri Lanka | 3 | 1 | 3 | 7 | 43% | 14% | 43% |
| S Asia | India | 21 | 9 | 32 | 62 | 34% | 15% | 52% |
| MENA | Palestine | 2 | 1 | 4 | 7 | 29% | 14% | 57% |
| ECA | Russia | 13 | 8 | 31 | 52 | 25% | 15% | 60% |
| S Asia | Bangladesh | 1 | 2 | 10 | 13 | 8% | 15% | 77% |

Note: Only for countries with at least 7 MFIs reporting. Sorted by % in red zone.

high *premium* indicates a high profit. To focus on this concern, Figure 2 includes only the 761 MFIs that reported profits to the MIX in 2008. This graph makes it clear that profits are a minor driver both of interest *yield* and interest *premium*. Fully 80 percent of the interest rate *premium* is explained by operating costs, with profits accounting for only 9 percent of the measure. In Figure 2, profits are net of other operating revenues, in order to capture only profits that are directly from interest and fees paid by microcredit borrowers.

The most important result from this analysis is that operating expense is the largest factor contributing to the level of both *premiums* and interest rate (*yields*) levels of microfinance institutions. In the case of *yield*, financial expense is the second most important component, and profits the third. In the case of the *premium*, profits are the second most important component. For both *yield* and *premium*, the relative contribution of profits is less than one-eighth of the relative contribution of operating expenses.

Figure 2
Premium and Yield Components,
only for Profitable MFIs, 2008



Consistently, the median operating expense by region negatively correlated with the percentage of MFIs in the green zone as depicted in Figure 1. This also explains why most of the countries in Table 1 are from Asia, given the prevalence of low salaries and high staff productivity that contribute to the

lower level of operating expenses. The appearance of Bolivia is explained by a combination of factors. Bolivia operates in one of the most mature microfinance sectors globally, and thanks to relatively larger average loan sizes, it has lower operating costs per dollar in portfolio outstanding. Compared to most countries in South Asia, Bangladesh is an outlier where only Grameen Bank (out of 13 MFIs) falls in the green zone, with 77 percent of MFIs falling in the red zone. It should not be surprising that Africa appears nowhere in Table 1, as high operational costs give these institutions exceptionally high *premiums*.

Loan Sizes and Operating Expenses are the Main Factors Explaining Differences in Premium

MFIs in the red zone disburse smaller loans (Table 2). Median loan size as percentage of GNI per capita for MFIs in the red zone is 29 percent smaller than the median for the yellow zone, and 54 percent smaller than the median for the green zone.

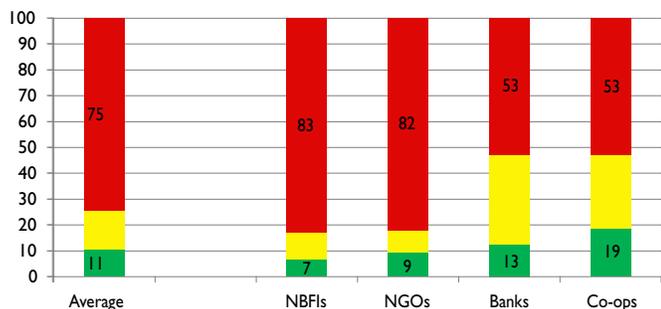
MFIs in the green zone have lower-cost operations. MFIs in the green zone have operating efficiency (defined as operating expense over average GLP) of 9 percent, the lowest of all groups, followed by 11 percent for the yellow zone, and 24 percent for the red zone. In order to move the median MFI from the red zone into the yellow zone, additional resources would be required to cover a gap between revenues and expenses equivalent to 14 percent of the average loan portfolio, assuming no loan losses or changes in delinquency and no payment of taxes.

That red zone MFIs disbursed smaller loans is also an important result from the perspective of depth of outreach

Table 2
Median Values for All Indicators by Zone

| Zones | Loan per Borrower % of GNIPC | % of Average GLP | | |
|----------|------------------------------|-------------------|----------------------|---------------------------|
| | | Operating Expense | Net Return (profits) | Cost per Borrower % GNIPC |
| Green | 43.3 | 9.0 | 1.3 | 2.9 |
| Yellow | 66.8 | 10.8 | 2.0 | 6.4 |
| Red | 30.7 | 23.7 | 3.7 | 6.8 |
| All MFIs | 35.3 | 19.2 | 2.9 | 6.3 |

Figure 3
Percentage of MFIs by Zone and Legal Status in 2008



(poverty of the clients) of these MFIs. Given that average loan size is often used as a proxy for the poverty level of the clients, Table 2 suggests that many MFIs serving poorer borrowers are being labeled as “not poverty focused.” Another way to explore this issue is by focusing on NGOs, MIX’s non-profit-oriented MFIs include partners of international networks like ACCIÓN, FINCA, Freedom from Hunger, Grameen Foundation, Mercy Corps, Plan International, ProMujer, Save the Children, Women’s World Banking, World Relief, World Vision, etc. Under the proposed methodology, only 9 percent of the 349 NGOs fall in the green zone, while 82 percent fall in the red zone (Figure 3). NGOs as a group tend to be more committed to reaching the poor than other types of MFIs, but these results imply that they should be (mis)labeled as institutions that focus on profit maximization. They are also less profit-oriented than other MFIs, which contradicts the proposition that all MFIs in the red zone focus on profit maximization.

Are MFIs using interest rates to take too much profit?

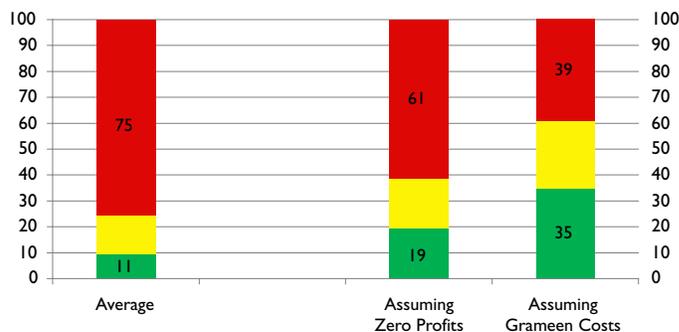
Professor Yunus defines profit-maximizing microcredit programs as those that charge an interest rate *premium* higher than that of the yellow zone, therefore operating in the red zone, or “moneylenders’ territory.”¹¹ Indeed, MFIs in the green zone have a lower return as percentage of average GLP (1.3 percent), compared to the median returns for the yellow and red zone (2 percent and 3.7 percent respectively), however these differences are not large compared to the differences in operating expenses.

11. Yunus (2007), p. 69.

One way to illustrate the negligible role of profits in raising the interest rate *premium* is to simulate what the breakout among zones would be if all MFIs lowered their interest rates enough to reduce their profit to zero. In other words, what would happen to the *premium* if all profitable MFIs lowered their yield in the amount of their profits, so that their net returns are zero? In Figure 4, the second column simulates this zero-profit scenario, which would still leave 61 percent of the world’s MFIs in the red zone, as compared to the actual figure of 75 percent—not a substantial improvement.

However, if we assume that all MFIs can operate with the same operating cost as Grameen Bank in 2008 (11 percent of average GLP), the percentage of MFIs in the green zone will be 35 percent, 26 percent will be in the yellow zone, and only 39 percent will be in the red zone. Clearly, operating costs are more important in determining the level of the *premium* than profits.¹² These results are presented as “Grameen Cost” in Figure 4.

Figure 4
Percentage of MFIs by Zone in 2008:
Actual Values and Simulations



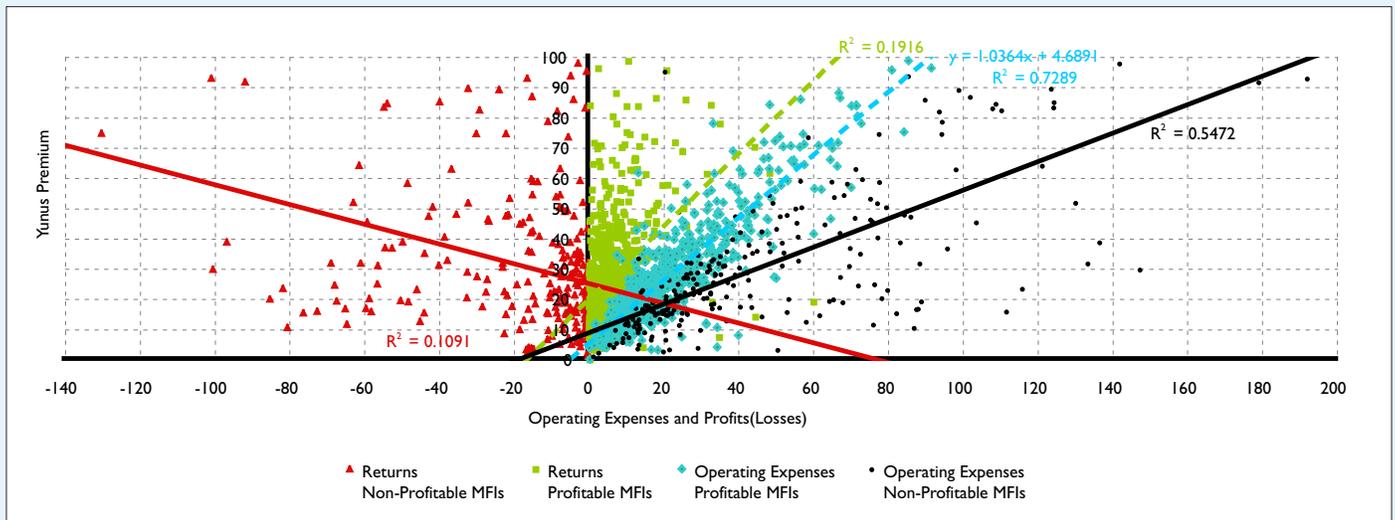
Conclusions

The main reason why microcredit interest rates are higher than those of other financial institutions is the higher operating cost necessary to deliver small loans, including administrative and personnel expenses. “Lending \$100,000 in 1,000 loans of \$100 each will obviously require a lot more in staff salaries than making a single loan of \$100,000.”¹³ Recent research

12. The yield of Grameen Bank is close to 20 percent, financial expenses 14 percent, and operating expenses 11 percent (all as percentage of average loan portfolio). These figures balance because Grameen Bank reports an additional 9 percent of GLP as other operating revenue not related with microcredit loans.

13. Rosenberg, Gonzalez, and Narain (2009).

Figure 5
Operating Expense and Returns versus Professor Yunus Premium, by Profitability Level, 2008



Operating Expenses and Returns vs. Interest Rate Premiums

Consistently, there is a clear relationship between the interest rate premium and the operating efficiency as shown in Figure 5, where both operating efficiency and returns are plotted against the Yunus premium. Here MFIs are divided in two categories: profitable and non-profitable MFIs. The slopes of the trends for both returns and operating expenses are almost identical, meaning that they have the same marginal contribution to changes (not the level) in the premium.¹⁵ However, the most important result is that as measured by R-squares, operating efficiency explains a larger share of the variability in the interest rate premium compared with returns.¹⁶

supports this argument, and two general conclusions can be derived from these analyses.¹⁴ First, smaller loans require larger cost than larger loans. Second, international comparisons are very difficult to make, unless there is a way to consider the differences in cost structure between countries.

A look at the average components of the *premium* in 2008 reveals that 88 percent covers operating expenses, 10 percent covers loan recovery and provisions, and 2 percent covers taxes. The main component of interest rates is operating expenses (salaries and administration). A simple metric like the one proposed by Professor Yunus for the analysis of interest rates has strong appeal. It allows for easy division of MFIs into clearly defined territories based on interest rates charged.

However, as analysis of the data has shown, this model does not account for the single largest driver of interest rates—

14. Gonzalez (2007), and Waterfield, Chuck (2008), “Why We Need Transparency”, Microfinance Transparency, November, available at <http://www.mftransparency.org/resources/>.

operating expenses—and the differences that exist between or within countries in the cost of service delivery. One undesirable result of the three-zone analysis is that many poverty-focused MFIs may be misclassified in the red zone. Nevertheless, Prof. Yunus’ concern about and willingness to take on the issue of high microcredit interest rates is important and necessary, and has forced the industry to look at itself, analyze the facts, and address these issues. However, by focusing public attention on profits rather than costs, the methodology takes attention and resources away from a core challenge to microfinance today: reducing the cost of service delivery. Interest rate analysis is still an issue that is better analyzed with many shades of grey, instead of with a few bright colors.

15. This does not mean that they should have the same average contribution to the level premium as depicted in Figure 2 because most MFIs’ returns are under the 20 percent range, while many operating expenses are over 50 percent.

16. Trends were fit in Excel using linear equations, after removing three MFIs whose operating efficiency was over 205 percent.