How statistics shaped microfinance

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If banking in poor communities was easy, banks would already be there in large numbers. The big global banks would have blanketed the world with branch offices and automatic teller machines, competing vigorously with local banks for poor customers. There would be no need for a vocabulary of "microfinance" or "financial inclusion," and no global microfinance campaigns.

But banking in poor communities is not generally easy. The big banks stayed away from communities served by microfinance for understandable reasons. Economists point to now-familiar problems in credit markets created by information asymmetries; moral hazard and adverse selection emerge especially in contexts where few assets can be used as collateral. Creating mechanisms that substituted for the use of collateral (especially group lending and installment lending) was the key technical innovation of microfinance.² It took the global microfinance movement to transform and popularize thesenew approaches to banking in poor communities.

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² For an overview of microfinance innovations, see Armendariz and Morduch (2010).

The starting date of the global microfinance movement is debated. Some look to antecedents in 19th century credit cooperatives.³ Others point to seeds in informal financial mechanisms like rotating saving and credit institutions.⁴ But the modern microfinance *movement* dates to Muhammad Yunus's early microcredit experiments in 1976, forty years ago. Those experiments led to the establishment of Grameen Bank in Bangladesh under an official ordinance in 1983, which in turn inspired the first global Microcredit Summit in 1997 and, eventually, today's worldwide efforts to promote financial inclusion.⁵

Statistics have been central to the global growth of microfinance. Most important, statistics have established regional benchmarks and documented progress over time. By choosing which numbers to collect and publish (and which not), advocacy organizations have also used statistics to tilt debates, not always subtly. The collection and publication of particular data can thus be seen as a reflection of internal tensions between social and commercial goals within the microfinance sector. In short, data have played both scientific and political roles.

Seen from the outside, the statistics on microfinance reinforce the sense that microfinance is a cohesive sector, with microfinance institutions driven by the shared belief that social goals and commercial imperatives can be pursued harmoniously within the same financial institutions. The idea builds from the notion that microfinance providers can earn profits while serving the needy. Microfinance has been pitched as a

³ See, for example, Banerjee, et al. (1994).

⁴ See, for example, Rutherford (2009).

⁵ I will use the words "microcredit" and "microfinance" interchangeably here, although Grameen Bank was originally focused mainly on credit and used the term "microcredit" as a mark of distinction to signify a pro-poor orientation.

win-win, "you can have it all" proposition. The win-win vision creates the possibility of rapid, organic growth, freed from the constraints of donor-driven expansion. Subsidies are seen as start-up funding, not permanent support.

Yet, from the start, microfinance has seen fundamental—and largely constructive—debates. The conflicts center on the priority to be given to social goals like poverty reduction versus commercial goals like profitability and the expansion of banking systems. Although most of the rhetoric of microfinance suggests that the goals are not in conflict, economics (and statistics) show that conflicts are inevitable.

In this essay, I describe key elements of microfinance as seen through four very different statistical efforts, each of which leads to (and is informed by) a fundamentally different view of the ultimate goals of microfinance. Only when the statistical efforts are viewed together does a full picture of microfinance emerge, a picture that reveals tensions within a sector in flux.

The first focus is data on the rapid growth (and pro-poor orientation) of microfinance documented by the Microcredit Summit Campaign, a grassroots advocacy organization closely tied to Muhammad Yunus's vision. The second, in contrast, is data on the profitability (and commercial orientation) of microfinance documented by the Microfinance Information Exchange (MIX Market), an organization created by international donors. The third is data on social impacts, mainly involving randomized controlled trials (RCTs), largely implemented by research-oriented economists. The RCTs shift focus to household outcomes like income and consumption (and have found only modest impacts). The fourth is financial diaries data—intensive studies of the

⁶ For more and a discussion of the "microfinance schism," see Morduch (2000).

finances of households in poor communities—carried out mainly by independent researchers. Using the tools of close observation, the diaries shift the focus once again, creating an argument that poor families mainly seek tools for basic money management rather than, as Yunus had originally argued, business investment. This "cash flow" perspective would bring microfinance closer to meeting the goals that most people the world over seek in financial access.

1. The rapid growth (and pro-poor orientation) of microfinance:

The Microcredit Summit Campaign

The Microcredit Summit Campaign was launched in February 1997 at a global summit in Washington, DC, attended by over 2,900 delegates from 137 countries. At that point, just 13 million microfinance customers were counted globally. The summit featured the start of a nine-year campaign to reach "100 million of the world's poorest families" by 2005. In line with Yunus's emphases, the focus was on women especially, and explicitly on "credit for self-employment and other financial and business services."

The 1997 summit has been followed by 17 annual summits. Having met the goal set in 1997, the November 2006 summit in Halifax ended with two new goals: First: "Reaching 175 million of the poorest families with credit for self-employment and other financial and business services." Second: "Helping 100 million families lift themselves out of extreme poverty."

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⁷ See details on the Microcredit Summit website. http://www.microcreditsummit.org/about-the-campaign2.html.

Figure 1 is taken from the Microcredit Summit Campaign's *State of the Summit Report 2015*. It shows the impressive success of microcredit in reaching global scale. In 1997, of the 13 million customers counted worldwide, 8 million of whom were among the poorest (either living on income below international poverty lines or living on income that placed them in the bottom half of their country's poor population). By 2005, the total had reached 113 million customers, 82 million of whom were counted as among the "poorest." The first goal had been met. By 2013, the number had hit 211 million, with 114 million among the "poorest." Both of the 2006 goals were thus met too.

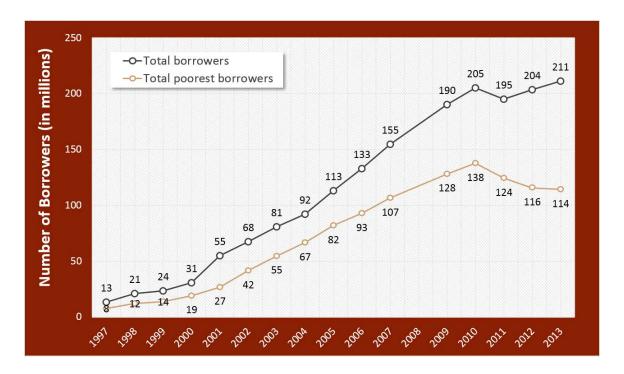


Figure 1. Microfinance as an institutional success.Millions of microfinance customers.
Microcredit Summit Campaign. *State of the Summit Report 2015*https://stateofthecampaign.org/data-reported/

⁸ The numbers are self-reported and, while there are attempts at outside verification, few if any of the statistics on the "poorest" are collected through careful household surveys on income and consumption.

The statistics show the rapid rise of microfinance and the ability to reach scale. Three elements are worth noting. First, the social orientation of the Microcredit Summit meant that the "headline" numbers counted people, rather than the size of loan portfolios or the growth of lenders' assets. Financial data were not highlighted. The numbers were driven by large lenders in Asia, even if they were not leaders on commercial dimensions.

Second, by counting poor customers and building poverty targets explicitly into goals, the social dimension was again underscored, an idea that lines up with Yunus's aim to be a "banker to the poor." Third, the trajectories of total borrowers and the "poorest" borrowers diverges from 2010 onward. The Microcredit Summit started to see both a relative and absolute decline in the orientation toward poor customers.

Figure 2 shows how the pro-poor agenda (and focus on "poorest women" clients) aligns with institutions in Asia. My calculations based on the final column shows that 91 percent of the poorest women (86 million out of a world total of 94 million) are served by institutions in Asia. Looking across rows (and calculating percentages) shows that different regions have different orientations. In Asia and the Pacific, 100 percent of the 167 million customers reported to the summit are women, 61 percent are among the poorest, and 51 percent are among the poorest women. In contrast, in sub-Saharan Africa, just 54 percent of the 16 million customers are women, and 37 percent are among the poorest women. Even more starkly, in Latin America and the Caribbean, while 62 percent of the 17 million customers are women, just 16 percent are among the poorest, and 12 percent are among the poorest women.

Region	No. MFIs	No. Total Clients	No. Total Women Clients	No. Poorest Clients	No. Poorest Women Clients
Sub-Saharan Africa	1,045	15,945,279	8,581,990	8,727,527	5,875,258
Asia and the Pacific	1,119	166,908,164	166,908,164	101,427,062	85,522,494
Latin America & Caribbean	672	17,407,431	10,725,880	2,751,885	2,008,379
Middle East & North Africa	99	5,279,706	2,785,940	1,250,061	908,991
Developing World Totals	2,935	205,540,580	189,001,974	114,156,535	94,315,122
North America & Western Europe	87	168,815	57,000	42,101	23,361
Eastern Europe & Central Asia	76	5,410,152	282,821	112,950	50,218
Industrialized World Totals	163	5,578,967	339,821	155,051	73,579
Global Totals	3,098	211,119,547	189,341,795	114,311,586	94,388,701

Figure 2. Microfinance heterogeneity

Customers by region, gender, and poverty level Microcredit Summit Campaign, *State of the Summit Report 2015* https://stateofthecampaign.org/data-reported/

The commercialization of microfinance and continued dependence on subsidy:MIX Market database.

While the Microcredit Summit Campaign aimed to keep an eye on the global human reach of microfinance, with a particular focus on poor women, international donors worked to shift attention to the commercial prospects for microfinance.

The new credit contracts, like group lending and installment lending, proved insufficient for microfinance to succeed and expand on a commercial basis. The success of microfinance also depended on a political argument that embraced the raising of interest rates for microfinance customers to levels that were considerably higher than the rates charged to (richer) customers of traditional banks. The case was made along several related lines: that the higher interest rates would still be much lower than rates charged by

moneylenders, that illiquid households sought access rather than cheap credit, and that the financial returns to cash-starved entrepreneurs were so high that interest rates were a minor concern. The arguments came together to create a broad defense of commercialization in social terms: High interest rates were necessary for a microfinance institution's profitability and, in principle, that would then attract investment to allow portfolio growth and far greater reach. It would also free donors of the need to perpetually support the sector.⁹

International donors, guided by the consortium CGAP (originally, the "Consultative Group to Assist the Poorest"), created the MIX Market, an independent organization to collect financial data on microfinance institutions. ¹⁰ The focus shifted to cost structures, revenues, loan losses, and various measures of profit. ¹¹

The MIX Market database remains the largest industry data source on the finances of microfinance institutions, and the analysis here is from analyses of MIX data by Cull, et al. (2016). They analyze the data on MFIs between 2005 and 2009, drawing on a database that includes 3845 institution-years, reflecting 291 million borrower-years. The

⁹ As Armendariz and Morduch (2010) show, the new contractual innovations played a role here by allowing lenders to raise interest rates while mitigating incentive problems connected to information asymmetries.

¹⁰ See Helms (2006) for an overview of the donor vision from CGAP.

¹¹ The MIX Market now collects data on social outcomes, although it did not do so initially.

¹² As noted by Cull, et al. (2016): "Participation in the MIX database is voluntary, and the microfinance institutions in the sample tend to feature institutions that stress financial objectives and profitability (though the database has become more broadly representative as it has expanded over time). The skew is shown by Bauchet and Morduch (2010) who calculate that the average operational self-sufficiency ratio (a measure of organizational efficiency) of institutions reporting to the larger, socially-focused Microcredit Summit Campaign database is 95 percent, compared to 115 percent for institutions reporting to the MIX Market. Scores above 100 percent reflect 'operational self-sufficiency."

2009 data include 930 institutions with a combined 80.1 million borrowers. Their focus is on variation among for-profit microfinance banks, credit unions and cooperatives, NGOs, non-bank financial institutions (NBFIs), and public-sector rural banks. Non-bank financial institutions are a broad range of institutions that span the space between NGOs and banks.

The central finding of Cull et al. (2016) is that, while most firms earn positive accounting profits, only a minority earn economic profit (which accounts fully for the opportunity costs of inputs). Accounting profit reflects an institution's ability to cover its costs with its revenues. It is a helpful statistic, but it does not account for implicit grants and subsidies. Cull, et al. (2016) find that two-thirds percent of microfinance institutions were profitable on an accounting basis (weighted by the number of borrowers per institution). Turning instead to economic profit (using the local prime interest rate as the alternative cost of capital), they find that only about one third percent of institutions were above the profit bar (weighted by the number of borrowers per institution).

The Cull et al. (2016) analysis highlights the challenge created by high fixed costs in lending. The need to raise interest rates was due to a more fundamental problem than information asymmetries: the basic costs of microfinance lending were high. Cull, et al. (2016) estimate a median unit cost of \$14 in operating expenses for each \$100 of loans outstanding. The distribution of unit costs, are skewed, though, as seen in Figure 3. Institutions making small loans face particularly high unit costs. The horizontal axis measures average loan sizes normalized by the income per capita at the 20th percentile of the income distribution in an institution's country. High fixed costs imply cost advantages when making larger loans (holding all else the same). The median

commercial microfinance bank makes loans that are, on average, three times larger than the median NGO. The median commercial microfinance bank thus can reduce unit costs to 11 percent -- versus 18 percent for the median NGO.

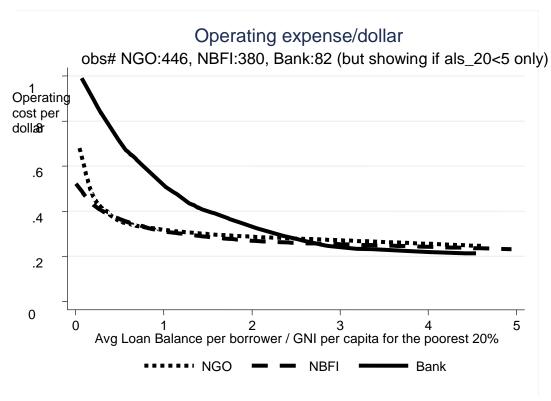


Figure 3: Operating expense per unit lent
Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).
Source: Cull, et al. (2016)

Following "best practices" promoted by donors, institutions respond by raising interest rates. Consistent with the pattern of costs, NGOs thus charge more than commercial microfinance banks. Figure 4 shows that, after adjusting for inflation, the median microfinance lender charged borrowers 21 percent per year, as measured by the average real portfolio yield. Strikingly, NGOs, the institutions that tend to serve the poorest customers, lent at an average of 28 percent per year after inflation. For-profit commercial microfinance banks, in contrast, charged an average of just 22 percent per year.

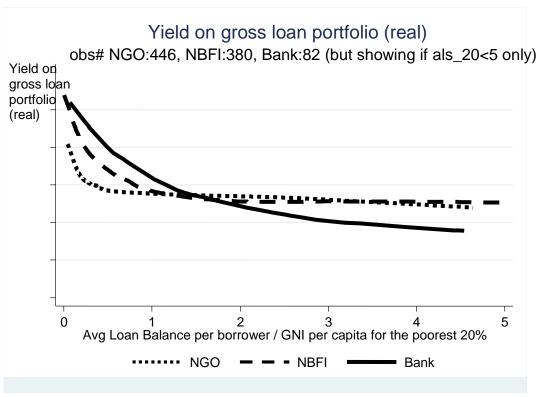


Figure 4: Average Yield on gross portfolio (real)
Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).
Source: Cull, et al. (2016)

Having established the lack of profitability in economic (versus accounting) terms, Cull et al. (2016) calculate the extent of subsidies. They find that, on average, subsidies amounted to \$132 per borrower, but again the distribution is highly skewed. The median microfinance institution used subsidies at a rate of just \$26 per borrower, and no subsidy was used by the institution at the 25th percentile.

There are two important implications. First, given how low subsidies are for some institutions, even modest impacts on customers could yield impressive cost-benefit ratios in social and economic terms. Second, the data show that subsidy is large for some institutions, especially—and surprisingly—the most commercialized institutions. As a group, their subsidy averages \$275 per borrower, with a median of \$93. In sharp contrast,

customers of NGOs, which focus on the poorest customers and on women, receive far less subsidy: the median microfinance NGO used subsidy at a rate of \$23 per borrower, and subsidy for the NGO at the 25th percentile was just \$3 per borrower.

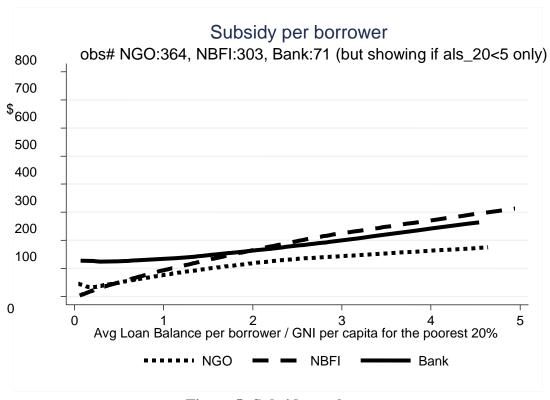


Figure 5: Subsidy per borrower

Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Source: Cull, et al. (2016)

In addition, Cull et al. (2016) show that the subsidies do not appear to be transitional. Their analysis shows that subsidies in fact continue to be important in microfinance, even for older institutions. Summing across the institutions, the total subsidy – both implicit and implicit -- was \$4.9 billion per year. Of the total subsidy, three-quarters went to institutions that were older than ten years. Almost all of the subsidy came via equity grants and cheap capital rather than direct donations.

3. Social and Economic Impacts Randomized Controlled Trials (RCTs)

The Cull et al. (2016) findings on subsidy suggest that the conversation needs to shift toward measured impact so the costs analyzed by Cull et al. (2016) can be compared to benefits. Ultimately, for policymakers, cost-benefit ratios are of key interest.

Impact measurement, though, has been hampered by selection bias. This is a particular problem in microcredit given the likely heterogeneity of impact and the endogeneity of participation. Measured impacts will be over-stated if outcomes for microcredit borrowers are compared to outcomes for non-borrowers without fully accounting for the ways that participants may have advantages from the outset.

Borrowers, for example, may be more industrious and better connected to market networks, and many of these dimensions are hard to control for in standard statistical frameworks. In contrast, there are cases when biases go the other way, when, for example, microfinance institutions targets the most disadvantaged populations. ¹³

These concerns have led researchers to turn to randomized controlled trials in which access to microcredit depends in part on a randomization process. Usually, lenders select some communities (treatment) and not others (control) on using a random number

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¹³ For a review of the statistical issues, see Armendáriz and Morduch (2010).

generator. Researchers then compare the outcomes in treatment and control communities after a few years. 14

Here, I focus on six studies published in *American Economic Journal: Applied Economics* 2014 (the studies are from India, Ethiopia, Bosnia-Herzegovina, Mexico, Morocco, and Mongolia). As a group, the papers show strong increases in borrowing but modest impacts of microfinance. ¹⁵

The studies show the power of randomization together with its limits. To give an example, the paper from India investigates an urban microcredit program in South India. Researchers found that small business investment and profits of existing businesses increased, but not average consumption by households. No significant impacts were found on health, education, or women's empowerment. A follow-up two years later (after

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¹⁴ Earlier papers addressed selection bias through other methods. See, for example, Mark M. Pitt and Shahidur R. Khandker, (1998) "The Impact of Group-Based Credit on Poor Households in Bangladesh: Does the Gender of Participants Matter?" *Journal of Political Economy* 106(5), pp. 958–96. A replication and critique of the paper can be found in David Roodman and Jonathan Morduch. 2014. "The Impact of Microcredit on the Poor in Bangladesh: Revisiting the Evidence." *Journal of Development Studies* 50 (4), April: 583-604.

¹⁵ The six studies published in the *American Economic Journal: Applied Economics* are: Banerjee, Abhijit V., Esther Duflo, Rachel Glennerster, and Cynthia Kinnan: "The Miracle of Microfinance? Evidence from a Randomized Evaluation"; Angelucci, Manuela; Karlan, Dean and Zinman, Jonathan: "Microcredit Impacts: Evidence from a Randomized Microcredit Program Placement Experiment by Compartamos Banco"; Orazio Attanasio, Britta Augsburg, Ralph De Haas, Emla Fitzsimons and Heike Harmgart: "The Impacts of Microfinance: Evidence from Joint-Liability Lending in Mongolia"; Britta Augsburg, Ralph De Haas, Heike Harmgart and Costas Meghir: "The Impacts of Microcredit: Evidence from Bosnia and Herzegovina"; Bruno Crépon, Florencia Devoto, Esther Duflo, and William Pariente: "Estimating the Impact of Microcredit on Those who Take It Up: Evidence from a Randomized Experiment in Morocco"; and Alessandro Tarozzi, Jaikishan Desai, and Kristin Johnson: "The Impacts of Microcredit: Evidence from Ethiopia."

the area had been more widely covered by microcredit) found very few significant differences between the original treatment and control groups. The findings point to some positive changes (especially in business investment) but not on the main household economic and social indicators. The study measures the impact of an expansion (into an urban area) but can say nothing about the impact of the microfinance institution on customers in its core rural locations. The impacts are on marginal customers, who are one group of interest in understanding the impact of expansions. The measures, though, can say nothing clear about impacts on infra-marginal customers, who form the majority of customers.

In Mexico, researchers tracked the expansion of the country's largest microlender (one that uses established microcredit lending methods and targets low-income women but which charges very high interest rates). After an average of two years of microcredit access, the researchers "find no evidence of transformative impacts on 37 outcomes (although some estimates have large confidence intervals)." The outcomes considered include micro-entrepreneurship, income, labor supply, expenditures, social status, and subjective well-being. Again, the study is useful, but it documents the impact of an expansion into new (and, in this case, recently-violent) territory, and cannot speak to the impact on the majority of (infra-marginal) customers in the institution's original locations.

In rural Mongolia, the researchers find positive impacts on the entrepreneurship of women and on food consumption by their households, but not on total working hours or household income. In Bosnia, with a better-off sample of customers, the researchers find positive impacts on self-employment and inventories, and, with that, a drop in wage

work. While the researchers find "some evidence of increases in profits" they also find that consumption and savings fall, and find no impact on average household income. In Morocco, the researchers also find an increase in self-employment coupled with a drop in other forms of labor. The increase in business profit was thus offset by falling income from other labor, leaving no net gain in average household income and consumption. In rural Ethiopia, researchers investigated impacts on income from agriculture, animal husbandry, nonfarm self-employment, labor supply, schooling, and indicators of women's empowerment. They find that "despite substantial increases in borrowing in areas assigned to treatment the null of no impact cannot be rejected for a large majority of outcomes."

One cannot generalize to all cases from just these six studies, but they align with results from a wider set of studies surveyed by Armendáriz and Morduch (2010). The summary view is that, in terms of studies that pass muster with academic economists, the empirical case that credit has a strong role in reducing measured poverty is weak. The studies show a few bright spots, and they show that microcredit generally helps businesses. But the studies show that the links are not strong from business investment to broader measures of welfare.

4. Shifting to a Cash Flow View: Financial Diaries

The statistics above pose a large challenge for microfinance. Indeed, microfinance is at a crossroads. The data show modest subsidies and modest impacts. They show growing scale, but a shift away from the poorest. And they show regional differences in the kinds

of populations served by microfinance. If microfinance has been a clear success institutionally, its ultimate impact on customers is far less clear.

Part of the dilemma ties back to limitations of the original vision. Stepping way from microfinance for a moment, households generally seek finance to make large purchases that would otherwise be difficult and to help with basic, week-by-week financial management. The original vision for microfinance, however, rested on the notion that finance for the poor meant only finance for business. The kinds of questions that researchers asked with RCTs followed suit, mainly focusing on impacts on business profits and household income. The same perspective was carried forward by both the Microcredit Summit Campaign and CGAP.

An alternative view emerges from financial diaries. The diaries are most closely associated with the work of Collins et al. (2009), which details the financial lives of low-income families in Bangladesh, India, and South Africa. Stepping away from large-scale statistical efforts, Collins et al. (2009) take a close-to-the-ground approach, aiming to track the entire financial lives of a small set of households in both rural and urban areas. They use the tools of empirical corporate finance to create linked balance sheets and income statements for the households. ¹⁶ Their focus is on the complete set of household financial transactions connected to earning, spending, saving, borrowing, and informal sharing. Rather than test hypotheses emerging from the economics literature, the researchers' goal was to watch and listen, and only then try to make sense (inductively) of households' observed choices.

¹⁶ For a related method see the important work of Samphantharak and Townsend (2009).

The picture that emerges is very different from the early microfinance vision. Collins et al. (2009) find that even if microfinance does not raise income or launch businesses, it may help households cope with the ups and downs of incomes and needs that arise through the year. A central finding of Collins et al. (2009) can be boiled down in terms of global poverty statistics: the hidden burden of living on \$1 a day per person (or wherever the global poverty line is set), is that rarely does anyone actually receive \$1 per person each and every day. Instead, farmers have high and low seasons, laborers have better and worse months, and many people are vulnerable to the ups and downs created by boom and bust economic business cycles. The financial problem of being poor, then, is both an issue of low resources on average and an issue of the uncertainty and unpredictability of those resources. Microfinance can then be an important asset in smoothing consumption in the sense of Deaton (1992), not just for investment. Not surprisingly, this is how Stuart Rutherford observes microfinance customers actually using their money (Collins et al. 2009, chapter 6).

Put another way, even if poverty rates (defined by a given level of average income) are not noticeably affected by microfinance access, some of the consequences of being poor – such as having difficulty finding funds to meet health crises -- may be ameliorated by having access to extra money when needed. Such access may be vital during emergencies (and are due more attention from policymakers and researchers), but it is a very different story from the standard narrative upon which the microfinance sector was built. Indeed, it is a very different story from that behind efforts to address global poverty.

To the extent that this is so, microfinance has been vastly undersold and has perhaps been missing its biggest market, the billions of wage-workers who have no interest in (nor time for) self-employment but whose needs for finance are fundamental to their well-being. This is not an argument for abandoning the aim to serve the poor: some of the poorest workers anywhere are wage-workers. The argument is instead to think differently and bigger, while not losing grasp of the original vision (and tensions) of microfinance.

5. Conclusion

Microfinance has been a global success, duly celebrated by the 2006 Nobel Peace Prize.

Beyond demonstrating the possibility of new kinds of financial institutions, it has demonstrated new ideas adopted in other sectors, including health, education, and energy.

Early efforts to build social businesses and foster social investment owe their inspiration to the pioneers of microfinance (Conning and Morduch 2011).

Yet microfinance was always a contested idea, and statistics were collected to highlight and promote some strands of thought over others. The notable divides were along social versus commercial lines. New empirical work, taking an inductive approach rather than a deductive one, calls into question the original premise of microfinance as a way to help customers start small businesses. Instead, new data from financial diaries suggest a broader view of household financial needs focused on cash flow management.

The conflicts within microfinance have largely been constructive, but the statistics have both revealed and (implicitly) concealed parts of the debate. In terms of statistics and data, the history of microfinance shows that a full view is only possible when very different kinds of data are brought together. The full picture cannot be seen from just

reading tables documenting the numbers reached, nor spreadsheets of financial performance, nor randomized controlled trials of economis and social impacts, nor financial diaries giving an on-the-ground view.

Investors and entrepreneurs have difficult choices to make in enabling the next steps for microfinance. One vision, provoked by the financial diaries, opens up the possibility of extending the ideas of microfinance to hundreds of millions of potential customers, many in urban areas and most with jobs, who lack a strong interest in business investment. They instead seek finance to help manage cash flows and seize opportunities requiring lumpy sums. The evidence from RCTs, though, suggest that such financial access can be an important step in expanding the choices of households but it is unlikely, in itself, to be socially transformative. The data from the Microcredit Summit suggest that this can be achieved at mass scale, while the (re-examined) data from the MIX Market suggest that, absent radical ways to slash costs, enduring subsidy is likely to be an integral part of microfinance business models for institutions serving poor communities.

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