

Microfinance and Economic Development

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Abstract

Microfinance is generally seen as a way to fix credit markets and unleash the productive capacities of poor people who are dependent on self-employment. The microfinance sector has grown quickly since the 1990s, paving the way for other forms of social enterprise and social investment. But recent evidence shows only modest average impacts on customers, generating a backlash against microfinance. This paper reconsiders the claims about microfinance, highlighting the

diversity in evidence on impacts and the important (but limited) role of subsidies. The paper concludes by describing an evolution of thinking: from microfinance as narrowly construed entrepreneurial finance toward microfinance as broadly construed household finance. In this vision, microfinance yields benefits by providing liquidity for a wide range of needs rather than solely by boosting business income.

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Microfinance and Economic Development

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Introduction

Microfinance was first trumpeted as a way to unleash the productive capacities of poor people dependent on self-employment (e.g., Hulme and Mosley 1996). The idea was straightforward: microfinance would transform customers' businesses by providing capital; that would increase borrowers' earnings and ultimately eliminate poverty (Yunus 2016). The focus aligned with influential economic theory that linked productive inefficiencies to credit market failure and pinned the blame on the vulnerability of standard lending contracts to information asymmetries (e.g., Stiglitz and Weiss 1981).

Microfinance has been fêted for introducing innovations in credit contracts, particularly group lending and installment-lending (Ghatak and Guinnane 1999, Armendáriz and Morduch 2000). More broadly, microfinance demonstrates a new mode of development intervention, one that displaces governments as central actors and turns to market-mechanisms to deliver services through a range of institutions that integrate social and financial goals (Conning and Morduch 2011).

Today, however, most observers see microfinance as a useful financial service but not a transformative social and economic intervention (Mossman 2015). Others, reacting against high expectations, dismiss microfinance as a failed fad, a neoliberal contrivance that entranced donors but failed to deliver services that truly helped poor communities (Bateman and Chang 2012). Even sympathetic observers worry that microfinance has “lost its moral compass” by focusing more on the profitability of lenders than on the poverty of customers (Hulme and Maitrot 2014).

This paper reconsiders the claims about microfinance, both about its social and economic impacts on households and about microfinance institutions' own profitability as business enterprises that serve low-income households. We argue that claims about large impacts and profits have been exaggerated, but so have claims about failures. There is important heterogeneity in both impacts and profit, and microfinance holds real appeal in some contexts, especially where communities remain fundamentally under-served.¹

Expectations for impacts were set high by microfinance pioneers. They argued that they were helping to overcome financing constraints for small-scale entrepreneurs and radically expanding their opportunities to earn. At minimum, they claimed, microfinance would provide capital at cheaper interest rates than moneylenders and diminish dependence on trader-lenders adept at extracting surpluses (U.S. House of Representatives 1986). But more optimistically, microfinance promised to raise income and, with newfound resources, improve education and health and empower women. In this vision, finance was seen as a tool of personal transformation, and it captured the imaginations of those seeking new modes of social and economic change (Yunus 2008).

Researchers, though, have so far failed to find sustained evidence that access to microfinance has *writ large* done much to reduce poverty, improve living conditions, and fuel micro-businesses. Nearly all rigorous quantitative studies, beginning well before the use of randomized controlled trials, fail to fully support microfinance as a tool that can powerfully and single-handedly reduce poverty (see accounts in Armendàriz and Morduch 2010, Banerjee et al.

¹ For related assessments, see Banerjee (2013), Field et al. (2016), and Hermes and Lensink (2011). See Beck (2015) for an assessment of microfinance within the broader contexts of financial inclusion and regulation.

2015c). Still, the vision is supported in pieces, and the most recent impact studies make a case for guarded optimism (e.g., Breza and Kinnon 2017, Banerjee et al. 2015a).

As debates on microfinance proceed, many are turning to broader notions like “financial inclusion” that bring microfinance together with efforts to provide saving, insurance, and payment services in under-served communities. This broadening should also inspire an expanded vision for microfinance itself. In this view, microfinance is not exclusively about fueling small businesses. Instead, microfinance makes life easier by enhancing financial liquidity, making it more likely that households can get hold of money when they need it. Here, microfinance is often worth paying for, and perhaps worth subsidizing, even though it rarely transforms. In this expanded vision, microfinance helps households with the challenges of managing the ups and downs of lives in poverty and near-poverty, even when poverty persists (Collins, et al. 2009). From customers’ viewpoints, microfinance is already seen as providing basic household finance—even though in public documents lenders may describe microfinance as a tool strictly for entrepreneurial finance.

Recognizing that microfinance is akin to consumer finance makes it clearer that donors and investors must also recognize that access to microfinance is not always benign (e.g., Karim 2011). In the 1980s and 1990s, the loan repayment rate coupled with evidence of steady demand had been used as a rough indicator of impact. After all, why would customers borrow repeatedly—and how could they repay their loans steadily and with interest—if the borrowed funds were not yielding high returns to investment? But as microfinance markets saturate and borrowing is partly driven by liquidity needs, it is easier to see how debt problems arise amid sustained demand (Schicks 2013). The past decades give examples of over-lending by providers and over-borrowing by customers—with microfinance crises emerging in economies including

Cambodia, Bangladesh, Bolivia, and Bosnia—jeopardizing borrowers’ livelihoods and adding substantial costs to already-burdened lives (Guérin et al. 2013).

The essay has four parts. The first describes the global landscape of microfinance, highlighting fundamental differences, on average, between institutions operating in South Asia versus Latin America, and those operating as NGOs versus commercialized banks. The second discusses the economic impacts of microfinance, showing room for both optimism and pessimism. The third part turns to subsidies and microfinance from a cost-benefit perspective.² The literature suggests that microfinance impacts are modest and mixed, but, more optimistically, we also find relatively low costs to providing microfinance (Cull et al. 2017). Microfinance should thus be seen as a basic intervention that, despite modest average benefits, can still deliver favorable benefit-cost ratios, especially when well-targeted. The fourth and final part describes a broader vision for microfinance.

Part 1: The Global Landscape of Microfinance

The starting date of the global microfinance movement is debated. Some look to antecedents in 19th century credit cooperatives (e.g., Banerjee, et al. 1994). Others point to seeds in informal financial mechanisms like rotating saving and credit institutions (e.g., Rutherford 2009). But the modern microfinance *movement* dates to Muhammad Yunus’s early microcredit experiments in 1976, 40 years ago.³ Those experiments led to the establishment of Grameen Bank in

² The paper focuses on the performance of microfinance institutions and the impacts of microfinance on poverty and development. For an overview of microfinance theory, see Armendáriz and Morduch (2010). For discussion of particular mechanisms and contracts, see Karlan and Morduch (2009) and Ghatak and Guinnane (1999).

³ We use the words “microcredit” and “microfinance” interchangeably here, although Grameen Bank was originally focused mainly on credit and also used the term “microcredit” as a mark of

Bangladesh under an official ordinance in 1983, which in turn inspired the first global Microcredit Summit Campaign, launched in February 1997 at a 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.⁴

Microfinance grew fast. Figure 1 is adapted from the Microcredit Summit Campaign’s *State of the Summit Report 2015* (the most recent at the time we are writing). It shows the impressive success of microcredit in reaching global scale. In 1997, of the 13 million customers counted worldwide, 8 million were among the poorest when entering (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).⁵ By 2013, the total had hit 211 million, with 114 million among the “poorest.”⁶

distinction to signify a pro-poor orientation. Other early providers of microcredit include Bank Rakyat Indonesia and Accion International, but it was Grameen Bank that created a focal point and developed the most widely replicated model.

⁴ See details on the Microcredit Summit website. <http://www.microcreditsummit.org/about-the-campaign2.html>.

⁵ 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. See Bauchet and Morduch (2010) for a discussion of the survey and its limits.

⁶ The social orientation of the Microcredit Summit means that their leadership’s choice of “headline” numbers deliberately focused on people, rather than the size of loan portfolios or the growth of lenders’ assets. By counting poor customers and building poverty targets explicitly into goals, the social dimension is reinforced, an idea that lines up with Muhammad Yunus’s aim to be a “banker to the poor” and not merely a banker.

These are impressive numbers as absolutes, but in relative terms the fraction comprised of the poorest has fallen from 62 percent in 1997 to 54 percent in the 2013 data. Diversity within the “big tent” of the movement shows in the divergence of trajectories of total borrowers and the “poorest” borrowers from 2010 onward. The Microcredit Summit started to see both a relative and absolute decline in the orientation toward poor customers.

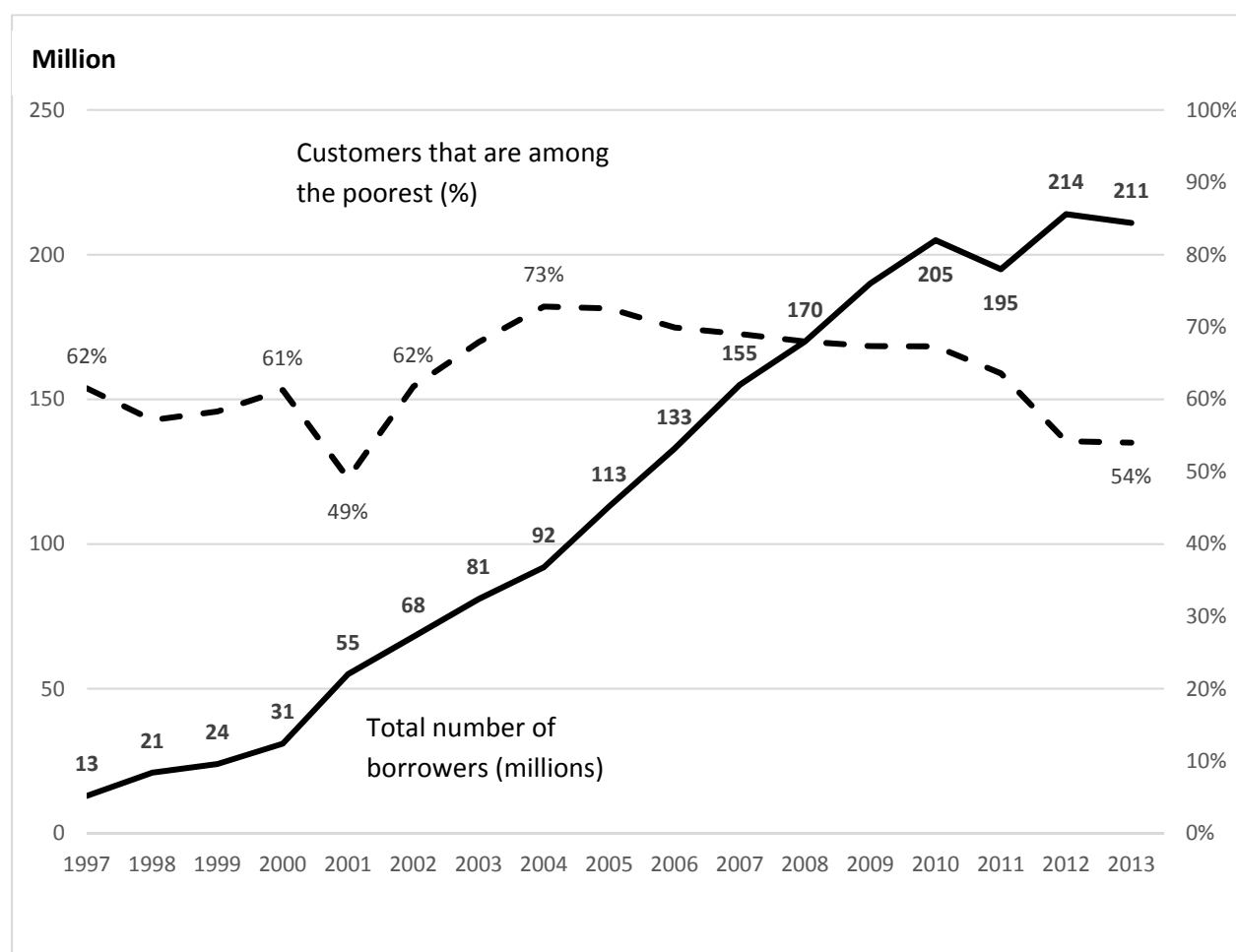


Figure 1. Microfinance Borrowers, 1997-2013 (Millions)

Adapted from Figure 1, Microcredit Summit Campaign. *State of the Summit Report 2015*
<https://stateofthecampaign.org/data-reported/>

Table 1 shows that the Microcredit Summit numbers are driven by large lenders in Asia and the Pacific, and most of those are in India and Bangladesh. Of total world outreach at the end of 2013, 79 percent of customers lived in Asia and the Pacific, including 86 percent of all women served and 89 percent of all counted as being the poorest. Given the overlap in the two groups, it is unsurprising that 91 percent of “poorest women” are also from Asia and the Pacific. In contrast, 16 percent of all borrowers are from Sub-Saharan Africa or Latin America and the Caribbean, and just 8 percent of the poorest women.⁷

	Total	Women	Poorest	Poorest Women
Sub-Saharan Africa	7.6%	5.4%	7.6%	6.2%
Asia and Pacific	79.1%	85.8%	88.7%	90.6%
Latin America and Caribbean	8.2%	6.8%	2.4%	2.1%
Middle East and N. Africa	2.5%	1.8%	1.1%	1.0%
"Developing World"	97.4%	99.8%	99.9%	99.9%

Table 1. Regional client numbers as percentage of global totals

Customers by region, gender, and poverty level

Data as of December 31, 2013.

Adapted from Table 7, Microcredit Summit Campaign, *State of the Summit Report 2015*

<https://stateofthecampaign.org/2015/12/15/2015-report-regional-data/>

⁷ The published data in the *State of the Summit Report 2015* include an incorrect entry for the number of women served in Asia and the Pacific (166,908,164 was reported as the number of total clients, and the same figure was mistakenly reported as the number of women; Table 7 of the report). In Table 1 and Table 2 here, we substitute a number based on data from the *State of the Summit Report 2014*. The 2014 report lists 161,022,985 total clients in Asia and the Pacific and 130,880,298 female clients in the region (81 percent of the 2014 total). Here, we assumed a stable gender ratio and replaced the Summit’s number of female clients with 131,195,613, which is also 81 percent of the Asia and Pacific total in 2013. Data from the 2014 report are available at <https://stateofthecampaign.org/2014/03/21/2014-report-regional-data/>

Asia's numbers are aided by a large population served by self-help groups in India (SHGs) subsidized by the National Bank for Agriculture and Rural Development (NABARD).⁸ In 2013, SHGs funded by NABARD accounted for 54.4 million customers in the Microcredit data, 43.5 million of whom were among the poorest (Table 8, Microcredit Summit 2015).⁹ We calculate that in percentage terms the NABARD group accounts for 33 percent of all customers in Asia and the Pacific in 2013. In global terms, NABARD alone accounts for 26 percent of the total. According to MIX Market (2017, p. 32), lenders in Bangladesh in total account for another 24 million active borrowers.

	Total Clients (million)	Percentage within each region		
		Women	Poorest	Poorest Women
Sub-Saharan Africa	15.9	53.8%	54.7%	36.8%
Asia and Pacific	166.9	81.0%	60.8%	51.2%
Latin America and Caribbean	17.4	61.6%	15.8%	11.5%
Middle East and N. Africa	5.3	52.8%	23.7%	17.2%
"Developing World"	205.5	92.0%	55.5%	45.9%

Table 2. Microfinance heterogeneity

Customers by region, gender, and poverty level

Data as of December 31, 2013.

Adapted from Table 7, Microcredit Summit Campaign, *State of the Summit Report 2015*

⁸ For a recent survey on microfinance in India (arguing that there's "still much to do"), see Sinha et al (2017). For an inquiry into SHGs in South India (and further references), see Guérin et al. (2010). See also www.nabard.org.

⁹ Since some SHGs are accounted for independently in the Microcredit Summit data, the NABARD numbers net out the overlapping institutions. The SHG fraction of the whole is thus slightly higher (by about 3 percent) when the other SHGs are also included (Microcredit Summit 2015).

Table 2 shows that different regions serve very different customers. In Asia and the Pacific, we estimate that 81 percent of the 167 million customers are women. The Microcredit Summit reports that 61 percent were among the poorest when they started, and 51 percent were among the poorest women.

In contrast, in Sub-Saharan Africa, just 54 percent of the 16 million customers reported to the Summit 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. There, commercial forms of microfinance have taken stronger root, part of a broader cleavage around the aims and orientation of microfinance.

Correlates of outreach

Microfinance has achieved remarkable scale, though penetration rates are widely dispersed across countries. While microfinance borrowers represent less than 2 percent of the population in roughly half of the developing countries for which data are available, they comprise 10-15% of the populations of Bangladesh, Mongolia, and Peru (see Cull et al. 2014, Figure 1). To understand variation, we look to the broader financial ecosystem of a country. Key factors include the business environment, particularly as it relates to regulation and supervision of microfinance institutions themselves, broader supervisory approaches within the financial sector, and competition from other providers of financial services, which all affect the development of

microfinance (see, for example, Ahlin et al. 2011, McIntosh and Wydick 2005, Hermes et al. 2011).

For example, Cull et al. (2014) use MIX Market data (see below) to show that the supporting institutional framework in terms of accounting transparency, client protection, the quality of credit bureaus, and the feasibility of financial transactions through agents are all positively associated with microfinance penetration rates. Effective client protection (as rated by expert observers) is most strongly associated with the scale of microfinance in a country.

Regulation and supervision also affect the trajectory of microfinance development, though impact varies across institutional types. For example, empirical evidence from cross-country data suggests that commercially oriented microfinance institutions bear the costs of active prudential supervision by making larger loans and lending less to women, both signs of curtailed outreach (Cull et al. 2011). In contrast, outreach indicators for microfinance institutions that rely more heavily on non-commercial sources of funding such as donations (typically chartered as non-governmental organizations) are not affected by prudential supervision. However, the costs of compliance are reflected in their significantly lower profitability when actively supervised.

Similar patterns are reflected for measures of the quality of microfinance regulation and supervision as rated by expert observers. Specifically, better developed regulatory and supervisory regimes are associated with less outreach to poorer clients (as reflected in larger average loan sizes) but stronger financial performance for commercially oriented microfinance institutions (Cull et al. 2014). The outreach and financial performance of less commercially oriented institutions (NGOs) are not associated with broad measures of the quality of regulation and supervision. However, NGOs tend to make smaller loans and lend more to women in

countries that score highly in terms of the ease of establishing and operating non-regulated microfinance institutions. (See also Hartarska and Nadolnyak, 2007 and Mersland and Strøm, 2009.)

Finally, competition from other financial service providers also affects the profitability and outreach of microfinance institutions, but again the effects vary across institutional types. Bank penetration as measured by the number of branches per capita (or per square km) is associated with microfinance institutions making smaller loans and lending more to women (Cull et al 2014). The relationships are strongest for formal microfinance institutions that rely on commercial sources of funding and make traditional bilateral loans rather than the group liability loans often favored by NGO microfinance institutions. This suggests that commercially-oriented microfinance institutions are more likely to compete with outreach-oriented banks, which pushes them to serve poorer clients and women. And indeed, bank branch penetration is not strongly linked to the outreach profiles of NGO microfinance institutions.

Financial performance

While the Microcredit Summit Campaign aims to keep an eye on the global human reach of microfinance with a particular focus on poor women, international donors have worked to shift attention to the commercial prospects for microfinance. According to “best practices,” the commercial prospects for microfinance depend on raising interest rates on loans to levels that often are considerably higher than the rates charged to (richer) customers of traditional banks (Helms 2006; see Rosenberg 2009 for a nuanced view).

The case has been made along several related lines: that the higher interest rates are still much lower than rates charged by moneylenders, that illiquid households seek access rather than

cheap credit, and that the financial returns to cash-starved entrepreneurs are so high that interest rates are a minor concern. Even though the arguments torture both logic and evidence (see Morduch 2000), the arguments have convinced policy makers and practitioners, creating a broad defense of commercialization in social terms: High interest rates are necessary for a microfinance institution's profitability, it is argued, and, in principle, that then attracts investment to allow portfolio growth and far greater reach. It also frees donors of the need to perpetually support the sector.¹⁰

In theory, moral hazard and adverse selection in financial markets impose limits on the ability to raise interest rates, since raising fees worsens incentives to repay. Although, all else the same, higher interest rates increase revenues generated by loans, the higher prices can undermine repayment discipline to such a degree that expected profit falls. In some cases, it is impossible to find a profit-making interest rate at all.¹¹ The promise was that new credit contracts (particularly group lending and installment lending) could attenuate the incentive problems, permitting microfinance to succeed and expand on a commercial basis while serving the poor (Ghatak and Guinnane 1999). The theory works well, but the bottom line is ultimately empirical.

The empirical difficulty with the vision is not with the claim that some poor households are willing to pay high interest rates. The difficulty is instead with the assertion that there is no trade-off between pursuing commercial and social goals. With respect to interest rates, evidence

¹⁰ See Helms (2006) for an overview of the donor vision from CGAP, the microfinance donor consortium. See Hudon and Traca (2011) for important questions around subsidy and efficiency.

¹¹ See Stiglitz and Weiss (1983) for a classic paper along these lines. See Armendariz and Morduch (2010) for a review of theory as it relates to microfinance. See Field et al. (2013) for an example of a structural empirical model of these mechanisms, calibrated to data from India. See Karlan and Zinman (2009) for an experimental approach to "observing unobservables" in the context of South African consumer finance.

from Bangladesh (structural break) and Mexico (randomized experiment) shows similar results: customers are sensitive to interest rates such that in the short-run a 10 percent increase in prices brings roughly a 10 percent drop in credit demand (Dehejia et al 2009, Karlan and Zinman 2016). After three years, Karlan-Zinman find an elasticity of -2.9. True, some customers are willing to pay high prices (in Mexico, roughly 100 percent annually and in Bangladesh roughly 24 percent annually)—but the evidence shows that many are not. A lynchpin of the “win-win” commercial/social vision (i.e., that borrowers are essentially insensitive to interest rates) fails the empirical test.

The main database on microfinance financial performance shows another set of tensions. Table 3 draws on an appendix table in MIX Market (2017), the key industry financial database for institutions focused on the bottom of the market. (However, the database focuses on institutions that tend to be more commercial than those in the broad sweep of the Microcredit Summit numbers described above.) The table disaggregates financial performance by institutions with different legal status. The main lenders by customer number are NGOs, NBFIs (non-bank financial intermediaries), and microfinance banks. Row 1 shows that, together, the MIX counts the three kinds of institutions collectively serving 112 million customers, or 94 percent of the data collected. We will focus on them here (the first three columns of data in Table 3). NBFIs can be for-profit or non-profit and they hold a middle ground between (non-profit) NGOs and (for-profit) microfinance banks. For that reason, contrasting business models are often easiest to see through comparisons of NGOs and microfinance banks, columns 1 and 3.

Row 2 shows that NGOs tend to serve more women than the banks do (87 percent versus 78 percent), and NGOs focus more sharply on micro-enterprise loans (rather than SME loans or household finance; 88 percent versus 51 percent). The comparison is even starker by volume (85

percent micro-enterprise loans by volume for NGOs versus 31 percent for banks). The difference in loan volumes reflects large differences in average loan sizes, \$289 for NGOs versus \$1,021 for banks, and, with that (as seen in row 9), costs per borrower that are three times larger for banks than NGOs. But while NGOs have managed to keep costs per borrower low (in part by often serving customers in groups and limiting brick-and-mortar operations), they struggle against relatively high costs per unit lent.

Given lending technologies with high fixed costs, there are large gains to making larger loans. Row 10 shows this via the ratio of operating expenses to the size of loans. For NGOs, the costs are about 15 percent per unit lent; for banks, the costs are just about 11 percent. Not surprisingly, NGOs then must charge higher interest rates (about 25 percent nominally) versus 19 percent for banks – even though NGOs have stronger loan repayment numbers (rows 11, 12, and 13). Microfinance banks are more likely than NGOs to require that loans be secured by borrowers via collateral, making it easier to create leverage (Conning and Morduch 2011), and row 14 shows that debt-to-equity ratios are more than three times as large for banks as for NGOs. The two measures of profitability (ROA and ROE) curiously show that profits are much higher for non-profit NGOs than for for-profit banks, but our closer look at an earlier wave of data suggests that the pattern is due to choices about capital costs made by the MIX Market (Cull et al. 2017), and the distinction disappears with alternative (and more realistic) assumptions.

	(1)	(2)	(3)	(4) Credit Union/ Coop- erative	(5) Rural Bank	(6) Total
	NGO	NBFI	Bank			
1. Borrowers, 000	34,458	38,518	38,912	2,762	1,495	118,849
2. % Female	87	89	78	57	84	84
3. Loans, 000	37,572	42,878	37,121	2,832	2,045	123,156
4. % Micro-enterprise	88%	55%	51%	39%	27%	63%
5. Loans, USD million	9,977.8	25,946.7	48,815.7	6,642.1	822.8	92,442.9
6. % Micro-enterprise	85%	54%	31%	22%	30%	42%
7. Average loan size (USD)	289	590	1021	1904	523	674
8. Avg Deposit Balance	72	705	542	558	159	411
9. Cost Per Borrower	\$40	\$76	\$118	\$211	\$81	\$81
10. Operating Expense / Loan Portfolio	14.8%	13.9%	10.6%	9.9%	18.2%	12.0%
11. Avg nominal interest	25.4%	25.2%	18.5%	16.7%	28.2%	21%
12. PAR > 30 days	3.2%	5.1%	5.8%	6.5%	12.1%	5.3%
13. PAR > 90 days	2.6%	4.0%	4.0%	4.8%	7.7%	3.9%
14. Debt-to-equity	1.7x	4.5x	5.9x	4.7x	4.7x	4.6x
15. Return on assets (ROA)	5.8%	2.4%	1.9%	1.4%	2.8%	2.4%
16. Return on equity (ROE)	16.2%	13.2%	12.7%	8.2%	17.5%	13.2%
17. Observations	304	421	114	144	21	1033

Table 3. Financial performance of leading microfinance institutions Adapted from Appendix Table, “Key Operational and Legal Metrics by Legal Status,” p. 35 of MIX Market (2017).

NOTES: Borrowers are active borrowers (in thousands), “Loans, 000” is number of loans outstanding (in thousands). “Loans, USD million” is Gross Loan Portfolio in millions of US

dollars. “Average loan size” is Average Loan Balance per borrower. “Avg nominal interest” is Yield on Gross Loan Portfolio (and includes fees and interest; not adjusted for inflation). “PAR” is portfolio at risk.

Cull, et al. (2017) use the MIX Market database to analyze MFIs between 2005 and 2009, reflecting 3,845 institution-years and 291 million borrower-years.¹² Again, the focus is on variation among for-profit microfinance banks, credit unions and cooperatives, NGOs, non-bank financial institutions (NBFIs), and public-sector rural banks.¹³

Cull et al. (2017) highlight the challenge created by the high fixed costs in lending described above. They estimate a median unit cost of \$14 in operating expenses for each \$100 of loans outstanding (in 2005-09). The distribution of unit costs is skewed, though, as seen in Figure 2. 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

¹² The 2009 data include 930 institutions with a combined 80.1 million borrowers. The Microfinance Information eXchange, Inc. (MIX) provided data through an agreement with the World Bank Research Department. Confidentiality of institution-level data has been maintained. The MIX Market now collects data on social outcomes, although it did not do so initially.

¹³ As noted by Cull, et al. (2017): “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.’”

commercial microfinance bank thus can reduce unit costs to 11 percent -- versus 18 percent for the median NGO.

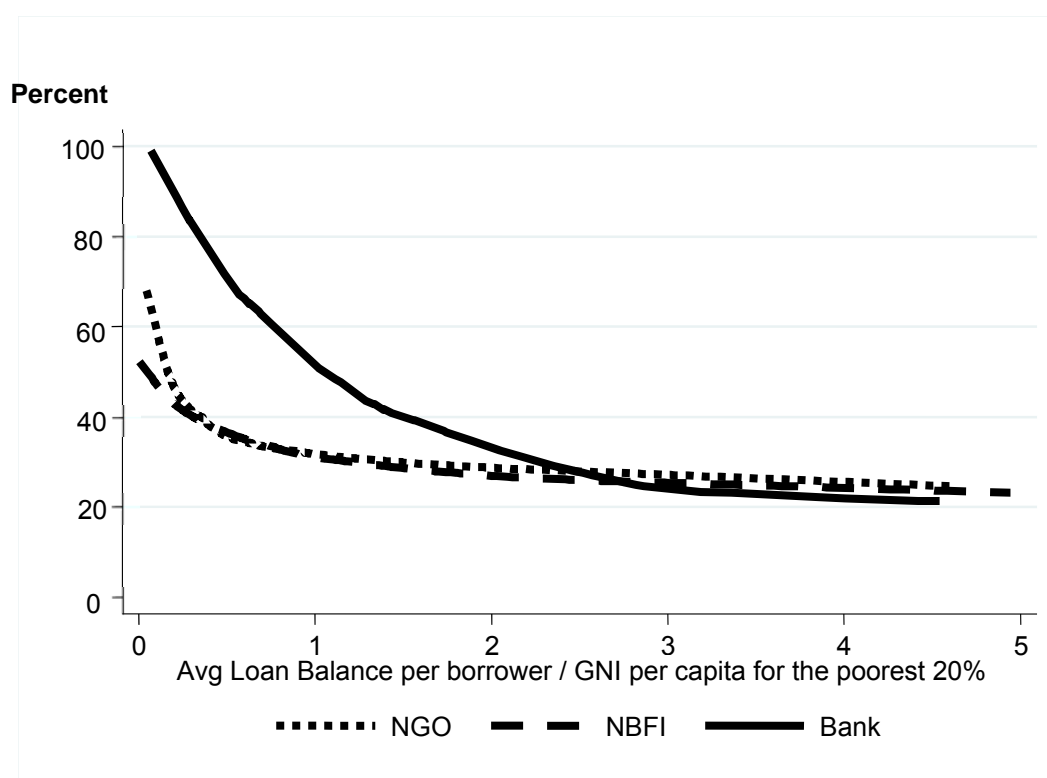


Figure 2: Operating expense per unit lent

Source: Cull, et al. (2017). Notes: Observations: 446 NGOs, 380 non-bank financial institutions (NBFIs), and 82 microfinance banks. The figure is restricted to observations in which the ratio of the lender's average loan size divided by the per capita gross national income at the country's 20th percentile is under 5. Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Following “best practices” promoted by donors, institutions respond by raising interest rates. Figure 3 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. Consistent with the pattern of costs, NGOs as a group thus charge more than commercial microfinance banks.

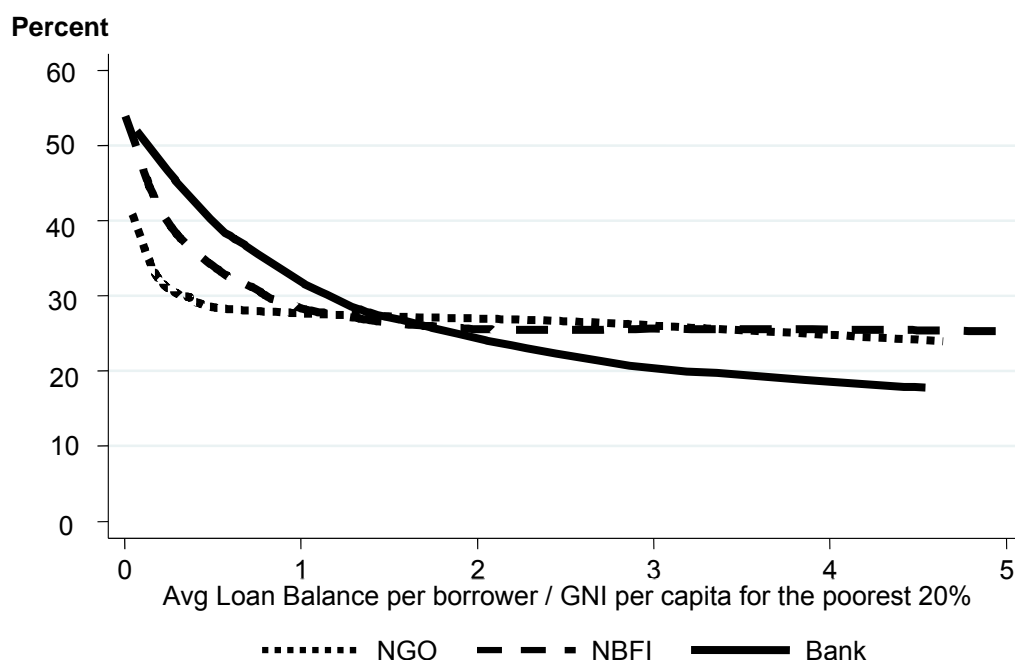


Figure 3: Average Yield on gross portfolio (real), percent

Source: Cull, et al. (2017). Notes: Observations: 446 NGOs, 380 non-bank financial institutions (NBFIs), and 82 microfinance banks. The figure is restricted to observations in which the ratio of the lender's average loan size divided by the per capita gross national income at the country's 20th percentile is under 5. Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

Despite the high interest rates, and despite the finding that 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. (2017) find that two-thirds 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 of institutions were above the profit bar (again, weighted by the number of borrowers per institution).

The data show that truly commercial microfinance exists, but it is not the norm. The big policy questions are then: (1) What are the trade-offs between commercialization and other goals, especially who is served and how they benefit? (2) More directly, how do the subsidies line up against the impacts?

Part 2: Impacts

Countries with greater financial development tend to have less poverty (Beck et al. 2007), but it is unclear what the role of microfinance is. Microfinance has not penetrated enough economies to the degree needed to say anything about its impacts in country-level macro data. Instead, economists have mainly focused on establishing household-level impacts of microfinance.

Surveying the evidence in the 1990s, Morduch (1999) concluded that:

Even in the best of circumstances, credit from microfinance programs helps fund self-employment activities that most often supplement income for borrowers rather than drive fundamental shifts in employment patterns. It rarely generates new jobs for others, and success has been especially limited in regions with highly seasonal income patterns and low population densities. The best evidence to date suggests that making a real dent in poverty rates will require

increasing overall levels of economic growth and employment generation.

Microfinance may be able to help some households take advantage of those processes, but nothing so far suggests that it will ever drive them. (Morduch 1999, 1610)

That early conclusion has been broadly affirmed by a string of observational studies that reveal modest impacts on average levels of household income and consumption (Roodman 2011, Armendáriz and Morduch 2010), and early randomized controlled trials largely concluded the same (Banerjee et al. 2015c). The most recent studies, though, provide a deeper understanding of the diversity of experiences (some of which are promising).

For a few observers, the evidence that microfinance is not a cure-all brands it as a failure (e.g., Bateman and Chang 2012). Yet that conclusion puts too much weight on the lofty bar set by the early boasts about microfinance's ability to turbo-charge entrepreneurial finance and boost average household income. At the same time, it also puts too much weight on the negative readings of the first pieces of RCT evidence (six studies packaged together in an issue of the *American Economic Journal: Applied Economics*; Banerjee et al. 2015).

Until recently, the main empirical challenge in the impact literature has been dealing with selection bias. Measured impacts will be over-stated if outcomes for microfinance 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 target the most disadvantaged populations.¹⁴

Beaman et al. (2015) construct an experiment to measure selection in a sample of farmers in Ghana. They ask whether those who borrow have higher returns to capital than those who choose not to borrow. Returns to capital are measured by measuring changes in output after distributing capital grants to both borrowers and non-borrowers. In general, returns to investment were large and positive, but those who had chosen not to borrow had zero returns to capital at the margin. Comparing the returns of borrowers to non-borrowers—without accounting for the endogeneity of borrowing—would then wildly overstate the returns to access.

Coleman (1999) addressed selection bias in a study in northern Thailand by forming a group of prospective microfinance clients who signed up a year in advance to participate with two village banks. Part of the group started receiving loans, and the other part had to wait a year. This gave Coleman a comparison group mostly free of selection bias. The study was not randomized, but both the borrowers and the non-borrowers had selected into the program at the same point in time, suggesting that unobservable differences might plausibly difference out in the treatment-control comparison. Coleman then generates two estimates of the impact of the program. The first is an estimate using the clients who signed up in advance as the comparison group. The second is a “naïve” estimate using a group of seemingly similar non-participants based only on observable characteristics. Comparing the first, preferred estimate with the second shows that the “naïve” estimate substantially overstated the gains from participation of the participants.

¹⁴ For a review of the statistical issues, see Armendáriz and Morduch (2010).

Pitt and Khandker (1998) also took aim at selection bias in an observational (i.e., not randomized) study. They used a World Bank survey of 1,798 member and non-member households of three Bangladeshi MFIs. The program rules stated that members should hold no more than one-half acre of land in order to be eligible for the program. With the half-acre rule providing the key to their identification strategy, they find very large microfinance impacts: notably, every 100 taka lent to a female borrower was estimated to increase household consumption by 18 taka. The result was widely cited, but it has not proved robust to re-analysis. Morduch (1998) shows that the half-acre rule was not followed closely in practice, and a simpler difference-in-difference model shows little evidence for increased consumption. A re-analysis by Roodman and Morduch (2014) turns up other problems with the original (see Pitt's rejoinder in the same journal), suggesting the need to look elsewhere for credible evidence.

These concerns led researchers to turn to randomized controlled trials in which access to microfinance depends in part on a randomization process. Usually, lenders select some communities (treatment) and not others (control) using a random number generator. Researchers then compare the outcomes in treatment and control communities after a few years.

The best known so far are 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.

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. Banerjee et al. (2015a) 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 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 takes advantage of an expansion (into an urban area) but, as a result, does not speak to the impact of the microfinance institution on customers in its core rural locations. More generally, 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, Angelucci et al. (2015) 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, Attanasio et al. (2015) 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-Herzegovina, with a better-off sample of customers but a focus on a sample deemed relatively unpromising in terms of creditworthiness, Augsburg et al. (2015) 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, Crépon et al. (2015) 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, Tarozzi et al. (2015) 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.”

After the six papers were published, the summary view was that, in terms of impact studies that pass muster with academic economists, the empirical case for supporting microfinance was very weak (Mossman 2015). 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.

The biggest concern with that conclusion comes from questions about the ability to generalize from the studies. Pritchett and Sandefur (2015) make the case that the six studies are an idiosyncratic sample without clear ways to extrapolate to microfinance in other regions. Pritchett and Sandefur obtain the data underlying the six studies and construct estimates of impact for each sample without depending on the experimental set-ups. These estimates are prone to selection bias, but Pritchett and Sandefur show that they tend to be more reliable predictors of impact in the given country than extrapolations based on experimental estimates from other countries. In other words, limited external validity undermines the ability to draw

broad conclusions from the sample (though see the Bayesian Hierarchical approach to the studies developed by Meager 2016 which provides a systematic way to begin generalizing).

Wydick (2016) digs deeper. He notes that the six studies reflect very different microfinance markets. For example, the experiments in Ethiopia, urban India, and Morocco took place when microfinance was just taking root. The lack of penetration led to imprecise estimates but some hopeful signs. For example, “Crépon et al. show point estimates on self-employment income that are twice as large as the corresponding decreases in wage income. Banerjee et al. find positive point estimates on both end-line measures of self-enterprise income, though driven largely by the upper tail of businesses that pre-existed microfinance access.” (Wydick 2016, p. 263) In sharp contrast, the experiments in Bosnia-Herzegovina, Mexico, and Mongolia took place in contexts in which microfinance had reached near-saturation (a very high 61 percent coverage in Bosnia-Herzegovina). As a result, the experiments could only be run in particularly marginal contexts – and the evidence of impact was correspondingly weakest. Wydick’s analysis is a reminder that context matters and that the six studies each need to be understood on their own terms. (For a close examination of the Moroccan context with a focus on low take-up rates, see the qualitative study by Morvant-Roux et al. 2014.)

Better understanding contexts may help sort why randomized evaluations of microfinance tend to find low impacts while evaluations of capital grants find relatively high impacts. Buera, Kaboski, and Shin (2016) review empirical evidence on the impact of microfinance loans relative to other similar financial interventions, concluding that both grants of capital to micro-entrepreneurs and assets grants (often in the form of livestock) to the ‘ultra-poor’ have substantially larger impacts on recipients than microfinance loans. The returns on modest capital grants to micro-entrepreneurs are sizable (up to six months of pre-intervention profits for

existing entrepreneurs) leading to greater investment and higher sustained profits (de Mel et al. 2008, McKenzie and Woodruff 2008, McKenzie 2016, and Fafchanps et al. 2013), while asset grant programs to the ultra-poor have generally led to substantial increases in assets, income, and consumption (see Bandiera et al. 2016; Bauchet et al. 2015 give a counter-example).

Grants, of course, have an inherent advantage over microcredit in that recipients do not incur a burden to repay. The high interest rates on microloans documented above thus could, in principle, account for much of the lower returns on investment financed by microcredit than that financed by grants. Microcredit repayment obligations also have direct negative effects on income and consumption levels relative to grants. Moreover, microcredit repayment structures typically entail installment payments beginning at or near loan inception, which discourages investment over longer time horizons and thus could depress longer-term profits and growth (Field et al. 2013).

But another part of the story is the clients that each of the respective interventions targets. As documented above, average loan size (an imperfect, but widely used proxy for the wealth of borrowers) is substantially smaller for NGO MFIs than for more commercially oriented MFIs, but many grant programs explicitly target very poor populations, for whom impacts have proven to be especially large in some cases. In contrast, microfinance institutions, even those that are less commercially oriented, tend to lend to less poor clients, many of whom have access to multiple sources of funding. Thus, microfinance may expand the funding envelope for those borrowers to some extent, and may improve the terms on which finance is extended relative to alternatives, but the evidence indicates that it is unlikely to have as large an impact as grants to very poor households that generally lack other sources of funding.

Grants for entrepreneurship are also targeted in ways that could account for their greater impact relative to microcredit. Similar to results for grants to the ultra-poor, entrepreneurship grants have been shown to have larger impacts on those who start with fewer assets. Whereas many microfinance programs target female borrowers, entrepreneurship grants have shown substantially larger gains in profitability for males. Moreover, while microcredit provides an influx of cash to borrowers, there is some evidence that in-kind entrepreneurship grants (in the form of equipment or inventories) may deliver better results than cash grants (Fafchamps et al., 2013). Finally, better educated entrepreneurs have benefited more from these grants. Since men tend to have more formal education than women in many developing country contexts, this could in part account for the gender disparity, and help explain the smaller impacts of microcredit targeted to women.

In short, targeting and repayment obligations can potentially account for a large share of the difference in the impact of microcredit versus grants. Buera, Kaboski, and Shin (2016) argue that comparisons with a third type of intervention, village fund programs, are instructive in assessing the relative importance of repayment versus targeting since they represent a middle ground between grants and microcredit. Village funds are constituted from a grant to the village as a whole and the loans that are extended to individual borrowers carry more favorable terms than typical microcredit contracts (7-8% interest rates and a single repayment at the end of the loan).¹⁵ Comparisons with microcredit borrowers therefore provide a rough indication of the potential impact of making the terms of microcredit contracts less rigid. And indeed, take-up

¹⁵ The village fund studies are also instructive because they were undertaken in China and Thailand, countries where the gender gap in education is relatively small. Similarly positive results for male and female borrowers from village funds suggest that the gender disparities found for microcredit might be eliminated if loans were extended to equally capable men and women.

rates for village fund loans are in the 30-55% range, notably higher than that typically found for microcredit. In addition to higher take-up, village fund loans have resulted in significant increases in borrowers' income and consumption (Kaboski and Townsend 2012; Cai et al. 2016). In addition, recent evidence from field experiments that relax the obligation to begin repaying just after receiving a loan from a microfinance institution also find positive impacts on investment and profits (Field et al. 2013).

Breza and Kinnan (2017) also show a promising result for microfinance, though they do so by estimating the impact of *not* having microfinance. Breza and Kinnan take advantage of an emergency ordinance issued in the state of Andhra Pradesh in south India in October 2010. The ordinance was a dramatic response to over-lending by rapidly-growing microfinance institutions. The ordinance caused a sudden supply shock, and Breza and Kinnan explore the impacts on consumption, entrepreneurship, and employment. The absence of microfinance, they find, drove significant cuts in casual daily wages, household wage earnings and consumption (suggesting the importance of general equilibrium effects and impacts via shifts in aggregate demand).

Banerjee et al. (2015a) consider the heterogeneity of returns to microfinance, also in Andhra Pradesh, extending insights from Banerjee et al. (2015b). They divide customers into “gung-ho entrepreneurs” who ran businesses prior to the introduction of microfinance. The others are “reluctant entrepreneurs” who started businesses only when they started taking microfinance loans. The gung-ho customers saw large and persistent benefits from microfinance borrowing: revenues more than doubled and business expenses rose by 80 percent. Self-employment hours increased by almost 20 percent and business assets by 35-40 percent. Reluctant entrepreneurs, in contrast, saw negligible benefits. Targeting then matters: focusing on expanding the businesses of existing entrepreneurs (the intensive margin) may do far more to

spur production than focusing on customers new to business (the extensive margin). Reluctant entrepreneurs tended to use microfinance to displace informal capital, while the gung-ho entrepreneurs used microfinance as a complement to informal finance.

These results, taken as a whole, suggest that the average impacts of microfinance are modest. Still, target populations are liquidity-constrained, and getting the right product to the right population can yield substantial impacts.

Part 3: Subsidy and Benefit-Cost Ratios

In the face of modest average impacts of microfinance, it is natural to wonder about relative costs. Having established the lack of profitability in economic (versus accounting) terms, Cull et al. (2017) 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 the 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 a subsidy at a rate of \$23 per borrower, and the subsidy for the NGO at the 25th percentile was just \$3 per borrower.

In addition, Cull et al. (2017) 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 explicit – was \$4.9 billion as of 2009. Of the total subsidy, three-quarters went to institutions that were older than 10 years. Almost all of the subsidy came via equity grants and cheap capital rather than direct donations.

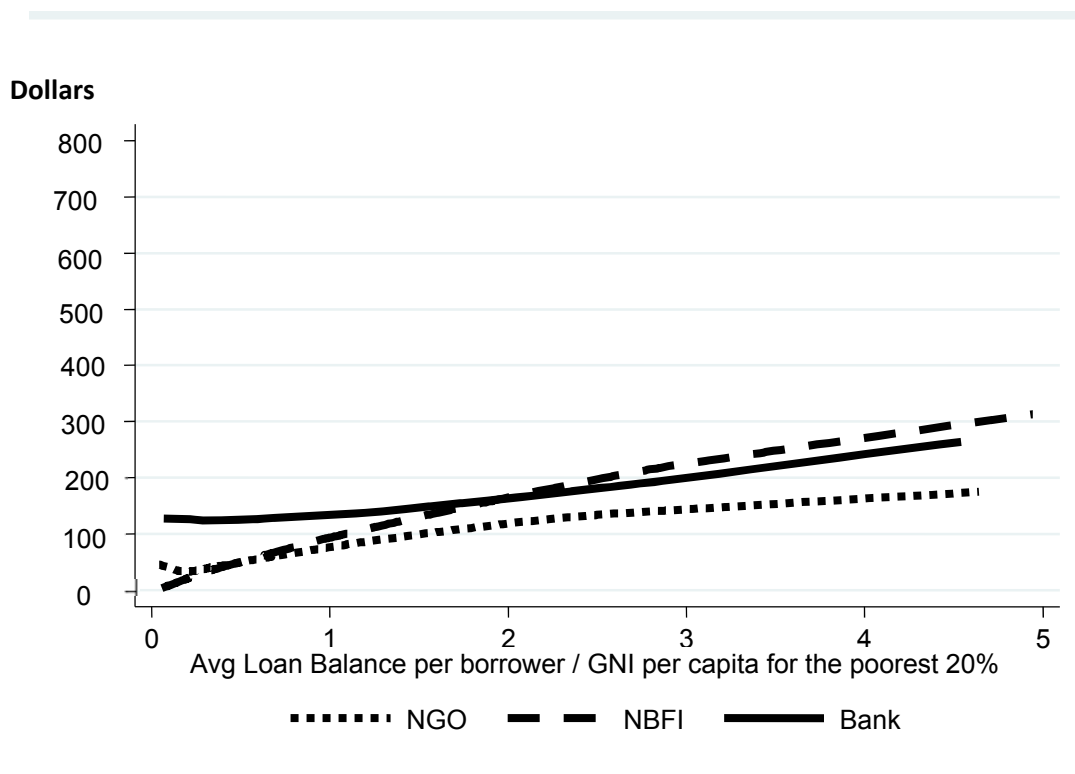


Figure 4: Subsidy per borrower

Source: Cull, et al. (2017). Notes: Observations: 364 NGOs, 303 non-bank financial institutions (NBFIs), and 71 microfinance banks. The figure is restricted to observations in which the ratio of the lender's average loan size divided by the per capita gross national income at the country's 20th percentile is under 5. Original, underlying data provided by Microfinance Information eXchange, Inc. (MIX).

The Cull et al. (2017) findings on modest but persistent subsidy suggest that the conversation needs to shift toward measured impact so the costs analyzed by Cull et al. (2017) can be compared to benefits. Ultimately, cost-benefit ratios are of key interest for policy makers, and—even with modest benefits—microfinance cost-benefit ratios can compare favorably to those for other interventions. However, systematic work here has hardly started.

Part 4: Microfinance as Liquidity Services

Most of the discussion above is framed in terms of impacts on business and entrepreneurship. It was posited that through business comes increases in income and, from that, social gains. This, though, is a particular (and narrow) view of finance. Finance is also needed by households to purchase consumer goods, however, and to help with basic, week-by-week financial management. The kinds of questions that researchers asked with RCTs followed from the business focus, and the same perspective was carried forward by the Microcredit Summit Campaign, donors, and investors.

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

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

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.

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 Grameen Bank's 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 (Gertler et al. 2009). Such access may be vital during emergencies (and are due more attention from policy makers 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 both been oversold and undersold. It 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.¹⁷

This shift takes the discussion from microfinance to financial inclusion, a broader topic than can be addressed in this paper. Financial inclusion goes beyond loans to saving, insurance, and payments (see, e.g., Singh 2017).

Conclusion

Microfinance has been duly celebrated by the 2006 Nobel Peace Prize. The early innovators can claim remarkable achievements: they demonstrated that it is possible to provide reliable financial services in poor communities, to create workable business models, to reach women especially, and to do so relatively cheaply and at wide scale. That, in itself, is worth paying attention to. Beyond demonstrating the possibility of new kinds of financial institutions, microfinance has inspired innovations 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 (Yunus 2008, Conning and Morduch 2011).

¹⁷ La Porta and Shleifer (2014) argue that small, informal businesses are often inefficient and that there are efficiency gains from spurring formal business and the expansion of wage employment.

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. 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 economic and social impacts.

The evidence described in this paper poses challenges for microfinance. 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, how to ensure impacts on customers is far less clear.

Investors and entrepreneurs have difficult choices to make in enabling the next steps for microfinance. One vision, provoked by evidence from 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 kinds of impacts to expect will not be those initially envisioned, nor those tested in most quantitative studies. Another, complementary vision entails redesigning products to better fit the needs of existing entrepreneurs. The data from the Microcredit Summit suggest that microfinance can evolve at mass scale, while the (re-examined) data from the MIX Market suggest that the subsidy still matters but, in some cases, it is small enough to generate appealing cost-benefit ratios.

Microfinance is far from dead, but it needs fresh thinking.

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