

# Rethinking Poverty, Household Finance, and Microfinance<sup>1</sup>

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## Abstract

High-frequency data show that the material condition of poverty is created by the interaction of insufficiency  $\times$  instability  $\times$  illiquidity. Reducing instability and/or illiquidity can thus reduce exposure to poverty even when average earning power (overall insufficiency) is unchanged. The high-frequency view shows competing needs for smoothing and spiking of spending, alongside competing needs for structure and flexibility in financial products. High-frequency instability also explains why *ex post* moral hazard (“strategic” default) is a particular problem for lenders and, in turn, why joint liability is difficult to sustain in microfinance. The high-frequency repayment structure of typical microfinance loan contracts is similar to the installment structure of consumer lending products and contractual saving products, explaining how microfinance loans work naturally for purposes other than business investment, despite lenders’ nominal intentions. The high-frequency view helps to show why microfinance loans remain popular despite mixed evidence on average impacts on household income.

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## Introduction

Sometimes new data shakes up thinking and forces us to revisit understandings that had once seemed settled. This essay describes how understandings of poverty and finance shift when viewed with week-by-week and month-by-month household-level economic data.<sup>2</sup>

High-frequency data collected regularly during the year shows how the experience of poverty extends beyond the insufficiency of earning power captured by annual snapshots. Year-by-year measures of poverty narrow metrics of progress to changes that raise average annual earnings. Month-by-month views of poverty broaden that view, showing that deprivation can worsen and improve through the year, with people close to poverty lines moving in and out of poverty, sometimes facing “chronic instability” within the year.

The high-frequency data show that the material condition of poverty is only partly captured by overall insufficiency. Instead, life in poverty is better captured by the interaction of insufficiency  $\times$  instability  $\times$  illiquidity. The three elements—insufficiency, instability, and illiquidity—are entwined. High-frequency data show that reducing instability and/or illiquidity can reduce exposure to poverty even when average earning power (overall insufficiency) is unchanged. We see this by re-conceiving poverty in shorter time units than the year and taking a high-frequency view of data.

In turn, the high-frequency view re-shapes understandings of household finance. Perhaps most important, the high-frequency view shows how improving household finance can reduce high-frequency poverty by reducing illiquidity. The high-frequency view shows the power of intra-year consumption smoothing—a building block of intertemporal household economics. When distinguishing consumption from spending, it also shows that consumption smoothing often requires the *spiking* of spending.

The high-frequency view—and the instability that it reveals—also helps to illuminate the challenging context for behavioral interventions. Behavioral economics demonstrates the value of structured contracts (like “commitment saving”) in the face of challenges like “kin taxes” and lack of self-control. High frequency data, in contrast, highlight the value of flexibility in order to respond to unexpected shocks. These two qualities—structure and flexibility—are inherently opposed, and the need for flexibility helps to explain low take-up rates of structured behavioral saving products (John 2020, Karlan and Morduch 2009).

These insights explain some of the success and limits of microfinance. When microfinance emerged in the 1980s, advocates (most prominently Muhammad Yunus) did more than present a new tool in the fight against poverty. In making the case for microfinance, advocates also presented a theory of why poor people stayed poor. The idea behind microfinance rested on the assertion that poverty could be traced back to a lack of access to loans to finance business investment. Microfinance was positioned as a way to increase entrepreneurial income and thus to reduce overall insufficiency. Poverty was distilled as low earning power, and household finance

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<sup>2</sup> The ideas here and in much of the chapter grew from Morduch and Schneider (2017) and Collins et al (2009). I also draw on ongoing research on high-frequency poverty with Joshua Merfeld using the most recent ICRISAT household data from India. An older literature on seasonal poverty and episodic poverty (e.g., Longhurst, et al. 1986) aligns with the discussion here.

was narrowed to concerns with entrepreneurial finance (Morduch 1999). Illiquidity (apart from challenges in getting business loans) was not central to the narrative.

Seeing high-frequency instability makes it easier to see why microfinance borrowing and saving are, in practice, often used to address the ups and downs of household spending needs rather than business needs. For households, microfinance holds the promise of addressing high-frequency poverty and facilitating high-frequency smoothing and spiking. High-frequency instability explains why *ex post* moral hazard (“strategic default”) is a particular problem for lenders (rather than the textbook *ex ante* moral hazard depiction) and, in turn, why joint liability is difficult to sustain. The installment structure of typical microfinance loan contracts (i.e., high-frequency repayments) is similar to the structure of consumer lending products and contractual saving products, helping to explain how microfinance loans work naturally for purposes other than business investment, even when that departs from lenders’ nominal intentions.

At the same time, microfinance loan contracts provide useful structure, but they are often too inflexible. Taking everything together, the high-frequency view—and the broad use of microfinance to meet spending needs—helps to show why microfinance loans remain popular as financial tools despite modest measured impacts on average household income. The view also points to ways to improve contracts to better meet households’ needs.

## **Rethinking Poverty**

The most familiar notion of poverty is the annual poverty rate measured and tabulated by policy experts, academics, and governments (e.g., World Bank 2020). The annual poverty rates quantify gaps between annualized measures of household needs (what is the minimum that a household needs for a year?) and annualized measures of household resources (are yearly income and spending high enough?).<sup>3</sup>

Academics debate how high to set poverty lines and how to form aggregate poverty measures (Atkinson 2019, Ravallion 2016), but what is seldom debated is the decision to measure poverty in year-long accounting units and to define “poverty” on the basis of yearly averages, although alternatives are possible (Atkinson 2019, chapter 3).

For most households, poverty is not just experienced as overall, steady insufficiency across the year. Instead, material challenges are tied to instability during the year, with urgent needs that rise and fall, and with moments when incomes may dip well below yearly averages. This creates a gap between poverty as measured and poverty as experienced by households. A household that lives on less than the World Bank’s \$1.90 a day per person poverty line in a given year may have months when average daily earnings are much greater than \$1.90 per person and months with much less. The ups and downs can stretch across months and seasons. Once we see that, we can understand why even poor households save (Deaton 1991), and why they often borrow to support spending.

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<sup>3</sup> The ideas here and in much of the chapter draw on chapter 7, “Sometimes Poor,” of Morduch and Schneider (2017) and on Collins et al (2009) and Morduch (2012). I also draw on ongoing empirical research with Joshua Merfeld with the ICRISAT data from India.

When calculating annual incomes and expenditures, the ups and downs of households' resources during the year disappear in the process of aggregation. Volatility and instability are averaged out, so the problem of poverty when seen through the conventional yearly lens is a problem mostly of low overall earnings. Similarly, ups and downs of needs through the year are smoothed out to yield a notion of average need as reflected in the single poverty line for the year. Emergencies and seasonally-changing requirements blur into the aggregates.

Recognizing the divergence between poverty as measured and poverty as lived is essential for understanding how, in practice, people make economic choices and how they use household finance and microfinance.<sup>4</sup> The centrality of month-to-month instability is the most important observation from the financial diaries completed in Bangladesh, India, and South Africa, and published as *Portfolios of the Poor: How the World's Poor Live on \$2 a Day* (Collins et al. 2009). The financial diaries show households wrestling with low incomes, instability, and a lack of reliable financial tools to manage important economic transactions. Together, these three elements (what the authors call "the triple whammy") shape the experience of poverty in terms of material deprivation.<sup>5</sup>

Similar findings are reported by Morduch and Schneider (2017) in financial diaries from four sites in the United States. When poverty is re-defined from an annualized quantity to a monthly measure, households are seen moving in and out of poverty during the year (Morduch and Schneider 2017, ch. 7; Morduch and Siwicky 2017). The U.S. financial diaries showed that households whose yearly income placed them below local poverty lines still spent, on average, about 3 months with income above poverty lines. Non-poor households whose yearly income was between the poverty line and 150 percent of the poverty line spent an average of five months below the poverty line. Even households with average income greater than twice the poverty line spent, on average, 1.6 months with income below the poverty line. Households were less poor when resources were measured by spending rather than income, but the shift in metric did not eliminate the dips into poverty (Morduch and Schneider 2017, Table 7.1).<sup>6</sup>

Re-conceptualizing "poverty" in terms of shorter accounting units leads to measures of poverty—and understandings of poverty—that more closely capture the experiences of households living with scarcity. The argument is not that we should entirely shift poverty measurement from year-long units to shorter units. Annual poverty rates importantly highlight broad changes in earning and spending power. The argument is that much can be better

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<sup>4</sup> The divergence can be hard to see in typical data sets, and as Longhurst, et al. (1986, p. 86) note: "it is crucially important that awareness is increased: that urban-based, season-proofed professionals become more aware of what rural people know only too well about how adverse seasonality affects them and how they try to handle it. Far greater knowledge and appreciation is required of the pattern of income earning and food acquiring activities of vulnerable people, especially when urban-based professionals are least likely to travel at the times of year when things are worst for rural people."

<sup>5</sup> Collins et al (2009) focus on material deprivation, and I follow that path here. The full experience of poverty is much broader, including deprivations that may be political and social, that may entail challenges to physical and mental health, and limits to other capabilities in the sense of Amartya Sen (1999).

<sup>6</sup> The sample in Morduch and Schneider (2017) is limited to four sites and is not representative. Parolin et al (2020) make a similar argument based on broader data in the United States.

understood by prying loose the definition of “poverty” from its tight attachment to annual sums, putting greater weight on households’ experiences of poverty during the year.

The idea that poverty can be seasonal is well-documented and has had a prominent place in development economics (e.g., Longhurst et al. 1986, Devereux et al 2012, Khandker 2012). Still, discussions of seasonality tend to be walled off from broader conversations about poverty, largely confined to a list of concerns for farmers and agricultural laborers whose work follows the agricultural cycle (e.g., Morduch 1994).

A contribution of Collins et al (2009) was to show that instability occurs for many reasons beyond farming and agriculture. A taxi driver in Dhaka, for example, saw his earnings rise and fall by the week depending on when he could drive, whether it rained during his shifts, and the luck of being in the right place at the right time to pick up fares. A snack shop owner in a South African township similarly saw her revenues swing sharply with local economic conditions and the availability of supplies. Second, rural households who were not engaged in farm work also experienced seasonal income variation since their incomes ultimately tied to the fluctuating fortunes of the farmers around them. Third, volatility is not just an issue of income variation; needs vary as well.

The instability would not matter, or would matter much less, if households could borrow, save, and insure without difficulty. Then, they could smooth the financial peaks and fill in the financial valleys, yielding a flatter plain for the year. Yet it is the poorest individuals who, typically, are least able to get hold of the amounts of money they need at the needed times. Put a different way: the standard framework for analyzing poverty makes most sense when financial constraints do not bind for individuals, but, in practice, financial constraints are especially likely to bind for people with limited resources.

Measuring yearly poverty on the basis of consumption, rather than income, shifts the picture somewhat (because it accounts for consumption-smoothing across years), but it does not fundamentally re-shape the picture. People with limited resources face the peaks and valleys during the year, leading to strategies and struggles that remain largely invisible (or puzzling) to poverty experts whose views only come through the annual aggregates.<sup>7</sup> In contrast, high-frequency household data on household consumption shows that greater liquidity does more than help households to “manage” poverty; it can effectively reduce measured poverty itself—when poverty is measured in sub-year units—and can lessen deprivation. This is one place where household finance and microfinance can be critical tools. Households know this well, and it shapes their actions.

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<sup>7</sup> The urgency and frequency of the within-year challenges have another consequence for poor households. Having to cope with the downturns exposes households with limited means to exploitation, forces reliance on the beneficence of friends and family, and increases the risk of persistent debt (Vishwanath et al 2020). It may also create gendered burdens through the unequal responsibilities for coping (Guérin et al. 2020). These elements of poverty are also hidden from view as data are swept into annual aggregates. Paying attention to poverty within the year brings into focus these broader implications of material deprivation.

## Rethinking Household Finance

The conventional focus of household finance for small-scale entrepreneurs is finance to invest in business, to buy equipment and materials and the like. In other words, it is “entrepreneurial finance” for the self-employed. This kind of finance is at the center of the microfinance narrative. For others, “productive” loans for education, or to migrate to a place where wages are higher, may be the focus. In each case, finance is seen as a tool to increase long-term earning possibilities. For economists, these are clear steps to improve efficiency and productivity.

A second, related focus is on ways to meet long-term goals, usually aligned with life-cycle stages and asset building (Sherraden 1991). Examples from the United States include saving for retirement, borrowing to purchase a house, and building an “emergency fund.” These forms of finance are legible in annual aggregates and household balance sheets, even when the ups and downs of short-term spending are not.<sup>8</sup>

The focus on household balance sheets can take attention away from concern with short-term cash flows (Collins et al. 2009). Just as yearly poverty rates do not capture the ups and downs of poverty within the year, focusing on balance sheets obscures the within-year ups and downs of resources and needs that can be seen by tracking cash flows.

The importance of managing cash flows is at the heart of Angus Deaton’s work on saving models (Deaton 1991). Deaton simulates optimal consumption trajectories in environments with substantial high-frequency income risk and limited borrowing possibilities. He labels this as “high frequency” saving in the sense that shocks come often and responses must come often too – in contrast to the low frequency need to adjust choices in preparation for large, distant life-cycle events like retirement. In Deaton’s simulations, saving and dis-saving are actively managed. Resources are accumulated and drawn down, and then accumulated again, in an ongoing cycle which responds to incoming shocks (Morduch and Schneider 2017, Elmi et al. 2020).

In this context, households hold few assets on average because they are constantly building up and depleting them. The aim, in fact, is not to build long-term assets; short-term shocks come too often and needs are too urgent. Deaton’s simulations align with a key finding from Collins et al. (2009) that asset balances for low-income households are often low at any given time, but nonetheless households often engage in a great deal of financial activity, borrowing and saving frequently. Low stocks accompany large flows. This is also consistent with Morduch and Schneider (2017, figure 4.1) who find that American families may have low saving balances over the long term but that saving accounts are used actively to manage short-term needs. Averaging across their respondents, 72 percent of money in saving accounts was earmarked for needs arising within six months; 83 percent was earmarked for spending within a year. Morduch and Schneider argue that saving choices are often not so much about whether to save or not, as in the textbook depiction; instead, some of the most difficult saving choices are about what to save for.

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<sup>8</sup> The attention to this kind of asset-building and changes to annual household balance-sheets is the basis for the framework for poverty reduction advanced by Sherraden (1991), and it has analogues with the rhetoric of microfinance. Grameen Bank has long offered higher education loans and housing loans alongside loans designated for business investment.

The choices often involve saving for high-frequency needs arising “soon” (in six months, say) versus saving for low-frequency needs that will occur “later” (in five, ten or more years).

Continually making these choices is not easy, and can be exhausting. Mullainathan and Shafir (2013) draw in part on the framework from Collins et al (2009) to argue that instability, together with limited resources to accommodate the ups and downs, impose a cognitive tax as households are forced to repeatedly calibrate financial choices against opportunity costs as they figure out how to cope (Shah et al 2012). The repetition of that task, again and again in varying forms, distracts attention from other choices that can improve long-term well-being (Mullainathan and Shafir 2013).

### ***Smoothing and Spiking. Aggregation and Distribution.***

Deaton’s model draws on theories of consumption smoothing, stripped down to illuminate the key insights on high frequency versus low frequency saving. The model is simplified by assuming that needs are identical in each period. The challenge for households is then to try to spend as evenly as possible across time despite instability and illiquidity (Morduch 1995, Jappelli and Pistaferri 2017).<sup>9</sup>

Yet, as described above, in reality needs vary too, requiring different amounts of resources at different moments. A consequence is that the need to “smooth” is often accompanied by the need to “spike” (Morduch and Schneider, 2017, chapter 3). Even if income is relatively steady, households can face substantial instability as they address unexpected (and sometimes urgent) spending needs through the year. Moreover, the spending needs may be inherently lumpy (i.e., indivisible). Addressing a health problem may require a fixed sum, for example, and half the sum does little good.

Households, in short, often need “usefully large sums” (Rutherford with Arora 2009, Collins et al. 2009). Another way of thinking of the basic financial problem is that there are two common challenges involving moving money through time: “distribution” (or “smoothing”—taking lumps of money received at a certain moment, dividing them, and moving all or part to other times when they are needed) and “aggregation” (or “spiking”—taking bits of money and amassing them to form larger sums).<sup>10</sup> Although it may seem contradictory, or at least complicated, households often need to distribute and aggregate—to smooth and spike—simultaneously.

Spiking is sometimes necessary for smoothing. Smoothing is usually defined in terms of consumption (Jappelli and Pistaferri 2017). Spiking, in contrast, is often about spending. But the two are directly related in that smoothing consumption may sometimes require spikes of spending. For example, buying a house—typically an enormous spending spike—subsequently provides years’ worth of steady consumption flows. The same, at a smaller scale, is true for buying a television or phone. At an even smaller scale, buying a large sack of rice once a month can translate to smooth daily or weekly consumption as the bag is slowly depleted. It is tempting

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<sup>9</sup> The optimal consumption path will depend on interest rates, discount rates and various preferences parameters. Moreover, the model is most naturally applied to non-durables. With consumer durables, the timing of spending and consumption can diverge substantially.

<sup>10</sup> Addressing risk is a related challenge, and, for brevity, it is left to the side here. Saving and borrowing, though, are common ways to cope with risk given the unavailability of formal insurance.

to equate “consumption smoothing” with “spending smoothing” but they are distinct notions, and one does not imply the other. Because spiking and smoothing seem at odds, spiking is often ignored in discussions of consumption smoothing, but they are of a piece, especially when moving to a high-frequency view.

While household finance tends to be organized around saving, borrowing, and insuring, it is often more helpful to think in terms of the underlying goals of distribution and aggregation. Most important, distribution and aggregation are often achieved by combining saving and borrowing—or are achieved by using saving and borrowing in ways that depart from textbook depictions. Afzal et al (2018) show that the desire to form meaningfully large sums can be so great that households willingly pay for saving services that facilitate the accumulation of lumps, just as they would pay for loans which achieve the same goal (albeit with different timing). From a different angle, Morduch (2010) draws on Collins et al (2009) to show cases in which people willingly borrow at high interest rates in order to protect already-accumulated savings (which would otherwise need to be re-built after being drawn down). Bauer et al. (2012) provide evidence from India suggesting that the structure of microfinance loans provides a valuable way to form large sums in the absence of similarly structured ways to save. In other words, people might rather save if appropriately-structured products were available, and borrowing is a next-best option in the absence of appropriate saving products. Rutherford (with Arora, 2009) makes a similar point by describing borrowing of this sort as “saving down” in contrast to the conventional “saving up.”<sup>11</sup>

Putting a focus on the value of aggregation helps to explain seemingly puzzling preferences. For example, Casaburi and Machiavello (2019) find that in Kenya dairy farmers prefer being paid less frequently rather than more often. The less frequent payments can be seen as combining a saving service together with compensation. Rather than the farmers having to save up on their own to meet larger needs (and having to overcome the challenges of doing so), the farmers are presented with lump sums that have already been accumulated for them. This would have limited appeal if the farmers could save easily on their own, but—as with the depiction of microfinance in Bauer et al (2012)—the favored mechanism can be seen as a next-best saving equivalent. See also Brune et al. (2021), who find related results in an experiment in rural Malawi.

Perhaps even more surprising, Herskowitz (2021) explains sports betting in Kampala, Uganda in a similar way. Beginning with the need for indivisible, lumpy sums, he shows how gambling can be a next-best way for bettors to get hold of usefully large sums, albeit at a high cost. He designs an experiment to establish that demand for betting falls when sports bettors are offered a better way to save.

In short: households need to smooth and spike. They need lumps, and they work hard to create them, sometimes in costly ways. Financing business investment is one example of lumpy spending, but it is only one of many lumpy needs.

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<sup>11</sup> These studies align with insights from behavioral economics, especially the limits to conventional ways of thinking about saving and borrowing through the lens of steady discount rates and interest rates.



### ***Borrowing as a commitment service***

Behavioral economists have shown that people think about financial choices in ways that depart from textbook depictions—and have shown that “commitment saving devices” can increase saving rates by providing helpful structure that constrains time-inconsistency and overcomes present-bias for individuals with hyperbolic preferences (e.g., Laibson 1997, Karlan and Morduch 2009).

The examples above provide a related way to think about borrowing. As Bauer et al. (2012) and Morduch (2010) show, borrowing is not just a transaction in which money is lent to borrowers at a given time to be repaid at a later date with interest. Instead, borrowing is also a structured relationship. An installment plan is often decided on. A plan is made and agreed on by the borrower and lender. The lender becomes a partner in creating accountability and enforcing early commitments. If plans go awry, the lender becomes an enforcer and negotiating partner. In all instances, the borrower is not left alone to repay. The rules might not be optimal, and lenders might be coercive and predatory. Borrowers may find themselves living under a growing burden of debt and may regret decisions to have borrowed. But, even as we recognize the dark sides, we can recognize that the qualities of most lending relationships are designed to ensure timely completion of the arrangement—and these qualities may, in themselves, be worth paying for.

Behavioral economics shows that these kinds of structures are not found in traditional saving products. Saving and borrowing thus have contrasting qualities that go beyond timing, and it becomes clearer why a patient person may choose to borrow simply for the advantages provided by the structure, even when saving might otherwise seem logical.

### ***Structure and Flexibility***

Behavioral economics in the spirit of Laibson (1997) shows how structure is useful for savers who face temptations and competing pressures (Dupas and Robinson 2013a). On the other hand, the financial diaries show that volatility calls for the opposite—flexibility (Collins et al 2009). As Morduch and Schneider (2017) argue, one of the most difficult—but most important—financial tasks is to figure out how to create structure that keeps plans in line while maintaining flexibility to address unexpected changes. Structure and flexibility seem at odds, and they can be hard to fit together. Most commercial financial products have too little useful structure, while others have too little flexibility.

Thus, for all of the insight of behavioral economics, the relative inattention to volatility is a sharp limit when explaining the choices of poorer households who lack reliable means to smooth ups and downs. New evidence shows that structure can help up to a point: barriers that are too high, and commitments that are too strong, can backfire or dissuade self-aware customers in the first place (John 2020). Finding the right mix of structure and flexibility can also be difficult when the user themselves is unsure how much structure is enough or too much, and they might pay a high cost when they get it wrong. Households thus seek an often-elusive but important balance: how to simultaneously enact rules while making sure that the rules can also be broken when needed.

Dupas and Robinson (2013a, 2013b) show how the competing demands for structure and flexibility, both implicit and explicit, complicate choices. Morduch and Schneider (2017) show

that people often found a balance not by finding a financial product with appropriate attributes but by shaping the context for the use of conventional products. One man in Brooklyn, New York asked his mother to hold his savings, which she kept in her own (conventional) saving account. His mother provided the structure and flexibility in her role as gatekeeper. Similarly, a woman in rural Mississippi found that her local bank was too accessible and convenient. She found herself too tempted to withdraw money that she would regret later. Realizing this, she had her savings be deposited automatically in a (conventional) credit union that was an hour away from home and had inconvenient hours. The barrier of time and distance created a way for her to discipline withdrawals while not ruling them out if really needed. Both examples show how—given the absence of better options—people who used conventional products in unconventional ways to balance structure and flexibility.

### *Debt and other troubles*

It is tempting to read financial diaries as stories of remarkable ingenuity in the face of complicated challenges. It is true that households put great effort into managing the instability (Longhurst et al, 1986, Collins et al. 2009). But the challenges are steep and the options are often limited. Households often fail, in whole or in part. Little formal insurance is available, making loans and savings important ways to cope with risk. Households are vulnerable to cycles of persistent debt (Vishwanath 2020), particularly high-cost unsecured debt such as from moneylenders (Reserve Bank of India 2017).<sup>12</sup>

Unless forced by regulation, banks are reluctant to lend, especially at low interest rates, to customers seeking only small loans and who cannot offer much in the way of collateral (Johnston and Morduch 2008, Cull et al. 2018). The turn to the informal sector and to non-institutional debt is also due to perceived inadequacies of the formal banking institutions that are available. Potential customers cite lack of trust, fear of paperwork and hassles, and lack of appropriate products (Reserve Bank of India 2017). As noted above, households seek flexibility to deal with uncertainties. But, for customers without collateral and limited credit histories, such flexibility is more likely to be offered by informal lenders than by banks. When hit by a pressing emergency, a high-priced moneylender may be a compelling option, especially when the resources of family and friends have been exhausted.

In a way, microfinance was designed to address this problem. It was conceived as a large-scale financial solution that could displace moneylenders and do better than conventional banks, reaching poor households who lack collateral and want to borrow in small sums. By focusing on business finance, however, the language of microfinance made it harder to address households' broad needs for debt—and their vulnerability to debt burdens. As discussed below, despite the business rhetoric, customers use microfinance broadly, and greater transparency about actual needs and uses is a first step toward addressing debt burdens.

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<sup>12</sup> See comparative data from India, China, Thailand, the United Kingdom, the United States, Australia, and Germany in Badrinza et al. (2019).

## Rethinking Microfinance

The discussion above lays a foundation for rethinking microfinance.<sup>13</sup> In principle, microfinance can be an answer to many of the problems described above—low overall earning power, high-frequency instability, and general illiquidity.

To make it so, borrowers use microfinance in ways other than those advertised by microfinance leaders, opening way for rethinking microfinance to better align with customers' needs. That begins with recognizing how microfinance rhetoric departs from existing practices. Microfinance is usually described as entrepreneurial finance: capital to aid small-scale business investment. In practice, it is frequently used in broader ways, in keeping with the preceding discussion. Above, poverty as measured by the year was distinguished from poverty as experienced by the week, month, or season. Taking a high frequency view on poverty moves households' instability during the year to the center of discussion. This reality helps to explain why, in practice, microfinance borrowers often combat their poverty by using microfinance for general household needs rather than business investment. In doing so, they are addressing high-frequency poverty rather than the annualized measures calculated by statistical agencies.

There is another layer to the story. As described below, design elements in standard microfinance contracts are especially well-suited for loans for non-business purposes. The installment structure of standard microfinance loans makes the loans function more like standard consumer loans than business loans (Armendàriz and Morduch 2000). Similarly, microfinance loan products share important features with structured saving products (Bauer et al. 2012). The “diversion” of microfinance loans away from business finance is thus less surprising. The broader uses of microfinance happen not despite the microfinance contract structure but because of it.

The primary question is not about what microfinance *should* be used for, it is about what microfinance is—in reality—used for. That question then leads to a set of questions about goals and strategies which can help frame normative queries:

1. If the measured impacts of microfinance on business profit and income are modest, or are only large for a minority of borrowers, why do so many customers continue to borrow?
2. If the contractual forms of microfinance loans look more like consumer loans than business loans, can microfinance loans be re-structured to work better for those borrowers who are primarily motivated by business investment? Can microfinance loans be re-structured to work better for consumers?
3. If customers seek a balance between structure and flexibility, are there ways in which microfinance designs can be improved?
4. If microfinance loans are best thought of as general-use loans, and if women are targeted as customers, how does microfinance contribute to “empowerment”? Or can microfinance—to the contrary— add to burdens for women especially?

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<sup>13</sup> This section draws on many sources, including Chapter 6 of Collins et al. (2009), “Rethinking Microfinance: The Grameen II Diaries” which draws on Stuart Rutherford’s diaries of Grameen Bank borrowers. I am grateful for long conversations with Rutherford over the years, comparing and testing ideas.

5. Ultimately, should using microfinance loans for consumption be celebrated or should attempts be made to limit such “diversion” (if even possible)? What would embracing microfinance for general uses look like for the sector?

These questions help take us beyond the conventional narratives of microfinance.

### *The conventional view of microfinance*

The potential to reduce annual poverty rates was central to the narrative that Muhammad Yunus created to promote microfinance. Yunus argued that microfinance could reduce annual poverty rates dramatically, even in Bangladesh—a country which gained independence only in 1971 and, in its early decades, had to immediately confront high rates of population growth and low average standards of living.

In the process, microfinance became framed largely as entrepreneurial finance: loans (mainly) for business investment, with saving and insurance products as helpful add-ons. Poor borrowers were seen primarily as capital-limited, small-scale entrepreneurs, and microfinance was seen as the fuel that could power borrowers’ emancipation from poverty by easing financial constraints and thereby increasing earning power.

Microfinance reinforced the argument that poverty should not be seen as a result of the personal failings of individuals, nor of toxic environments, nor of “backward” cultures, nor lack of knowledge and training. To Muhammad Yunus (1999), poor people were not seen as long-toiling laborers or farmers, but were instead re-cast as entrepreneurs. They were frustrated entrepreneurs, for sure, lacking capital but possessing energy and ambition. Poor people, in this view, sought opportunities foremost: chances to make the most of their talents by building and growing small businesses. The aim of microfinance was to provide the missing financing, and to do so at costs well below the interest rates charged by moneylenders.

At a conceptual level—at the level of ideology—microfinance was a clear success in its first decades.<sup>14</sup> By depicting poor people as entrepreneurs, and as customers for financial services rather than beneficiaries of government handouts, microfinance saw dignity and agency in poor people. Microfinance also elevated women and, especially in South Asia, made poor women the central focus.

Microfinance succeeded in part because it capitalized on emerging understandings in economics. For economists, the diagnoses of market failure hinged on examples of businesses thwarted in their pursuit of loans by asymmetric information, limited liability, and the attendant challenges of moral hazard and adverse selection (Stiglitz and Weiss 1981; Townsend 1979; Armendáriz and Morduch 2010, chapter 2; Banerjee 2013). Theories of moral hazard and adverse selection became the basis of theories of microfinance, and the focus was on how to lend to risky businesses (see, e.g., chapters 2, 4, and 5 of Armendáriz and Morduch 2010).

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<sup>14</sup> By a “clear success”, I mean that the rhetorical formulation was convincing to many and aligned with prevailing political and social imperatives. See, e.g., Geismer (2020). Not everyone was convinced, and microfinance has had its share of critics, especially from the left (e.g., Bateman and Chang 2012).

The theoretical structures highlighted a fundamental challenge for lenders: How to know if repayment difficulties are caused by risks outside of a borrower's control versus difficulties due to insufficient care taken by the borrower? For the most part, the lenders' challenge was depicted as *ex ante* moral hazard (e.g., Stiglitz 1990). The lender's difficulty was in their inability to easily observe borrowers' efforts (e.g., Holmström 1979).

Group lending with joint liability was posed as a solution (Ghatak and Guinnane 1999). If a borrower's neighbors have good local information by virtue of their proximity (and if they are interested in loans for themselves), the neighbors can monitor their neighbors and enforce contracts. The solution that microfinance innovators suggested was to make neighbors jointly liable for each others' loans (sometimes implicitly, sometimes explicitly). In theory, loan officers do not need to acquire the information held by the groups; the loan officers just need to enforce the optimal incentive-compatible contract. With the contract in force, borrowers will work hard, investments will succeed and loans will be repaid. High microfinance loan repayment rates appear to confirm the power of the mechanism.

### ***Ex post moral hazard***

Crucially missing from this picture is serious consideration of how to address the broader risks described in previous sections, those arguably outside the borrowers' control. These are not necessarily business risks. Risks that undermine the ability to repay loans include risks to health, shelter, and food security. They include risks to income earned from sources other than the particular investment to which microfinance is attached. The risks may involve obligations to extended family members and the community, linked in mutual support. So, even if *ex ante* moral hazard (will borrowers work hard enough to succeed at the given business?) is managed, *ex post* moral hazard still arises (will borrowers succeed at the business yet still not repay?).

*Ex post* moral hazard is often depicted as "strategic default," but the ethics and contexts can be complicated. Labeling the choice to default as "strategic" implies greater agency than may actually be the case, and reducing default rates to zero may be cruel, undermining the welfare gains from lending when it means taking strong actions to discipline defaulters who are already seriously down on their luck, perhaps through little fault of their own (Gertler et al. 2021).

Most evidence on the causes for repayment difficulty focuses on the efficacy of microfinance contracts (e.g., Ahlin and Townsend (2007), but the question here is about the nature of the underlying risks and triggers of non-payment. Simtowe, Zeller and Phiri (2006) report on survey data from Malawi, for example, which shows that the single most prevalent cause of default is *ex post* moral hazard in microfinance groups (the unwillingness to repay, not the inability to repay). A quarter of their sample had the money to repay, but chose not to. Another 16 percent could not repay due to mismanagement of various kinds (*ex ante* moral hazard). Thus, 41 percent of default could be attributed to either mismanagement or misuse of funds. Of the balance, 18 percent was due to natural disasters (i.e., slightly more than was attributed to *ex ante* moral hazard) and 24 percent was due to "low profit" (but not mismanagement), about the same as was attributed to *ex post* moral hazard.<sup>15</sup>

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<sup>15</sup> Default is endogenous, and it is not possible to describe underlying risks that created difficulty but which did not result in default.

The lines between misuse, mis-management, and poor luck are not always clear, and the efficient level of risk-sharing implied in joint-liability contracts can be hard to reach. Borrowers' groups are thus implicated, through joint liability, in shouldering a wide range of risks face by households. The risks can be a heavy load to bear for group members, and it's unsurprising that microfinance borrowers complain about the burden imposed by joint-liability, especially as loan sizes (and thus obligations to others) grow. As Ahlin (2020) notes, drawing on evidence from Thailand, the joint-liability contract may itself push toward group formation which is not particularly well diversified against risk.

When customers get into trouble, loan officers then face a dilemma. Recognition of the broader risks facing borrowers—risks that arise at least in part from life in risky environments—lead loan officers to step in to deliver fairer outcomes than the strict application of group lending under joint liability would produce. Rather than insisting that group members pitch in to repay for all overdue loans of others, and rather than cutting off all group members from future borrowing, loan officers may try to negotiate and adjudicate. One solution is to replace the borrower in default, re-constituting the group. With steps like this, the excesses of group lending are reduced. But so too is the bite of group lending. It is a difficult contract to maintain because of the inherent contradictions: given their poverty, borrowers are ill-equipped to provide broad insurance mechanisms for each other, yet the contract pushes for it and in some cases punishes borrowers who, to the best of their ability, appear to be doing everything right.<sup>16</sup>

It is thus not surprising that joint liability has ceased to be seen as the key to microfinance (Attanasio 2015).<sup>17</sup> Grameen Bank itself dropped joint liability at the start of this century (Dowla and Barua 2006). A broader study by De Quidt et al. (2018) documents the decline of joint liability in the global MIX Market dataset and ties the fall to increased commercialization. The use of groups and group meetings may persist, but the use of joint liability—the best-known microfinance innovation—has greatly faded.

### ***Microfinance loans look like consumer loans***

How then does microfinance work? Microfinance has always worked through multiple, overlapping mechanisms, even though group lending with joint liability took most of the attention. Two other mechanisms are dynamic incentives (borrowers are eligible for the next loan only if they have successfully repaid prior loans) and the division of repayments into small, frequent installments that start soon after the loan is disbursed (Armendáriz and Morduch 2000).

The latter is an odd feature. A conventional business loan has a single “balloon” or “bullet” repayment to allow borrowers time to invest and reap profits before repaying. In some cases, there might be more than one installment, but not the small weekly/bi-weekly/monthly installments that are usual in microfinance contracts.

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<sup>16</sup> In theory and in lab experiments, joint liability can even exacerbate risk through allowing free-riding via the implicit insurance mechanism (Giné et al. 2010, Fischer 2013).

<sup>17</sup> See Mahmud (2020) for a counter-example documenting how switching from individual to joint liability was helpful for a lender in Pakistan.

The frequency of microfinance installments, though, has the advantage of making it possible for borrowers to repay loans with flows of household income that are independent of revenues from the targeted business. The small sums needed for the installments can be put together with income from various sources. In fact, it is necessary to do so, at least at first, in the period before businesses produce revenues (Field et al. 2013). More striking, it is not strictly necessary to even have a business in order to want a microfinance loan and to be able to repay it on time. For better and worse, this structure with small, regular payments makes microfinance operate much more like a credit card (or an installment-based consumer loan) than a business loan, and customers understand the possibilities that this opens (Morduch 2018). As with credit cards, microfinance can help with both smoothing and spiking.

The possibility of using microfinance for consumption purposes (to pay for healthcare, to keep food on the table, to pay for travel or durable goods) means that microfinance is in practice often not used entirely for business. This is not quite “misuse” if the borrower can afford to repay the loans through reliable strategies, although the choice may deviate from the assumption that loans will be used for business investment.

Surveys of borrowers reveal that a large share of microfinance loans are used for broad purposes, both to smooth and spike. Stuart Rutherford concludes from his research on a sample of Grameen Bank borrowers that only a minority borrow mainly for business: “On the one hand, it is clear that an early hope of microfinance lending—that virtually every loan would be invested in a microenterprise—has not come about. On the other hand, businesses and asset-investment uses are responsible for more than half the value of loans disbursed, though concentrated among the minority of borrowers well placed to use them in this way.” (Collins 2009, p. 167.) Similar results—about half of microfinance loans going to non-business purposes—are documented, for example, in Indonesia by Johnston and Morduch (2008) and in Mongolia by Attanasio et al. (2015).<sup>18</sup>

Islam and Maitra (2012) consider health shocks in Bangladesh. Using a large panel data set from rural Bangladesh, they show that, given the lack of access to health insurance, households often sell livestock to address health shocks. But once microfinance is introduced, households are more likely to cope with microfinance loans instead, a less-costly strategy. Gertler et al. (2009) similarly find that households with access to microfinance in Indonesia are better able to protect their consumption after health shocks. Calis et al. (2017) turn to coping with natural disasters, investigating a large cyclone that struck in India in 2013. They find that microfinance helped borrowers to mitigate the shock, again by providing needed liquidity.<sup>19</sup>

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<sup>18</sup> Karlan et al. (2016) show in a sample from Manila that borrowers added to business investment in a magnitude comparable to loan sizes. Since money is fungible, the money directly received from the microfinance lender was not necessarily spent on business, yet it freed other money that could be spent on business, and, ultimately, investment took place. This is consistent with the demand for general-use loans, for which business is one use.

<sup>19</sup> Some of the reduction in harm could come from increased overall income, or the diversification of income flows, rather than from consumption-smoothing. Note too that mobile money has been shown to provide liquidity in a similar way, by facilitating payments within social and family networks (e.g., Jack and Suri 2014, Lee et al. 2021).

### ***Why microfinance loans are popular when measured impacts are modest***

Early randomized trials yielded a mixed verdict for microfinance impacts: they found a clear impact on business activity but little impact on overall household income or consumption (Banerjee, et al. 2015). The modest findings of the initial RCTs remain part of the picture and align with expectations from earlier non-experimental studies (Morduch 1999).

But the results raise a critical question: if impact on average income and consumption is hard to find, why do borrowers continue to borrow? The early RCT results force us to think harder about consumers' financial choices. Are borrowers as ignorant or irrational as the results imply?

One response to this demand puzzle is that the results are from margins that may be unrepresentative (Morduch 2020). Subsequent work finds positive impact on incomes in other settings. Breza and Kinnan (2020), for example, analyze the impact of halting microfinance in South India and show increases in income that occur through effects on wages. Cai et al. (2020) show large, positive impact on incomes in rural China in a particularly poor group of villages, driven partly by increased migration.

These studies suggest a complementary answer to the demand puzzle. The low levels of impact found in the early RCT studies could partly arise because borrowers divert money away from business investment in order to spend on health needs and consumer goods, and to pay down more expensive debt, etc. The outcomes from those uses are unclear, but they align with the discussion of high-frequency poverty and finance above and suggest very different terms by which to evaluate microfinance.<sup>20</sup>

Annual poverty rates and annual household income are thus not necessarily the outcomes that are most likely to be affected by microfinance. Attanasio et al (2015) find, for example, that food consumption increases even if income does not. Since microfinance loans can be used in multiple ways, evaluating their impact on business investment or yearly income provides a test of Yunus's narrative but misses other potential impacts.

### ***Microfinance loans look like structured saving products***

One response to the observation that microfinance loans are used to fund consumption is that customers should be encouraged to save instead. Without getting into whether that should be so, it is worth noting that the structure of microfinance loans already resembles that of contractual saving products, where savers are expected to deposit a given amount on a regular schedule until a certain goal is met (e.g., Dupas and Robinson 2013b). Put another way: Microfinance loans share features with consumer installment loans, and both share features with structured saving products. This is the sense above that a fundamental element of loans (including microfinance loans) is that they come bundled with "behavioral" commitment services (Bauer et al. 2012).

As noted in the discussion of household finance, saving and borrowing can both be ways to translate flows of money into "usefully large sums". With borrowing, the lump is delivered

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<sup>20</sup> As noted earlier, by enabling consumption smoothing, the loans may be reducing poverty as experienced by households (and as measured by sub-year poverty measures, even if not by annualized rates).



sooner than through saving and is more costly. But the function of reliably transforming flows into lumps may be more important than the timing and costs (Bauer et al. 2012, Afzal et al. 2018). Microfinance allows people to aggregate resources when functionally-equivalent saving products do not exist. Kast and Pomeranz (2018) show this in reverse: when improved saving possibilities were introduced in Chile, short-term borrowing declined by 5-20 percent. An attraction of microfinance borrowing for some is as a way to build up lump sums when it is not possible to save in a structured format.

### ***Too much structure, too little flexibility***

The microfinance installment structure transforms a “business” loan into something that looks more like a consumer loan or a structured saving product. In a way, that is the hidden genius of microfinance. But that does not mean that the contract is optimal, for either business or consumer purposes. Field et al (2013), for example, work with a lender in Kolkata to experimentally test the impact of giving borrowers more time to invest. Providing borrowers with a “grace period” before they start to repay increases business investment and average profitability and encourages risk-taking by customers.

Similarly, Battaglia et al. (2018) provide an experiment with year-long loans from BRAC in Bangladesh, in which customers were allowed to pay two installments late without penalty. (The usual structure involved monthly installments.) The resulting flexibility led borrowers to invest more, increasing assets by 51 percent relative to the control group. Their revenues increased on average by 87 percent and profits by 25 percent. Borrowers also saw more risk, with sales volatility rising 80 percent relative to the control group. Still, given the flexibility, loan defaults dropped and customer retention increased.

Banerjee (2013) notes that while structure may be helpful, weekly repayments may impose too much structure. For some borrowers, monthly installments, as at BRAC, may provide a better trade-off between structure and flexibility.

### ***Gendered empowerment or burden?***

Of all the claims for microfinance, the most compelling may be the promise that access to small loans can empower women. By targeting women with business finance, the hope is to raise their earning power – and, with that, to increase women’s bargaining power, status, and autonomy.

The vision is tied to business finance, and, as described above, this is only one element of microfinance. As shown by Bernhardt et al. (2019), investment in the businesses of women are often diverted to those of men in the same household. Similarly, Riley (2020) shows that women are more successful in business when they can hide their resources from family members. Finance may be helpful to households, but it operates within cultural and social constraints that are difficult to erode.

The focus on financial management above points to a different set of issues for female borrowers. As some note, microfinance targeted to women can create burdens of debt that women are forced to shoulder (Karim 2011). Guérin (2014) finds from her research in Tamil Nadu, India, that the main demand for microfinance in her site is for non-business purposes (e.g.,

food security, health, religious and social obligations, and repaying other debt). For the women that she and her collaborators study, access to microfinance can provide liquidity, giving women more options as they juggle debt. Yet the backdrop to such juggling is a heavy burden of debt borne by women, money owed both to microfinance lenders and to informal lenders (Guérin et al. 2020). These burdens are laid most heavily on poorer women with fewer social advantages. By targeting women, microfinance lenders assist in shifting the task of “making ends meet” to women rather than men, even as they (helpfully) provide women with better financial tools to do so. Only by recognizing the reality of microfinance as a cash management tool can these unequal burdens be seen, described, and assessed.

### **Concluding thoughts**

People manage their economic lives at different frequencies: week by week, month by month, and year by year. Governments and researchers, however, usually collect data that only give snapshots of annual aggregates like yearly income or expenditure. In principle, poverty can also be measured by the month, for example, or by the season. These alternative choices help to highlight households’ short-term but often-chronic instability—and the limited liquid assets and financial tools that households have available to respond.

I argue that household finance and microfinance are best understood by also using a high-frequency lens to follow households as they experience ups and downs through the year. The same is true for poverty, as households with limited resources move in and out of poverty. The intersecting concerns—overall insufficiency, instability, and illiquidity—are bound together. Typical poverty analyses ignore short-term instability and thus pay little attention to short-term illiquidity. But once we see the challenge of instability, we can immediately see broader needs for access to reliable finance. This, in turn, pushes for a broader perspective on household finance and microfinance as tools to manage instability and illiquidity in order to facilitate general spending needs. In this conception, business investment may or may not be an important goal.

Yunus wove a coherent narrative of microfinance and its emancipatory possibility (Yunus 1999). His result was grand and sweeping, and, with that, both powerful and problematic. Theory and practice, research and experiment, reveal inherent contradictions in this conventional microfinance narrative. Within those contradictions lie an answer, or the seeds of an answer, as to why microfinance has failed to manifest its transformative promise yet why it has thrived, continuing to draw customers and investors.

To better understand the realities of microfinance – its possibilities and its contradictions – it is necessary to return to the notions of poverty and household finance upon which the initial claims and ambitions were based. This essay is an attempt to do that, selectively drawing together threads rather than providing a review of related literatures.

Policy experts may be tempted to relegate concern with the short-term ups and downs of poverty and the short-term maneuvers of finance. They may be tempted to focus only on policies and programs that promise large, long-term transformations. For households living with scarcity, however, the short term is the path to the long term. Without the ability to get through the short

term, long term goals too frequently lie out of reach, unmet. Being able to ignore short-term challenges is a privilege, usually accessible only to better-off households.

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