

Financial Inclusion and Inclusive Growth

A Review of Recent Empirical Evidence

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Abstract

There is growing evidence that appropriate financial services have substantial benefits for consumers, especially women and poor adults. This paper provides an overview of financial inclusion around the world and reviews the recent empirical evidence on how the use of financial products—such as

payments services, savings accounts, loans, and insurance—can contribute to inclusive growth and economic development. This paper also discusses some of the challenges to achieving greater financial inclusion and directions for future research.

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**Financial Inclusion and Inclusive Growth:
A Review of Recent Empirical Evidence**

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1 Introduction

Financial inclusion means that adults have access to and can effectively use a range of appropriate financial services. Such services must be provided responsibly and safely to the consumer and sustainably to the provider in a well regulated environment. At its most basic level, financial inclusion starts with having a deposit or transaction account at a bank or other financial institution or through a mobile money service provider, which can be used to make and receive payments and to store or save money. Yet 2 billion or 38 percent of adults reported not having an account in 2014 (Demirguc-Kunt et al., 2015). Financial inclusion also encompasses access to credit from formal financial institutions that allow adults to invest in educational and business opportunities, as well as the use of formal insurance products that allow people to better manage financial risks.

This paper provides a brief overview of financial inclusion around the world and discusses the benefits of financial inclusion and how they can contribute to inclusive growth and economic development, summarizing related empirical evidence.¹ It concludes by outlining some of the challenges to realizing the benefits of financial inclusion and directions for future research.

Financial inclusion can help reduce poverty and inequality by helping people invest in the future, smooth their consumption, and manage financial risks. Adults around the world and in all income groups use an array of different financial services. However, many low-income adults rely on informal financial services (Collins et al., 2009). Access to formal financial services allows people to make financial transactions more efficiently and safely and helps poor people climb out of poverty by making it possible to invest in education and business. By providing ways to manage income shocks like unemployment or the loss of a breadwinner, financial inclusion can also prevent people from falling into poverty in the first place. This is especially relevant for people living in the poorest households.

Financial inclusion also benefits society more broadly. Shifting payments from cash into accounts allows for more efficient and more transparent payments from governments or

¹ See Klapper, et al. (2016) for a review of how financial inclusion can help achieve the Sustainable Development Goals (SDG's). See Karlan and Morduch (2010) and Beck (2015) for surveys of the literature on access to finance and Cull et al. (2014) for a summary of the benefits of financial inclusion.

businesses to individuals – and from individuals to government or businesses. Although no conclusive evidence exists at this point, access to the formal financial system and appropriate credit can potentially facilitate investments in education and business opportunities that could, in the long term, boost economic growth and productivity.

Most of the attention and research on household finance and economic development in the past two decades has been on the impact of microcredit. Celebrated by many as an effective development tool, microcredit was the basis for the 2006 Nobel Peace Prize. But as rigorous evaluations of the development impacts of microcredit became more common and evidence started to accumulate of the more mixed effects of access to microcredit for low-income individuals, there has been a shift in focus in recent years towards account ownership and the savings and payments services accounts can provide. Similarly, there has also been an increased focus on insurance, especially agricultural insurance.

There is some evidence that financial depth – a concept related to but distinct from financial inclusion – also can contribute to shared economic growth and development. While financial inclusion is typically measured by ownership of an account by individuals, financial development is measured by macro-level indicators, such as market capitalization of the stock market or a country's ratio of credit to gross domestic product (GDP). Many factors influence both a country's level of financial inclusion and financial development, including income per capita, good governance, the quality of institutions, availability of information, and the regulatory environment (Allen et al. 2016; Rojas-Suarez 2010; Karlan et al. 2014; Park and Mercado 2015). Research has empirically linked measures of financial depth with greater economic growth and lower income inequality (King and Levine 1993; Beck et al. 2000; Clark et al. 2006; Beck et al. 2007; Demirguc-Kunt and Levine, 2009).

However, the relationship between financial inclusion, inequality, and macroeconomic growth is not yet well understood, and there is relatively limited research on the topic. In their study of towns in Mexico where bank branches were rapidly opened, Bruhn and Love (2014) use a natural experiment to argue that increased access to financial services leads to an increase in income for low-income individuals by allowing informal business owners to keep their businesses open and creating an overall increase in employment. Similarly, Burgess and Pande

(2005) have documented a decrease in rural poverty in India due to an expansion of bank branches in rural areas, although these findings have been questioned (Panagariya 2006 and Kochar 2011). Within the limitations of country level data, the IMF has related financial inclusion with a number of macroeconomic outcomes, including economic growth, stability and equality (Sahay et al. 2015). Their analysis suggests that financial inclusion can be positively related to these outcomes but that the relationship may depend on factors such the level of per capita income or quality of the regulatory environment. Yet, so far there is no rigorous research showing a direct impact of financial inclusion on economic growth and inequality at the country level.

One reason why the relationship between financial inclusion and inequality and macroeconomic growth is not yet well understood is data availability. Establishing such a relationship requires a sufficiently long time-series on financial inclusion measures. Analysis of the factors shaping macroeconomic growth and inequality often requires decades of data. Until very recently, data on financial inclusion on a comparable, global level have not been available, limiting the ability to assess its impact.² Data on financial inclusion collected by financial institutions have been available for select economies starting as early as 2004 as part of the IMF's Financial Access Survey.³ There was no comparable global demand-side data on financial inclusion collected from the perspective of individuals until the World Bank launched its first Global Findex database in 2011 (Demirguc-Kunt et al., 2015). Another reason the connection between financial inclusion and macroeconomic outcomes remains unclear is that national policies aimed at increasing financial inclusion are for the most part very recent, and assessing their impact on country-level growth and inequality will take time.

The paper proceeds as following: Section 2 provides a description of account ownership around the world. Section 3 discusses the evidence on the benefits of financial inclusion organized around four major types of formal financial products: payments, savings, credit, and insurance. Section 4 discusses some of the challenges to achieving greater financial inclusion and directions for future research.

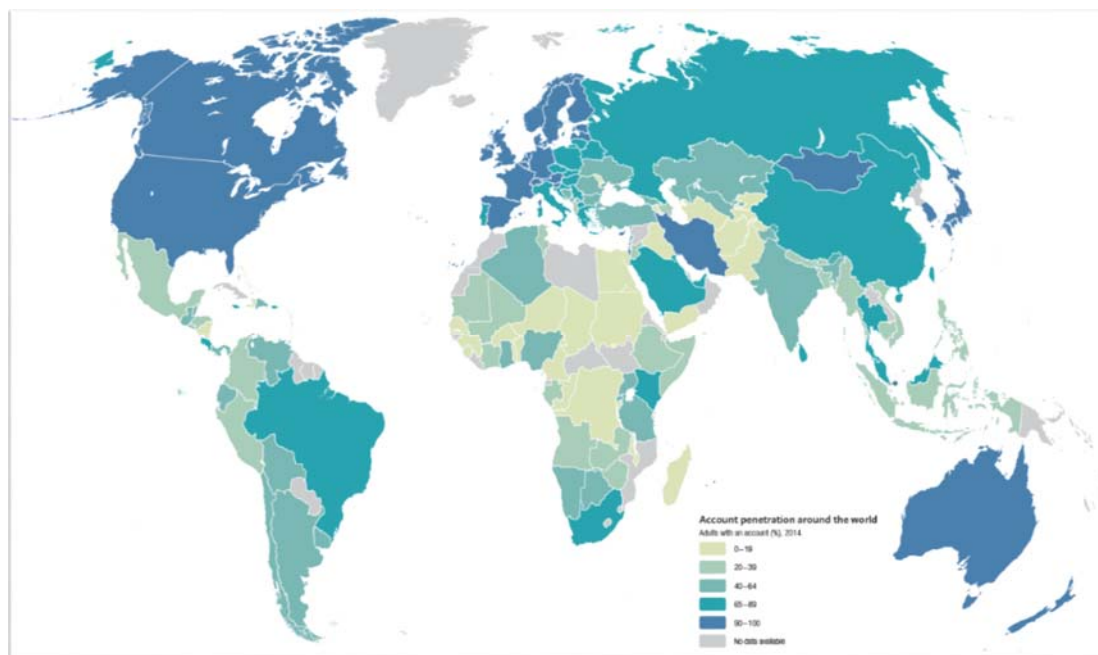
² See World Bank (2014) for an overview of data sources on financial inclusion.

³ <https://www.imf.org/external/np/sec/pr/2015/pr15455.htm>

2. Account Ownership around the World

Worldwide, 62 percent of adults reported having an account – either at a financial institution such as bank or through a mobile money provider – in 2014 according to the Global Findex database (Demirguc-Kunt et al., 2015). Not surprisingly, account ownership varies widely around the world. In high-income OECD economies account ownership is almost universal: 94 percent of adults reported having an account in 2014. In developing economies only 54 percent did. There are also enormous disparities among developing regions, where account penetration ranges from 14 percent in the Middle East to 69 percent in East Asia and the Pacific (map 1; figure 1).

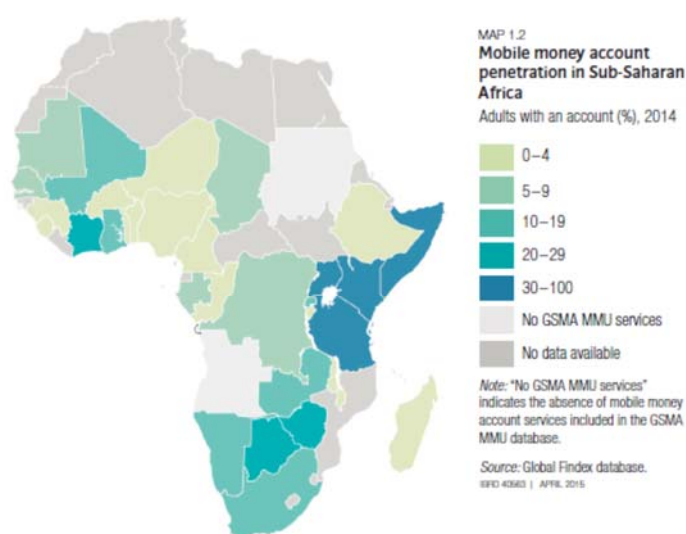
Map 1: Account penetration around the world



Globally, nearly all adults who reported owning an account said that they have an account at a financial institution: 60 percent reported having a financial institution account only, 1 percent having both a financial institution account and a mobile money account, and 1 percent a mobile money account only.

Sub-Saharan Africa is an exception to this global picture. There, almost a third of account holders—or 12 percent of all adults—reported having a mobile money account. Within this group about half reported having both a mobile money account and an account at a financial institution, and half having a mobile money account only. Mobile money accounts are especially widespread in East Africa, where 20 percent of adults reported having a mobile money account and 10 percent a mobile money account only (map 2). But these figures mask wide variation within the subregion. Kenya has the highest share of adults with a mobile money account, at 58 percent, followed by Somalia, Tanzania, and Uganda with about 35 percent.

Map 2: Mobile money account penetration in Sub-Saharan Africa



Account ownership not only varies across countries, but also by characteristics such as household income and gender. Over half (54 percent) of adults in the poorest 40 percent of households within-economy were unbanked in 2014. There is also a significant gender gap in account ownership. Although in high-income OECD economies there was virtually no gender gap in account ownership, in developing economies the gender gap remained a steady nine percentage points.

3. Empirical Evidence of the Benefits and Risks of Financial Inclusion

This section discusses the empirical evidence of the benefits and risks of using formal financial services, organized around four major types of formal financial products: payments, savings, credit, and insurance.

3.1 Payment Services

Most people receive or make payments. People receive payments for work, the sale of agricultural goods or as a remittance or government transfer payment. And they make payments such as when making purchases at retail stores, paying utility bills or sending a remittance payment. Increasingly, adults are making and receiving payments digitally, directly from and to their accounts. In 2014, virtually all account holders (95 percent) in high-income OECD economies made or received at least one digital payments from or into their account while in developing countries 62 percent of account holders did so. This includes payments made directly with a debit or credit card or using a phone or via the internet. But many payments are still made in cash. In developing economies, the majority of adults who reported receiving a wage payment (59 percent) or a payment for the sale of agricultural goods (91 percent) and almost half of adults who reported receiving a government transfer payment (48 percent) did so in cash instead of into an account in 2014. Similarly, of the 56 percent of adults in developing countries that made regular payments for utilities in 2014, almost 90 percent did so in cash.

There is evidence that shifting payments from cash into accounts has many potential benefits, for both senders and receivers, especially when it comes to long-distance or higher-value payments.⁴ Accounts can improve the efficiency and convenience of payments by significantly lowering the cost of making and receiving them and by increasing their speed. For example, recipients of cash payments in rural areas often have to travel considerable distances to a bank branch, money transfer operator, or government office in order to receive a remittance or government transfer payment. Paying bills or sending remittances can require similar trips. A rigorous evaluation of a

⁴ Digital payments can also be made without the use of an account in so-called over-the-counter transactions, which are used, for example, for remittance payments or bill payment. Some but not all of the benefits of shifting from cash to digital payments also accrue to digital over-the-counter transactions.

social transfer program in Niger found that disbursing transfers by mobile transfer reduced overall travel and wait time to a quarter of the time required to collect manual cash transfers. Overall, based on agricultural wages, the time savings attributable to the digital transfers translated into an amount large enough to feed a family of five for a day (Aker et al., 2013).

Digital payments also save money for governments and businesses. The Niger study showed that mobile transfers of government social benefits cut administrative costs by 20 percent compared to manual cash distribution (Aker et al., 2013). In South Africa, the cost of disbursing social grants in 2011 by smart card was a third that of manual cash disbursement (R13.50 compared to R35.92) (CGAP, 2011). And in Mexico, a study estimates that the government's shift to digital payments (which began in 1997) trimmed its spending on wages, pensions, and social welfare by 3.3 percent annually, or nearly \$1.3 billion (Babatz, 2013). The study attributes most of the savings to less money lost in unauthorized or incorrect payments. There are also some savings due to interest earned by not having to deposit funds in advance of payments and due to not having to pay bank fees for distributing cash payments.

In contrast to cash, digital payments can be virtually instantaneous, even if the sender and the recipient of the payment are not in the same place. This means that payments arrive much faster which can be a considerable benefit when the timely arrival of money is of essence such as in emergency situations. In Kenya, for example, two-thirds of adults reported the mobile money service M-Pesa as the fastest and most convenient way to receive money from family living elsewhere (GSMA, 2014). Similarly, insurance payouts or government financial assistance can be made without delay when the need is greatest. For example, the Liberian government was able to quickly pay thousands of Ebola workers, often working in rural areas, by opening accounts for health workers and making payments digitally (BTCA, 2015).

Shifting cash payments into accounts can also increase the security of payments and lower the associated incidence of crime. Senders and recipients of large amounts of cash – whether for a remittance, wage, or rent payment – are particularly susceptible to street crime. Also vulnerable are large payments which are disbursed at publicly known times, such as social benefits transfers. In the mid-1990s, the United States began distributing social benefits through electronic debit cards instead of paper checks which needed to be cashed. As a direct result of

this switch, the overall crime rate dropped by almost 10 percent over the next 20 years (Wright et al., 2014).

Shifting cash payments into accounts can also increase transparency and ensure that people receive wage or government transfer payments in full. Cash is easily pilfered by middlemen, but digital payments curb opportunities for theft by reducing the number of intermediaries between senders and recipients. Digital payments also are easier to track than cash, and when recipients have records of the amount of payments they are entitled to, it is more difficult for middlemen to seek bribes. In Argentina, moving cash payments for a national anti-poverty program into accounts was found to reduce corruption. When the payments were made in cash, 4 percent of recipients reported paying kickbacks to people or organizations that helped enroll them in the program; when the payments were made directly into accounts, that number dropped to just 0.03 percent (Duryea and Schargrotsky, 2008). In India, bribe demands for receiving social security pension payments were cut by 1.8 percentage points (or 47 percent) when the payments were made via smart cards instead of being handed out in cash by government officials (Muralidharan et al., 2014). At the same time, shifting cash payment into accounts can also help governments and businesses reduce the incidence of “ghost” or fake recipients. Payments into accounts generally require more stringent identification documentation, making it harder for ghost recipients to remain undetected. Incidence of ghost recipients fell by 1.1 percentage points when India’s social security pension payments were made digitally via smart cards rather than cash (Muralidharan et al., 2014).

Shifting payments, especially regular bill payments, from cash into accounts can also help people build a payments data history which can then be leveraged for better access to credit. Access to credit often depends on lenders being able to assess the credit risk of potential borrowers based on their credit history. However, many low-income adults lack a documented credit history, which might reduce their ability to secure a loan. Including payment data on regular bill payments such as utility or telephone payments can help adults build credit history and qualify for better loan terms. In the United States, for example, the inclusion of utility and telecom payment data into credit files reduced the share of adults for whom no credit score could be calculated from 12 percent to 2 percent. The greatest benefits accrued to lower-income adults, members of minority communities, young adults, and the elderly (Turner et al., 2012; Turner and

Varghese 2012). And in Kenya, M-Shwari – a combined savings and loan product offered in partnership between CBA, a bank, and Safaricom, the mobile money operator behind M-Pesa – offers small, short-term loans to its customers based on their transaction and payments history with Safaricom and M-Pesa (Cook and McKay, 2015).

Incorporating payments data into credit files not only has benefits for potential borrowers but also helps financial institutions in better being able to assess credit risks and thus minimize their nonperforming loan (NPL) portfolio. Using the payments and transaction history of its customers with Safaricom to assess their credit worthiness and assign individual credit limits, CBA in Kenya was able to significantly reduce NPLs of its M-Shwari portfolio (Cook and McKay, 2015). While a reduction in nonperforming loans can contribute to overall financial sector stability, for most financial institutions loans extended to adults solely based on payments data will likely make up a very small share of their overall loan portfolio.

Finally, moving payments from cash into accounts might be especially valuable for women, who benefit from the greater confidentiality and control such payments offer. This is particularly true for payments women receive either as compensation for work, remittance payments, or government transfer payments. The arrival of a payment into an account is private information, allowing the recipient to at least temporarily conceal the payment from other household members or friends or relatives who may place inappropriate demands on the use of the money. A payment into an account thus gives women more control over their money and assets and makes it harder for family and friends to access these funds.

There is evidence from the earlier mentioned social cash transfer program in Niger, for instance, that the greater privacy and control of mobile transfers, compared to manual cash transfers, shifts intra-household decision making in favor of women who receive the transfers (Aker et al., 2013). And in Kenya, research has shown that the arrival of mobile money transfers has increased women's economic empowerment in rural areas by making it easier for women to request remittances from their husbands who migrated to urban areas for work (Morawczynski and Pickens, 2009). Giving women more control over their money may also have larger societal and development benefits. A large body of research suggests that income in the hands of women,

compared to men, is associated with larger improvements in child health and higher spending on health, housing, and nutritious food (for an overview, see Duflo, 2012).

3.2 Savings Products

People save for future expenses such as large purchases, investments in education or business, old age, and potential emergencies. In 2014, over half (56 percent) of adults around the world reported having saved or set aside money in the past year, including 54 percent of adults in developing economies. Globally in 2014, a quarter of adults—or almost half of savers—reported having saved formally in the past year at a bank or another type of financial institution. In developing economies a common alternative to saving at a financial institution is to save semiformally, by using an informal savings clubs or a person outside the family. One common form of informal savings club is a rotating savings and credit association (ROSCA). These associations generally operate by pooling the weekly deposits of their members and disbursing the entire amount to a different member each week. In 2014, about 10 percent of adults in developing economies reported having saved semiformally in the past year. But the most common form of saving in developing countries (reported by about half of savers) is in some way other than at a financial institution or by using an informal savings club or a person outside the family. This may include saving in cash at home (“under the mattress”) or saving in the form of jewelry, livestock, or real estate.

Saving money at a bank or another type of formal financial institution has many potential benefits over saving cash at home. One advantage of formal savings is safety from theft. Another advantage is that it can curb impulse spending and therefore encourage better cash management. The option to save using an account can also strengthen women’s economic empowerment by offering confidentiality and greater control over their savings by making it harder for family and friends to access these funds.

There is also evidence that savings accounts can help achieve a range of development goals (for an overview see Karlan et al., 2014a). In Kenya, for example, a field experiment showed that market vendors (mostly women) were able to save significantly more when provided with a

savings account and as a result saw increases in private expenditures by 38 percent and business investment by 60 percent compared to a control group (Dupas and Robinson, 2013a). However, the study found no such impact for men working as bicycle taxi drivers. Evidence from Malawi shows that accounts can also increase savings for farmers that translate into increased agricultural output and household expenditures (Brune et al., 2016). In particular, compared to the control group of the study, increases in agricultural investments appear to translate into a 15 percent increase in agricultural output and 11 percent increase in household expenditures. And in Nepal, female household heads provided with savings accounts in a field experiment were better able to cope with income shocks, reallocated their expenditures (more spending on education and food; less on health and dowries), and reported that their overall financial situation improved even though the study could not document statistically significant increases in savings compared to the control group (Prina, 2015). These papers express uncertainty about the exact mechanisms that allow people to save more or better manage their funds with savings accounts. But some speculate that by keeping the money in an account where it might not be immediately accessible, people can better resist impulse spending or demands on their income from family and friends (Dupas and Robinson, 2013a). There is mixed evidence with regard to whether commitment features of savings accounts – which restrict access to funds until a certain date or goal is achieved – are a possible mechanism (Brune et al., 2015, Dupas and Robinson, 2013b, Karlan et al., 2014a).

However, a set of field experiments in Uganda, Malawi and Chile found no evidence that extending access to basic, no-frills bank accounts to the rural poor resulted in overall increases in savings or improvements in developmental outcomes such as consumption, schooling, or health (Dupas et al., 2016). The study speculates that accounts not tailored to specific needs, high transaction costs in using the account, as well as poorer individuals compared to other studies limited the impact of expanding account access.

Using a natural experiment of bank expansion in India, Burgess and Pande (2005) have documented a 2.22 percent decrease in rural poverty for every 1 percentage point increase in the share of savings in bank accounts, although Panagariya (2006) and Kochar (2011) have disputed the findings.

The greater confidentiality and control over savings offered by formal accounts compared to saving at home can be especially important for women. For example, the study in Kenya cited above (Dupas and Robinson, 2013a) shows that having access to a savings account made a difference to women, but not to men.⁵ There is also evidence suggesting that power imbalances and different savings priorities between men and women can depress household savings rates. Therefore, having access to a savings account in her own name can help improve a woman's ability to save, invest in household durables relevant to herself, and empower her in household decision making due to the greater control and restricted access savings accounts offer (Ashraf et al., 2010 and Karlan et al., 2014a).

3.3 Credit

Most people borrow money from time to time. They may want to invest in an education or business, or buy land or a home. People also borrow to cover the cost of unexpected emergency expenses. Globally in 2014, less than half (42 percent) of all adults reported borrowing money in the past 12 months (excluding through the use of credit cards).⁶ In high-income OECD economies a financial institution was the most frequently reported source of new loans. In all other regions family and friends were the most common source of new loans. Overall in developing economies, three times as many adults borrowed from family or friends than borrowed from a financial institution. In several regions more people reported borrowing from a store (using installment credit or buying on credit) than reported borrowing from a financial institution. This practice is particularly common in the Middle East.

⁵ The difference in outcome might be in part attributable to that fact that men and women worked in different sectors.

⁶ Credit cards are a payment instrument. But in addition they serve as a source of short-term credit, especially when credit card holders do not pay off their balance in full each statement cycle. Since credit cards might be used as a substitute for short-term loans used to meet unexpected or end of month expenses, their use might explain the seemingly low reported use of new credit in high-income countries. In 2014, 53 percent of adults in high-income OECD economies reported owning a credit card, as compared to only 10 percent in developing economies. Indeed, if adults who reported having used a credit card in the past 12 months are included with those who originated a new loan from a financial institution, the percentage of adults with a new formal loan in high-income OECD economies would increase by 35 percentage points. In developing economies, the percentage of adults with a new formal loan would increase by 6 percentage points.

Borrowing from a financial institution (when appropriate) has benefits over borrowing from friends, family, or an informal lender. When people can only borrow from family and friends in their community, they are restricted to the funds within their community. Borrowing from a formal financial institution removes that constraint. This might be especially important for low-income households who might not otherwise have access to sufficient funds to invest in education or business opportunities. Moreover, by borrowing from a formal financial institution they might have access to better credit terms than from informal lenders.

However, the evidence from the microfinance literature on the development impact of access to credit is mixed at best. The early enthusiasm about microcredit in the 1990s and early 2000s was fueled by mostly anecdotal evidence and descriptive statistics about dramatic economic and social benefits (Morduch, 1999, Banerjee, 2013 and Banerjee et al. 2015b). More rigorous impact evaluations in recent years have drawn much more modest conclusions.

The earliest attempt to rigorously examine the impact of microcredit is by Pitt and Khandker (1998) who study the impact of microcredit provided by Grameen Bank – one of the pioneering microcredit institutions – and two other microfinance institutions in Bangladesh. Comparing outcomes for those eligible for microcredit and those who are not in villages where the microcredit institutions had newly entered, they found that microcredit increased household consumption expenditures, assets, labor supply and children’s school attendance, especially when microcredit was provided to women. Morduch (1998) questions the empirical strategy of the paper which Pitt (1999) rejects as misplaced criticism in a reply and which has led to a number of follow-up replies from both sides.⁷ Overall, questions about the identification strategy of Pitt and Khandker remain as it is not clear that the microcredit institutions entered villages randomly. Subsequent studies using randomized controlled trials for evaluating the impact of microcredit have drawn more modest conclusions. An introduction to and summary of six prominent randomized evaluations of the impact of microcredit under different models and modalities in Bosnia and Herzegovina (Augsburg et al., 2015), Ethiopia (Tarozzi et al., 2015), India (Banerjee et al., 2015a), Mexico (Angelucci et al., 2015), Mongolia (Attanasio et al., 2015), and Morocco (Crepon et al., 2015) published together in a volume of the *American*

⁷ See Pitt and Khandker (2012), Pitt (2014), Roodman and Morduch (2011) and Roodman and Murdoch (2014).

Economic Journal: Applied Economics finds “modestly positive, but not transformative, effects” of microcredit as a development tool (Banerjee et al., 2015b). While businesses can benefit from these loans, it is less clear that this translates into development impacts such as increased incomes or broader welfare benefits for individuals.

In particular, the study in Bosnia and Herzegovina finds that extending microcredit for entrepreneurial activities to individuals under an individual-lending program who would have otherwise been marginally rejected led to increases in self-employment activity and business ownership at the expense of wage employment. However, the evidence on increased business profits was mixed and there was evidence of reduction in savings and consumption, possibly because the loans were too small to make necessary lumpy business investments. There was no evidence that the program increased overall income. The study in Mongolia extended microcredit to low-income women in rural areas for entrepreneurial activities and randomly introduced either group-lending or individual-lending programs across villages. This allowed the study to test not only whether the introduction of microcredit had an impact compared to the control group that received no credit but also whether the design of the microcredit program mattered. Under the group-lending program, the study documents an increase in business ownership as well as increased food and total consumption by 14 percent and 11 percent, respectively, although there was no evidence of increased income. However, the study finds no significant impact on business creation or consumption under the individual lending program. The authors speculate that group-lending may be more effective in producing poverty impacts because group-lending fosters self-discipline and leads to larger parts of the loan being invested in entrepreneurial activity instead of being used for consumption or transfers for others.

The study in India is the first randomized evaluation of a typical group-lending microcredit program that targets women in a setting where a microfinance institutions opened branches in previously not served neighborhoods of Hyderabad. It evaluates the impact of microcredit after 15 to 18 months (short run) and after three years (longer term) when microcredit also became available in the control areas. The study finds that microcredit did not lead to new entrepreneurial activity although investments in existing business increased and the profitability of these entrepreneurial ventures increased on average in the short term. However, the authors note that this increase was driven by a small number of the most profitable businesses. Overall,

consumption did not increase for those with early access to microcredit in the short term and longer term. However, microcredit shifted the consumption patterns of households: they invested more in durable goods and spent less on so-called temptation goods and festivals. The study finds no significant effect on other developmental outcomes such education, health, or women's empowerment in the short run and in the longer run. Similarly, the study in Mexico uses the expansion of a microcredit provider using group-lending targeted to low-income women entrepreneurs to study the impact of credit and its findings are in line with the results of other studies. Two to three years after the expansion of microcredit, households in the treated areas expanded their business but there are no effects on business entry, exit, or profits. There is no impact on household income and labor supply. There is also no evidence of an impact on most consumption measures although they observe a decline in the consumption of so-called temptation goods and as well a decline in assets which the authors speculate might be related to lumpy business investments that required additional financing beyond the size of the loan. Unlike most of the other studies, the study finds that microcredit has a small but positive impact on some broader social welfare indicators such as increases in female decision-making, happiness and trust in each other and decreases in depression and need for aid.

In Morocco, the expansion of microcredit to previously unserved rural villages resulted in the expansion of existing entrepreneurial activity in agriculture but did not result in new entrepreneurial activity. And while income from entrepreneurial activities increased, that increase appeared to have been offset by losses in income from wage work and the study finds no impact on total household income or consumption two years after the introduction of microcredit.

Evaluating the impact of microcredit at the district level instead of the individual level, the study in Ethiopia found that the introduction of microcredit increased borrowing but resulted in no clear significant improvements in socioeconomic indicators across 40 different outcomes.

While the evidence on the impact of classical microcredit for (implicitly) entrepreneurial activity is mixed, a study documents that expanding access to individual consumer loans in South Africa at high interest rates (200 percent APR) led to a clear increases in income (Karlan and Zinman, 2010). Randomly assigned loans to marginally rejected loan applicants resulted also in increases

for constructed indices capturing consumption, economic self-sufficiency/maintaining employment, and optimism and perception of socioeconomic status although measures of stress and depression increased as well.

There is also evidence on the impact of microcredit using natural experiments on the expansion of credit. Using the natural experiment on bank expansion in India, research has documented a 1.52 percent decrease in rural poverty for every 1 percentage point increase in the share of credit disbursed (Burgess and Pande 2005), although these findings have been contested (Panagariya 2006 and Kochar 2011). Another study uses Thailand's Million Baht Village Fund Program to assess the impact of microcredit (Kaboski and Townsend, 2011 and 2012). As part of the program, every village in Thailand was given 1 million Baht (about \$24,000) to start a village bank that made loans available to villagers. Exploiting the fact that all villages receiving the same amount of money regardless of population size led to large variation in how much credit availability increased across villages, the study found that income and consumption increased and assets decreased initially, but then return to trend within a couple of years. Given the initial increase in income and consumption, the study surprisingly found no effect on new business creation.

3.4 Insurance

Insurance products can be a critical tool in managing financial risks related to large, unexpected expenses such as those stemming from sudden illness, crop failures, natural disasters, or income loss due to the death of a wage earner (for an overview see Karlan and Morduch, 2010).⁸ While many people use savings and credit to manage financial risks and may informally share risks within their family or community, formal insurance offers additional benefits. Formal insurance products can pool risk over a much larger population, which affords households broader coverage than they would have if they relied on their own savings, credit, or community. This is especially true for adults in low-income households with limited assets. Moreover, formal insurance products can provide protection from common risks faced by individuals in the same

⁸ Unfortunately, the 2014 Global Findex database does not collect data on the use of insurance and, to the best of our knowledge, no similar data exists for the use of insurance.

community, like extreme weather. Because such risks affect individuals in a community at the same time, informal community mechanisms are often insufficient. In anticipation of potentially significant income shocks and the absence of insurance, individuals might thus adopt a low risk, low return technologies over high risk, high return technologies (Rosenzweig and Binswanger, 1993; Dercon et al., 2011).

The empirical evidence documents that individuals indeed adopt higher risk, higher return technology if provided access to formal agricultural insurance. However, studies typically do not assess the welfare implications of the adoption of higher return technology. A randomized controlled trial studying the demand for and effect of offering index-based rainfall insurance in the presence of informal risk sharing in India finds that insurance increased the cultivation of riskier rice varieties (Mobarak and Rosenzweig, 2012). Similarly, research using randomized controlled trials on weather-based index insurance in India (Cole et al., 2013) and Ghana (Karlan et al., 2014b) shows that it encourages farmers to move from low return, low risk crops to high return, high risk crops. In India, farmers who received free insurance against rainfall risk significantly increased production of cash crops which have higher expected returns but are more sensitive to rainfall. In Ghana, farmers who received free insurance invested more in cultivation and also shifted their mix of crops to riskier, more rain sensitive crops. Insured farmers had higher total revenue and liquid post-harvest assets. In terms of welfare outcomes, the households of insured farmers were 8 percentage points less likely to report missed meals but the study found no significant impact on select expenditures in other categories. There is also evidence from field experiments in China that promotion of sow insurance increases investment in sows (Cai et al., 2015) and weather insurance against yield losses increases tobacco production (Cai, 2016).

4. Challenges to achieving greater financial inclusion and directions for future research

Evidence shows that financial inclusion allows people to make many everyday financial transactions more efficiently and safely and expand their investment and financial risk management options by using the formal financial system. This is especially relevant for people living in the poorest 40 percent of households. Yet not all financial products are equally effective

in reaching development goals, such as reductions in poverty and inequality. Current evidence suggests that the biggest impacts come from savings accounts – provided that they are inexpensive and serve a specific purpose – and digital payments. Research on microcredit’s impact is mixed and shows modest, if any, effects. Some studies show that people with insurance invest in riskier, higher return technologies, though little is known about its impact on welfare measures.

The literature on measuring the impact of financial inclusion has been rapidly growing in the past couple of years. But research on the impact of the different dimensions of financial inclusion on economic development is still in many ways at its beginning. Especially when it comes to payments, savings, and insurance few studies exist at the moment and more needs to be better understood.

Experimental field experiments (randomized control trials) suffer from uncertainty about whether positive findings are applicable to other countries and groups of people. For example, would a savings product that benefitted market women in Kenya be helpful for a male farmer in Brazil? Replicating successful interventions in different settings will address such questions and clarify the circumstances under which financial inclusion improves livelihoods. Similarly, more research is needed to understand why financial inclusion may have a beneficial impact in some circumstances but not others. For example, the existing evidence suggests that product design, including pricing, might have a significant effect on demand and development outcomes for financial inclusion.

To fully realize the benefits of financial inclusion then, financial products first and foremost need to be tailored to the needs of people to be relevant and make a difference in their financial lives. This also includes consumer education and protection to build and ensure trust in the formal financial system. On a more fundamental level, realizing the benefits of financial inclusion depends on an adequate financial infrastructure and a regulatory environment that is conducive to innovation, making small financial transactions economically viable and ensuring a safe, stable, and reliable financial system.⁹ And it also relies on a financial infrastructure that is complemented by an enabling general infrastructure, including an ID system and reliable ICT

⁹ For an overview, see BIS and World Bank, 2016.

connectivity throughout the country to ensure that financial services can reliably reach beyond urban centers.

Advances in technology have made it possible to deliver financial services in new ways and will continue to change how financial services will be delivered. As financial services change, so might their potential link to economic development. In addition to deepening the research agenda on the impact of financial inclusion on household income and vulnerability, another important dimension will be linking the micro-level evidence of the benefits of financial inclusion to macro-level goals, such as economic growth and a fall in inequality.

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