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Financial Inclusion: What Have We Learned So Far? What Do We Have to Learn?

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Prepared by Adolfo Barajas, Thorsten Beck, Mohamed Belhaj, and Sami Ben Naceur[1]

Authorized for distribution by Valerie Cerra and Mahvash Saeed Qureshi

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Abstract

The past two decades have seen a rapid increase in interest in financial inclusion, both from policymakers and researchers. This paper surveys the main findings from the literature, documenting the trends over time and gaps that have arisen across regions, income levels, and gender, among others. It points out that structural, as well as policy-related, factors, such as encouraging banking competition or channeling government payments through bank accounts, play an important role, and describes the potential macro and microeconomic benefits that can be derived from greater financial inclusion. It argues that policy should aim to identify and reduce frictions holding back financial inclusion, rather than targeting specific levels of inclusion. Finally, it suggests areas for future research.

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Authors' E-Mail Addresses: ABarajas@imf.org, Thorsten.Beck.1@city.ac.uk, MBelhaj@imf.org, SBenNaceur@imf.org

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I. INTRODUCTION

Financial inclusion has received increasing attention from both researchers and policymakers in the past two decades as a potential source of benefits to the economy. On the research side, study of financial inclusion is partly a logical next step from the literature originating in the early 1990s, which uncovered positive micro and macroeconomic impacts from more efficient financial service provision in general.[2] For example, the broad process of *financial development* has been shown to promote economic growth at the national, industry, and firm levels, as well as to enhance productivity growth and capital accumulation. It has also been shown to reduce income inequality and is strongly associated with poverty alleviation. As this chapter will discuss, financial inclusion can be thought of as an aspect of financial development, and therefore potentially is associated with many of the benefits that are derived from this process.

As a result, policymakers have taken notice and action as well. According to the World Bank's 2014 Global Financial Development Report, about 50 countries had adopted explicit policies to boost financial inclusion. In its analysis of policy frameworks in 55 emerging market economies, the Economist Intelligence Unit's Global Microscope reported that about two-thirds of these countries had explicit national financial inclusion strategies in 2014. By 2019, all but one of the analyzed countries had them.

The purpose of this paper is to give an overview of the trends and drivers of financial inclusion that incorporates the main findings from the research conducted to date, including the key insights that can be of use to policymakers seeking to design strategies that will help to promote financial inclusion to its greatest advantage for the economy. Section II provides a working definition of financial inclusion that has proved useful for empirical work, takes stock of orders of magnitude and recent trends in the data, and introduces concepts that help to ascertain when there is an economically meaningful gap in financial inclusion. Section III reviews the main findings of theoretical and empirical research on the impacts of financial inclusion. Sections IV and V zero in on two major areas in which financial inclusion is of particular relevance: households' access and use of financial services, and the financing of micro, small, and medium-sized enterprises (MSMEs). Section VI concludes and identifies directions for future research.

II. WHAT IS FINANCIAL INCLUSION?

There are many possible ways in which financial inclusion has been defined, each of which touches to some degree on one of several aspects: access of the population to financial services, the degree of use of these services, and their quality and cost. When searching for a workable definition that can be measured relatively consistently in a broad group of countries, the World Bank's 2014 Global Financial Development Report opted for the following: the proportion of individuals and firms that *use* financial services. Of course, the different aspects are interrelated. For example, banking services will be used more extensively by the population the greater the ease of access—availability of ATMs or branches—the lower the cost, and the greater the quality of services. Consequently, measures

[2] See for example, Levine (2005); Beck, Demirgüç-Kunt, and Levine (2007), and Beck Levine and Loayza, (2000).

of use are likely to reflect access, cost and quality, and vice versa. To the extent that more detailed data on specific aspects of financial inclusion are available either within or across countries, the definition can be broadened to incorporate access, quality, and cost dimensions as well.

A. Signs of Improvement, with Some Recent Challenges

By most measures, financial inclusion has increased during the past decade. One prominent data source for measuring financial inclusion is the World Bank's Global Findex, a survey of about 150,000 households across 140 countries, covering account holdings, credit and savings activities, and whether wages or government transfers are paid directly into accounts. The Findex survey was first conducted in 2011, and has been conducted every three years since. One of its most often cited indicators, the percentage of adult population holding a bank account,[3] has experienced an impressive increase from a worldwide average of 51 percent in 2011 to 69 percent in 2017, its most recent observation (Figure 1).[4] However, this still leaves an estimated 1.7 billion adults worldwide without an account, in other words, *unbanked*. Also, borrowing activities by households from formal financial institutions have not matched the same pace of inclusion, registering a much milder increase, from 9 to 11 percent if credit card use is excluded, and from 22 to 23 percent if it is included.

The data reveal other salient features, among them, sizable differences across regions and income levels. First, a key component of the increase in financial inclusion has been the result of a fintech innovation, the adoption of mobile money accounts, mostly in Sub-Saharan Africa, and to a lesser degree in South Asia. In Sub-Saharan Africa, over one-fifth of the adult population now uses mobile money accounts, compared to 4 percent worldwide. While one might expect a strong negative correlation between the proliferation of mobile money and the use of conventional bank accounts, as the former substitutes for the latter, Figure 2 shows that this is generally not the case. Kenya, the country with the highest mobile money penetration, at 73 percent, does contrast visibly with Singapore, a country with much greater account holding and only 10 percent of adults with mobile money accounts. However, Namibia also has high mobile money penetration (43 percent) together with above-average account holding, while Chad has little presence of either. Finally, a large number of countries with widely varying levels of account holding have very little presence of mobile money.[5]

Second, as one might expect, levels of both account holding and borrowing are markedly higher in richer countries. For example, on average, account holding exceeds 90 percent in high income countries, compared to 70 percent in the emerging and developing regions with the highest levels, East Asia and Pacific and South Asia. Differences in the use of bank borrowing are even more pronounced; 55 percent in high income countries compared to 24 percent in Europe and central Asia. Finally, it is notable that, across all regions and income levels, borrowing activity is much less widespread than account holding; even in rich

[3] Account holding refers specifically to whether the respondents reported having an account (by themselves or together with someone else) at a bank or another type of financial institution or report personally using a mobile money service in the past twelve months.
[4] Similar upward trends can be observed in financial inclusion indicators for firms (from the World Bank Enterprise Surveys) and from the percentage of the adult population who are depositors or borrowers from banking institutions (from the IMF Financial Access Survey).
[5] Based on supplier-side data from the IMF's Financial Access Survey, Espinosa-Vega and others (2020) find that mobile money penetration is negatively correlated with measures of access to traditional banking services, such as the number of ATMs per 100,000 adults. They also find a positive correlation with a broad index of enabling regulatory environment for mobile money.

countries, an adult is over four times as likely to have an account than to borrow from a formal financial institution.

This brief look at the Global Findex data reveals different dimensions of the use of financial services by households: account holding, borrowing, and mobile money. This paper will also review other data sources related to firms' use of financial services, as well indicators of access. It is important to note that, at this point, the different dimensions are not being compared against each other, for example, by judging whether borrowing or account holding matters more for assessing overall financial inclusion. As the paper will show, much of the empirical literature examining the determinants or impacts of financial inclusion takes this approach, by focusing on individual dimensions and in a microeconomic setting.

However, other studies have taken multi-dimensional approach, creating composite indicators of financial inclusion from different sources and weighing each dimension by its statistical contribution to the total variation of the composite. The first to take this approach was Svirydzenka (2016), who used a principal components methodology to construct a composite indicator of financial development (*FD*), a sub-component of which was itself a composite indicator of financial access (*FA*), combining aspects of household and firm access to services provided by financial institutions (*FIA*) and markets (*FMA*). Blancher and others (2019) used a similar procedure to construct a composite measure for small and medium SMEs, and Loukoianova and Yang (2018) constructed composite indices based on individual indicators from the IMF's Financial Access Survey of financial institutions (FAS). Sahay and others (2020) constructed indices of access to and usage of digital as well as traditional financial inclusion. All of these studies have used their measures in regressions aimed at assessing the macroeconomic impact of financial inclusion.

Recent developments surrounding the COVID-19 crisis present challenges, but also opportunities for financial inclusion going forward. First, the severe setbacks suffered by the real economy, both directly from the virus and as a result of the lockdowns and social distancing measures introduced, have weakened a wide spectrum of borrowers' ability to repay and, consequently pose challenges for the survival of many financial institutions. There are indications that these pressures have been particularly great for non-bank institutions such as microfinance lenders, who have experienced recent collapses in repayment rates,[6] thus generating great uncertainty about their viability going forward. This has the potential to leave a large number of SMEs without access to finance. Fintech startups have been similarly affected, with venture capital and investors forced to withdraw funding.[7] On the positive side,
the need for rapid deployment of government transfers to households and firms has made more urgent the transition away from cash and into bank accounts and digital payments. As cash transactions can be a medium of transmission of COVID-19, there are also indications that individuals are accelerating their shift away from cash transactions, with potential benefits for financial inclusion down the road. The recent expansion of mobile money

[6] See, for example, https://www.economist.com/finance-and-economics/2020/05/05/for-microfinance-lenders-covid-19-is-an-existential-threat.
[7] Zachariadis, Ozcan, and Dinckol (2020).

accounts in many developing countries allows for easier risk sharing among families and friends,[8] and an easier push-out of government support programs through mobile money networks, as the example of Togo has shown.[9]

B. Structural Conditions and the Financial Possibilities Frontier

To some extent, the differences observed across countries, regions, and income levels are due to structural conditions in the economy. If one considers that extending financial services to a wide swath of the population entails certain costs, and that these costs are likely to exhibit economies of scale, then it stands to reason that financial inclusion will be naturally higher in countries in which structural conditions are such that the per-person costs of providing financial services are lower.

One major structural condition is the income level; banks and other financial institutions will find it more cost-effective to provide services to higher-income potential customers, and therefore higher-income countries should be expected to have higher levels of financial inclusion, as reflected in the income group comparisons in Figure 1. More broadly, there is a positive association[10] between a country's income per capita and different measures of financial inclusion, as illustrated in Figure 3, which shows a selection of financial inclusion indicators, from three sources. The first, of account holding and borrowing by individuals, obtained from the Global Findex database and reported in Figure 1, has the highest correlation with income per capita, with a coefficient of over 0.70. The second type of indicator is focused on firms and is obtained from the World Bank's Enterprise Surveys (WBES). Two indicators are shown: the percentage of firms that reported using bank credit and the percentage not identifying lack of finance as a major obstacle to their business. The third type of indicator involves supply-side information from the IMF's Financial Access Survey (FAS), which collects data on access to and use of financial services across the globe.[11] The number of borrowers per 1,000 adults, and the extension of financial infrastructure—branches and ATMs—to the population, both of which are also shown to be positively correlated with income.

In addition to the level of income, other structural conditions would include the size of the population and its density, as well as demographic factors, such as young and old age dependency ratios, all of which are likely to influence the cost effectiveness of providing financial services to the population.

[8] Section II.F reviews evidence of how mobile money can enhance risk sharing.
[9] See https://novissi.gouv.tg/en/home-new-en/
[10] It should be mentioned that the relationship between financial inclusion and income is likely to contain causality in both directions. Just as in the finance-growth literature surveyed by Levine (2005), care should be taken to account for reverse causality when estimating regressions that are meant to capture causal relationships.
[11] Espinosa-Vega and others (2020) provide a ten-year retrospective of the FAS. They show trends in the data, documenting how financial inclusion has expanded over the past decade in different regions, and by different modalities (for example, bank branches vs mobile and internet banking) and income levels, as well as identifying major gaps that persist, for example, between income level, size of firms, or by gender.

The relationship between structural conditions of an economy and its level of financial inclusion can be represented graphically, as in Figure 4.[12] A country's structural conditions are shown along the horizontal axis, the more conducive to financial inclusion, the further to the right. For example, a relatively rich country with a large and densely distributed population, Country *A*, is compared to a poor country with a small and disperse population, Country *B*. Thus, the structural conditions in *A* are more conducive to financial inclusion than in *B* ($SC_A > SC_B$), and therefore *B* would be expected to have greater financial inclusion. This is represented by the *structural benchmark* (*SB*) line, showing the expected levels of financial inclusion for each level of structural conditions. A country's actual level of financial inclusion can differ from its structural benchmark due to non-structural factors, such as its policies. For example, *A* lies under the *SB* line, therefore it underperforms its structural benchmark (it has a positive financial inclusion gap), possibly as a result of policies have hindered or failed to facilitate financial inclusion—say, an excessive reliance on state-owned banks, or an inability to provide macroeconomic stability[13]— relative to other countries with similar structural characteristics. On the other hand, *B* overperforms its benchmark (negative gap), possibly due to successful pro-financial inclusion policies, such as facilitating greater banking competition or reducing barriers for individuals to open accounts.

An optimal level of financial inclusion would be obtained when polices succeed in extending financial services to a broad segment of the population, and have done so in an efficient and sustainable manner. This level is given by the second line, the *Financial Possibilities Frontier* (FPF). Thus, *B* still has room to improve its policies to reach the *FPF*. Finally, there may also be a situation in which financial inclusion becomes excessive.[14] A third country, *C*, may have experienced an expansion in financial inclusion beyond the frontier, but this level is neither desirable nor sustainable in the long run. Episodes such as the U.S. subprime crisis come to mind, where mortgages were extended to an ever-wider pool of borrowers that became increasingly risky, with little capacity to repay. Thus, one could say that financial inclusion in the U.S. mortgage market had become excessive prior to the crisis.[15]

Note that innovation can reduce the costs of providing financial services, effectively shifting upward the *SB* line, and potentially the *FPF* as well. The rapid proliferation of mobile money in some countries is evidence of this. Figure 5 shows two measures of account holding by individuals in 2017, one excluding mobile money and one including it, and plots them against the country's GDP per capita. Both indicators display the expected positive relationship with GDP per capita, but once mobile money is included, the position of some countries changes markedly. While high-income countries are relatively unaffected, as they approach universality in account holding, several low-income countries where mobile money has taken hold—a selection of which is displayed as red points in the figure—shift upward

[12] Adapted from Barajas, Beck, Dabla-Norris, and Yousefi (2013). Note that a similar analysis can be carried out for other dimensions of financial development, such as financial depth. Many of the ideas underlying this analysis were also discussed in Beck and de la Torre (2007).

[13] Sections IV and V review the lessons drawn from the empirical literature assessing which policies are associated with greater financial inclusion of households and small and medium-sized enterprises.

[14] The concept of excessive financial inclusion is related to the "too much finance" phenomenon, which has been applied to aggregate private sector credit extended by the banking system. Arcand, Berkes and Panizza (2015) show that, beyond a certain level, this credit ceases to have a positive impact on economic growth, and may even become detrimental.

[15] The graphical representation of Figure 4 is highly stylized; the relationship between structural conditions and financial inclusion, as well as the FPF, need not be linear, and the position of both lines would necessarily shift according to the indicator being represented. For example, the degree of account holding will tend to approach universality as structural conditions become more conducive to inclusion, whereas both lines will be well below 100 percent in the case of use of bank credit.

noticeably. For example, after including mobile money, Uganda and Zimbabwe exhibit levels of account holding markedly greater than the level predicted by their income, and Kenya, at over 80 percent, approaches the level of countries with many times its income per capita.

Using the World Bank's Finstats platform, observed levels of a wide range of indicators of financial development can be compared easily to benchmarks based on structural characteristics. As described in detail in Feyen, Kibuuka, and Sourrouille (2019), the benchmarking exercise consists of two steps. First, quantile regressions are run for each of 46 indicators of financial depth, inclusion, or performance on a set of structural explanatory variables reflecting income level, demographics, and special circumstances.[16] Then the predicted median from this regression provides the structural benchmark against which the indicator in a given country at a given time can be compared. If the observed value of the indicator is above (below) the structural benchmark, one can say that the country is overperforming (underperforming) relative to what is typical for countries of similar structural conditions.[17]

Figure 6 illustrates the comparison for two emerging economies (India and Colombia) and two indicators, the percentage of account holding and the percentage of firms with a loan or line of credit with a formal financial institution. India, as a result of a massive government effort in recent years, managed to increase the percentage of account holders from 35 to 80 percent between 2011 and 2017, well surpassing its structural benchmark of 40 percent. However, firms' use of bank credit, at 21 percent in 2014, is well below the 35 percent level predicted by India's structural conditions. Colombia presents a contrasting case, with account holding underperforming its structural benchmark in 2017 while credit to firms appears to overperform.[18]

C. How to Interpret "Gaps" in Financial Inclusion

So far, the discussion has been entirely descriptive; the paper has shown that, across several measures, countries can differ quite dramatically in their levels of financial inclusion, and that such differences are due in part to structural differences that may facilitate or hinder financial inclusion. Data on financial inclusion reveals various gaps: for example, between rich and poor countries, between partial and universal inclusion (particularly in the case of account holding), and between the observed levels and the structural benchmarks for a given country at a specific time. How should one interpret these gaps? Does the existence of a gap necessarily signal that there is a shortfall or deficiency that policymakers must aim to close? In other words, is more financial inclusion necessarily better? The simple answer is no, more financial inclusion is not necessarily better, and not all gaps need to be eliminated. In terms

[16] The full set of structural variables includes economic development (GDP per capita and its square); population factors (total population and its density); demographic factors (young and old age dependency ratios); "special circumstances" (dummies for oil exporters, offshore financial centers, transition countries, and landlocked countries); and the global cycle (time fixed effects).

[17] The Finstats database created by Feyen, Kibuuka, and Sourrouille (2019) provides observed values as well as estimated structural benchmarks for the 46 indicators. Using the Finstats Dashboard, graphical comparisons between observed levels and benchmarks, such as those shown in Figure 5, can be generated very easily.

[18] Note that, although the structural benchmarking regressions control for the global cycle, an individual country may seem to over- or underperform due to its own cyclical factors.

of the FPF framework, there are strong reasons why the level of financial inclusion of a Country C may be excessive or not desirable from a macroeconomic point of view. These reasons are discussed below.

First, not all firms and households need all financial services. Consider that the Global Findex reveals that some financial exclusion is voluntary, that is, some individuals choose not to use financial services. For example, in Lithuania, a high-income country with a relatively high level of financial inclusion, while 83 percent of adults reported having a bank account in 2017, 8 percent stated that they did not have a bank account because they had access through another family member, and another 3 percent felt they had no need for financial services. An additional 1 percent cited religious reasons, a response that tends to be particularly high in countries with large Islamic populations.[19] Regarding Lithuanian firms, in the Enterprise Survey in 2013 about 33 reported having a bank loan or line of credit—very close to the global average—while 54 percent responded that they had not applied for bank credit because they had no need for it.[20] There may be a case for policy to affect voluntary exclusion, for example by encouraging financial education so that individuals may better understand the potential benefits of using financial services, or by providing financial services that are more compatible with individuals' religious beliefs. But there is an open question as to the cost effectiveness of these types of policies,[21] and it may be true that some individuals or firms simply do not need financial services.

As for involuntary exclusion, there is a strong case against policymakers attempting to drive it to zero in all cases, for two main reasons: risks and costs. In the credit market, some borrowers may be too risky. As this market is characterized by having *information asymmetries*—lenders (banks) do not have perfect information on potential borrowers' riskiness—a situation emerges which was first described by Stiglitz and Weiss (1981). Banks will voluntarily choose to limit the interest rate charged on loans and ration borrowers out of the market, even some who would be willing to pay a higher rate. As a result of *adverse selection*, the lender knows that increasing the lending rate will only increase the riskiness of borrowers, thereby reducing her profits from lending. Thus, there will be an optimal maximum interest rate at which she will be willing to lend, even if it leaves some demand unsatisfied. A key point is that this an equilibrium or rational outcome arising from the conditions that lenders face. Thus, lack of inclusion in this case does not necessarily warrant a policy action to close the gap. In fact, it would be detrimental to society to include borrowers that are too risky.

Costs are also relevant. Related to the discussion of the financial possibilities frontier, some individuals or firms might be excluded due to the high costs of providing services to them. Focusing on the credit market, if transaction costs are large, lenders would need to charge a higher rate to cover them, and the quantity of credit in the economy would be small, as there

[19] For example, religious reasons were cited as the reason for not having in account in 12 percent of respondents in West Bank and Gaza, Pakistan, and Tajikistan, 10 percent in the Philippines and Tunisia, and 7 percent in Turkey.
[20] One possible reason for the reported lack of need for domestic bank loans in Lithuania is the direct support offered by the EU to SMEs through the Lithuanian Operational Program.
[21] Section IV discusses financial education and capability in greater detail. Fernandes and others (2014) and Miller and others (2014) conduct meta analyses of studies of financial education programs and find that there is limited effectiveness in changing financial behaviors of individuals, for example, the likelihood of saving or planning for retirement. Note that these studies generally do not address cost considerations.

would be fewer potential borrowers with projects whose return is high enough. Furthermore, also excluded are individuals with demand for very small loans, since providing these loans has an important fixed cost component. Inclusion will then have spatial or geographic characteristics driven by costs, as some remote areas will not have a branch, for example, because the fixed cost cannot be covered by the low demand. That said, innovation can change the landscape of financial inclusion dramatically by reducing the fixed costs needed to provide some financial services. The examples cited of low-income countries recently boosting account holding through mobile money reflect this fact quite clearly, and it is becoming clear that some financial services, such as basic transactions and payments, can approach universality without undue costs or risks.

The structural benchmark-FPF framework can serve as a useful guide to policymakers to assess a country's financial inclusion, providing a first pass comparison with peer countries. Evidence of underperformance with respect to the structural benchmark would suggest exploring the types of policies that have been successful in the overperforming peer countries. For example, Indian firms' use of credit—21 percent compared with the structural benchmark of 35 percent— should suggest an examination of policies in the peer countries. However, beyond the structural benchmark, the exact optimal level of financial inclusion—the FPF—is not known in practice. Therefore, while 35 percent could serve as an initial target, it is much more challenging to determine an optimal or appropriate long-term target.

One major takeaway from the theoretical and empirical literature is that, rather than to target financial inclusion directly, policy should therefore focus its attention on involuntary exclusion driven primarily by *frictions* in the markets, and should aim to enact policies that reduce these frictions. One such friction is imperfect or incomplete information, as highlighted in the credit market example above. To the extent that it is both possible and cost-effective, a policy that helps to improve information on prospective borrowers—setting up a credit registry, for example—can help expand access to credit safely. Other common frictions include weak contract enforcement and property rights, and lack of competition. De la Torre, Gozzi, and Schmukler (2017) offer a useful criterion for assessing whether lack of access to finance constitutes an economically meaningful problem: "…when an investment project that would be internally financed by the agent (that is, the firm or an individual) if she had the required resources does not get external funding…" In other words, as a result of credit market frictions, a wedge arises between the return required by the lender (external) and that required internally by the borrower, potentially excluding otherwise worthy borrowers.

Relatedly, one recent study by Claessens and Rojas-Suárez (2020) offers another useful framework for diagnosing financial inclusion problems and then focusing on policy action. Focusing on digital financial services, it proposes a "decision tree" approach that uses country-specific information as well as cross-country benchmarks of indicators to determine which constraints are likely to be most binding for a particular country and, consequently, where policy should direct its interventions.

III. WHY DOES FINANCIAL INCLUSION MATTER?

Implicit in the discussion up to now is that financial inclusion matters, that is, that it has a

potentially beneficial impact on the economy. However, determining what happens in the economy when more individuals and firms have access to and use financial services is not trivial, and much research activity has been directed at answering this question, both in theoretical and empirical work, and both at the micro and macroeconomic levels. This section will take stock of the main findings to date, focusing on a selection of studies that provide a useful overview of the main effects of financial inclusion on economic outcomes, and critically, the channels through which these effects come about.

A. Financial Inclusion as a Dimension of Broad Financial Development

Critical to understanding why and how financial inclusion matters is to recognize that finance, or financial development, matters. As reviewed by Levine (2005), finance has a positive impact on the economy through the critical functions it undertakes: (i) to produce information; (ii) allocate capital to productive uses; (iii) monitor investments and exert corporate control; (iv) mobilize and pool savings; (v) facilitate trading, diversification, and management of risk; and (vi) ease exchange of goods and services. Note that these functions can be carried out not only by banks and other financial institutions, but also by financial markets, such as those for bonds or equity. Theoretical research has uncovered linkages between these functions and a variety of positive economic outcomes, such as higher economic growth and productivity. Thus, one can define a country's level of financial development as the extent to which the functions above are being carried out.

Empirical research has sought to provide evidence of these positive linkages, and therefore has relied on indicators that measure, at least approximately, the level of financial development. Until recently, the types of indicators used by this research have reflected mostly the size or scale of financial activity: for banking, the ratio of credit to the private sector to GDP, and for markets, the ratio of stock market capitalization or volume of transactions per year to GDP. These measures are termed indicators of *financial depth*, and are certainly related to financial development. For example, a country in which private credit and/or the volume of stock market transactions is very small clearly cannot be mobilizing a significant amount of savings, nor allocating capital, producing information about borrowers or issuers, or offering risk management tools for firms and individuals. Indeed, Levine (2005), and more recently, Popov (2018), review evidence from cross-country panel regressions showing that both financial depth measures are positively and significantly related to higher rates of long run economic growth, capital accumulation, and productivity, and that these relationships are likely to be causal, that greater depth leads to these better outcomes. However, more recent research has uncovered evidence supporting a "too much finance" hypothesis, whereby the relationship between growth and financial depth tends to be hump-shaped rather than unambiguously increasing, and thus weakens at very high levels of financial depth.[22]

Work by Rajan and Zingales (1998) takes the finance-growth analysis one step further, to

[22] Arcand, Berkes, and Panizza (2015) find that the positive link between depth in banking and growth is not unlimited, and at sufficiently high levels of depth—private credit to GDP exceeding 100 percent—the growth benefits begin to wane and may even become negative. Relatedly, Cecchetti and Kharroubi (2015) show that rapid growth of the banking sector can also have a negative impact on productivity. Rousseau and Wachtel (2017) show that the incidence of financial crises weakens the finance growth relationship as well.

investigate a possible channel through which finance affects growth. They find that greater financial depth allows a country to ease the financing constraints of those sectors that naturally depend more heavily on external financing as opposed to their own funds. Therefore, through this mechanism the financially dependent sectors may grow faster in countries with greater financial activity. Furthermore, Beck, Demirgüç-Kunt, and Levine (2007) present evidence that financial depth is also associated with other beneficial outcomes: lower income inequality and a smaller percentage of the population living in poverty, and Zhang and Ben Naceur (2019) confirm these positive outcomes from improvements in several indicators in addition to depth measures: greater stock market turnover, lower interest margins, and higher regulatory capital ratios of banks, although they also find that financial liberalization may have adverse effects on income equality and poverty.

Financial inclusion constitutes an additional *dimension* of financial development. Financial depth indicators, such as private credit to GDP, are imperfect and incomplete proxies for financial development. It is possible for two countries to have identical levels of banking depth, but with one country allocating the same volume of credit to a handful of large, protected firms, while a second one distributes the funds more broadly across a wide range of firms and individuals. The critical financial functions—allocating capital, producing information, exerting corporate control—may be carried out more effectively in the second country. So greater financial inclusion is related to greater financial development, controlling for the level of financial depth, and may provide additional benefits.

Of course, financial inclusion should be associated to some degree with financial depth; generally, if a country mobilizes a large amount of funds, it is more likely to provide services to a large percentage of individuals and firms. However, this correlation is not perfect, as Figure 7 shows. Three financial inclusion measures are displayed together with the ratio of credit by banks and other financial institutions to GDP: the percentage of individuals with bank loans, the percentage of firms with a bank loan or line of credit, and the coverage of ATMs throughout the population. Several pairs of countries are highlighted in red to show that, although financial inclusion does tend to be greater in countries with greater banking depth, countries with similar depth can diverge quite dramatically in terms of financial inclusion. For example, in Bosnia and Herzegovina and Israel, banks and other financial institutions provide credit equal to about sixty percent of GDP, yet in Israel in 2017 an individual was more than three times as likely to borrow from a formal financial institution than in Bosnia and Herzegovina. This suggests that financial development is more advanced in Israel than in Bosnia and Herzegovina, and that financial depth alone might be understating the possible benefits accruing from financial activity in Israel. One can also make similar comparisons between pairs of countries sharing the same level of depth but differing quite strikingly in the use of credit by firms, or in the availability of ATMs, as Figure 6 shows.

B. Some Suggestive Results for Financial Inclusion at the Macro Level

Viewed as a dimension of financial development, or as an additional piece of information useful in assessing a country's level of financial development, it follows that financial inclusion should have a measurable impact on macroeconomic outcomes such as long-term

growth, enhancing income equality, or reducing poverty. A small but growing literature examines the possible empirical links between financial inclusion and these outcomes, analogous to the previous body of work focusing on the macroeconomic implications of financial depth.

Regarding the link with economic growth, the logical step would be to re-estimate the standard growth regressions using financial inclusion indicators in place of, or in addition to, financial depth measures. However, a main obstacle has been the lack of time observations; at most, the IMF FAS offers annual observations since 2004, the Findex has only three observations per country over 2011-2017, and the WBES also offer limited time observations which, in addition, are non-synchronous from country to country.

Facing these limitations, Sahay and others (2015) use several FAS indicators as well as the Svirydzenka (2016) composite indicators and interact them with the private sector credit-GDP ratio. Their results suggest that financial inclusion does have a measurable impact on 10-year growth, above and beyond that of financial depth.[23] As Figure 8 illustrates, the impact of depth on growth increases with the level of financial inclusion, measured by ATM coverage or the percentage of firms not considering lack of finance to be a significant obstacle. That is, Israel would be expected to derive greater growth benefits from finance than Bosnia and Herzegovina. The findings are also consistent with a "too much finance" hypothesis, with the growth impact weakening with increases in both financial inclusion and depth. Given the limited time series, however, this result is more suggestive than definitive in uncovering a financial inclusion-long run growth nexus.

Turning to broader issues of economic inclusion, Cihák and others (2020) also obtain encouraging results linking financial inclusion to lower inequality, based on panel regressions for 105 countries over the 2004-15 period. Payments services, as approximated by ATM coverage, are found to be associated with lower inequality, as measured by the GINI coefficient. Furthermore, this relationship is significantly stronger when economic growth is faster, when the financial system is more stable, and when financial depth is lower. For credit—the share of borrowers in the population—the differences in the negative financial inclusion-inequality relationship are even more stark; while at low levels of depth this relationship is relatively strong, it weakens at progressively higher levels of depth, and eventually reverts, meaning that at high levels of depth an expansion in use of credit can *increase* inequality. Using composite measures, Loukoianova and Yang (2018) also find beneficial effects of financial inclusion, reducing inequality and poverty in addition to increasing economic growth.

C. Possible Tradeoffs between Financial Inclusion and Financial Stability

Finally, there has been empirical work exploring the relationship between financial inclusion and financial stability. This is motivated partly by the "too much finance" hypothesis, which argues that one reason why the finance-growth relationship exhibits the hump shape is because very large financial systems tend to become more prone to instability and crises. It is also related to work by Schularick and Taylor (2012) and others who find that rapid

[23] Sahay and others (2020) find similar beneficial effects on economic growth for adoption of digital payments.

expansions in credit are often precursors to financial crises. Given that one sees a similar weakening relationship between financial inclusion and growth as inclusion increases, the question then is whether there is a tradeoff between financial inclusion and financial stability.

On the positive side, Han and Melecky (2013) find a stabilizing effect of greater inclusion in bank deposits; countries in which a larger share of the population had access to deposits prior to the 2008 global financial crisis suffered significantly smaller withdrawals when the crisis hit. Mehrotra and Yetman (2015) show that consumption volatility tends to be lower in countries where there is a larger percentage of adults that have accounts and save in formal financial institutions.

Other studies have found more mixed results. In a panel data setting including a sample of 150 countries, Cihak, Mare, and Melecky (2016) examine the inclusion-stability relationship more broadly, using measures of account ownership, payments, savings, credit, and insurance services, which they then relate to different indicators of financial stability. They find that the relationship is complex, with instances of tradeoffs between the two—in particular, with regard to expansions in credit access—but also instances of synergies between some aspects of financial inclusion and stability, primarily during non-crisis times. They also find that the relationship is also affected by country characteristics, such as financial openness, tax rates, education, and credit information depth. Sahay and others (2015) and Cihák and others (2020) focus on credit inclusion, and find that the relationship with financial stability depends crucially on the quality of bank regulation and supervision. If high, then no tradeoff emerges; bank credit can be expanded to a greater share of the population without endangering financial stability. If regulatory and supervisory is low, however, then the tradeoff does emerge, credit inclusion will come at a cost of lower financial stability.

More recently, Ahamed and Mallick (2019) obtained more encouraging results. From an international sample of 2,635 banks in 86 countries, financial inclusion was found to contribute to a more stable banking system, an effect that is more pronounced when banks are mostly funded by deposits, display low marginal costs, and operate within a strong institutional environment.

D. Channels through which Financial Inclusion Can Affect Key Economic Outcomes

As discussed earlier in the context of the Rajan and Zingales (1998) study, a main consequence of financial activity is that it eases financing constraints to individuals and firms, thereby providing possibilities that would not be available if these agents were limited to their own funds. Dabla-Norris, Ji, Townsend, and Unsal (2015 and 2019)—hereafter, DNJTU—develop a theoretical model that traces out key channels through which financial activity and financial inclusion ultimately affect economic outcomes.[24] In the stylized economy they describe, individuals differ in their initial wealth and their managerial talent or productivity, and decide on whether to become a worker or an entrepreneur by comparing how much they could earn in each activity. Entrepreneurship can be profitable, but only after spending a certain upfront cost, and this profitability will depend on the individual's talent as

[24] As the authors point out, their model is in the tradition of macro-development models incorporating heterogeneous agents and financial frictions (Banerjee and Newman, 1993; Gine and Townsend, 2004; and Bauer and Shin, 2011, 2013). However, their model is unique in that it incorporates multiple financial frictions faced by economic agents.

well.

Figure 8, taken from DNJTU, summarizes the impact of finance and financial inclusion, specifically related to credit. The panel on the left represents a situation in which no credit exists, termed the "savings regime". Four types of agents emerge. First, "unconstrained workers", individuals with very limited managerial ability, who therefore will opt to be workers regardless of their initial wealth. Some individuals have sufficient talent to become entrepreneurs, but because of their limited wealth, lack the capital required and must remain workers. These are the "constrained workers". Another group have sufficient talent and initial wealth to become entrepreneurs, but may not have sufficient wealth to operate their firms at the optimal scale ("constrained entrepreneurs"), while those in a fourth group are wealthy enough to be able to do so ("unconstrained entrepreneurs"). With credit—the "credit regime"—some talented individuals are able to invest in the required capital and become entrepreneurs, thereby shrinking the portion of constrained workers and expanding that of entrepreneurs. As illustrated in the panel on the right, the portion of unconstrained entrepreneurs also expands. Credit also allows some entrepreneurs to increase their scale of production to the optimal level.

It follows that introduction of credit will increase the level of entrepreneurship, allowing talented but constrained individuals to become entrepreneurs, and to increase the scale of production of the incumbent businesses. Therefore, overall GDP will most certainly increase, while effects on productivity and income distribution are a bit more complex and ambiguous. While some entrepreneurs are able to increase their productivity by reaching the optimal scale, access to credit also introduces small-scale firms that are initially not very productive, while the average entrepreneurial talent is likely to increase. Individuals becoming entrepreneurs will benefit, as will workers through upward pressure on wages—there is now a smaller supply of workers relative to entrepreneurs—but wealthy entrepreneurs who had been constrained will benefit as well.

Beyond the extremes depicted in Figure 9, three main frictions inhibit an economy from increasing the availability and scale of credit. The first is a *credit access* or entry cost friction that must be borne in order to obtain credit, reflecting such factors as the distance to the nearest bank, the documentation required, lack of knowledge about credit, cultural constraints, lack of trust in banks, discrimination, and others. Equivalently, in countries with very low levels of financial inclusion, it is very *costly* for a large segment of the population to access financial services such as credit. A second friction is related to weak contract enforceability, that facilitates individuals' incentive to abscond with a portion of the loan and not invest it productively. In response, banks impose a *collateral constraint*, thus limiting the amount of leverage taken on by their borrowers. While prudent, this action also limits the quantity of credit or financial depth, therefore some entrepreneurs may not be able to reach their optimal scale. The final friction is related to *efficiency* of financial intermediation, as reflected in the spread between the rate charged on loans and the rate paid on deposits.[25] By increasing the cost of credit, this friction reduces the profitability derived from debt-financed activity, and will therefore inhibit both the entry of new entrepreneurs and the scaling up of

[25] Note that this is not the same as the interest rate charged for the loan, which will be related to a different friction.

production by constrained entrepreneurs.[26]

By calibrating the model to reflect country-specific characteristics, DNJTU simulate the effects of reducing each of these frictions on key outcomes, including GDP, productivity, income distribution and risk of default. Figure 10 shows one such simulation for three emerging economies (Malaysia, the Philippines, and Egypt) resulting from the reduction in the financial inclusion friction (denoted by ψ). In all countries, greater access to credit leads to greater economic activity, although total factor productivity (TFP) declines as a result of the entrance of small-scale firms. On net, income distribution improves, and there is little effect on either interest spreads or nonperforming loans, as leverage does not become troublesome. DNJTU show how the results vary depending on initial conditions; for three low-income countries, for example, the initial levels of financial inclusion are substantially lower, and it takes a larger reduction in the friction to bring about a noticeable entry of new entrepreneurs. As a result, initially TFP does not fall but income distribution worsens as the prime beneficiaries are wealthier entrepreneurs who are able to borrow to increase their scale of operation.

Recall that one key message derived from the literature is that pro-inclusion policies should focus on alleviating or removing frictions that inhibit access to financial services. The DNJTU framework allows one to simulate the impacts of such policies, and to compare different strategies, such as reducing financial frictions one at a time, or all three together. DNJTU (2019) derive several lessons from these simulations. First, different policies have different impacts depending on the country, that is, there is no "one size fits all" policy for increasing financial inclusion.

Second, because of how the frictions interact with one another, the friction that is most binding for a country may not be obvious from the descriptive data. For example, with only 6.7 percent of firms having access to credit, it would seem that in Pakistan the entry cost would be the most binding, but simulations show that it is the collateral constraint that is most binding, as its reduction produces the greatest gains to the economy. Third, even if all income groups benefit from the policies, income distribution may be become more unequal—the Gini coefficient increases. Finally, country conditions affect the overall strategy, whether to reduce one friction—the most binding—or to pursue a more balanced approach.

While the empirical literature cited in the previous section has explored the relationship between financial inclusion and financial stability, theoretical work generally has not, although the DNJTU model does provide some useful insights. Note that as individuals move into the credit regime, leverage is introduced as well; in the savings regime, all investment was undertaken with internal funds. With leverage, there is now also the possibility of borrowers' default. Indeed, the model shows that facilitating finance is often accompanied by

[26] In DNJTU (2019), the description of the three frictions was refined relative to DNJTU (2015). The "financial inclusion" friction, became the broader "credit access" or "entry cost" friction, recognizing that all three frictions are related to financial inclusion. The "financial depth" friction became "collateral constraint", also recognizing that all frictions affect financial depth. Finally, the 2015 paper had related the efficiency friction to an asymmetric information problem; lenders know their borrowers only imperfectly, who may also have a strategic incentive to default on their loans. In response, lenders will have to monitor borrowers' behavior, involving a cost that will be passed on to borrowers through higher lending rates, and therefore a wider intermediation spread arises. The 2019 study views this friction more broadly, as reflecting inefficiency in intermediation in general, part of which may be due to high monitoring cost.

an increase in the nonperforming loan ratio. One could think that, in a model that incorporates the possibility of bank failures, a large enough expansion of credit, while beneficial for GDP and productivity, could involve increasing risks to financial stability. Further work in building an analytical framework to explore possible tradeoffs between financial inclusion and stability would be most useful to underpin the empirical work being done in this area, and to give guidance to policymakers.

E. Financial Frictions, Microfinance, and Poverty Traps

A large literature has emerged to examine the effects of microfinance at the micro and macro level. As reviewed and assessed by Buera, Kaboski, and Shin (2016), one key question posed by the literature is whether financial frictions play a role in generating "poverty traps at the individual and economywide level. The policy implication then is that if one could reduce these frictions—for example, by increasing access to credit, or by introducing targeted micro credit programs or outright asset grants to poor entrepreneurs—this might allow individuals and the economy to escape poverty traps.

To analyze these questions, a benchmark theoretical model was devised, sharing some elements in common with DNJTU; in particular, there is heterogeneity among entrepreneurs, also with respect to talent and initial wealth. Financial frictions result in limited access to credit, therefore some talented but poor individuals opt not to become entrepreneurs, as they are unable to invest in the capital necessary to climb out of poverty, while wealthy entrepreneurs with similar talent are able to grow their business mostly from own funds supplemented by limited credit. Indeed, in field studies it has been shown that greater access to credit and targeted micro credit and asset grant programs can have beneficial effects on income distribution.

Regarding micro credit, both theory and empirical analysis of real-world experiments show that take-up tends to be relatively low, and therefore increases in entrepreneurship are modest. However, the effect on the labor market is such that even individuals not directly participating in the programs—salaried workers—can benefit through an upward pressure on wages. At the macro level, there does not seem to be a long-run poverty trap induced by financial frictions, partly because wealthier entrepreneurs can eventually escape financial constraints by generating sufficient funds internally to expand their scale of operation.

Although most micro credit experiments are short-lived and do not offer the chance to assess their long-run impact, Banerjee, Breza, Duflo, and Kinman (2019) analyzed an intervention in Hyderabad, India, in which micro credit was randomly assigned to 52 neighborhoods and then withdrawn to all several years later. This allowed an assessment of the persistent impact of the program years after it had been suspended. Relative to the "untreated" neighborhoods, where micro credit was not offered, the study found significant increases in entrepreneurship, profits, business scale, turnover and employment in the "treated" neighborhoods.

However, the experiment also found an important additional source of heterogeneity; between those who were already entrepreneurs when micro credit was introduced ("gung ho entrepreneurs", GE), the new entrants ("reluctant entrepreneurs", RE), and those who did not become entrepreneurs, but rather used the micro credit to finance consumption. The bulk of the positive business impacts of micro credit were concentrated among the GEs. This suggests that there are dual technologies, one more productive and capital-intensive than the

other. While the untreated GEs are essentially caught in a poverty trap due to lack of access to the superior technology, those given access to credit were able to invest in this technology, grow their business, and escape poverty. The study even found evidence of *crowding in* of other sources of finance; GEs with access to micro credit were also more likely to borrow from other sources. On the other hand, there was no significant impact of credit for either the REs or the consumption borrowers in relation to their credit-constrained counterparts.

These results imply that benefits from micro credit are primarily on the *intensive* margin, and suggest that policy should aim at alleviating financial constraints on existing business rather than to promote new entrepreneurship.

F. Benefits from Payments Services

The previous two subsections focused on impacts from greater access to credit. There is also a literature examining the benefits to providing greater access to basic payments or transactions services.

There is evidence that shifting from cash payments into bank accounts lowers the cost of transactions and increases their speed. For example, in South Africa, the cost for the government to pay out social transfers using a smart card is equivalent of third of the cost of cash payments. Shifting cash payments into accounts can also improve transparency and reduce corruption. Argentina introduced *Jefes Program* at the midst of the 2002 economic and social crisis to shift government payments from cash to deposit accounts, which helped to reduce kickbacks, and delivered other beneficial effects (Duryea and Schargrodsky, 2008).

This shift also has been shown to help individuals build a payment history, which can then ease access to credit. In the United States, for example, adding data on payment of utilities into credit files increased the number of adults for whom a credit score could be calculated (Turner et al. 2002).

Focusing on the M-PESA mobile money platform in Kenya, studies show positive impacts on household consumption, saving, and reduced poverty rates. Two-thirds of adults surveyed reported that M-PESA is the fastest way to send and receive money (GSMA, 2014), contributing the role that mobile money has played in enhancing one of the key functions of finance: the ability to manage risk. Figure 11 illustrates the results of two studies that compare how users of M-PESA differ from non- users when facing a negative shock, such as a natural disaster, the loss of a job, or an illness.[27] Panel a shows how M-PESA users are less prone to cutting back on consumption.

Enhanced risk sharing occurs because they are more likely to receive a transfer from friends and family, receive more money in total, and receive it from a more diverse set of people in their network. In fact, a large share of transactions on M-PESA are between-person transfers across long distances. Panel b refers to a second study, which focused on adverse health shocks. M-PESA users are able to spend more on medical expenses while also increasing expenses on food and maintaining their education expenditure. Nonusers or households

[27] This figure is taken from the Suri (2017) survey paper.

located far from agents, on the other hand, are unable to increase expenditure on health without cutting back on food, and particularly education expenses. They might have to pull their children out of school.

Mobile money can also help small and micro enterprises expand access to trade credit, as shown by Beck et al. (2018). The authors construct a quantitative dynamic general equilibrium model in which mobile money dominates fiat money as medium of exchange to repay lenders as it avoids the risk of theft but comes with transaction costs. Entrepreneurs with higher productivity and access to trade credit are more likely to use mobile money instead of fiat money to pay their suppliers, which in turn expands the amount of trade credit they receive and lowers their interest rate. Calibrating the model to Kenyan firm-level survey data, the authors show that the adoption of M-PESA in 2007 can explain 10 percent of per capita income growth between 2007 and 2013.

A recent study shows further evidence of the economic benefits of mobile banking. Using granular data from Paytm, one of the largest providers of mobile money services in India, Patnam and Yao (2020) show that, at the district level, adoption is associated with greater resilience of economic activity and household consumption to adverse rainfall shocks. They also find that firm level adoption is associated with greater sales.

More recently, the COVID-19 crisis has seen an enhanced role for mobile money. For example, in West Africa, where adoption still lags that of East African countries such as Kenya and Tanzania, individuals seeking to reduce the risk of contagion are shifting away from cash transactions. In some countries, the government or mobile money providers have aided in the process by lowering the barriers to opening mobile money accounts.[28] Penetration of these accounts has also facilitated the speed, efficiency, and safety with which governments can implement the social protection programs necessitated by the lockdowns and interruption of economic activity.[29]

IV. HOUSEHOLD FINANCIAL INCLUSION

As reviewed in Section II, some 1.7 billion adults are excluded from financial services worldwide. The Global Findex Survey identified seven reasons cited by respondents for not owning or using a formal bank account. Figure 12 shows that the most cited is lack of money, followed by: a family member has an account, opening an account is costly, banks are too far away, the respondent lacks proper documentation, has little trust in financial institutions, and opts not to use financial services for religious reasons.

A. How and Why is Financial Inclusion Important for Households?

As the theoretical model reviewed in Section III showed, reducing frictions related to financial inclusion can increase the level of entrepreneurship, allowing talented but financially constrained individuals to become entrepreneurs, and allowing existing businesses to scale up their operations to their desired levels. At the aggregate level, these effects could ultimately boost economic activity, reduce poverty, and potentially increase income equality.

[28] See https://www.weforum.org/agenda/2020/04/coronavirus-set-to-spur-mobile-money-growth-in-w-africa/
[29] See https://blogs.worldbank.org/africacan/covid-19-africa-how-can-social-safety-nets-help-mitigate-social-and-economic-impacts

Empirical studies have also detected positive associations between financial inclusion and beneficial macroeconomic outcomes. As the previous section touched on the role of payments services, this subsection reviews the evidence on benefits for households of three major financial services, as surveyed by Demirgüç-Kunt et al. (2017): savings, credit, and insurance.

Use of savings at a formal financial institution has benefits as well. It can help reduce theft, improve household well-being, and reinforce women's economic empowerment. Rune et al. (2016) analyzed a randomized control trial (RCT) of a program facilitating formal savings for Malawian tobacco farmers, finding that it not only increased banking activities but also household welfare, investments in inputs, and subsequent agricultural yields. Also using an RCT, Ashraf et al. (2010) examine the impact of an individually held commitment savings product in Philippines. They find that this saving product positively impacted on the female decision-making power within the household.

Borrowing from a financial institution can benefit low-income households. They may gain access to funding for education or business under better conditions than from a family member or an informal lender. However, as discussed in Section III, evidence of the impact of microfinance on access to credit shows is mixed and shows, at most, a modest effect (Banerjee, 2013; Banerjee et al. 2015).

Finally, insurance products can help households manage financial risks, such as unexpected expenses, and provide better coverage than saving and credit. There is also evidence that individuals will adopt higher risk and return technologies if provided access to formal insurance (Rosenzweig and Binswanger, 2016) Using a randomized control trial in China, Cai et al. (2010) find that offering formal insurance to small pig farmers significantly increases the number of sows raised.

However, the benefits of expanding access to these services are not always clear-cut. Dupas et al. (2018) find that, while programs to increase account ownership in in Chile, Malawi and Uganda did succeed in opening a large number of accounts, only a small fraction of them are used. In India, following a massive government effort, three quarters of the 222 million accounts opened are still inactive (Agrawal et al. 2018).

B. What is the State of Household Financial Inclusion Around the World?

Of the 1.7 billion unbanked adults worldwide, half live in seven developing economies: Bangladesh, China, India, Indonesia, Mexico, Nigeria and Pakistan (Figure 13). Fifty-six percent of all unbanked are women. The poor are overrepresented, as half of unbanked adults come from the poorest 40 percent of households. Adults with low education or who are out of the labor force are also much more likely to be unbanked (2017 Global Findex).

As Section II showed, there has been an impressive increase in registered account holding worldwide, although the effective increase in financial inclusion may have been much smaller. Rhyne and Kelly (2018) note that the 69 percent figure for banked individuals worldwide in 2017 is actually 55 percent once adjusted for inactive accounts, 48 percent for

developing countries. In short, use is not keeping pace with access. Global Findex data show that nearly 750 million people worldwide have accounts that they have not used in a year, the majority being in India and China. As Section II also showed, digital payments are gaining traction, but credit access is growing much more slowly, and financial saving is declining. Finally, there is a persistent gender gap in access to finance, mainly concentrated in three regions: Middle East and North Africa, Sub-Saharan Africa, and South Asia.

C. Policies to Enhance Households' Financial Inclusion

Beck et al. (2008) were the first to investigate the barriers to financial inclusion, and proposed policies to overcome them. From survey data from 209 banks in 62 countries, several factors arose as significant barriers to financial inclusion: minimum balances for deposit accounts, annual fees, high documentation requirements, minimum amount for costumer loans, and the time it took to process loans. The authors found that more stringent restriction on bank activities, opaque banking systems, and high incidence of government ownership of banks were also impediments to financial inclusion. Thus, they suggested policies aimed at easing restrictions on banking entry and activities, enhancing bank transparency, improving the quality of physical infrastructure (such as electricity and internet networks), lowering government ownership, and encouraging foreign bank entry.

To understand what policies are especially effective in reducing the number of unbanked, Allen et al. (2012) use data on 124,000 individuals in 123 countries. They find ownership and use of a bank account are associated with lower fees to open an account, greater proximity to banks, better enabling environment and lower disclosure requirements. They also show that actions such as a requirement to offer free basic accounts, and exempting small or rural deposits from high disclosure requirements can help to increase access to financial services.[30]

One policy that has proven effective in raising access for rural and poor populations is the requirement that government payments be made through bank accounts. The 2017 Global Findex data estimates that roughly 90 million adults opened their first bank account to collect public sector wages, 140 million to receive government transfers, 120 million to receive public sector pensions and 200 million to collect private sector wages. However, there is still room to build on this progress given that about 100 million unbanked adults still receive their government payments in cash and 230 million adults still receive their private sector wages in cash.

Aggarwal and Klapper (2013) proposed some public and private initiatives to expand financial inclusion by removing the barriers to open and use an account in a formal financial institution. As discussed above, one common reason for not having an account—cited by 25 percent of adults in the 2017 Global Findex Survey—is the high cost of opening and maintaining a bank account. In keeping with the findings of Allen et al (2012), many governments have required banks to offer basic accounts with little or no fees or minimum balance requirements. The Indian government has launched the "Basic Savings Bank Deposit Accounts" with no minimum balance requirements, provided a debit card, and allowed four

[30] The Financial Action Task Force (FATF) publishes recommendations and provides with country examples on how to determine threshold for disclosure requirements.

free withdrawals per month.

Physical distance is another commonly barrier to financial inclusion, cited by 20 percent of global Findex respondents as a reason for not having an account. Policymakers and financial institutions have proposed several solutions. For example, the Reserve Bank of India required government-owned banks to open new branches in areas identified as unbanked, which resulted in the share of saving by rural banks increasing from 3 percent to 15 percent between 1969 and 1990 (Burgess and Pande, 2005).[31] In the U.S., the removal of barriers to intrastate bank branching in the 1970s was shown to lead to an expansion of bank branches which contributed to greater income equality (Beck, Levine, and Levkov, 2010) and to increased financial inclusion and wealth accumulation among the poorer households (Celerier and Matray, 2019). Since remotely located branches are generally costly to sustain, some countries have turned to agent or correspondent-banking. Brazil is a case in point, with its Banco Postal partnering with local banks to open 10 million postal saving accounts between 2002 and 2011 (Anson and Gual, 2008). In addition, more than 200 financial institutions in Brazil were bringing banking services to rural inhabitants in 340,000 locations across the country using local retail outlets as agents which helped open 6.5 million new accounts (Aggarwal and Klapper, 2013). The success of the Brazilian experience led many countries across the world (Bolivia, Chile, Kenya, Pakistan among others) to introduce the correspondent-banking model.

Bruhn and Love (2014) examined the case of a market-driven innovation, Banco Azteca in Mexico, whose founding involved the simultaneous opening of over 800 bank branches in pre-existing Elektra department stores. It was able to take advantage of extensive purchase histories of the stores' customers to increase access to credit. The branch openings were shown to be linked to greater subsequent informal business activity, employment, and income for low-income households and residents in previously low-financial access areas.[32]

Credit reporting systems can also enhance financial inclusion of households, by reducing asymmetric information problems. Improved information on borrower's creditworthiness enhances access of the borrower to credit, enables the lender to assess credit risk and to adapt financial products to their client profile, and allows regulators to monitor the buildup of financial vulnerabilities to prevent crises originating in over indebtedness. De Janvry, McIntosh, and Sadoulet (2019) document that the use of credit bureau services by a microfinance lender in Guatemala improved screening of new clients, increased the size of loans, but also led to an increase of expulsion of existing clients. Agarwal et al. (2018) showed that a microcredit program coupled with a well-functioning credit bureau in Rwanda improved individuals' access to commercial bank loans at favorable conditions.

As discussed earlier, financial innovation can reduce costs of providing financial services to the population, effectively shifting upward the structural benchmark and financial

[31] Burgess and Pande (2005) also linked this policy with a decline in poverty rates in the previously unbanked relative to the banked region. However, Kochar (2011) focuses on one state and uses more disaggregated data to examine the expansion of credit brought on by the policy, and finds that consumption inequality increased, as the effects of policy tended to favor the nonpoor over the poor.

[32] However, there has been anecdotal evidence questioning some of Banco Azteca's lending and collection practices. See for example: https://www.bloomberg.com/news/articles/2007-12-12/the-ugly-side-of-microlending

possibilities frontier for many countries. Mobile banking is a clear example of this, allowing individuals and firms to use a mobile phone to send or receive money, make deposits, pay utility bills and, in some cases, apply for a loan. Recent research shows that M-PESA has helped lift 2 percent of Kenyans out of poverty by reducing transaction costs and enhancing consumption smoothing (Suri and Jack, 2016). Section III illustrated the risk-sharing advantages of M-PESA when households confronted adverse shocks. Extension of mobile banking into credit is also underway, with some early evidence of impact. Bharadwaj, Jack and Suri (2019) find that while M-Shwari, a digital bank service that offers saving account and also short-term loan, expanded access to credit and improved household's resilience to income shocks, it had no measurable effects on investments and savings.

However, Kenya's success with mobile banking has not been easily replicated in other countries. Researchers have found that an enabling approach to regulation can help; lowering barriers to entry into the financial sector, allowing both banks and mobile operators to provide mobile money, and for mobile money entrants to contract with agents to provide basic financial services with light regulation (Burns, 2018). Certain reliable physical infrastructure is also required, such as electric and mobile networks and a well-functioning payment system, in addition to a network of bank agents or ATMs. In particular, Davidovich, Loukoianova, Sullivan, and Tourpe (2019) identify preconditions in terms of physical and regulatory infrastructure that are necessary to spur growth in fintech applications in Pacific Island countries. Sahay and others (2020) find that better access to digital infrastructure—availability of the internet and mobile phones—as well high usage of traditional financial services, quality of governance, lower bank concentration, and a consumer-friendly environment are all positively related to mobile money usage. As with traditional credit, digital credit inclusion is related to better information on borrowers. There would seem to be considerable scope to increase financial inclusion through mobile payments since the digital penetration rate—the percentage of the population that use the internet—is currently only 51 percent in 2019 (Statista, 2019).

Documentation requirements are another reason for not having an account, cited by 18 percent of Global Findex respondents. This barrier generally takes the form of Know-Your-Costumer (KYC) requirements to comply with Anti Money Laundering /Counter-Financing Terrorism guidelines, which is also a measure to reduce corruption and improve governance. In response, a number of countries have simplified their KYC requirement. Banks in Brazil for example, offer basic saving accounts with minimum KYC requirements. India has introduced the "Aadhar" program to issue a biometric identification number and card for all Indian citizens.

Lack of trust is another reason reported for not having an account. Policies to improve trust could include enhancing disclosure requirements for banks or introducing an explicit deposit insurance system because a transparent bank with protected deposits raise the confidence of depositors (Lovett 1999). Increased financial literacy could play a role as well, as more well-informed are more likely to trust banks and the financial services on offer. One recent RCT study in rural Peru found that complementing a conditional cash transfer program with a training session aimed at building trust in financial institutions resulted in greater financial savings, while having little impact on the use of transactions services (Galiani, Gertler, and

Navajas Ahumada, 2020).

Finally, although not directly linked to policy, there is evidence that international workers' remittances have a catalytic effect on financial inclusion. Some earlier studies, such as Aggarwal, Demirguc-Kunt, and Martinez Pería (2011) analyzed the relationship with financial depth at the macro level, finding that the size of remittance flows into a country—scaled by its GDP—had a positive impact on the ratios of bank deposits and credit to GDP. More recently, Ben Naceur, Chami, and Trabelsi (2020) find a more nuanced relationship for financial inclusion at the macro level; when remittances are low, they act as a substitute for financial inclusion, but then complement or help to boost financial inclusion when they surpass a certain level.

Other studies examine the relationship at the micro level. For example, Anzoategui, Demirguc-Kunt, and Martínez-Pería (2014) analyze household survey data in El Salvador and find that remittance receipts increase the likelihood that a household will use deposit accounts, but may reduce the likelihood that they obtain credit from a financial institution, possibly because remittances may substitute for bank financing. Ayana Aga and Martínez Pería (2014) investigate household survey data in five countries in Sub Saharan Africa, and find that households receiving remittances are also more likely to open a bank account. The reverse question, of whether a remitter living abroad is more likely to send money when the recipient family has access to banking services, has yet to be explored.

D. A Primer on Financial Education and Capability

Financial literacy has often been considered an essential skill to improve financial wellbeing and economic inclusion, given the increasing responsibility of individuals in taking financial decisions and the growing complexity of financial products. Indeed, sound financial behavior is associated with high financial knowledge levels (OECD 2013). Moreover, the lack of awareness and understanding of financial products may push consumers out of the financial system. For example, farmers with low ability to understand the terms of the insurance product are less likely to buy the product (Giné et al, 2008). This subsection reviews the evidence on the impact of financial literacy policies.

First, it is important to distinguish two key concepts, financial *literacy* and financial *capability.* Financial literacy refers to understanding of basic financial information and concepts. Financial capability, on the other hand, is a broader concept that includes knowledge, skills, attitudes, and ultimately, behaviors, the ability to use financial products to their best advantage. Thus, a financially capable individual not only has the requisite knowledge but also is able to make sound financial decisions: she saves enough for retirement or for her children's education, diversifies investment, borrows prudently, and manages risks. In this manner, she can contribute effectively to economic growth and stability. As one would expect, the two are correlated; for example, more financially educated households tend to hold more diversified portfolios (Von Gaudecker, 2015) and obtain higher returns than less financially educated households (Bianchi, 2018).

Regarding financial literacy, in 2004 Lusardi and Mitchell (2008, 2011) designed an initial

survey of three questions to evaluate fundamental financial concepts.[33] The initial results revealed a relatively low level of financial literacy in the U.S., with only 30 percent of participants able to answer all three questions correctly, and less than half able to answer correctly the question on risk diversification, which would seem to be a prerequisite for sound investment decisions. The initial survey was repeated throughout the world, revealing similar gaps in financial knowledge in other regions (Figure 14). Moreover, financial literacy was shown to be positively correlated with income and education, and there is a gender gap across the developed and developing world. Financial literacy also tends to follow an inverted U-shaped behavior with age, rising, then falling after a certain age. Finally, it is correlated with race and geographical location. For example, financial literacy scores in the U.S. are lower among Hispanics and African-Americans than among whites and Asians.

Many governments have put in place financial education programs—often referred to as *interventions*—aimed at improving consumer awareness and promoting sound financial behavior, that is greater financial capability. There is an ongoing debate about the effectiveness of these interventions. Applying a meta-analysis approach, Miller et al. (2014) and Fernandes et al. (2014) conclude that, while they increase knowledge, they have little impact on actual behavior. However, Kaiser and Menkhoff (2016) and Kaiser et al. (2020) find that these interventions can impact financial behavior positively. Although the ultimate effectiveness is still under debate, some design features have been found to increase the effectiveness of interventions:

- Target the less literate groups, such as women, youth, the elderly, the poor, and lower education consumers. For example, targeting youth improved student financial knowledge and even succeeded in changing their behavior in a large-scale financial literacy program among high-schoolers in Brazil (Bruhn et al, 2013).
- Leverage social networks. Peers effect play an important role in financial information transmission and adoption of new financial products (Duflo and Saez (2003) and Conley and Udry (2010)). For example, farmers are more likely to buy insurance when they get the information from their neighbors. Leveraging such network effects would be a cost-effective strategy to spread financial education.
- Tailor the intervention to participants needs and at *teachable moments*. Studies point out that participants are more focused and motivated to learn, and more likely to apply the acquired knowledge when they are going to take a financial decision (buy a house, borrow for education, or prepare for retirement).
- Adapt the delivery channel to the targeted audience. The delivery format can take the form of courses, workshops, and individual counseling. Online courses, radio, television can be more effective than standard delivery modes. For example, in South Africa, the use of a popular soap opera helped increase financial knowledge and had an impact on financial

[33] They were the following. (i) On compound interest: You deposit $100 in a savings account at 2 percent per year. Five years later you will have exactly $102, less than $102, or more than $102? (ii) On inflation: You deposit $100 in a savings account at 1 percent per year, and inflation is 2 percent per year. After one year, you will be able to take the amount in the savings account and purchase more, less, or the same amount of goods as you can today? (iii) On risk diversification: True or False: buying a single stock is safer than buying a stock mutual fund.

behavior (Berg and Zia, 2017).

- Simplify course content and design. Teaching rules of thumb can be more effective in changing financial behavior than teaching complex calculations.

V. FINANCIAL INCLUSION OF SMALL AND MEDIUM ENTERPRISES

Given their economic relevance and the potential impact of financing constraints, the financial inclusion of micro, small, and medium-sized firms (MSMEs) has been one major area of focus for research and policymakers alike. MSMEs comprise over 95 percent of firms around the world, and in low and middle income countries, they are particularly important in terms of employment; more than 50 percent of workers are in companies with fewer than 100 employees (Ayyagari, Demirgüç-Kunt and Maksimovic, 2011b). Further, there is ample evidence that smaller firms suffer more from financing constraints. Beck, Demirgüç-Kunt and Maksimovic (2005), for example, show that financing obstacles constrain the growth of smaller firms more than that of larger firms and that this difference is larger in countries with more shallow financial systems.

To understand the financing constraints of MSMEs and how to alleviate them, one has to dig deeper into the universe of these firms. First, while micro, small and medium-sized enterprises all suffer from financing constraints and other obstacles in the business environment, policies and interventions to overcome them vary significantly across these firm types.[34] Second, while micro-entrepreneurs are often self-employed individuals or household enterprises, with no separate business accounts and often no formal business license, medium-sized enterprises are often growth- and/or export-oriented, with formal accounts. These differences imply different financing needs and forms. For example, while micro-entrepreneurs might be best served by microfinance institutions, medium-sized enterprises might look beyond bank finance to other sources, such as venture capital.

One important distinction within MSMEs is between *subsistence* and *transformational* entrepreneurs. Subsistence entrepreneurs have businesses based on self-employment and informality, and are almost exclusively micro-entrepreneurs. Many are established as a result of lack of alternative employment options in the formal sector, and rely almost exclusively on the owner, maybe with support from family members and/or friends. On the other hand, transformational entrepreneurs often lead larger businesses that create jobs and are aimed at longer term growth. There is evidence that the subsistence entrepreneurs make up the majority of microenterprises. De Mel, McKenzie, and Woodruff (2010) show that only 30 percent of microenterprise owners in Sri Lanka have characteristics similar to those of large firm owners, whereas 70 percent are more similar to wage workers. In a sample of micro-entrepreneurs in Mexico, Bruhn (2013) finds that about 50 percent are similar to wage workers.

This suggests that a stronger focus of financial sector policies on transformational enterprises is therefore needed if the objective is to promote long-term aggregate growth and job

[34] There are different definitions of MSME. The MSME country indicator database, maintained by the IFC defines micro- enterprises as those with fewer than 10 employees, medium-sized as those with 50 to 249 employees and small enterprises with those between 10 and 49 employees. See Kushnir, Mirmulstein and Ramalho (2010) for details.

creation, while vulnerable people might be better targeted with non-credit policies.[35] As Fafchamps and Woodruff (2011) point out: "programs on expansion, employee management and innovation for those with more growth potential" and "programs on mitigating risk and increasing income for those not likely to expand."

A. What Sets MSMEs Apart?

As discussed in Section II, two major factors play a role in limiting access to and use of finance: transaction costs and information asymmetries. With regard to credit, fixed transaction costs in credit assessment, processing, and monitoring result in *economies of scale*—the unit costs of a loan decrease as the size increases—which makes lending to MSMEs more costly. Also, compared with large firms, information asymmetries are likely to be more severe. That is, MSMEs are more *opaque*; they often do not have audited financial statements that allow a clearer picture of the enterprise and its projected profits, and are less likely to be able to post collateral. Furthermore, compared to their relationship with retail clients where they can use standardized products, financial institutions cannot rely as much on the law of large numbers to exploit scale economies and diversification benefits of SMEs, as there are fewer of them in a given sector, and their characteristics are harder to capture in a few quantitative indicators.[36]

Thus, there will be a constrained maximum share of MSMEs applying for loans that can be served by financial institutions in a commercially viable way, due to three types of limitations.[37] First, from the demand side, voluntary exclusion may be due to cultural barriers or lack of financial literacy, or simply to a dearth of profitable investment projects in the economy. A second type of access problem arises from the supply side, as a result of regulatory distortions or due to lack of competition, either of which can cause lenders not to fully exploit all the outreach opportunities and thus limit the availability of credit. A final access problem consists of deficiencies in an economy's institutional framework, for example the absence of credit information sharing or an effective collateral registration system.

B. Benefits and Costs of MSME Financial Inclusion

What are the macroeconomic impacts of promoting MSMEs, and what role does finance play? While there is a positive correlation between the share of MSMEs in manufacturing and GDP per capita growth, there is no evidence that this relationship is causal, i.e. that having a high share of SMEs helps countries grow faster or reduce poverty at faster rates (Beck, Demirgüç-Kunt and Levine, 2005). However, there is evidence that financial deepening can contribute to economic growth and ultimately poverty reduction by easing financing constraints of MSMEs. Such effects are not always direct, but act through

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[35] Among transformational enterprises, there is often a further emphasis on "gazelles", enterprises with exceptionally high growth rates over longer periods.

[36] See Beck and de la Torre (2007) and de la Torre, Martinez Peria and Schmukler (2010) for a more in-depth discussion and references.

[37] As discussed in more depth in Beck and de la Torre, (2007), the fact that there is no unique combination of costs, expected return, and risk that maps one-to-one to the interest rate limits our graphical analysis to loan applicants as opposed to all potential borrowers.

improved resource allocation across the economy. Financial deepening can help create jobs, and there is evidence that this happens in part by expanding MSME finance. At the aggregate level, Pagano and Pica (2011) show a positive and significant relationship between financial development and job creation in developing countries. For the U.S., Beck, Levine and Levkov (2010) show that branch deregulation and consequent financial liberalization led to decreases in unemployment and increased labor market participation especially among low-skilled workers. Gine and Townsend (2004) show that in Thailand financial liberalization has contributed to a migration of subsistence agricultural workers into urban salaried jobs.

In addition, there are a variety of studies showing the importance of financial development for growth of SMEs. Alleviating financing constraints of SMEs and leveling the playing field between firms of different sizes is thus an important channel through which finance can have direct and indirect impacts on firm and aggregate growth. The literature has identified three specific channels through which financial deepening and inclusion affects firm and ultimately aggregate growth:

- The availability of external finance is positively associated with the number of start- ups—an important indicator of entrepreneurship—as well as with firm dynamism and innovation. On the other hand, access to financial services can help new entrepreneurs survive beyond the first year, as evidence from a firm-level survey in Bosnia shows (Demirgüç-Kunt, Klapper and Panos, 2010), although this is not necessarily through credit, but rather access to savings services, as shown with a randomized control trial (Dupas and Robinson, 2013), and can help enterprises innovate at a faster rate as shown with the World Bank's Enterprise Survey data (Ayyagari, Demirgüç-Kunt and Maksimovic, 2011a). Finally, a more inclusive financial system, as proxied by more effect credit registries and higher branch penetration, is associated with a lower degree of tax evasion and thus lower informality, as shown with the World Bank's Enterprise Survey Data (Beck, Lin and Ma, 2013).
- Finance also allows existing firms to exploit growth and investment opportunities, and to achieve larger equilibrium size. Beck, Demirgüç-Kunt and Maksimovic (2006) show in a cross-country sample that large firms, i.e. firms that are most likely to be able to choose the boundaries of the firm, are larger in countries with better- developed financial and legal systems.
- Finance makes it possible for firms to acquire a more efficient productive asset portfolio and to choose more efficient organizational forms such as incorporation. For example, Demirgüç-Kunt, Love and Maksimovic (2006) find that firms are more likely to operate in incorporated form in countries with better-developed financial and legal systems, strong creditor and shareholder rights and effective bankruptcy processes.[38] Incorporated firms have thus a comparative advantage in countries with institutions that support formal contracting, while unincorporated firms are more adapted to operate in countries with less developed formal institutions where firms have to rely on informal institutions and reputation.

[38] While these effects are tested for separately, they are certainly interdependent with each other.

C. Public Policies to Foster MSME Financial Inclusion

In order to foster greater financial inclusion of MSMEs, policy should focus on alleviating the access constraints discussed above. First are measures that aim to promote financial capability of MSMEs, that is, to encourage the healthy use of financial products. The last few years have seen many interventions in the form of financial literacy randomized control trials (RCTs) for entrepreneurs. As with studies focused on households, there is a large variation in findings, with a general conclusion being that tailor-made interventions can have an impact on entrepreneurship and business expansion under certain circumstances.

Second, policies should aim to relax regulatory constraints and entry barriers into the financial system. Regulatory constraints include client documentation requirements and taxation issues (such as VAT on leasing). Addressing these will have indirect impacts on the financial system and might have differential effects on the outreach effort by different financial institutions. It might have also indirect impact by enabling the entry of new providers targeting previously unbanked entrepreneurs. While AML/CFT concerns are important in this context, a risk-based approach that limits these requirements to transactions and firms above a certain threshold can be useful.

The final type of access constraint—too few projects generating sufficient returns to be financed externally—requires a set of policies that provide for general reforms of the business environment and institutional framework that are not necessarily specific to MSMEs. Macroeconomic stability is one such policy, as it affects the willingness and ability of entrepreneurs to invest in potentially profitable, longer-term projects. Collateral registries, including for movable assets,[39] as well as broader legal sector reforms, can be included among such policies. Similarly, improving the information environment through the adoption of accounting and auditing standards and introduction or improvement of credit registries and bureaus is important.

There are also policies that intervene more directly into the market, trying to overcome market frictions. One oft-cited example is the partial credit guarantee (PCG) scheme, which figures prominently among "market-activist policies".[40] By providing guarantees to MSME loans, the opacity and lack of collateral offered by these firms can be overcome. However, certain design issues become relevant, for instance, the appropriate pricing, funding, and institutional structure.

Ultimately, PCGs should be subjected to cost-benefit analysis. While such schemes could be run on a self-sustainable basis, they often involve significant subsidies and contingent fiscal liabilities in the event of losses, which may be difficult to compute ex-ante. Furthermore, the main financial inclusion benefit should be *additionality*, that is, the share of borrowers that would not have gained access to finance if it were not for the PCG.

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[39] Love, Martínez Pería, and Singh (2013) analyzed firm level data for a sample of 73 countries, and found that the introduction of collateral registries for movable assets led to increases in firms' access to bank finance and that this effect was greater for smaller firms.

[40] For an overview of the literature on PCGs, see World Bank (2007) and Beck, Klapper, Mendoza (2010) for an overview of the variation in types and characteristics of PCGs across the globe.

There have been few rigorous impact assessments of PCGs, though the few that have been undertaken point to a somewhat positive effect, as by Lelarge, Sraer, and Thesmar (2010) in the case of the French credit guarantee scheme. Two separate studies suggest that the Chilean scheme FOGAPE has generated additional loans for new and existing bank clients and that the additional loans have led to higher sales and profit growth (Cowan, Drexler, and Yañez 2009; Larrain and Quiroz 2006). However, another study questions the additionality effect, as approximately 80 percent of the firms that benefit from the guarantees had bank loans in the past (Benavente, Galetovic, and Sanhueza, 2006). More evidence is needed to gauge what characteristics constitute a successful PCG scheme, exploiting the large variation in experiences across countries.

D. The Role of Competition and the Private Sector

Policies could also encourage greater competition in banking, although the theoretical and empirical literature is ambiguous on its effect on MSMEs' access to finance. While the traditional market efficiency view regards more competitive markets as conducive for access to external finance (e.g., Pagano, 1993), other studies point to market power as providing necessary incentives to establish long-term lending relationships (Gerschenkron, 1962; Petersen and Rajan, 1995). Cetorelli and Gambera (2001) show that industries in which young firms rely more on external finance grow faster in countries with more concentrated banking systems. Similarly, Bonacorsi di Patti and Dell'Ariccia (2004) show for Italy that bank concentration is conducive to access to external finance in industries that are less transparent, thus more reliant on long-term relationships.

The effects of competition may depend on institutional characteristics of countries. Beck, Demirgüç-Kunt and Maksimovic (2004) show that bank concentration increases obstacles to external finance by MSMEs, but only in countries with low economic and institutional development. Similarly, Black and Strahan (2002) find for the U.S. that higher concentration is associated with lower new firm formation, while Kerr and Nanda (2009) find that higher competition after deregulation led to higher churn (entry *and* exit) among entrepreneurs in the U.S.. Using the Lerner index as measure of market power, Carbo-Valverde, Rodriguez-Fernandez, and Udell (2009) find that higher competition improves credit availability for MSMEs in Spain.

Closely linked with the debate on competition and MSME finance is the discussion on different lending techniques—transaction-based versus relationship lending—that are appropriate for MSMEs. The traditional view argues that relationship lending is crucial, as longstanding relationships between a financial institution, or even a specific loan officer, and the borrower, allow problems of information asymmetry to be overcome.[41] This implies that smaller and local financial institutions are more effective in lending to MSMEs than large and foreign- owned banks. However, relationship lending tends to be costly, thus putting the financial possibilities frontier further out of reach.

[41] Berger and Udell (1998).

A more nuanced view has also emerged, showing that large and foreign banks can have a comparative advantage at financing MSMEs through transaction-based lending techniques.[42] While relationship lending might thus be better carried out by small, community-based financial institutions, transaction-based lending is carried out more cost- effectively by large financial institutions that can exploit the necessary economies of scale that investment in technology implies. In many developing countries, this debate has an additional dimension, because smaller banks are often owned by domestic shareholders, while large financial institutions are often foreign-owned. However, there is no perfect mapping of size and ownership, a distinction exploited by Clarke et al. (2005), who show across four Latin American countries that large foreign banks often have a greater share and higher growth of lending to small businesses than large domestic banks, while smaller foreign banks have a smaller share and lower growth of lending to small businesses than smaller domestic banks. It thus seems that both relationship- and transaction-based lending techniques can be appropriate for SME lending, and that both domestic and foreign-owned banks can cater to SMEs.

Furthermore, more recent evidence suggests that foreign and domestic banks can cater to the same clientele, by using different lending techniques. Specifically, Beck, Ioannidou and Schäfer (2018) find for Bolivia that foreign and domestic banks use different lending techniques for the same clientele, with foreign banks relying more on internal ratings, collateral and shorter maturities as disciplining tools, while domestic banks rely more on relationship lending. However, this also suggests that transaction-based lending to MSMEs by foreign banks relies on several basic institutional pre-requisites, including collateral and credit registries, as discussed above.

There are also specific transaction-based lending techniques—leasing and factoring—that seem especially conducive to expanding MSMEs' access to finance. Leasing is attractive—from the perspective of both demand and supply—because it is based on the cash flow of the financed asset, such as machinery or a vehicle, rather than the reputation or asset value of the enterprise. It also often has tax advantages, and it allows for easier recovery if the correct legal framework is in place. Factoring, the discounting of accounts receivables, is attractive for small suppliers of large credit-worthy buyers because it does not rely on information about the borrower, but rather about the obligor.[43] Both leasing and factoring rely on a legal framework to govern the transactions but rely to a lesser extent on the contractual framework of a country.

In summary, the degree of banking competition and structure of the banking system can be important factors for financial inclusion of MSMEs. The evidence, however, is not clear-cut, although one could reach the tentative conclusion that competition and openness to foreign ownership can help ease MSMEs' financing constraints provided the necessary institutional and regulatory conditions prevail.

[42] See Berger and Udell (2006) and de la Torre, Martinez Peria, and Schmukler (2010).
[43] Klapper (2006).

E. The Role of Key Regional and International Organizations

Given the high priority policymakers have attached to MSME finance across the globe, international financial institutions have assumed an active role in the policy debate, in several ways. First, the World Bank, often in cooperation with regional development banks, has undertaken its Enterprise Surveys over the past 20 years, which allow an assessment of operational and growth constraints, including those related to access to finance. These have allowed the emergence of a rich empirical literature on MSME finance (partly referenced in this section) as well as country-specific investment climate assessments (ICA). Second, MSME finance has also been at the core of many private sector projects, including those by the IFC and private sector arms of other development banks. Policy initiatives related to the establishment of credit bureaus and collateral registries often have an explicit focus on MSMEs, as these are the firms that stand to benefit most from them. Third, regulatory reforms, such as Basel III, are often assessed for their impact on MSME finance (e.g., FSB, 2019). Finally, international organizations have taken on a critical role in knowledge collection and dissemination on success stories in MSME finance.

VI. CONCLUSION

Interest in financial inclusion has increased very rapidly in the last two decades, as policymakers and researchers alike have sought to explore the potential economic benefits of expanding the outreach of financial services across the population. This paper surveyed the main findings so far from the empirical and theoretical literature, based on a simple definition of financial inclusion: the extent of access to and use of financial services. Using a variety of data sources, it documented the increase in the banked population worldwide over the past decade, but with persistent gaps between regions, income levels, and gender, among others. The paper also showed that, given that providing financial services is costly, certain structural characteristics affect these costs and therefore help to explain why some countries have higher levels of inclusion than others. Of course, as innovation is introduced to reduce these costs, the relevance of some structural characteristics is bound to diminish, as the expansion of mobile banking in Sub Saharan Africa illustrates.

The literature also showed that, beyond the structural characteristics, there are policy-related factors that work as obstacles to financial inclusion. Focusing on credit, the DNJTU framework identified three types of frictions that constrain both the number of agents with access to credit and the amount of credit that can be provided by the financial system. These frictions are related to credit access, collateral requirements, and efficiency, and simulations applied to several emerging and developing economies showed that there would be gains from reducing these frictions.

The paper showed how financial inclusion matters, for households, MSMEs, and the macroeconomy in general. At a basic level, financial inclusion is one more dimension of financial development, thus it can be expected to contribute to the economy through the essential functions that financial activity undertakes. Among the benefits to the economy are the easing of financial constraints for potentially productive firms, and the ability to manage risk and smooth consumption for households. Empirical research has found evidence of these benefits at both the micro and macro levels.

The overriding message is that much good can come from advances in financial inclusion, and there are some areas in which policy can act effectively to bring this about. At the same time, there are notes of caution: policy should not operate mechanically, targeting a specific level, nor aiming to close a specific gap. Rather, the policy question should dig deeper, to identify the frictions that constitute the greatest constraints to a particular type of financial inclusion and explore the most cost-effective way of ameliorating them. Finally, tradeoffs should be considered when relevant, most notably between financial inclusion and fiscal costs, and between financial inclusion and stability.

This last consideration points to an area in which research can greatly contribute going forward, namely, improving our understanding of the possible tradeoffs involved in increasing financial inclusion. In most studies, policies are evaluated in their ability to increase households' or firms' access to financial services—the additionality effect—and the resulting impact on economic outcomes. Certainly more empirical research is needed to assess the additionality of different polices. However, what is lacking most is a full cost-benefit analysis. One prominent example is PCGs, where the costs—both direct and contingent—are often not well understood or measured, let alone compared to the potential benefits of alternative uses of scarce fiscal resources. As for financial stability, the empirical literature appears to point to a meaningful tradeoff when expanding credit in situations with low quality regulation and supervision. Thus, advances in theoretical models that incorporate financial stability effects would be welcome as well, to understand the mechanisms through which greater access to credit can eventually lead to undesirable outcomes, a "too much finance" phenomenon applied to inclusion. Further empirical work could draw on the literature linking credit accelerations to financial distress, exploring, for example, the financial inclusion implications of these accelerations.

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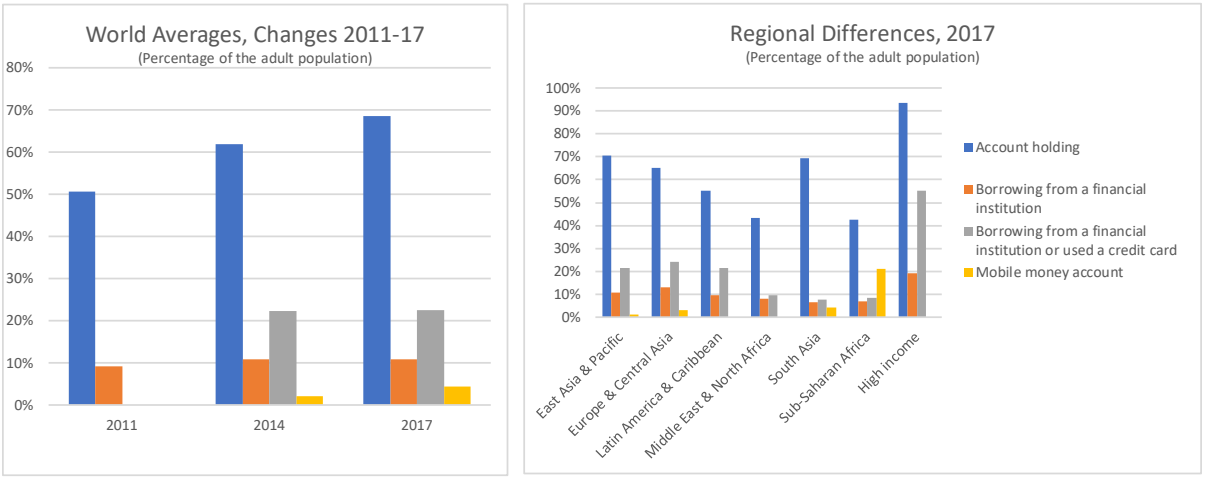
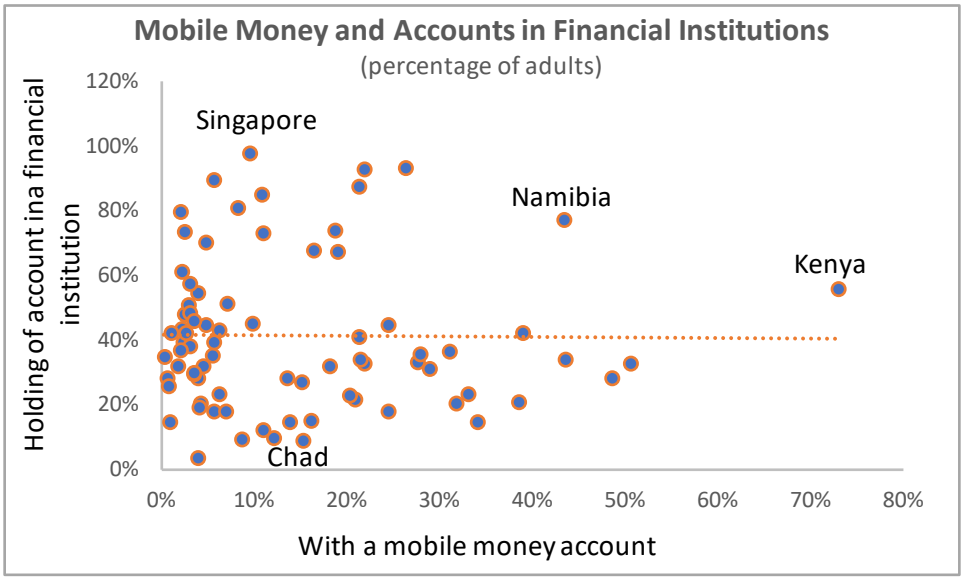
Figure 1: Household Financial Inclusion



Source: World Bank, Global Findex Database.

Figure 2. Mobile Money and Accounts in Financial Institutions



Source: World Bank, Global Findex Database.

Figure 3. Financial Inclusion and Real GDP Per Capita—Cross-Country Correlation

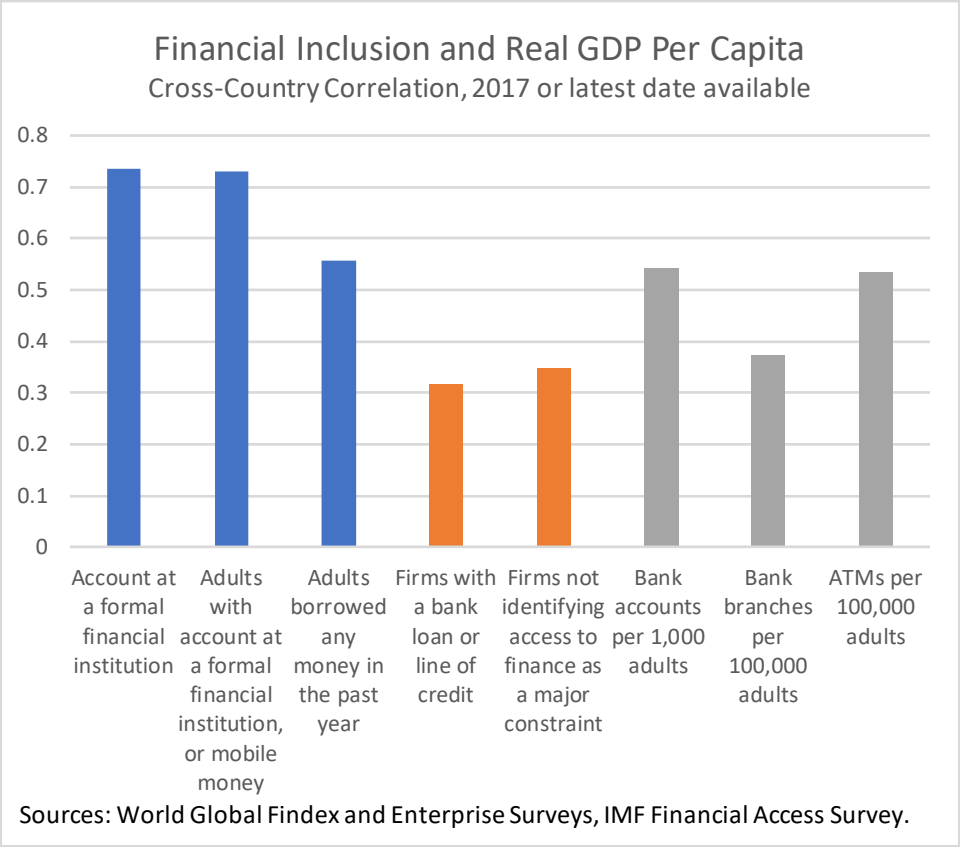
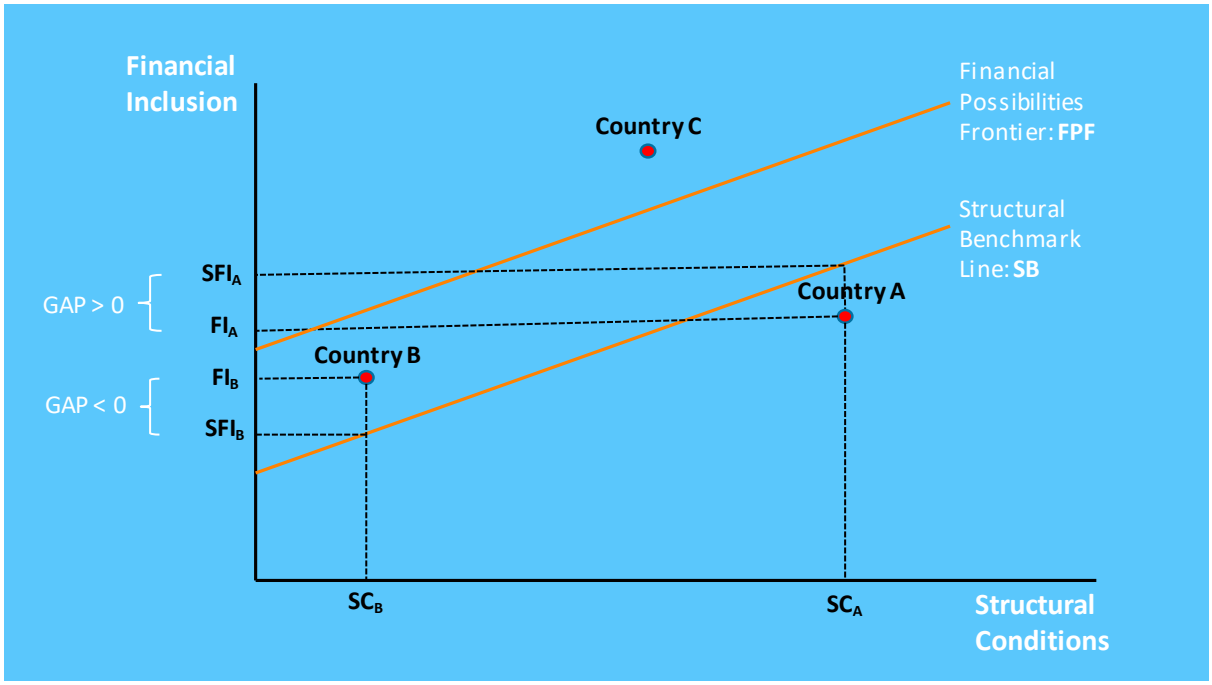
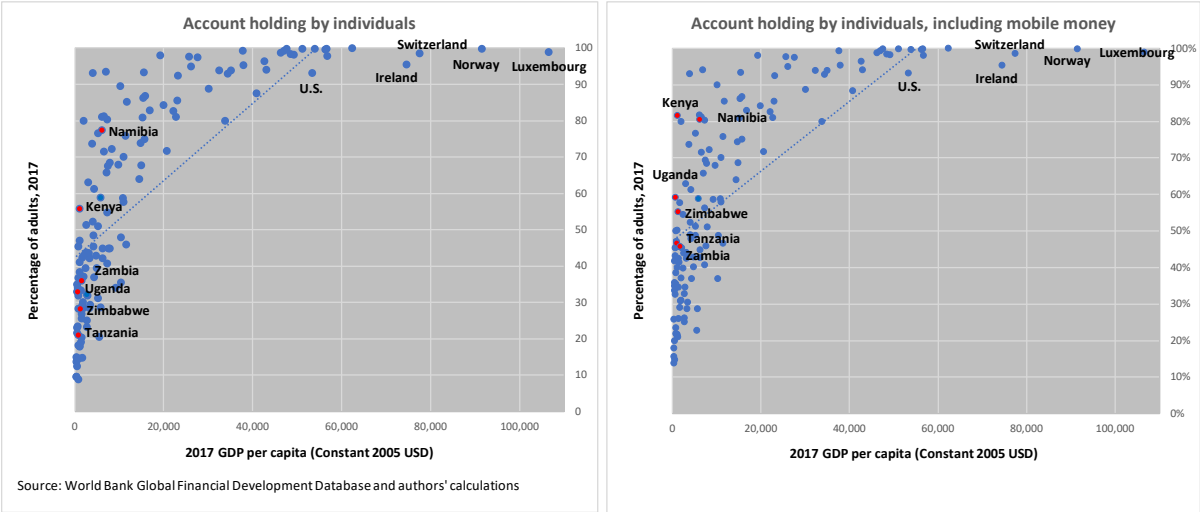


Figure 4. Stylized Financial Possibility Frontier



Source: Adapted from Barajas, Beck, Dabla-Norris, and Yousefi (2013)

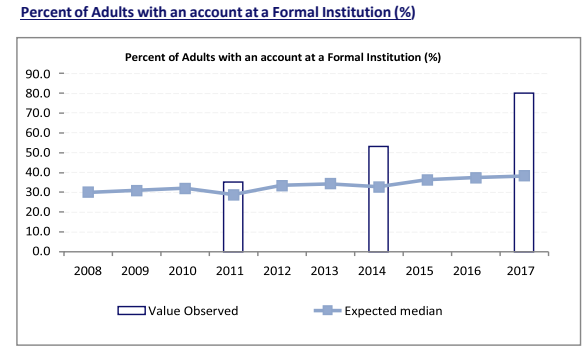
Figure 5. Mobile Money and Financial Inclusion

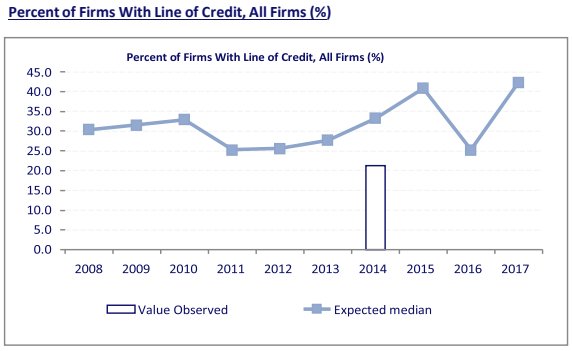


Source: World Bank Global Financial Development Database and authors' calculations

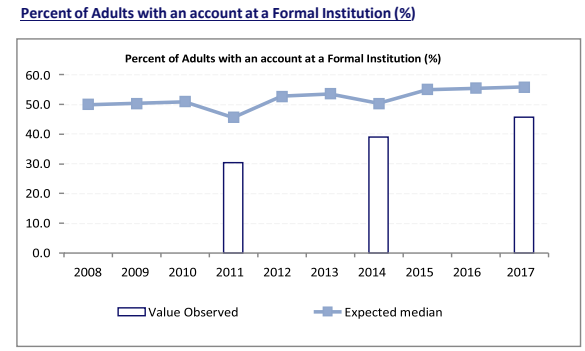
Figure 6: Financial Inclusion Observed Levels Compared to Structural Benchmarks

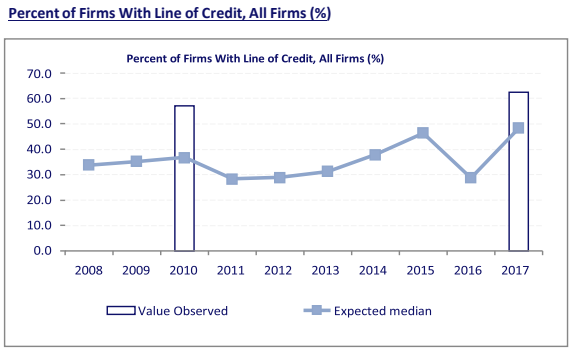
A. India





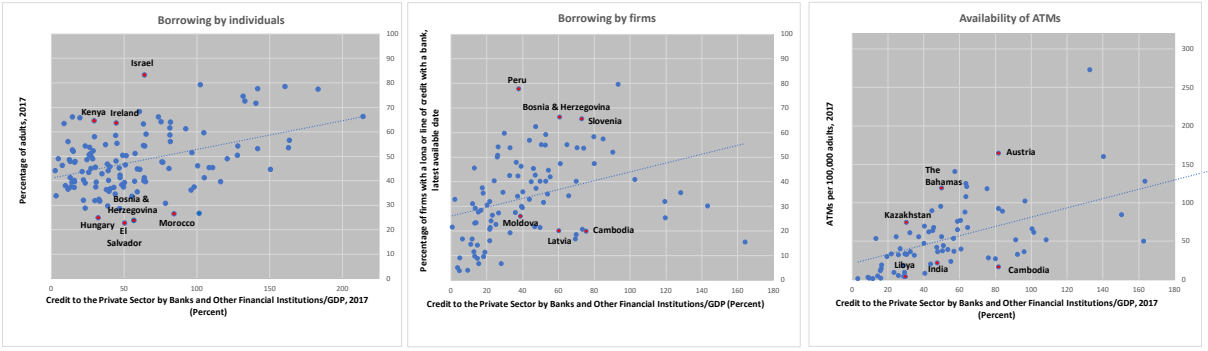
B. Colombia





Sources: World Bank Finstats Database.

Figure 7. Financial Inclusion and Financial Depth



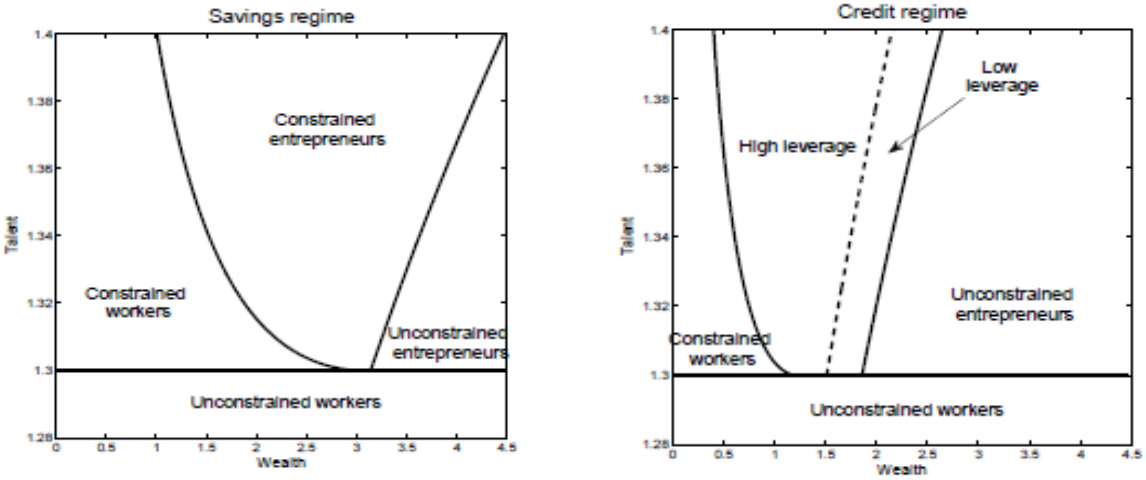
Sources: World Bank Global Findex, Enterprise Surveys, IMF Financial Access Survey and authors' calculations.

Figure 8. Estimated Impact of Increases in Financial Inclusion and Financial Depth on Economic Growth

Sources: Adapted from Sahay and others, 2015.

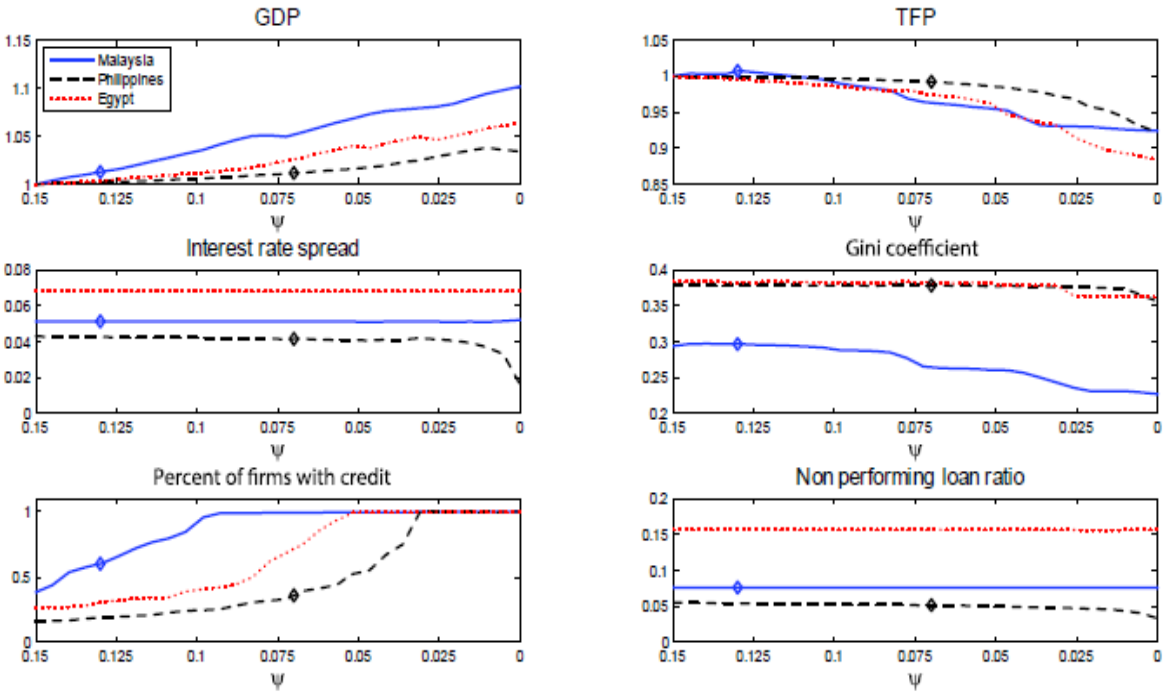
Note: The graph on the left shows that, for a country with a private credit-to-GDP ratio ("privy") at the 25th percentile, an increase in the availability of ATMs from the 25th to the 75th percentile is associated with an increase in average economic growth of 3 percentage points. When the private credit-to-GDP ratio is at the 75th percentile, the effect of a similar increase in ATMs yields considerably less additional growth, about 2 percentage points. The graph on the right shows a similar relationship between the percentage of firms not identifying access to credit as a major obstacle and the private credit-to-GDP ratio.

Figure 9. Finance and Occupational Choice in the DNJTU (2015) Model



Sources: Dabla-Norris, Ji, Townsend, and Unsal (2015).

Figure 10. Simulated Effect of Reducing the Financial Inclusion Friction (ψ)



Sources: Dabla-Norris, Ji, Townsend, and Unsal (2015).

Figure 11. Risk Sharing through M-Pesa (Mobile Money) in Kenya

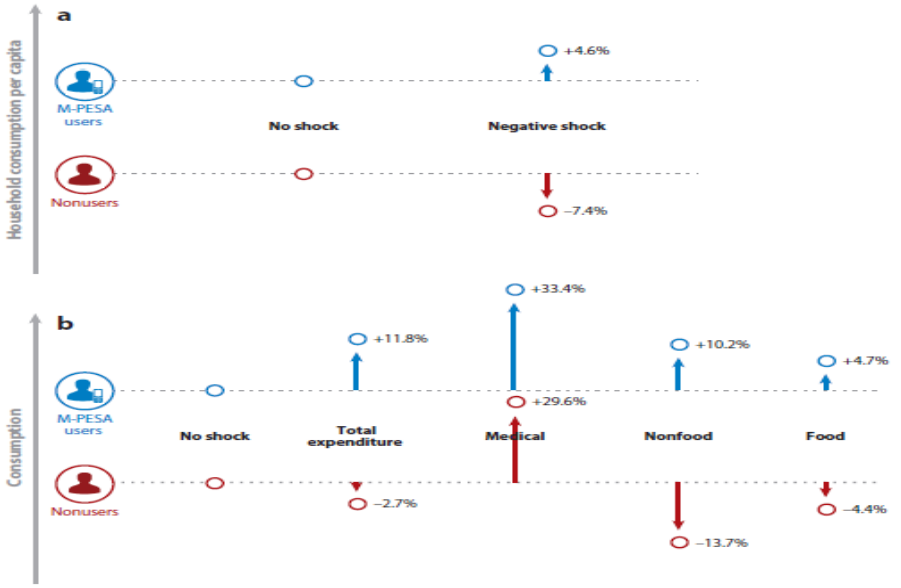
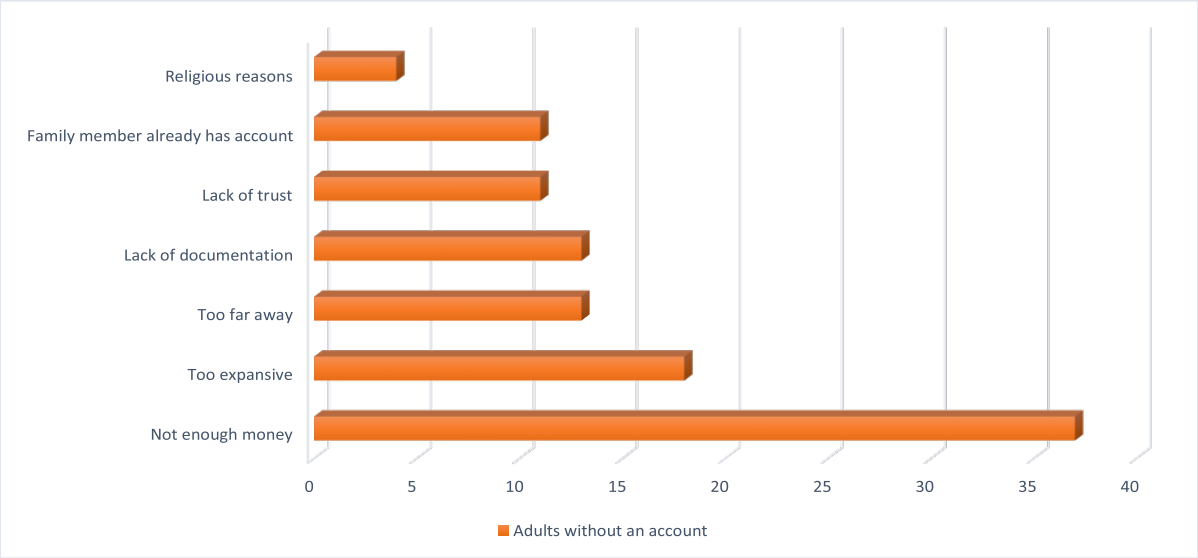


Figure 6
Resilience of M-PESA users and nonusers to economic shocks. Panel *a* is based on data from Jack & Suri (2014); panel *b* is based on data from Suri et al. (2012).

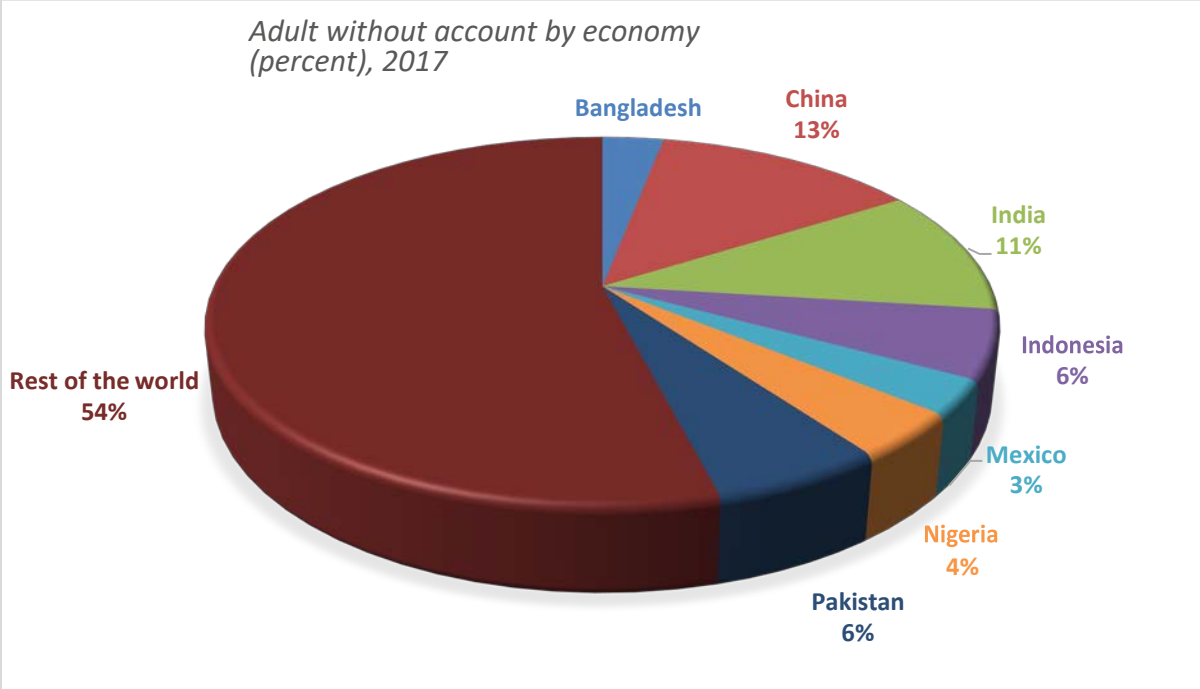
Source: Suri (2017).

Figure 12. Reported Reasons for Not Having a Bank Account



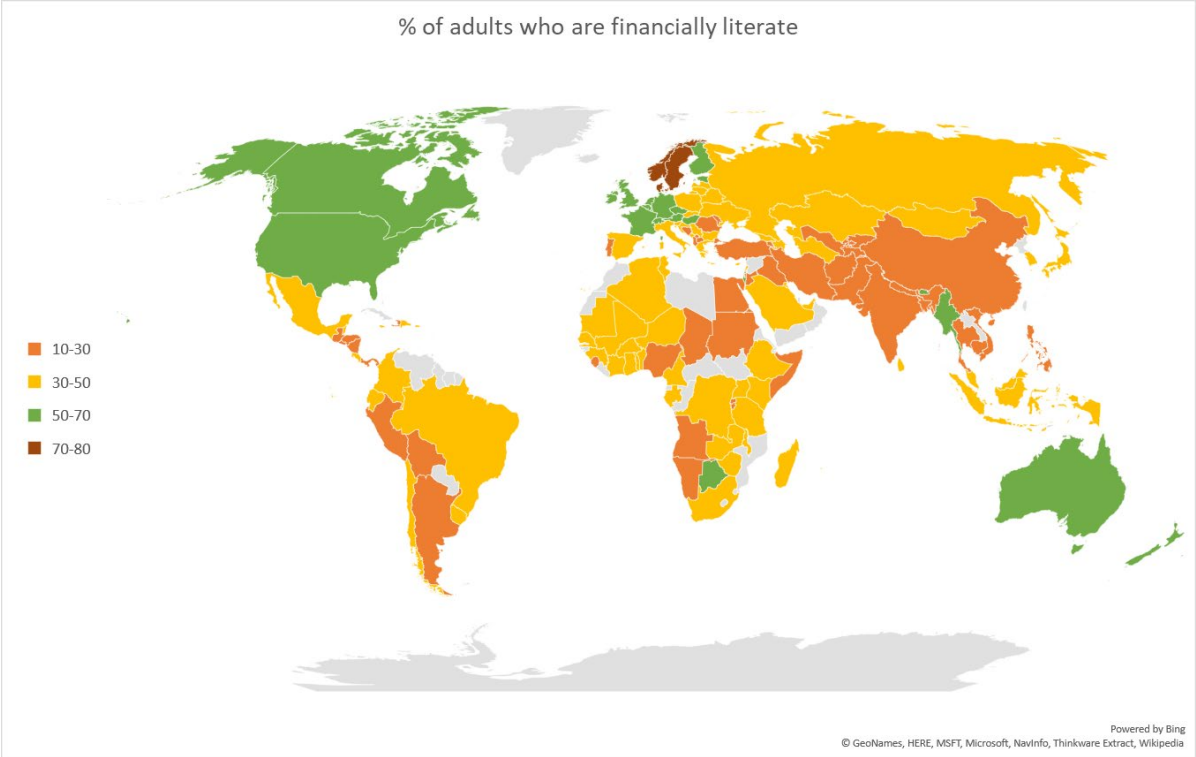
Source: Global Findex Database.

Figure 13. Nearly Half of All Unbanked Live in Just Seven Countries



Source: Global Findex Database.

Figure 14. Financial Literacy Around the World



Source: S&P Global FinLit Survey.
Note: A person is defined as financially literate when he or she correctly answers at least three out of the four financial concepts described in https://gflec.org/sp-global-finlit-survey-methodology/.