GLOBAL FINANCIAL DEVELOPMENT REPORT 2014

Financial Inclusion

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1 2 3 4 16 15 14 13

ISBN (paper): 978-0-8213-9985-9
ISBN (electronic): 978-0-8213-9990-3
ISSN 2304-957X
DOI: 10.1596/978-0-8213-9985-9

The report reflects information available up to September 30, 2013.

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Foreword

The second *Global Financial Development Report* seeks to contribute to the evolving debate on financial inclusion. It follows the inaugural 2013 *Global Financial Development Report*, which re-examined the state's role in finance following the global financial crisis. Both reports seek to avoid simplistic views, and instead take a nuanced approach to financial sector policy based on a synthesis of new evidence.

Financial inclusion has moved up the global reform agenda and become a topic of great interest for policy makers, regulators, researchers, market practitioners, and other stakeholders. For the World Bank Group, financial inclusion represents a core topic, given its implications for reducing poverty and boosting shared prosperity.

The increased emphasis on financial inclusion reflects a growing realization of its potentially transformative power to accelerate development gains. Inclusive financial systems provide individuals and firms with greater access to resources to meet their financial needs, such as saving for retirement, investing in education, capitalizing on business opportunities, and confronting shocks. Real-world financial systems are far from inclusive. Indeed, half of the world's adult population lacks a bank account. Many of the world's poor would benefit from financial services but cannot access them due to market failures or inadequate public policies.

This *Global Financial Development Report* contributes new data and research that helps fill some of the gaps in knowledge about financial inclusion. It also draws on existing insights and experience to contribute to the policy discussion on this critical development issue.

The new evidence demonstrates that financial inclusion can significantly reduce poverty and boost shared prosperity, but underscores that efforts to foster inclusion must be well designed. For example, creating bank accounts that end up lying dormant has little impact, and policies that promote credit for all at any cost can actually exacerbate financial and economic instability. This year's report offers practical, evidence-based advice on policies that maximize the welfare benefits of financial inclusion. It also builds on the benchmarking of financial institutions and markets first introduced in the 2013 *Global Financial Development Report*. A rich array of new financial sector data, made publicly

available through the World Bank Group's Open Data Agenda, also accompany the new report.

Following in the footsteps of its predecessor, this year's installment of the *Global Financial Development Report* represents one component of a broader initiative to enhance the stability and inclusiveness of the global financial system. We hope that it proves useful to a wide range of stakeholders, including governments, international financial institutions, nongovernmental organizations, think tanks, academics, private sector participants, donors, and the wider development community.

Jim Yong Kim
President
The World Bank Group

Acknowledgments

Global Financial Development Report 2014 reflects the efforts of a broad and diverse group of experts, both inside and outside the World Bank Group. The report has been cosponsored by the World Bank, the International Finance Corporation (IFC), and the Multilateral Investment Guarantee Agency (MIGA). It reflects inputs from a wide range of units, including the Development Economics Vice Presidency, Financial and Private Sector Development Vice Presidency, all the regional vice presidencies, the Poverty Reduction and Economic Management Network, and External and Corporate Relations Publishing and Knowledge, as well as inputs from staff at the Consultative Group to Assist the Poor.

Aslı Demirgüç-Kunt was the project's director. Martin Čihák led the core team, which included Miriam Bruhn, Subika Farazi, Martin Kanz, Maria Soledad Martínez Pería, Margaret Miller, Amin Mohseni-Cheraghlou, and Claudia Ruiz Ortega. Other key contributors included Leora Klapper (chapter 1), Dorothe Singer (box 1.3), Christian Eigen-Zucchi (box 2.1), Gunhild Berg and Michael Fuchs (box 3.4), Rogelio Marchetti (box 3.6), Sam Raymond and Oltac Unsal (box 3.7), and David McKenzie (box 3.8).

Kaushik Basu, Chief Economist and Senior Vice President, and Mahmoud Mohieldin, Special Envoy of the World Bank President, provided overall guidance. The authors received invaluable advice from members of the World Bank's Financial Development Council, the Financial and Private Sector Development Council, and the Financial Inclusion and Infrastructure Practice.

External advisers included Meghana Ayyagari (Associate Professor of International Business, George Washington University), Thorsten Beck (Professor of Economics and Chairman of the European Banking Center, Tilburg University, Netherlands), Ross Levine (Willis H. Booth Professor in Banking and Finance, University of California Berkeley), Jonathan Morduch (Professor of Public Policy and Economics, New York University Wagner Graduate School of Public Service, and Managing Director, Financial Access Initiative), Klaus Schaeck (Professor of Empirical Banking, Bangor University, United Kingdom), Robert Townsend (Elizabeth and James Killian Professor of Economics, Massachusetts Institute of Technology), and Christopher Woodruff (Professor of Economics, University of Warwick). Aart

Kraay reviewed the draft for consistency and quality multiple times.

Peer Stein and Bikki Randhawa have been the key contacts at IFC. Gaiv Tata, Douglas Pearce, and Massimo Cirasino have been the interlocutors at the Financial Inclusion and Infrastructure Practice. Ravi Vish has been the key contact at MIGA. Detailed comments on individual chapters have been received from Ardic Alper, Nina Bilandzic, Maria Teresa Chimienti, Massimo Cirasino, Tito Cordella, Quy-Toan Do, Mary Hallward-Driemeier, Oya Pinar, Mohammad Zia Qureshi, and Sergio Schmukler. The authors also received valuable suggestions and other contributions from Daryl Collins, Augusto de la Torre, Shantayanan Devarajan, Xavier Faz, Michael Fuchs, Matt Gamser, Xavier Giné, Jasmina Glisovic, Richard Hinz, Martin Hommes, Zamir Iqbal, Juan Carlos Izaguirre, Dean Karlan, Alexia Latortue, Timothy Lyman, Samuel Maimbo, Kate McKee, David McKenzie, Ajai Nair, Evariste Nduwayo, Douglas Pearce, Tomas Prouza, Alban Pruthi, Steve Rasmussen, Rekha Reddy, Mehnaz Safavian, Manohar Sharma, Dorothe Singer, Ghada Teima, Hourn Thy, Judy Yang, and Bilal Zia. The manuscript also benefitted from informal conversations with colleagues at the International Monetary Fund, the Gates Foundation, Banco Bilbao Vizcaya Argentaria (BBVA), the U.K. Department for International Development, and the World Economic Forum.

In the World Bank–wide review, comments were received from Makhtar Diop, Yira Mascaro, Xiaofeng Hua, Francesco Strobbe, Ben Musuku, and Gunhild Berg (all Africa Region); Sudhir Shetty, Nataliya Mylenko, and Hormoz Aghdaey (all East Asia and Pacific Region); Laura Tuck, Ulrich Bartsch, Megumi Kubota, John Pollner, and Vahe Vardanyan (all Europe and Central Asia Region); Hasan Tuluy, Marialisa Motta, Holger Kray, Jane Hwang, Marisela Montoliu Munoz, P. S. Srinivas, Pierre Olivier Colleye, Rekha Reddy, and Aarre Laakso (all Latin America and the Caribbean Region); Shantayanan Devarajan (Middle East and North Africa Region); Idah Pswarayi-Riddihough, Sujata Lamba, Shamsuddin Ahmad, Thyra Riley, Aruna Aysha Das, Henry Bagazonzya, Kiran Afzal, and Niraj Verma (all South Asia Region); Jorge Familiar Calderon, Maria Cristina Uehara, and Sivan Tamir (all Corporate Secretariat); Cyril Muller (External and Corporate Relations); Mukesh Chawla, Robert Palacios, Olav Christensen, and Jee-Peng Tan (all Human Development Network); Caroline Heider, Andrew Stone, Beata Lenard, Jack Glen, Leonardo Alfonso Bravo, Raghavan Narayanan, and Stoyan Tenev (all Independent Evaluation Group); Jaime Saavedra-Chanduvi, Lucia Hanmer, and Swati Ghosh (all Poverty Reduction and Economic Management); Vijay Iyer (Sustainable Development Network); and Madelyn Antoncic (Treasury).

The background work was presented in 14 Global Financial Development Seminars (http://www.worldbank.org/financialdevelopment). The speakers and discussants included, in addition to the core team, the following: Abayomi Alawode, Michael Bennett, Gunhild Berg, Timothy Brennan, Francisco Campos, Robert Cull, Tatiana Didier, Vincenzo Di Maro, Xavier Giné, Mary Hallward-Driemeier, Zamir Iqbal, Leora Klapper, Cheng Hoon Lim, Rafe Mazer, David Medine, Martin Melecký, Bernardo Morais, Florentina Mulaj, Maria Lourdes Camba Opem, Douglas Pearce, Valeria Perotti, Mehnaz Safavian, Sergio Schmukler, Sandeep Singh, Jonathan Spader, P. S. Srinivas, Wendy Teleki, Niraj Verma, and Bilal Zia.

The report would not be possible without the production team, including Stephen McGroarty (editor in chief), Janice Tuten (project manager), Nora Ridolfi (print coordinator), and Debra Naylor (graphic designer). Roula Yazigi assisted the team with the website. The communications team included Merrell Tuck, Nicole Frost, Ryan Douglas Hahn, Vamsee Kanchi, and Jane Zhang. Excellent administrative assistance was provided by Hédia Arbi, Zenaida Kranzer, and Tourya Tourougui. Other valuable

assistance was provided by Parabal Singh, Meaghan Conway and Julia Reichelstein.

Azita Amjadi, Liu Cui, Shelley Lai Fu, Patricia Katayama, Buyant Erdene Khaltarkhuu, William Prince, Nora Ridolfi, Jomo Tariku, and Janice Tuten have been helpful in the preparation of the updated *Little Data Book on Financial Development*, accompanying this report.

The authors would also like to thank the many country officials and other experts who participated in the surveys underlying this report, including the Financial Development Barometer.

Financial support from Knowledge for Change Program's research support budget and the IFC is gratefully acknowledged.

Abbreviations and Glossary

GDP	gross domestic product
IFC	International Finance Corporation
MFI	microfinance institution
SME	small and medium enterprises

Note: All dollar amounts are U.S. dollars ($) unless otherwise indicated.

GLOSSARY

Country	A territorial entity for which statistical data are maintained and provided internationally on a separate, independent basis (not necessarily a state as understood by international law and practice).
Financial development	Conceptually, financial development is a process of reducing the costs of acquiring information, enforcing contracts, and making transactions. Empirically, measuring financial development directly is challenging. This report focuses on measuring four characteristics (depth, access, efficiency, and stability) for financial institutions and markets ("4x2 framework").
Financial inclusion	The share of individuals and firms that use financial services.
Financial services	Services provided to individuals and firms by the financial system.
Financial system	The financial system in a country is defined to include financial institutions (banks, insurance companies, and other nonbank financial institutions) and financial markets (such as those in stocks, bonds, and financial derivatives). It also encompasses the financial infrastructure (for example, credit information sharing systems and payments and settlement systems).

Formal financial institution	A commercial bank, insurance company, or any other financial institution that is regulated by the state.
State	The country's government as well as autonomous or semi-autonomous agencies such as a central bank or a financial supervision agency.
Unbanked	A person who does not use or does not have access to commercial banking services.

Overview

Financial inclusion—typically defined as the proportion of individuals and firms that use financial services—has become a subject of considerable interest among policy makers, researchers, and other stakeholders. In international forums, such as the Group of Twenty (G-20), financial inclusion has moved up the reform agenda. At the country level, about two-thirds of regulatory and supervisory agencies are now charged with enhancing financial inclusion. In recent years, some 50 countries have set formal targets and goals for financial inclusion.

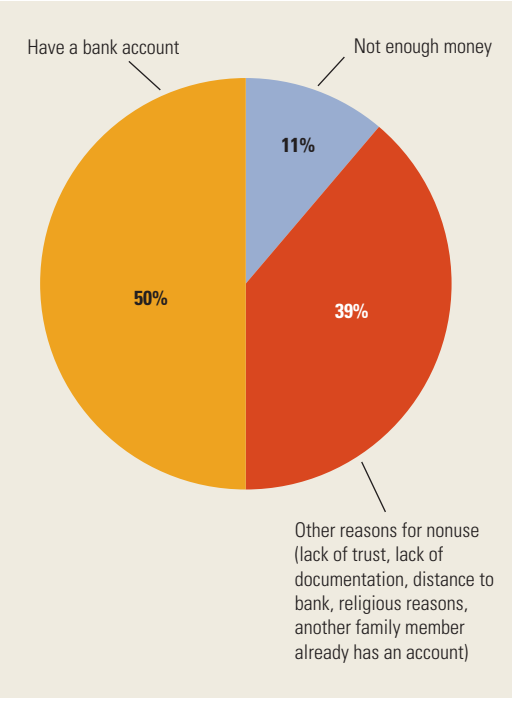
The heightened interest reflects a better understanding of the importance of financial inclusion for economic and social development. It indicates a growing recognition that access to financial services has a critical role in reducing extreme poverty, boosting shared prosperity, and supporting inclusive and sustainable development. The interest also derives from a growing recognition of the large gaps in financial inclusion. For example, half of the world's adult population—more than 2.5 billion people—do not have an account at a formal financial institution (figure O.1). Some of this nonuse demonstrates lack of demand, but barriers such as cost, travel distance, and amount of paperwork play a key part. It is encouraging that most of these barriers can be reduced by better policies.

Indeed, some progress has been achieved. For example, in South Africa, 6 million basic bank accounts were opened in four years, significantly increasing the share of adults with a bank account. Worldwide, hundreds of millions have gained access to electronic payments through services using mobile phone platforms. In the World Bank's *Global Financial Barometer* (Čihák 2012; World Bank 2012a), 78 percent of the financial sector practitioners surveyed indicated that, in their assessment, access to finance in their countries had improved substantially in the last five years.

But boosting financial inclusion is not trivial. Creating new bank accounts does not always translate into regular use. For example, of the above-mentioned 6 million new accounts in South Africa, only 3.5 million became active, while the rest lie dormant.

Moreover, things can go—and do go—badly, especially if credit starts growing rapidly. The promotion of credit without sufficient regard for financial stability is likely

FIGURE 0.1 Use of Bank Accounts and Self-Reported Barriers to Use



Source: Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
Note: Self-reported barriers to use of formal bank accounts. Respondents could choose more than one reason. "Not enough money" refers to the percentage of all adults who reported only this reason.

to result in a crisis. A spectacular recent example is the subprime mortgage crisis in the United States in the 2000s: the key contributing factors included the overextension of credit to noncreditworthy borrowers and relaxation in mortgage-underwriting standards. Another example of overextension of credit in the name of access was the crisis in India's microfinance sector in 2010. Because of a rapid growth in loans, India's microfinance institutions were able to report high profitability for years, but this resided on large indebtedness among clients. While these two examples (explored in chapter 1, box 1.5) are more complex, they illustrate the broader point that deep social issues cannot be resolved purely with an infusion of credit. If not implemented properly, efforts to promote financial inclusion can lead to defaults and other negative effects.

This is where the current report fits in. It provides a careful review and synthesis of recent and ongoing research on financial inclusion, identifying which policies work, and which do not, as well as areas where more evidence is still needed. Box O.1 provides the main messages of this synthesis.

Despite the growing interest, the views of policy makers and other financial sector practitioners on the policies that work best are widely split (box O.2), underscoring the major gaps in knowledge about the effects of key policies on financial inclusion. Hence, this *Global Financial Development Report*, while recognizing the complexity of the questions and the limits of existing knowledge, introduces new data and research and draws on available insights and experience to contribute to the policy discussion.

FINANCIAL INCLUSION: MEASUREMENT AND IMPACT

Financial inclusion and access to finance are different issues. Financial inclusion is defined here as the proportion of individuals and firms that use financial services. The lack of use does not necessarily mean a lack of access. Some people may have access to financial services at affordable prices, but choose not to use certain financial services, while many others may lack access in the sense that the costs of these services are prohibitively high or that the services are simply unavailable because of regulatory barriers, legal hurdles, or an assortment of market and cultural phenomena. The key issue is the degree to which the lack of inclusion derives from a lack of demand for financial services or from barriers that impede individuals and firms from accessing the services.

Globally, about 50 percent of adults have one or more bank accounts, and a nearly equal share are unbanked. In 2011, adults who were banked included the 9 percent of adults who received loans and the 22 percent of adults who saved through financial institutions.

Looking beyond global averages, we find that financial inclusion varies widely around

BOX 0.1 Main Messages of This Report

The level of financial inclusion varies widely around the world. Globally, about 50 percent of adults have a bank account, while the rest remain unbanked, meaning they do not have an account with a formal financial institution. Not all the 2.5 billion unbanked need financial services, but barriers such as cost, travel distance, and documentation requirements are critical. For example, 20 percent of the unbanked report distance as a key reason they do not have an account. The poor, women, youth, and rural residents tend to face greater barriers to access. Among firms, the younger and smaller ones are confronted by more binding constraints. For instance, in developing economies, 35 percent of small firms report that access to finance is a major obstacle to their operations, compared with 25 percent of large firms in developing economies and 8 percent of large firms in developed economies.

Financial inclusion is important for development and poverty reduction. Considerable evidence indicates that the poor benefit enormously from basic payments, savings, and insurance services. For firms, particularly the small and young ones that are subject to greater constraints, access to finance is associated with innovation, job creation, and growth. But dozens of microcredit experiments paint a mixed picture about the development benefits of microfinance projects targeted at particular groups in the population.

Financial inclusion does not mean finance for all at all costs. Some individuals and firms have no material demand or business need for financial services. Efforts to subsidize these services are counterproductive and, in the case of credit, can lead to overindebtedness and financial instability. However, in many cases, the use of financial services is constrained by regulatory impediments or malfunctioning markets that prevent people from accessing beneficial financial services.

The focus of public policy should be on addressing market failures. In many cases, the use of financial services is constrained by market failures that cause the costs of these services to become prohibitively high or that cause the services to become unavailable due to regulatory barriers, legal hurdles, or an assortment of market and cultural phenomena. Evidence points to a function for government in dealing with these failures by creating the associated legal and regulatory framework (for example, protecting creditor rights, regulating business conduct, and overseeing recourse mechanisms to protect consumers), supporting the information environment (for instance, setting standards for disclosure and transparency and promoting credit information–sharing systems and collateral registries), and educating and protecting consumers. An important part of consumer protection is represented by competition policy because healthy competition among providers rewards better performers and increases the power that consumers can exert in the marketplace. Policies to expand account penetration—such as requiring banks to offer basic or low-fee accounts, granting exemptions from onerous documentation requirements, allowing correspondent banking, and using electronic payments into bank accounts for government payments—are especially effective among those people who are often excluded: the poor, women, youth, and rural residents. Other direct government interventions—such as directed credit, debt relief, and lending through state-owned banks—tend to be politicized and less successful, particularly in weak institutional environments.

New technologies hold promise for expanding financial inclusion. Innovations in technology—such as mobile payments, mobile banking, and borrower identification using biometric data (fingerprinting, iris scans, and so on)—make it easier and less expensive for people to use financial services, while increasing financial security. The impact of new technologies can be amplified by the private sector's adoption of business models that complement technology platforms (as is the case with banking correspondents). To harness the promise of new technologies, regulators need to allow competing financial service providers and consumers to take advantage of technological innovations.

Product designs that address market failures, meet consumer needs, and overcome behavioral problems can foster the widespread use of financial services. Innovative financial products, such as index-based insurance, can mitigate weather-related risks in agricultural production and help promote investment and productivity in agricultural firms. Improvements in lending to micro and small firms can be achieved by leveraging existing relationships. For example, novel mechanisms have broadened financial inclusion by delivering credit through retail chains or large suppliers, relying on payment histories in making loan decisions, and lowering costs by using existing distribution networks.

It is possible to enhance financial capability—financial knowledge, skills, attitudes, and behaviors—through well-designed, targeted interven-

(box continued next page)

BOX 0.1 Main Messages of This Report *(continued)*

tions. Financial education has a measurable impact if it reaches people during teachable moments, for instance, when they are starting a job or purchasing a major financial product. Financial education is especially beneficial for individuals with limited financial skills. Leveraging social networks (for example, involving both parents and children) tends to enhance the impact of financial education. Delivery mode matters, too; thus, engaging delivery channels—such as entertainment education—shows promise. In microenterprises, business training programs have been found to lead to improvements in knowledge, but have a relatively small impact on business practices and performance and depend on context and gender, with mixed results. The content of training also matters: simple rule-of-thumb training is more effective than standard training in business and accounting.

BOX 0.2 The Views of Practitioners on Financial Inclusion: The Global Financial Barometer

To examine views on financial inclusion among some of the World Bank's clients, the *Global Financial Development Report* team has undertaken the second round of the Financial Development Barometer, following up on the first such survey from the previous round (Čihák 2012; World Bank 2012a). The barometer is a global informal poll of views, opinions, and sentiments among financial sector practitioners (central bankers, finance ministry officials, market participants, and academics, as well as representatives of nongovernmental organizations and interdisciplinary research entities focusing on financial sector issues).

The barometer contains 23 questions arranged in two categories: (1) general questions about financial development and (2) specific questions relating to the specific topic of the relevant *Global Financial Development Report*. The results of the first barometer, which addresses specific questions on the state's role in finance, were reported in *Global Financial Development Report 2013*. Selected results of the second barometer, with specific questions on financial inclusion, are reported in this box. (Additional information is available on the report's website, at http://www.worldbank.org/financialdevelopment.) The barometer poll was carried out in 2012/13 and covers respondents from 21 developed and 54 developing economies. Of the 265 individuals polled, 161 responded (a response rate of 61 percent).

According to the survey results, a majority of respondents see financial inclusion as a big problem both for households and for small enterprises. At the same time, most respondents see an improving trend in the access to finance in the last five years (table BO.2.1, rows 1–3).

TABLE BO.2.1 Selected Results of the 2012–13 Financial Development Barometer

% of respondents agreeing with the statements

1. "Access to basic financial services is a significant problem for households in my country."	61
2. "Access to finance is a significant barrier to the growth of small enterprises in my country."	76
3. "In my country, access to finance has improved significantly over the last 5 years."	78
4. "State banks and targeted lending programs to poorer segments of the population (social banking) are a useful tool to increase financial access."	80
5. "Social banking actually plays an important role in increasing financial access in my country."	43
6. "The lack of knowledge about basic financial products and services is a major barrier to financial access among the poor in my country."	78

Source: Financial Development Barometer; for full results, see the Global Financial Development Report website, at http://www.worldbank.org/financialdevelopment.

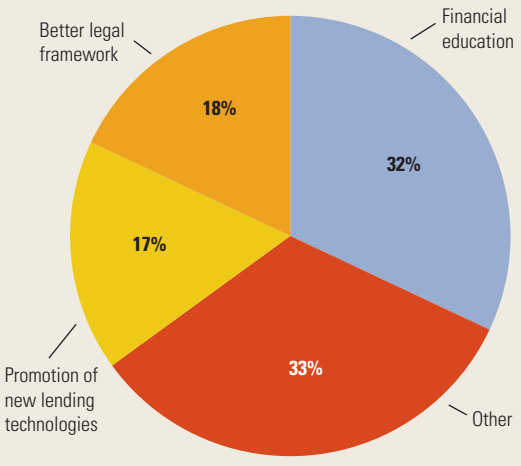
(box continued next page)

BOX O.2 The Views of Practitioners on Financial Inclusion: The Global Financial Barometer *(continued)*

On the role of the state, there is an interesting disconnect: 80 percent of the respondents consider social banking—that is, state banks and lending programs targeted at poorer segments of the population—as a useful tool to increase financial access, but only about 50 percent think that social banking actually plays a major part in expanding financial access (table BO.2.1, rows 4–5).

Another interesting result is that 78 percent of the respondents consider the lack of knowledge about basic financial products and services as a major barrier to financial access among the poor (table BO.2.1, row 6). Corresponding to this result, for views about the best policy to improve access to finance among low-income borrowers, the policy selected by the greatest number of respondents (32 percent) was financial education (figure BO.2.1).

FIGURE BO.2.1 Views on Effective Financial Inclusion Policies



Source: Financial Development Barometer; for full results, see the Global Financial Development Report website, at http://www.worldbank.org/financialdevelopment.

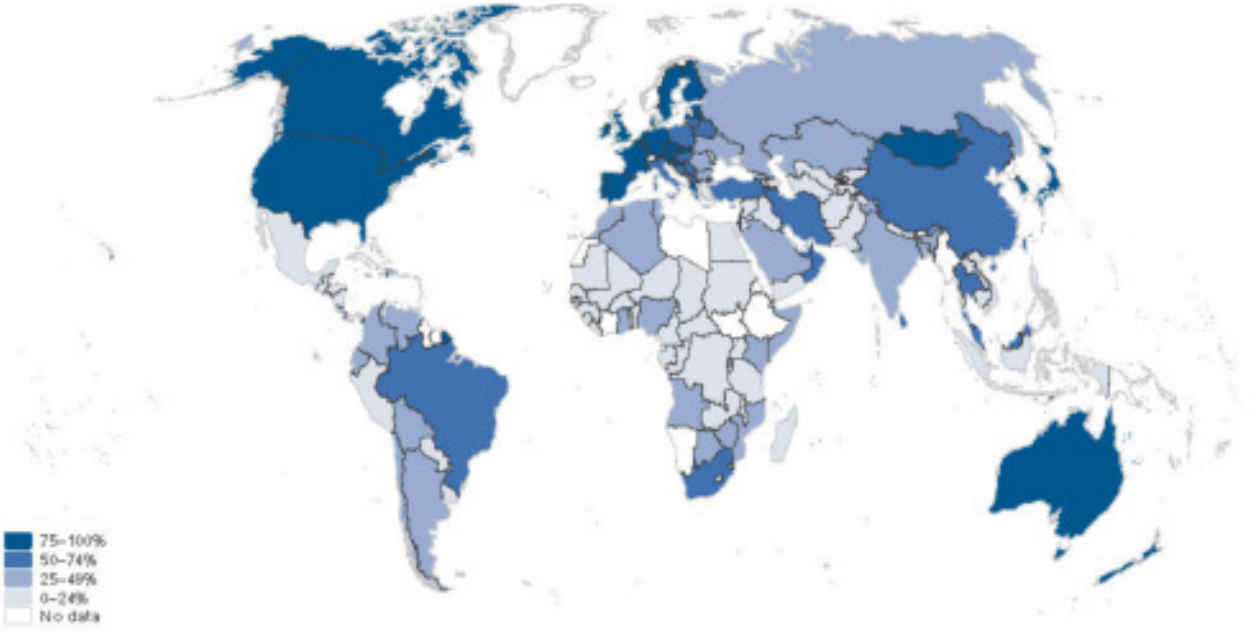
the world. Newly available user-side data show striking disparities in the use of financial services by individuals in developed and developing economies. For instance, the share of adults with a bank account in developed economies is more than twice the corresponding share in developing ones. The disparities are even larger if we examine the actual use of accounts (map O.1). Worldwide, 44 percent of adults regularly use a bank account. However, if we focus on the bottom 40 percent of income earners in developing countries, we find that only 23 percent regularly use an account, which is about half the participation rate among the rest of the populations of these countries (the corresponding participation rates in developed economies are 81 percent and 88 percent, respectively).

From the viewpoint of shared prosperity, it is particularly troubling that the disparities in financial inclusion are large in terms of population segments within countries. People who are poor, young, unemployed, out of the workforce, or less well educated, or who live in rural areas are much less likely to have an account (figure O.2). Account ownership also goes hand in hand with income equality: the more even the distribution of income within a country, the higher the country's account penetration. What helps is a better enabling environment for accessing financial services, such as lower banking costs, proximity to financial providers, and fewer documentation requirements to open an account.

While the disparities are less pronounced in the access of firms to finance, significant differences persist across countries and by characteristics such as firm age and size. Younger and smaller firms face greater constraints, and their growth is affected relatively more by the constraints.

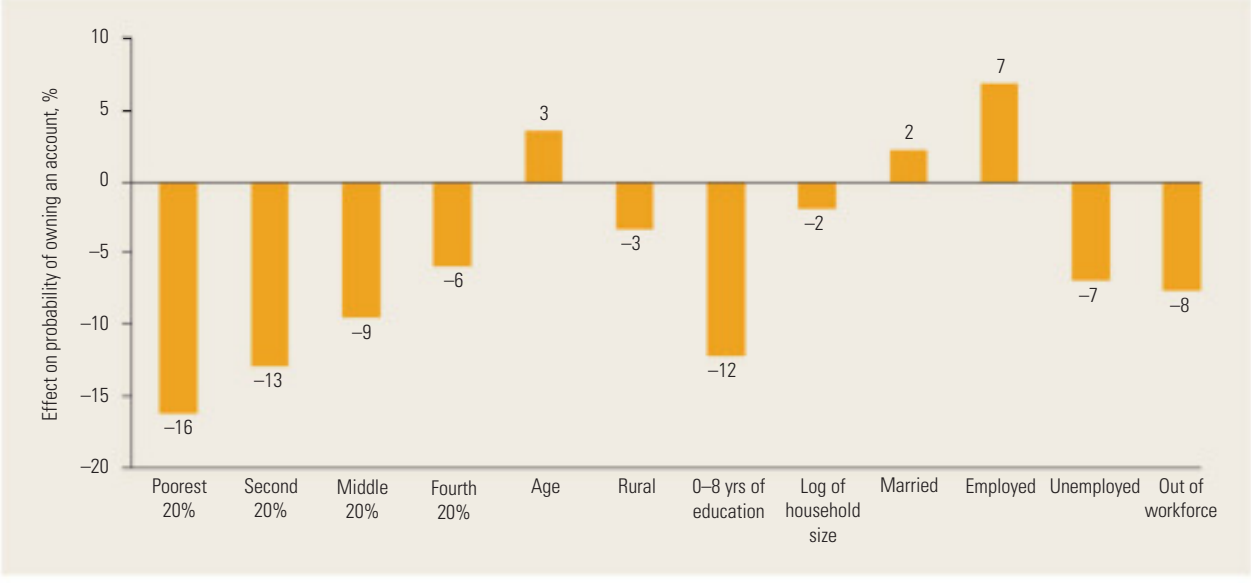
Research highlighted in this report shows that financial inclusion matters for economic development and poverty reduction. A range of theoretical models demonstrate how the lack of access to finance can lead to poverty

MAP 0.1 Adults Using a Bank Account in a Typical Month



Source: Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
Note: Percentage of adults (age 15 years or older) depositing to or withdrawing from an account with a formal financial institution at least once in a typical month.

FIGURE 0.2 Correlates of Financial Inclusion



Source: Based on Allen, Demirgüç-Kunt, and others 2012.
Note: Results from a probit regression of a financial inclusion indicator on country fixed effects and a set of individual characteristics for 124,334 adults (15 years of age and older) covered in 2011 in the Global Financial Inclusion (Global Findex) Database (http://www.worldbank.org/globalfindex). The financial inclusion indicator is a 0/1 variable indicating whether a person had an account at a formal financial institution in 2011. See Allen, Demirgüç-Kunt, and others (2012) for definitions, data sources, the standard errors of the parameter estimates, additional estimation methods, and additional regressions for other dependent variables (savings and the frequency of use of accounts).

traps and inequality. Empirical evidence on the impact of financial inclusion paints a picture that is far from black and white. The evidence varies by type of financial services. For basic payments and savings, evidence on the benefits, especially among poor households, is quite supportive. For insurance products, there is also some evidence of a positive impact, although studies on the effects of microinsurance are inconclusive. As regards access to credit, evidence on microcredit is mixed, with some cautionary findings on the pitfalls of microcredit. For small and young firms, access to credit is important.

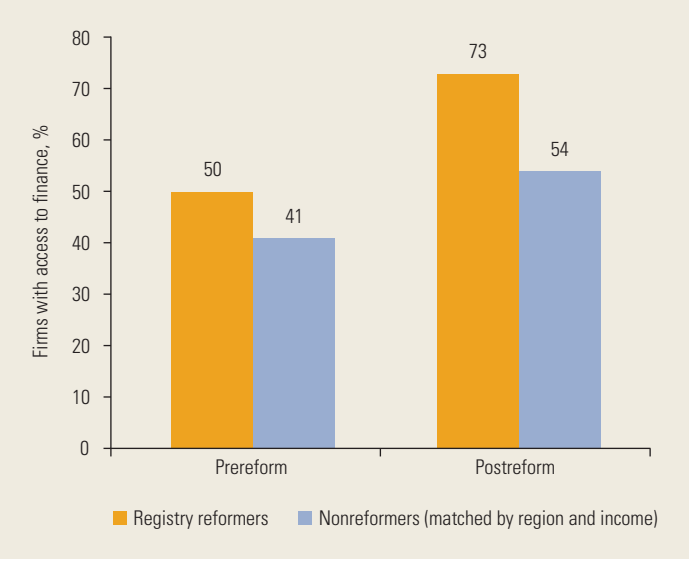
The message from the research is thus a nuanced one: for inclusion to have positive effects, it needs to be achieved responsibly. Creating many bank accounts that lie dormant makes little sense. While inclusion has important benefits, the policy objective cannot be inclusion for inclusion's sake, and the goal certainly cannot be to make everybody borrow.

PUBLIC POLICY ON FINANCIAL INCLUSION: OVERALL FINDINGS

Enhancing financial inclusion requires the policy and market problems that lead to financial exclusion to be addressed. The public sector can promote this goal by developing the appropriate legal and regulatory framework and supporting the information environment, as well as by educating and protecting the users of financial services. Many of the public sector interventions are more effective if the private sector is involved. For example, improvements in the credit environment, disclosure practices, and the collateral framework can be more effective with private sector buy-in and support.

New evidence showcased in this report suggests that the government has a particularly important role in overseeing the information environment. Public policy can achieve potentially large effects on financial inclusion through reforms of credit bureaus and collateral registries. Evidence highlighted in the report indicates that the introduction or reform of registries for movable collateral, such as machines and other equipment, can greatly spur firm access to finance (figure O.3). Importantly, the improvements in access to finance are larger among small firms.

FIGURE O.3 Effect of Collateral Registry Reforms on Access to Finance



Source: Doing Business (database), International Finance Corporation and World Bank, Washington, DC, http://www.doingbusiness.org/data; Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org; calculations by Love, Martínez Pería, and Singh 2013.
Note: Based on firm-level surveys in 73 countries, the study compares the access of firms to credit in seven countries that have introduced collateral registries for movable assets against the access of firms in a sample of countries matched by region and income per capita.

This evidence shows that improvements in the legal, regulatory, and institutional environment, which tend to be helpful for development in general, are also quite useful for financial inclusion.

How about policies aimed more directly at financial inclusion? New evidence on 142,000 people in 123 countries suggests that policies aimed specifically at enhancing account penetration and payments can be effective, especially among the poor, women, youth, and rural residents. Specifically, Allen, Demirgüç-Kunt, and others (2012) show that, in countries with higher banking costs, financially excluded individuals are more likely to report that they perceive not having enough money as a barrier to opening an account. Focusing only on

financially excluded individuals who report "not having enough money" as the only barrier, they observe that the presence of basic or low-fee accounts, correspondent banking, consumer protection, and accounts to receive "government-to-person" (G2P) payments lower the likelihood that these individuals will cite lack of funds as a barrier. While these results are not causal, they hint that government policies to enhance inclusion may be related to a higher likelihood that individuals consider that financial services are within their reach.

In contrast, direct government interventions in credit markets tend to be politicized and less successful, particularly in environments with weak institutions. Examples of such direct interventions include bailouts and debt relief for households, directed credit, subsidies, and lending via state-owned financial institutions. The challenges associated with these direct government interventions are discussed in *Global Financial Development Report 2013*, where the focus is "Rethinking the Role of the State in Finance." The current report highlights additional, novel evidence. For example, recent in-depth analysis of India's 2008 debt relief for highly indebted rural households finds that, while the initiative led to the intended reductions in household debt, it was associated with declines in investment and agricultural productivity (Kanz 2012).

Research also suggests that it matters how the various interventions are put together. Packaging reforms together leads to scale effects—positive and negative—and to sequencing issues. For example, in a country in which creditor rights are weakly enforced because of a poorly functioning judiciary, a policy that would center solely on the computerization and unification of credit registries for movable collateral would have a limited impact on credit inclusion if it were not combined with other supportive reforms that may take longer to implement. Considerations of this sort help impart some welcome realism to aspirational objectives of universal access and assist countries in operationalizing their national financial inclusion strategies.

Against this broader policy context, the report examines three focus areas: (1) the potential of new technology to increase financial inclusion; (2) the role of business models and product design; and (3) the role of financial literacy, financial capability, and business training. These three areas can reinforce each other. For example, new technology can be used not only to boost financial inclusion, but also to improve product design and strengthen financial capability (as examined in the studies on the use of text messages to promote savings behavior that are referenced in chapter 2). The report's emphasis of these areas reflects the impact these areas can have on financial inclusion and shared prosperity, as well as the fact that there is new evidence to highlight. (For help in navigating the report, see box O.3.)

FOCUS AREA 1: THE PROMISE OF TECHNOLOGY

Technological innovations can lower the cost and inconvenience of accessing financial services. The last decade has been marked by a rapid growth in new technologies, such as mobile payments, mobile banking, Internet banking, and biometric identification technologies. These technological innovations allow for a significant reduction in transaction costs, leading to greater financial inclusion.

While much of the public discussion has focused on mobile payments and mobile banking, other new technologies are also promising. Recent research suggests that biometric identification (such as fingerprinting, iris scans, and so on) can substantially reduce information problems and moral hazard in credit markets. To illustrate, figure O.4 shows results from a study authored by World Bank researchers and based on a field experiment involving the introduction of fingerprinting among borrowers. The intervention significantly improved the lender's ability to deny credit in a later period based on previous repayment performance. This, in turn, reduced adverse selection and moral hazard, leading to improved loan performance among the weakest borrowers.

BOX 0.3 Navigating This Report

The rest of the report consists of three chapters, which cover (1) the importance of financial inclusion, some key facts, and drivers of financial inclusion; (2) financial inclusion for individuals; and (3) financial inclusion among firms. Within these broader topic areas, the report focuses on policy-relevant issues on which new evidence can be provided.

Chapter 1 introduces the concept of financial inclusion and reviews the evidence on its links to financial, economic, and social development. It discusses the benefits of and the limits to inclusion and the importance of pursuing this agenda responsibly. It highlights evidence based on theoretical and empirical research on the impact of financial inclusion on economic development and identifies transmission channels through which financial inclusion contributes to income equality and poverty reduction. The chapter introduces cross-cutting issues related to financial inclusion, such as the relationship between financial sector structure and inclusion.

Chapter 2 focuses on financial inclusion among individuals. It starts with a discussion on the role of technology in financial inclusion. This is followed by an examination of private sector initiatives in financial inclusion, particularly product designs that address market failures, meet consumer needs, and overcome behavioral problems to foster the widespread use of financial services. Financial literacy and capability are another area of special focus. The chapter ends with an in-depth discussion of the various public sector policies in financial inclusion and provides some evidence-based policy recommendations.

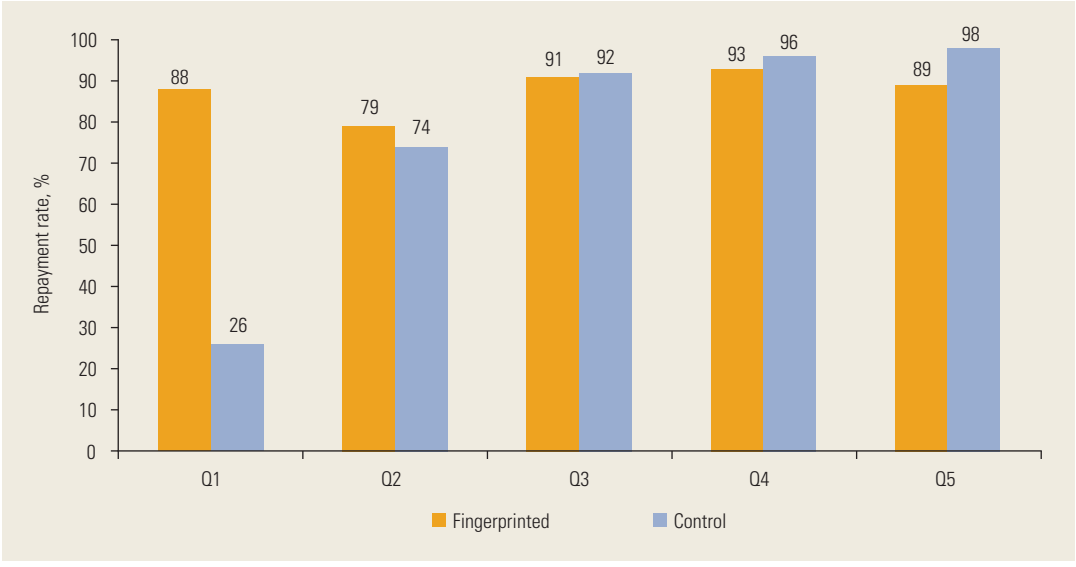
Chapter 3 covers financial inclusion among firms. It focuses on firms that face market failures that restrict access to finance, such as small firms and young firms. The discussion covers access not only to formal bank credit, but also to microfinance, private equity, and other forms of finance, such as factoring and leasing. The chapter focuses on access to credit, but it also discusses the importance of savings and insurance products for firms. The chapter highlights three topics that have recently received much policy and research attention: (1) whether gender matters in lending and the extent to which differences in firm growth arise because of differences in access to finance among firms owned by women and firms owned by men; (2) the challenges and financing needs of rural firms; and (3) the role of finance in promoting innovation.

The **Statistical Appendix** consists of three parts. Appendix A presents basic country-by-country data on financial system characteristics around the world. It also shows averages of the same indicators for peer categories of countries, together with summary maps. It is an update of information in the 2013 *Global Financial Development Report*. Appendix B provides additional information on key aspects of financial inclusion around the world. Appendix C contains additional data on Islamic banking and financial inclusion in member countries of the Organization of Islamic Cooperation (OIC).

The accompanying website (http://www.worldbank.org/financialdevelopment) contains a wealth of underlying research, additional evidence, including country examples, and extensive databases on financial development. It provides users with interactive access to information on financial systems. The website is a place where users can supply feedback on the report, participate in an online version of the Financial Development Barometer, and submit suggestions for future issues of the report. The website also presents an updated and expanded version of the Global Financial Development Database, a data set of 104 financial system characteristics for 203 economies since 1960, which was launched together with the 2013 *Global Financial Development Report*. The database has now been updated with data on 2011, and new series have been added to the data set, especially in areas related to the nonbank financial sector.

The adoption of new technologies has taken different paths in different economies. In mobile technology, for instance, neither ubiquity nor a high penetration of mobile phones is a necessary condition for the development of mobile banking. To illustrate this, consider the example of Kenya, where mobile payment services took off when the country's mobile phone penetration rate was only about 20 percent. This was similar to the penetration rate in countries such as Afghanistan, Rwanda, and Tanzania, where mobile payments have not developed to such a high degree.

FIGURE 0.4 Fingerprinting and Repayment Rates, Malawi



Source: Calculations based on Giné, Goldberg, and Yang 2012.
Note: The repayment rates among fingerprinted and control groups by quartiles of the ex ante probability of default. Individuals in the "worst" quintile (Q1) are those with the highest probability of default and those on whom fingerprinting had the largest effect.

The evidence indicates that one of the factors that truly make a difference is competition among providers of financial services. To harness the potential of technologies, regulators need to allow competing financial service providers and consumers to take advantage of technological innovations. This may seem controversial for two main reasons. First, regulators have to walk a fine line between providing incentives for the development of new payment technologies (allowing providers to capture some monopoly rents to recoup investments) and requiring the new platforms to be open. Second, competition without proper regulation and supervision could cause credit to become overextended among people who are not qualified, which could lead to a crisis. But, as noted in the first *Global Financial Development Report* (World Bank 2012a), the evidence on crises actually underscores that healthy competition among providers rewards better performers and increases the power that consumers can exert in the marketplace. The present report follows up on this theme, highlighting new evidence that low rates of competition among banks diminish the access of firms to finance. This effect is stronger if financial development is less advanced, if the share of government banks is higher, and if credit information is less available or of lower quality.

FOCUS AREA 2: PRODUCT DESIGN AND BUSINESS MODELS

Wider use of financial services can also be fostered by innovative product designs that address market failures, meet consumer needs, and overcome behavioral problems. One example of such product design is the commitment savings account, whereby an individual deposits a certain amount and relinquishes access to the cash for a period of time or until a goal has been reached. These accounts have been viewed as a tool to promote savings by mitigating self-control issues and family pressures to share windfalls. One of the studies authored by World Bank researchers and highlighted in this report (Brune and others 2011) finds that farmers who were offered commitment accounts

saved more than farmers who were offered checking accounts. This had positive effects on agricultural input use, crop sales, and household expenditures. The study finds that commitment accounts work primarily by shielding the funds of farmers from the social networks of the farmers, rather than by helping the farmers deal with self-control issues.

Another example of innovative product design is index-based insurance. In contrast to traditional insurance, payouts for index-based insurance are linked to a measurable index, such as the amount of rainfall over a given time or commodity prices at a given date. Index insurance reduces problems of moral hazard because payouts occur according to a measurable index that is beyond the control of the policyholder. Also, index insurance is well suited to protect against the adverse shocks that affect many members of informal insurance networks simultaneously. It has clear benefits for lenders and a potential to increase financial inclusion and agricultural production. Interestingly, however, the take-up of index insurance has often been low. For example, in a randomized experiment with farmers highlighted in this report, take-up was only 20 percent for loans with rainfall insurance, compared with 33 percent for loans without insurance (Giné and Yang 2009). New evidence from field experiments suggests that lack of trust and liquidity constraints are significant nonprice frictions that constrain demand. Therefore, what helps is to design financial products that pay often and quickly; endorsements by credible, well-regarded institutions; the simplification of products; and consumer education.

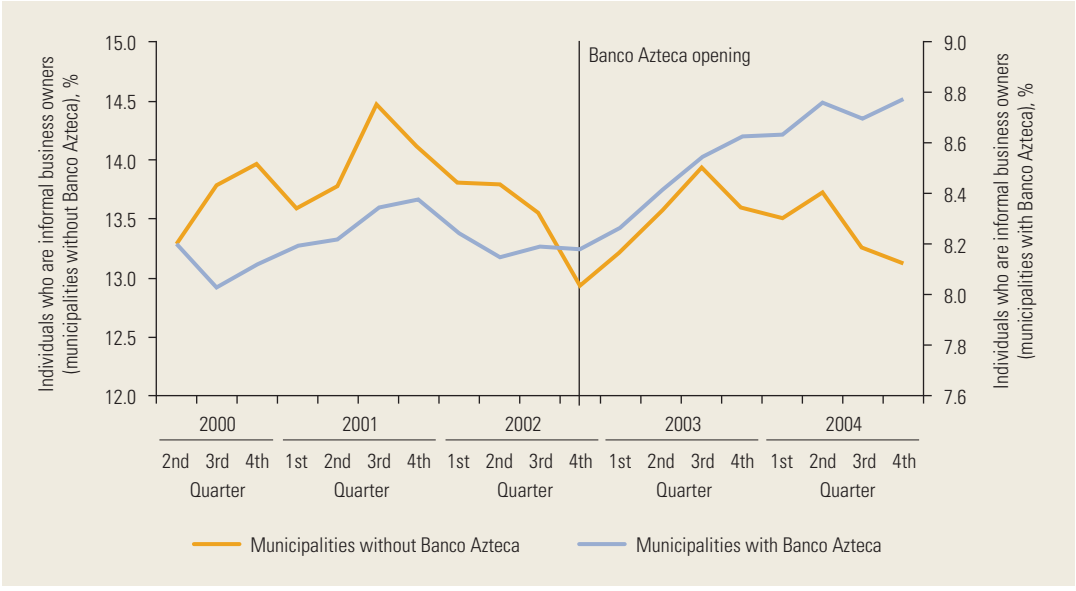
Beyond product design, innovative business models can help enhance economic growth. For example, microenterprises are often financially constrained because of a lack of information. This constraint can be addressed by leveraging existing relationships. Recent years have seen a growth in innovative channels for the delivery of credit through retail chains or large suppliers, reliance on payment histories to make loan decisions, and the reduction of costs through the use of existing distribution networks.

An interesting case that illustrates this point is Mexico's Banco Azteca (Bruhn and Love 2013). In October 2002, the bank simultaneously opened more than 800 branches in all the stores of its parent company, Grupo Elektra, a large retailer of consumer goods. The bank catered to low- and middle-income groups that were mostly excluded from the commercial banking sector. Capitalizing on the parent company's rich data, established information, collection technology, and experience in making small installment loans for merchandise, the bank was able to require less documentation than traditional commercial banks, often accepting collateral and cosigners instead of valid documents. Analysis highlighted in this report shows that the new bank branch openings led to an increase in the proportion of individuals who ran informal businesses, but to no change in formal businesses. After the Banco Azteca branches were opened, the proportion of informal business owners increased significantly in municipalities with Banco Azteca branches (figure O.5). Additionally, Banco Azteca's branch openings generated increases in employment and income levels. These findings illustrate that innovative business models can address some of the failures that lead to financial exclusion.

FOCUS AREA 3: FINANCIAL LITERACY AND BUSINESS TRAINING

Financial literacy is different from financial capability. Research indicates that standard, classroom-based financial education aimed at the general population does not have much of an impact on financial inclusion. It takes more than lectures and memorizing definitions to develop the capacity needed to benefit from financial services. This can be illustrated through an analogy with driving cars. A person can learn the meaning of street signs, but this does not make him capable of driving in traffic. Similarly, financial literacy does not ensure that a person is financially capable and able to make financially sound

FIGURE 0.5 Individuals Who Work as Informal Business Owners in Municipalities with and without Banco Azteca over Time



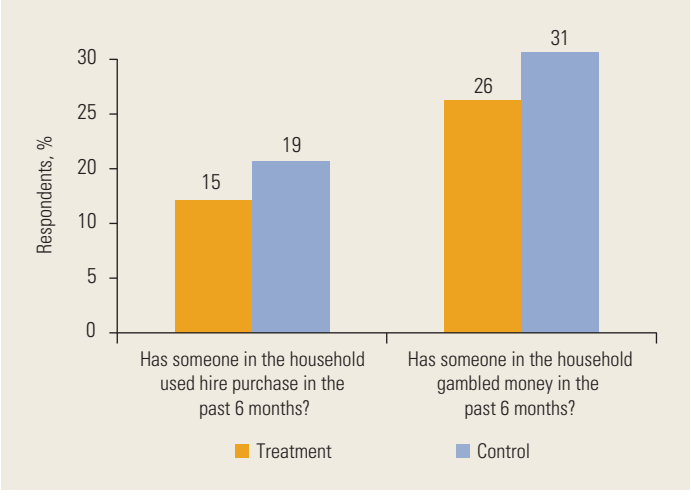
Source: Bruhn and Love 2013.
Note: The study uses the predetermined locations of Banco Azteca branches to identify the causal impact of Banco Azteca branch openings on economic activity through a difference-in-difference strategy. It controls for the possibility that time trends in outcome variables may be different in municipalities that had Grupo Elektra stores and those that did not have such stores (see the text).

decisions. Promoting financial capability through standard financial education has proven to be extremely challenging.

Recent research has identified some interventions that can raise the financial skills of individuals and firms. It is possible to boost financial capability through well-designed and targeted interventions. Interventions that use teachable moments, such as starting a job or purchasing a major financial product, have been shown to have a measurable impact. The evidence also demonstrates that financial education is especially beneficial among people with below-average education and limited financial skills. The impact of financial education is enhanced by leveraging social networks, which means involving both parents and children in the program or, in the case of remittances, both senders and recipients. In microenterprises, business training programs have been found to lead to improvements in knowledge; however, these programs have a relatively small impact on business practices and performance. Recent research suggests that education focusing on rules of thumb is particularly helpful because it avoids information overload.

New research on financial capability indicates that the mode of delivery can be a major factor in the effectiveness of outreach. One example of engaging delivery channels

FIGURE 0.6 Effects of Entertainment Education



Source: Berg and Zia 2013.
Note: "Hire purchase" refers to contracts whereby people pay for goods in installments.

that show some promise is entertainment education, highlighted in this report through a study that analyzes the impact of South Africa's soap opera "Scandal." The soap opera's story line incorporated examples of financially irresponsible behavior and the effects of such behavior. Researchers found statistically and economically significant effects on the financial behavior of respondents who watched the show (figure O.6). At the same time, the effects of this and other financial interventions are often short-lived, suggesting the need for these interventions to be repeated.

CHAPTER 1: KEY MESSAGES

- **Financial inclusion—the proportion of individuals and firms that use financial services—** varies widely across the world.
- **More than 2.5 billion adults—about half of the world's adult population—do not have a bank account.** While some of these people exhibit no demand for accounts, most are excluded because of barriers such as cost, travel distance, and amount of paperwork.
- **Enterprise surveys in 137 countries find that only 34 percent of firms in developing economies have a bank loan, whereas the share is 51 percent in developed economies.** In developing economies, 35 percent of small firms identify finance as a major constraint, while only 16 percent in developed economies do so.
- **Research—both theoretical and empirical—suggests that financial inclusion is important for development and poverty reduction.** For the poor, the relevant evidence is especially strong on access to savings and automated payments; it is much weaker on access to credit. For firms, especially for small and medium enterprises and new entrepreneurs, improving access to credit is likely to have significant growth benefits.
- **If inclusion is to have positive effects, it needs to be promoted responsibly.** Financial inclusion does not mean credit for all at all costs.
- **A diverse and competitive financial sector**—one that includes different types of financial providers and financial markets—is helpful in supplying the range of products and services necessary for healthy financial inclusion.

1

Financial Inclusion: Importance, Key Facts, and Drivers

Well-functioning financial systems serve a vital purpose by offering savings, payment, credit, and risk management services to individuals and firms.[1] Inclusive financial systems are those with a high share of individuals and firms that use financial services. Without inclusiveness in financial systems, people must rely on their own limited savings to invest in education or become entrepreneurs. Newly founded enterprises must likewise depend on their constrained earnings to take advantage of promising growth opportunities. This can contribute to persistent income inequality and slow economic growth.

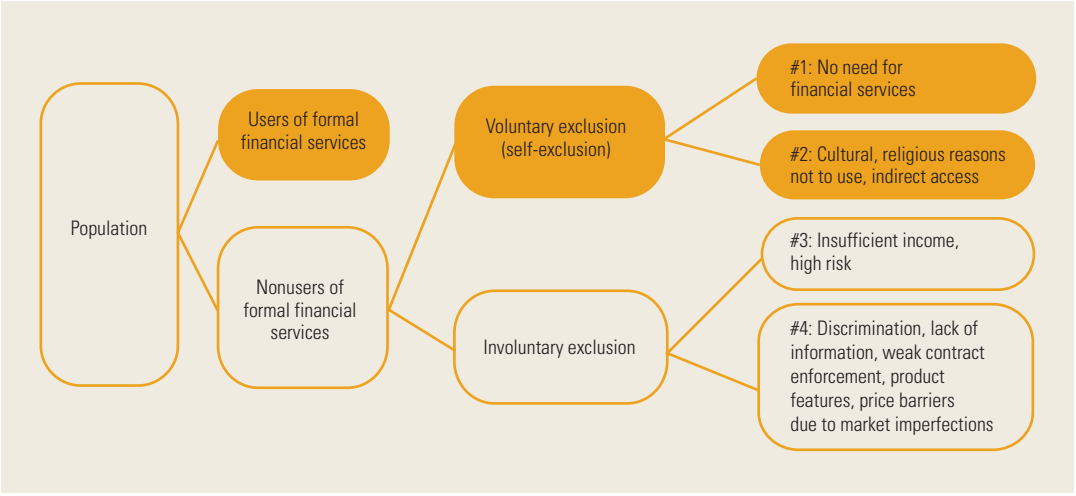
Development theory provides important clues about the impact of financial inclusion on economic development. Available models illustrate how financial exclusion and, in particular, lack of access to finance can lead to poverty traps and inequality (Aghion and Bolton 1997; Banerjee and Newman 1993; Galor and Zeira 1993). For example, in the model of Galor and Zeira (1993), it is because of financial market frictions that poor people cannot invest in their education, despite their high marginal productivity of investment. In Banerjee and Newman's model (1993), the occupational choices of individuals (between becoming entrepreneurs or remaining wage earners) are limited by the initial endowments. These occupational choices determine how much the individuals can save and what risks they can bear, with long-run implications for growth and income distribution.[2] These models show that lack of access to finance can be critical for generating persistent income inequality or poverty traps, as well as lower growth.

DEFINING FINANCIAL INCLUSION

Financial inclusion, as defined in this report, is the proportion of individuals and firms that use financial services.[3] It has a multitude of dimensions, reflecting the variety of possible financial services, from payments and savings accounts to credit, insurance, pensions, and securities markets. It can be determined differently for individuals and for firms.

Greater financial inclusion is not necessarily good. For the most part, more extensive availability of financial services allows individuals and firms to take advantage of business opportunities, invest in education,

FIGURE 1.1 Use of and Access to Financial Services



Source: Adapted from Demirgüç-Kunt, Beck, and Honohan 2008.

save for retirement, and insure against risks (Demirgüç-Kunt, Beck, and Honohan 2008). But not all financial services are appropriate for everyone, and—especially for credit—there is a risk of overextension.

It is important to distinguish between the use of and access to financial services (figure 1.1).[4] Actual use is easier to observe empirically. Some individuals and firms may have access to, but choose not to use some financial services. Some may have indirect access, for example, by being able to use someone else's bank account. Others may not use financial services because they do not need them or because of cultural or religious reasons. The nonusers include individuals who prefer to deal in cash and firms without promising investment projects. From a policy maker's viewpoint, nonusers do not constitute an issue because their nonuse is driven by lack of demand. However, financial literacy can still improve awareness and generate demand.[5] Also, nonuse for religious reasons can be addressed by allowing the entry of financial institutions that offer, for instance, Shari'a-compliant financial services (for example, see box 1.4).

Some customers may be involuntarily excluded from the use of financial services. (This is illustrated by the "involuntary exclusion" box in figure 1.1.) Several groups belong to this category. One notable group consists of individuals and firms that are unbankable from the perspective of commercial financial institutions and markets because they have insufficient income or represent an excessive lending risk. In this case, lack of use may not be caused by market or government failure. Other groups in this category may not have access because of discrimination, lack of information, shortcomings in contract enforcement, a poor information environment, shortcomings in product features that may make a product inappropriate for some customer groups, price barriers because of market imperfections, ill-informed regulations, or the political capture of regulators. If high prices exclude large parts of the population, this may be a symptom of underdeveloped physical or institutional infrastructure, regulatory barriers, or lack of competition. Financial exclusion deserves policy action if it is driven by barriers that restrict access by individuals for whom the marginal benefit of using a financial service would otherwise be greater than the marginal cost of providing the service. Box 1.1 explains why one hears about an access problem in markets for financial services more often than in markets for other products and services.[6]

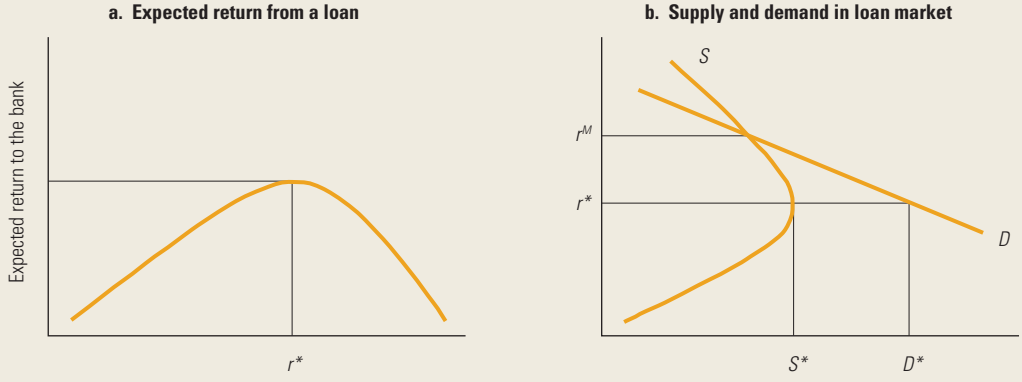
BOX 1.1 What Makes Finance Different? Moral Hazard and Adverse Selection

Financial service markets differ from the markets for other services and products. For example, one often hears about access problems in credit markets, but not about an access problem for, say, bubblegum. One of the basic rules of economics is that prices adjust so that, at market equilibrium, supply equals demand. Hence, if the demand for bubblegum exceeds the supply, the price of bubblegum will rise until demand and supply are equated at a new equilibrium price. If this price is too high for some consumers, they will not be able to buy bubblegum. But all those who are willing and able to pay the price will be able to buy bubblegum. So, if prices function as expected, there should be no access problem.

In a seminal paper, Stiglitz and Weiss (1981) provide a compelling explanation of why financial markets, particularly credit and insurance markets, are different.[a] They show that information problems can lead to credit rationing and exclusion from financial markets even in equilibrium. Credit and insurance markets are characterized by serious principal agent problems, which include adverse selection (the fact that borrowers less seriously intent on repaying loans are more willing to seek out external finance) and moral hazard (once the loan is received, borrowers may use funds in ways that are inconsistent with the interest of the lenders). Therefore, in considering involuntarily excluded users, one must distinguish between those individuals facing price barriers and financial exclusion arising because of high idiosyncratic risk or poor project quality (those people identified as group #3 in figure 1.1) and those individuals facing such barriers because of market imperfections such as asymmetric information (group #4 in figure 1.1).

Rationing may arise even in a competitive credit market because interest rates and bank charges affect not only demand, but also the risk profile of a bank's customers: higher interest rates tend to attract riskier borrowers (adverse selection) and change repayment incentives (moral hazard). As a result, the expected rate of return of a loan will increase less rapidly than the interest rate and, beyond a point, may actually decrease (figure B1.1.1, left panel). Because banks do not have perfect information about the creditworthiness of prospective borrowers, the supply of loans will be backward bending at rates above the bank's optimal rate, r^*. This means that financial exclusion will persist even at market equilibrium (at rate r^M). Because it is not profitable to supply more loans if the bank faces excess demand for credit, the bank will deny loans to borrowers who are observationally indistinguishable from those who receive loans. The rejected applicants would not receive a loan even if they offered to pay a higher rate. Hence, they are denied access. In other words, they may be bankable (that is, worthy, in principle, of financial services), but are involuntarily excluded.

FIGURE B1.1.1 Financial Exclusion in Market Equilibrium



Source: Stiglitz and Weiss 1981.
Note: D = demand; S = supply

(box continued next page)

BOX 1.1 What Makes Finance Different? Moral Hazard and Adverse Selection *(continued)*

Determining whether individuals or firms have access to credit, but choose not to use it or are simply excluded is complex, and the effects of adverse selection and moral hazard are difficult to separate. Thus, attempts to broaden access beyond level S^* in figure B1.1.1, right panel, are associated with challenges because they would require a bank to lower screening standards and may translate into higher risks for the bank and for borrowers. The global financial crisis has highlighted that extending access at the expense of reduced screening and monitoring standards can have severely negative implications both for consumers and for financial stability. Therefore, in the case of credit, it is preferable to enhance financial inclusion through interventions that increase supply by removing market imperfections. Examples are new lending technologies that reduce transaction costs and improved borrower identification that can mitigate (even if not fully eradicate) the problems of asymmetric information.

Moral hazard and adverse selection issues are also well documented in insurance markets. Other financial services, such as deposits and payments, do not suffer from moral hazard and adverse selection to the same extent, but they still present policy challenges in terms of financial inclusion. For example, agency problems also occur from the perspective of depositors, particularly small depositors, who entrust their financial resources to intermediaries who are not easy to oversee. These problems may become acute and limit participation in contexts where a lack of trust is an important reason for not opening an account at a formal financial institution (globally, 13 percent of adults report such a reason).

The nonprice barriers are often considerable. For example, potential customers may be discriminated against by the design features of a product, or they may face barriers to access because of red tape. Some individuals will have no access to financial services because there are no financial institutions in their area; this is the case in many remote rural areas. Yet others may be excluded because of poorly designed regulations, for instance, the documentation requirements for opening an account, such as the existence of a formal address or of formal sector employment. For these individuals, the supply curve in the right panel of figure B1.1.1 would be vertical at the origin, and the supply and demand for services would not intersect, leading to financial exclusion.

Policy makers are also concerned if high prices and fixed costs make it impossible for large segments of the population to use basic services such as simple deposit or payment services. This is not an access issue in the strict sense, but it still represents a policy challenge to the extent that it reflects a lack of competition or underdeveloped physical or institutional infrastructures, in resolving which government can play a major role.

a. For other explanations, see, for example, Keeton (1979) and Williamson (1987).

The challenging but important practical issue is that, if nonuse is observed, it is hard to disentangle whether the nonuse is voluntary or involuntary. Therefore, for policy reasons, it is crucial that financial inclusion be properly measured. This is the subject of the following section.

MEASURING FINANCIAL INCLUSION: KEY FACTS

Financial inclusion varies widely across the world. Newly available data confirm striking disparities in the use of financial services in developed and developing economies (box 1.2). The Global Financial Inclusion (Global Findex) Database provides a new set of indicators that measure how adults (aged 15 years and above) in 148 economies save, borrow, make payments, and manage risk by surveying over 150,000 individuals with characteristics representative of 97 percent of the world's adult population during the 2011 calendar year.[7] For instance, the share of adults in developed economies with an account at a formal financial institution is more than twice the corresponding share in developing economies. There is also substantial variation in financial inclusion within countries across individual characteristics such as income and

BOX 1.2 Overview of Global Data Sources on Financial Inclusion

Until recently, the measurement of financial inclusion around the world has focused on density indicators, such as the number of bank branches or automatic teller machines (ATMs) per capita. Data of this type have been compiled by surveying financial service providers (for example, see Beck, Demirgüç-Kunt, and Martínez Pería 2007; Kendall, Mylenko, and Ponce 2010). Much of this provider-side information on financial inclusion is now collected as part of the Financial Access Survey, which has annual data for 187 jurisdictions from 2001 to 2011.[a] While these indicators have made it possible to obtain basic provider-side information on the use of financial services, relatively little has been known until recently about the global reach of the financial sector, that is, the extent of financial inclusion and the degree to which the poor, women, and other population segments are excluded from formal financial systems.

This gap in data has now been addressed with the release of the Global Financial Inclusion (Global Findex) Database, built by the World Bank, in cooperation with the Bill and Melinda Gates Foundation and Gallup, Inc. (see Demirgüç-Kunt and Klapper 2012).[b] These user-side indicators, compiled using the Gallup World Poll Survey, measure how adults in 148 economies around the world manage their day-to-day finances and plan for the future. The indicators are constructed with survey data from interviews with more than 150,000 nationally representative and randomly selected adults over the 2011 calendar year. The database includes over 40 indicators related to account ownership, payments, savings, borrowing, and risk management. As a survey-based data set, the user-side data face certain challenges that have been addressed in the survey design and execution. (For instance, self-reported barriers could be misleading because respondents with limited awareness of the benefits of formal financial products may mention other reasons than their lack of knowledge as the main reason for being excluded.)

For now, the Global Findex data are available for one year, 2011. Global Findex will eventually produce time series on usage (complete updates are planned for 2014 and 2017). The questionnaire, translated into 142 languages to ensure national representation in 148 economies, can be used by local policy makers to collect additional data.

The compilation of user-side data includes a growing body of survey data on financial capability, living standards and measurement surveys, and enterprise surveys.[c] There are also user-side data that, while limited in country coverage, have had a great impact on financial inclusion (for example, the FinScope surveys conducted by FinMark Trust in South Africa and now expanding beyond the region).[d] Data collected through the financial diaries methodology used by Collins and others (2009) have also provided important insights such as the sheer number of financial transactions undertaken by the poor.

For the access of firms to finance, the World Bank's Enterprise Surveys are the leading data set for the measurement of financial inclusion by firms of all sizes across countries.[e] The World Bank also compiles informal surveys, similar in format to the Enterprise Surveys, but focused on firms in the informal sector.[f] The Global Financial Development Database contains additional variables, such as cross-country indicators on the access of firms to securities markets.[g] It has been updated and expanded as part of the work on this report (see the Statistical Appendix).

At a summit in June 2012, the leaders of the G-20 endorsed the "G20 Basic Set of Financial Inclusion Indicators," which integrates existing global data efforts to compile indicators on the access to and usage of financial services. They include the Financial Access Survey, the Global Findex Database, and the Enterprise Surveys.[h]

a. See Financial Access Survey (database), International Monetary Fund, Washington, DC, http://fas.imf.org/.
b. See Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
c. See World Bank (2013a) and Responsible Finance (database), World Bank, Washington, DC, http://responsiblefinance.worldbank.org/.
d. See FinScope (database), FinMark Trust, Randjespark, South Africa, http://www.finscope.co.za/.
e. Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.
f. For additional information on the informal surveys, see "Enterprise Surveys Data," World Bank, Washington, DC, http://www.enterprisesurveys.org/Data.
g. Global Financial Development Report (database), World Bank, Washington, DC, http://www.worldbank.org/financialdevelopment.
h. See "G20 Basic Set of Financial Inclusion Indicators," Global Partnership for Financial Inclusion, Washington, DC, http://datatopics.worldbank.org/g20fidata/.

gender. While the disparities are less sizable in the access of firms to finance, considerable differences exist across countries and by certain characteristics, such as firm age and firm size (see Beck, Demirgüç-Kunt, and Martínez Pería 2007; Cull, Demirgüç-Kunt, and Morduch 2012; Demirgüç-Kunt and Klapper 2012).

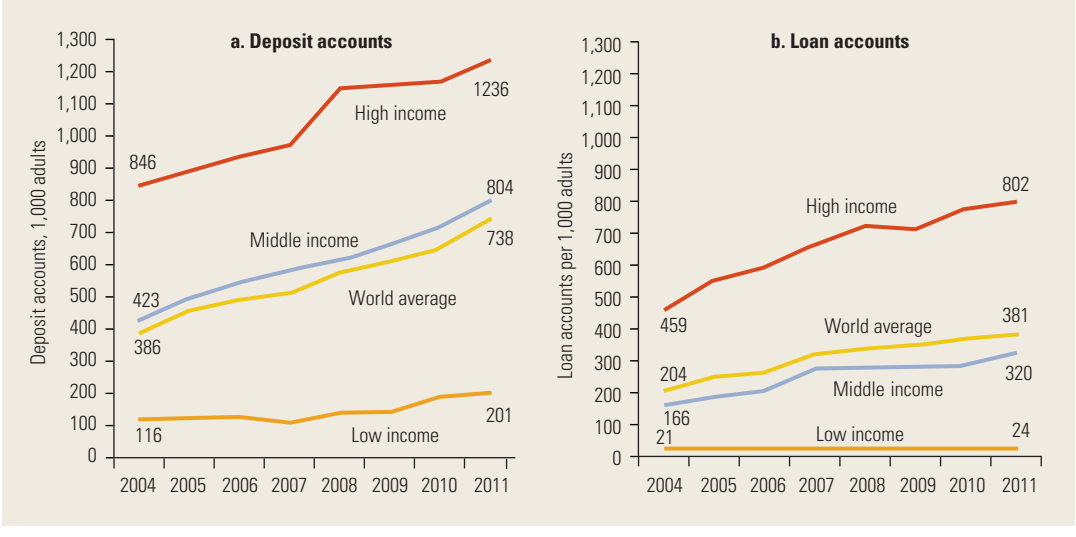
Basic trends in financial inclusion

The available proxies suggest that the use of financial services has been slowly, but steadily, expanding over time. For example, the number of deposits and loan accounts with commercial banks has been increasing for the whole period on which consistent data are available (figure 1.2).[8]

The growth in the number of deposits and loan accounts dipped with the onset of the global financial crisis in 2008, but, despite this dip, the number of accounts continued to expand. Low-income countries did record slightly positive growth in the number of accounts, but the growth rate was generally lower than the corresponding rate in high-income countries, thereby increasing the wedge between the two country groups in terms of financial inclusion.

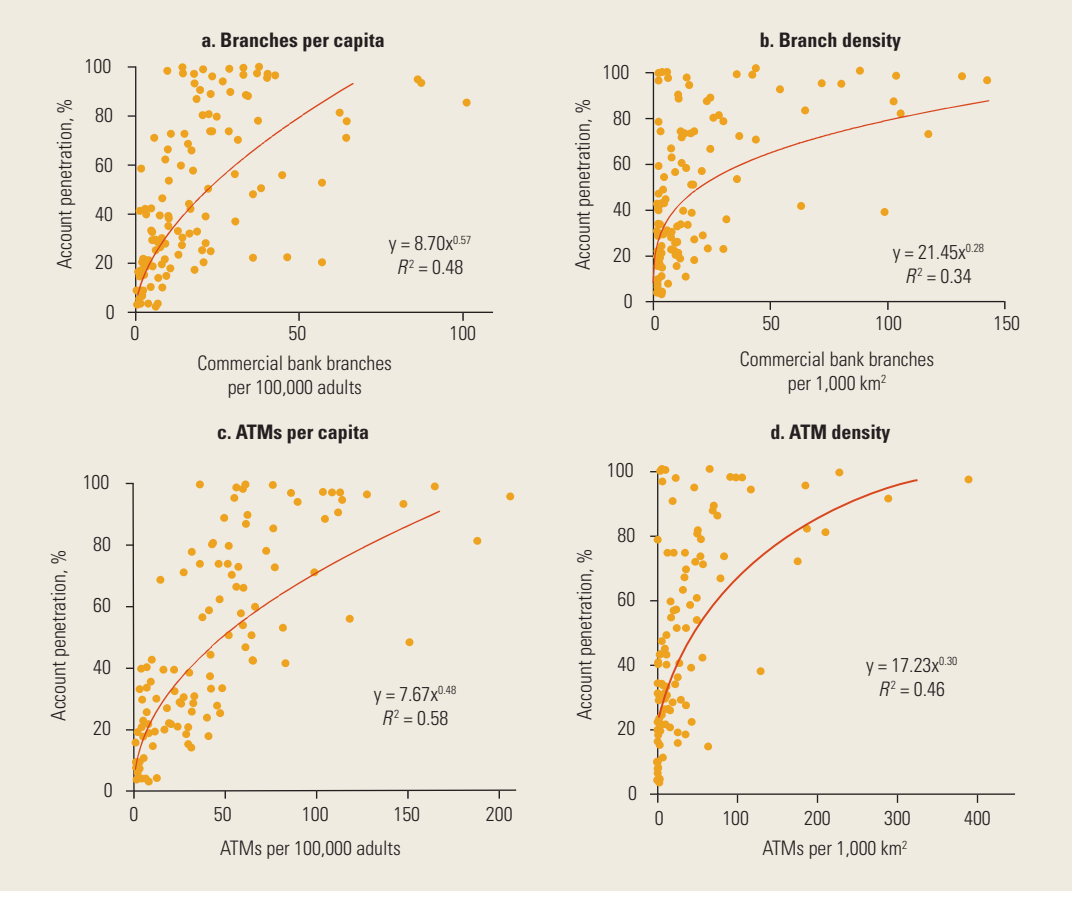
The data clearly indicate a wide dispersion in financial inclusion around the world. For example, user-side indicators such as the share of adults who own an account (shown on the vertical axes in figure 1.3) varies from less than 1 percent (Turkmenistan) to more than 99 percent (Denmark). Similarly, provider-side indicators, such as bank branch density and ATM density (shown on the horizontal axes in figure 1.3), vary widely from country to country. The user-side and the provider-side measures are correlated, but their correspondence is far from perfect, as illustrated in figure 1.3.[9] For example, Bulgaria had 84 commercial bank branches per 100,000 adults in 2004–11, substantially above the global average of 19 branches (with a standard deviation of 19). At the same time, according to Global Findex, only 53 percent of adult Bulgarians had an account with the formal financial system.[10] In comparison, the Czech Republic, a country of approximately similar size and population, had account penetration of 81 percent, with 22 branches per 100,000 adults. These differences underscore that variables such as bank branch density, while useful, provide only a rough proxy for financial inclusion.

FIGURE 1.2 Trends in Number of Accounts, Commercial Banks, 2004–11



Source: Calculations based on data from the Financial Access Survey (database), International Monetary Fund, Washington, DC, http://fas.imf.org.

FIGURE 1.3 Provider-Side and User-Side Data on Financial Inclusion



Sources: Calculations based on data from the Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex for account penetration rates and the Financial Access Survey (database), International Monetary Fund, Washington, DC, http://fas.imf.org/ for the other four indicators.
Note: ATM = automatic teller machine.

Ownership of accounts

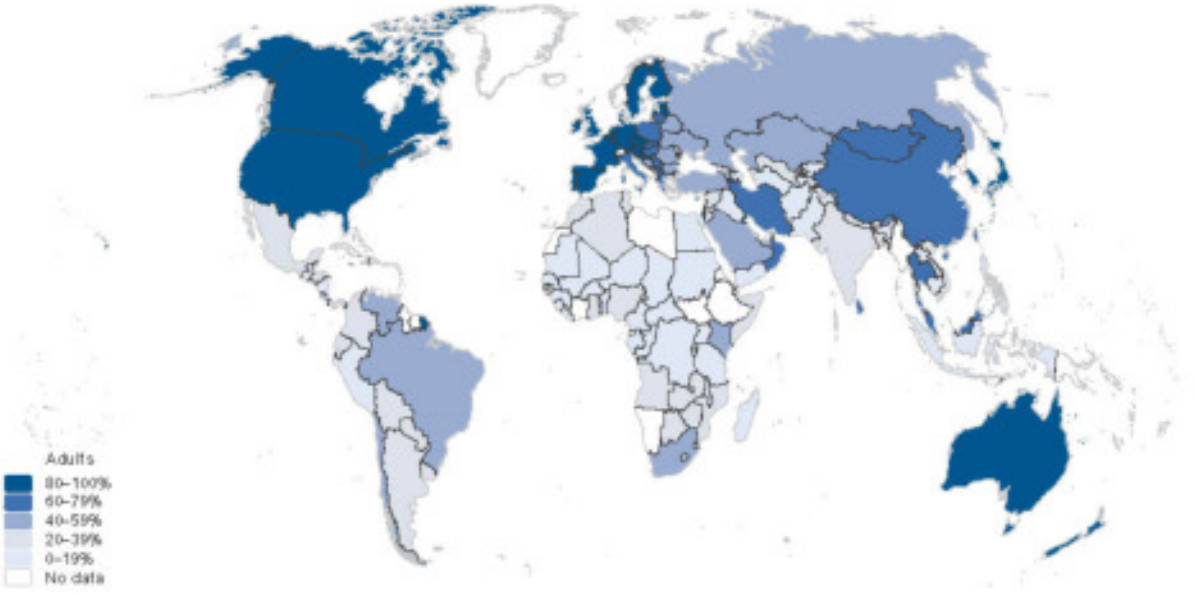
Accounts are a key measure of financial inclusion because essentially all formal financial activity is tied to accounts. In developed economies, 89 percent of adults report that they have an account at a formal financial institution, while the share is only 24 percent in low-income economies. Globally, 50 percent of the adult population—more than 2.5 billion people—do not have a formal account. In many countries in Africa, the Middle East, and Southeast Asia, fewer than 1 in 5 adults has a bank account (map 1.1).

Account penetration varies considerably not only among countries, but also across individuals within the same country. For example, in developing economies, on average, the top 20 percent of the wealthiest adults are more than twice as likely as the poorest adults to have a bank account (Demirgüç-Kunt and Klapper 2012). Also, in developing economies, women are 20 percent less likely to have an account than men (box 1.3).

Payments

Noncash methods of payment are becoming more important, but they still lag behind cash methods in terms of penetration. Debit and credit cards account for a large part of noncash retail transactions. Only a small fraction of adults are using mobile payments, although

MAP 1.1 Adults with an Account at a Formal Financial Institution



Source: Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.

this area has shown much promise (figure 1.4; also see chapter 2).

SAVINGS

Globally, 36 percent of adults report that they saved or set aside money in the previous year. In high-income economies, this ratio is 58 percent, while in low-income economies, it is only 30 percent. Similar to account ownership, the propensity to save differs across and within countries.

Only a portion of these savings is held in formal financial institutions. Worldwide, 22 percent of adults report they saved at a bank, credit union, or microfinance institution (MFI) in 2011. The share ranges from 45 percent in high-income economies to 11 percent in low-income economies. Many other people, including some who own a formal account, rely on different methods of saving. Community-based savings methods, such as savings clubs, are widely used around the world as an alternative or complement to saving at a formal financial institution. These methods are most commonly found in low-income economies. (For example, in Sub-Saharan Africa, 19 percent of adults reported they had used savings clubs and similar methods in 2011.)

As with account penetration, formal savings behavior also varies by country category or by individual characteristics within countries (Demirgüç-Kunt and Klapper 2012). For instance, 43 percent of account holders worldwide saved at a formal financial institution in 2011. This ratio ranged from less than 1 percent in Armenia, Cambodia, the Arab Republic of Egypt, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan to more than 60 percent in Australia, New Zealand, and Sweden.

Worldwide, 12 percent of bank account holders save solely using methods other than bank accounts. The reasons for this include the high costs of actively using the account, such as balance and withdrawal fees, as well as costs associated with physical distance. Policy makers or commercial bankers could introduce new products to encourage existing account holders to save in formal financial institutions.

BOX 1.3 The Gender Gap in Use of Financial Services

Gender is a powerful determinant of economic and financial opportunities. Women use the formal financial sector less than men, especially in developing economies. Globally, 47 percent of women own or co-own an account, compared with 55 percent of men.[a] There are other major differences. For example, the gap is largest among people living on less than $2 per day and among people living in South Asia and the Middle East. But, according to analysis by Demirgüç-Kunt, Klapper, and Singer (2013), the broad pattern holds in all regions of the world and across income groups within countries.

The gender gap is large even within the same income groups, by 6 to 9 percentage points in developing economies. This signals that the gap is not merely a function of income. Indeed, the econometric analysis of Demirgüç-Kunt, Klapper, and Singer (2013) highlights that significant gender differences remain even after one controls for income and education.

The gap extends beyond the opening of a bank account. Women lag significantly behind men also in the rate of saving and borrowing through formal institutions, even after we account for individual characteristics such as age, education, income, and urban or rural residence. In Latin America, for instance, 8 percent of women report that they had saved in a formal institution in the previous year, compared with 12 percent of men.

This can put women, often the main caregivers in their families, at a disadvantage. If they do not own an account, women face more difficulties saving formally or receiving government payments or remittances from family members living abroad. The lack of a formal account can also create barriers to the access of formal credit channels, which may hinder entrepreneurial or educational ambitions.

Several factors are to blame for this phenomenon. Legal discrimination against women, such as in employment laws and inheritance rights, explains a large portion of the gender gap across developing countries, even after one controls for differences in gross domestic product (GDP) per capita.

In a reflection of this discrimination, more women than men turn to alternative means to manage their day-to-day finances and plan for their future financial needs. In Sub-Saharan Africa, for example, 53 percent of women who save do so using an informal community-based savings method, such as a rotating savings and credit association, in comparison with 43 percent of the men who save.

In Findex surveys, women also cite the ability to use another person's account as a reason for not opening one themselves.[a] Indeed, 26 percent of unbanked women in developing economies—compared with 20 percent of men—say they do not have an account because a family member already has one.

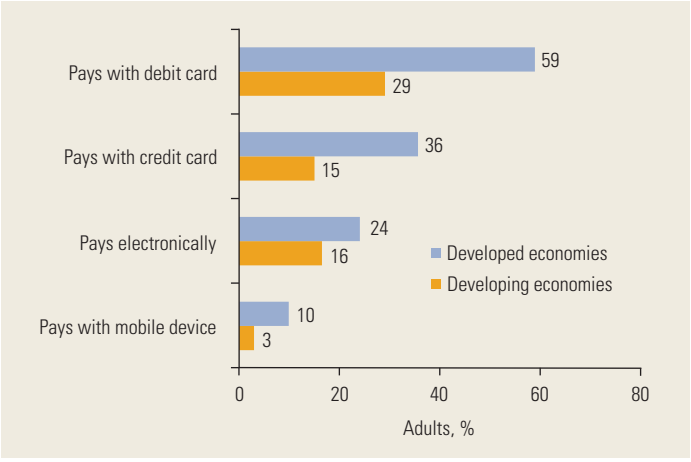
The lack of asset ownership, moreover, may have an adverse effect on empowerment and self-employment opportunities. Several interesting studies use randomized controlled trials to show that providing access to personal savings instruments boosts consumption and productive investment, especially among women, thereby contributing to the empowerment of women (Ashraf, Karlan, and Yin 2010; Dupas and Robinson 2013). It is thus probably not enough for women to have access to an account; they also need to be the owners of their accounts and savings.

In some countries, the gender gap in terms of use may be even greater than the gap in terms of account ownership. For example, a World Bank study in Pakistan estimates that 50–70 percent of the loans made to women clients may actually be used by their male relatives (Safavian and Haq 2013). This highlights the challenges of measuring inclusion, as well as of designing policies to enhance financial access: if, for instance, credit for women were subsidized, an expansion in loans to women clients might not necessarily translate into women gaining more access to finance.

a. Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.

A large share of adults around the world who report they saved or set aside money in 2011 used neither formal financial institutions nor community-based savings methods. Adults saving through alternative methods, such as accumulating gold or livestock or putting money "under the mattress," account for 29 percent of savers globally.

FIGURE 1.4 Selected Methods of Payment, 2011



Source: Calculations based on data from the Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
Note: The response on mobile payments may subsume some of the other categories. (For example, using a credit card to make a payment by phone may be seen as a mobile payment by the respondent.)

Insurance

Insurance is crucial for managing risks, both the risks associated with personal health and the risks associated with livelihoods. In developing economies, 17 percent of adults report they paid for health insurance (in addition to national health insurance, where applicable). The share ranges from 3 to 5 percent in Sub-Saharan Africa, Europe, Central Asia, and South Asia. The corresponding ratio for East Asia and the Pacific is 38 percent, which is driven by China, where 47 percent of adults report they paid for health insurance; without China, the regional average would drop to 9 percent.

People who work in farming, forestry, or fishing are critically vulnerable to severe weather events. Nonetheless, only 6 percent of these people report they purchased crop, rainfall, or livestock insurance in 2011. In Europe and Central Asia, only 4 percent report they purchased such insurance.

Credit

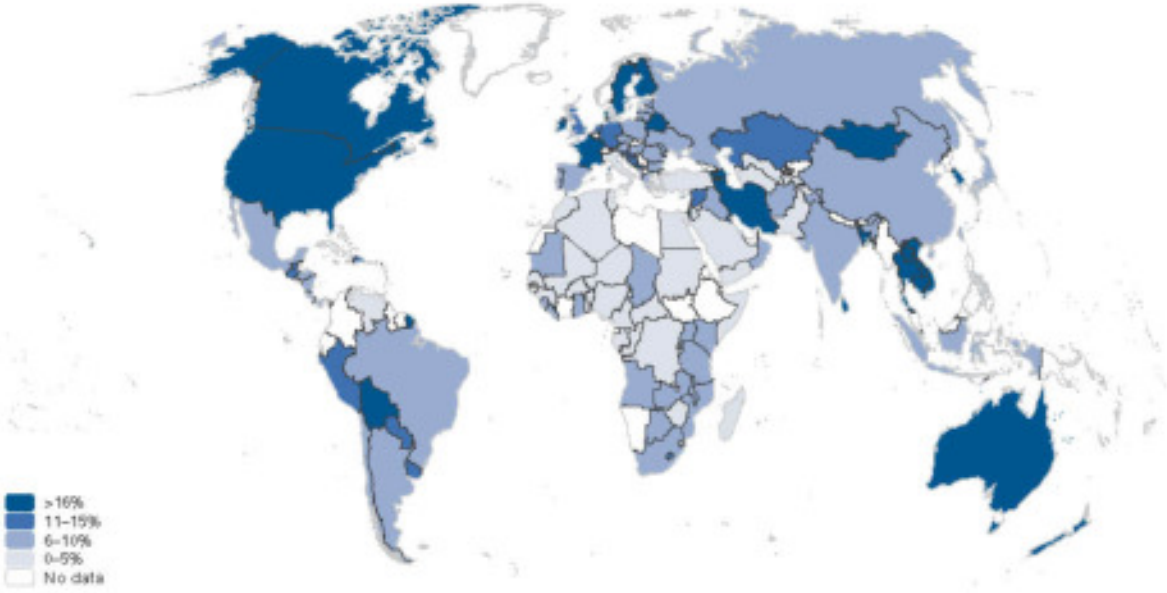
Most borrowing by adults in developing economies occurs through informal sources, such as family and friends. Globally, 9 percent of adults report they originated a new loan from a formal financial institution in the previous 12 months. But, in developing economies, adults are three times more likely to borrow from family and friends than from formal financial institutions. In high-income economies, the most commonly cited purpose of an outstanding loan is to purchase a home, while emergency and health reasons are most frequently cited by adults in the developing world.

The introduction of credit cards has had a large effect on the demand for and use of short-term formal credit. In high-income economies, half of the adult population reports they have a credit card. Despite a surge in recent years, credit card ownership in developing economies still lags far behind the rates in high-income economies; in the former, only 7 percent of adults report they have a credit card (notable exceptions are Brazil, Turkey, and Uruguay, where the proportion of adults with a credit card exceeds 35 percent).

As a result of the extensive ownership of credit cards, adults in high-income economies may have less need for short-term loans from financial institutions. This may help explain why the share of adults in these economies who report they received a loan in the previous year from a formal financial institution (such as a bank, cooperative, credit union, or MFI) is not particularly high. Indeed, if the adults in high-income economies who report they own a credit card are included in the share of those adults who report they borrowed from a formal financial institution in the previous year (a measure that may not include credit card balances), the share rises from 14 percent to 54 percent.

Individuals in higher-income economies are more likely to borrow from formal sources, while those in lower-income economies tend to rely more heavily on informal sources. To illustrate, in Finland, 24 percent of adults report they borrowed money from a formal financial institution, such as a bank, credit union, or MFI, in the previous year (map 1.2). In Ukraine, only 8 percent of adults report they did so, and, in Burundi, only 2 percent of adults report they used formal credit. The pattern is reversed with respect to the proportion of adults who received

MAP 1.2 Origination of New Formal Loans



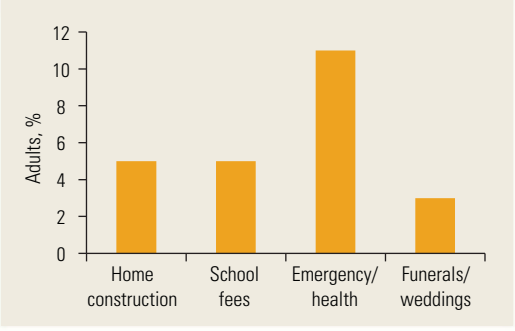
Source: Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.

credit from informal sources (the shares of adults who have done so in Finland, Ukraine, and Burundi are 15 percent, 37 percent, and 44 percent, respectively). This propensity toward informal borrowing persists across low- and middle-income countries. Friends and family are the most commonly reported sources of new loans in upper-middle-, lower-middle-, and low-income economies, but not in high-income economies. In low-income economies, 20 percent of adults report that friends or family were their only sources of new loans in the previous year. In contrast, only 6 percent of adults report that a formal financial institution is their only source. Adults in poorer countries are also more likely to report they borrowed money from a private informal lender in the previous year. An important caveat to this finding is that social norms may have a significant effect on the degree to which this type of borrowing is reported.

The purpose of borrowing varies across economies and by individual characteristics, similar to the differences in sources of credit. Data gathered in developing economies highlight that emergencies or health issues are particularly common reasons for the existence

FIGURE 1.5 Reasons for Loans Reported by Borrowers, Developing Economies

Adults with an outstanding loan, by purpose of loan



Source: Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.

of an outstanding loan (figure 1.5). More in-depth analysis points to a fine line between lending for business purposes and lending for household purposes. For example, evidence from Mongolia indicates that about half of all microcredit business loans are used for purposes associated with the household, such as the purchase of domestic applicances (Attanasio and others 2011). Similar results have been obtained for Bangladesh, Indonesia, Peru, and

the Philippines (Collins and others 2009; Johnston and Morduch 2008; Karlan and Zinman 2011). The key point is fungibility: a business loan diverted to consumption can free up other resources for business investment later; so, it is still possible to see a positive net impact on business and income. Households need such general use finance in part for self-employment and in part for other priorities.

Data on the use of mortgages show large differences across economies at different income levels. In high-income economies, 24 percent of adults report they have an outstanding loan to purchase a home or apartment. The corresponding share is only 3 percent in developing economies. Even within the European Union, there is large variation in the use of mortgages. For example, while 21 percent of adults in Germany have an outstanding mortgage, only 3 percent in Poland do so. Such differences may, in part, reflect differences in housing finance systems across economies, such as in product diversity, types of lenders, mortgage funding, and the degree of government participation.

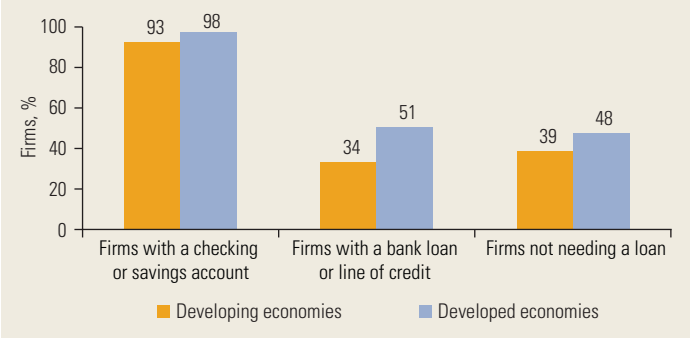
FINANCIAL INCLUSION AMONG FIRMS

Many of the findings on financial inclusion among individuals are also applicable to financial inclusion among firms.[11] For example, firms in developed economies are, on average, more likely to use bank credit (figure 1.6). Indeed, the dividing line between firm finance and individual finance becomes cloudy in some cases, especially for small firms and the poorer segments of the population, segments that policies aimed at enhancing financial inclusion are often designed to reach. Frequently, the family is essentially a productive unit, that is, a firm. Thus, quasi-experimental studies and randomized controlled trials regularly tend not to make fine distinctions between the two.[12]

Comparing the use of checking and savings accounts by (formal sector) firms and the use of loans by the same type of firms reveals that the differences between developed and developing economies are relatively small (figure 1.6). In both sets of countries, a vast majority of firms use bank accounts. In comparison with their counterparts in high-income economies, firms in low- and middle-income economies are more financially constrained. Interestingly, a significant share of firms in both the high-income and the low- and middle-income groups (48 percent and 39 percent, respectively) reported they did not need a loan. The geographic variation in the use of bank accounts and loans by firms is relatively large. While more than 90 percent of firms in Eastern Europe have bank accounts, and 44 percent have loans, 76 percent of firms in the Middle East report they have accounts, and only 27 percent report they have loans. Within-region variations are large, too. In Azerbaijan, for example, 77 percent of firms have accounts and 20 percent have loans, while in Romania, 50 percent of firms have accounts and about 42 percent have loans.

Firms do differ in developed and developing economies in terms of their identification of access to finance as a major hindrance to their operations and growth. More so than firms in high-income economies, firms in low- and middle-income economies, on average, identify access to finance as a major problem (figure 1.7). The lack of access to finance is negatively correlated with firm size in both country-income types; a relatively higher share

FIGURE 1.6 The Use of Accounts and Loans by Firms



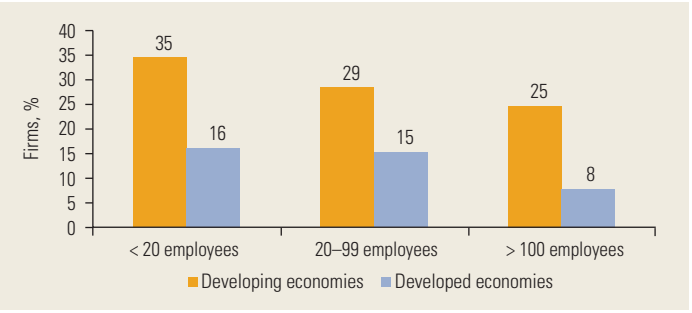
Source: Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.
Note: The sample includes 137 countries from 2005 to 2011. The income groups are based on World Bank definitions; high income refers to countries with gross national income per capita of at least $12,476.

of smaller firms identify access to finance as a major constraint.

About 66 percent of investments are internally financed by firms. Among the external sources of finance available, banks are the mostly widely used option and represent, on average, 18 percent of investment financing. Credit from suppliers and the issuance of new equity, are also commonly used options (figure 1.8). The use by firms of internal financing varies considerably across regions. For example, on average, firms in South Asia finance 75 percent of their new investments internally, while, in Latin America, firms use internal resources to finance 58 percent of their new investment. Big differences also exist within regions: while an average firm in Pakistan finances 80 percent of its new investments internally, the share is around 52 percent for an average Sri Lankan firm. A look at bank financing—the most widely used external source of finance—reveals that Pakistani firms, on average, finance less than 15 percent of their new investments through banks, while, in Sri Lanka, bank financing accounts for around 30 percent.

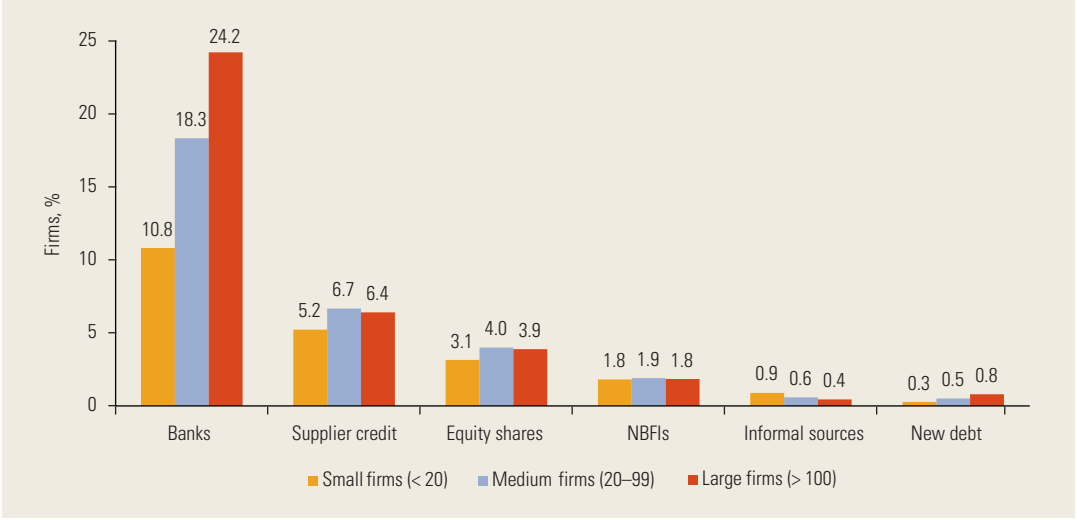
The biggest constraints affecting the operations and growth of firms include macroeconomic instability (figure 1.9). This reflects the negative effects of the recent financial crisis on aggregate demand across the globe, the reduced exports of developing countries, and macroeconomic volatility. Tax rates are also considered an important obstacle by firms, along with electricity shortages, corruption, and political instability. The lack of access to finance, which includes problems in both the availability and the cost of financing, is

FIGURE 1.7 Finance Is a Major Constraint among Firms, Especially Small Firms



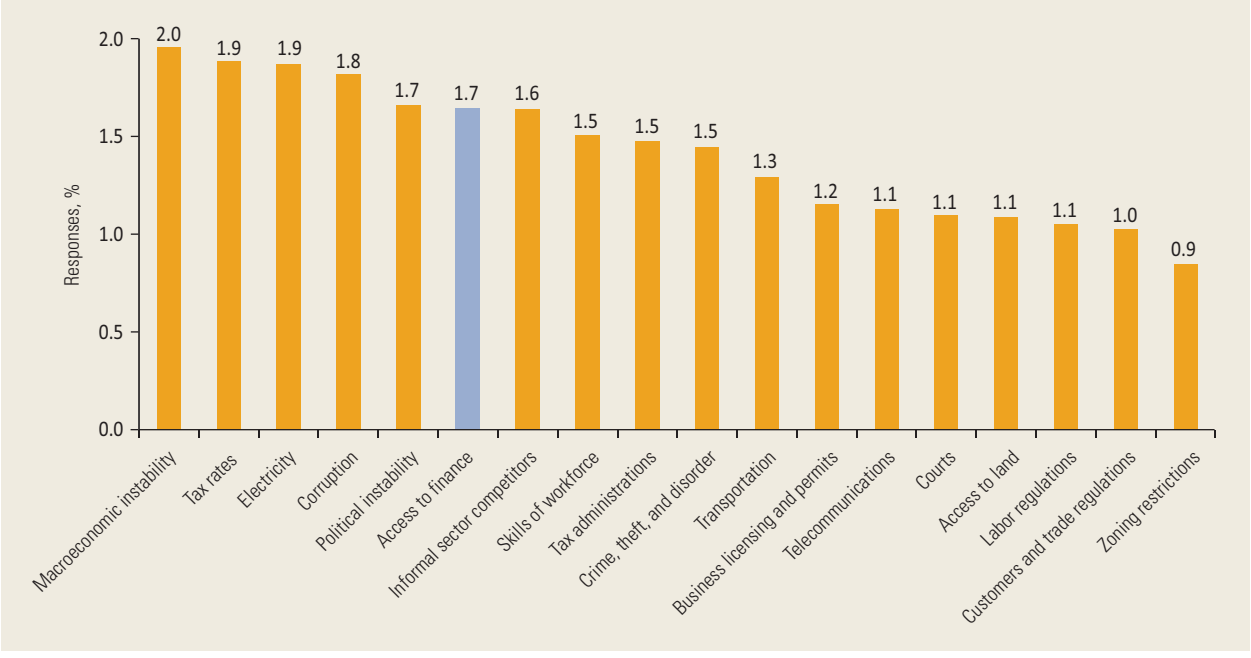
Source: Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.
Note: The sample includes 137 countries from 2005 to 2011. The income groups are based on World Bank definitions; high income refers to countries with gross national income per capita of at least $12,476.

FIGURE 1.8 Sources of External Financing for Fixed Assets



Source: Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.
Note: The sample includes 120 countries from 2006 to 2012. The numbers in parentheses represent the number of employees. NBFI = nonbank financial institution. New debt = issuance of new debt instruments such as commercial paper and debentures.

FIGURE 1.9 Business Constraints



Source: Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.
Note: The sample includes 120 countries from 2006 to 2012. The figure shows the percentage of total responses to a question asking firms about the biggest obstacle they face.

ranked as the sixth greatest obstacle faced by firms. Ayyagari, Demirgüç-Kunt, and Maksimovic (2012) show that there is a distinction between what firms report and what actually constrains their growth, and that, regardless of perception, finance represents the most constraining factor.

Young firms and start-ups are particularly credit constrained because of principal agent problems. Because they have not been in the market for long, there is no or little information on their performance or creditworthiness. Data from the World Bank Enterprise Surveys show that, across a wide range of countries, younger firms rely less on bank financing and more on informal financing from family and friends.[13] Globally, only 18 percent of firms that are 1–2 years old use bank financing, compared with 39 percent of firms that are 13 or more years old; in contrast, 31 percent of firms that are 1–2 years old rely on informal sources of financing, such as family and friends, whereas only 10 percent of firms that are 13 or more years old get financing from informal sources (Chavis, Klapper, and Love 2011). The downside of financing through friends and family includes that this method might be unreliable or untimely or that it might bear large nonfinancial costs. Indeed, studies find that bank credit is associated with higher growth rates if one controls for other factors (for example, see Ayyagari, Demirgüç-Kunt, and Maksimovic 2012).

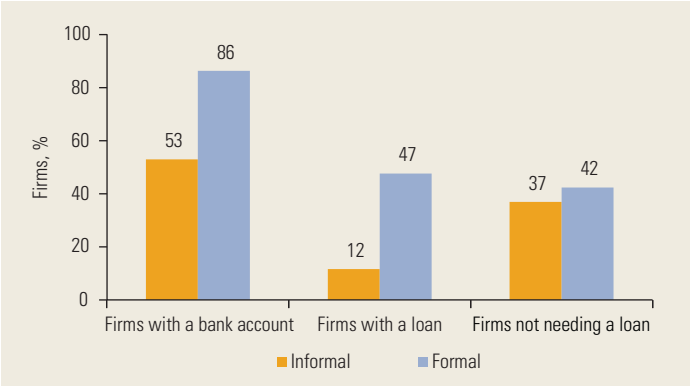
Firms in the informal sector face a specific set of issues in accessing finance. According to data from World Bank surveys of firms in the informal sector, 47 percent of informal sector firms do not have an account to run their business, and 88 percent do not have a loan (figure 1.10). On the other hand, formal sector firms have relatively greater access to bank accounts and loans. About 86 percent of formal firms report having an account and 47 percent claim to have loans. Differences in the use of finance between formal and informal sector firms can also be seen at the country level. For example, in the formal sector of

Rwanda, 86 percent of firms have an account, and 18 percent have loans, while, in the informal sector, only 36 percent of firms have an account, and 9 percent have loans.

A sizable share of firms in both the informal and formal sectors (37 percent and 42 percent, respectively) reported they did not need a loan. The firms that did need a loan but did not apply for one reported the following reasons for not applying: complex application procedures, interest rates that were too high, a lack of the required guarantees, or a higher collateral requirement (figure 1.11). The reasons for not applying for a loan were similar for firms in the formal and informal sectors.

A study of the access of firms to finance would be incomplete without an examination of access to securities markets, where some firms are able to use nonbank sources of funding, such as the issuance of stocks or bonds. Map 1.3 illustrates the differences in the access of firms to the stock market by using the share of market capitalization outside the top 10 largest companies: the higher this share, the easier it generally is for smaller firms to issue securities in this market. In most countries, the top 10 issuing firms capture a large fraction of the total amount raised.

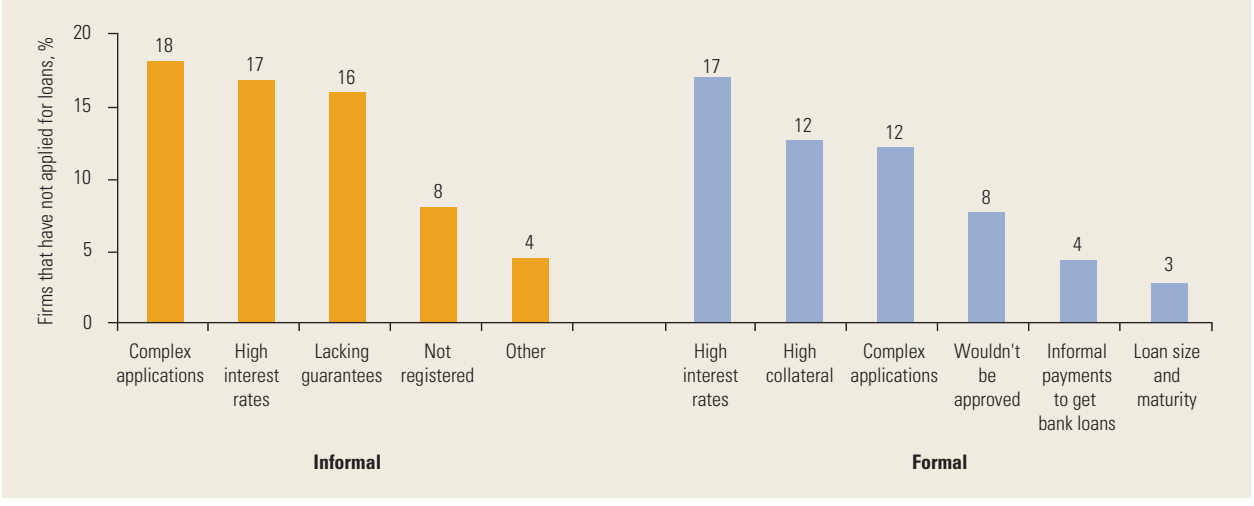
FIGURE 1.10 Formal and Informal Firms with Accounts and Loans



Sources: World Bank informal surveys; Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.
Note: The sample includes 13 countries from 2008 to 2011.

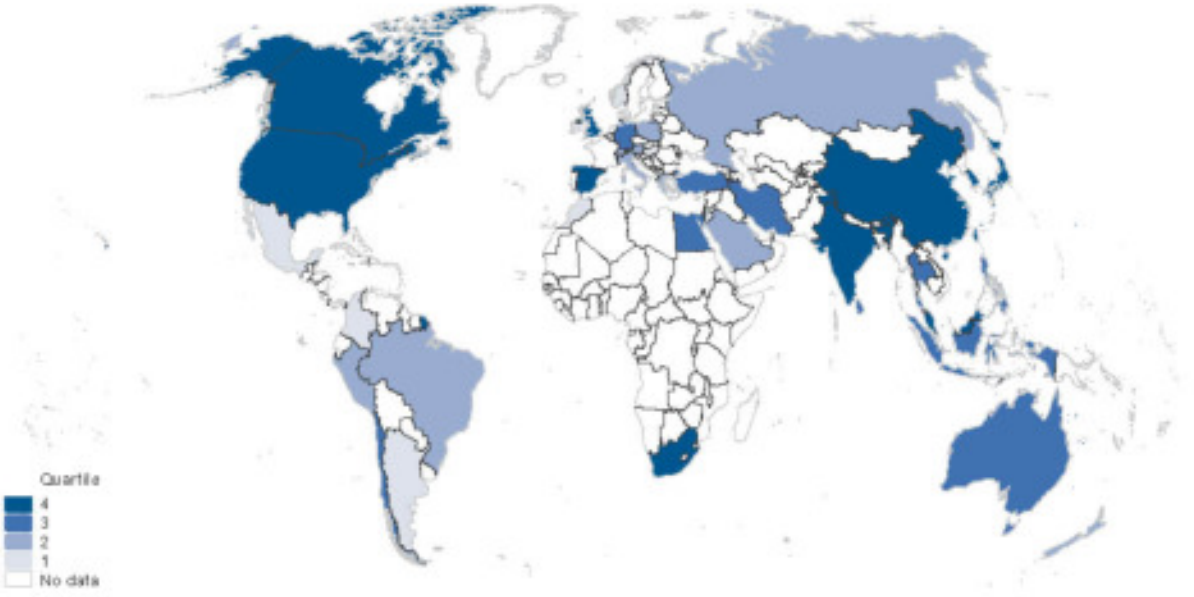
Access to securities markets tends to be relatively easier for smaller firms in high-income countries. It is also relatively easier in large economies, such as those of China and India. But, even in such economies, there are serious disparities between larger and smaller firms; the larger ones are much more likely to issue new equity (Didier and Schmukler 2013). In contrast, smaller, lower-income economies either have no securities markets to speak of, or

FIGURE 1.11 Reasons for Not Applying for a Loan



Sources: World Bank informal surveys; Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.
Note: The sample includes 13 countries from 2008 to 2011.

MAP 1.3 Access by Firms to Securities Markets



Source: Global Financial Development Report (database), World Bank, Washington, DC, http://www.worldbank.org/financialdevelopment.
Note: The map is based on the share in market capitalization of firms that are outside the top 10 largest companies. The World Federation of Exchanges provided data on individual exchanges. The variable is aggregated up to the country level by taking a simple average over exchanges. The four shades of blue in the map are based on the average value of the variable in 2008–11: the darker the blue, the higher the quartile of the statistical distribution of the variable.

are characterized by markets in which most of the capitalization is concentrated among a small number of the largest issuers, while access by smaller firms is limited.

CORRELATES OF FINANCIAL INCLUSION AND EXCLUSION

Income seems to matter, as does inequality

Country-level income, approximated by GDP per capita, seems to account for much of the massive variation in account penetration worldwide. In most countries with GDP per capita above $15,000, account penetration is essentially universal (notable exceptions are Italy and the United States, with account penetration of 71 percent and 88 percent, respectively). Indeed, national income explains 73 percent of the variation around the world in the country-level percentage of adults with a formal account.[14]

Account ownership also appears to go hand in hand with income equality. Demirgüç-Kunt and Klapper (2012) show that within-country inequality in the use of formal accounts is correlated with the country's income inequality. They find a relatively high correlation between account penetration and the Gini coefficient as a proxy for income inequality. This association seems to hold even if one controls for national income and other variables.

Nonetheless, these correlations need to be taken with a grain of salt. In-depth analyses suggest that other factors, especially the quality of institutions in an economy, drive account penetration as well as income level and income inequality. One therefore needs to look beyond basic factors in explaining the variance in account penetration.

Geography matters, too

Within individual countries, the use of financial services is often rather uneven: densely populated urban areas show a much higher density in retail access points (such as bank

MAP 1.4 Geography Matters: Example of Subnational Data on Financial Inclusion

Source: Calculations based on data from Comisión Nacional Bancaria y de Valores, Mexico.
Note: The indicator is the sum of all formal accounts, including deposit accounts, savings accounts, open market transaction accounts, debit card accounts, credit card accounts, and payroll transaction accounts.

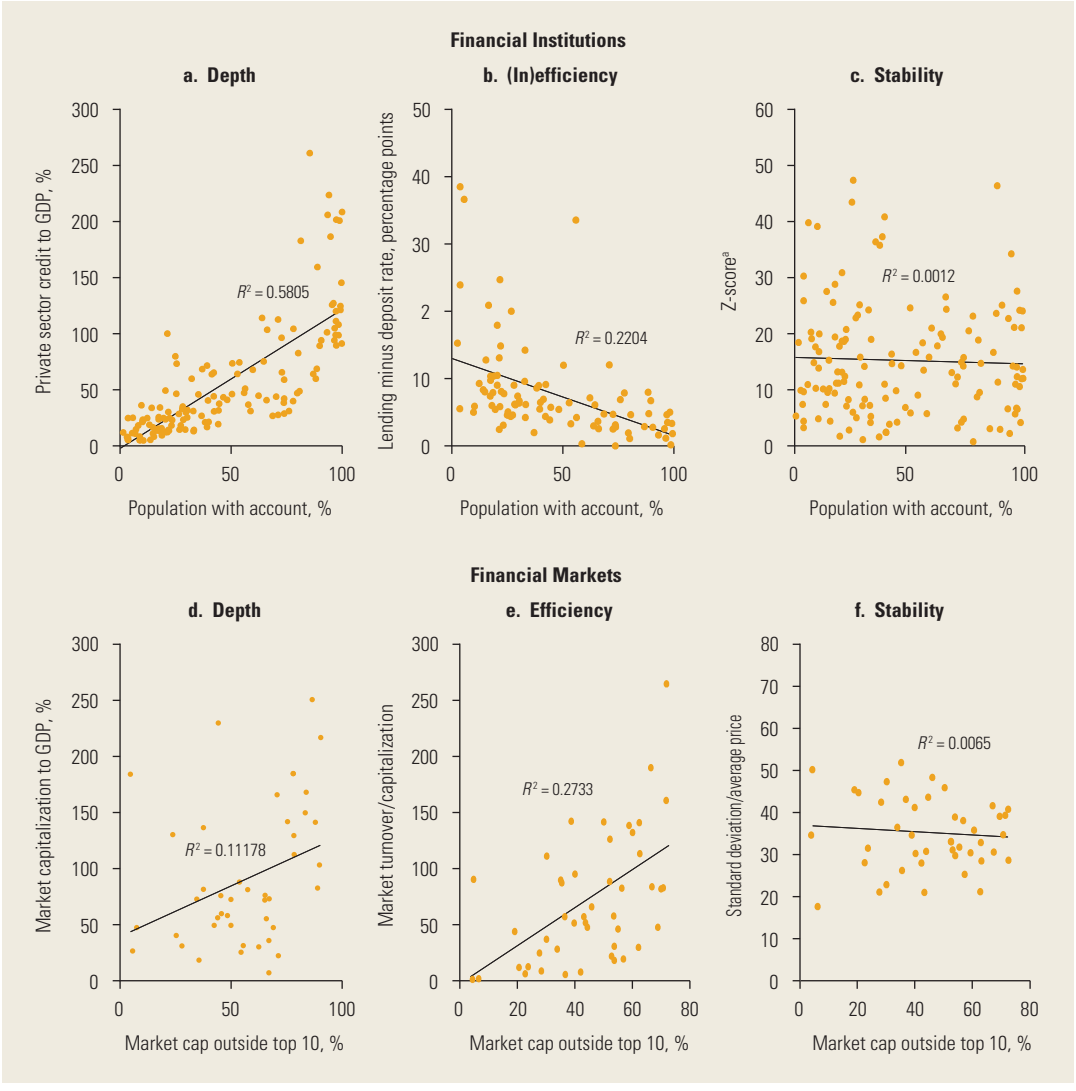
branches, ATMs, and agents) and a greater use of financial services than rural areas. Despite the growth in mobile money and other recent technologies, being near a retail access point is still important for the use of financial services by individuals. It is especially important for the poor, who are less mobile and have less access to modern technologies. Building retail access points is costly for financial service providers; so, they are keen to place these points optimally in relation to their existing and potential customers. Financial inclusion advocates also want broad coverage of the population by financial access points, but would like to see that certain types of customers, such as the poor, also have access, a concern not always shared by providers. This leads to major policy questions—such as the identification of policies that work and how much policy interventions can and should push providers to offer access in places in which they do not want to provide access—that are discussed in greater depth in chapter 2.[15]

Map 1.4 underscores the significance of geography in financial inclusion by illustrating it through granular data on Mexico. Formal financial services are in much greater use in the capital city district (the small central area in black) than elsewhere in the country. The number of accounts per capita is relatively higher in the north of the country and in areas with an active tourism industry. More generally, urban areas show much greater numbers of accounts, reflecting factors such as higher population density and greater proximity to retail access points.

Financial inclusion vs. depth, efficiency, and stability

Large amounts of credit in a financial system—both commercial and consumer credit—do not always correspond to the broad use of financial services because the credit may be concentrated among the largest firms and the wealthiest individuals. Indeed, the use of formal accounts is imperfectly correlated with a

FIGURE 1.12 Financial Inclusion vs. Depth, Efficiency, and Stability (Financial Institutions)

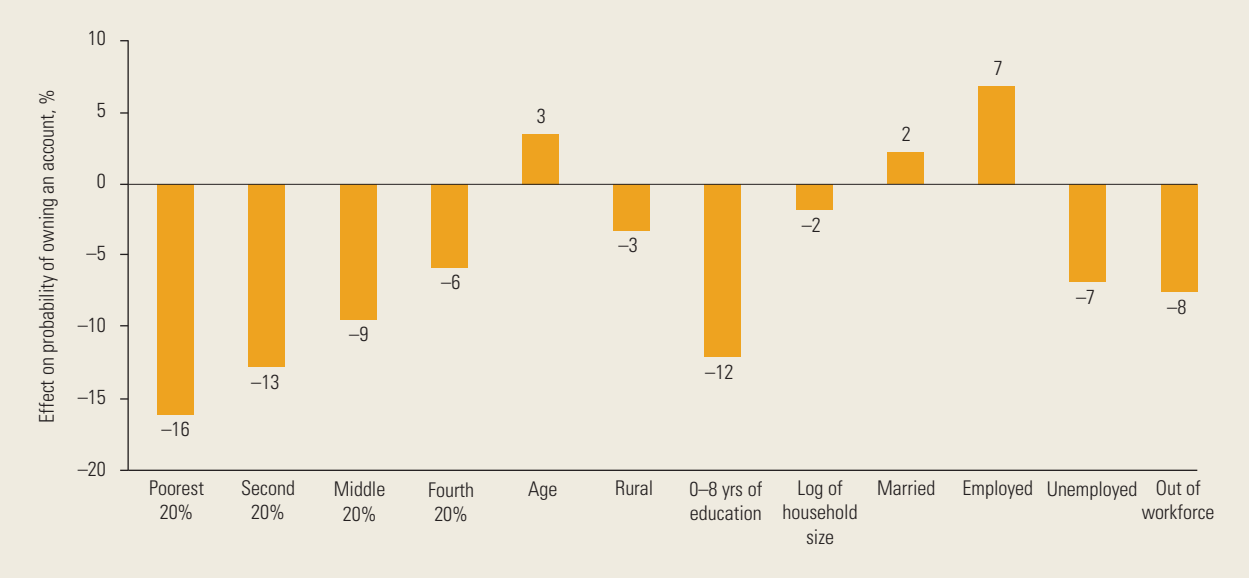


Source: Global Financial Development Report (database), World Bank, Washington, DC, http://www.worldbank.org/financialdevelopment.
Note: Each point corresponds to a country; averages are for 2008–11. For definitions and a discussion of the 4x2 matrix for benchmarking financial systems, *see* Čihák and others (2013). "Market cap" is short for market capitalization.
a. The z-score is a ratio, defined as (ROA + equity)/assets)/sd(ROA), where ROA is average annual return on end-year assets and sd(ROA) is the standard deviation of ROA.

common measure of financial depth: domestic credit to the private sector as a percentage of GDP (figure 1.12, panel a). Country examples bear this out. Vietnam has domestic credit to the private sector amounting to 125 percent of GDP, but only 21 percent of the adults in the country report they have a formal account. Conversely, the Czech Republic, with relatively modest financial depth (with domestic credit to the private sector at 56 percent of GDP), has relatively high account penetration (81 percent). This suggests that financial depth and financial inclusion are distinct dimensions of financial development and that financial systems can become deep while showing low degrees of inclusion.[16]

The greater use of formal accounts is associated with higher efficiency in financial institutions. This is illustrated in panel b of figure 1.12 by the negative correlation between the

FIGURE 1.13 Correlates of Financial Inclusion



Source: Based on Allen, Demirgüç-Kunt, and others 2012.
Note: The figure shows probit regression results of a financial inclusion indicator on country fixed effects and a set of individual characteristics, for 124,334 adults (15 years and older) covered by the Global Financial Inclusion (Global Findex) Database (http://www.worldbank.org/globalfindex) in 2011. The financial inclusion indicator is a 0/1 variable indicating whether a person had an account at a formal financial institution in 2011. See Allen, Demirgüç-Kunt, and others (2012) for definitions, data sources, standard errors of the parameter estimates, additional estimation methods, and additional regressions for other dependent variables (savings and the frequency of use of accounts).

account penetration rate and the lending-deposit spread. This relationship is robust with respect to different measures of efficiency and different proxies for account penetration.

Finally, there is no significant correlation between account penetration and financial stability. This is illustrated in panel c of figure 1.12. The result holds up also for alternative measures of financial stability. For example, if one compares the crisis and noncrisis countries as identified by Laeven and Valencia (2012), the degree of account use is, on average, not significantly different.

Cross-country data on financial markets provide a similar picture: financial inclusion is associated positively with depth and efficiency (figure 1.12, panels d and e) while having no significant association with stability (figure 1.12, panel f).

An econometric examination of financial inclusion

What can data on some 124,000 people tell us about the drivers of financial inclusion? The massive data set underlying the Global Findex database provides a unique source of information on what drives financial inclusion around the world.[17] Allen, Demirgüç-Kunt, and others (2012) subject the data set to a battery of statistical tests to address the question of what drives financial inclusion. They consider a host of other country-level characteristics and policies as potential determinants of account use. Their analysis focuses on three indicators of account use: (1) ownership of an account, (2) use of the account to save, and (3) frequent use of the account, defined as three or more withdrawals per month. They find that these indicators are associated with a better enabling environment for accessing financial services, such as lower banking costs, greater proximity to financial providers, and fewer documentation requirements to open an account. People who are poor, young, unemployed, out of the workforce, or less well educated, or who live in rural areas are relatively less likely to have an account (figure 1.13). Policies targeted at enhancing financial inclusion—such as offering basic or low-fee accounts, granting exemptions

from onerous documentation requirements, allowing correspondent banking, and using bank accounts to make government payments—are especially effective among those people who are most likely to be excluded: the poor and rural residents.

BARRIERS TO FINANCIAL INCLUSION

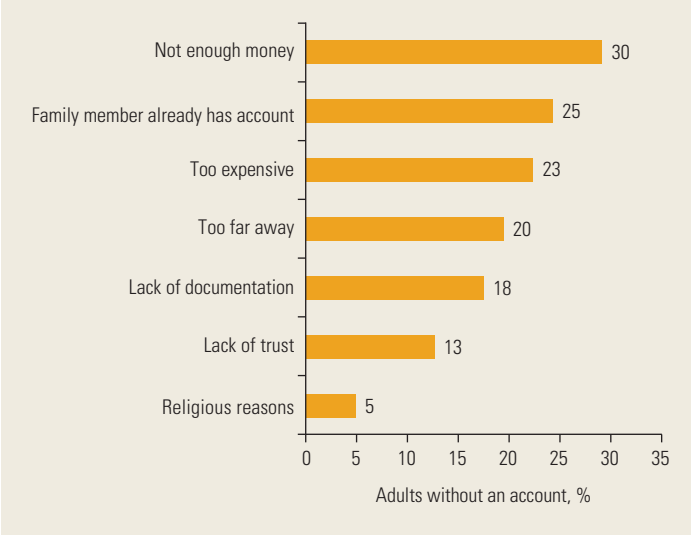
Income levels and individual characteristics clearly help explain some of the differences in the use of accounts around the world. What do people say when asked why they do not have an account? The Global Findex survey provides novel data on the barriers to financial inclusion, based on the responses of more than 70,000 adults who do not have a formal account.[18]

Globally, the reason most frequently cited for not having a formal account is the lack of enough money to have and use one (figure 1.14). Thirty percent of adults who are without a formal account cite this as the only reason. The next most commonly cited reason for not having an account is that another family member already has an account. The other reasons reported (in order of importance) are bank accounts being too expensive, excessive distance of banks, lack of the necessary documentation, lack of trust in banks, and religious reasons. Adults in developing economies are significantly more likely to cite distance, cost, documentation, and lack of money compared with adults in developed economies.

The second most frequently cited reason was that another member of the family already has an account, a response that identifies indirect users. Women and adults living in high-income and upper-middle-income economies (where relatives are most likely to have an account) were substantially more likely to choose this reason. A recent study shows that lack of account ownership (and personal asset accumulation) limits women's ability to pursue self-employment opportunities (Hallward-Driemeier and Hasan 2012). Hence, while such voluntary exclusion may be linked to individual preferences or cultural norms, it may also indicate a lack of awareness of financial products or a lack of financial literacy more generally.[19]

Affordability is a key barrier to account ownership. High costs are cited by a quarter of unbanked respondents, on average, and by 32 percent of unbanked respondents in low-income economies. Fixed transaction costs and annual fees tend to make small transactions unaffordable for large parts of the population. For example, annual fees on a checking account in Sierra Leone are equivalent to 27 percent of GDP per capita. Not surprisingly, 44 percent of adults without accounts in the country cite high cost as a reason for not having a formal account. Analysis finds a significant relationship between cost as a self-reported barrier and objective measures of costs (Demirgüç-Kunt and Klapper 2012). Even more importantly, the high costs of opening and maintaining accounts are associated with a lack of competition and underdeveloped physical or institutional infrastructure in a country. This is a key point: it suggests that the high costs associated with a small account do not simply represent the

FIGURE 1.14 Reported Reasons for Not Having a Bank Account



Source: Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
Note: Respondents could choose more than one reason.

fixed costs of provision, but there is now evidence that some of the costs are associated with underlying distortions (Allen, Demirgüç-Kunt, and others 2012).

Twenty percent of unbanked respondents cited distance as a key reason they did not have a formal account. The frequency with which this barrier was cited increases sharply as one moves down the income level of countries, from 10 percent in high-income economies to 28 percent in low-income economies. Among developing economies, there is a significant relationship between distance as a self-reported barrier and objective measures of providers, such as bank branch penetration. To illustrate this point: Tanzania has a large share of non–account-holders who cite distance as a reason they do not have an account—47 percent—and also ranks near the bottom in bank branch penetration, averaging less than 0.5 bank branches per 1,000 square kilometers.

The documentation requirements for opening an account may exclude workers in the rural or informal sector who are less likely to have wage slips or formal proof of residence. There is a significant relationship between subjective and objective measures of documentation requirements as a barrier to account use that holds even after one takes into account GDP per capita (Demirgüç-Kunt and Klapper 2012). Indeed, the Financial Action Task Force, an intergovernmental body aimed at combating money laundering, terrorist financing, and related threats to the integrity of the international financial system, recognized that overly cautious safeguards against money laundering and terrorist financing can have the unintended consequence of excluding legitimate businesses and consumers from financial systems. It has therefore called for such safeguards that also support financial inclusion.[20]

Distrust in formal financial institutions is a nontrivial barrier to wider financial inclusion and one that is difficult to address in the short term. Thirteen percent of adults without a formal account cite lack of trust in banks as a reason for not having an account. This distrust can stem from cultural norms, discrimination against certain segments of the population, past episodes of government expropriation of banks, or economic crises and uncertainty. In Europe and Central Asia, 31 percent of non–account-holders cite lack of trust in banks as a reason for not having an account, a share almost three times the share in other regions, on average.

About 5 percent of unbanked respondents cite religious reasons for not having a formal account. The proportion is higher in some Middle Eastern and South Asian economies, where the development of financial products compatible with religious beliefs (in particular, Islamic finance) could potentially increase account penetration and the use of various financial services (box 1.4).

FINANCIAL SECTOR STRUCTURE, COMPETITION, AND INCLUSION

Which type of financial sector structure works best in reaching out to a broad set of individuals and firms? In terms of financial inclusion and economic development, how do financial systems based on banks compare with those based on financial markets? Studies consistently find that what matters for economic growth is the overall development of the financial system, rather than the relative shares of banks and financial markets. In other words, at similar levels of financial development, more highly bank- or market-oriented economies are not associated with greater economic growth rates, industry growth, or the access of firms to external finance (Beck and Levine 2004; Demirgüç-Kunt and Maksimovic 2002; Levine 2002).

While the structure of the financial system does not seem to be associated with growth outcomes, Demirgüç-Kunt and Maksimovic (2002) find that this does affect the types of firms and projects that are financed, which has strong implications for financial inclusion. By looking at firm-level data for 40 countries, they conclude that, in economies with more well developed capital markets, the

BOX 1.4 Islamic Finance and Inclusion

Shari'a-compliant financial products and instruments can play a significant role in enhancing financial inclusion among Muslim populations. About 700 million of the world's poor live in predominantly Muslim-populated countries. In recent years, there has been growing interest in Islamic finance as a tool to increase financial inclusion among Muslim populations (Mohieldin and others 2011).

The main issue relates to the fact that many Muslim-headed households and micro, small, and medium enterprises may voluntarily exclude themselves from formal financial markets because of Shari'a requirements. Islamic legal systems, among other characteristics, prohibit predefined interest-bearing loans. They also require financial providers to share in the risks of the business activities for which they provide financial services (profit and loss sharing). Given these requirements, most conventional financial services are not relevant for religiously minded Muslim individuals and firms in need of financing.

Based on a 2010 Gallup poll, about 90 percent of the adults residing in Organization of Islamic Cooperation (OIC) member countries consider religion an important part of their daily lives (Crabtree 2010). This may help explain why only about 25 percent of adults in OIC member countries have an account in formal financial institutions, which is below the global average of about 50 percent. Also, while 18 percent of non-Muslim adults in the world have formal saving accounts, only 9 percent of Muslim adults have these accounts (Demirgüç-Kunt, Klapper, and Randall, forthcoming). Moreover, 4 percent of respondents without a formal account in non-OIC countries cite religious reasons for not having an account, compared with 7 percent in OIC countries (table B1.4.1) and 12 percent in the Middle East and North Africa.

TABLE B1.4.1 OIC Member Countries and the Rest of the World

% of respondents, unless otherwise indicated	All	OIC countries	Non-OIC countries
Have an account at a formal financial institution*	50	25	57
Reason for not having an account			
religious reasons*	5	7	4
distance*	20	23	19
account too expensive*	25	29	23
lack of documentation*	18	22	16
lack of trust	13	13	13
lack of money*	65	75	61
family member already has an account*	23	11	28

Source: Calculations based on the Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
* The means *t*-test between the Organization of Islamic Cooperation (OIC) and non-OIC countries is significant at the 1 percent level.

Muslim countries are far from uniform in terms of financial inclusion. For example, 34 percent of the unbanked Afghan population cite religious reasons for not having an account in a formal financial institution, while only 0.1 percent of Malaysians do so, although both countries have similarly high Gallup religiosity indexes (97 percent and 96 percent, respectively; see the Statistical Appendix).[a] This can be traced to the extent to which Islamic financial institutions are present in a given country. An analysis suggests that the size of Islamic assets per adult population is negatively correlated with the share of adults citing religious reasons for not having an account (table B1.4.2). This correlation is particularly strong if one focuses on the group of OIC countries and, even more, on those OIC countries that show a religiosity index exceeding 85 percent.

Based on the Global Findex, for religious reasons, some 51 million adults in the OIC countries do not have accounts in a formal financial institution.[b] Given that a majority of the OIC population lives in poverty, Islamic microfinance could be particularly attractive. For example, 49 percent and 54 percent of adults in Algeria and Morocco, respectively, prefer to use Islamic loans even if these loans are more

(box continued next page)

BOX 1.4 Islamic Finance and Inclusion *(continued)*

TABLE B1.4.2 Islamic Banking, Religiosity, and Household Access to Financial Services

Indicator	All countries	OIC countries	OIC countries with religiosity > 85%	Non-OIC countries
OIC dummy	5.79***	..	..	..
GDP per capita, US$, 1,000s	0.02	0.38**	0.43**	−0.005
Islamic assets per adult, US$, 1,000s	−0.18*	−0.61***	−0.65**	−3.85
Observations	137	41	32	96
R-squared	0.21	0.06	0.08	0.00

Sources: Based on the Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex; World Development Indicators (database), World Bank, Washington, DC, http://data.worldbank.org/data-catalog/world-development-indicators; Bankscope (database), Bureau van Dijk, Brussels, http://www.bvdinfo.com/en-gb/products/company-information/international/bankscope.
Note: Dependent variable: percentage of adults citing religious reasons for not having an account. Regressions include a constant term. Robust standard errors are reported.
.. indicates that the variable could not be included in the regression. OIC = Organization of Islamic Cooperation.
Significance level: * = 10 percent, ** = 5 percent, *** = 1 percent.

expensive than conventional loans (Demirgüç-Kunt, Klapper, and Randall, forthcoming).

Global surveys on Islamic microfinance completed by the Consultative Group to Assist the Poor (CGAP) in 2007 and 2012 provide some initial insights into the rapidly growing Islamic microfinance industry. The 2007 CGAP survey found fewer than 130 and 500,000 Islamic MFIs and customers, respectively (Karim, Tarazi, and Reille 2008). Within five years, these figures more than doubled, reaching 256 MFIs and 1.3 million active clients (El-Zoghbi and Tarazi 2013). These figures are on the conservative side because they are based on data for 16 of the 57 OIC member countries (excluding economies such as the Islamic Republic of Iran, Malaysia, and Turkey, which have active Islamic finance industries). In short, the estimated unmet demand for Shari'a-compliant financial products, in conjunction with the rapid growth of Islamic MFIs, as well as the astonishing growth of the overall Islamic finance industry, all point to the growing attractiveness of Shari'a-compliant financial products and the supply shortage of such products.[c]

Religiosity also has an impact on the access of firms to finance in OIC countries. The number of Islamic banks per 100,000 adults is negatively correlated with the proportion of firms identifying access to finance as a major constraint. The negative correlation is greater if one focuses on OIC countries and greater still if one focuses on a subset of OIC countries with a religiosity index above 85 percent (table B1.4.3). These findings, which are mainly driven by small firms (figure B1.4.1), suggest that increasing the number of Shari'a-compliant financial institutions can make a positive difference in the operations of small firms (0–20 employees) in Muslim-populated countries by reducing the access barriers to formal financial services.

TABLE B1.4.3 Islamic Banking, Religiosity, and Firm Access to Financial Services

Indicator	All countries	OIC countries	OIC countries with religiosity > 85%
OIC dummy	8.59**	..	..
GDP per capita, US$, 1,000s	−1.23***	−6.12***	−5.79***
Islamic banks per 100,000 adults	−52.70*	−61.97*	−108.76**
Observations	107	32	24
R-Squared	0.25	0.35	0.38

Sources: Calculations based on Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org; World Development Indicators (database), World Bank, Washington, DC, http://data.worldbank.org/data-catalog/world-development-indicators; Bankscope (database), Bureau van Dijk, Brussels, http://www.bvdinfo.com/en-gb/products/company-information/international/bankscope.
Note: Dependent variable: percentage of firms identifying access to finance as a major constraint. All regressions include a constant term. Robust standard errors are reported.
.. indicates that the variable was not included in the regression. OIC = Organization of Islamic Cooperation.
Significance level: * = 10 percent, ** = 5 percent, *** = 1 percent.

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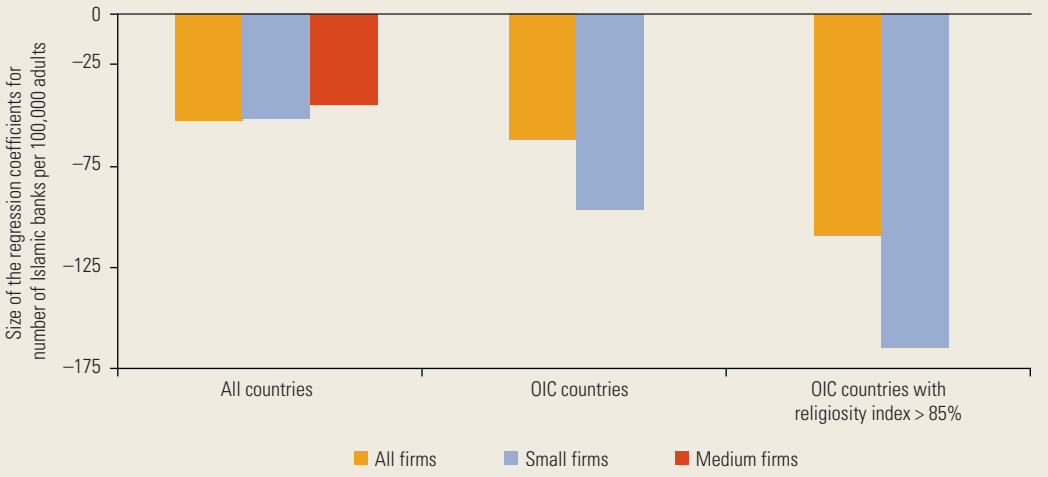
BOX 1.4 Islamic Finance and Inclusion *(continued)*

FIGURE B1.4.1 Islamic Banking, Religiosity, and Access of Firms to Financial Services



Sources: Calculations based on Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org; World Development Indicators (database), World Bank, Washington, DC, http://data.worldbank.org/data-catalog/world-development-indicators; Bankscope (database), Bureau van Dijk, Brussels, http://www.bvdinfo.com/en-gb/products/company-information/international/bankscope.
Note: The dependent variable is the percentage of firms identifying access to finance as a major constraint. All regressions include a constant term and GDP per capita. Robust standard errors are used. Only coefficients significant at 10 percent or less are included in the figure. OIC = Organization of Islamic Cooperation.

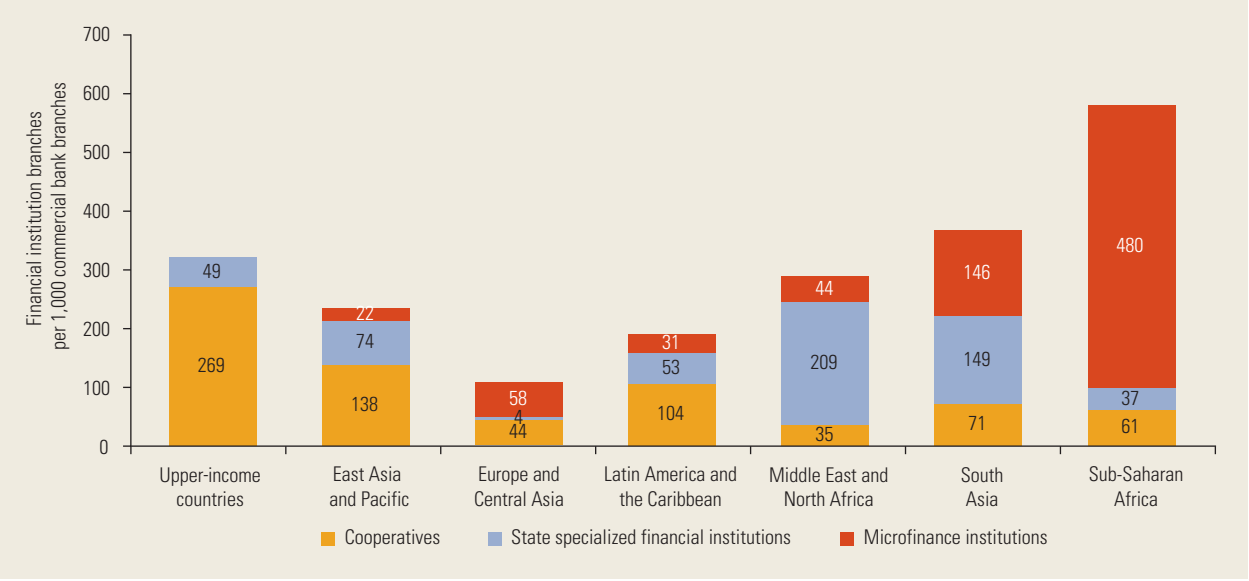
Efforts to increase financial inclusion in jurisdictions with Muslim populations thus require sustainable mechanisms to provide Shari'a-compliant financial services to all residents, especially the Muslim poor, estimated at around 700 million people who are living on less than $2 per day. One obstacle is the lack of transparency and the absence of a broadly accepted standardized process for assessing the compliance of financial institutions with Shari'a guidelines, which makes it difficult for many individuals to distinguish between financial institutions that are operating based on Shari'a specifications and institutions that are not. Another difficulty has been the lack of information and training on Islamic finance. For example, only about 48 percent of adults in Algeria, Egypt, Morocco, Tunisia, and the Republic of Yemen have heard about Islamic banks (Demirgüç-Kunt, Klapper, and Randall, forthcoming). Finally, in their infancy and smaller in scale, Islamic financial products tend to be more expensive than their conventional counterparts, reducing their attractiveness.

a. The Gallup religiosity index captures the percentage of adults who responded affirmatively to the question "Is religion an important part of your daily life?" in a 2009 Gallup poll (Crabtree 2010). The question does not distinguish which type of religion (and the analysis presented here may apply to other religions as well). The reliability of this index depends on how truthfully people respond to the survey question. Nonetheless, the variable has been used in previous research.
b. Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
c. Globally, Islamic financial assets have more than doubled since 2006 (Mohieldin and others 2011). See also Čihák and Hesse (2010) on the growth and stability of the Islamic financial sector.

use by firms of long-term financing is greater. In contrast, firms rely on short-term financing to a much larger extent in countries with more financial structures that are bank-based.

Consistent with these results, Demirgüç-Kunt, Feyen, and Levine (2011) find that financial structures evolve with economic development because capital markets provide

FIGURE 1.15 Ratio of Cooperatives, State Specialized Financial Institutions, and Microfinance Institution Branches to Commercial Bank Branches



Source: Financial Access (database) 2010, Consultative Group to Assist the Poor and World Bank, Washington, DC, http://www.cgap.org/data/financial-access-2010-database-cgap.

financial services that are different than the services provided by banks. Particularly, the significance of market-based financing increases relative to bank-based financing. They show that, as economies develop, the services provided by securities markets become more important for economic activity, while those provided by banks become less important.

Another part of this literature has moved from the market- vs. bank-financing analysis to explore a different angle of financial diversity, more focused on the types of financial institutions (such as niche banks, cooperatives, and MFIs) and their link with access to finance and with economic growth.

In developing economies, the financing needs of a large fraction of households and enterprises are supplied by alternative financial institutions such as cooperatives, credit unions, MFIs, and factoring or leasing companies. While banks are the most prominent institution across regions, their relative importance varies substantially. For instance, for each MFI, there are 46 bank branches in Europe and Central Asia, 32 in Latin America, and only 2 in Sub-Saharan Africa.[21]

Countries also differ in the mix of financial institutions constituting the market because certain types of institutions are more prevalent in particular regions (figure 1.15). In the Middle East and North Africa, for every 1,000 commercial bank branches, there are 35 cooperatives, 209 state specialized financial institutions, and 44 MFI branches. However, in Sub-Saharan African countries, there are 480 MFIs for every 1,000 commercial banks, and only 61 cooperative and 37 public bank branches. Countries in Latin America and East Asia and the Pacific are more reliant on cooperatives than are developing countries in other regions. The ratio of cooperatives to bank branches is the highest in upper-income countries, where there are 269 cooperatives per 1,000 commercial bank branches. This pattern is particularly strong in Western European economies, where financial systems rely more on these institutions.[22]

Some argue that a comparative advantage of institutions such as cooperative banks may be that they rely on more flexible lending technologies, making it possible to extract information about more opaque clients,

such as micro, small, and medium enterprises or households that do not have available the type of information or documentation that banks traditionally request (Berger, Klapper, and Udell 2001; Stein 2002). Others argue that banks can extend financing to more opaque clients by applying different transactional technologies that facilitate arm's-length lending and that, through more competition, improved financial infrastructure, and appropriate incentives, banks can be encouraged to reach out for new clients (Berger and Udell 2006; de la Torre, Gozzi, and Schmukler 2007).

A study by Beck, Demirgüç-Kunt, and Singer (forthcoming) explores the role of different kinds of financial institutions, as well as their average size, in easing the access of firms to financial services and finds heterogeneous impacts across countries and firm sizes. More specifically, in low-income countries, a higher share of low-end financial institutions (such as cooperatives, credit unions, and MFIs) and specialized lenders (such as factoring and leasing companies) is associated with better access to finance. The evidence the authors present indicates that the average size of financial institutions matters for inclusion. In contrast to earlier studies suggesting that smaller financial institutions are better able to serve the credit needs of small, opaque borrowers (for example, Berger and Udell 1995; Keeton 1995), the authors reject that smaller institutions are better at easing the access of firms to finance. On the contrary, in countries with low levels of GDP per capita, larger banks and low-end institutions seem to improve access to financial services, and larger banks and specialized lenders seem to facilitate access to loans and overdraft use by smaller enterprises.

These results are in line with the findings of more recent studies. For instance, Berger, Klapper, and Udell (2001) find that larger banks may be as well equipped as smaller ones to serve small clients because they use a different lending technology. De la Torre, Gozzi, and Schmukler (2007) likewise find that, contrary to the belief that large banks are less capable of reaching out to opaque small and medium enterprises, most banks find such enterprises profitable for several reasons. One such reason is the increased use of different transactional technologies that benefit from the economies of scale of larger institutions (for example, the use of credit scoring models requires a large pool of clients, thereby benefiting from larger bank size).

Relationship lending is one of several other ways in which banks extend financing to more opaque clients (Berger and Udell 2006). Two examples of large banks that have adopted innovative lending technologies and business models are Banco Azteca in Mexico and BancoSol in Bolivia. BancoSol is arguably the first commercial bank to specialize in microfinance. Its lending technology relies on a solidarity group lending strategy, whereby members organize small joint liability credit groups, and the bank lends simultaneously to all group members (Gonzalez-Vega and others 1997). Banco Azteca, on the other hand, targets clients employed in the informal sector by using their durable goods as collateral for loans. Ruiz (2013) shows that, in municipalities in which this bank has opened a branch, households with members working in the informal sector are more likely to borrow from banks, are less likely to rely on more expensive credit suppliers, and are thus better able to smooth their consumption and accumulate more valuable durable goods.

Beyond financial structure, evidence points to competition in the financial sector as a key factor in enhancing financial inclusion. Examining firm-level data for 53 countries from 2002 to 2010, Love and Martínez Pería (2012) find that bank competition substantially increases the access of firms to finance. An advantage of their study relative to others is that their data allow them to isolate within-country variations in competition and access to finance more effectively. In a more microlevel analysis, Lewis, Morais, and Ruiz (2013) examine competition among Mexican banks. Their results show that large banks are more likely to engage in less competitive practices and confirm that, as expected, competition leads to less collusive practices. Importantly, less competition

disproportionally affects access to finance among smaller firms.

To summarize, recent studies indicate more financially diverse markets are associated with improved access to finance. Policy recommendations to support a more financially diverse landscape encompass (1) improving competition within the financial system, but also allowing a variety of financial institutions to operate (from specialized lenders and low-end institutions to banks with lending technologies or business models that reach out to new clients in responsible ways); (2) strengthening financial and lending infrastructure, including commercial laws, bankruptcy laws, and contract enforcement; and (3) creating the conditions for capital market development to improve access to longer-term finance.

THE REAL EFFECTS OF FINANCIAL INCLUSION ON THE POOR: EVIDENCE

Our discussion has so far focused on why financial inclusion is important for development in economic theory and on defining financial inclusion, measuring it, explaining what drives it, and examining the barriers that limit it. In the following, we turn to the empirical evidence on the relationship between financial inclusion and economic development.

Recent empirical evidence on the impact of financial inclusion on economic development and poverty varies by the type of financial service in question.[23] In the access to basic payments and savings, the evidence on benefits, especially among poor households, is quite supportive. In insurance products, there is also some evidence of a positive impact. For firms, particularly small and young firms that face greater constraints, access to finance is associated with innovation, job creation, and growth. However, in access to microcredit, the data on dozens of microcredit experiments and from other cross-country research paint a rather mixed picture (for example, see Bauchet and others 2011; Roodman 2011).[24] A common message of the underlying research is that effective financial inclusion means responsible inclusion (for example, McKee, Lahaye, and Koning 2011). Financial inclusion does not mean increasing access for the sake of access, and it certainly does not mean making everybody borrow.

The effects of savings and payments

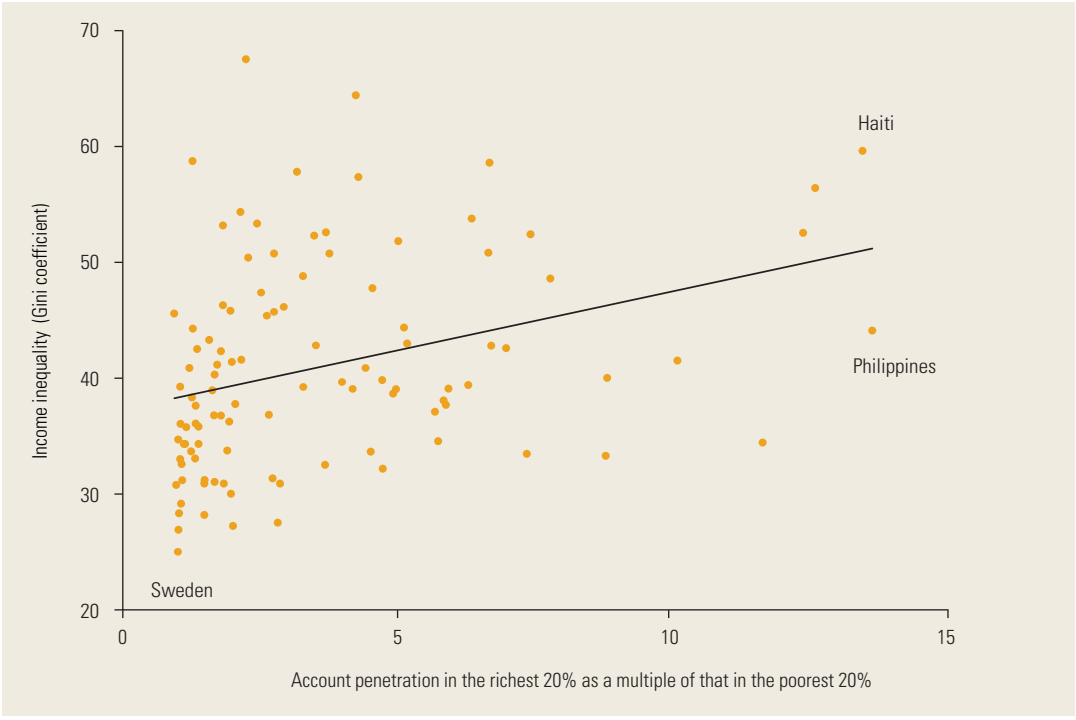
Newly available global data point to a strong correlation between income inequality and inequality in the use of bank accounts. For example, in Sweden—a country with one of the most even income distributions in the world—the share of people having bank accounts is the same for the rich and the poor. On the other end of the spectrum are countries such as Haiti, where income inequality is very high and where the richest 20 percent are about 14 times more likely to have a bank account than the poorest 20 percent. Figure 1.16 illustrates that across a broad spectrum of countries, this measure of inequality in account penetration (financial inequality) is closely correlated with income inequality (the correlation coefficient being 0.33).

It thus appears that financial inequality and income inequality go hand in hand. The strong relationship holds even when controlling for national income. However, the correlation is not perfect. For example, the measure of financial inequality in the Philippines is very close to that of Haiti, but incomes are much more evenly distributed in the Philippines. Moreover, the correlations only suggest that financial and economic inequality are closely associated, not necessarily that one causes the other.

Field experiments provide more direct evidence about the causal linkages between access to savings and payments services and real-economy variables. For example, a range of randomized controlled experiments finds that providing individuals with access to savings accounts or simple informal savings technologies increases savings (Aportela 1999; Ashraf, Karlan, and Yin 2006), women's empowerment (Ashraf, Karlan, and Yin 2010), productive investment (Dupas and Robinson 2011, 2013), consumption, investment in preventive health, productivity, and income (Ashraf, Karlan, and Yin 2010; Dupas and Robinson 2013).[25]

The findings from the randomized controlled experiments are in line with those of

FIGURE 1.16 Correlation between Income Inequality and Inequality in the Use of Financial Services



Source: Calculations based on Demirgüç-Kunt and Klapper 2012; World Development Indicators (database), World Bank, Washington, DC, http://data.worldbank.org/data-catalog/world-development-indicators.
Note: Higher values of the Gini coefficient mean more inequality. Data on Gini coefficients are for 2009 or the latest available year. Account penetration is the share of adults who had an account at a formal financial institution in 2011.

several other studies. For example, an in-depth examination of the effect of bank deregulation in the United States shows that greater financial inclusion accelerates economic growth, intensifies competition, and boosts the demand for labor. It is also usually associated with relatively bigger benefits to those people at the lower end of the income distribution, thus contributing to inclusive growth (Beck, Levine, and Levkov 2010).

Together, these studies provide robust justification for policies that encourage the provision of basic accounts for savings and payments.[26] Increasing financial inclusion in terms of savings and payments, if done well, can both help reduce extreme poverty and boost shared prosperity.

The effects of insurance

For insurance products, the evidence on the impact on economic development is slightly more nuanced, but, on balance, still positive. Evidence based on total volumes of written insurance premiums casts doubts on the aggregate impact. Ward and Zurbruegg (2000), using cointegration analysis for nine countries of the Organisation for Economic Co-operation and Development (OECD) from the 1960s to the 1990s, find that, in some countries, the insurance industry Granger causes economic growth, while, in other countries, the reverse is true. They conclude that the relationship between insurance and growth is nation specific. Subsequent authors (for example, Kugler and Ofoghi 2005) have pointed out that it is possible to have cointegration at the aggregate level but not at the disaggregate level, and vice versa; so, looking more closely at the disaggregated data is important.

Recent evidence from disaggregated data is encouraging. In particular, Cai and others (2010) have conducted a large randomized experiment in southwestern China to assess

the impact of insurance on sows. They find that providing access to formal insurance significantly increases the propensity of farmers to raise sows. In another study, Cole, Giné, and Vickery (2012) examine how the availability of rainfall insurance affects the investment and production decisions of small- and medium-scale Indian farmers. They observe little effect on total expenditures. However, they find that increased insurance induces farmers to substitute production activities toward high-return high-risk cash crops. Finally, Shapiro (2012) evaluates the effects of a Mexican government disaster relief program with insurance-like features. Specifically, the program provides fixed indemnity payments to rural households the crops or assets of which have been damaged by a natural disaster. The evaluation finds that the availability of insurance against losses from natural disasters changes how rural households invest in their farms. In particular, insured farmers utilize more expensive capital inputs and purchase better seeds.

The effects of credit

Economic theory suggests that improved access to credit can have positive implications for poverty alleviation and entrepreneurial activity. Better access to credit makes it easier for households to smooth out consumption over time and provides a de facto insurance against many of the common risks facing households and small enterprises in the developing world. By the same token, improved access to credit can also encourage entrepreneurial activity by attenuating investment constraints and making it easier for small businesses to grow beyond subsistence.

There is ample evidence that limited access to credit poses a substantial obstacle to entrepreneurship and firm growth, especially among small and young firms (Banerjee and Duflo 2007; Beck, Demirgüç-Kunt, and Maksimovic 2005; Beck and others 2006; Evans and Jovanovic 1989). Cross-country research analyzing 10,000 firms in 80 countries shows that financing constraints are associated with slower output growth, while other reported constraints are not as robustly associated with growth (Ayyagari, Demirgüç-Kunt, and Maksimovic 2008). There is also evidence that returns on capital are high (de Mel, McKenzie, and Woodruff 2008, 2012a). Improving access to finance for potential entrepreneurs therefore promises significant welfare gains not only for the entrepreneurs, but also for society as a whole.

Some evidence indicates that access to credit is associated with a decline in observable measures of poverty. For example, Burgess and Pande (2005) suggest that bank branching regulation in India has had a substantial impact on poverty reduction. Between the 1970s and the 1990s, India's bank branching regulations required banks to open four branches in unbanked locations for every new branch opened in an urban area. This led to the establishment of up to 30,000 rural bank branches, and the study provides direct evidence that this expansion of the bank branch network had a positive impact on financial inclusion and contributed to a considerable decline in rural poverty. At the same time, bearing in mind that India's branch expansion was a government initiative in a banking system dominated by state-owned banks, one ought to ask whether the cost-benefit calculation for this program exceeds that of other forms of government assistance and to what extent the benefits of this policy need to be adjusted for the cost of the longer-run credit market distortions arising from India's social banking experiment. After all, the program was discontinued in 1991 in part because of the high default rates among rural branches.

New research provides insights into the impact of access to credit on poverty alleviation and into the channel through which this is likely to occur, that is, the greater propensity of individuals to transition into entrepreneurship. In a recent study, Bruhn and Love (forthcoming) evaluate the opening of a new commercial bank, Banco Azteca, focused on low- and middle-income borrowers in Mexico. They find that the opening of Banco Azteca, which represented a significant improvement in access to credit among households at the "bottom of the pyramid," led to a 7.6 percent increase in the number of informal businesses in areas with a new bank branch,

a 1.4 percent decrease in unemployment, and an increase in income levels of up to 7 percent in the two years following the branch opening. The opening of Banco Azteca led to no change among formal businesses, which is consistent with the new bank's focus on lower-income individuals and with the bank's low documentation requirements. In contrast, formal business owners have easier access to commercial bank credit and likely prefer it because of the higher interest rates charged by Banco Azteca. The measured impacts were larger among individuals with below median income levels and in municipalities that were relatively underserved by the formal banking sector before Banco Azteca opened. (For more on Banco Azteca, see chapter 3, box 3.3.)

Overall, there is plenty of evidence that access to finance is important for firms, especially for the smaller and younger ones. Economic growth would come to a halt if firms could not get credit. But there are major ongoing debates on the pros and cons of microcredit, which are discussed in the next subsection.

The effects of microcredit

In many parts of the world, substantial improvements in access to credit among households and small businesses in recent decades have occurred through the rapid expansion of microcredit. The original narrative emphasized that microcredit could serve not only as a tool to alleviate extreme poverty, but also as a means to unleash the entrepreneurship potential of the poor. Recent evidence has, however, highlighted some of the limitations of microcredit and suggests a more nuanced narrative. Although microcredit can have significantly positive welfare effects if used as a means for consumption smoothing and risk management, most studies have found that the effects of microfinance on investment and entrepreneurship are relatively small.

Many studies have documented the effects of microfinance on household welfare and income. This includes positive effects on consumption, economic self-sufficiency, and some aspects of mental health and well-being (Kaboski and Townsend 2011, 2012; Karlan and Zinman 2010; Khandker 2005; Pitt and Khandker 1998). By contrast, studies that explore the impact of microfinance on entrepreneurship find relatively modest effects (Giné, Jakiela, and others 2010; Morduch and Karlan 2009). In a study that experimentally varies access to microcredit, Banerjee and others (2013) find a large effect of access to microfinance on investment in fixed assets, but also note that this effect is concentrated among wealthier households that already own a business, while households with a low initial probability to transition into entrepreneurship use credit to consume rather than invest. Many of the limitations of microcredit as a tool to finance entrepreneurship are likely to be the result of the rigidity of microcredit, including the lack of grace periods, frequent payments, and joint liability that may prevent risk taking (Field and others, forthcoming; Giné, Jakiela, and others 2010). While joint liability contracts have made the extension of credit to marginal clients possible, such contracts may be poorly suited for loans to businesses for which the cash flows and risks are difficult to observe. (See also the discussion on product design in chapter 2.)

At the macroeconomic level, however, the impact of broader access to microcredit may be mostly redistributive and not without risks for financial stability. Recent research in this area has supplied intriguing new insights using applied general equilibrium modeling. For example, Buera, Kaboski, and Shin (2012) offer a quantitative evaluation of the aggregate and distributional impact of microfinance and find that, if general equilibrium effects are accounted for, scaling up microfinance programs has only a small impact on per capita income because increases in total factor productivity are counterbalanced by the lower capital accumulation resulting from the distribution of income from high savers to low savers. The benefits occur largely through wage increases and greater access to finance by poorer entrepreneurs. At the same time, there are also costs: the redistribution of credit toward new borrower segments may lead to losses in the efficiency

of financial intermediation (for example, because of higher screening and information costs) and change the risk profile of bank lending as banks make loans to new borrowers who are, on average, riskier clients. This means that the economic benefits of financial access need to be carefully weighed against the effects on the risk profile of bank and nonbank lending. The expansion of credit, if not well managed and if combined with low capitalization, can lead to financial crises, as illustrated quite powerfully by the examples of Bosnia and Herzegovina, India, and the United States illustrated in box 1.5.

BOX 1.5 Three Tales of Overborrowing: Bosnia and Herzegovina, India, and the United States

The debate over the sources of the U.S. mortgage crisis highlights the issues and trade-offs in attempts to increase credit. One of the key explanations of the crisis (for example, Rajan 2010) is that it was precipitated by an overextension of credit and a relaxation in mortgage-underwriting standards (combined with aggregating the resulting junk bonds and reselling them as highly rated bonds). There is evidence that the losses in the two massive government-sponsored enterprises, Fannie Mae and Freddie Mac, reflected these relaxed standards. The decline in underwriting standards was at least partly a response to mandates that required Fannie Mae and Freddie Mac steadily to increase the mortgages or mortgage-backed securities they issued to target low-income or minority borrowers and underserved locations. The turning point, as documented by Calomiris (2011), was the year 2004. Fannie and Freddie had kept their exposures low to loans made with little or no documentation (low-doc and no-doc loans), owing to their risk management guidelines that limited such lending. In early 2004, however, senior management realized that the only way to meet the political mandates was to cut underwriting standards. Risk managers, especially at Freddie Mac, complained, as documented by publicly released e-mails to senior management. They refused to endorse the move to no-docs and battled unsuccessfully against reduced underwriting standards. Politics—not shortsightedness or incompetent risk managers—drove Freddie Mac to eliminate its previous limits on no-doc lending. After a decision by Fannie and Freddie to embrace no-doc lending, the volume of new, low-quality mortgages increased to $715 billion in 2004 and more than $1 trillion in 2006, compared with $395 billion in 2003. In a forensic analysis of the sources of increased mortgage risk during the 2000s, Rajan, Seru, and Vig (forthcoming) show that more than half of the mortgage losses that occurred in excess of the rosy forecasts of the expected loss at the time of mortgage origination reflected low-doc and no-doc lending.

The second example of the overextension of credit in the name of access comes from the other side of the globe. In October 2010, the microfinance sector in India's Andhra Pradesh was in the middle of a major crisis. An analysis shows that the roots of the crisis were in the rapid rise of loans disbursed by specialized MFIs since the late 1990s (Mader 2013). The liberalization of India's economy and its financial sector after 1991 changed the composition of lending: credit from the private sector (especially MFIs and nonbank financial institutions) rapidly rose, even as the state remained a driving force in the background. Evidence suggests that the expansion of Indian microfinance did have some—relatively limited—impacts (Banerjee and others 2013). At the same time, the spectacular growth and profitability of Indian MFIs in many cases also led to multiple borrowing and excessive indebtedness among low-income clients. While India's MFI crisis had its roots in the rapid and, at times, insufficiently regulated growth of MFIs, there were also other factors that contributed to the crisis. First, the development of an appropriate institutional infrastructure lagged behind the rapid growth of the MFI sector. This is particularly true for the establishment of reliable credit reporting systems for MFI borrowers that could have limited problems of overindebtedness and of borrowing from multiple lenders. These problems

(box continued next page)

BOX 1.5 Three Tales of Overborrowing: Bosnia and Herzegovina, India, and the United States *(continued)*

were aggravated by the absence of well-functioning personal bankruptcy laws that could have allowed for the orderly discharge of excessive debts. Second, the MFI sector faced competition from grossly subsidized state government programs that extended credit to borrowers at the bottom of the pyramid under soft conditions, and this arguably contributed to problems of overindebtedness and moral hazard in loan repayment. Finally, the sector was affected by overt political interventions in the credit market: state governments encouraged MFI clients to stop repaying their loans ahead of elections. Hence, the Indian case illustrates how the rapid growth of low-documentation lending is particularly problematic in environments with an insufficiently developed legal and institutional framework and environments in which political interventions in the credit market are common. An important lesson of the crisis—one that has begun to be translated into policy—is that appropriate consumer protection regulation, credit market infrastructure, and legal provisions for the orderly discharge of excessive debt burdens (personal bankruptcy) can reduce the need for political interventions in the credit market, which are prone to introduce additional distortions into the credit market.

The third study on overborrowing involves the microfinance industry in Bosnia and Herzegovina. It provides a vivid view on how excessive competition among credit providers, riskier lending, rapid institutional growth, lapses in credit discipline, and lack of transparency in client indebtedness can result in a loan delinquency crisis. The country's microfinance industry grew quickly from 2004 to 2008. Delinquency problems started arising in late 2008, coinciding with the recession in Europe. Even though the economic downturn aggravated the pace and scope of the repayment crisis, it was not the main cause. The recession merely brought to the surface a crisis that had been looming for some time and that was primarily caused by structural deficiencies and excessive market growth. About 58 percent of microcredit borrowers in the country had accumulated loans from several microlenders, while 28 percent were seriously indebted or overindebted (Maurer and Pytkowska 2010). Three main vulnerabilities in the microfinance industry contributed to the industry problems: (1) lending concentration and multiple borrowing, (2) overstretched MFI capacity, and (3) a loss in MFI credit discipline (Chen, Rasmussen, and Reille 2010). Fierce competition among financial institutions in concentrated markets enabled clients to borrow from multiple lenders and increase their total loan amount, without creditors knowing. The country began credit information bureau projects in 2005, but the bureaus became operational only after the repayment crises had already started. This resulted in repayment problems for clients, and around 16 percent of MFI clients were identified as close to exceeding their repayment capacity (Maurer and Pytkowska 2010). To survive in an extremely competitive environment, MFIs started using more persuasive sales techniques, hired new, less experienced staff, and disbursed loans quickly based on shallow assessments of the repayment capacity of borrowers. Around 60 percent of the clients going through repayment difficulties reported that intensified sales behavior by financial institutions contributed to their problems, and 30 percent of the problem clients stated that they had not been visited by a loan officer at the time of loan appraisal (Maurer and Pytkowska 2010). To keep up with the growing business, MFIs also increased their staff size at a pace that could not keep up with the training staff needed to be able to monitor existing loans and identify new low-risk clients. The imprudent lending and the decline in monitoring quality led to deteriorations in MFI loan portfolios. The portfolios-at-risk over 30 days rose from 1 percent in 2003 to 11 percent in 2009 (Lützenkirchen and Weistroffer 2012). Strained by target-driven growth in an environment mired in low levels of oversight compliance undermined internal controls and eroded the credit discipline of MFIs. Staff working under incentives that emphasized growth and market share often overlooked their lending discipline. This increased credit risk contributed to the subsequent repayment crises. The lack of industry standards for a code of conduct also added to the problem because irresponsible lending could not be curbed due to the lack of standards of responsible finance.

(box continued next page)

The evidence on the overall impact of increased microcredit access on economic development and poverty alleviation is weak at best. Kaboski and Townsend (2011) use data from the Townsend Thai Survey to evaluate the Thai Million Baht Village fund program, which involved the transfer of 1.5 percent of the Thai GDP to the nearly 80,000 villages in Thailand to start village banks and was one of the largest government microfinance initiatives of its kind.[27] The evaluation finds that some households valued the program at much more than the per household cost, but, overall, the program cost 30 percent more than the sum of the benefits.

One conclusion is relatively clear: microcredit does have a substantial redistributive potential. While microcredit is costly and its overall impact on economic growth is subject to debate, the available studies indicate that a majority of the population is positively affected through increases in wages.

PUBLIC AND PRIVATE SECTOR BREAKTHROUGHS IN FINANCIAL INCLUSION

There is clear potential for private sector– and public sector–led breakthroughs in expanding financial inclusion. For example, the Global Findex data show that, in Kenya, 68 percent of adults report they had used a mobile phone in the past 12 months to pay bills or send or receive money.[28] The spread of mobile money products, the proliferation of bank agents, and the growing movement toward dispensing government payments via formal accounts all offer potential to alter substantially the ways in which adults manage their day-to-day finances.

The public sector can bring about change in how adults around the globe interact with the formal financial sector. Increasingly, governments are using formal accounts to disburse transfer payments. In Brazil, the government allows recipients of conditional cash transfers (as part of its Bolsa Família Program) to receive payments via no-frills bank accounts, though many more choose to receive payments via a virtual account that does not allow deposits or indefinite storage. Still, 20 percent of adults in Brazil report receiving government transfers via a bank account, among the highest rates in the developing world.[29] In India, the government recently began depositing government pension and scholarship payments directly into the bank accounts of almost 250,000 people in 20 districts; officials plan to expand the program with the aim of preventing corruption as well as increasing financial access. These types of reforms have the potential to extend the reach of the formal financial sector to the poorest individuals.

The challenge for public policy is to ensure that enhancements in access are achieved through the removal of market and regulatory distortions rather than through price regulation or other anticompetitive policies that may exacerbate distortions and threaten financial stability. Policies can enhance financial inclusion by addressing imperfections in the *supply* of financial services (for example, through modern payment and credit information systems, the use of new lending technologies, support for competition in the provision of financial services) and in the *demand* for financial services (for instance, through financial literacy initiatives that raise awareness and lead to the more responsible use of finance). Policies to support financial inclusion also include initiatives to remove nonmarket barriers that prevent *equitable access to financial* services (for example, through consumer protection and antidiscrimination laws). More generally, the challenge for policy is to guarantee that financial service providers are delivering their services as widely and inclusively as possible and that the use of such services is not hampered by inappropriate regulatory policies or nonmarket barriers that limit the use of financial services.[30]

There are many important links between the public sector and financial inclusion. Weak public sector institutions are detrimental to financial inclusion; so, improvements in public sector governance can have a positive impact on the use of and the access to financial services in an equitable way. There are also key effects in the other direction: if electronic payments are widely available, this

can boost the efficiency of public sector programs. The remainder of this report discusses, in greater depth, policies to influence financial inclusion among individuals (chapter 2) and among firms (chapter 3).

NOTES

1. For further discussion of the key functions of the financial system, see the inaugural *Global Financial Development Report* (World Bank 2012a) and the related study by Čihák and others (2013).
2. See also Demirgüç-Kunt and Levine (2008) and the references therein.
3. Financial inclusion can be defined in different ways. The advantage of this chapter's definition is that it can be expressed in operational terms (by specifying "use") and measured (for example, in map 1.1, "use" is approximated by "having at least one account"; in map O.1, it is measured more narrowly as "depositing to or withdrawing from an account at least once per month").
4. In addition to use and access, the quality of financial services is a relevant issue. Quality is more difficult to measure empirically than usage. Nonetheless, the issue is important, for example, for consumer protection (see chapter 2).
5. Lack of financial literacy may also result in excessive use of financial services. For example, people may buy insurance policies or take on credit they do not really need, put money in savings accounts with high fees that are not welfare enhancing, and so on.
6. Unbanked does not necessarily mean exclusion from the use of financial services. Some of the people who are without bank accounts have access to transactional services or accounts (for example, accounts provided by mobile phone operators). Even more broadly, financial services are also provided by informal service providers, such as moneylenders. This fills some of the gaps in formal financial inclusion, but is also associated with important drawbacks because the use of such informal financial services may involve less protection and higher costs.
7. See Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex. See also Demirgüç-Kunt and Klapper (2012).
8. The caveat is that the tracking of trends in inclusion has been possible so far based exclusively on data from financial service providers. User-side data have only started to be collected recently, and time series have yet to be built up. Even in the producer-side data, consistent worldwide data sets are available only since 2004.
9. The correlations are lower for geographic density, reflecting mobile technologies and other forms of remote access.
10. See Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
11. From the viewpoint of development, the relationship between household inclusion and firm inclusion is far from trivial. For example, in Latin America and Central and Eastern Europe in the early 2000s, household inclusion was expanding rapidly, whereas firm finance was slow to develop. Recent studies point out that there may be costs associated with expanding household access before firm access has been opened up and that the impact of financial deepening on growth and income inequality derives from enterprise credit, rather than from household credit (Beck and others 2008). The caveat is that, in many countries, the dividing line between households and firms is blurred in the case of small firms.
12. An area of active recent research has focused on whether and how financial services could enable microentrepreneurs to expand their businesses and employ additional workers. Microcredit impact studies show that greater availability of credit had no impact on the profits of microbusinesses owned by women in India, Morocco, or the Philippines (Banerjee and others 2013; Crépon and others 2011; Karlan and Zinman 2011).
13. See Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.
14. This is based on a country-level ordinary least squares regression of account penetration on the log of GDP per capita (Demirgüç-Kunt and Klapper 2012).
15. New technologies—inexpensive global positioning system receivers, mapping software, and widely available spatial data—have made it feasible to map out the geographic reach of financial systems in many countries. This facilitates a range of analyses that can be useful to the commercial sector, the public sector,

regulators, and donor agencies. For example, the Bill and Melinda Gates Foundation has sponsored a project to use mapping software and spatial data to assess the geographic distribution of financial access points relative to population in Kenya, Peru, and other countries. On Thailand, data on 960 households in 64 rural Thai villages have been made available via the Townsend Thai Survey and are studied in Kaboski and Townsend (2011). For the survey, see "The Townsend Thai Project: Baseline Survey ('The Big Survey')," National Bureau of Economic Research, Cambridge, MA, http://cier.uchicago.edu/data/baseline-survey.shtml.

16. This discussion highlights the usefulness of measuring financial systems using the 4x2 matrix introduced in the first *Global Financial Development Report*, that is, measuring depth, access, stability, and efficiency in both financial institutions and financial markets (World Bank 2012a; Čihák and others 2013).
17. See Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
18. See Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
19. The institutional barriers to financial inclusion are analyzed in Allen, Demirgüç-Kunt, and others (2012).
20. For more, see Financial Action Task Force (2013).
21. Calculations based on the Financial Access (database) 2010, Consultative Group to Assist the Poor and World Bank, Washington, DC, http://www.cgap.org/data/financial-access-2010-database-cgap.
22. Within Western Europe, in countries such as Austria and Germany, the number of cooperatives is even higher than the number of banks. In 2010, there were 15.9 commercial bank branches and 17.4 cooperatives per 100,000 adults in Germany. In Austria, the corresponding number of branches was 27.5 and 30.6, respectively.
23. Earlier research on the impact of the financial sector on economic development highlighted the contributions of aggregate financial depth on economic growth (Demirgüç-Kunt and Maksimovic 1998; King and Levine 1993; Levine and Zervos 1998; Rajan and Zingales 1998), and on poverty reduction and income inequality (Beck, Demirgüç-Kunt, and Levine 2007; Clarke, Xu, and Zou 2006; Li, Squire, and Zou 1998; Li, Xu, and Zou 2000). But, as illustrated in figure 1.12, deep financial sectors are not necessarily inclusive ones, which is why recent and ongoing research and empirical work have focused on examining financial inclusion and the access to and use of different types of financial services separately from financial depth.
24. For example, Karlan and Zinman (2011), based on an innovative experiment in the Philippines, find that access to credit led to a decline in the number of business activities and employees in the treatment group relative to controls, and subjective well-being declined slightly. However, they did find that microloans increase the ability to cope with risk, strengthen community ties, and boost the access to informal credit. These findings suggest that microcredit has a positive impact, but that the channels may not necessarily be those hypothesized by proponents.
25. Ashraf, Karlan, and Yin (2010) also find a reduced vulnerability to illness and other unexpected events.
26. For brevity, the focus in this section is on savings and transactions related to savings accounts. Nonetheless, there is also evidence of the strong impact of access to payment services. One aspect of this is the benefits of international remittances on the incomes and living standards of the families of migrants, on which there is some evidence. (See chapter 3, box 3.1 for a discussion on remittances and financial inclusion.)
27. For the survey, see "The Townsend Thai Project: Baseline Survey ('The Big Survey')," National Bureau of Economic Research, Cambridge, MA, http://cier.uchicago.edu/data/baseline-survey.shtml.
28. Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
29. Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
30. Beck and de la Torre (2007) rely on the notion of the access possibilities frontier to explain this.

CHAPTER 2: KEY MESSAGES

- **Promoting the use of financial services by individuals requires that market distortions**—such as information asymmetries or the abuse of market power—preventing the widespread use of financial products be addressed, ways be found to deliver services at lower costs for suppliers and consumers, and consumers be educated and protected so they use products that meet their needs and avoid costly mistakes. Governments can confront market failures and enhance inclusion by developing an appropriate legal and regulatory framework, supporting the information environment, promoting competition, and facilitating the adoption of business models by providers to enhance financial inclusion.
- **Technological advances hold promise in the expansion of financial inclusion.** Transaction costs become an obstacle for financial inclusion if providers cannot profitably serve low-income consumers. Innovations in technology, such as mobile banking, mobile payments, and the biometric identification of individuals, help reduce transaction costs. Which technology is appropriate for financial inclusion depends on the development of the traditional banking sector; market size, structure, and density; and the level of development of supporting infrastructure.
- **Product designs that deal with market failures, meet consumer needs, and overcome behavioral problems can foster the widespread use of financial services.** Certain business models and delivery channels can also enhance inclusion by reducing the cost of using financial services. The regulatory stance of governments can influence the product designs and business models of financial institutions. Hence, governments should strike a delicate balance between financial stability concerns and supporting innovations in product design and business models that allow for greater financial inclusion.
- **How best to strengthen financial capability, that is, financial knowledge, skills, attitudes, and behaviors, remains a focus of research and discussion, but some lessons are emerging:** the importance of using teachable moments to deliver financial knowledge, the value of social networks (such as between parents and children or between remittance senders and receivers), the relevance of psychological traits such as impulse control, and the possible benefits of new delivery channels such as entertainment education and text messaging.
- **Evidence points to the role of government in setting standards for disclosure and transparency, regulating aspects of business conduct, and overseeing effective recourse mechanisms to protect consumers.** To avoid conflicts of interest, prudential regulation may be separated from the regulation of financial consumer protection. Competition is also a key part of consumer protection because it creates a mechanism that rewards better performers and increases the power that consumers can exert in the marketplace.
- **Governments can also subsidize access to finance and undertake other direct policies to enhance financial inclusion, but more evidence on the effectiveness of these approaches is needed.** Financial exclusion is often a result of high debt levels, especially in rural economies. Debt restructuring may be preferable to unconditional debt relief to minimize the incentives for moral hazard and restore financial inclusion.

2

Financial Inclusion for Individuals

Promoting the use of financial services by individuals requires dealing with market failures, such as asymmetric information and moral hazard, that prevent the widespread use of financial products. It also involves designing products that fit consumer needs and delivering services at prices that individuals can afford. It entails educating and protecting consumers so they avoid making costly mistakes upon entering into financial contracts. Both private sector and government engagement is necessary to expand the financial inclusion of individuals. Technological progress, likely driven by the private sector and facilitated by the public sector, is expected to help increase the financial inclusion of individuals.

This chapter reviews the roles of technology, product design, financial capability, financial education programs, consumer protection and market conduct, and government policies in fostering financial inclusion.

THE ROLE OF TECHNOLOGY

The last two decades have seen a proliferation of new technologies with significant potential to improve financial access. As illustrated in chapter 1, transaction costs and geographical barriers are major impediments to the provision of financial services. Innovative technologies—including mobile banking, electronic credit information systems, and biometric individual identification—can reduce such transaction costs and can thus help overcome some of the traditional barriers to financial access.

Major innovations in retail payment systems date back to the rise of card-based payment services. Credit cards were introduced in the 1950s, and their use grew rapidly over the next three decades based on infrastructure developed and managed mainly by the card associations Visa and MasterCard. During the late 1980s and the 1990s, because of growing sophistication in information processing and telecommunications technologies, which, among other features, allowed online transaction authorization by issuers, credit cards became a widely accepted form of payment in many countries. In the 1980s, debit cards started to evolve as a key electronic payment instrument. Today, in some countries where credit card adoption has been slow because of the limited infrastructure for credit information and other issues, such as cultural preferences, debit cards have become the most popular electronic instrument for

retail payments.[1] The growth in debit cards has been dramatic over the last 25–30 years. At first, debit cards were enablers for moving customers from bank teller counters to the newly deployed automatic teller machine (ATM) systems. Over time, instead of using the card to withdraw cash from an ATM to pay merchants, bank customers could simply present the card to the merchants and have their bank account debited directly. Given this tremendous potential, debit card products evolved globally and became based on the infrastructure that was already in place for processing credit card transactions at the point of sale.

The market for prepaid cards, or stored-value cards, has also become one of the most rapidly growing segments in the retail payment industry.[2] In the 1990s, when prepaid cards first became available, they were mostly issued by nonfinancial businesses and used in limited deployment environments, such as mass transportation systems. In recent years, prepaid cards have grown substantially as financial institutions and nonbank organizations target the unbanked and migrant remittance segments of populations. Some prepaid cards already rely on the existing infrastructure for traditional credit and debit cards. Technological innovations in the way information is stored (such as magnetic stripe or computer chip), the physical form of the payment mechanism, and biometric account access and authentication are converging to create efficiencies, reduce transaction times at the point of sale, and lower transaction costs.

Although innovations in card-based retail payments have expanded access to finance and the method remains a dominant mode of transactions in many countries, there are limitations. From a consumer protection perspective, card-based payment systems can be problematic because of hidden, nontransparent fees. From a technology perspective, a potential concern is that the huge investments that banks and payment system providers have made into card-based payment infrastructure may inhibit interoperability and create market segmentation, which may have negative implications for competition and product innovation.

More recently, much attention has been focused on the role of mobile banking applications in financial inclusion. The reason is that mobile phones have been adopted by consumers at a rapid rate, becoming almost ubiquitous. They are now well within the reach of many poor individuals around the world. In many low- and middle-income countries, the share of the population that has access to a mobile phone is considerably larger than the share of the population that has a formal bank account. For example, in 2011, there were 127 mobile phone subscriptions for every 100 inhabitants in South Africa, while only 54 percent of the population had a bank account. There were 123 mobile phone subscriptions per 100 inhabitants in Brazil, while only 56 percent had a bank account. And, in India, 72 of every 100 inhabitants had a mobile phone, while only 35 percent had a bank account.[3] These numbers illustrate the vast potential of mobile telephony to enhance financial inclusion.

Mobile banking has been perhaps the most visible example of the use of new technologies to advance financial inclusion, but new technologies have also had an impact in other areas. For instance, modern information technologies have allowed banks to serve previously unbanked locations through banking correspondents. Improved technologies for credit reporting and borrower identification have dramatically reduced the cost of financial intermediation and allowed banks to provide financial services to clients who would have been excluded from the use of formal financial services in the absence of these technologies. As computing power has grown, banks are also able to leverage data on historical client behavior to better assess credit risk and deliver credit to previously underserved individuals.

While new technologies are, in principle, available globally, their adoption and use for financial inclusion have been uneven across countries, and there has also been great variation in whether such technologies

have been pioneered by the traditional financial sector or other players. India's financial inclusion strategy, for example, relies on providing basic financial services through traditional bank branches and technologically based correspondent banking, both led by the country's large public sector banks. At the other end of the spectrum, Kenya's popular mobile payment service, M-PESA, is operated by a private telecommunications provider and has reached nationwide appeal independently of the traditional banking sector.

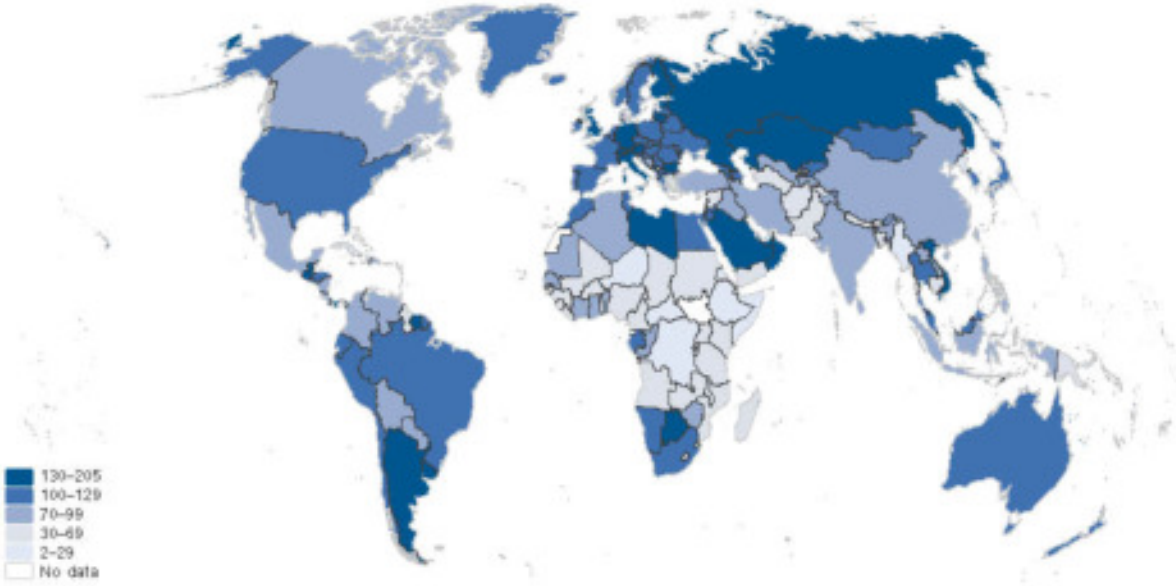
This section discusses the role of technology in financial inclusion. It reviews the growth of mobile banking and payment systems and discusses technology-based business models and the role of improved borrower identification and credit reporting technologies in financial inclusion. The section highlights that technology-based strategies for financial inclusion have varied substantially across countries and examines the features of national market environments that determine which technologies are best suited to enhance financial inclusion, as well as issues related to market structure and regulation that might make the success of some technology-based solutions difficult to replicate elsewhere.

Mobile banking and payments

Mobile banking and payment technologies are among the most significant financial sector innovations of the last decades. The wide geographical reach and the rapid growth of mobile phone technology has dramatically reduced communication costs from prohibitive levels to prices that are well within the reach of many low- and middle-income individuals across the developing world (map 2.1; figure 2.1). In the early stages of this technological revolution, users started transferring air time credits as a mode of payment within the network. This soon gave rise to the first mobile payment systems that were formalized by telecommunications providers (such as Safaricom in Kenya) or by banks that began allowing customers to receive, transfer, and deposit money over the mobile phone network.

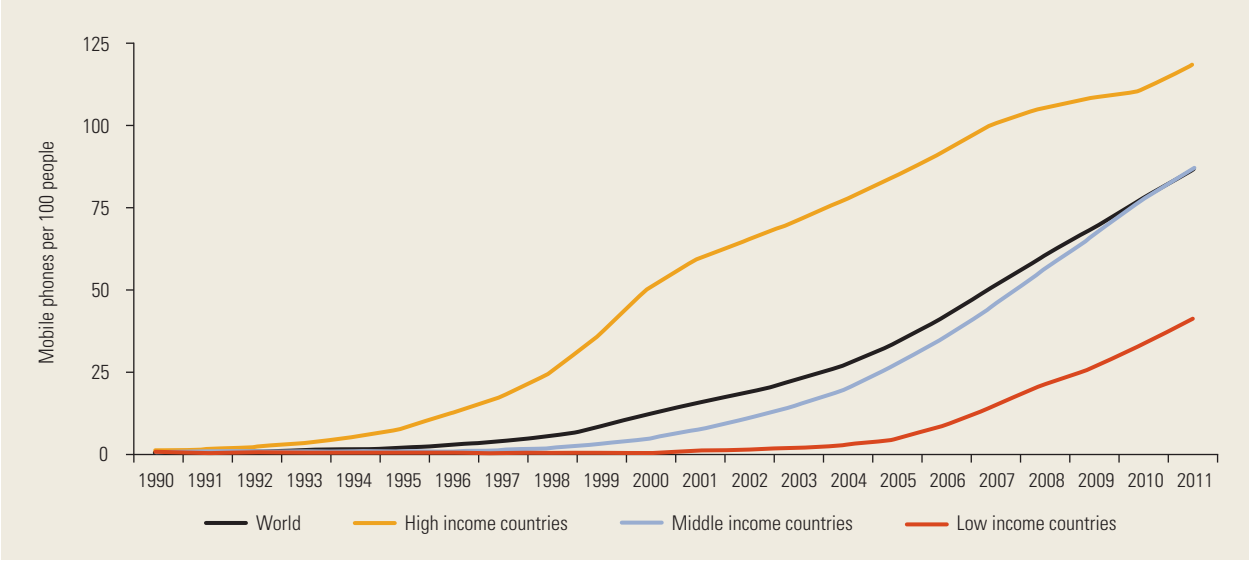
There is still considerable scope for expansion in mobile technology to translate into greater access to financial services. For example, Alonso and others (2013), using data on

MAP 2.1 Mobile Phones per 100 People, 2011



Source: Calculations based on World Development Indicators (database), World Bank, Washington, DC, http://data.worldbank.org/data-catalog/world-development-indicators.

FIGURE 2.1 Mobile Phones per 100 People, by Country Income Group, 1990–2011



Source: World Development Indicators (database), World Bank, Washington, DC, http://data.worldbank.org/data-catalog/world-development-indicators.

Mexico, estimate the potential demand gap for mobile banking—the difference between the possession of mobile phones and the access to current bank accounts—at about 40 percent.

To put matters in perspective, although mobile money has changed the economics of banking across the globe, the aggregate volumes of mobile banking transactions are still small compared with the value transacted through traditional payment instruments. Returning to the example of Kenya, one of the countries where the adoption of mobile payments has been most successful, the value of transactions among banks is nearly 700 times larger than the value of all transactions among M-PESA mobile accounts (Jack and Suri 2011).

One area where mobile technologies can be an important driver of change is remittance flows. While mobile payments are becoming a popular channel for sending domestic remittances, technological and regulatory barriers still constrain their widespread use for international remittances. Box 2.1 provides an in-depth discussion of the links among remittances, technology, and financial inclusion.

Mobile banking and payment technologies could serve as a key stepping-stone into the use of formal financial services, but a major challenge is to design secure mobile applications in a way that makes them easy to access and use in everyday transactions. Because mobile banking and payment applications have network externalities, they become more cost effective to operate and use as more participants join the system. In practice, this means that the success of mobile banking and payment systems depends crucially on the number of potential users a participant can transact with. Because mobile money applications in developing countries are set up in the context of what are still largely cash economies, other crucial factors determining their adoption are the number of cash-in points and the ease with which cash can be transferred into and out of the mobile system.

What are some of the requirements that would need to be in place for a country to replicate Kenya's extraordinarily successful experience in the adoption of mobile payments? The economics of mobile banking rely on network externalities and economies of scale. In the case of Kenya, the rapid adop-

BOX 2.1 Remittances, Technology, and Financial Inclusion

Remittances are among the most important financial transactions for populations with limited access to formal banking services. The total value of remittances has been rising steadily over the past decade. The World Bank (2013b) estimates that officially recorded international migrant remittances (defined as the sum of worker remittances, the compensation of employees, and transfers initiated by migrants) to developing countries totaled $401 billion in 2012. Remittances within countries—from one province or urban area to another—are several times this amount. Many countries receive remittances to the extent that the remittances have significant macroeconomic effects, including real exchange rate appreciation.

There should be a strong relationship between remittance flows and financial inclusion. A key reason is that remittances are usually regular and predictable flows, which should, in principle, make remittance recipients relatively more inclined to join the formal financial sector. This is not obvious, however, from cross-country data. Lower-income countries tend to have both higher levels of remittances as a share of gross domestic product (GDP) and less account penetration (figure B2.1.1, left panel). Drawing conclusions from this observation is difficult because, within countries, lower-income population segments are more likely to have a family member sending remittances and not have a bank account. While data on financial inclusion are now available through the Global Findex database, data on remittances by income decile still need to be collected more systematically through surveys.[a] (Substantial progress in this area is expected through the planned addition of a module in the Gallup World Poll in 2014.)

Indeed, to send and receive remittances, households increasingly rely on mobile banking and other modern retail payment applications. For many households, this can serve as a primary point of entry to the financial system and to the use of financial services that extend beyond payment systems. The potential of mobile banking is evident from data showing that poorer countries lag much more in terms of account penetration than in mobile telephony (figure B2.1.1, right panel). When people

FIGURE B2.1.1 Remittances and Financial Inclusion

Source: Calculations based on Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
Note: Gross remittance flows is the sum of remittance payments and receipts.

(box continued next page)

BOX 2.1 Remittances, Technology, and Financial Inclusion *(continued)*

come to a bank or credit union to engage in remittance transactions, they often end up opening a bank account after several visits. Many providers of financial services have recognized this enormous potential of introducing new client groups to financial services through remittances and are actively offering additional services along with remittance accounts.

The positive impact on financial inclusion of bundling remittance accounts with other financial products is also apparent in other ways. The fixed costs of sending remittances tend to make remittance flows lumpy and seasonal. This boosts the demand for savings instruments that offer households a safe place to store temporary savings and to use income for consumption smoothing (Anzoategui, Demirgüç-Kunt, and Martínez Pería 2011). Remittances often also improve access to credit because the processing of remittance flows provides financial institutions with information about the creditworthiness of poor recipient households, which helps make financial institutions more willing to supply credit and microloans. Finally, remittances can facilitate microinsurance, especially the purchase by migrant relatives, for example, of health insurance for their families in their countries of origin.

Given the potential role of remittances in raising financial inclusion, it is important to make transfer systems less costly, more efficient, and more transparent. According to recent survey data (World Bank 2013c), account-to-account products between nonpartner banks are the most expensive, with an average cost of about 13.6 percent, while transfers within the same bank or to a partner bank cost about 8.4 percent, on average. Mobile services are among the cheapest product types, at a cost of about 7.6 percent. However, mobile services for cross-border remittances are more difficult to access in most countries, and there is substantial scope to make the costs of mobile money transfers more transparent. This will be helped by regulatory initiatives such as the U.S. remittance transfer rule and efforts to improve consumer awareness.[b]

Several countries have integrated remittance products into national policies on financial inclusion. Under India's National Financial Inclusion Strategy, for instance, many public sector banks offer accounts that charge no fees for remittances. The Philippine Development Plan (2011–16) explicitly notes the need to promote financial inclusion and facilitate remittances both internally and from abroad (NEDA 2011). To these ends, the central bank has approved alternative ways of making remittances, such as the Smart Padala, G-Cash, and stored-value cards, and competition is helping both to lower transaction costs and to reduce the time needed for delivery.

At the global level, the value of facilitating remittance flows and reducing costs has been repeatedly emphasized by G-8 and G-20 leaders (see, among others, the G-8 L'Aquila Declaration and the G-20 Cannes declarations). The efforts of the Global Remittances Working Group (chaired by the World Bank's Financial and Private Sector Development Vice President) were successful in securing G-8 and G-20 commitments to reducing the cost of remittances by 5 percentage points in five years (the 5x5 objective). The implementation of remittance price comparison databases is proving effective in reaching or monitoring the progress toward achieving this objective.[c]

a. See Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
b. See "Remittance Transfer Rule (Amendment to Regulation E)" Consumer Financial Protection Bureau, Iowa City, IA, http://www.consumerfinance.gov/remittances-transfer-rule-amendment-to-regulation-e/.
c. See the Remittance Prices Worldwide Database, at http://remittanceprices.worldbank.org.

tion of mobile banking was driven by Safaricom, the largest mobile network operator in the country, which provided an extensive network that ensured banking was viable for the provider as well as for potential clients. In settings where the market for mobile banking is more fragmented, the adoption of these technologies has often been much slower because providers have insufficient incentives to invest in the extensive infrastructure

required to make mobile banking economically viable.

This illustrates that regulators walk a fine line between providing incentives for the development of mobile payment platforms and requiring these platforms to be open. From a consumer perspective, it is clearly desirable to require different electronic banking and payment platforms to be interoperable so that users can interact across mobile banking applications without technological barriers or extra charges. However, if operators are required to interconnect at an early stage of development, this may weaken the incentives to invest in infrastructure and services that can be leveraged throughout the system. Striking the right balance between these competing policy goals remains a key challenge in the regulation of new payment technologies.

Aside from issues of market structure and regulation, there are a variety of government policies that can support the adoption of mobile banking. One policy that has been showing some promise in encouraging the adoption of mobile banking technologies is the use of government-to-person (G2P) payments. G2P payments provide an attractive opportunity to draw previously unbanked beneficiaries into formal financial services by channeling a consistent flow of money into financial accounts. Several governments have begun to experiment with the use of mobile payment technologies on a small scale, for example, as a way to channel welfare payments to low-income individuals. These are only relatively limited programs in terms of size and aggregate effect so far; most governments use card-based or direct deposit technologies for G2P payments. However, two instances of large government transfer programs that have gone fully mobile are Colombia's Familias en Acción Program and Pakistan's Benazir Income Support Program.

The digitalization of government payments in Pakistan is an example of how G2P payments over mobile networks can be used as an effective tool for supporting financial inclusion. There are currently 1.8 million mobile banking accounts in Pakistan and more than 31,000 agents (covering 90 percent of Pakistan's districts) who process more than 10 million payments per month. Several mobile banking providers currently operate in Pakistan, and nearly all of them are involved in the digitized disbursement of G2P payments (Rotman, Kumar, and Parada 2013). The case of Pakistan is also a good example of how governments can work with private sector partners to leverage the benefits of mobile banking technologies: Pakistan's government agencies are keen to channel G2P payments through mobile banking to reduce administrative costs and increase transparency, while mobile banking providers view G2P payments as a useful way to grow their client base among low- and middle-income individuals. As a result, the share of G2P payments made through Pakistan's mobile network has steadily risen, and it is expected that, within five years, up to 75 percent of all G2P payments in Pakistan could be digitized.

The effect of mobile banking on savings has been a matter of some dispute. Because many mobile banking platforms were originally designed as pure payment systems, one concern is that mobile banking facilitates payments and consumption but does not generate incentives to save and to engage in other welfare-enhancing financial behaviors. There is some evidence that mobile banking services are used much more as a mode of transaction than as a store of value. For example, in a study of mobile banking in Kenya, Mbiti and Weil (2011) suggest that access to M-PESA has only a limited effect on the ability of individuals to save. In a related study, Demombynes and Thegeya (2012) show that enrollment in Kenya's M-PESA system increases the likelihood of saving by up to 20 percentage points. People who have only M-PESA save, on average, K Sh 1,305 per month (about $13), compared with K Sh 2,282 per month among people who save only with other accounts and K Sh 2,959 among people who save with M-PESA and other accounts.

Taking into consideration the fact that people who save using non–M-PESA accounts tend to be wealthier individuals who save more, one may conclude that mobile

banking—in addition to reaching unprecedented numbers of low-income individuals with basic payment services—may encourage savings. Reliable evidence on this point is, however, scarce. One reason for this is that many electronic retail payment systems still focus heavily on facilitating transactions, but do not offer sufficiently attractive savings products. In some cases, this is because regulators do not permit mobile banking providers to act as deposit-taking institutions. There is, nonetheless, wide variation in regulatory regimes, and some providers, such as M-Shwari in Kenya, have partnered with banks and started offering credit products.

Innovative delivery channels

In addition to enhancing financial inclusion directly, new mobile banking and payment technologies have also given rise to technology-based business models that can broaden access to basic financial services. Banking correspondents that use a combination of card- and mobile-based technologies are an example of how banks use new technologies to provide financial services to previously unbanked customers and locations.

A banking correspondent is a representative of a bank who operates transactions on behalf of one or more banks outside the bank's branch network. The term "banking correspondent" is often used broadly and may include post offices, supermarkets, grocery stores, gasoline stations, and lottery outlets that offer basic financial services. Banking correspondents can be fixed retail locations that offer banking services to clients on a commission basis in previously unbanked locations or mobile banking agents that visit remote locations regularly to offer basic financial services. It is worth distinguishing between banking correspondents, who offer a broader range of financial services on behalf of a bank, and mobile agents, who act on behalf of a mobile phone or payment operator and typically provide only elementary transaction services. Both types of correspondent models have grown rapidly through the advent of new mobile banking and payment technologies. They rely on mobile banking and point-of-sale technologies to reduce transaction costs and expand access to financial services beyond locations covered by a bank's existing network of branches.

The innovative aspect of mobile technology–based correspondent banking is the combination of mobile technologies and new delivery channels, for example, by using retail outlets as banking correspondents. This enables banks to offer more convenient points of access to existing customers, decongest their branches, collect payments, and gain a larger geographical presence without having to invest in brick and mortar branches. Most of the underlying technologies are similar to those that enable basic mobile banking. However, correspondent banking can also reach people without mobile phones. Moreover, it typically provides a broader suite of financial services—including insurance and savings products—than mobile banking. More recently, some of the more mature mobile payment platforms have linked up with banking partners to offer a broader range of products to customers, often through the retail channel of an established banking correspondent network.[4]

Evidence shows that correspondent banking has had a substantial impact on financial inclusion. For example, Allen, Demirgüç-Kunt, and others (2012) find that, among adults in the bottom income quintile, the likelihood of using a formal financial account increases by up to 5 percentage points through the introduction of correspondent banking.

In many countries, including Brazil, India, Kenya, and Mexico, correspondent banking has been instrumental in enhancing the access to basic financial services. For instance, technology-based business models played a key part in India's policies to enhance financial inclusion. In 2006, India adopted a bank-led, technology-driven banking correspondent model. The Reserve Bank of India called on banks to provide basic financial services in all unbanked villages in two phases: first, to all villages with a population of at least 2,000 and, second, to all villages with a population of less than 2,000. Banks have used a combination of new branches, fixed location business correspondent outlets, and mobile

technology–based banking correspondents to meet this target. As of March 2012, 96,828 new customer service points had been set up under the program.[5] According to Findex data, only about 35 percent of India's adult population had a bank account in 2011.[6]

Brazil leads the way globally in terms of the coverage and number of correspondents. Brazil's strong payment system infrastructure has set the technological foundation for the successful and rapid deployment of correspondent banking. Brazil has 1,471 point-of-sale terminals per 100,000 adults, more than three times the number in Chile (450 per 100,000), and also leads the region in ATMs, at 121 per 100,000, a coverage rate similar to the rates in Germany and other European countries. The large government transfer programs handled through public banks have also created an immediate use for the correspondent networks. Today, these are largely grouped under the Bolsa Família conditional cash transfer program, which serves nearly 14 million families (the largest program of its kind in the developing world). Central bank regulations likewise encourage financial institutions to reach out to more distant consumers and to communities where they had not previously been active. The Brazilian example illustrates not only the enormous successes, but also some of the challenges that this innovative channel faces. For example, despite progress, correspondents in poorer and more remote areas tend to be limited to providing basic access to payments, and services such as savings, credit, and insurance are not readily available for many low-income consumers (box 2.2).

BOX 2.2 Correspondent Banking and Financial Inclusion in Brazil

The development of a widespread correspondent banking network is one of the main factors behind improvements in financial inclusion in Brazil. The central bank encouraged financial institutions to reach out to more distant consumers and to communities where they had not previously been active, including lower-income areas, through partnerships with a variety of retail establishments. In response to early successes with the program, regulators have gradually reduced the restrictions on correspondent banking, for instance, on individual approval processes. The legal framework has facilitated healthy expansion by putting the onus on regulated institutions to train and monitor their correspondents. An important step was the auctioning off of the right to use post offices as correspondents, which was won by a private bank. This has raised the incentive for other banks to look for alternative correspondent networks.

Between 2005 and 2010, the number of correspondents approximately doubled, exceeding 150,000 in December 2010 (table B2.2.1). The number of bank branches grew by about 12 percent in the same period, from 17,627 to 19,813. Banks and financial institutions have partnered with a variety of retail establishments, including some with public ties such as the post office network and lottery agencies. Several financial institutions, Banco Bradesco and Caixa, for instance, have also developed riverboat banks to reach distant communities along the Amazon (figure B2.2.1).

The example of Brazil highlights how innovative business models can harness the possibilities of new

TABLE B2.2.1 Correspondent Banking, Brazil, December 2010

		Links, %		Activities authorized, operational correspondents, %				
Region	Number	Bank	Financial company	Open account	Funds transfers	Payments (send and receive)	Loans and finance	Credit cards
North	6,850	91	14	34	48	79	53	42
Northeast	31,752	93	13	29	47	81	51	41
Central-West	11,948	86	19	25	40	72	58	40
Southeast	67,878	82	31	23	31	61	66	38
South	31,195	80	27	28	37	68	66	38
All	151,623	84	24	26	37	68	62	39

Source: Calculations based on data of the Central Bank of Brazil.

(box continued next page)

BOX 2.2 Correspondent Banking and Financial Inclusion in Brazil *(continued)*

FIGURE B2.2.1 Voyager III: Bradesco's Correspondent Bank in the Amazon

Source: Banco Bradesco. Used with permission; further permission required for reuse.

technologies to extend financial services to previously unbanked households and locations. The data in table B2.2.1 illustrate some of the ongoing challenges this channel faces. For example, wealthier regions (such as the South and Southeast) have a higher share of correspondents, and the correspondents in these areas are more likely to provide a full range of services (such as account opening and access to loans), whereas many correspondents in the North and Northeast only handle payments (such as those related to utility bills and the provision of monthly government benefits). Basic financial services beyond payments (including savings, credit, and insurance) are still not readily available for many low-income consumers. Government authorities are therefore now aiming to extend the use of banking correspondents to government payments and to provide greater incentives to use correspondent banking to enable savings.

Other countries in Latin America have likewise expanded access through the use of correspondent banking networks. In Mexico, changes in the regulatory framework in 2009 and 2010 resulted in the number of correspondent banks more than doubling, from 9,303 in the fourth quarter of 2010 to 21,071 one year later. This represents an estimated 2.64 correspondent banking sites per 10,000 adults, compared with only 1.83 per 10,000 among traditional bank branches. (The total number of bank branches was 14,631 in 2011.) Nearly half of all banking correspondents in Mexico (9,964 as of 2011) are located in convenience stores, which are part of the OXXO retail chain. Walmart, 7-Eleven, and several pharmacies also serve as banking correspondents. The main publicly owned banking correspondent partner is Telecomunicaciones de México (with 1,597 banking locations in 2011), the third largest of the correspondent network partners in Mexico, but significantly smaller than the public sector network partners in Brazil, such as the lottery or the post offices. Mexican regulations are flexible and permit even individuals with a laptop to act as agents, as well as large retailers that offer complete banking services. Banco Azteca, which operates out of the Elektra retail chain, offers an example of the high end of this market; it provides comprehensive banking services through Elektra stores to a largely low-income clientele.

In Colombia in 2006, the government created an innovative program, Banca de las Oportunidades, to support financial inclusion through a combination of policy actions, including regulatory reforms, financial capability initiatives, and incentives for providers to meet the demand of low-income consumers for banking services. Correspondent banking is one of the approaches to financial inclusion that Banca de las Oportunidades has supported both through regulatory reforms such as the creation of nonbank correspondent agents and simple know-your-customer rules. As of the first quarter of 2013, there were 35,765 correspondents in Colombia, roughly equivalent to slightly more than 10 per 10,000 adults, compared with only 7,183 traditional branches of financial institutions.[a]

These three examples from Latin America all demonstrate the importance of the regulatory environment for the expansion of correspondent banking. In each case, Brazil, Colombia, and Mexico, the steps taken by the regulator to facilitate agent or correspondent banking, such as greater flexibility in documentation and the know your customer requirements for small balance accounts, were critical in enabling banks and other formal financial institutions to expand the networks.

a. See http://www.bancadelasoportunidades.gov.co/portal/default.aspx, the Banca de las Oportunidades website.

Technologies for improved borrower identification and credit reporting

Technologies that reduce asymmetric information in credit markets are another type of technological innovation that can enhance financial inclusion. Many financial markets are plagued by severe information problems, which are a major cause of financial exclusion. Lenders will try to compensate for the lack of reliable information on the identities and credit histories of borrowers by raising collateral requirements, engaging in the costly screening of borrowers prior to approval, or refusing to lend to certain segments of the borrower population altogether. This leads to credit rationing and financial exclusion even among otherwise creditworthy borrowers.

Most developed economies have national identification systems that make it easy to identify borrowers uniquely and track individual credit histories. For a credit reporting system to function effectively, it must be possible to identify individuals uniquely. This is a challenge in many low- and middle-income countries where no universal identification system exists. Even where there is some form of formal identification, it is often hard to verify the authenticity of the documentation. This means that borrowers can easily renege on financial commitments and makes lenders reluctant to provide financial services and credit to new clients. Microfinance institutions (MFIs) have traditionally circumvented this problem by relying on group lending and frequent personal interaction between borrowers and loan officers. However, in the wake of recent default crises in microfinance (see chapter 1, box 1.5), even MFIs are increasingly relying on traditional credit reporting, which underscores the need for reliable identification at the bottom of the financial pyramid.

To address this challenge, many countries have resorted to innovative technological solutions for improved borrower identification. Local and national governments have, for example, introduced biometric forms of identification, which utilize biometric data on individuals, such as fingerprints. These can be linked to credit histories. The world's largest effort at biometric borrower identification is currently under way in India, where the Unique Identification Authority of India's Aadhaar Program is assigning identification numbers to all of the country's citizens. When the process is finished in 2014, each person will have an identification number linked to biometric data, including a photograph, iris scans, and fingerprints. It is envisioned that the identification numbers could be linked to Aadhaar Enabled Payment Systems, as well as a borrower's credit history (such as bank and microfinance loans) to improve transparency and reduce information problems in the credit market.

Recent research indicates that technologies for improved borrower identification can substantially reduce information problems and moral hazard in credit markets. Giné, Goldberg, and Yang (2012) report on a field experiment in Malawi that introduced fingerprinting as a form of biometric borrower identification. In line with theoretical predictions, the intervention improves the lender's ability to implement dynamic incentives (that is, the ability to deny credit in a later period based on earlier repayment performance) and reduces adverse selection and moral hazard (box 2.3). The paper is part of the broader literature on the topic. In particular, a related paper by Karlan and Zinman (2009) finds experimental evidence of moral hazard and weaker evidence of adverse selection in urban South Africa. A number of recent papers supply empirical evidence on the existence and impacts of asymmetric information in credit markets in both developed and developing economies (for instance, Edelberg 2004; Giné and Klonner 2005; Visaria 2009).

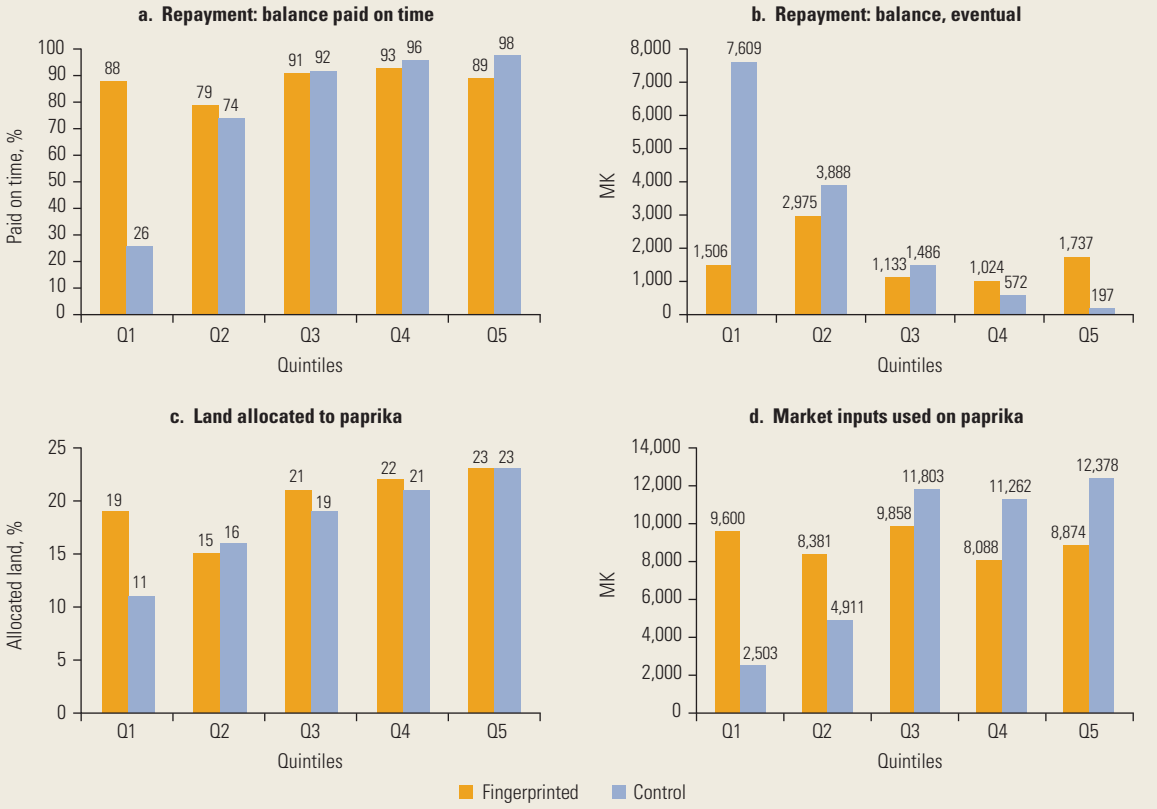
Although efforts to create better borrower identification schemes are currently under way in many countries, governments often use multiple purpose-specific identification schemes. This can run counter to the objective of creating a base identification infrastructure on which the private sector can build financial inclusion products. Hence, one policy implication for the creation of an effective unique identification system with wide applicability is the need to separate the provision of unique

BOX 2.3 The Credit Market Consequences of Improved Personal Identification

Until recently, there has been virtually no empirical evidence on the impact of personal identification in credit markets. Three questions are of broad interest. First, how do improvements in personal identification affect borrower and lender behavior and, ultimately, loan repayment rates? Second, how prevalent are adverse selection and moral hazard in credit markets? And, finally, how does improved personal identification affect the operation of credit reporting systems?

Giné, Goldberg, and Yang (2012) present results from a randomized field experiment that sheds light on the above questions. The experiment randomizes the fingerprinting of loan applicants to test the impact of improved personal identification. The experiment was carried out in rural Malawi, which is characterized by an imperfect identification system and limited access to credit (Figure B2.3.1). According to the Global Financial Development Report database, Malawi ranked 124 out of 153 jurisdictions for which 2011 data were available on private credit to GDP, a frequently used measure of financial sector depth.[a] Malawi also received low marks in the depth of credit information index, which proxies for the amount and quality of information about borrowers available to lenders.[b] Few rural Malawian households have access to loans for production activities: only 12 percent report any production loans in the past 12 months, and, among these loans, only

FIGURE B2.3.1 Fingerprinting in Malawi



Source: Calculations based on Giné, Goldberg, and Yang 2012.
Note: The graphs show the repayment rates among fingerprinted (gold) and control (blue) groups by quintiles of the ex ante probability of default. Individuals in the worst quintile (Q1) are those with the highest probability of default and those on whom fingerprinting had the largest effect. MK = Malawi kwacha.

(box continued next page)

BOX 2.3 The Credit Market Consequences of Improved Personal Identification *(continued)*

40 percent are from formal lenders. In the experiment, farmers who applied for agricultural input loans to grow paprika were randomly assigned to either a control group or a treatment group where each member had a fingerprint collected as part of the loan application.

The authors find that fingerprinting led to substantially higher repayment rates for the subgroup of borrowers with the highest ex ante default risk. This suggests that fingerprinting, by improving personal identification, enhanced the credibility of the lender's dynamic incentive, that is, the threat of denying credit based on earlier repayment performance. The impact of fingerprinting on repayment in the highest default risk subgroup (20 percent of borrowers) is large: the average share of the loan repaid (two months after the due date) was 67 percent in the control group, compared with 92 percent among fingerprinted borrowers. In other words, among these farmers, fingerprinting accounts for roughly three-quarters of the gap between repayment in the control group and full repayment. By contrast, fingerprinting had no impact on repayment among farmers with low ex ante default risk.

The authors also collected unique additional evidence that points to the presence of both moral hazard and adverse selection. Fingerprinting leads farmers to choose smaller loan sizes, which is consistent with a reduction in adverse selection. In addition, farmers with a high risk of default who are fingerprinted also divert fewer inputs away from the contracted crop (paprika), which represents a reduction in moral hazard. If these benefits are compared to the estimated costs of implementation, the adoption of fingerprinting is revealed to be cost-effective, with a benefit-to-cost ratio of about 2.3:1. The paper also has implications for the perceived benefits of a credit reporting system. Despite the absence of a credit bureau in Malawi, study participants were told that their fingerprints and associated credit histories could be shared with other lenders. Since fingerprinting led to positive changes in borrower behavior, the paper underscores the belief of borrowers that improved identification would allow the lender to condition credit decisions on past credit performance. This is important because it suggests how borrowers may respond to the introduction of a credit bureau. These findings also complement recent work by de Janvry, McIntosh, and Sadoulet (2010), who study the introduction of a credit bureau for microfinance borrowers in Guatemala and find that the resulting improvement in borrower information leads to large efficiency gains through the reduction of moral hazard and adverse selection.

a. Global Financial Development Report (database), World Bank, Washington, DC, http://www.worldbank.org/financialdevelopment.
b. See Doing Business (database), International Finance Corporation and World Bank, Washington, DC, http://www.doingbusiness.org/data.

(biometric) identification from customization to a specific purpose that could narrow the scope of the applications.

While many developing economies are still facing the basic technological challenge of establishing an infrastructure for unique borrower identification, there is a range of policy interventions available to countries with a more advanced credit reporting infrastructure. For the most part, these policies are aimed at creating the appropriate legal and competitive framework for the possibilities generated by new borrower identification and credit reporting technologies (see also IFC 2012a; World Bank 2011a).

First, where credit reporting institutions exist, information sharing between different financial institutions is often difficult to achieve in practice. Because lenders benefit from exclusive access to information about the creditworthiness of prospective borrowers, established lenders are frequently reluctant to share credit information with competitors, especially with market participants

who challenge traditional lending models, such as the providers of consumer credit or MFIs. Ensuring equitable and transparent access to credit information allows customers to use their credit histories as reputational collateral, strengthens credit market competition, and enhances access to finance. In recent years, these basic functions of credit reporting institutions have been supported by new technologies, including the biometric borrower identification tools described above, and improved banking technologies that make it easy to share and collect borrower information.

Second, existing credit reporting institutions often cover only borrowing and transactions within the traditional banking sector. To strengthen the role of credit reporting institutions as a tool for financial inclusion, one should expand the coverage of credit reporting systems to nontraditional lenders, such as nonbank financial institutions and microfinance borrowers. This would not only help graduate microfinance clients into formal banking. It could also serve to prevent overindebtedness among low-income borrowers, which has become a cause for concern in the wake of recurring default crises in microfinance and the rapid expansion of consumer finance in emerging markets.

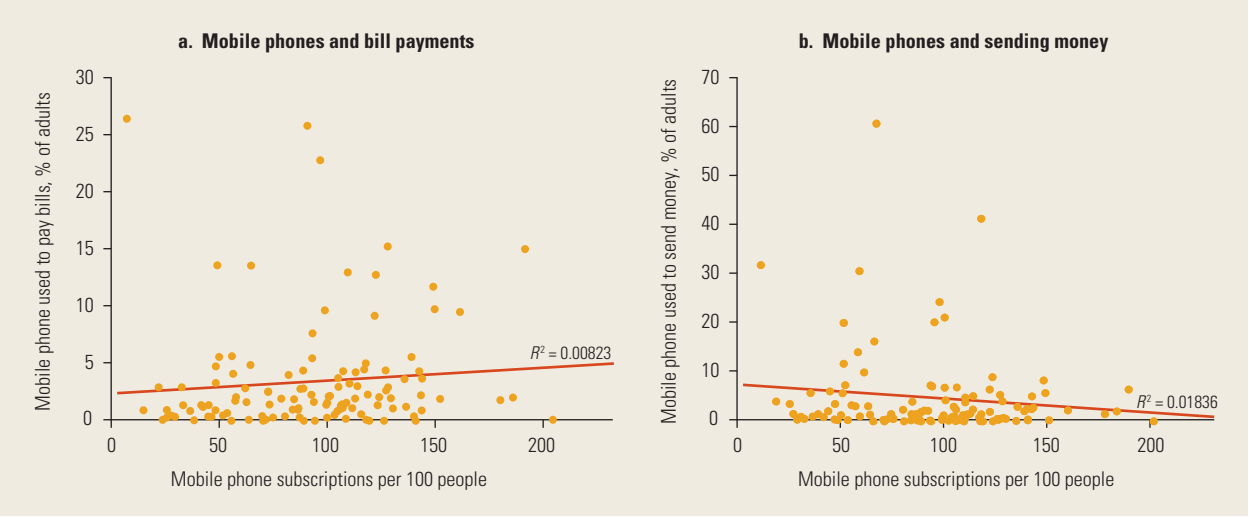
Finally, where comprehensive credit reporting institutions are in place, they have more effect on financial inclusion if they are governed by an adequate legal framework that safeguards the rights of consumers, mitigates some of the risks associated with the availability of large amounts of personal credit information on individuals, and ensures equity and transparency in information sharing among various market participants.

Adopting new technologies: The role of the market environment and competition

New technologies, particularly mobile banking and retail payment systems, have become an integral part of financial inclusion around the world, but the use of new technologies has taken different paths across economies. Indeed, neither ubiquity, nor a high penetration of mobile phones is a necessary condition for the development of mobile banking. For example, M-PESA began offering mobile payment services when Kenya's mobile phone penetration rate was only 20 percent, not so different from the levels in Afghanistan, Rwanda, and Tanzania when they introduced similar services. In cross-country comparisons, the correlation between mobile phone subscriptions and the use of mobile phones for payments and sending money is insignificant (figure 2.2).

To understand more clearly the reasons for this surprisingly low correlation, one may usefully focus on two country cases from opposite ends of the spectrum: the Russian Federation and Somalia. Russia has one of the highest rates of mobile phone subscriptions in the world (179 per 100 people), while ranking among the lowest in terms of mobile phone use for financial transactions (less than 2 per 100 adults). Part of the explanation for this phenomenon is a long-standing preference for using cash in transactions rather than other methods of payment; many private sector employers pay employee wages in cash, and—despite growth in e-commerce—the preferred method of payment for online orders is cash on delivery. About 50 percent of Russians are skeptical of debit and credit cards, even if they own one. Thus, 83 percent of the more than 140 million active bank cards are payroll cards, and 90 percent of the activities registered on these cards are ATM withdrawals on paydays (Adelaja 2012; Evdokimov 2013). A contributing factor is that Russian banks have been slow to develop electronic payment and mobile banking services. In mid-2012, only 4 of the 30 largest Russian banks provided a complete set of mobile banking services, and only 7 enabled money transfers between individuals.[7] Only in 2011 was legislation on electronic payments adopted that legalized electronic payments and set up the legal and security framework to make such payments possible (Adelaja 2012). Because of these factors, cash is the main method of payment in Russia, while payments and transfers through

FIGURE 2.2 Mobile Phone Penetration and Mobile Payments



Sources: Calculations based on data from the World Development Indicators (database), World Bank, Washington, DC, http://data.worldbank.org/data-catalog/world-development-indicators; Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.

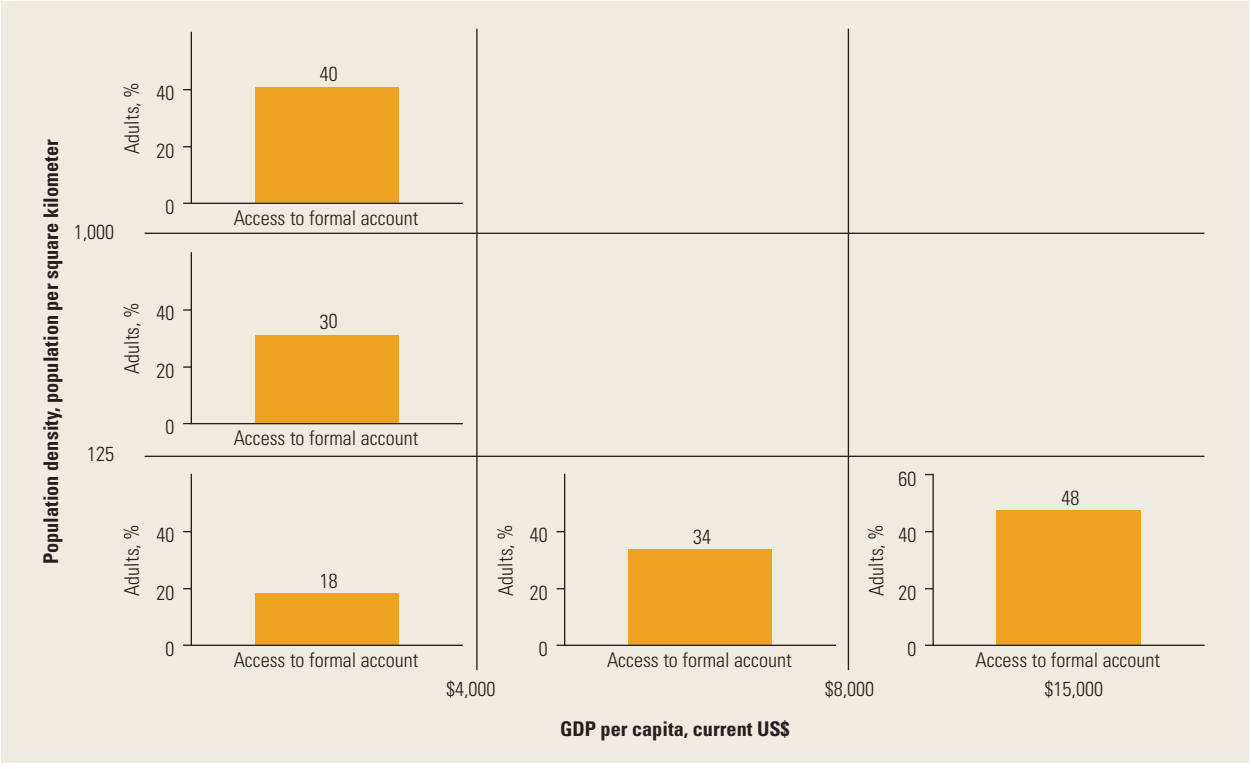
mobile phones are less frequent compared with countries with similar levels of education, wealth, technological advancement, and mobile phone penetration.[8]

Somalia is a quite different example. It has the fourth-lowest mobile penetration rate in the world, but is among the three countries with the highest usage of mobile phones for payments. This somewhat contradictory picture largely reflects Somalia's challenging security conditions. When the country's largest telecommunications company launched mobile banking services, the services quickly proved to be of great benefit. Individuals could now easily transfer money to other subscribers, facilitating shopping and the payment of bills without the need to carry cash. The new service has made it possible for Somalis to receive remittances from their family members and friends abroad, an important change given that remittances, equivalent to about 70 percent of the Somali GDP, have been the backbone of Somalia's war-torn economy (Maimbo 2006). The example of Somalia underscores that the degree of use of mobile phones for payments, while a good indicator, should not be considered an end in itself.

There is now wide agreement that no single strategy will work to enhance financial inclusion in all markets and economic environments. Indeed, when researchers have investigated conditions such as the amount of regulation, the extent of legal rights, the cost of alternatives, market size, and the size of the financially excluded population, the results have been inconclusive (for example, see Flores-Roux and Mariscal 2010). This raises the question: what enabling conditions must be in place to support the development, for example, of mobile banking and payments services sufficiently comprehensive to increase financial inclusion?

While no single factor can explain the stark cross-country differences in the adoption of mobile banking and payment technologies, some patterns do stand out. In many ways, the provision of financial services to lower-income customers has traditionally been similar to the physical retail business. The profitability of providing financial services to the mass market is determined by the number of potential customers within the range of a physical branch and the revenue per potential customer. The first of these components is affected by

FIGURE 2.3 Share of Adults with an Account in a Formal Financial Institution



Sources: Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex; World Development Indicators (database), World Bank, Washington, DC, http://data.worldbank.org/data-catalog/world-development-indicators; Faz and Moser 2013.

population density; the second is a function of the per capita income of potential customers.

Population density and per capita income are two key factors that are systematically correlated with financial inclusion. Figure 2.3 shows the percentage of adults who are 15 years or older and who have a formal bank account according to per capita income (horizontal axis) and population density (vertical axis). If measured in terms of access to bank accounts, financial inclusion is an increasing function of a country's per capita income. There is also a strong positive relationship between population density and financial inclusion. This is largely explained by the economies of scale in countries such as Bangladesh, India, and Indonesia, where high population densities have been an enabling condition for financial inclusion through traditional bank branches, despite low levels of per capita income.

This classification of financial inclusion environments can highlight the settings in which mobile banking and mobile payments can have the greatest impact on financial inclusion. It is possible to identify three broad financial inclusion environments, corresponding to three of the four corners in figure 2.3, in which one would expect the adaptation of mobile banking services to follow different paths: (1) low-income and low–population density environments, characterized by the absence of a widespread banking infrastructure and, often, of a dominant telecommunications provider; (2) low-income and high–population density environments with a widespread network of banks and MFIs and well-developed telecommunications providers; and (3) high-income and low–population density environments with a developed banking sector, a widespread organized retail sector, and strong telecommunications providers.

Mobile banking and payment technologies change the economics of banking because they dramatically reduce the cost of providing financial services. This reduction in transaction costs is especially large in environments with low population densities and low per capita income, precisely the settings that have been underserved by traditional providers of financial services. These are the settings in which mobile banking technologies have the greatest potential welfare benefits because the technologies offer a commercially viable way of reaching locations and customers that were previously excluded from formal financial services due to the prohibitively high costs of providing such services. Kenya, the Philippines, and Tanzania are examples of markets in which new technologies have had an instrumental role in expanding financial inclusion.

In the other parts of the matrix in figure 2.3, one may see that mobile banking and technology-based business models can still be important, but they are more likely to function as a complement to rather than a substitute for traditional bank-based financial inclusion policies. This point is most obvious in the case of economies classified as high population density and low income (upper left corner of figure 2.3). Examples include Bangladesh, India, Indonesia, and parts of China. In these economies, the large number of customers that can be served by a single bank branch compensates somewhat for comparatively low average account balances and transaction volumes. As a result, these economies have a well-developed network of traditional bank branches and microfinance providers that cater to low-income customers. Mobile banking and technology-based business models can nonetheless help in expanding financial inclusion within these environments. India's financial inclusion policies, for example, focus on a bank-led model that combines the advantages of a widespread network of physical bank branches with technology-based correspondent banking solutions to reach previously unbanked locations and unbanked segments of the population. Mobile technologies can act as a complement by decongesting existing branches, bringing services closer to customers, and expanding access to more remote areas where the high population criterion may not hold.

Harnessing the potential of new technologies for financial inclusion is perhaps most challenging in the third financial inclusion environment, characterized by high income and low or medium population density (bottom right corner of figure 2.3). Examples include much of Eastern Europe and Latin America. In this environment, banks, retailers, and telecommunications providers tend to be well established so that the introduction of new banking and payment technologies is often more likely to redistribute the market shares of the services provided to an already banked population rather than to incorporate new client groups into the formal financial sector. Because of the value of existing banking relationships in such a setting, this is also an environment in which entrenched providers of financial services tend to be reluctant to adopt new technologies that could threaten their market position or displace existing technologies with clearly defined market shares and revenue structures, such as credit cards. Hence, this financial inclusion environment represents a much greater burden for regulators, who need to ensure that, first, new technologies are adopted and, second, that they are priced and made available in a way that makes them accessible to the unbanked. Increasing the challenges is the fact that, in this environment, the risk of regulatory capture is heightened.

Finally, an important prerequisite for the adoption of technologies that can enhance financial inclusion across all market environments is an adequate legal and regulatory framework. The regulatory framework needs to create enabling conditions for the providers of technology-based financial services, while protecting the rights of consumers. The case of mobile payment systems is a good example: regulating new payment systems as if they were conventional banks is likely to reduce competition and may create risks for consumers. The same applies to new technologies that make it easier to collect and share borrower information.

THE IMPORTANCE OF PRODUCT DESIGN

The design of financial products can have a major impact on the use by individuals of financial services. Recent studies show that product design features can affect both the extent and the impact of the use by individuals of financial services.[9]

Credit

Certain design features of credit products aid in mitigating market imperfections and increasing inclusion. For example, products that help reveal hidden information assist in channeling credit by mitigating asymmetric information problems. Drugov and Macchiavello (2008) and Ghosh and Ray (2001) show how small, initial tester loans can provide information that is useful for assessing the risk in subsequent larger loans.

Group lending is an often-discussed and arguably the most controversial solution to information asymmetries in developing economies. Ghatak (1999) shows how group lending can mitigate adverse selection. In selecting fellow borrowers with whom they will be jointly liable for loans, potential clients will exploit information known to borrowers, but not to banks, so as to screen out bad borrowers. Group lending also addresses moral hazard by providing incentives for clients to employ peer pressure to ensure that funds are invested properly and effort exerted until the loans are repaid. Karlan (2007) uses quasi-random variation in the group-formation process at a Peruvian MFI to show that groups with greater levels of social connection (ethnic ties and geographical proximity) have lower default and higher savings rates. There are also concerns, however, that group lending may create problematic incentives at the community level, such as the use of coercion to oblige family or neighbors to participate.[10]

Based on a series of investment games in India, Fischer (2008) finds that joint liability (a characteristic of group lending) produced free-riding and higher levels of risk taking under limited information conditions, but not under complete information. At the same time, peer monitoring can help mitigate ex ante moral hazard by discouraging risky investments. Giné, Jakiela, and others (2010) have obtained similar results from games conducted with borrowers in Peru. Giné and Karlan (2009), based on experiments in the Philippines, show that joint liability is not necessary to achieve high repayment rates.

Another important issue in credit product design is related to the timing of repayments. Field and others (forthcoming) have conducted a randomized evaluation of the effect of offering a grace period prior to the start of loan repayment. In particular, they offered one set of borrowers from the Village Welfare Society in West Bengal, India, a traditional group microcredit loan with semi-weekly payments with no grace period, while a second set of borrowers received loans with a two-month grace period. The authors found that the borrowers offered the grace period invested 6 percent more of their loans relative to the borrowers who were not given a grace period; the former set saw an average of 30 percent higher profits. Household income was also higher, on average, among the borrowers given the grace period. However, these average results mask significant differences within the grace-period borrowers: while some borrowers did well, others did not, and 9 percent of the individuals among the grace-period borrowers defaulted on their loans relative to the 2 percent default rate among the borrowers not given a grace period. The experiment suggests that, while a grace period can allow borrowers to invest more and, hence, sometimes obtain higher profits, institutions will have to balance this out against the potential losses associated with the higher default rates among such borrowers, perhaps by raising loan rates.

While grace periods seem to have negative consequences on default rates, dynamic incentives—whereby borrowers are subject to future penalties (no access to loans) or rewards (discounts on loan prices) depending on their present repayment behavior—seem to improve loan repayment. In one study in South Africa, Karlan and Zinman (2010) worked with a lender who randomly offered

some clients a dynamic incentive, a discount on future loans if the clients repaid the current loans. This offer led to a 10 percent reduction in the default rate, and the responsiveness was proportional to the size of the incentive.

Savings

A number of psychological factors help explain people's limited use of savings products. One is lack of self-control: people want to save, but self-control issues make it difficult to resist the temptation to spend the cash immediately. This type of behavior is interpreted as a sign of hyperbolic discounting, whereby people disproportionally value today's money over tomorrow's (Laibson 1997). Another explanation is that individuals face pressures from family members and others to share their excess funds, which eats away at their savings. Finally, lack of forethought may make people lose sight of the fact that they might need savings in the future.

Commitment savings accounts, which allow individuals to deposit a certain amount and relinquish access to the cash for a period of time or until a goal has been reached, have been examined as a possible tool to boost savings by mitigating the self-control issues and family pressures to share windfalls. The evidence comes primarily from two studies: Ashraf, Karlan, and Yin (2006) and Brune and others (2011). The first study involved a randomized evaluation of commitment accounts in a financial institution in the Philippines. The take-up of the accounts was 28 percent. There was one treatment group, and the study did not show differential take-up.

The second study focused on an institution in Malawi, with take-up of the commitment accounts at 21 percent. The study had two treatment groups; one was offered a checking account only, and the other a checking account, plus a commitment savings account. There was no differential take-up between the two groups, but the group with the checking and commitment accounts saved more. In other words, the observed results did not arise because of differences in take-up. Brune and others (2011) found that the commitment treatment led to increases in deposits at the bank and, over the next agricultural year, was associated with rises in agricultural input use, crop sales, and household expenditures. The commitment savings accounts seemed primarily to have helped farmers less by mitigating self-control issues than by shielding funds from the social networks of the farmers, because participants who were identified with self-control issues experienced no different effect from the commitment savings accounts relative to their peers. On the other hand, the commitment savings accounts had a higher impact on wealthier individuals, who may have faced greater pressure to share funds.

Other innovations in savings product design try to pin the attention of savers on long-term savings goals to reduce the tendency to become distracted and spend funds in the short term. Two approaches have been tested in recent studies. One involves the use of reminders, and the other involves offering labeled accounts, whereby individuals create accounts with explicit savings goals, such as to finance housing or education.

Accounts with general automatic savings reminders lead to a boost in savings, but accounts with specific goal reminders are even more effective in raising savings. Karlan and others (2010) find that reminders can influence the use of deposit accounts for savings. They designed field experiments with three banks, one each in Bolivia, Peru, and the Philippines. In each experiment, individuals opened a bank savings account that included varying degrees of incentives or commitment features designed to encourage individuals to reach a savings goal. Some individuals were randomly assigned to receive a monthly reminder via text message or letter, while a control group received no reminder. Reminders increased the likelihood of reaching a savings goal by 3 percent, and the total amount saved in the reminding bank by 6 percent. Reminders that highlighted the client's particular goal, that is, reminders that made a particular future expenditure opportunity, such as school fees, more salient, were two times more effective than reminders that did not mention the goal.

Labeling, a practice of designating a specific savings goal for an account, has been shown to be highly effective in increasing savings. Karlan, Kutsoiati, and others (2012) offered a random group of clients at a bank in eastern Ghana the opportunity to open separate savings accounts labeled according to specific goals. The study found that the treatment group that had access to labeled accounts saved 31 percent more, on average, than the control group.

Basic accounts (accounts with low fees and minimum requirements), if well designed, can be valuable in encouraging the use of accounts. Germany, the United Kingdom, and numerous other European countries use basic savings accounts as entry products. In the United States, the Bank On public-private partnership program of generic accounts through commercial banks has considerably expanded the use of basic accounts by previously unserved consumers.[11] Some of the efforts aimed at generic products were not successful; the experiment in Brazil is one such example. Several countries currently have savings promotions associated with lotteries that serve as a simple commitment savings product.

Insurance

Design features also matter in insurance products. Households in developing economies are exposed to risks that can generate extreme income volatility. This is particularly true in the case of covariate risks, such as droughts or natural disasters, which affect large geographical areas or large segments of the population and are not adequately covered by informal insurance mechanisms. Modern insurance products can substantially reduce the resulting welfare losses. However, much of this potential remains unfulfilled because extending access to basic insurance products among vulnerable populations is extremely challenging (Cole and others 2013). An important barrier to access derives from the fact that insurance markets are plagued by moral hazard and adverse selection: riskier clients are more likely to demand and buy insurance in the first place (adverse selection), and access to insurance coverage may lead households to behave in ways that make a negative outcome more likely (moral hazard). Because insurance providers can often form only a poor estimate of an individual client's true risk profile, the market price of insurance is often substantially higher than the actuarially fair value of the contract, which is the price that would be justified given a customer's risk profile. In many developing economies, this means that basic insurance products either are not available, or are outside the reach of the most vulnerable households.

An important innovation in agriculture insurance has been the introduction of index-based insurance products. Traditional agriculture insurance products have been indemnity based, meaning the company insures against crop loss or damage. The farmer buys insurance up to a given amount of loss, and, if an event materializes that leads to that level of loss, the farmer receives the insurance once the validity of the claim is established. The problem is that the moral hazard and adverse selection problems involved in this kind of insurance often lead to rationing or high premiums. By determining payouts based on an objective rainfall-index, for example, index-based insurance can circumvent some of the problems of indemnity-based insurance (box 2.4).

In many cases, index insurance products differ from other types of insurance policies that consumers may be used to. Understanding the potential benefits that index insurance contracts offer over conventional insurance requires a relatively high level of financial literacy. In practice, this has often meant that the take-up of index insurance has been slow and has not yet had the widespread impact envisioned by policy makers when these products were first introduced.

THE IMPORTANCE OF BUSINESS MODELS

The business models used by banks and other financial institutions can have a considerable impact on financial inclusion. Throughout this report, there are numerous examples

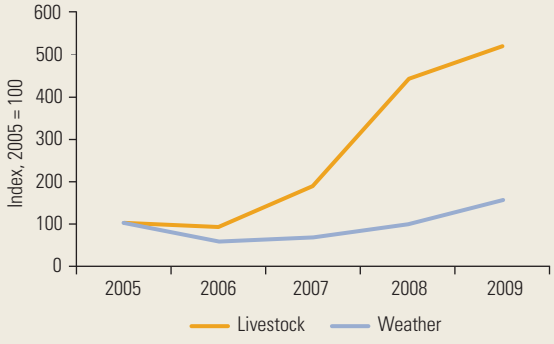
BOX 2.4 Insurance: Designing Appropriate Products for Risk Management

Two main approaches have been proposed to expand access to basic insurance products. The first is targeted at reducing markups by attenuating information problems. For instance, the geospatial mapping of weather risks can reduce uncertainty in calculating insurance premiums. Bundling insurance with other financial services can provide better client information, allowing for more accurate risk assessments, which reduce the cost of providing insurance. The second approach relies on a new class of insurance contracts, index insurance. In contrast to traditional insurance contracts, payouts for this type of product are linked to a measurable index, such as the amount of rainfall over a given period or commodity prices at a given date. Index insurance represents a particularly attractive alternative to financial innovations because it eliminates problems of moral hazard (payouts occur according to a measurable index that is beyond the control of the policyholder). Index insurance is also especially well suited to provide insurance against adverse shocks that affect many members of informal insurance networks at the same time.

Analyzing specific index insurance products, Giné and Yang (2009) implemented a randomized field experiment to examine whether the provision of insurance against a major source of production risk induces farmers to take out loans to adopt a new crop technology. The study sample consisted of roughly 800 maize and groundnut farmers in Malawi, where the dominant source of production risk is the level of rainfall. Half the farmers were randomly selected to receive credit to purchase high-yielding hybrid maize and groundnut seeds for planting; the other half were offered a similar credit package, but were also required to purchase (at actuarially fair rates) a weather insurance policy that partially or fully forgave the loan in the event of poor rainfall. Surprisingly, the take-up was lower by 13 percentage points among farmers offered insurance with the loan. The take-up was 33 percent among the farmers who were offered the uninsured loan. There is evidence that the lower take-up of the insured loan arose because farmers already had implicit insurance through the limited liability clause in the loan contract: insured loan take-up was positively correlated with farmer education, income, and wealth, which may proxy for the individual's default costs. By contrast, the take-up of the uninsured loan was uncorrelated with these farmer characteristics. If one takes into account the lender's perspective, a clearer picture emerges. For the lender, weather insurance tends to be an attractive way to mitigate default risk. It can thus become an effective risk management tool with the potential of increasing access to credit in agriculture at lower prices.

In India, the popularity of rainfall insurance has risen, although the growth in usage has been rather limited. Giné, Menand, and others (2010) examine rainfall insurance in India's Andhra Pradesh using data from BASIX, an MFI and bank that sells weather insurance policies in Andhra Pradesh on behalf of ICICI Lombard. Figure B2.4.1 plots the growth in rainfall insurance and livestock insurance (as a point of comparison) sold by BASIX since 2005. Over this period, livestock insurance coverage has risen fivefold, compared with an approximately 50 percent increase in rainfall insurance coverage. This is not simply due to a difference in value, because, as reported in figure B2.4.2, the payouts on rainfall insurance are greater relative to the premiums than is the case in livestock insurance. Two facts are apparent from the figure. First, the average payouts on rainfall insurance are much more volatile, reflecting aggregate variation in the intensity of the monsoon. Second, average returns on the insurance product are quite high over this period, higher

FIGURE B2.4.1 Growth in Livestock and Weather Microinsurance, India

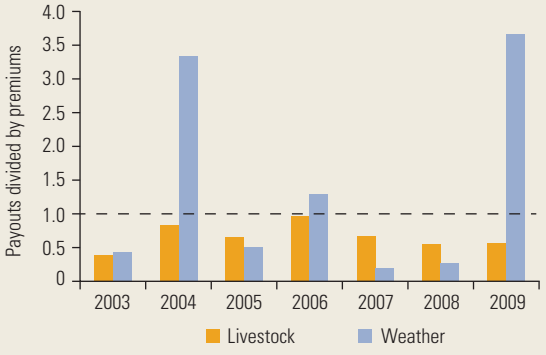


Source: BASIX administrative data.
Note: Total nominal premiums (in Rs) paid on livestock and weather microinsurance policies. Rainfall insurance data are for Andhra Pradesh only; livestock insurance data are for all states.

(box continued next page)

BOX 2.4 Insurance: Designing Appropriate Products for Risk Management *(continued)*

FIGURE B2.4.2 Payouts Relative to Premiums, Rainfall and Livestock Insurance, India



Source: BASIX administrative data.
Note: The figure shows the payouts relative to the total premiums paid for insurance policies sold by BASIX across all states.

than actuarially fair based on a simple average of payout ratios across these years. This may reflect some unusual shocks over the past few years, particularly the record drought in 2009. Alternatively, it may reflect structural change in weather conditions, such as a rise in the volatility of the monsoon.

A notable weather insurance product is Kilimo Salama, an index-based insurance product that covers the input of farmers in the event of drought or excessive rainfall. It was developed in Kenya by the Sygenta Foundation for Sustainable Agriculture and launched in partnership with Safaricom (the largest mobile network operator in Kenya) and UAP (a large Kenya-based insurance company). Kilimo Salama is notable because it is the first microinsurance product distributed and implemented over a mobile phone network. Though there has been no formal evaluation of the product, the rapid growth in the number of users suggests that the product seems to benefit farmers. The program was piloted in 2009, and take-up grew from an initial 200 farmers to over 12,000 in 2010. Kilimo Salama is featured in one of the Product Design Case Studies of the International Finance Corporation.[a]

Recent research has supplied fresh insights on household participation in insurance markets, which can help guide the design of new products and policies. Using data from a field experiment in India, Cole and others (2013) find that lack of trust and liquidity constraints are significant nonprice frictions that constrain demand. There are several implications of this research for the design of insurance products. First, products need to be designed to pay fairly often so as to engender trust in the user population. Also, an endorsement by a well-regarded institution has been shown to increase client trust. Second, because liquidity constraints matter, rapid payouts are important. Because of these constraints, it may also be useful to bundle insurance with loans for payment of the premiums.

a. See "Product Design Case Studies," International Finance Corporation, Washington, DC, http://www1.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/industries/financial+markets/publications/product+design+case+studies.

of financial institutions that have targeted lower-income segments of populations. These include BRAC and Grameen Bank in Bangladesh, Banco Sol in Bolivia, the Bradesco and Caixa banks in Brazil, Equity Bank in Kenya, Banco Azteca and BBVA in Mexico, and many others.

While all these institutions target the unbanked and underbanked, the emphasis of the individual business models differs substantially. For example, Banco Azteca's strategy has relied on synergies with a large retail chain owned by the same mother company, which has allowed the bank to use existing customer information and collection technology (chapter 3, box 3.3). BBVA does not have such a retail company; it has relied on the introduction of banking agents, allowing commercial establishments to offer basic financial services on behalf of the bank. Its strategy emphasizes a simple, low-cost account targeted at low-income population segments in Mexico. The simplified account opening process has boosted sales to 2 million

accounts (including 62 percent purchased in states with the highest poverty rates) since the launch of the process in March 2011 (Alonso and others 2013). These new account holders benefit from BBVA's alternate channel network, with most of transactions (82 million) done at ATMs and banking agents. The bank is now launching a micro-life insurance product, sold through banking agents.

The various institutions also differ in how they balance the trade-off between outreach (the ability to reach poorer and more remote people) and sustainability (the ability to cover operating costs and possibly create profits). There is a wide variety of strategies, ranging from the for-profit (and profitable) operations of commercial banks such as Banco Azteca, BBVA, and Equity Bank to the clearly not-for-profit orientation of developmental financial institutions such as BRAC.

This section focuses in more detail on one example of a financial institution that pursues distinct branching strategies that target underserved areas and less-privileged households. The institution, Equity Bank, is a private commercial bank in Kenya that focuses on microfinance.[12]

In 1994, Equity Bank's predecessor, Equity Building Society, became technically insolvent. Because of a combination of economic downturn and poor management, more than half its loan portfolio had gone bad, and its accumulated losses were 10 times the available capital. The Central Bank of Kenya gave Equity time to convert its depositors into shareholders. A new chief executive shifted the organization's focus from the competitive mortgage market to small loans. The backbone of the new strategy was to offer Kenya's large unbanked population microloans from as little as K Sh 500 ($5.81); the average loan amount was K Sh 16,000.

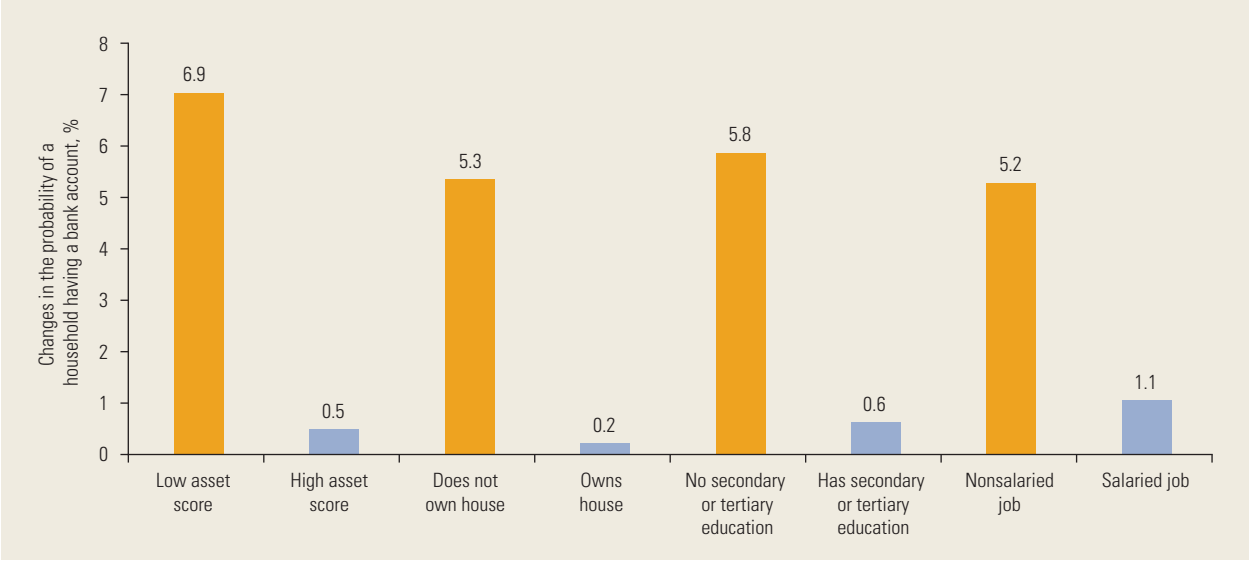
In what followed, Equity bucked the trend of branch closures around the country. It waived property-ownership requirements and allowed anyone with a national identity number to open an account. It was flexible about forms of collateral, accepting marriage beds or personal belongings. Some customers repaid loans with cow's milk. Where there were too few customers for it to build branches, Equity sent mobile ones, such as armored trucks with a satellite dish on top and a bank manager inside. New standards of service created a large and loyal customer base. Since 2000, the bank's pretax profit has grown at an annual average rate of 65 percent. Today, roughly half of all bank accounts in Kenya are with Equity. Nonperforming loans were only 1.3 percent of the loan portfolio in 2011 (*The Economist*, December 8, 2012).

A recent study on Equity Bank, based on household surveys and bank penetration data at the district level in 2006 and 2009, examines the impact of Equity Bank on financial inclusion in Kenya (Allen and others 2012a). The study finds that the bank's presence has had a positive and significant impact on the use by households of bank accounts and bank credit, especially among Kenyans with low income, no salaried job, and lower educational attainment, and Kenyans who do not own their own homes (figure 2.4).

To what extent can Equity Bank's business model—providing financial services to population segments typically ignored by traditional commercial banks and generating sustainable profits in the process—help in solving financial access challenges in other countries? Equity has yet to replicate its Kenyan success abroad. For example, in the past four years, it has lost $359,000 on the $96 million it has invested to build an East African platform. The return on equity in Uganda was 18 percent in 2011, a positive number, but lower than the 34 percent the bank recorded in Kenya in the same period. It remains to be seen to what extent Equity's model based on banking for the unbankable is exportable.

Though some financial service providers such as Equity Bank have developed business models and products that are specifically targeted at low-income individuals, the product designs and business models of financial institutions are often criticized, especially in the developing world, because they are not demand driven.[13] A common complaint is that most of the products offered are not tailored to the needs of low-income clients, but rather look remarkably similar to products offered to high-end clients in more well-developed markets.

FIGURE 2.4 Equity Bank's Effect on Financial Inclusion



Source: Based on Allen and others 2012a.
Note: The figure shows estimates from a probit model of changes in the probability of a household having a bank account that are associated with the presence of Equity Bank.

A number of factors explain the failure of institutions to deliver products and adopt business models that are more conducive to financial inclusion.[14] First, institutions often do not pursue a *human-centered design process* that requires them genuinely to engage with customers and understand their lives and needs.[15]

Second, a demand-driven approach to product design requires the entire organization to be centered on the client, including governance, human resources, delivery channels, processes, incentives, and core systems. This implies a degree of commitment that is often misunderstood by financial institutions.

Third, institutions need to be willing to try different ideas and be prepared for some to fail. In other words, institutions need to create space for testing innovations outside the core business and for learning from failed products.

Fourth, institutions need to feel that the regulatory environment supports innovation in product design and delivery. Hence, governments can play an important role in either promoting or stifling innovations in product design and delivery. While regulators should rightly be concerned with financial stability and consumer protection, they should remain open to offering support for innovative products and approaches to financial inclusion. They should build a regulatory framework that is proportionate with the risks involved in innovative products and services and is based on an understanding of the gaps and barriers in existing regulations (GPFI 2011a). Aside from adopting the proper regulatory stance, governments can also support innovations in product design and delivery by collecting data on individual preferences and habits in financial products that financial institutions can use to tailor new products and business approaches (Group of 20 Financial Inclusion Experts 2010).

FINANCIAL CAPABILITY

As the use of financial services expands and new products become available, it is crucial that consumers be financially literate and capable. The global financial crisis has led to the insertion of financial literacy and financial

capability onto the global policy agenda of financial regulators out of recognition that one of the contributing factors to the financial turmoil was the fact that vulnerable consumers (many of whom were termed subprime in the United States) had been marketed loans they often did not understand and were unable to service. Similar concerns were raised in emerging markets such as India, where the rapid growth of microfinance through aggressive marketing was seen as leading to overindebtedness among the rural poor, with sometimes tragic consequences (chapter 1, box 1.5). Policy makers around the globe now recognize the importance of financial capability and financial education.[16] Comprehensive national initiatives and programs funded by the World Bank and various development donors are emerging all over the world.

The term financial capability tends to encompass concepts ranging from financial knowledge (including knowledge of financial products, institutions, and concepts), financial skills (such as the ability to calculate compound interest payments), and financial capability more generally (which includes all the skills, attitudes, and behaviors that enable individuals to use financial services to their advantage). Financial knowledge does not necessarily translate into wise financial behavior, that is, financial capability. In practice, these notions often overlap.

Basic financial knowledge around the world

A broad review of survey data finds that basic financial knowledge is lacking in both developed and developing economies (table 2.1). On average, only about 55 percent of individuals demonstrate a basic understanding of compound interest; 61 percent correctly answer a basic question about the effect of inflation on savings; and 49 percent respond correctly to a basic question on risk diversification. While there are substantial differences across countries, low-income countries tend to be at the bottom end of the performance rankings.

This research indicates that basic financial knowledge is weak. People tend to understand the concept of inflation relatively better than the concept of compound interest. This is especially true in upper- and middle-income countries, where, in almost all cases, more people correctly answered the inflation question, and fewer people correctly answered the question on compound interest. The question on the concept of risk diversification tended to be the one that most people in high-income countries answered incorrectly, perhaps because it involves stocks, which many consumers, even in developed countries, do not hold.

Evidence on the financial mistakes of consumers

Evidence on consumer credit card and mortgage markets suggests that both consumer lack of information and irrationality lead to substantial errors in financing choices that are accentuated by the design of products by financial providers who want to exploit shortcomings in understanding among consumers.

Consumer credit can enhance household welfare by allowing for consumption smoothing over time, but there are many reasons why growth in consumer credit may, at times, be a concern (Bar-Gill and Warren 2008). For example, research has shown that consumers are frequently ignorant about many of the features of the products they use; they do not always make good decisions; and credit providers often exploit the tendency for consumers to make mistakes. In particular, consumer biases such as the exponential growth bias and cognitive limitations such as the lack of financial literacy lead to inefficient consumer credit market outcomes and overindebtedness (Lusardi and Tufano 2009; Stango and Zinman 2009).

There is ample evidence of mistakes among consumers in the use of credit cards. For example, Shui and Ausubel (2004) find that a majority of consumers who accept credit card offers featuring low introductory rates do not switch to a new card with a new introductory rate after the expiration of the introductory period on the first card, even if their debt did not decline after the introductory period

TABLE 2.1 Financial Knowledge around the World

Economy, year	Q1:[a] Compound interest, %	Q2:[b] inflation, %	Q3:[c] Risk diversification, %	Survey sample, total	Source
High income					
British Virgin Islands, 2011	63 (20)	74	41	535	OECD survey
Czech Republic, 2010	60 (32)	80	54	1,005	OECD survey
Estonia, 2010	64 (31)	86	57	993	OECD survey
Germany, 2009	82	78	62	1,059	Bucher-Koenen and Lusardi 2011
Germany, 2010	64 (47)	61	60	1,005	OECD survey
Hungary, 2010	61 (46)	78	61	998	OECD survey
Ireland, 2010	76 (29)	58	47	1,010	OECD survey
Italy, 2006	40	60	45	3,992	Fornero and Monticone 2011
Japan, 2010	71	59	40	5,268	Sekita 2011
Netherlands, 2010	85	77	52	1,324	Alessie, Van Rooij, and Lusardi 2011
New Zealand, 2009	86	81	27	850	Crossan, Feslier, and Hurnard 2011
Norway, 2010	75 (54)	87	51	2,117	OECD survey
Poland, 2010	60 (27)	77	55	1,008	OECD survey
Sweden, 2010	35	60	68	1,302	Almenberg and Save-Soderbergh 2011
United Kingdom, 2010	61 (37)	61	55	1,579	OECD survey
United States, 2009	65	64	52	1,488	Lusardi and Mitchell 2011a
Upper-middle income					
Albania, 2011	40 (10)	61	63	1,008	OECD survey
Azerbaijan, 2009	46	46	—	1,207	World Bank
Bosnia and Herzegovina, 2011	22	58	—	1,036	World Bank
Bulgaria, 2010	39	46	—	1,618	World Bank
Chile, 2006	2	26	46	13,054	Behrman and others 2010
Colombia, 2012	26	69	—	1,526	World Bank
Malaysia, 2010	54 (30)	62	43	1,046	OECD survey
Mexico, 2012	31	56	—	2,022	World Bank
Peru, 2010	40 (14)	63	51	2,254	OECD survey
Romania, 2010	24	43	—	2,048	World Bank
Russian Federation, 2009	36	51	13	1,366	Klapper and Panos 2011
South Africa, 2010	44 (21)	49	48	3,017	OECD survey
Lower-middle income and lower income					
Armenia, 2010	53 (18)	83	59	1,545	OECD survey
India, 2006	59	25	31	1,496	Cole, Sampson, and Zia 2011
Indonesia, 2007	78	61	28	3,360	Cole, Sampson, and Zia 2011
Mongolia, 2012	58	39	60	2,500	World Bank
Tajikistan, 2012	56	17	52	1,000	World Bank
West Bank and Gaza, 2011	51	64	—	2,022	World Bank

Source: An expanded and updated version of Xu and Zia 2012.

Note: Countries are ordered alphabetically. Additional information on World Bank surveys of financial capability can be found at Responsible Finance (database), World Bank, Washington, DC, http://responsiblefinance.worldbank.org/. OECD = Organisation for Economic Co-operation and Development. — = not available. The questions have been worded as indicated in the table notes below. The correct answers are shown in italics.

a. Q1: "Suppose you had $100 in a savings account, and the interest rate was 2 percent per year. After five years, how much do you think you would have in the account if you left the money to grow? (*More than $102*/Exactly $102/Less than $102/Do not know/Refuse to answer)." Respondents in Azerbaijan, Chile, Romania, Russia, and Sweden were asked a more difficult question. For example, in Sweden, the question was "Suppose you have SKr 200 in a savings account. The interest is 10 percent per year and is added into the same account. How much will you have in the account after two years?" The OECD data for compound interest in the table include correct responses to a question on the calculation of interest and principal and, in the parentheses, the correct responses to two questions on compound interest.

b. Q2: "Imagine that the interest rate on your savings account were 1 percent per year, and inflation were 2 percent per year. After one year, how much would you be able to buy with the money in this account? (More than today/Exactly the same/*Less than today*/Do not know/Refuse to answer)." In Russia and in the West Bank and Gaza the question was "Let's assume that, in 2010, your income is twice as much as now, and consumer prices also grow twofold. Do you think that, in 2010, you will be able to buy more, less, or the same amount of goods and services as today?"

c. Q3: "True or false: Buying a single company's stock usually provides a safer return than a stock mutual fund. (True/*False*/Do not know/Refuse to answer)." Respondents in New Zealand were asked a more difficult question: "Which one of the following is generally considered to make you the most money over the next 15 to 20 years: a savings account, a range of shares, a range of fixed interest investments, or a checking account?" Respondents in Russia were asked: "Which is the riskier asset to invest in: shares in a single company stock, or shares in a unit fund, or are the risks identical in both cases?" In Indonesia and India: "Do you think the following statement is true or false? For farmers, planting one crop is usually safer than planting multiple crops." The result for Italy is from a 2008 update of the survey, since a comparable question was not asked in 2006.

ended. Gross and Souleles (2002) show that many consumers pay high interest rates on large credit balances, even if they are holding liquid assets in deposit accounts. Massoud, Saunders, and Scholnick (2007) find similar results. Agarwal and others (2009), after analyzing a representative random sample of about 128,000 credit card accounts between January 2002 and December 2004, conclude that more than 28 percent of consumers make mistakes that trigger fees, including late fees and cash advance fees.

Mortgage loans, which are generally more complex than other types of household credit, provide larger opportunities for errors. In the context of the U.S. subprime crisis, the evidence indicates that a large percentage of borrowers took subprime mortgages when they could have qualified for prime rate loans (Willis 2006). In 2002, a study by the National Training and Information Center found that, at a minimum, 40 percent of those borrowers who were issued subprime mortgages could have qualified for a prime market loan (involving a lower interest rate). A study based on 75,000 home equity loans made in 2002 identified persistent consumer mistakes in the estimation of home values in loan applications, which raised the loan-to-value ratio and thus the interest on the loan (Agarwal and others 2009). Many studies document that consumers fail to exercise options to refinance their mortgages and end up with rates that are higher than the market rates (Van Order, Firestone, and Zorn 2007).

Evidence on the behavior of providers of financial products reinforces the notion that consumers make poor choices, and providers exploit the imperfect information and irrationality of consumers in designing financial products. For instance, evidence on the credit card market indicates that, as credit card debt among consumers grows and interest rates become a more salient feature of credit cards in the view of consumers, issuers offer cards with low interest rates but high fees to attract and retain clients (Evans and Schmalensee 1999). Other features of credit card contracts are also designed to exploit the imperfect information and imperfect rationality of consumers. Examples of such practices include low amortization rates, compound interest rates, and deceptive methods of balance computation.

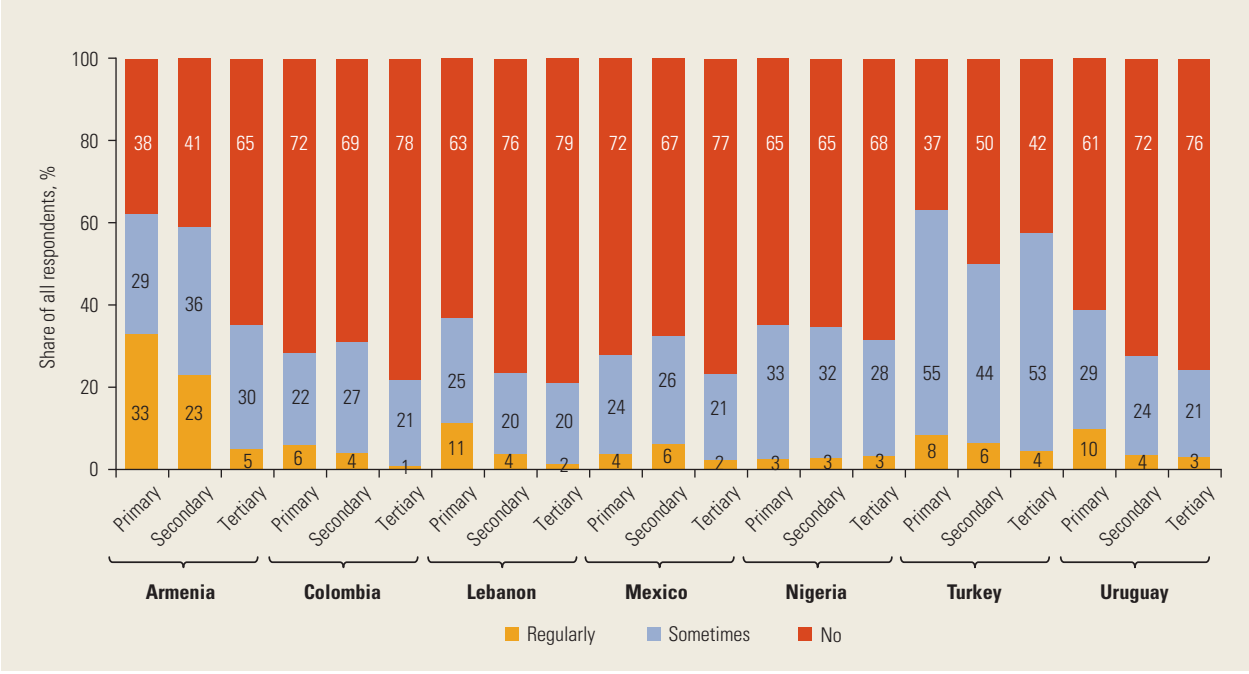
Unsuitable products can have significant distributive consequences. Because better educated consumers are less likely to make mistakes in their financing choices, financial institutions are more likely to target risky and costly products at poor, less well educated consumers who are more likely to suffer from mistakes. Empirical evidence on the U.S. mortgage market supports the notion that more well educated consumers are less likely to make mistakes (Van Order, Firestone, and Zorn 2007; Woodward 2003). Similar evidence is available on the credit card market (Massoud, Saunders, and Scholnick 2007).

Measuring financial capability

In recent years, progress has been made in defining and measuring financial capability more precisely. An important part of this effort is the World Bank–Russia Trust Fund multicountry survey of financial capability (Holzmann, Mulaj, and Perotti 2013).[17] The survey was designed to reflect inputs from focus groups among low-income consumers in developing economies. It covers three key areas: behavior, attitudes, and motivations. The focus groups and the survey development process began in 2011, and the surveys were carried out in seven countries in 2012–13 (Armenia, Colombia, Lebanon, Mexico, Nigeria, Turkey, and Uruguay). Similar surveys, with additions to measure financial inclusion and consumer protection, were conducted in Mongolia and Tajikistan.[18]

The survey demonstrates the financial vulnerability of a significant number of people, even in relatively wealthier countries. For example, in most of the middle-income countries surveyed, a quarter or more of the population indicated that they borrowed for necessities (figure 2.5). In most cases, people with lower educational attainment were more likely to rely on borrowing to cover basic needs, but even among people with some university education, 20 percent or more indicated that they

FIGURE 2.5 Borrowing for Food and Other Essentials, by Level of Education



Sources: Based on data of the World Bank Survey of Financial Capability 2012; World Bank 2013a.
Note: Primary, secondary, and tertiary refer to the respondent's highest education. The chart shows responses to the following question: "Do you ever use credit or borrow money to buy food or essentials?"

had sometimes been forced to borrow to make ends meet.

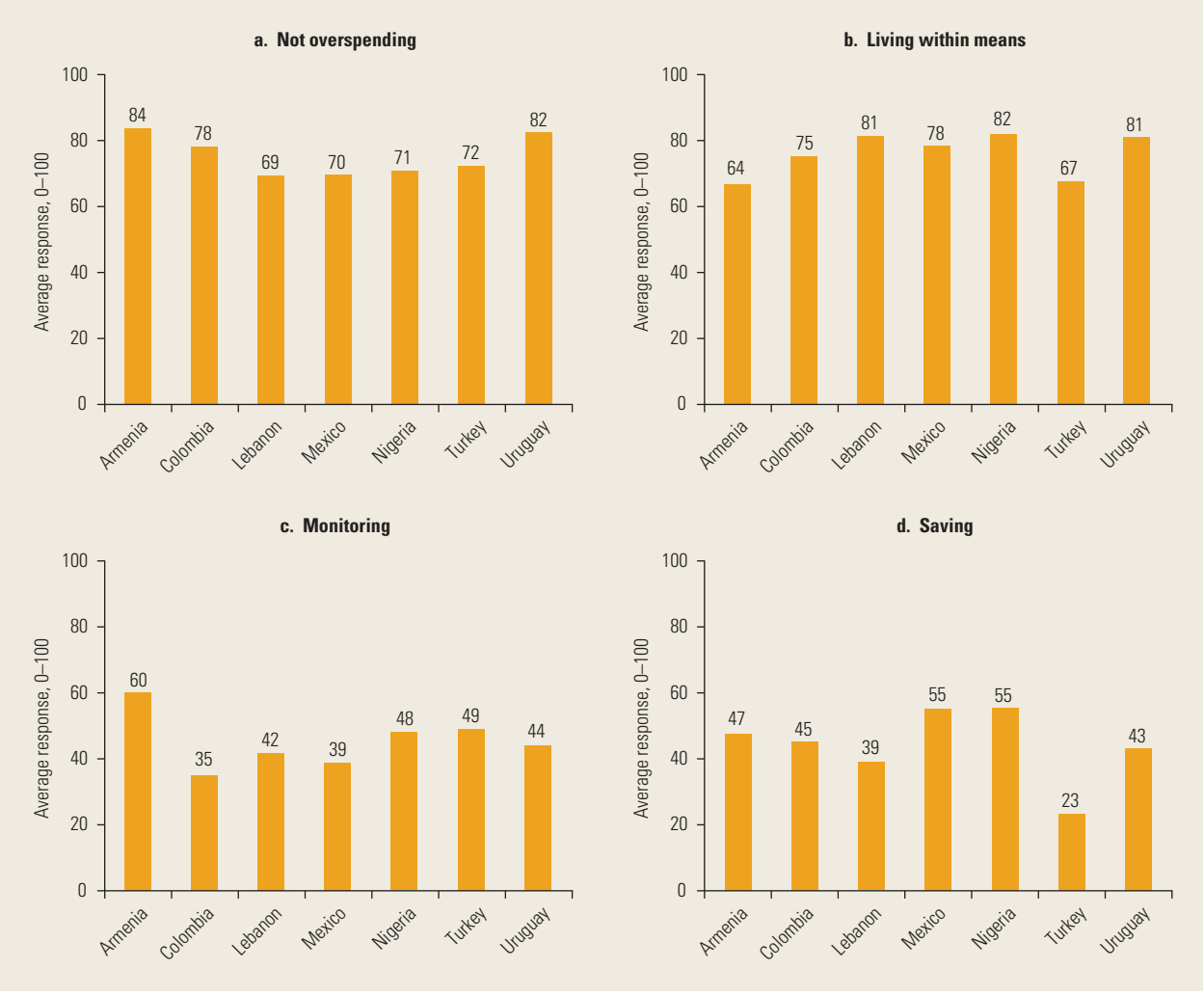
There was a remarkable degree of consensus in the focus groups across the countries. Quite consistently, the focus group responses suggested that good financial behavior is not necessarily driven by financial knowledge: individuals can have financial knowledge but still make irrational financial decisions. Financial capability is also not necessarily linked to income (even though low income can be critical in preventing people from planning for the future). It is thus important to capture attitudes and motivations as well as experiences.

A major goal of the research was to measure financial capability in middle-income countries in a way that works both across countries and across different subpopulations within the countries. A factor analysis of the data generated by the country surveys was used to construct measures of components of financial capability that were aligned with the key concepts identified through the focus groups. These components included budgeting, living within means, monitoring expenses, not overspending, using information, covering unexpected expenses, saving, attitudes toward the future, not being impulsive, and achievement orientation.

The results of the financial capability surveys show that, while most respondents say they are relatively capable of day-to-day money management (as indicated by the relatively high scores on "not overspending" and "living within means" in figure 2.6), they lag in terms of self-discipline in making a budget and then monitoring expenses and regularly saving. The survey also confirms that older people are more likely than younger people to live within their means and not overspend. Higher household income is associated with higher scores in most areas, but it does not seem to matter for budgeting or impulsiveness.

Overall, the survey highlights the importance of the psychological traits and motivations associated with financial capability, including one's attitude toward the future,

FIGURE 2.6 Survey Results on Financial Capability



Sources: World Bank Survey of Financial Capability 2012; Kempson, Perotti, and Scott 2013.
Note: The figure illustrates the average among respondents, on a range from 0 to 100. The score for each component is a weighted combination of variables generated from the responses to several questions about different, but related behaviors or attitudes.

impulsiveness, and goal orientation. The survey findings corroborate earlier research on financial capability in developed economies such as the Netherlands, the United Kingdom, and the United States.[19] Across countries, a few key behavioral skills have been found to be crucial, in particular, money management, budgeting, and the ability to save for the future.

There is widespread evidence that gender influences the levels of financial literacy and capability, with only a few exceptions, such as eastern Germany and Russia (Bucher-Koenen and Lusardi 2011; Klapper and Panos 2011; Xu and Zia 2012). There is broad evidence, much of it from the United States and other developed economies, that women score lower on tests of financial literacy (Fonseca and others 2012; Van Rooij, Lusardi, and Alessie 2011). There is also evidence on links between levels of financial literacy and financial behaviors such as pension planning and investment decisions (Dwyer, Gilkeson, and List 2002; Lusardi and Mitchell 2008, 2011b).

The World Bank Survey of Financial Capability provides new data and insights on the

role of gender in financial capability, using data from developing economies. An analysis of the pooled World Bank data indicates that women achieved higher scores than men on a number of key financial behaviors, including budgeting, using information, and saving.

Research recently published on farmers in India shows no substantial gender bias in financial capability if other characteristics (education, experience with financial products, cognitive ability) are also measured (Gaurav and Singh 2012). The study points to the fact that gender is often correlated with other factors that influence financial skills and opportunities (level of access to and use of financial services, educational attainment, formal employment). Disentangling the impact of gender from the impact of one's environment, which is influenced or constrained by gender, is important in understanding the barriers faced by women in gaining financial capability and then using their skills and knowledge to improve financial outcomes.

FINANCIAL EDUCATION PROGRAMS

Interest in financial literacy has risen exponentially in recent years as evidenced, for example, by the large number of new studies and literature reviews.[20] There is growing evidence that certain types of financial literacy programs can improve financial knowledge and affect behavior.

Can people be effectively taught financial knowledge as well as the skills, attitudes, and, ultimately, behavior that improve financial outcomes? The diversity of existing studies limits the ability to draw conclusions.[21] However, with appropriate caveats, it is possible to identify emerging lessons.[22] In a study underlying this report, Miller and others (2013) approach this question through a systematic review of the impact evaluation literature on financial capability and construct a detailed database that describes the range of interventions that have been studied and that permits a preliminary meta-analysis. The following subsections provide a qualitative summary of the recent evidence.

Solid general education is key

Solid general education, including numeracy, has a clear relationship with financial inclusion. According to Global Findex data for 2011, only 37 percent of adults with primary or lower educational attainment had accounts at formal financial institutions, compared with 63 percent among adults with secondary educational attainment and 83 percent among adults with tertiary or higher educational attainment.[23] These differences are massive and are larger than the differences according to other characteristics, such as gender, rural versus urban residence, and income. This sizable effect of education is confirmed by more rigorous, in-depth analysis. For example, Allen, Demirgüç-Kunt, and others (2012) find that the probability of owning a bank account is 12 percent lower among adults who have 0–8 years of education than among other adults after the authors control for age, level of income, and many other factors. Similarly, Cole, Paulson, and Shastry (2012) show that the level of general educational attainment has a strong effect on financial market participation.

The level of educational attainment also has a clear, though imperfect link to financial capability. Measures of financial capability tend to be positively correlated with educational levels (De Meza, Irlenbusch, and Reyniers 2008), and people with higher levels of education perform better along a number of dimensions, including budgeting, living within means, attitudes toward the future, and impulse control (Kempson, Perotti, and Scott 2013).

Targeting people with lower levels of formal or financial education helps

Financial literacy programs aimed at the general population have not yet been shown to be effective, but programs focused on specific segments of the population, especially those people with lower levels of formal or financial education, can have substantial measurable effects.

The debate on expanding financial inclusion has often focused on supply-side issues,

such as the creation of financial services that are appropriate for low-income consumers. Less attention has been paid to the demand side and to understanding why seemingly attractive services, such as affordable basic bank accounts, have generated only limited take-up. Using experimental evidence on Indonesia, Cole, Sampson, and Zia (2011) have evaluated the impact of a financial literacy intervention and monetary incentives on the decision to open a bank account. Only 41 percent of Indonesian households report they have a bank account, but 51 percent have savings in a nonbank institution. When households surveyed for the research were asked if they would open a bank account if there were no fees, 58 percent responded that they would. Additional evaluations indicated that financial literacy is a significant predictor of the use of bank accounts, but less important than other factors such as household wealth.

The researchers have tested the willingness of consumers to open a basic bank account offered by Bank Rakyat Indonesia, the country's largest bank. This account required a minimum deposit of Rp 5,000 ($0.53) and involved no fees for up to four transactions per month. Deposits earned interest on balances above Rp 10,000 ($1.06) and were covered by the same deposit insurance used by other banks for deposits in Indonesia. Households were selected randomly and independently for a financial literacy intervention and a monetary incentive. The financial literacy course was a two-hour in-person classroom training session designed to teach unbanked individuals about bank accounts. The monetary incentives varied randomly from Rp 25,000 to Rp 75,000 and Rp 125,000 (equivalent to $3, $8, and $14, respectively).

Financial literacy did not have a measurable impact within the full sample, but larger monetary incentives did, raising the probability of opening a bank account by 13.7 percentage points for the incentive of $14, more than twice the impact of the $8 incentive (table 2.2). In follow-up research carried out two years after the initial study, Cole, Sampson, and Zia (2011) found that households that had received the larger incentives continued to have a higher number of open accounts, and approximately two-thirds of these households had used the accounts during the previous year.

On households without formal schooling, financial literacy training had a significant effect and increased the probability of opening an account. Also, the financial literacy intervention had a greater impact among consumers who had started out with low levels of financial knowledge, significantly increasing their likelihood of opening an account (table 2.2). These results highlight the importance of targeting financial literacy efforts on more disadvantaged consumers, as well as the relative importance of cost barriers, including the possible role that incentives can play in boosting participation in financial markets.

Targeting the young can help, too

School-based interventions and programs targeting youth are among the most common approaches to teaching financial literacy and capability. School-based programs benefit

TABLE 2.2 Effects of Financial Literacy Interventions and Monetary Incentives, Indonesia
Effect on the probability of opening a bank account, percentage points

Indicator	Full sample	By education level	By financial literacy score
Financial literacy training	+2.9	−3.2	−4.9
Monetary incentive Rp 75,000 ($8)	+6.6*	+6.1**	+6.0
Monetary incentive Rp 125,000 ($14)	+13.7***	+9.9***	+10.0***
Financial literacy training and no formal schooling		+15.5**	
Financial literacy training and below median financial literacy			+10.0**

Source: Based on Cole, Sampson, and Zia 2011.
Note: Empty cells indicate the information was not included in the regression.
Significance level: * = 10 percent, ** = 5 percent, *** = 1 percent

from access to a large captive population and a skilled teaching staff (although educators are not necessarily comfortable teaching financial concepts) and the ability to incorporate lessons in a variety of ways to reach different kinds of students. The downside is that students often have limited money or access to financial products and services and thus cannot put concepts to use. And, even if these programs are effective over time, it is difficult to establish causality, and few researchers have tried to measure the long-run effects. While school-based financial education is a popular concept, and many countries have such initiatives, few programs have been rigorously evaluated.

On the United States, the evidence on financial education among youth seems mixed. Bernheim, Garrett, and Maki (2001) show that personal finance courses in schools are linked to higher rates of asset accumulation. However, Cole and Shastry (2010) find no relationship between the two. Carpena and others (2011) have extended this research and find weak evidence of an impact by secondary-school financial education courses, but more promising results related to basic mathematics education on future financial habits, especially among girls. Research by the U.S. nonprofit Jump$tart also indicates that courses on personal finance are not correlated with improved performance in tests of financial literacy (Mandell 2008). However, more motivated students are more likely to show a positive impact from such courses, indicating that student engagement with the material may be a critical factor of success (Mandell and Klein 2007).

In Ghana, a study supported by Innovations for Poverty Action, a nonprofit, reported relatively limited results (Berry, Karlan, and Pradhan 2013). While the financial education program resulted in a small increase in youth savings rates and greater risk aversion, it had no measurable impact on the overall level of financial literacy, time preference, or financial planning behavior of the youth involved.

A promising example of a comprehensive financial education program is a three-semester secondary-school financial education scheme piloted in Brazil. The program was recently evaluated by Bruhn and others (2013). It considerably enhanced the financial knowledge, attitudes, and behavior of students and is being rolled out on a national basis. In both follow-up evaluations, the student test scores indicated that the average level of financial proficiency was substantially higher in the treatment group than in the control group. The test scores of both low- and high-achiever students rose across the distribution. The distributional effects of the program speak to the accessibility of the curriculum and highlight the benefits for students across a wide performance spectrum. Similarly, students in the treatment group boosted their savings and exhibited greatly improved spending behavior compared with the control group. In the treatment group, a higher proportion of students saved at least some of their income relative to the control group. The study shows that both the proportion of student savings and the actual amount of the savings per student increased (figure 2.7).

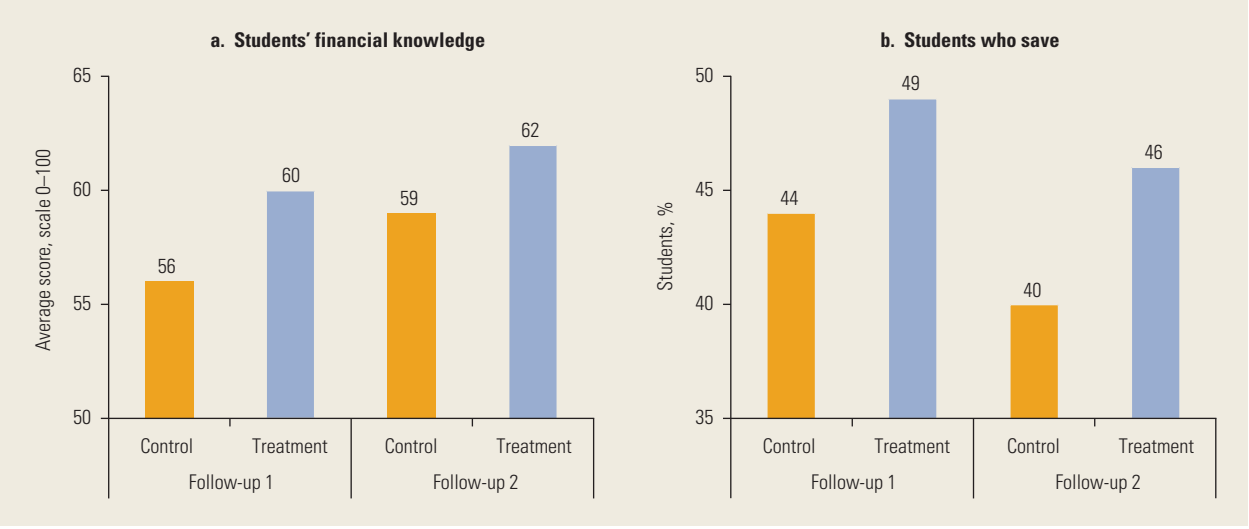
Teachable moments have value

Financial literacy programs aimed at poor households that do not have the leeway to change their savings behavior are bound to produce small results. However, implementing such programs at critical life-decision points can be valuable. For example, a financial literacy program in Indonesia for workers who are about to migrate abroad (and obtain a major boost in income) has shown a relatively large impact on savings (Doi, McKenzie, and Zia 2012).

The term "teachable moment" refers to times when people may be especially motivated to gain and use financial knowledge and skills and are able to put this knowledge to work. These moments include periods during which specific financial decisions—such as the purchase of a financial product or service or major life changes such as marriage, divorce, starting a job, retirement, the birth of a child, or the death of a spouse—occur that may affect incomes or normal expenditures.

Most impact studies focus on adult financial education in developed-country markets

FIGURE 2.7 **Effects of Secondary-School Financial Education, Brazil**



Source: Bruhn and others 2013.
Note: Students completed surveys that included a test of financial proficiency, with scores from 0 to 100. The intervention was launched in August 2010; the first follow-up survey was conducted in early December 2010; and the second follow-up survey was conducted in December 2011.

(especially the United States) and are typically linked to teachable moments. The teachable moments that are most often considered in the literature on adult financial literacy are retirement planning and participation in pensions (often provided by employers); training related to mortgage finance and home ownership; and credit or debt management, often targeted at people with credit problems. The ability to use immediately the new knowledge and skills in a particular financial decision or transaction also facilitates the impact analysis of financial literacy interventions designed around teachable moments. Workplace financial education programs leverage teachable moments that are common to a number of employees, such as joining a pension fund or a retirement plan for new hires or deciding on benefits such as insurance or stock options when employer-provided programs change. For example, Bayer, Bernheim, and Scholz (2009) and Bernheim and Garrett (2003) provide evidence of a positive impact of workplace financial education in the United States. In both instances, the evidence is linked to retirement savings rates.

There are several commonsense reasons why workplace outreach may be effective, including access to captive populations at the place of employment, which reduces the cost of delivering the intervention, and incentive alignment between employers and employees (both benefit from employees making good financial decisions), which may raise the credibility of the information provided.

Reinforcing messages through social networks is helpful

Several key studies have shown that it is important to reinforce knowledge and behavior through social networks. Bruhn and others (2013), in their above-mentioned study of a secondary-school financial education program in Brazil, have evaluated the impact on student savings rates of the engagement of parents during a brief financial workshop. Parents were randomly assigned to various workshops, some focusing on health issues, others on the financial messages being taught to their children. The savings rate among students increased by 2.5 percentage points if the parents attended the financial workshop provided by the school. Thus, students whose parents had participated in health literacy workshops

reported they saved 13.5 percent of their income, compared with 16.0 percent among students whose parents had participated in the financial literacy workshops. This difference was statistically significant at the 5 percent level and indicates that parents were able to use their improved knowledge to reinforce the financial messages their children heard at school.

Research on financial literacy among migrant workers has found that both the desire to change savings behavior and the ability to put newly acquired knowledge about financial issues into effect are much greater if both the worker who sends a remittance and the individual receiving the remittance have had financial literacy training. For example, Doi, McKenzie, and Zia (2012) have assessed the impact of financial literacy training among migrants who are remitting money and among the family members who are receiving the funds from the migrants. The training was delivered at the teachable moment when the migrant workers were about to leave their home country for work abroad. The training program emphasized financial planning and management, savings, debt management, sending and receiving remittances, and understanding migrant insurance. The authors conclude that training among both the migrants and the family members has large and significant impacts on financial knowledge, behavior (for instance, more careful financial planning and budgeting), and savings. If only the family member (the recipient of the remittances) is trained, the effect is still positive, but smaller. Training among only the migrants had no effect on the family members. Hence, there are complementarities in treatment.

Complementary interventions matter

Combining targeted financial literacy programs with other interventions is particularly helpful among poor households, which often face multiple constraints on saving and other financial activities. Even if financial education can lead to better knowledge, individual behavioral constraints are a significant barrier to the enhancement of financial outcomes. Small situational barriers, such as a "testy bus ride, challenging hours, or the reluctance to face a contemptuous bank teller" (Bertrand, Mullainathan, and Shafir 2004, 420), can be a substantial hindrance to opening a bank account despite the large benefit. In this context, alleviating several constraints simultaneously can provide a needed impetus for change.

Numerous studies have documented that one-off interventions focusing only on one constraint have little impact. For example, Gibson, McKenzie, and Zia (2012) have studied the impact of teaching migrants in Australia and New Zealand about various methods and cost options for remitting money to their home countries and detected no change in either the frequency or level of the remittances. Similarly, Seshan and Yang (2012) conducted a financial literacy course on savings among migrants in Qatar and found no significant impacts on savings or remittance levels.

In an innovative study, Carpena and others (2013) tried to examine empirically the effect of broader interventions. They studied the impact of the use of DVDs on savings, credit, insurance, and budgeting on financial education in India. The DVDs were produced specifically for the study. The production process incorporated several rounds of feedback from focus groups to adapt the content to a target audience in urban areas. The DVDs were shown over several weeks to a randomly selected treatment group, and the outcomes were compared with the results among a control group that watched DVDs on health literacy. Despite the relatively long intervention, adapted content, and attractive delivery, the influence on financial outcomes was limited. While the study found improvements in attitudes toward and awareness of financial issues, budgeting and borrowing were the only areas in which significant changes in behavior were detected. The link between financial knowledge and behavioral outcomes thus appears rather weak in this case as well, in line with the studies on one-off interventions.

To test the effectiveness of complementary interventions, that is, interventions that address multiple constraints at once, Carpena and others (2013) combined their financial literacy treatment with goal setting and individualized financial counseling. The results of these integrated treatments were striking. First, goal setting and financial counseling have consequential effects on the take-up of financial products. While financial education alone does not induce individuals to undertake informal or formal savings initiatives, the incorporation of goal setting and financial counseling in the financial education program does accomplish this. Similar results occurred with regard to opening bank accounts and purchasing financial products such as insurance.

Second, the integrated treatments allowed the respondents to plan their finances more carefully; thus, respondents assigned to the integrated treatment group were less likely to borrow for consumption purposes and more likely to understand the details of the interest rates associated with their loans.

These results suggest that coupling financial literacy with individualized financial counseling and a scheme of reminders can improve savings behavior. Hence, thinking more broadly about the constraints that individuals and households face in poor settings is crucial.

The delivery mode matters

Unlike children, adults are often stubborn in their preferences, which are therefore difficult to change. Also, many people have a short attention span and become easily distracted if they find lecture-based financial literacy programs boring, even if the programs are conducted by leading experts. Thus, innovating the financial knowledge delivery mechanism matters.

There are many ways that financial literacy and capability programs can be delivered, and the implications in terms of both cost and effectiveness vary. Traditional forms of outreach, such as classroom instruction, brochures, and other printed materials and one-on-one counseling, are relatively expensive because of the higher per unit costs. Technology-enabled solutions can help reduce costs and target information and tools to specific consumer needs.

"Entertainment education" or "edutainment" interventions can potentially reach large audiences, including individuals who may need to strengthen their financial capability, but who would not seek out or attend special training sessions. There is a growing literature on the use of entertainment education to impart financial literacy. Spader and others (2009) find that the awareness of key financial concepts increased among viewers of a television soap opera, "Nuestro Barrio," produced for the U.S. Latino population. Tufano, Flacke, and Maynard (2010) have evaluated the impact of video games produced by Doorways to Dreams on a sample of 84 participants and found a boost in financial skills, knowledge, and self-confidence. Di Maro and others (2013) have assessed the impact of the use of a movie to encourage savings among small entrepreneurs in Nigeria and find that, while viewing the film was helpful in motivating short-term behavioral change (opening a savings account), it did not lead to longer-term increases in savings. Berg and Zia (2013) have analyzed the impact of including a financial literacy story line on debt management into an ongoing commercial soap opera in South Africa (box 2.5).

CONSUMER PROTECTION AND MARKET CONDUCT

Financial inclusion creates opportunities for many consumers who have previously been excluded from financial markets or who have been underbanked. However, it is also accompanied by risks. The emphasis on *responsible* financial inclusion in recent years is an attempt to balance opportunity and innovation in financial markets with safeguards to prevent abuse and to help consumers benefit from access, especially the most vulnerable. Consumer protection and market conduct regulations are a key aspect of a responsible finance agenda. The terms *consumer*

BOX 2.5 Behavior Change through Mass Media: A South Africa Example

Household indebtedness has been a large and growing problem in South Africa over the last decade. The ratio of household debt to disposable income was 76 percent in the second quarter of 2012, up from 50 percent in 2002.[a] In June 2012, the National Credit Regulator reported that, of the roughly 20 million consumer borrowers on its books, 9 million (47 percent) had poor credit records.[b]

The financial woes in South Africa are not limited to indebtedness. The household savings rate is low (1.7 percent in the second quarter of 2012).[c] According to FinScope, 67 percent of the population does not save at all, even though a majority of adults believe that saving is important. Moreover, of those who save, only 22 percent save through formal channels.[d]

A project was undertaken to assess the ability of entertainment education to influence sound financial management among individuals, with a focus on managing debt. The project entailed the content development, production, and impact evaluation of financial capability story lines that were included in a popular South African soap opera, "Scandal!" (figure B2.5.1). The soap opera has been running four episodes a week for eight years (more than 1,500 episodes). It is broadcast on the second-most-watched station in South Africa—the show reaches approximately 3 million viewers—and has been especially popular among low-income South Africans. The financial education story line stretched over two consecutive months, a time span deemed necessary by social marketing specialists for the viewers to connect emotionally with the characters, for the events to unfold, and for the financial literacy messages to sink in. The financial education messages in the story line were tested through focus groups to ensure that they would be correctly understood by the target group, that the plot appeared realistic, and that the target group could identify with the characters and their problems. All changes suggested by the focus group members were included in the final story line. The development and production of the story line lasted for eight months and cost approximately $90,000.

To evaluate the impact of the project, a randomized encouragement design methodology with the following key components was used. A financial incentive of R 60 (about $7) was provided to half of the sample (the randomly selected treatment group)

B2.5.1 Scandal! Cast

Source: Ochre Media and e.tv. Used with permission; further permission required for reuse.

(box continued next page)

BOX 2.5 Behavior Change through Mass Media: A South Africa Example *(continued)*

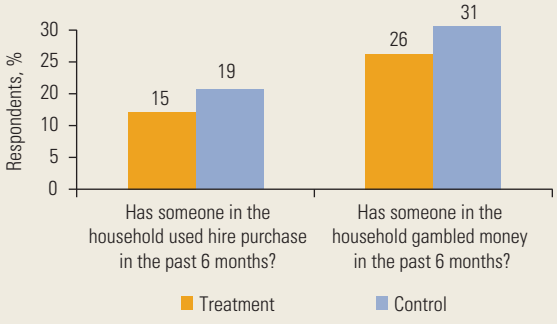
to encourage the participants to watch "Scandal!" A financial incentive of the same amount was provided to the other half of the sample (the randomly selected control group) to watch a soap opera that is similar in terms of content and viewership profile and that airs around the same time, but that did not have a financial literacy component. Two phone-based surveys were conducted. (The financial incentives were transferred in the form of airtime credits.) A final face-to-face survey probed the longer-term effects of the soap opera four months after the financial literacy episodes had been broadcast.

The impact evaluation found substantial improvements in content-specific financial knowledge, a greater affinity for formal borrowing, less affinity for hire purchase agreements (which spread the cost of an expensive item over a period of time at a high interest rate), and a decline in gambling (Berg and Zia 2013). The possible negative consequences of hire purchase and gambling were highlighted in the soap opera story line: the main character ended up in considerable financial distress because of a hire purchase transaction and gambling.

The results of the final face-to-face survey (figure B2.5.2) show that respondents in the treatment group were substantially less likely to have signed a hire purchase agreement or to have gambled during the previous six months (respectively, 19 percent and 31 percent in the control group vs. 15 percent and 26 percent in the treatment group). The heterogeneous effects were strongest among the respondents with low initial financial literacy and low formal educational attainment. The complementary qualitative analysis confirmed these findings and highlighted some key gender differences in the way men and women think about borrowing: women generally take on debt as a last resort, while men are more willing to borrow for purchases.

In addition, daily call volume data were obtained from the National Debt Mediation Association that showed an upsurge in incoming calls immediately after an episode in which the association was introduced into the story line. The call volume jumped from an average of 120 calls per day to over 500 per day, a more than 300 percent rise. A regression analysis confirmed that there had been a large increase in awareness of the existence of formal avenues for financial advice: compared with an average of 69 percent in the control group, nearly 80 percent of the respondents in the treatment group stated that they would seek financial advice from a formal source if they needed it. However, this effect dissipated over the longer run, likely because the relevant content only appeared in the soap opera for a brief period and because reinforcement of the messages through other interventions are needed to ensure greater knowledge retention.

FIGURE B2.5.2 Effects of Entertainment Education



Source: Berg and Zia 2013.
Note: "Hire purchase" refers to contracts whereby people pay for goods in installments.

The study shows that entertainment media has the power to capture the attention of individuals and thereby provide policy makers with an effective and accessible vehicle to deliver carefully designed educational messages that resonate with audiences and influence financial knowledge and behavior, at least in the short to medium term.

a. *Quarterly Bulletin* 265 (September 2012), South African Reserve Bank.
b. *Credit Bureau Monitor* (June 2012), National Credit Regulator.
c. *Quarterly Bulletin* 265 (September 2012), South African Reserve Bank.
d. FinScope (database), FinMark Trust, Randjespark, South Africa, http://www.finscope.co.za/.

protection and *market conduct* are sometimes used interchangeably, but, by consumer protection, we mean a subset of market conduct. Transparency and disclosure, fair treatment, and effective recourse mechanisms are the three main components of consumer protection laws and regulations.[24] Market conduct includes these three aspects of consumer protection, as well as broader regulatory responsibilities related to entry and competition, such as licensing institutions and market analysis to identify instances of excessive market power, new risks, or fraudulent behavior.

Consumer protection is particularly useful if there are gaps in financial literacy and financial capability, especially as policies aimed at enhancing financial inclusion help open new market segments and as financial institutions introduce new distribution channels. Legal and regulatory protections can extend across the product life cycle by influencing the way products are designed and marketed to consumers, promoting the disclosure of fees and interest when products are purchased, and specifying mechanisms for redress and appropriate collection procedures if problems arise.

Proportionality, resources, and the effectiveness of regulation

Consumer protection regulations should be balanced with other goals of financial sector policy. The G-20's Global Partnership for Financial Inclusion has defined four distinct financial policy goals—inclusion, stability, integrity, and protection—and highlighted the need for regulators to understand the effects of changes in one area on the other three. The links between consumer protection and the stability and integrity of the financial system are straightforward: measures to boost the ability of consumers to make informed decisions about financial products and services and to seek redress if problems arise have a direct bearing on market performance. The relationship with financial inclusion is more complex but no less critical. Consumer protection can raise the confidence of consumers in financial products and services, increasing the willingness of consumers to enter the marketplace. The greater transparency created in financial markets by consumer protection regulations can help shift demand away from products that offer poor value to consumers and toward higher-quality products, resulting in more sustainable market growth.

Proportionality is a widely accepted principle of good regulation. It helps ensure that protection does not unnecessarily restrict access. According to this principle, the restrictions imposed by regulators on industry must be proportionate to the benefits that are expected to result from the restrictions (Lyman, Pickens, and Porteous 2008). An example that is relevant for financial inclusion is customer identification and documentation requirements, which can effectively limit the access to finance by low-income populations. Rather than viewing the relaxation of these types of requirements as a threat to financial stability and integrity, regulators today see financial inclusion as part of an effective response to financial threats such as money laundering and terrorist financing. The Financial Action Task Force, which aims to protect the international financial system from misuse, recently affirmed the value of financial inclusion by declaring that financial exclusion can represent a risk by boosting the use and prevalence of informal providers who are not monitored.[25]

On the credit side, well-designed government regulations can assist in ensuring that loans flow to creditworthy households, thereby helping protect the stability of the financial sector and avoiding the negative consequences of consumer overindebtedness. Meanwhile, governments are sometimes subject to incentives (political pressure) to expand the access to credit, potentially even beyond optimal levels. On the payment side, governments can play a crucial role in retail payment systems by addressing the potential market failures arising from coordination problems. Streamlining these systems and facilitating their interoperability can improve their efficiency and affordability.

Enhancing the transparency of financial markets through disclosure requirements that make information available and easy to comprehend and use is another key aspect of

consumer protection laws and regulations. In comparing products and services, even the most financially savvy consumers benefit from standards on disclosure. Improvements in disclosure standards have been, for example, a major element of the recent U.S financial regulatory reforms (Agarwal and others 2009; Barr, Mullainathan, and Shafir 2008). Among other reforms, the 2009 Card Act in the United States requires that important billing information be in plain language and plain sight. In addition to information on the minimum payment, bills must include the number of months needed to pay off the debt if the consumer pays only the minimum and provide the amount that would need to be paid to retire the debt within 36 months. A recent study shows that there have been improvements because of these disclosure requirements, including higher minimum payments and, in some cases, payment amounts revised to approach the 36-month payoff amount. However, these gains have typically not been retained, and people who pay off higher debt amounts still tend to raise their overall debt levels.

Consumer protection policies to address information failures and improve disclosures are at least as challenging to implement in low-access, low-income environments. Successful implementation depends on the skill mix of consumers and the local market structure (Beshears and others 2009; Gu and Wenzel 2011; Inderst and Ottaviani 2012). An ongoing study on Mexico shows that loan officers voluntarily provide little information to low-income clients, and, if probed, most appear to be misinformed about key characteristics of the products they offer (Giné, Martínez de Cuellar, and Mazer 2013). More importantly, clients are never offered the cheapest product that fits their needs, most likely because institutions make more profit by supplying more expensive products. This illustrates the challenge of disclosure policies that run counter to the commercial interest of financial institutions (box 2.6). The Mexican study also highlights the potential value of regulators who are proactive in their approach to the supervision of consumer protection laws and regulations, including the use of mystery shoppers and other tools that provide accurate, unfiltered information on how financial products and services are marketed and sold.

The inadequacy of existing disclosure regimes has been highlighted through World Bank consumer protection diagnostic reviews (World Bank 2009a, 2009b, 2010). These reviews have found that at least half of the complaints submitted to supervisory authorities are requests for additional background information to help consumers understand the financial services they purchase. The poor conditions in low-access environments, including low levels of literacy and numeracy, regulatory capacity constraints, the existence of unregulated informal providers, and overreliance on advice from loan officers, all pose obstacles to the effective application of disclosure requirements (Chien 2012).

Efficient consumer protection rules should also cover the other communication channels financial institutions use to present information to consumers beyond the disclosure provided at the point of sale. Along with information from family and friends, many consumers depend on advertising or comparisons in the media (that may or may not be independent) as their primary sources of information about financial products. The reliance on advertising is even more pronounced in rural settings, where consumers usually have less experience with financial services and are thus more susceptible to misleading information. For example, World Bank studies in Azerbaijan and Romania find that more than one-third of rural consumers—34 percent and 38 percent, respectively—rely on advertising for their financial product information compared with only 25 percent and 17 percent, respectively, in urban areas.

Once consumers have made a decision to purchase a financial product or service, there are numerous business practice issues that come into play. Key topics include ethical staff behavior, selling practices, and the treatment of client data, as well as issues related to product design and marketing (Brix and McKee 2010). For example, in various ways,

BOX 2.6 Case Study: New Financial Disclosure Requirements in Mexico

The traditional approach to financial consumer protection regulation has focused on providing information to consumers and assuming that rational decisions will follow. Insights from behavioral economics, however, indicate multiple reasons for departures from this classical model, including present bias, loss aversion, difficulties dealing with ambiguous information or too much information, and status quo bias.

New research and practical examples from a variety of countries indicate ways that consumer protection regulations and recourse mechanisms can be crafted to be more effective by taking into account how people actually react to disclosures on contracts, information provided by lenders, and information on recourse mechanisms.

In Mexico in 2009, new requirements were approved on disclosure formats and pricing policies through the Law for Transparency and Regulation of Financial Services. One part of the regulation requires that consumers be presented with key financial terms. However, disclosure-related problems persist in the Mexican financial market. To understand how the regulations are being applied, researchers working with the National Commission for the Protection of Users of Financial Services, the government agency charged with financial consumer protection, sent trained mystery shoppers to 19 financial institutions in four towns near Mexico City with predominantly low- to middle-income populations of between 30,000 and 50,000 people. The mystery shoppers carried out 112 visits to financial institutions, lasting, on average, 25 minutes, including about 15 minutes of face-to-face encounters with staff. Shoppers had various planned scripts on the kinds of accounts they were seeking (checking or fixed term savings), their level of financial literacy or knowledge (neophytes or experienced), and their awareness of the competition and other offers.

Giné, Martínez de Cuellar, and Mazer (2013) analyzed the quality of the information obtained by the shoppers along three dimensions: the conditions and terms of the accounts, such as interest rates and type of interest; the fees and commissions, such as those related to minimum balances and early withdrawals; and account usage, including procedures for balance inquiries and money withdrawal. Staff provided verbal information voluntarily (without prompting) on only one-third (6 of 18) of the information items being surveyed. The "experienced" shoppers were provided more information on fees and on the usage of the accounts and were also more likely than the neophytes to be shown a loan contract. The *ganancia anual total* (total annual return), a measure of annual interest that can be compared across institutions because it is specified by formula, was only provided at the request of the experienced shoppers, and only in two cases were staff of financial institutions able to explain this precisely. Printed materials, if they were supplied at all, offered little additional information that could help in evaluating products. The shoppers typically received product offers that were more expensive than products more suited to their needs, reflecting the misalignment of incentives that exists between a financial institution and its customers. The research demonstrates the difficulty, in practice, of regulating disclosure, transparency, and the provision of information by financial institutions.

financial firms take advantage of information asymmetries and limits on the ability of consumers to understand and use information, including through pricing strategies and by highlighting irrelevant information or by developing redundant financial "innovations" that target less-sophisticated consumers (Carlin 2009; Choi, Laibson, and Madrian 2010; Gabaix and Laibson 2005; Henderson and Pearson 2011; Johnson and Kwak 2012). Policy makers concerned with fair treatment in business practices can use incentives through regulation and by encouraging competition and market transparency (to identify good actors), as well as coercive tactics such as the regulation of specific products and practices. However, enforcing fair treatment is complicated because, in low-access environments, the lack of formal financial options may lead customers to accept abusive or coercive treatment in the formal or informal sector.

The rules on the books vs. enforcement

There is an important gap between enforcement and the consumer protection laws and regulations on the books. According to the World Bank's recent Bank Regulation and Supervision Survey (Čihák and others 2012), many countries have consumer protection regulations on the books, but only a small fraction of these countries actually enforce the regulations (figure 2.8). In about two-thirds of countries, banking regulators are responsible for consumer protection. The share is higher in Central and Eastern Europe (77 percent) and lower in East Asia (63 percent) and Sub-Saharan Africa (61 percent). Regulators report they have a number of avenues of enforcement; the most common is the ability to issue a warning (64 percent of responding countries), followed by the ability to impose fines and penalties (55 percent). The least common means of enforcement is the most drastic one, withdrawing the license of the provider. This step is available in 34 percent of countries in the sample. Most countries, with the exception of countries in the Middle East and North Africa, report they have several enforcement tools at their disposal; the median number of tools is four.

Enforcement actions (the orange columns in figure 2.8) are much more frequently taken in high-income countries than in other categories of countries. This may, to some extent, reflect the bigger size of high-income country financial systems, but analysis indicates that, even if the number of enforcement actions is scaled by banking system assets in each country, major differences persist, and the ratio of assets per enforcement action is significantly higher in high-income countries than in low-income countries. The distribution of enforcement actions is also quite uneven in this sample: six countries account for about 85 percent of the total number of enforcement actions. The strongest sanction—revoking a license to operate—was available to 34 percent of the countries, but was only used in 4 percent of the countries in 2006–11.

Several factors may inhibit the effectiveness of consumer protection regimes. One is a lack of adequate resources. In Brazil, for example, the Consumer Protection Secretary in the Ministry of Justice has responsibility for all economic sectors. Most complaints and issues originate in only a few key industries. In 2010, there were 26,000 complaints related to finance, representing 21.5 percent of the total (second place). Even so, no full-time staff member is charged with dealing with financial complaints, and fewer than 30 full-time staff cover consumer protection issues nationwide in a country of 200 million.[26] Only about two-thirds of the regulators who are responsible for financial consumer protection in countries have a dedicated team or unit working in this area (Čihák and others 2012). Some countries also have several separate sectoral financial supervisors with varying consumer protection mandates, which may lead to uneven consumer protection, uneven attention to consumer issues, and regulatory arbitrage by financial groups seeking to limit the impact of consumer protection rules.

In countries where an agency with broad responsibility for consumer protection handles

FIGURE 2.8 Consumer Protection Regulations and Enforcement Actions

Sources: Bank Regulation and Supervision Survey (database), World Bank, Washington, DC, http://go.worldbank.org/WFIEF81AP0; Čihák and others 2013.
Note: The numbers are per country averages for the respective country groups.

consumer protection for finance, there may also be problems because of a lack of knowledge of financial sector issues in the agency. In the case of Brazil, for example, the Consumer Protection Secretary is supported at the local level by consumer protection bureaus known as *procons*, which provide services directly to citizens across all product and service categories and through a variety of means, including by phone, in person at an office, and by mobile procon vans. While these bureaus are important in making consumer protection accessible to more Brazilians, they may lack the specific knowledge of finance necessary for effective action. On several key consumer protection issues, leading procons have taken positions against financial regulators and arguably against the interests of consumers. For example, procons have criticized the law creating the positive data archive in the credit reporting system (the *cadastro positivo*) on the basis of concerns over data protection that are valid, but have not balanced this by discussing the potential gains through the cadastro from more transparent and competitive credit markets. In the case of the payment card industry, procons defend the right to claim *nao sobre preco* (often translated as the law of one price), arguing that consumers should not be subject to higher costs for goods purchased with credit cards instead of cash. However, this is a position that strengthens the hand of card acquirers in their dealings with retailers and may contribute to higher prices, which is not in the interest of consumers (Central Bank of Brazil, Ministry of Finance, and Ministry of Justice 2010).

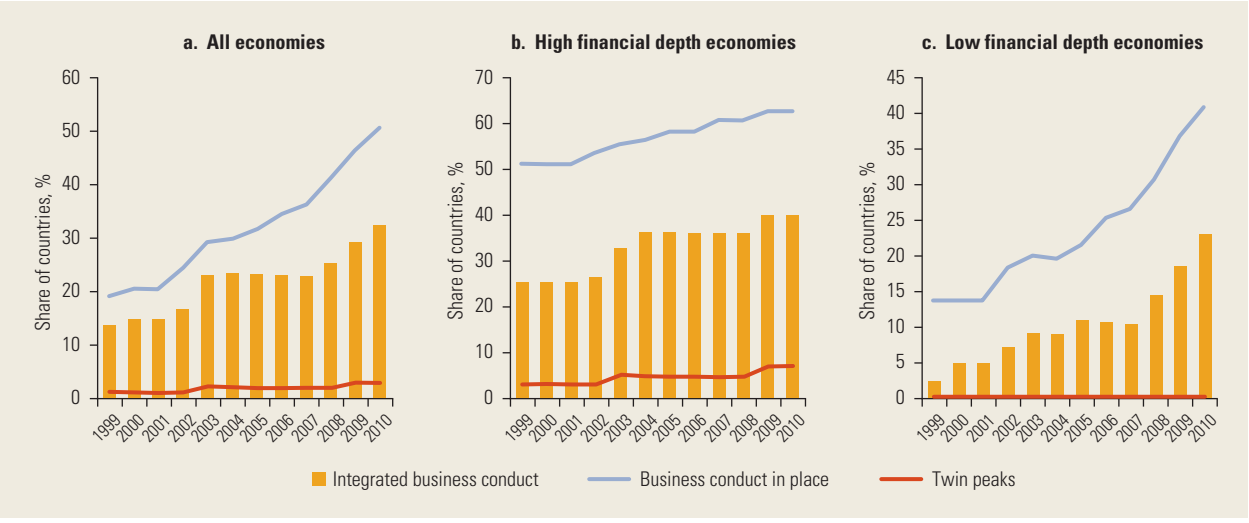
The organization of consumer protection

In some countries, including Malawi, Portugal, and, until recently, the United States, financial regulators are responsible for prudential supervision, consumer protection, and market conduct. In countries with limited resources and institutional capacity and a lack of professional staff able to perform financial market supervision, combining these two functions may be the best solution. There are also advantages to combined supervision given that the market intelligence gained through the enforcement of consumer protection regulations can be useful for prudential supervision, and vice versa. Prudential regulators also tend to be well funded and attract top-quality staff, providing a strong institutional framework for consumer protection and market conduct activities. However, there is also a potential downside to this approach. This may include inefficiencies and diseconomies of scale because of a lack of harmony and poor task delegation across banking, insurance, and securities and the competition of resources between the two regulatory functions, which could result in circumstances in which regulators choose to maintain financial sector stability at the expense of consumer protection.

For these reasons, some countries have created a specific regulator for financial consumer protection and market conduct issues. Another reason for separating prudential and consumer protection regulation relates to the wide range of providers offering financial products and services, many of which are nonbank financial institutions. This kind of twin peaks approach is considered a way to limit regulatory gaps and ensure competitive neutrality (Čihák and Podpiera 2008). Because of the relative stability of banking systems in countries such as Australia and Canada during the global financial crisis, interest in the twin peaks model of supervision has been growing in recent years. In the United States, a new supervisory structure, anchored by the Consumer Financial Protection Bureau, has been established to focus on consumer protection and market conduct. In the United Kingdom, a similar change has been undertaken through the creation of the Financial Conduct Authority.

An alternative approach involves the establishment of a general consumer protection agency responsible for financial consumer protection. In the United States, for example, prior to the creation of the Consumer Financial Protection Bureau, the Federal Trade Commission handled some aspects of financial consumer protection, including complaints related to credit reporting. The advantages of this approach include regulatory independence because officials are not

FIGURE 2.9 Evolution of Business Conduct, by Financial Market Depth



Source: Melecký and Podpiera 2012.

working only with financial markets and have the ability to examine problems that involve finance beyond supervised institutions in retail lending. However, there are often also potential drawbacks, including a lack of resources and high-quality staff, a lack of knowledge of financial products and services, and limited ability to influence powerful stakeholders such as banks and other financial providers.

Whatever the specific institutional structure, formal market conduct supervision has been catching on in both developed and developing economies. According to Melecký and Podpiera (2012), over half of the 98 countries surveyed have employed some form of formal market conduct supervision (figure 2.9). And, while specific mandates may differ, most countries share the same overall outcome goals for the operations of the market conduct supervisors: (1) fair treatment of consumers, (2) enhanced and informed participation in the financial system, and (3) sustained public confidence and trust in the financial system.

GOVERNMENT POLICIES FOR FINANCIAL INCLUSION

A key role for the government in terms of financial inclusion is to deal with obstacles in the supply or demand of financial services that can lead to inefficient outcomes. Asymmetric information (which leads to adverse selection and moral hazard problems) and high transaction costs are two significant obstacles that are commonly mentioned. Asymmetric information and high transaction costs can generate first-mover dilemmas and coordination problems that prevent the expansion of financial services to certain segments of the population (de la Torre, Gozzi, and Schmukler 2007). For example, a bank investing in a technology or business model that can reach underserved customers has to bear the risks and the initial costs if the experiment fails, but can quickly lose market share if others follow its lead. Problems of this sort can promote underinvestment in innovations that can mitigate asymmetric information and high transaction costs. At the same time, the departures of consumers from rational behavior may also generate inefficient outcomes and justify government action.

The following subsections focus on three roles that the government can play in financial inclusion to mitigate the problems associated with asymmetric information, high transaction costs, and consumer irrationality: (1) develop the legal and regulatory framework, (2) support the information environment, and (3) subsidize access

or undertake other direct policies to expand financial inclusion.

Developing the legal and regulatory framework

Legal institutions underpin the development of the financial sector (Djankov, McLiesh, and Shleifer 2007; La Porta and others 1997, 1998; Levine 1998, 1999). In particular, the protection of private property and the enforcement of shareholder and creditor rights are cornerstones of developed financial sectors (for example, see Levine 1998, 1999). In environments with weak legal institutions, contract writing and enforcement are problematic. As a result, financial institutions tend to resort to more costly business models (such as relationship lending or group monitoring) that might limit both the supply and the demand for their services.

The government has a key part in enhancing financial inclusion by introducing laws that protect property and creditor rights and by making sure that these laws are adequately enforced. A number of studies find that both the quality of the laws and the efficiency of enforcement of creditor rights affect the availability and cost of credit to households.[27] Meador (1982) finds that interest rates in the U.S. mortgage market are higher in those states in which the cost and duration of judicial interventions to repossess collateral are greater. Focusing on Europe, Freixas (1991) shows that the cost and the duration of the judicial process required to repossess collateralized assets are inversely related to consumer and home lending. Combining data on Italian households and the performance of Italian judicial districts, Fabbri and Padula (2004) find that an increment in the backlog of pending trials has a statistically and economically significant positive effect on the probability of loan rejections among households. Japelli, Pagano, and Bianco (2005) find similar evidence using aggregate credit data across 95 Italian provinces. Using data on mortgage debt outstanding in 62 countries during 2001–05, Warnock and Warnock (2008) find that countries with stronger protections for legal rights have deeper housing finance systems.

The efficiency of the legal system also matters because this can affect the sectoral composition of lending. For instance, Costa and de Mello (2006) find that, in Brazil, banks provided payroll loans—the repayment of which was deducted from the employee's payroll check—at lower rates than regular consumer loans, which were subject to the inefficient procedures of the Brazilian legal system. Using databank-level survey data for over 20 transition economies, Haselmann and Wachtel (2010) find that, if bankers have positive perceptions of the legal environment, they tend to lend more to opaque borrowers such as households and small and medium enterprises.

The strength and enforcement of creditor rights can have implications for household debt repayment behavior. Using data from the European Community Household Panel during 1994–2001, Duygan-Bump and Grant (2009) find that, if faced with adverse shocks, households in countries with poor protection of creditor rights are more likely to delay their loan repayments. Hence, poorly designed and enforced creditor rights discourage lending and encourage households to default.

A key component of a modern collateral framework is the existence of collateral registries. The extensive research on the use of property rights, land titles, and access to finance suggests that property ownership is important in the attitudes, beliefs, and behaviors that can have a considerable impact on a variety of social, income, and even environmental factors (Di Tella, Galiani, and Schargrodsky 2007; Goldstein and Udry 2008; Jacoby, Li, and Rozelle 2002). However, the traditional view of the importance of property rights in access to finance arising because property provides solid collateral is being challenged by new findings. For example, Deininger and Goyal (2012) evaluate the impact of modernizing land title registries in Andhra Pradesh, India, and find significant, but modest rises in access to credit only in urban areas. Galiani and Schargrodsky (2010) study the impact of the acquisition of clear land titles on access to finance and on other

measures of well-being in a poor suburban area of Buenos Aires. They find that household welfare improves, but not through the credit channel; rather, long-term investments in housing and human capital formation made without access to formal credit account for the changes. Galiani and Schargrodsky (2011a) discuss the difficulty that low-income homeowners face in maintaining formal land titles over time because of the relatively high cost of the administrative procedures. Galiani and Schargrodsky (2011b) find evidence of links between long-term investments and stronger property rights in rural areas, but none of the links are attributable to the use of land for collateral in formal credit markets. These studies point to the importance of strong property rights, but call into question policies focused narrowly on providing land titles.

Developing the information environment

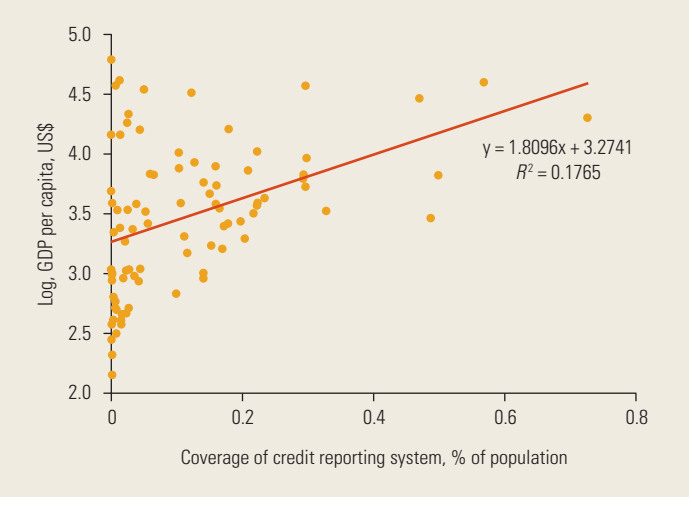
Information asymmetries between people who demand and people who supply financial services can lead to adverse selection and moral hazard. For example, in credit markets, adverse selection arises when information about the borrower's characteristics is unknown to the lender. Moral hazard refers to a situation whereby the lender's inability to observe a borrower's actions that affect repayment might lead to opportunistic behavior on the part of the borrower. In both cases, asymmetric information leads to rationing (a situation where the supply falls short of the demand).

Theoretical models suggest that information sharing can reduce adverse selection in markets in which borrowers approach different lenders sequentially (Pagano and Jappelli 1993). Moreover, information sharing can also have a strong disciplining effect on borrowers (Padilla and Pagano 2000). The model of Diamond (1984) indicates information sharing can motivate borrowers to choose agreed projects. Other models show that information sharing can discipline borrowers into exerting substantial effort in projects and in repaying loans (Klein 1992; Padilla and Pagano 2000; Vercammen 1995).

The government can enhance financial inclusion by facilitating the access of banks to borrower information either by passing laws and regulations that enable banks to share information or by directly setting up public credit registries. These are databases established and managed by central banks or financial supervisors that capture information on both individual and firm borrowers and their credit. Private credit bureaus refer, meanwhile, to information-sharing arrangements spontaneously created and maintained by private financial institutions.

The current evidence on the relationship between information sharing and credit market performance relies mostly on cross-country comparisons using aggregate or firm-level data. Jappelli and Pagano (2002) and Djankov, McLiesh, and Shleifer (2007) show that aggregate bank credit to the private sector is more substantial in countries in which information sharing is more well developed (figure 2.10). Analyses of firm-level survey data indicate that access to bank credit is easier in countries in which there are credit bureaus or registries (Brown, Jappelli, and Pagano 2009; Galindo and Miller 2001; Love

FIGURE 2.10 Credit Information Sharing and Per Capita Income



Sources: Global Financial Development Report (database), World Bank, Washington, DC, http://www.worldbank.org/financialdevelopment; International Financial Statistics (database), International Monetary Fund, Washington, DC, http://elibrary-data.imf.org/FindDataReports.aspx?d=33061&e=169393.

and Mylenko 2003). Though fewer studies exist that focus specifically on the impact of credit registries on consumer lending, the evidence is generally positive. For example, using a unique data set on credit card applications and decisions from a leading bank in China, Cheng and Degryse (2010) analyze how the introduction of information sharing via a public credit registry affects bank lending decisions. They find that borrowers on whom there was extra information (those on whom information was shared with the bank by other institutions) received a more substantial line of credit on their credit cards than those borrowers on whom the information came only from the bank.

Because participation in public credit registries is typically mandatory, they can jumpstart credit reporting in countries with no private credit bureaus (Jappelli and Pagano 2002). However, to be effective, public credit registries need to provide timely and sufficient data on borrowers and their creditworthiness (Maddedu 2010). Basic borrower information (such as full name, unique identification number, and location) is necessary, along with the corresponding information on the credit extended (such as credit type, outstanding amount, days past due, and the date of origination) and on any risk mitigation measures securing the credit (such as collateral and guarantors). The coverage of the public credit registry should be comprehensive—it should include not only large, but also small debts—and include as many financial intermediaries as possible; in other words, it should include not only banks, but also MFIs, cooperatives, and so on. Ultimately, the extent, accuracy, and availability of the information collected by the government will determine the usefulness of the public credit registry as part of the toolkit to expand access to credit.

While public credit registries can be important in the early stages of financial development, they can also reduce the attractiveness of private bureaus. In countries in which the government decides to retain a public credit registry, ensuring fair competition should be a major objective of regulation (box 2.7).

Subsidies and debt relief programs

As in other areas of development, the use of public funds is easy to justify in the interest of improving access and thereby promoting pro-poor growth. Such subsidies should be evaluated against the many alternative uses of the donor funds or scarce public funds, not least of which are alternative subsidies to meet the education, health, and other priority needs among the poor. In practice, such a cost-benefit calculation is rarely made. Indeed, the scale of subsidies is often unmeasured.

Furthermore, as with financial sector taxation, subsidies can be more liable to deadweight costs in finance than in many other sectors (Honohan 2003). It is often especially difficult to ensure that finance-related subsidies reach the target group or have the hoped-for effect.

An even more serious problem is the possible chilling effect of subsidies on the commercial provision of competing and potentially better services for the poor. Subsidizing finance is likely to undermine the motivation and incentive for market-driven financial firms to innovate and deliver. It is this danger—that subsidies will inhibit the viability of sustainable financial innovation—that can be the decisive argument against some forms of subsidy.

Note that it is not subsidization of the poor that should be questioned: the poor need help and subsidies in many dimensions. Subsidies to cover fixed costs (for example, in payment systems, especially if these generate network externalities) may be less subject to this chilling effect than subsidies that operate to cover marginal costs. Each case must be assessed on the merits.

Microfinance is the area of financial access in which subsidies have been most highly debated. Many well-intentioned people have sought to make credit affordable for the poor by means of subsidies. As a result, a majority of MFIs today—though fewer of the largest ones—operate on a subsidized basis (Cull, Demirgüç-Kunt, and Morduch 2009). Some of these subsidies are for overhead, and the MFIs do not think of them as subsidies on interest

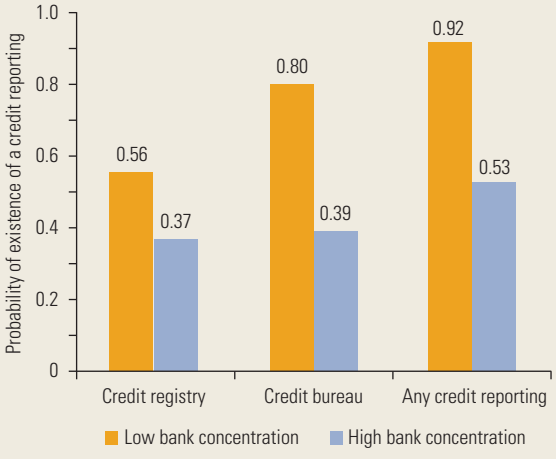
BOX 2.7 Monopoly Rents, Bank Concentration, and Private Credit Reporting

The existence of a comprehensive credit reporting system is beneficial for the financial market as a whole, but individual lenders may profit from sharing only limited information with other market participants. If only one lender has credit information on a firm or individual, this lender faces less competition in lending to these borrowers because other institutions may be reluctant to offer them credit. In economic terms, a lender can capture monopoly rents by not sharing information. This issue may be particularly pronounced if the market for credit is dominated by a few large banks. These banks would each already have a broad customer base and may try to maintain their large market share by holding onto information. Not making information available can also prevent entry by new banks.

Bruhn, Farazi, and Kanz (2012) examine the relationship between bank concentration and the emergence of private credit reporting. Using data for close to 130 countries, the authors find that bank concentration is negatively associated with the probability that a credit bureau emerges. Figure B2.7.1 illustrates that 80 percent of countries with low bank concentration have a credit bureau, whereas only 39 percent of countries with high bank concentration have a credit bureau. This difference is smaller for credit registries (56 percent vs. 37 percent), which may reflect the fact that banks are required to report to a credit registry, while participation in a credit bureau is often voluntary.

This result is robust if one controls for confounding factors that could bias the analysis. In addition, the data also show that higher bank concentration is associated with the less-extensive coverage and quality of the information being distributed by credit bureaus. These findings suggest that market failures can prevent the development of effective credit-sharing systems, implying that the state may have to intervene to help overcome these obstacles.

FIGURE B2.7.1 Credit Bureaus and Registries Are Less Likely if Banks Are Powerful



Source: Based on Bruhn, Farazi, and Kanz 2012.
Note: The figure shows the percentage of countries with private (credit bureau), public (credit registry), or any credit reporting institutions. The countries are distinguished by high or low bank concentration (above or below the sample mean). Bank concentration is the asset share of a country's three largest banks.

rates. Many currently subsidized MFIs aspire to reach a break-even point and ultimately become fully profitable. Others, including the well-known Grameen Bank, consciously apply subsidies to keep interest rates down. MFIs that operate group-lending schemes and thus that are more focused on the poor, rely on the relatively largest amount of subsidies.

While many borrowers are able and willing to service interest rates at levels that allow efficient MFIs to be fully profitable, there is no doubt that demand and borrower surpluses would be even greater if interest rates were lower. Many would agree with Morduch (1999) that the prospects of reaching many of the poor with unsubsidized credit are limited. But even if subsidized microcredit can be used to broaden financial inclusion, credit is only one among several financial service needs of the poor. Ensuring sustainable access to credit markets requires greater access to other financial services, including savings and insurance products.

Policies that support access to credit at below market rates may also be part of government programs used to gain political sup-

port. Interest rate caps, interest rate subsidies, and debt restructuring programs are common around the world, and especially widespread in rural credit, where they can help in reaching geographically dispersed constituencies. While such programs may offer short-term welfare gains for borrowers, they can also lead to severe credit market distortions that may hinder financial inclusion in the longer run. As a case study of such a policy, box 2.8, examines the impacts of a government bailout for heavily indebted rural households in India.

Other direct interventions to address financial inclusion

Several other direct interventions for financial inclusion have attracted attention in recent years. These include government-to-person (G2P) payments, the use of state-owned banks, the use of government postal services for financial inclusion, and explicit financial inclusion strategies.

In the payments and savings arena, governments can potentially play a direct role in enhancing financial inclusion by using G2P payments to raise the demand for bank accounts. These payments, which could include social transfers and wage and pension payments, can facilitate access through existing government infrastructure, such as post office networks. If well designed, these payments have the potential to become a vehicle for extending financial inclusion, and some observers have noted that providing poor G2P recipients with financial services could strengthen the development impact of G2P payments (Bold, Porteous, and Rotman 2012; Pickens, Porteous, and Rotman 2009). Allen, Demirgüç-Kunt, and others (2012) examine the effects of G2P payments as part of a broader examination of the factors driving financial inclusion. Specifically, they include in their models of account penetration a dummy variable for whether the government reported it had encouraged or mandated the payment of government transfers or social payments through bank accounts. They find that the existence of accounts to receive G2P payments lowers the likelihood that the individuals with the accounts will cite lack of funds as a barrier. This suggests that government policies to enhance inclusion can increase the likelihood that individuals perceive that financial services are within their reach.

There is growing evidence that postal networks can play a powerful role in financial inclusion. According to some observers, postal networks around the world have gone or are going through a transformation from mail-centered bureaucracies to diversified commercial enterprises with a social mission to serve the whole population and reduce financial exclusion (Berthaud and Davico 2013; El-Zoghbi and Martinez 2012). The arrival of the Global Findex data provides some new cross-country empirical evidence on the subject, suggesting where postal financial inclusion may be relevant and applicable.[28] The data show that postal financial inclusion reaches the poorer, older, less well educated, and unemployed people at the bottom of the pyramid.

Financial inclusion strategies

A growing number of countries have adopted formal national financial inclusion strategies. These are public documents, developed through a consultative process that typically involves a variety of public sector bodies (the ministry of finance or economy, the central bank, consumer protection agencies, the ministry of justice, social protection agencies, and so on) as well as private sector firms (commercial banks, insurance firms, nonbank financial institutions, telecommunications firms), and civil society partners (such as microfinance organizations and nongovernmental organizations in financial education). In many countries, the financial inclusion strategy is led by the central bank. In Kenya, for example, the central bank was aided by Financial Sector Deepening Trusts, supported by the United Kingdom's Department for International Development, and surveys and research conducted by Finmark Trust. In Colombia, a government-created independent trust fund has led efforts on financial access.

BOX 2.8 Exiting the Debt Trap: Can Borrower Bailouts Restore Access to Finance?

Many households around the world are excluded from access to formal financial services because of high levels of household debt. This is particularly true of rural households that are exposed to a variety of recurring economic shocks (drought, export price volatility), but that may lack the tools to insure against the resulting income volatility. The potentially far-reaching aggregate implications of extreme household indebtedness have motivated a number of large government-led debt relief and debt restructuring programs that aim to bring recipients back into the fold of the formal credit market.

In India, where overindebtedness among rural households has been a particularly substantial problem, the government has resorted to an unusually bold policy response. Prompted by a wave of defaults among microfinance borrowers and a highly visible rise in farmer suicides in poorer regions of the country, the government embarked on what was perhaps the largest household-level debt relief program in history. Announced in February 2008, the Agricultural Debt Waiver and Debt Relief Scheme (ADWDRS) for Small and Marginal Farmers cancelled the outstanding debt of more than 40 million rural households across the country; this represented approximately 1.7 percent of India's GDP.

What was the effect of this large-scale intervention on access to finance, credit supply, and loan performance? While the benefit of debt relief programs for individual households can be substantial, the merit of such programs as a tool to improve household welfare in the long run remains highly controversial. Proponents of debt relief argue that extreme levels of household debt are likely to distort investment and production decisions, and thus debt relief holds the promise of improving the productivity of beneficiary households. Critics of debt relief, on the other hand, worry that it is difficult to "write off loans without also writing off a culture of prudent borrowing and repayment."[a] If debt relief changes expectations and borrower behavior, they argue, bailouts may, in fact, lead to widespread moral hazard and more severe credit rationing in the future. Although both views can appeal to a foundation in economic theory, there exists surprisingly little evidence on how indebtedness and, hence, debt relief affect economic decisions and the access to credit at the household level. India's experiment with debt relief provides an excellent chance to bring some empirical evidence to bear on this debate.

Two recent studies use the natural experiment arising from India's large-scale borrower bailout to examine the effect of debt relief at the household and economy level. Kanz (2012) uses a survey of 2,897 households that were beneficiaries of India's debt relief program to gather evidence on the impact of debt relief on the subsequent economic decisions of these households. One important intention of the program was to provide households with a "fresh start" by clearing pledged collateral and enabling new borrowing that would allow households to finance productive investment. The results suggest that the program was successful along only one of these dimensions. Debt relief led to a substantial and persistent reduction of household debt. Even one year after the program, beneficiaries of unconditional debt relief were approximately Rs 25,000 ($464 or 50 percent of median annual household income) less indebted than households in a control group. However, the program did not manage to reintegrate the recipient households into formal lending relationships. Despite the fact that banks were required to make bailout recipients eligible for fresh loans, a large fraction of the households did not use their freed-up collateral to take on new loans. This is directly reflected in household investment and productivity: beneficiary households reduce their investment in agricultural inputs (which tend to be largely credit financed) and suffer a corresponding decline in agricultural productivity. Taken together, these household-level results suggest that merely writing off debt might be a necessary, but not sufficient policy to help households gain access to new financing and engage in productive investment.

This means that, if debt relief is to encourage new investment, debt forgiveness should be accompanied by measures to restore banking relationships. By the same token, the results indicate that, among the sources of constraints to produce investment, expectations about future access to credit are as important as the disincentives generated by the debt overhang arising from high levels of inherited debt. Hence,

(box continued next page)

BOX 2.8 Exiting the Debt Trap: Can Borrower Bailouts Restore Access to Finance? *(continued)*

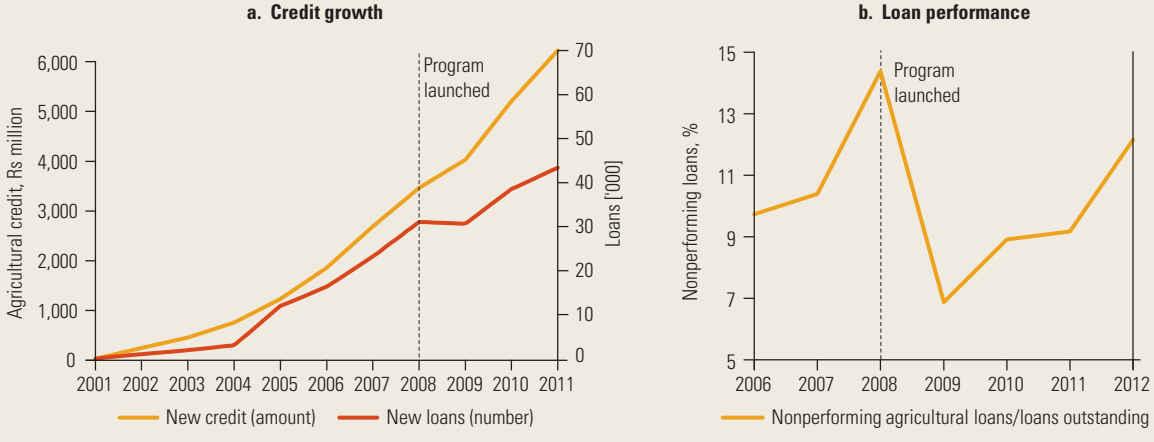
a bailout designed to encourage new investment is likely to be effective only if it is implemented in a way that credibly improves the long-term expectations of households about their access to finance.

While the microevidence gathered from household-level studies can tell us something about the effect of debt relief on individual households, it does not allow us to draw inferences about the larger economic effects of such programs. For example, an important caveat about large-scale debt relief or restructuring programs is that they might generate significant moral hazard and do lasting damage to a country's credit culture. This, in turn, might lead banks to change the way they allocate credit that might make it even more difficult for marginal households to obtain credit in the future. Are these concerns justified?

To explore these questions, Giné and Kanz (2013) use district-level data on credit supply and loan performance for a panel of Indian districts for the period between 2001 and 2012, that is, before and after ADWDRS. The study shows that the bailout led to a reallocation of new credit away from high bailout districts, an overall slowdown in new loans, and significant moral hazard in the post program period (figure B2.8.1). Although credit supply to the most strongly affected regions has rebounded in the years since the bailout, the results suggest that the program has had a negative long-run impact on the financial access of marginal borrowers. This underscores that a major challenge in designing effective debt relief and restructuring programs is to minimize the adverse effect on repayment incentives and credit market discipline.

Are there alternatives to borrower bailout programs in settings in which overindebtedness is as widespread as in the case of India? Some countries have experimented with debt restructuring that makes relief conditional on borrower behavior. While this approach is less likely to distort repayment incentives, it has often been more difficult to establish eligibility and enforce compliance with conditional debt relief programs. Perhaps the most efficient policy solution to the problem of excessive household debt is to strengthen provisions for personal bankruptcy settlements. This would allow for the orderly discharge of household debt in a way that avoids incentive distortions and deals with the problem before it becomes so severe as to require large-scale policy interventions into the credit market that are prone to mismanagement and political capture.

FIGURE B2.8.1 Bailouts and Moral Hazard



Source: Based on Giné and Kanz 2013.
Note: Rs = Indian rupees.
a. "Waiving, Not Drowning: India Writes Off Farm Loans. Has It Also Written Off the Rural Credit Culture?" *The Economist*, July 3, 2008.

The main stated objective of these strategies is to increase the access to finance. A typical strategy would highlight a headline target. For example, Nigeria's strategy, published in October 2012, aims to reduce financial exclusion in the country from 46 percent to 20 percent by 2020. Beyond the headline target, the strategy defines financial inclusion, identifies key stakeholders, outlines their roles and responsibilities, reports on the status of financial inclusion in Nigeria relative to international benchmarks, discusses barriers to financial inclusion, introduces a range of targets, presents a range of strategies for achieving financial inclusion targets, discusses the implications for regulation and policy in Nigeria, introduces regular monitoring and evaluation, and puts in place an organizational framework for the institutionalization of the strategy. Notably, the strategy sets rather specific targets for payments, savings, credit, insurance, pensions, branches of deposit banks and microfinance banks, and so on. The key initiatives in the strategy include a tiered approach to spreading awareness of customer rules, agent banking, mobile payments, cashless policies, the financial literacy framework, consumer protection, and the implementation of credit enhancement schemes and programs.

The Alliance for Financial Inclusion, a global network of financial policy makers from developing and emerging countries, has begun a Policy Champion Program to promote dissemination of good practices. In 2012, alliance member states issued the Maya Declaration, the first global and measurable set of commitments by developing and emerging country governments to unlock the economic and social potential of the 2.5 billion unbanked people worldwide through greater financial inclusion. More than 40 countries have signed the declaration.[29]

An important perceived benefit of these strategy documents is better coordination of multiple stakeholders and initiatives. Indeed, most country authorities report that the consultative process involved in preparing the strategies leads to improved dialogue and better coordination among multiple stakeholders and initiatives, greater knowledge of the sector, and clearer commitments to good practices.

Evidence on the effectiveness of the national financial inclusion strategies is still only emerging. Duflos and Glisovic-Mézières (2008) discuss national microfinance strategies in some 30 countries, mostly in Africa, pointing out that usually the strategies have been initiated at the request of donors. They find little evidence that the strategies have influenced access to finance in the countries where they have been adopted. They identify some challenges, such as weak diagnostics, inadequate government leadership, and unrealistic action plans. The paper offers suggestions to donors on the development of the strategies. These include investing in comprehensive sector diagnostics (so that the strategy is based on solid data), analyzing the political climate, ensuring local ownership, evaluating results, and being open to changing course. A recently published framework document for financial inclusion strategies describes how selected countries have approached this task and provides general guidance for nations that may be contemplating such strategy exercises (World Bank 2012i).

While it is still too early to perform a rigorous examination of these strategies, there are some initial signs that improvements can be achieved through shared public and private sector commitments to financial inclusion. For example, the South Africa Financial Sector Charter helped raise the percentage of banked adults from 46 to 64 percent in four years, and six million basic bank accounts (called Mzansi accounts) were opened. In the United Kingdom, a Financial Inclusion Taskforce contributed to halving the number of unbanked adults through e-money regulation, G2P payments linked to bank accounts, and access to financial services through post offices. The government of Brazil implemented regulatory reforms that enabled the financial sector to respond with innovative products and enhance access, leading to a dramatic expansion in financial service access points. As a result, every municipality in the country, including in remote rural areas, is now covered.

NOTES

1. There are a few variants of debit cards, including delayed debit cards, whereby the payment instruction resulting from the use of the debit card for a payment results in placing a hold on the funds in the underlying account, as opposed to resulting directly in a debit.
2. While the terms prepaid card and stored-value card are frequently used interchangeably, differences exist between the two products. Prepaid cards are generally issued to persons who deposit funds into an account of the card issuer. During the prefunding of the account, most issuers establish an account and obtain identifying data from the purchaser (name, phone number, and so on). Stored-value cards do not typically involve a deposit of funds into an account because the prepaid value is stored directly on the cards.
3. Data of World Development Indicators (database), World Bank, Washington, DC, http://data.worldbank.org/data-catalog/world-development-indicators; Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex. See also Demirgüç-Kunt and Klapper (2012).
4. The focus here is on mobile technology because of its growth and its promise to increase inclusion, but, to put matters in perspective, the bulk of the agent-based transactions mentioned in this paragraph can be and still are carried out through payment cards rather than mobile phones.
5. Data of the Reserve Bank of India, at http://www.rbi.org.in.
6. Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
7. See Markswebb Rank & Report website, at http://markswebb.ru/ [in Russian].
8. See "e-Commerce in Russia: What Brands, Entrepreneurs, and Investors Need to Know to Succeed in One of the World's Hottest Markets," East-West Digital News, http://www.ewdn.com/e-commerce/insights.pdf.
9. See "Product Design Case Studies," International Finance Corporation, Washington, DC, http://www1.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/industries/financial+markets/publications/product+design+case+studies.
10. Carpena and others (2011) examine a microlender's shift from individual to group liability. This is useful in the context of a push of microlenders who are trying to move toward individual liability, especially on bigger loans.
11. See "Bank On San Francisco," San Francisco Office of Financial Empowerment, San Francisco, http://sfofe.org/programs/bank-on. See also Department of the Treasury (2011).
12. Another relevant example, Mexico's Banco Azteca, is discussed in chapter 3, box 3.3.
13. See "Product Design Case Studies," International Finance Corporation, Washington, DC, http://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/industries/financial+markets/publications/product+design+case+studies.
14. See "Product Development," CGAP Topics, Consultative Group to Assist the Poor, World Bank, Washington, DC, http://www.cgap.org/topics/product-development.
15. Human-centered design refers to a process whereby products are designed taking into account the needs of the people and communities for which the products are intended. See "Human-Centered Design Allows Us to Create and Deliver Solutions Based on People's Needs," HCD Connect, http://www.hcdconnect.org/toolkit/en.
16. The same factors that have focused more attention on financial capability are also behind a growing emphasis on financial consumer protection regimes. This includes activities by the Financial Stability Board, the G-20, and the Organisation for Economic Co-operation and Development (OECD).
17. The World Bank has also organized Financial Capability and Consumer Protection surveys, which build on the World Bank–Russia Trust Fund questionnaire and complement it with financial knowledge and consumer protection questions. The results of this expanded survey are not yet available.
18. Financial literacy surveys using different questionnaires were previously undertaken by the World Bank in countries such as Azerbaijan, Bosnia and Herzegovina, Bulgaria, Romania, and Russia.
19. There is extensive research finding that financially capable behavior is influenced by psychological traits and not merely by the individual's financial knowledge. On the United Kingdom, De Meza, Irlenbusch, and Reyniers (2008) analyze a survey of financial capability and find that psychological differences (such as the propensity to procras-

tinate) rather than informational differences explain much of the variation in financial capability. On the United States, Mandell and Klein (2011) analyze data from the Jump$tart national survey of high school students and find that motivation is a key determinant of financial literacy levels.

20. These include Atkinson (2008); Fernandes, Lynch, and Netemeyer (forthcoming); Gale and Levine (2010); Hastings, Madrian, and Skimmyhorn (2012); Hathaway and Khatiwada (2008); Lusardi and others (2010); Martin (2007); and Xu and Zia (2012). The review suggests that financial knowledge is linked to higher levels of retirement planning and savings (Alessie, Van Rooij, and Lusardi 2011; Behrman and others 2010; Bucher-Koenen and Lusardi 2011; Lusardi and Mitchell 2007, 2011b), the quality of investment decisions (Abreu and Mendes 2010; Van Rooij, Lusardi, and Alessie 2011), credit management and satisfaction (Akin and others 2012), and mortgage performance (Ding, Quercia, and Ratcliffe 2008; Gerardi, Goette, and Meier 2010; Quercia and Spader 2008).
21. In particular, the design, quality, and intensiveness of interventions vary, making comparisons difficult; until recently, most studies focused on developed economies; few studies evaluate long-term or sustainable changes; and few provide a cost-benefit analysis of the intervention compared with other possible policies.
22. Based on a meta-analysis of over 100 studies, Miller and others (2013) find that, while some of these papers cannot reject the null hypothesis that financial education has no effect on savings, these papers, taken together, do supply evidence of an impact on savings. The study also exposes positive evidence of an impact on recordkeeping, but no evidence of an impact of financial education on defaults. Caution is required in interpreting this result because the studies on which the meta-analysis is based are diverse in many characteristics, including the countries in which the interventions occurred and the intensity and type of the interventions.
23. See the Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
24. For a comprehensive review of this topic, see World Bank (2012a).
25. See Cull, Demirgüç-Kunt, and Lyman (2012) and "Ministers Renew the Mandate of the Financial Action Task Force until 2020," Financial Action Task Force, Paris, April 20, 2012, http://www.fatf-gafi.org/topics/fatfgeneral/documents/ministersrenewthemandateofthefinancialactiontaskforceuntil2020.html.
26. Based on interviews at the Consumer Protection Department during the March 2012 Financial Sector Assessment Program mission.
27. Other studies find similar results in considering aggregate bank credit as opposed to lending to households (see Bae and Goyal 2009; Qian and Strahan 2007).
28. Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.
29. Under the declaration, each country makes measurable commitments in four areas: (1) creating an enabling environment to harness new technology that increases access to and lowers the costs of financial services; (2) implementing a proportional framework that advances synergies in financial inclusion, integrity, and stability; (3) integrating consumer protection and empowerment as a key pillar of financial inclusion; and (4) utilizing data for informed policy making and tracking results.

CHAPTER 3: KEY MESSAGES

- **One of the key channels through which finance affects economic growth is the provision of credit to the most promising firms.** Micro and small firms and young firms face the greatest constraints to access to finance because of market imperfections such as information asymmetries and transaction costs. Finance also has a crucial role in supporting innovation. Research shows that the use of external finance is associated with greater innovation by private small, medium, and large enterprises. To promote job creation and economic growth, it is also important to address the financing challenges associated with new entry and with young firms that are financially constrained because of a lack of information and collateral.
- **Recent research concludes that the provision of microcredit is not enough to spur microenterprise investment and firm growth** in part because borrowers have heterogeneous growth prospects, lack managerial capital, and face regulatory barriers and psychological or behavioral constraints. And, in part, debt may not be the appropriate instrument because repayment requirements without grace periods and joint liability discourage risky investment. Theoretically, equity-like contracts may overcome this problem, but they may not emerge because of moral hazard and a weak legal environment. While there is little evidence on the effectiveness of microequity, recent studies suggest that savings products and microinsurance can spur microenterprise investment and growth.
- **Financial inclusion can be considerably enhanced by improvements in financial sector infrastructure.** Mounting evidence indicates that movable collateral frameworks and registries as well as credit information systems can boost lending to small and medium enterprises (SMEs) by overcoming information problems. Encouraging greater competition in the financial sector is critical in promoting innovation among financial institutions and the adoption of technologies that help cover underserved segments such as SMEs.
- **Business models and product design matter.** Leveraging relationships can be vital in lending to micro and small firms. Novel mechanisms deliver credit through retail chains or large suppliers, while relying on payment histories to make loan decisions and lowering costs by using existing distribution networks.
- **Financial and business training in an effort to enhance financial management leads to greater expertise, although the impacts on business practices and performance tend to be small, depend on context and gender, and show mixed results.** The content of training also matters: simple rule-of-thumb training may be more effective than standard business and accounting training.
- **Direct government interventions in the credit market, such as directed lending programs and risk-sharing arrangements, can have positive effects on the access of SMEs to finance and growth, but it is a challenge to design and manage the interventions properly.** This problem is even greater in weak institutional environments where good governance is difficult to establish.
- **Woman-owned firms and agricultural firms face particular challenges in gaining access to finance.** Woman-owned firms tend to be smaller than firms owned by men and grow at a slower rate partly because women have less access to finance.
- **Agricultural firms are constrained because of geography as well as high seasonal variability and weather-related risks in agricultural production.** Financial products, such as insurance, and government programs can help mitigate these risks and promote investment and productivity among agricultural firms.

3

Financial Inclusion for Firms

One of the core functions of financial systems is the allocation of funds to the most productive uses. These productive uses may be available in firms that have good growth opportunities and that need additional funds to finance working capital and fixed asset investments. However, some of these firms may be excluded from accessing external finance because of principal-agent problems and transaction costs (see chapter 1, box 1.1).

This chapter examines the challenges and possible solutions in enhancing the financial inclusion of firms. The first part of the chapter focuses on microenterprises, followed by an examination of the situation among small and medium enterprises (SMEs) and young firms because principal-agent problems and transaction costs that restrict access to finance are particularly relevant for these firms.[1] Microenterprises, defined here as firms with fewer than 5 employees, and SMEs, defined as firms with 5–99 employees, are discussed separately because their financing needs tend to be different.[2] Microenterprises often need relatively small loans that are provided by microfinance institutions (MFIs). SMEs, on the other hand, require larger amounts of credit that they may access through banks or other forms of finance, such as factoring and leasing (see below). The policy interventions targeted at microenterprises and SMEs may thus also be different.[3]

Research indicates that microenterprises enjoy high returns to capital. This chapter addresses the question whether lack of access to microcredit, savings, and insurance represents a barrier to the purchase by microenterprises of more capital to realize these returns. The chapter summarizes the evidence from a range of impact evaluations and concludes that microcredit is not sufficient to support microenterprise investment and firm growth. One reason for this finding appears to be that stiff repayment requirements and joint liability can discourage investment. Equity-like contracts may overcome this problem, but, currently, there is a lack of evidence on whether equity investments can be used successfully to support microenterprise growth. Some recent studies find, however, that savings products and insurance can promote investment in microenterprises.

The chapter then argues that a sizable fraction of SMEs in developing countries are credit constrained because of principal-agent

problems and lack of the financial infrastructure necessary to mitigate these problems. Within-country studies show that relieving credit constraints can foster SME growth. Governments can take a range of actions to mitigate the credit constraints affecting SMEs. Direct interventions in the credit market, such as directed lending programs and risk-sharing arrangements, can have positive effects on SME access to finance and growth, but it is a challenge to get the design and management right. These concerns are even greater in weak institutional environments where good governance is difficult to establish and SMEs face particularly severe financial constraints.

Policy makers can take other, more market-oriented actions to encourage SME lending. These actions aim to improve the ability of financial sector infrastructure to mitigate the principal-agent problems faced by SMEs. Mounting evidence shows that legal frameworks and registries for movable collateral, as well as credit information systems, can increase lending to SMEs. Factoring and leasing are two ways to support financing to SMEs, but there is currently little evidence documenting the impact of these two financial instruments on SME investment and growth.

The chapter also points out that SMEs with risky, but potentially lucrative investment opportunities may not be able to obtain bank loans to fund these projects. Private equity investors can step in to share the risk and potential rewards. However, these types of investments rely on sound legal systems for contract enforcement and previous business expertise, which may be lacking in developing countries. International agencies have launched projects to help develop local private equity industries. More research is needed to document the extent to which these projects promote SME growth.

Much policy and research attention has been focused on the financial inclusion of SMEs, but young firms also face financial constraints. Relieving these constraints can potentially foster productivity growth and job creation, although more evidence is needed to document this relationship. Angel investors provide a promising source of finance for young firms because they take on risk and also contribute business experience through their mentorship. Currently, angel investor groups are less common in developing economies than in developed economies, but financial and technical assistance can help support the creation of angel investor networks.

The chapter examines the relationship between firm finance and innovation to understand the channel through which financial inclusion can promote economic growth. Innovative projects are especially difficult to finance with external funds because they are often risky, and firms are reluctant to disclose much information about inventions that may be imitated by others. Governments can step in by sponsoring matching grant programs and business plan competitions. Evidence suggests that matching grants can improve firm productivity and employment growth, but these grants are also difficult to implement well. Research on the impact of business plan competitions is under way, but not yet completed.

The chapter then turns to two topics involved in firm financial inclusion that have recently received much policy and research notice. First, it asks whether gender matters in access to financial services. Several studies document that women have less access to credit because women tend to own fewer assets than men, have lower levels of educational attainment, are restricted by societal norms, or are sometimes subject to taste discrimination. Evidence also shows that woman-owned firms tend to be smaller than firms owned by men and grow at slower rates. The chapter concludes that getting more credit to women can promote the growth of woman-owned firms if policies also address the underlying factors that lead to the gender gap in access to finance in the first place.

Second, the chapter discusses the particular challenges and financing needs of agricultural firms. Agricultural production is subject to seasonal variability and risks, such as pests, livestock diseases, and adverse weather conditions. As a result, agricultural firms may decide to forgo riskier investments to guarantee a lower, but more certain stream of

income. Lenders may also be reluctant to provide financing for risky projects. The chapter reviews how financial products, such as insurance, and government programs can help mitigate these risks and promote investment and productivity among agricultural firms.

MICROENTERPRISES

The vast majority of firms around the world are microenterprises. The International Finance Corporation (IFC) Enterprise Finance Gap Database shows that about three-fourths of formal microenterprises and SMEs in developing economies are microenterprises, defined in this data set as enterprises with 1–4 employees.[4] Even in developed economies, 59 percent of all microenterprises and SMEs are microenterprises (figure 3.1).

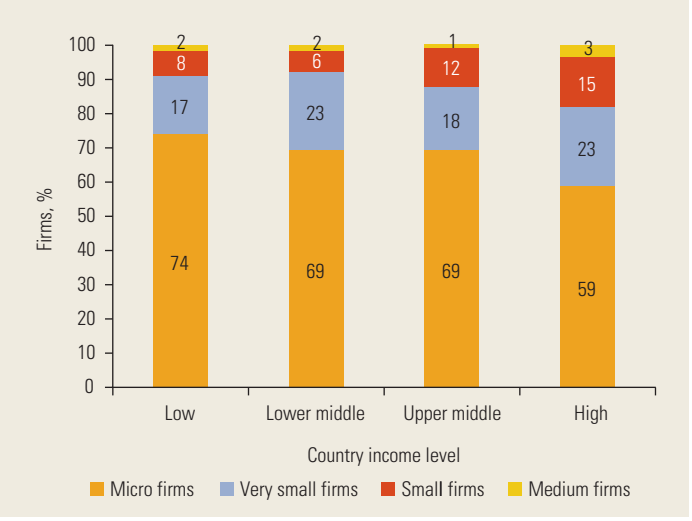
About 80 percent of microenterprises and SMEs are informal.[5] The data do not provide a separate number for microenterprises only, but informality rates tend to be highest among the smallest firms (de Mel, McKenzie, and Woodruff, forthcoming). According to the World Bank informal enterprise surveys, most firms in the informal sector report that lack of access to finance is the biggest obstacle they face (figure 3.2).[6] Box 3.1 summarizes a study by Farazi (2013) that looks at financing issues among microenterprises and small firms in the informal sector.

High returns to capital for microenterprises

Theory and evidence suggest that microenterprises can obtain high returns to capital. From a theoretical standpoint, returns to capital at enterprises that operate at a small scale may be high (and notably higher relative to larger firms) if production functions display decreasing returns. Studies in Ghana, Mexico, and Sri Lanka have provided empirical evidence that returns to capital among microenterprises are indeed sizable, ranging from 5 to 60 percent per month (de Mel, McKenzie, and Woodruff 2008; Khandker, Samad, and Ali 2013; McKenzie and Woodruff 2008; Udry and Anagol 2006). De Mel, McKenzie, and Woodruff (2008) use a field experiment to illustrate the high returns to capital among microenterprises (box 3.2).

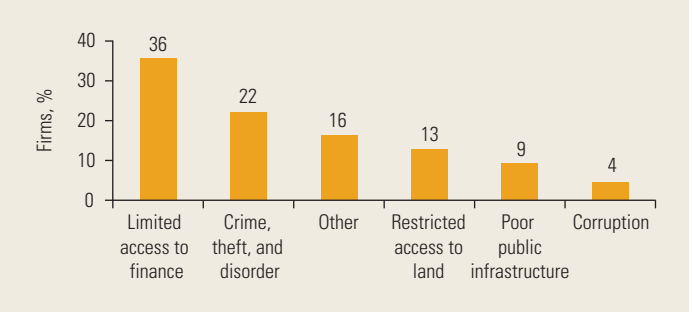
Given the evidence on the high returns to capital, a natural question is evoked: why do microentrepreneurs not purchase additional capital assets (for example, machinery or tools) to realize these returns? In other words, can

FIGURE 3.1 Percentage of Micro, Very Small, Small, and Medium Firms



Source: IFC Enterprise Finance Gap Database, SME Finance Forum, http://smefinanceforum.org.
Note: The data cover 177 countries. The observation year varies from 2003 to 2010 by country. Firm size is based on the number of employees (1–4: micro; 5–9: very small; 10–49: small; and 50–250: medium). The data set does not include large firms (typically less numerous than medium firms).

FIGURE 3.2 Biggest Obstacles Affecting the Operations of Informal Firms



Source: World Bank informal enterprise surveys.
Note: The figure covers microenterprises (0–5 employees) and small firms (6–20 employees) in 13 countries. The bars represent the percentage of firms identifying a given option as a major obstacle to business. "Other" includes difficult business registration procedures, the workforce, limited demand for products or services, and political instability.

BOX 3.1 Financial Inclusion of Informal Firms: Cross-Country Evidence

Lack of access to finance is identified as the biggest operational challenge by informal firms according to the World Bank informal enterprise surveys.[a] This box is based on an analysis of issues in access to finance among informal firms. The analysis was carried out by Farazi (2013) using World Bank surveys of approximately 2,500 firms across 13 countries in Latin America and Sub-Saharan Africa.

A majority of informal firms are microenterprises, that is, they have no more than five employees, and started operations less than 10 years ago. Most informal firm owners have received some type of educational or vocational training. Few of the owners have jobs in formal businesses, implying that the informal business is their main source of income. Informal firms report low use of loans and bank accounts, and a significant majority finance their operations through sources other than financial institutions, including internal funds, moneylenders, family, and friends. A majority of the respondents would like their firms to become formal (that is, to register), but do not do so because registration requires them to pay taxes. They state that the ease of access to finance would be the most important benefit they could obtain from registering (table B3.1.1).

TABLE B3.1.1 Snapshot of Informal Firms

Indicator	Share of firms, %
Size: microenterprise (0–5 employees)	89
Age: 10 years or less	74
Level of education: no education	6
Largest owner has a job in a formal business	8
Use of accounts	23
Use of loans	11
Working capital finance: internal funds, family, and moneylenders	80
Investment finance: internal funds, family, and moneylenders	84
Would like to register	59
Main reason for not registering: taxes	26
Most important benefit of registering: access to finance	52

Source: Farazi 2013.

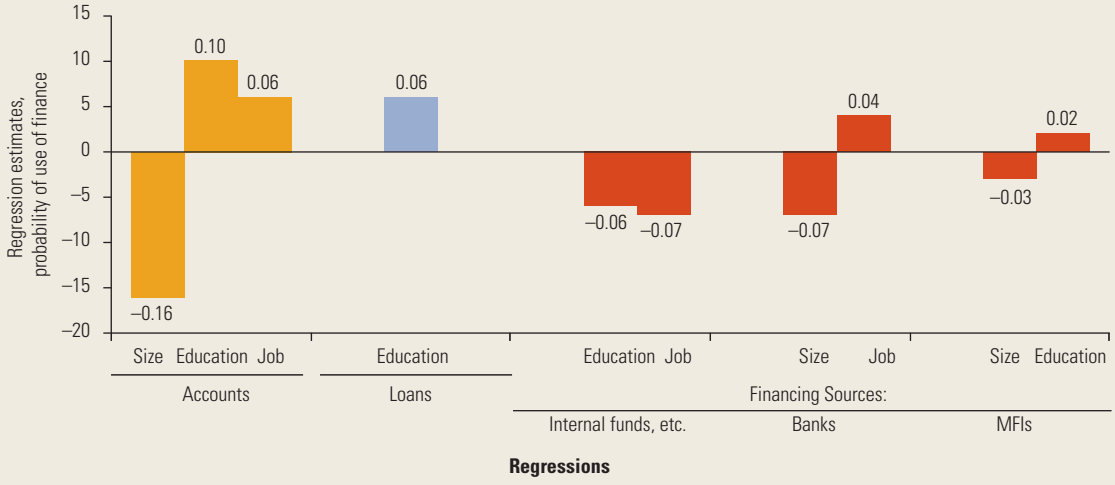
The use of finance by informal firms is significantly associated with (1) firm size, (2) the owner's level of educational attainment, and (3) the owner having a job in the formal sector. The results of the regression analysis conducted by Farazi (2013) suggest that, relative to small enterprises, microenterprises show lower rates of use of bank accounts and rely less on banks and more on MFIs for working capital financing. Size is not significantly associated with the use of loans. The owner's level of education and the owner's having a job in the formal sector are positively associated with the use of bank accounts and negatively associated with the use of internal funds and financing from family and moneylenders for working capital. The higher educational levels of owners are also positively associated with the use of loans by informal firms (figure B3.1.1).

Recent research indicates that lowering initial registration costs and providing information on registration procedures have only small effects on firm formalization (Bruhn 2013; de Andrade, Bruhn, and McKenzie 2013; De Giorgi and Rahman 2013). In ongoing research for the World Bank, Francisco Campos, Markus Goldstein, and David McKenzie find that the variable costs associated with becoming formal, such as tax payments, may be comparatively more important for informal firms. Unless these firms grow and become sufficiently profitable to cover such costs, it would be difficult for them to enter the formal sector. Enhancing the financial inclusion of informal firms can potentially help them grow and pave their path toward formalization (Campos, Goldstein, and McKenzie 2013).

(box continued next page)

BOX 3.1 Financial Inclusion of Informal Firms: Cross-Country Evidence *(continued)*

FIGURE B3.1.1 Use of Finance by Informal Firms



Source: Farazi 2013.
Note: Variables listed above the line are independent variables, while those listed below the line are dependent variables. The orange bars are regression estimates for accounts as a dependent variable (equals 1 if a firm has a bank account and 0 otherwise); the blue bar is a regression estimate for loans as a dependent variable (equals 1 if a firm has a loan and 0 otherwise); and the red bars are estimates derived from separate regressions for different sources for the financing of working capital (outcome variables equal 1 if firms use a given financing source and 0 otherwise). Each regression controls for firm-level variables (age, microsize, sector, owner's gender, educational level, and job in the formal sector) and country fixed effects. The results are robust if country-level variables (proxies for financial sector development and the quality of institutions) are used instead of country fixed effects. A probit model is used; estimates show marginal effects. MFI = microfinance institution.

a. For additional information on the informal surveys, see "Enterprise Surveys Data," World Bank, Washington, DC, http://www.enterprisesurveys.org/Data.

greater access to financial products, including credit, savings, and insurance, promote microenterprise investment and growth? Note that, apart from lack of financial access, there are many other potential reasons why microenterprises do not invest more, including regulatory barriers, lack of skills or qualified employees, will to remain informal, and psychological or behavioral constraints. A detailed review of these issues goes beyond the scope of this chapter. They are, however, discussed again in this section in so far as they influence the access of microenterprises to finance or the impact of finance on firm growth.

Credit for microenterprises

Commercial banks often do not lend to microenterprises because the operational costs of lending to these firms are high relative to the revenue generated by the small loan amounts. Microfirms also typically lack sufficient collateral to pledge against commercial bank loans. A study in Sri Lanka finds that only about 10 percent of microenterprises receive bank loans (de Mel, McKenzie, and Woodruff 2011). Many more would like loans, but are constrained by their inability to provide collateral or personal guarantors or by other bureaucratic procedures. The study also finds

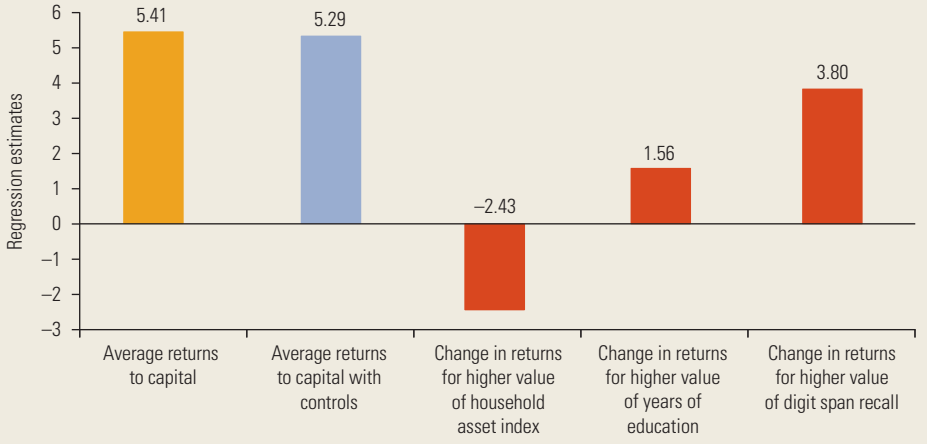
BOX 3.2 Returns to Capital in Microenterprises: Evidence from a Field Experiment

The rapid increase in development funding directed toward MFIs raises a central question for policy makers: do small and informal firms have the potential to grow, or do they only represent a source of subsistence income for low-productivity individuals unable to find alternative work? De Mel, McKenzie, and Woodruff (2008) attempt to answer this question using randomized grants to a set of Sri Lankan microenterprises. They carried out a baseline inquiry on microenterprises in April 2005 as the first wave of the Sri Lanka Microenterprise Survey; eight additional waves of the panel survey were conducted at quarterly intervals through April 2007. To ensure the grant intervention would be a sufficiently large shock to business capital, the survey organizers included only firms with invested capital of SL Rs 100,000 (about $1,000) or less. Of the 659 enterprises that were surveyed, firms directly affected by the December 2004 Indian Ocean tsunami were excluded from the analysis, leaving a sample of 408 firms.

The aim of the intervention was to provide randomly selected firms with a positive shock to their capital stock and to measure the impact of the additional capital on business profits. The intervention consisted of one of four grants: SL Rs 10,000 worth of equipment or inventories for their business, SL Rs 20,000 worth of equipment or inventories, SL Rs 10,000 in cash, and SL Rs 20,000 in cash. The SL Rs 10,000 treatment was equivalent to about three months of median profit reported by the firms in the baseline survey, and the larger treatment was equivalent to six months of median profits. For in-kind treatments, the amount spent on inventories and equipment by entrepreneurs sometimes differed from the amount offered under the intervention. Entrepreneurs usually contributed funds of their own to purchase larger items. In the case of the cash grants, on average, 58 percent of the cash treatments were invested in the business between the time of the treatment and the subsequent survey.

Figure B3.2.1 shows estimates of the treatment effect for the whole sample, on average, and for scenarios taking into account heterogeneous characteristics among the enterprise owners. For the aver-

FIGURE B3.2.1 Estimated Returns to Capital



Source: De Mel, McKenzie, and Woodruff 2008.
Note: The returns are shown in percent per month. The orange bar shows the average returns to capital for the whole sample. The blue bar shows the estimated returns based on regressions that control for indicators of ability (including years of schooling and digit span recall) and household assets. The household asset index is the first principal component of variables representing the ownership of 17 household durables; digit span recall is the number of digits the owner was able to repeat from memory 10 seconds after viewing a card showing the numbers (ranging from 3 to 11). The three red bars show how much returns changed relative to the blue bar at a higher household asset index, more years of education, or longer digit span recall, respectively.

(box continued next page)

BOX 3.2 Returns to Capital in Microenterprises: Evidence from a Field Experiment *(continued)*

age enterprise in the sample, the authors estimate the real return to capital at about 5.4 percent per month (65 percent per year), which is substantially higher than market interest rates. By examining the heterogeneity of treatment effects, the authors investigate the importance of imperfect credit and insurance markets. They claim that, within a context of imperfect markets, returns to shocks to capital stock should be greater among entrepreneurs who are more constrained and more risk averse. The authors find that returns vary substantially based on the ability and household wealth of the entrepreneurs. The returns to shocks to capital stock are higher among more constrained entrepreneurs (those entrepreneurs with fewer household assets, that is, less wealth) and entrepreneurs with higher ability as measured by years of education and digit span recall. On the other hand, returns to capital do not vary significantly with measures of risk aversion or uncertainty in sales and profits. The observed heterogeneity of returns seems to suggest that the high returns are more closely associated with missing credit markets than missing insurance markets.

The high returns at low levels of capital stock estimated by the authors indicate that entrepreneurs starting out with suboptimal capital stocks would be able to grow by reinvesting profits. Individuals might remain inefficiently small for some time, but would not be permanently disadvantaged. The authors find, however, such high levels of returns somewhat puzzling. It is unclear what prevents firms from growing incrementally by reinvesting profits. The results point to the need for a better understanding of how these microentrepreneurs make investment decisions.

that a local bank allocates credit to microenterprises with more household assets, that is, collateral, and not to enterprises exhibiting particularly high returns.

Another reason why microenterprises may have difficulty obtaining bank loans is that they are often opaque given their usually inadequate documentation on formal accounts. MFIs use lending techniques that allow them to provide credit to these small, informationally opaque firms. They employ intensive screening technologies to collect information on potential borrowers, including visits to the borrower's house or firm. These screening technologies imply high costs, meaning that these institutions typically charge higher interest rates than banks. However, given that the returns to capital are also high among microenterprises, credit from MFIs could potentially lead to more investment and growth in these firms (see, for example, Khandker, Samad, and Ali 2013).

Despite the difficulties associated with financing microenterprises, there are some examples of banks that have successfully catered to microenterprises. For example, in Brazil, Banco Santander has been promoting entrepreneurship and encouraging the growth of small businesses by making microloans to informal microfirms that are unable to obtain loans otherwise. The majority of their loans go to businesses run by women. In Chile, Banco Estado, through its subsidiary, BancoEstado Microempresas, targets segments of the population that are generally not served by commercial banks. Relying on its broad countrywide capacity, the bank provides financial services to microenterprises and low-income households.

Does microcredit promote investment?

Several recent studies have used rigorous research designs to examine whether microcredit promotes investment and firm growth, but have come up with mixed results. Most papers tend to find positive effects on some business outcomes, but not on others, raising additional questions.

A study conducted in Mexico City shows that improved access to microloans led to increases in inventory investment and fixed

assets for very small retail enterprises (Cotler and Woodruff 2007). Sales and profits also went up, but the effects are not statistically significant.

Similarly, a paper on India finds that microcredit allows households with an existing business to invest more in durable goods, that is, to expand the business (Banerjee and others 2010). However, microcredit has no clear impact on the nondurable consumption of these households, meaning that existing businesses may or may not become more profitable if they scale up.

In Bosnia and Herzegovina, individuals who received a loan from an MFI as part of a randomized experiment were more likely to be self-employed or own a business relative to individuals who did not receive a loan (Augsburg and others 2012). The study also finds evidence of increased business investment. However, this greater investment did not necessarily translate into substantially higher business profits.

In contrast, a large microcredit initiative in Thailand had no measurable effect on business investment, but business income did rise because of the expansion in credit (Kaboski and Townsend 2012). A possible explanation for these findings is that the businesses used the microcredit to finance working capital.

An impact evaluation in the Philippines shows that loans going to microentrepreneurs reduced the number of business activities and employees in these businesses and that subjective well-being declined slightly (Karlan and Zinman 2011). However, the microloans raised the ability to cope with risk, strengthened community ties, and boosted the access to informal credit.

Overall, these findings point to a positive impact of credit on microenterprises, although this impact is not always reflected in greater investment and growth. One caveat here is that most research papers examine only the short-term impact of microcredit; it may take more time for loans to translate into increased profit or growth. In addition, the study samples may not always be large enough to generate sufficient statistical power to detect significant effects on investment, sales, and profits because these variables tend to have large variances across firms and across time.

Another reason why some studies find positive impacts of microcredit on enterprise growth while others do not may be that microfinance borrowers are heterogeneous in terms of their growth prospects. For example, de Mel, McKenzie, and Woodruff (2010) show that only 30 percent of microenterprise owners in Sri Lanka have personal characteristics similar to those of large firm owners, whereas 70 percent have characteristics more akin to those of wage workers, that is, a large share of microenterprise owners may be running their business to make a living while they are looking for a wage job and may not have plans for expanding the business (see also Bruhn 2013).

In addition, the microenterprise owners who would like to expand their business may lack the necessary managerial capital to do so (Bruhn, Karlan, and Schoar 2010). Some MFIs provide financial and business training to their clients in an effort to improve the financial management and use of microloans by these clients.[7] While many studies find improvements in knowledge deriving from the training, the impacts on business practices and performance are relatively small. Alternatively, other studies find benefits of the training among the MFIs, such as changes in the likelihood that clients will be retained or in the characteristics of the clients who apply for loans. Other studies find that the training is most effective among certain groups in different contexts, such as women in Bosnia and Herzegovina or men in Pakistan (Bruhn and Zia 2013; Giné and Mansuri 2012). One study shows that the content of training may matter: simple rule-of-thumb training leads to considerable improvements in business practices, while standard accounting training does not. However, neither type of training has a strong effect on business sales (Drexler, Fischer, and Schoar 2011). Overall, it appears that financial and business training does not substantially amplify the impact of microloans on microenterprise investment and growth across the board, although it can have positive effects among certain borrowers in various settings.

It is also possible that microloans are not the proper financial instrument for encouraging investment and growth. Most microloan contracts require that repayment begin immediately after loan disbursement. A study conducted in India shows that this repayment requirement can discourage risky illiquid investment and thereby limit the impact of microcredit on firm growth (Field and others, forthcoming). Similarly, joint liability for microloans may discourage investment because group members have to pay more if a fellow borrower makes a risky investment that goes bad, but they do not enjoy a share of the profits if the investment yields returns. Equity-like financing, in which investors share both the benefits and risks of more profitable projects, may be a solution to these incentive problems (Fischer forthcoming). There is little evidence on the feasibility and impact of equity financing among microenterprises. However, a research team with World Bank participation is starting to implement and evaluate a microequity scheme in South Asia. The team will partner with local chambers of commerce and MFIs to select firms that will be offered a microequity contract. Under the contract, firms will receive funds to invest in machinery and equipment. Firms will have a choice between debt-like or equity-like repayment plans, that is, firms will agree to repay a share of the invested amount, and they will also pay the investor a share of firm revenue. In the first phase of the project, a range of contracts will be available that will shed light on whether firms favor debt-like or equity-like contracts.

The role of savings in promoting microenterprise growth

Savings accounts are an important financial instrument that may aid microenterprise owners to accumulate resources to purchase additional capital. These accounts may be particularly beneficial for individuals who have difficulty saving at home because of demands on their cash holdings by family members or because of behavioral biases. An impact evaluation in Kenya has documented that gaining access to bank accounts increases savings and productive investment among women market vendors, but not among men bicycle-taxi drivers (Dupas and Robinson 2013). One reason women benefited more from formal savings accounts could be that they may face regular demands on their incomes from relatives, neighbors, or husbands (Ashraf, Karlan, and Yin 2010). More broadly, savings accounts may also promote discipline among individuals with present-biased preferences who are tempted to spend the cash they hold (Gul and Pesendorfer 2004; Laibson 1997). Furthermore, the graduation model supported by the Consultative Group to Assist the Poor (CGAP) and the Ford Foundation emphasizes that saving regularly in a formal way can help poor entrepreneurs build financial discipline and become familiar with financial service providers (Hashemi and de Montesquiou 2011).

Innovative commercial banks can reach out to microentrepreneurs by providing both credit and savings accounts. For example, Banco Azteca in Mexico is able to make microloans with low documentation requirements by relying on synergies with a large retail chain owned by the same mother company, Grupo Elektra. Most branches are located inside retail stores and share the costs of the distribution network. Banco Azteca also draws on a large database that the retail chain has accumulated on customer repayment behavior on installment loans. An impact evaluation has shown that the opening of Banco Azteca promoted the survival of informal businesses and led to expansion in labor market opportunities and earnings among low-income individuals (box 3.3).[8] Another feature of Banco Azteca is that it offers consumption loans. Thus, in addition to providing financial services to microentrepreneurs, it boosts the purchasing power of potential microenterprise clients, which may promote firm growth.

Insurance among microenterprises

Another financial constraint among microenterprises may be the inability to insure income against the risk posed by volatile

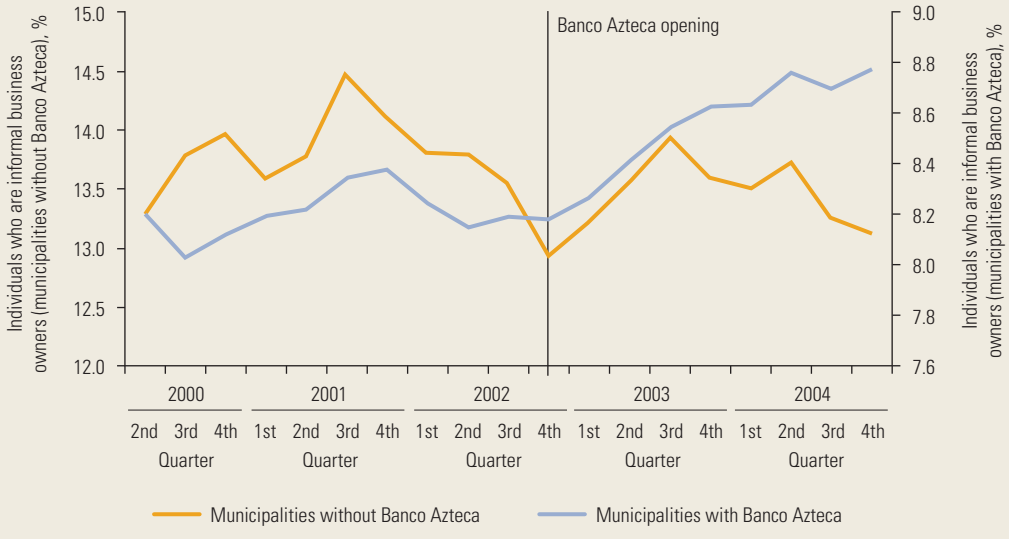
BOX 3.3 The Effect of Financial Inclusion on Business Survival, the Labor Market, and Earnings

In October 2002, Banco Azteca simultaneously opened more than 800 branches in Mexico in all of the existing stores of its parent company, a large retailer of consumer goods, Grupo Elektra. From the start, Banco Azteca catered to low- and middle-income borrowers who had mostly been excluded from the commercial banking sector. It capitalized on Grupo Elektra's experience in making small installment loans for the purchase of merchandise and relied on the parent company's rich data, established information, and collection technology. Banco Azteca was thus uniquely positioned to target the relevant segment of the population, which it estimated at more than 70 percent of all households. Many of these households were part of the informal economy, operating small informal businesses that lacked the documentation necessary to obtain traditional bank loans. Banco Azteca requires less documentation than traditional commercial banks, often accepting collateral and cosigners instead of the documents.

Through a difference-in-difference strategy, Bruhn and Love (2013) use the predetermined locations of Banco Azteca branches to identify the causal impact of the opening of the branches on economic activity. They compare the changes in the employment choices and income levels of individuals before and after the branch openings across municipalities with or without Grupo Elektra stores at the time of the branch openings. They control for the possibility that time trends in outcome variables may be different in municipalities that had Grupo Elektra stores and those that did not have these stores.

The results show that the branch openings led to a 7.6 percent rise in the proportion of individuals who run informal businesses, but to no change in formal businesses. This is consistent with anecdotal evidence suggesting that Azteca targets lower-income individuals, as well as with Azteca's flexible documentation requirements. In contrast, formal business owners have easier access to commercial bank credit and likely prefer it because of the higher interest rates charged by Azteca. Figure B3.3.1 illustrates that the proportion of informal business owners followed a similar pattern across municipalities and across

FIGURE B3.3.1 Individuals Who Work as Informal Business Owners in Municipalities with and without Banco Azteca over Time



Source: Bruhn and Love 2013.

(box continued next page)

BOX 3.3 The Effect of Financial Inclusion on Business Survival, the Labor Market, and Earnings *(continued)*

time before the branch openings. After the branches opened, the proportion of informal business owners rose substantially in municipalities with branches, but, on average, remained similar to the initial levels in municipalities without the new branches. Bruhn and Love also find that the branch openings led to an increase in employment by 1.4 percent and an increase in income levels by 7.0 percent.

The measured impacts of Banco Azteca are larger among individuals with below median incomes and in municipalities that were relatively underserved by the formal banking sector before Azteca opened (measured by demographic data on bank branch penetration). These results provide additional evidence that the channel through which Banco Azteca exerts an impact on economic activity is the expansion in access to financial services among low-income individuals.

Banco Azteca also offers other financial services, including savings accounts, business loans, and consumer loans. The measured rise in informal entrepreneurial activity, employment, and income may thus be associated with the greater access to a combination of these products.

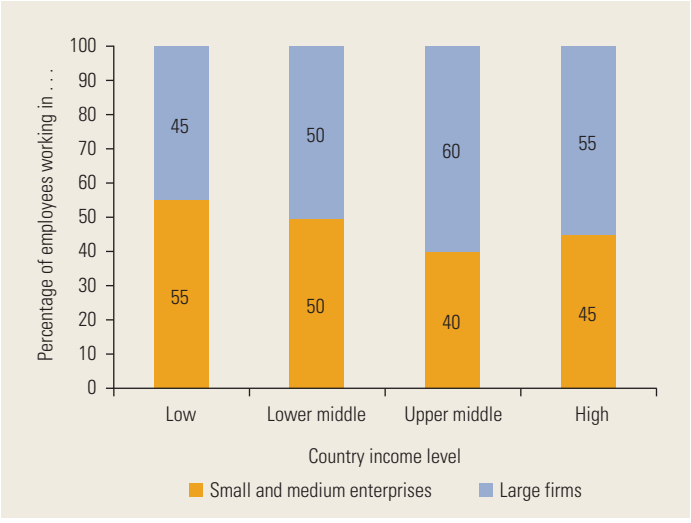
entrepreneurial returns, that is, individuals may be reluctant to start or expand a microenterprise because they do not know if they will succeed and if their investment will pay off.[9] A recent study in Mexico suggests that this constraint is at least as important as the constraint represented by the lack of liquidity for capital investment and that microenterprises may benefit from insurance products (Bianchi and Bobba, forthcoming). The study finds that the existence of a conditional cash transfer program has a positive impact on the likelihood of entry into microentrepreneurship. The transfer effectively insures entrepreneurs against income risk because they can rely on the transfer in case their business income is low. The setting in this study is thus specific, and it is not clear to what extent the findings would carry over to an economy in which insurance products are sold to microenterprises by an insurance company. These insurance products may be difficult to design because of moral hazard issues. Moral hazard is particularly salient among informationally opaque enterprises that lack formal and reliable records because the insurance company will experience difficulty verifying whether and why the enterprises show low incomes. In some industries, such as agriculture, moral hazard is mitigated if insurance payouts can be tied to publicly observable events, such as lack of rainfall measured at weather stations, as discussed in the context of agricultural finance below.

Overall, the evidence suggests that microcredit is not sufficient to promote microenterprise investment and firm growth. One reason for this finding appears to be that repayment requirements and joint liability can discourage investment. Equity-like contracts may overcome this problem, but there is no evidence that equity investments can be successfully used to promote microenterprise growth. Mounting evidence indicates, however, that savings products and insurance can promote investment in microenterprises. Ongoing research will shed more light on this question within the next couple of years.

SME FINANCING: WHY IS IT IMPORTANT? AND WHAT TO DO ABOUT IT?

SMEs employ a large share of the workers in developing economies. Ayyagari, Demirgüç-Kunt, and Maksimovic (2011a) report that formal SMEs account for about 50 percent of employees in developing countries (figure 3.3). They also find that SMEs create a greater share of net jobs relative to large firms even after they account for job destruction.[10] At the same time, the contribution of SMEs

FIGURE 3.3 Employment Shares of SMEs vs. Large Firms



Source: Calculations based on Ayyagari, Demirgüç-Kunt, and Maksimovic 2011a.
Note: The year of observation varies by country, ranging from 2006 to 2010. Firm size categories are defined based on the number of employees: 5–99 refers to small and medium enterprises (SMEs), and 100+ refers to large firms. Shown are the mean employment shares across countries within each income group. The data do not cover employment in firms with less than 5 employees or employment in informal firms.

to productivity growth in developing economies is not as high as that of large firms (for example, see Ayyagari, Demirgüç-Kunt, and Maksimovic 2011a). Moreover, cross-country research suggests that the existence of a large SME sector does not promote growth in per capita gross domestic product (GDP) (Beck, Demirgüç-Kunt, and Levine 2005). One reason for these findings may be that weak legal and financial institutions in developing countries prevent SMEs from growing into large firms, and, so, a large SME sector coincides with weak institutions that directly undermine growth (Beck, Demirgüç-Kunt, and Maksimovic 2005). It is thus crucial to take a closer look at the constraints that SMEs face.

Are SMEs credit constrained?

Several cross-country studies find that the lack of access to finance is a key constraint to SME growth in developing economies (Beck, Demirgüç-Kunt, and Maksimovic 2005; Beck and others 2006).[11] Cross-country research analyzing 10,000 firms in 80 countries shows that financing constraints are associated with slower output growth, while other reported constraints are not as robustly associated with growth (Ayyagari, Demirgüç-Kunt, and Maksimovic 2008). Within-country evidence also points to credit constraints on SMEs. An impact evaluation in India exploits variations in access to a targeted lending program and finds that many SMEs are credit constrained and that providing additional credit to SMEs can accelerate their sales and profit growth (Banerjee and Duflo 2012). In addition, research in Pakistan shows that a drop in subsidized export credit led to a substantial decline in exports among small firms, but not among large firms. Large firms were able to replace subsidized credit with credit at market interest rates, but this was not true of small firms, indicating that small firms were, in fact, credit constrained (Zia 2008).[12]

In examining how widespread credit constraints are among SMEs, one should distinguish between firms that are voluntarily versus involuntarily excluded from using loans. Figure 3.4 relies on data from the World Bank enterprise surveys to shed light on this issue. It shows the percentage of SMEs in low-, middle-, and high-income countries that did or did not apply for a loan during the past year. For SMEs that did not apply, it lists whether firms report they did not need a loan or were involuntarily excluded from applying for a loan. Among SMEs, 44 percent in low-income countries, 28 percent in middle-income countries, and 20 percent in high-income countries were involuntarily excluded from applying for a loan. An even higher share of SMEs may not have obtained a loan because firms that applied for a loan sometimes had their applications rejected.[13] The numbers for involuntary exclusion are thus a lower bound. Figure 3.5 provides the corresponding statistics on large firms. Compared with SMEs, a smaller share of large firms are involuntarily excluded from applying for a loan: 25 percent in low-income countries and 14 percent in middle- and high-income countries.

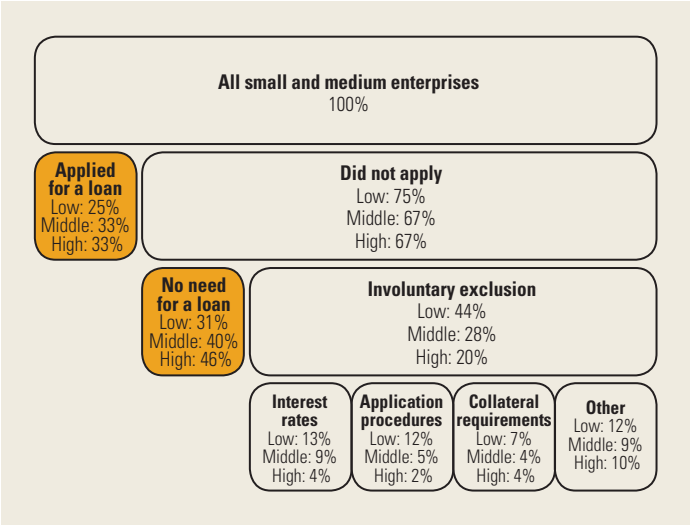
The reasons for involuntary exclusion from applying for a loan vary. Some SMEs may simply not benefit from investment opportunities that are sufficiently profitable to pay market

interest rates, or their projects may be too risky for banks to finance. Other SMEs may be credit constrained because they are subject to principal-agent problems (adverse selection and moral hazard) that are less salient among large firms. SMEs often do not have adequate records and accounts to document firm performance to apply successfully for a loan. This problem is compounded by the fact that some SMEs operate informally. Thus, they may not register with the government, or, if they are registered, they may not declare all their revenue, implying that they have no or inadequate official proof of income. This lack of documentation may be one reason why 12 percent of SMEs in low-income countries state they did not apply for a loan because of complex application procedures, that is, the application requires information that they cannot easily provide (see figure 3.4). To fill in for missing information, the lender may ask for additional collateral, but SMEs also often lack adequate collateral. In low-income countries, 7 percent of SMEs state that the major reason they have not applied for a loan is high collateral requirements (see figure 3.4). Application procedures and collateral requirements appear to be less of an obstacle for large firms (see figure 3.5). Only 5 percent of large firms in low-income countries report they did not apply for a loan because of complex application procedures (and 3 percent say it was due to collateral requirements).

In addition, high transaction costs can restrict access to credit among SMEs because the high fixed costs of financial transactions render lending to small borrowers unprofitable. The higher costs of lending to SMEs and the greater risks involved are often reflected in higher interest rates and fees for SMEs relative to larger firms, particularly in developing countries (Beck, Demirgüç-Kunt, and Martínez Pería 2008a, 2008b). Figures 3.4 and 3.5 show that, compared with large firms, a greater percentage of SMEs did not apply for a loan because of high interest rates.

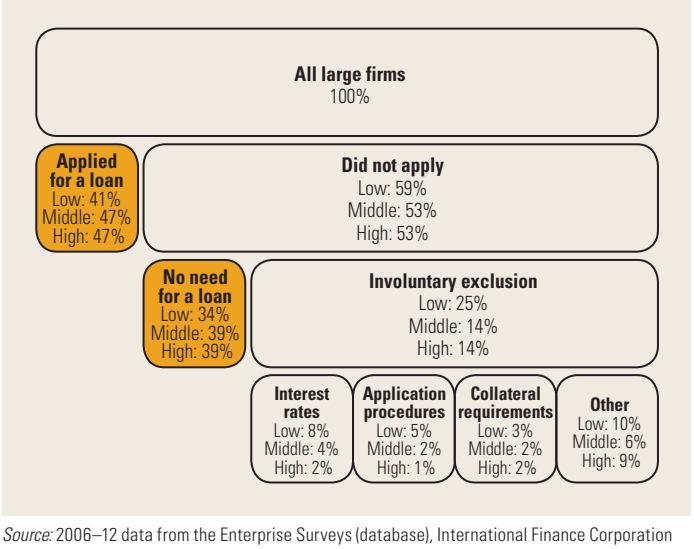
Overall, figure 3.4 illustrates that involuntary exclusion for all reasons—high interest rates, difficult application procedures, and substantial collateral requirements—tends to

FIGURE 3.4 Voluntary vs. Involuntary Exclusion from Loan Applications, SMEs



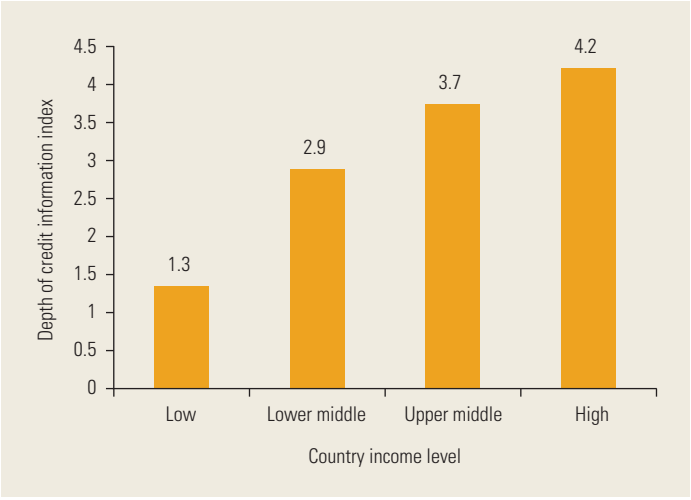
Source: 2006–12 data from the Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.
Note: The figure includes data on 120 countries and relies on the most recent enterprise survey for each country. It covers only small and medium enterprises (SMEs), that is, firms with 5–99 employees. The last row lists the main reason firms did not apply for loans. "Other" reasons for involuntary exclusion include "Did not think would be approved"; "Size of loan and maturity are insufficient"; "It is necessary to make side payments"; and unspecified reasons. "Low, Middle, High" refer to low, middle, and high-income economies, respectively.

FIGURE 3.5 Voluntary vs. Involuntary Exclusion from Loan Applications, Large Firms



Source: 2006–12 data from the Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.
Note: The figure includes data on 120 countries and relies on the most recent enterprise survey for each country. It covers only large firms, that is, firms with 100+ employees. The last row lists the main reason firms did not apply for loans. "Other" reasons for involuntary exclusion include "Did not think would be approved"; "Size of loan and maturity are insufficient"; "It is necessary to make side payments"; and unspecified reasons. "Low, Middle, High" refer to low, middle, and high-income economies, respectively.

FIGURE 3.6 The Depth of Credit Information



Source: 2012 data from Doing Business (database), International Finance Corporation and World Bank, Washington, DC, http://www.doingbusiness.org/data.
Note: The figure shows average values across all countries in each income group. The depth of credit information runs from 0 to 6; the higher values indicate the availability of more comprehensive credit information. The index measures rules and practices affecting the coverage, scope, and accessibility of the credit information available through either a public credit registry or a private credit bureau.

be more prevalent in low- and middle-income than in high-income countries. This pattern may reflect the fact that high-income countries have more financial sector infrastructure to mitigate the principal-agent problems that SMEs face. For example, the World Bank's Doing Business database shows that countries with higher income levels have more comprehensive credit information available through a credit reporting system (figure 3.6). Other reasons why involuntary exclusion varies across countries include the structure of economies, competition in the banking sector, and the extent of government borrowing. An analysis of the obstacles to bank financing among SMEs in African countries highlights that the share of SME lending in bank portfolios varies between 5 and 20 percent and that contributing factors are the structure and size of the economy, the extent of government borrowing, the degree of innovation introduced by entrants to financial sectors, the state of the financial sector infrastructure, and the enabling environment (box 3.4).

In sum, a sizable portion of SMEs in developing economies are credit constrained because of principal-agent problems (and the lack of financial infrastructure to mitigate these problems). Country studies show that relieving the credit constraint can foster SME growth. The following subsections discuss private and public sector actions that can relieve the credit constraint on SMEs.

Private sector initiatives to expand SME lending

In some countries, banks have developed innovative strategies for lending to SMEs. In Argentina and Chile, for example, banks often seek out creditworthy SMEs through client relationships with large firms. They ask their large clients for references on their most dependable buyers and suppliers, which, in many cases, are SMEs. Banks in Argentina and Chile perceive the SME sector as large, unsaturated, and possessing good prospects (de la Torre, Martínez Pería, and Schmukler 2010b). This interest in SME lending seems to be at least in part an outcome of strong competition in other market segments, such as corporate and retail lending, that is, banks may make more of an effort to overcome market failures related to SME lending if they are pushed to seek out new markets because of competition in existing markets.[14]

An interesting recent development is the fact that banks in emerging markets are increasingly providing nonfinancial services to SMEs (IFC 2012b). For example, banks offer training and consulting services that can improve recordkeeping among SMEs, thus permitting banks to assess more easily the creditworthiness of these SMEs. In addition, a majority of these nonfinancial services are managed by SME account managers, allowing them to obtain detailed information about the business, financial situation, and banking needs of the SMEs. This business model mitigates information asymmetry problems as banks gain more accurate information on SME loan applicants. For instance, the Turkish Bank TürkEkonomiBankası has successfully used nonfinancial services to expand its SME lending. Starting in 2005, the bank developed and implemented training, consulting, and information-sharing services for

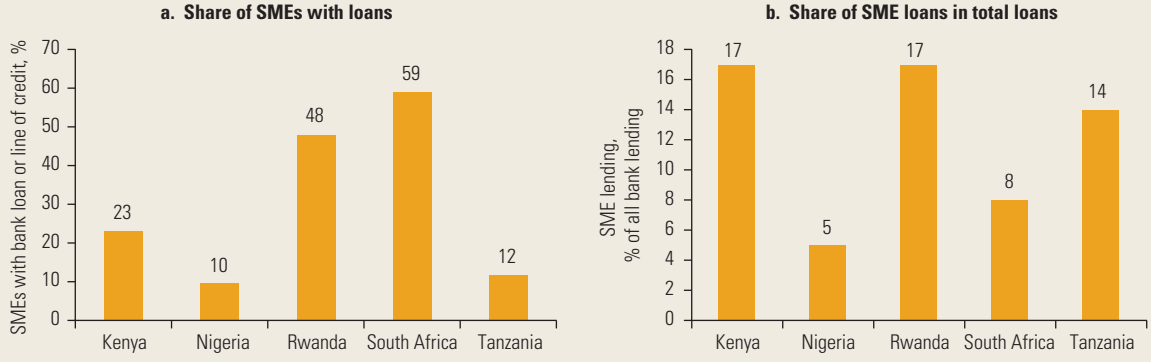
BOX 3.4 Financing SMEs in Africa: Competition, Innovation, and Governments

Access to finance has been identified as the most binding constraint on SME growth in Africa in the World Bank enterprise surveys.[a] Research on the financing of SMEs in Kenya, Nigeria, Rwanda, South Africa, and Tanzania has sought to explore this issue, analyzing both the supply and demand sides of SME finance (Berg and Fuchs 2013). The supply-side studies consist of surveys of commercial banks and other formal financial institutions to understand their involvement with SMEs and their business models for serving this segment. The supply-side studies are comparable to previous World Bank surveys (such as Beck and others 2008; de la Torre, Martínez Pería, and Schmukler 2010a; Rocha and others 2010; Stephanou and Rodriguez 2008; World Bank 2007b, 2007c). In each country, banks were surveyed and interviews held with a majority of the respondents. For the demand-side surveys, either new data were collected to construct a panel of SMEs from the latest enterprise survey (Nigeria and South Africa), or data from the enterprise survey were used if recent data were available or still being collected (Kenya, Rwanda, and Tanzania).

Data from the demand-side surveys show that the use of bank financing among SMEs varies considerably among the countries examined, though the data refer to different years (figure B3.4.1, panel a). According to the commercial bank surveys, the share of SME lending in the overall loan portfolios of banks ranges between 5 and 20 percent. While the definitions of SMEs certainly differ across countries, banks in Kenya, Rwanda, and even Tanzania seem to be more involved with SMEs in terms of the share of loans going to SMEs relative to the corresponding shares at banks in Nigeria and South Africa (figure B3.4.1, panel b). This can partly be explained by the size of bank lending portfolios, which is largest in South Africa, implying that a lower share of the loan portfolio is still a sizable investment in SME lending. Apart from this, the reasons for the differences across countries vary, but key contributing factors are the structure of the economy, the extent of government borrowing, the degree of innovation in SME lending models as practiced by domestic financial intermediaries or foreign entrants, and the state of financial sector infrastructure and the enabling environment.

The five countries in which the SME finance studies were undertaken—Kenya, Nigeria, Rwanda, South Africa, and Tanzania—differ in economic profile. South Africa is the largest economy in Africa. Nigeria depends heavily on the oil and gas sectors. Kenya has a reasonably well-diversified economy and a well-established layer of medium and larger

FIGURE B3.4.1 Financing Small and Medium Enterprises in Africa



Sources: Panel a: Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org; additional small and medium enterprise (SME) surveys (see the text). Panel b: SME finance surveys (see the text).

(box continued next page)

BOX 3.4 Financing SMEs in Africa: Competition, Innovation, and Governments *(continued)*

companies. Rwanda and Tanzania have considerably smaller economies. Commercial banks in Nigeria focus their lending on the oil, gas, and telecommunications sectors and the associated value chains, while, in Rwanda and Tanzania, banks need to lend to SMEs simply because of a lack of alternatives.

The extent of government borrowing has led to the crowding out of the private sector, especially in Nigeria, but also in Tanzania, where banks continue to hold a sizable proportion of their balance sheets in government securities. Particularly in smaller financial systems with weaker legal and regulatory structures and capacity, there is a strong relationship between the willingness of banks to lend to private enterprises and the availability and yields of investment opportunities perceived as safer, such as government securities.

A strong determinant of the involvement of banks with SMEs is the degree of competition in the market and the innovation introduced either by domestic institutions or foreign entrants. Competition in the SME market is strongest in Kenya, where a large number of commercial banks target different market segments. The difference between Kenya and most other African countries is that innovation in Kenya started through a combination of microfinance-rooted institutions scaling up to become commercial banks and innovative lending models and technology in the retail banking segment, most notably Equity Bank. The innovations pioneered by Kenyan banks have spread to other countries as banks expand their footprint in the East African Community and beyond. The studies outlined above show that competition among banks for SME clients and retail customers has increased in Rwanda because of the entrance of Kenya-based banks in the market, while the availability of innovative distribution channels such as agency banking has expanded as well. In South Africa, in contrast, four big banks dominate the financial sector, collectively holding about 80 percent of bank assets and covering the market for (cheap) retail deposits. The market concentration has affected innovation because competitors face difficulty growing in this market.

Evidence from the five SME finance studies above suggests that competition, especially through innovators, can have a large impact on the frontier lending of banks. While competition and innovation cannot be introduced by government directive, encouraging innovation (for example, by allowing agency banking) or a supportive regulatory environment for MFIs (to boost competition from within the lower end of the market) is within the realm of possibility of a regulatory authority. Competition is required to move commercial banks out of their comfort zone in countries such as Nigeria, where high interest rates on government securities provide a disincentive to intensify lending to SMEs. In countries with lower yields on government securities, the incentives are much greater for banks to expand their lending to SMEs, and, if knowledge is transferred in such circumstances, as was the case in Rwanda, SME lending expands.

While there seems to be a role for government to encourage lending to SMEs in markets where that development has not yet taken place, providing an environment conducive to lending seems to be crucial. Ensuring that an effective credit bureau is in operation and that the securitization and realization of (movable) collateral are efficient is a fundamental challenge in a number of countries. The reforms in financial infrastructure in Rwanda, for instance, have been appreciated as a positive development by the banking sector and have led to an increase in the use of movable assets to secure SME loans and to a general expansion in lending to the sector.

a. Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.

SMEs with the goal of building a client base of healthy businesses, gaining new SME clients, promoting customer loyalty, and reducing the credit risk in the SME sector. The number of the bank's SME clients rose from 20,000 in 2005 to 700,000 in 2011, and the share of SME loans in the total loans of the bank grew from 25 percent in 2006 to 44 percent

in 2011, while loan delinquency rates in the bank's SME portfolio declined.[15] Driven by the success in Turkey, BNP Paribas (one of the Turkish bank's larger shareholders) replicated some of the bank's nonfinancial services in Algeria and is now also seeking to replicate the model in European markets.[16]

Some banks take advantage of cross-selling opportunities with SMEs by providing checking accounts, transaction banking services, and cash management services. Through these services, the banks develop a relationship with the SMEs and learn about them, which can facilitate lending to these SMEs in the future. For example, ICICI Bank in India currently derives most of its SME revenues through deposits and other nonlending products. However, its lending revenues are growing quickly as the deposit-only clients begin to take out loans (IFC 2010a).

Direct state interventions

Despite the promising results in some countries, private sector action may not always be sufficient to lessen the credit constraint on SMEs, and policy makers often pursue SME financing policies to promote firm growth and employment creation. Commonly used policies include direct state intervention in the form of directed credit, subsidies, or state-bank lending to SMEs. The success of these programs tends to be rare, but exceptions exist. For example, an impact evaluation in India has analyzed a program that requires banks to lend a share of their credit to small firms. The study (Banerjee and Duflo 2012) has found positive effects on the sales and profit growth of the firms, namely, Re 1 of directed lending boosted profits before interest payments by Re 0.89. However, it is not clear to what extent this finding applies to other contexts because the study examined only one bank, which has been consistently rated among the top five public sector banks by a major business magazine. The *Global Financial Development Report 2013* discusses the issue of state ownership in banks and other state interventions more broadly by conducting a comprehensive literature survey and concludes that state banks have generally been inefficient in allocating credit because they often serve political interests (World Bank 2012a). Focusing on the governance of state-owned banks may help policy makers address the inefficiencies associated with these institutions. However, governance reforms are particularly challenging in weak institutional environments. In addition, the bulk of the empirical evidence suggests that the government ownership of banks in developing economies has had negative consequences for long-run financial and economic development.

Policy makers can encourage banks to lend to SMEs by taking on some of the credit risk through guarantees either for a portfolio of loans or for individual loans. Both governments and international organizations offer such risk-sharing arrangements. IFC provides risk-sharing facilities whereby IFC reimburses a bank for a portion of the principal losses incurred on a portfolio of SME loans.[17] For example, as part of the Global SME Finance Initiative, IFC set up a $22 million risk-sharing facility with Access Bank in Nigeria in December 2012. The project aims to increase access to finance among SME distributors of Coca-Cola's Nigeria bottler. Eligibility for the risk-sharing facility is based on agreed criteria, and IFC does not review individual loans at origination. Other schemes guarantee individual loans. In these schemes, the guarantor, for instance, the government, pledges to repay a fixed percentage of individual loan amounts to the relevant bank in case of borrower default. The scheme administrator typically reviews and approves individual credit guarantee applications on a case-by-case basis.[18]

Risk-sharing arrangements can increase lending to SMEs by lowering the amount of collateral that an SME needs to pledge to receive a loan because the guarantor provides part of the collateral. Similarly, for a given amount of collateral, a credit guarantee can allow more risky borrowers to receive a loan because the guarantee lowers the risk of the loan.

In practice, a concern is that risk-sharing arrangements may not lead to additional

lending. Instead, banks may use guarantees to lower the risk on loans that they would have issued even in the absence of the guarantees. Rigorous impact evaluations in Chile and France have assessed the extent to which risk-sharing arrangements lead to additional SME lending and whether this promotes firm growth.[19]

In Chile, the Fondo de Garantía para Pequeños Empresarios (the guarantee fund for small businesses) is managed by a large public bank (BancoEstado) that provides guarantees for loans to small firms. The fund does not evaluate guaranteed loans on a case-by-case basis, but sets broad eligibility criteria and lets participating banks decide which loans to guarantee. Two separate studies find that the fund has generated additional loans for new and existing bank clients (Cowan, Drexler, and Yañez 2009; Larraín and Quiroz 2006). Moreover, the additional loans seem to have led to higher sales and profit growth among the firms receiving the guarantees (Larraín and Quiroz 2006). However, another study questions whether the fund truly leads to additional lending (Benavente, Galetovic, and Sanhueza 2006). It points out that approximately 80 percent of the firms that participate in the fund had had bank loans in the past and that many of these firms had previously received guarantees.

Lelarge, Sraer, and Thesmar (2008) study the impact of the SOFARIS credit guarantee scheme in France that reviews and covers individual loans. The authors find that obtaining a loan guarantee lowers the cost of capital among firms and helps the firms grow more rapidly. However, the loan guarantee also increases the probability of default. Higher default may be a reflection of the riskier, but potentially more profitable investments made by the firms because of the loans. The investments may be beneficial from a policy perspective and could justify the loss of some guarantee amounts. On the other hand, guarantee schemes also lower the repayment incentives of firms, and the schemes need to be designed carefully and managed effectively to prevent large-scale losses.

Research and practitioner experience suggest that best practices for credit guarantee schemes include (1) leaving credit assessments and decision making to the private sector, (2) capping coverage ratios and delaying the payout of the guarantee until recovery actions are taken by the lender so as to minimize moral hazard problems, (3) pricing guarantees to take into account the need for financial sustainability and risk minimization, and (4) encouraging the use of risk management tools.[20] However, many existing schemes do not follow best practices, which likely explains their limited effectiveness in promoting SME lending. Saadani, Arvai, and Rocha (2011) review the design of credit guarantee schemes in the Middle East and North Africa. They find that guarantee schemes in the region look financially sound, but tend to focus on larger loans and are not yet reaching smaller firms. Most schemes have room to grow, but this growth should be accompanied by an improvement in key design and management features, as well as the introduction of systematic impact evaluations.

In summary, directed lending programs and risk-sharing arrangements can have positive effects on the access of SMEs to finance and growth, but it is a challenge to design and manage such initiatives. These concerns are even greater in weak institutional environments where good governance is difficult to establish and SMEs face particularly severe financial constraints.

Market-oriented government policies

Policy makers can take other, more market-oriented actions to promote SME lending. Such actions aim to improve financial sector infrastructure to mitigate the principal-agent problems faced by SMEs. They include (1) putting in place adequate movable collateral laws and registries; (2) fostering the availability of credit information by improving corporate accounting and by supporting information sharing among various actors, including banks, utility companies, and suppliers; and (3) strengthening the legal, regula-

tory, and institutional infrastructure for factoring and leasing.

Movable collateral laws and registries

To compensate for missing information on the creditworthiness of SMEs, lenders may ask for collateral to guarantee a loan. Data from the World Bank enterprise surveys show that about 79 percent of loans or lines of credit require some form of collateral.[21] Movable assets, as opposed to fixed assets such as land or buildings, often account for most of the capital stock of firms, particularly SMEs. For example, in the developing world, 78 percent of the capital stock of businesses is typically in movable assets such as machinery, equipment, or receivables, and only 22 percent is in immovable property (Alvarez de la Campa 2011). Yet, banks are often reluctant to accept movable assets as collateral because of nonexistent or outdated secured transaction laws and collateral registries. Many legal systems place unnecessary restrictions on creating collateral, leaving lenders unsure whether a loan agreement will be enforced by the courts. For example, about 90 percent of the movable property that could serve as collateral for a loan in the United States would likely be unacceptable to a lender in Nigeria (Fleisig, Safavian, and de la Peña 2006).

Reforming the movable collateral framework may enable firms to leverage their assets to obtain credit. Canada, New Zealand, and the United States were the first to reform the legal system governing the use of movable property as collateral and now have among the most advanced systems. Some developing countries have also successfully reformed these systems, including Afghanistan, Albania, Bosnia and Herzegovina, China, Ghana, Mexico, Romania, and Vietnam. The reformed systems have three common features: (1) laws do not impose limits on what can serve as collateral; (2) creditors can seize and sell collateral privately or through summary proceedings, dramatically reducing the time it takes to enforce a collateral agreement; and (3) secured creditors have first priority to their collateral and can verify their priority through an electronic archive of security filings (Fleisig, Safavian, and de la Peña 2006).[22]

Priority rules work best if a country has a single registry for pledges of collateral so that prospective lenders can easily establish whether there is a prior claim on an asset (Fleisig, Safavian, and de la Peña 2006). A recent study using enterprise surveys for 73 countries finds that introducing movable collateral registries increases the access of firms to finance (box 3.5). There is also some evidence that this effect is larger among smaller firms. Overall, sound collateral laws and registries can allow firms to use their own assets to guarantee loans and may reduce the need for publicly sponsored guarantee schemes.

Credit information

An additional crucial component of the financial infrastructure that can support SME financial inclusion is credit information. Such information encompasses any data that can help a lender decide whether a firm is creditworthy. It can be used to generate credit scores predicting repayment on the basis of borrower characteristics. In the United States, the use of credit-scoring technology for small business loans has led to an expansion in the availability of loans for small and riskier firms even by larger banks that would otherwise have shied away from this segment (Berger, Frame, and Miller 2005). Some countries, such as India, have introduced credit-rating agencies that focus specifically on small firms (GPFI 2011f). The SME Rating Agency of India Limited provides credit ratings for microenterprise and SME loan applicants for a fee (equivalent to roughly $900, with variations depending on turnover). The Indian government covers a large part of this fee to subsidize the use of credit scoring.

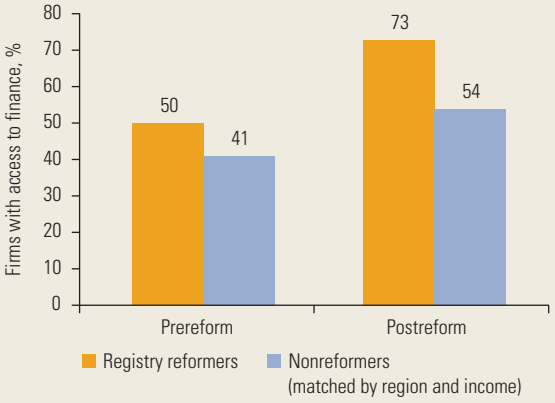
Credit information can be supplied from numerous sources, including firm financial statements, credit registries or bureaus, and supplier networks. Firm financial statements and official documentation are essential parts of loan applications at many banks, but the

BOX 3.5 Collateral Registries Can Spur the Access of Firms to Finance

To reduce the asymmetric information problems associated with extending credit and to increase the probability of loan repayment, banks typically require collateral from their borrowers. Movable assets are the main type of collateral that firms, especially those in developing countries, can pledge to obtain financing. However, lenders in developing countries are usually reluctant to accept movable assets as collateral because of the inadequate legal and regulatory environment in which banks and firms coexist. Specifically, three conditions are required before banks are able to accept movable assets as collateral: the creation of security interest, the perfection of security interest, and the enforcement of security interest (Fleisig, Safavian, and de la Peña 2006). The movable collateral registry is a necessary component because it allows for the perfection of security interest, meaning that security interest becomes enforceable with regard to other creditors or third parties rather than merely between the lender and the borrower. Specifically, the registry fulfills two essential functions: to notify parties about the existence of a security interest in movable property (existing liens) and to establish the priority of creditors with respect to third parties (Alvarez de la Campa 2011). Therefore, without a well-functioning registry of movable assets, even the best secured transaction laws could become completely ineffective.

Using firm-level surveys for up to 73 countries, Love, Martínez Pería, and Singh (2013) explore the impact of the introduction of collateral registries of movable assets on the access of firms to finance. They compare the access of firms to finance in seven countries that introduced collateral registries of movable assets against three control groups: firms in all countries that did not implement collateral reform, firms in a sample of countries matched by location and income per capita with the countries that introduced movable collateral registries (figure B3.5.1), and firms in countries that introduced other types of collateral reforms, but did not set up registries of movable collateral. Overall, they find that the introduction of movable collateral registries increases the access of firms to finance. There is also some evidence that this effect is larger among smaller firms.

FIGURE B3.5.1 Effect of Collateral Registry Reforms on Access to Finance



Source: Doing Business (database), International Finance Corporation and World Bank, Washington, DC, http://www.doingbusiness.org/data; Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org; calculations by Love, Martínez Pería, and Singh 2013.

quality and reliability of these statements vary across countries and firms. In an effort to standardize financial reporting, the IFRS Foundation develops rigorous international financial reporting standards. Recognizing that the full standards, as well as many national generally accepted accounting principles are complex, the foundation issued self-contained global standards for SMEs in 2009. These SME standards focus on concepts that are most relevant for helping SMEs gain access to capital, such as cash flows, liquidity, and solvency. They also take into account that SMEs often have fewer resources and capabilities than larger firms for the preparation of financial statements (IASB 2012). About 60 countries have adopted the SME standards. However, some countries have adopted a simpler set of obligatory standards because they have concluded that the SME standards of the IFRS Foundation are too costly and burdensome for local and small firms (GPFI 2011f). SMEs often lack sufficient technical knowledge and capacity to prepare sound financial statements. Nonetheless, business development services may help to build capacity in this area. Two

recent studies show that management consulting services can improve accounting and recordkeeping among SMEs (Bloom and others 2013; Bruhn, Karlan, and Schoar 2013). Regulatory reforms that encourage informal firms to register with the authorities can also lead to better information on SMEs.

Credit registries and credit bureaus provide records of past and current loans taken out by firms.[23] These records can help lenders observe whether loans have been repaid successfully and also whether firms have other liabilities that may make them risky borrowers. Cross-country evidence confirms that the availability of detailed information about the borrowing and repayment behavior of prospective clients places banks in a better position to assess default risk, counter adverse selection, and monitor institutional exposure to credit risk (Jappelli and Pagano 2002; Miller 2003; Pagano and Jappelli 1993). Cross-country research also shows that the presence of credit bureaus is associated with lower financing constraints and a higher share of bank financing among SMEs, as well as with a higher ratio of private credit to gross domestic product (Djankov, McLiesh, and Shleifer 2007; Love and Mylenko 2003). In addition, using firm-level survey data from 24 transition economies, Brown, Jappelli, and Pagano (2009) find that information sharing by banks is associated with the enhanced availability and lower cost of credit to firms. This correlation is stronger for opaque firms than transparent ones and stronger in countries with weak legal environments than in those with strong legal environments. Finally, Beck, Lin, and Ma (2010) show that more effective credit information sharing is associated with lower tax evasion (and thus informality), particularly among smaller firms and firms requiring more external finance. The *Credit Reporting Knowledge Guide,* "The General Principles for Credit Reporting," and the *Global Financial Development Report 2013*, the *Credit Reporting Knowledge Guide*, provide detailed information on credit reporting institutions and actions that governments can take to foster the development of these institutions (IFC 2012a; World Bank 2011a, 2012a).[24]

Another valuable source of credit information is buyer-supplier relationships. Buyer or supplier credit, also called trade credit, is an important channel of external financing for firms (Demirgüç-Kunt and Maksimovic 2001). For example, suppliers often allow buyers to pay for goods a number of months after delivery. In this way, large suppliers with sufficient liquidity and access to loans can act as a financial intermediary for firms that are small or credit constrained (Marotta 2005; McMillan and Woodruff 1999). Trade credit has been shown to act as a substitute for bank credit during periods of monetary tightening or financial crisis (Choi and Kim 2005; Love, Preve, and Sartia-Allende 2007).

Suppliers often have detailed records on how diligent buyers are in repaying trade credit. An innovative credit information scheme in Peru uses a large technology platform to process and analyze repayment data held by suppliers. The platform generates payment reports—similar to those provided by a credit bureau, with proof of historical fulfillment of payments—on the firms that participate in the scheme. Firms can then use these independent payment reports when they approach banks, improving their chances of receiving bank credit.[25] In addition to providing repayment histories, the project also encompasses a factoring scheme that can channel more supplier credit to firms.

Insolvency regimes

Insolvency regimes are a key aspect of financial infrastructure. They can promote access to finance among SMEs by supporting predictability in credit markets. An effective insolvency framework can help regulate efficient exits from the market, ensure fair treatment through the orderly resolution of debts incurred by debtors in financial distress, and provide opportunities for recovery by bankrupt entities and their creditors (Cirmizi, Klapper, and Uttamchandani 2012).

Many countries have substantial legal gaps such that insolvency frameworks are unable to deal with SMEs effectively (IFC 2010b). If legal frameworks are absent, SMEs can be negatively affected in a number of ways. First,

SMEs that are fundamentally viable, but face short-term liquidity crises have no safety net. The SME facing financial distress cannot seek temporary protection from its creditors, cannot propose a plan of reorganization, and cannot compromise debt to achieve greater returns to all creditors. Second, in the event of liquidation, SMEs would find it difficult to go through an orderly and transparent process to repay creditors and return productive assets into the economy as quickly as possible. Third, if an SME fails, its outstanding obligations will be the obligations of the individual entrepreneur, in perpetuity, unless specifically forgiven by creditors. The absence of effective exit mechanisms can thus lock the productive assets of SMEs in a legal limbo, making reentry into the marketplace problematic and inhibiting entrepreneurship.

An efficient and modern framework for SME insolvency should include fast-track, expedited bankruptcy provisions in unified or corporate bankruptcy laws. It should provide alternative dispute resolution frameworks, such as mediation and conciliation, to improve efficiency. Legislation on SME insolvency should specify a clear and transparent process that entrepreneurs can use to rescue their troubled businesses. This can include stays on proceedings by creditors and the ability of SMEs to propose restructuring plans to creditors. In the event of business failure, the legislation should set out a clear method for liquidating the business, repaying creditors in a timely manner, and discharging the remaining debt. There should be established punishments for fraudulent activities, such as the act of dissipating the assets of a business so that creditors cannot recover their claims and for negligently incurring obligations from creditors if the entrepreneur knew, or should have known, that the business was insolvent. These critical protections for creditors can help ensure that SMEs continue to be able to access credit at reasonable rates (IFC 2010b).

Payment services

Although data are lacking, and discussion on this topic is at an early stage, the issue of supporting payment services for SMEs has garnered growing interest. Among individuals, payments are an entry point into the formal economy and potentially regulated financial services. Firms have specific needs that should be taken into account in the design of payment systems and instruments, and they depend closely on banks for payment solutions. An interesting question that has emerged in the early policy discussions is whether this makes SMEs a captive market or whether they can seek alternative solutions elsewhere, for example, in software companies. The migration to electronic payments is an established trend in the corporate world. Key benefits seem to be standardization (that is, adopting common formats that can be processed automatically to execute instructions and provide ancillary data), greater efficiency, and savings in time and resources (according to evidence in the World Bank's Doing Business database).[26] However, SMEs are lagging in the paperless trend. Scale, cultural, and cost factors could limit the use of electronic solutions by SMEs, as well as regulatory aspects. In some cases (Italy is an example), government legislation plays an active role in promoting the adoption of new technologies such as e-invoicing.

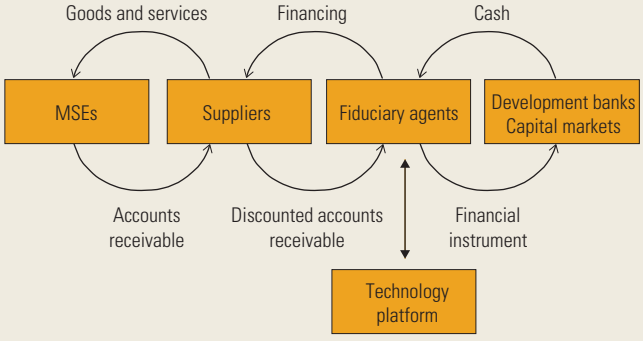
Factoring

Take the case of an SME that provides goods or services to a large buyer, but the large buyer only pays 30 to 90 days after delivery, while the SME needs working capital throughout the production cycle. Reverse factoring schemes, such as NAFIN (Nacional Financiera) in Mexico, allow SMEs to address this problem by transferring outstanding bills to a factor. The factor pays the SME immediately (at a discount) and later collects the full outstanding amount directly from the large buyer (Klapper 2006). Because, in this case, the large buyer is the liable party, the factor can issue credit at better terms than it would grant if the more risky SME were the borrower. The scheme in Peru described in box 3.6 works differently. There, a large supplier pools the invoices from many small buyers. Risk pooling allows the package of bills to be

BOX 3.6 Case Study: Factoring in Peru

The World Bank is currently implementing a factoring scheme in Peru (figure B3.6.1). Factoring is a financial transaction in which a firm sells its creditworthy accounts receivable to a third party, the factor, at a discount (equal to interest, plus service fees) and receives immediate cash. The World Bank scheme uses a financial structure and a technology platform to purchase accounts receivable from large companies that supply many micro and small enterprises (MSEs). Doing so frees up working capital that the suppliers can use to extend more credit to MSEs, helping to solve the problem of access to finance. It also benefits the suppliers and other stakeholders.

FIGURE B3.6.1 Actors and Links in the Financing Scheme, Peru



Because of the close relationship between large suppliers and their MSE customers, the suppliers can provide a substantial amount of credit to MSEs at relatively low risk and low cost. The accounts receivable portfolios of these large suppliers are diversified and carry low risk, qualities that are the building blocks of the financing scheme.

The scheme, which has been developed with financing from FIRST (Financial Sector Reform and Strengthening Initiative), involves the creation of a fiduciary agent, such as a trust, to purchase accounts receivable from corporate suppliers on a revolving basis. During the initial implementation in Peru, the local development bank, COFIDE, will fund the trust. Once the scheme is implemented, the fiduciary agent can raise funds on capital markets. The scheme minimizes the risks involved in the transaction through its financial structure and the technology platform used to manage the flow of receivables.

Invoice factoring has several benefits for MSE customers. First, participating MSEs receive more financing from suppliers, which they can use to increase sales. In addition, the scheme helps MSEs obtain better credit terms elsewhere because they build credit histories that are valuable when they approach other financial intermediaries. Large suppliers benefit from transferring a portion of their accounts receivable portfolio to a third party, improving their financial ratios, that is, factoring improves the liquidity of suppliers by substituting cash for accounts receivable. The suppliers can use this additional (off-balance-sheet) financing to raise the sales of their products and services by providing additional credit to their MSE customers without negatively affecting working capital. In addition, because of the guarantee structure, the financing cost implicit in the factoring scheme will usually be lower than traditional bank financing. Moreover, reducing the cost of funding will boost the rate of return on assets among suppliers. Finally, the system will help suppliers achieve better risk management of their client MSEs.

The World Bank, COFIDE, and Capital Tool Corporation, working directly with structuring, legal, and tax advisers, have implemented a pilot version of this factoring scheme in Peru. In the transaction, COFIDE and Axur (a local MSE supplier)—through a fiduciary agent—created a special-purpose vehicle,

(box continued next page)

BOX 3.6 Case Study: Factoring in Peru *(continued)*

which issued a term note that COFIDE purchased, providing $5 million in capacity for financing MSEs. The vehicle used the proceeds to purchase preselected accounts receivable from Axur on a revolving basis. The transaction would extend financing to approximately 1,000 MSEs, discounting invoices of $500, on average, and 21 days maturity. In subsequent transactions, the rating agencies will determine the risk of the financial instrument to be issued by the vehicle. This rating would allow the vehicle to sell participations in the financing to local institutional investors. At that time, it could cover 25,000 client MSEs, for a total funding amount of $30 million–$40 million.

This factoring scheme was one of 14 winners of the G-20 SME challenge award for finding new ways to finance MSEs and received a grant to expand the scheme. The solution also attracted interest from other multilateral lending agencies. The Inter-American Development Bank has approved a grant to expand the scheme by incorporating the portfolio of local MFIs. Colombia and Paraguay have also expressed interest in the scheme.

associated with financing at better terms than each individual bill, providing additional liquidly to the large supplier that can be passed on to the small buyers.

Factoring is used in developed and developing countries around the world, but it requires an appropriate legal framework (GPFI 2011f; Klapper 2006). For instance, the law should allow firms to transfer their receivables to factors, giving factors the right to enforce payment without consent of the firm. The *Legislative Guide on Secured Transactions* of the United Nations Commission on International Trade Law (UNCITRAL 2010) includes detailed recommendations on how to set up a legal framework that is amenable to factoring transactions.

Leasing

Another financial product that can improve access to finance among SMEs is leasing (Berger and Udell 2006). Leasing provides financing for assets, such as equipment and vehicles, rather than direct capital. Leasing institutions purchase the equipment and provide it to firms for a set amount of time. During this time, the firms make periodic payments to the leasing institution, typically covering the cost of the equipment and an agreed rate of interest. Leasing thus focuses on the ability of firms to generate cash flows from business operations to service leasing payments, rather than on the credit history of firms or their ability to pledge collateral (Fletcher and others 2005). The ownership of the equipment is often transferred to the firms at the end of the lease period.

Brown, Chavis, and Klapper (2010) show that close to 34 percent of firms in high-income countries use leasing, compared with only 6 percent in low-income countries. They also find that a strong institutional environment is associated with the greater use of leasing. Fletcher and others (2005) discuss different variations of leasing and provide a manual on leasing legislation, regulation, and supervision based on international best practices and IFC's technical assistance experience (see also GPFI 2011f for more information on standards, guidelines, and good practices).

In summary, mounting evidence indicates that movable collateral frameworks and registries, as well as credit information systems, can increase lending to SMEs. Factoring and leasing are two alternative ways of channeling financing to SMEs. Currently, there is little evidence documenting the impact of these two financial instruments on SME invest-

ment and growth. More research is needed in this area.

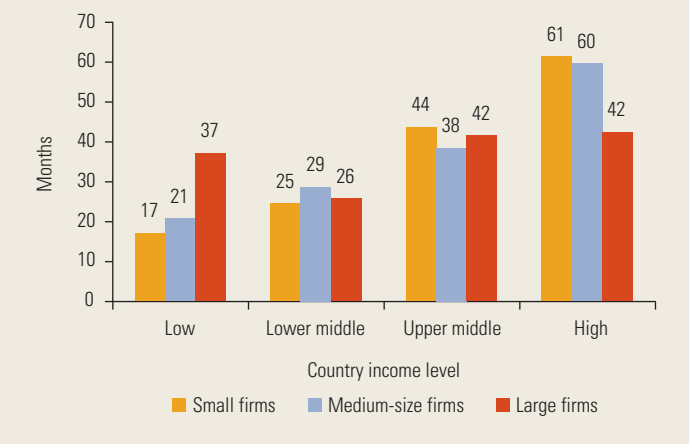
Dealing with risk

So far, the discussion has largely focused on bank credit for SMEs, but some investments that SMEs make may require other sources of financing, such as private equity. In particular, banks may be reluctant to finance risky investments. This reluctance may not arise from the creditworthiness of the SMEs, but from the probability of failure of the risky, but potentially profitable investments. For example, banks may be reluctant to lend to a firm that considers an investment with an 80 percent chance of success and a 20 percent chance of failure, especially if the firm has limited liability. If the firm does not have limited liability, the owner will be reluctant to invest because the owner will lose personal assets in the event the project fails. This problem may be salient in countries in which other mechanisms for dealing with risk, such as bankruptcy protection, are weak. Innovative insurance products may provide one way of mitigating the investment risk affecting firms.

Private equity for SMEs

Private equity financing can encourage firms to make risky investments because it allows the firm to share the risk with a private equity investor. Another advantage of private equity is that it can provide financing that is longer term relative to loans, particularly for riskier and more opaque borrowers, because banks often offer such borrowers shorter-term loans, which then need to be renewed or renegotiated. Demirgüç-Kunt and Maksimovic (1999) use data from 30 developed and developing countries during 1980–91 to show that small firms have less long-term debt as a proportion of total assets and total debt compared with larger firms. They also find that firms in developed countries hold a greater proportion of their total debt as long-term debt compared with firms in developing countries. Data from the World Bank enterprise surveys show a similar pattern (figure 3.7). The average loan maturity is only 17 months for small firms in low-income countries, compared with 37 months for large firms in low-income countries, and 61 months for small firms in high-income countries.

FIGURE 3.7 Average Loan Term



Source: Data for 2006, 2007, and 2009 from Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.
Note: The data cover 23 countries. It shows results based on the most recent enterprise survey for each country.

Despite the potential benefits, private equity investment and risk-sharing arrangements may not become more common because they can also lead to moral hazard. With risk sharing, the SME owner has less incentive to ensure that investments are successful because the SME's stake in the investment is less than the full amount. In fact, in some developing countries, equity investments in SMEs are supplied by friends and family, who may have good information about the SME owner's intentions and actions and who can rely on the personal relationship as an enforcement mechanism (for example, see Allen and others 2006). However, not all SMEs have access to sufficient funding from friends and family. This is a case where private equity investors can step in. To mitigate moral hazard, private equity investors rely on contracting contingencies and securities that shift control rights depending on the performance of the investment. Because these contracts require sound legal enforcement, private equity financing is more likely to flourish in countries with strong

enforcement mechanisms (Lerner and Schoar 2005). Governments can thus promote the formation of a private equity industry by putting in place a strong legal framework that allows for efficient contract enforcement.

Private equity investors often supply more than funding to the firms they support. They rely on extensive industry experience to offer market knowledge and back-office services that can help firms make large changes in their business. This market knowledge and expertise may be scarcer in developing countries, which is another reason why private equity investment may be more difficult to find in these economies.

Some governments and international organizations have taken steps to address the shortfalls in private equity investment in developing countries. For example, a major attempt to stimulate the private equity industry in Nigeria was the Small and Medium Industry Equity Investment Scheme, which required banks to set aside 10 percent of their pretax profits for equity investments in SMEs. Recently, the Nigerian government also changed pension regulations to allow up to 5 percent of pension assets to be invested in private equity. However, some of these funds have remained uninvested in part because of a high prevalence of fraud and a lack of SME capacity and transparency. In case studies conducted by the World Bank, a private equity fund manager pointed out that his staff visits the businesses they invest in at least once a week and calls them every day to stay as involved in the business as possible and guard against fraud (Berg and others 2012). It was also mentioned that most Nigerian entrepreneurs do not understand private equity as a source of financing for growing their business, indicating a need for training and capacity building. A case study in Rwanda uncovered similar challenges and also highlighted that many entrepreneurs are reluctant to cede ownership to external private equity investors (Abdel Aziz and Berg 2012).

Another example from a developed economy is the U.S. Overseas Private Investment Corporation, which is the U.S. government's development finance institution.[27] It makes investments in private equity funds in emerging markets in the form of senior secured loans. These types of loans are senior to all other claims against the borrower, which means that, in case the borrower goes bankrupt, the senior secured loan is the first to be repaid before all other interested parties receive repayment. Since 1987, the corporation has committed $4.4 billion to 63 private equity funds in emerging markets. These funds have invested $5.6 billion in more than 570 firms across 65 countries.

IFC recently launched the SME Ventures Project to provide risk capital and support to SMEs in International Development Association countries. Under the program, IFC provides private equity funds that are managed through independent investment managers, who are selected on a competitive basis. The program thereby helps develop the capacity of investment managers to invest risk capital successfully in small businesses in these countries. Capacity building is a crucial component of the project. IFC provides financing and technical assistance to fund managers in areas such as partial support for start-up and operational costs, legal structuring and registration, and capacity building among new staff. SME Ventures also offers advisory services to the SME business community. SMEs selected for private equity investments receive tailored business support to prepare them for the investment, as well as during the life of the investment. These services include business planning, market research, governance, management information and accounting systems, and upgraded environmental and social standards.

One of the funds created through SME Ventures is the West Africa Fund for Liberia and Sierra Leone. It currently has an approved investment portfolio of 19 projects worth $7.4 million in different sectors, including food processing, transportation, construction, health, and light manufacturing. To help managers identify investment opportunities, the IFC advisory services team conducted market surveys and identified more than 240 high-potential SMEs in Liberia and Sierra Leone. In a first phase, 60 of these SMEs developed

business plans, and the 20 best plans were submitted to the West Africa Fund, facilitating five investment appraisals. In a second phase, the remaining high-potential SMEs are also likely to develop business plans, which can lead to more appraisals and investments.

In conclusion, SMEs that are looking to make risky investments with potential high returns may not be able to obtain bank loans to fund these projects. Private equity investors can step in to share the risk and potential rewards. However, these types of investments rely on sound legal systems for contract enforcement and previous business expertise, which may be lacking in developing countries. International agencies have launched projects to help develop local private equity industries. This is another area where research can help to document the extent to which these projects promote SME growth.

Can stock markets alleviate the financing constraints on SMEs?

Stock markets can be a potential source of financing for some SMEs, but they are associated with a number of challenges. According to a 2010 survey of the World Federation of Exchanges, 44 percent of all listed companies are microcaps, which are defined as companies with market capitalization below $65 million, but these companies account for only 1 percent of total market capitalization (WFE 2011). Compared with the number of SMEs in the economy, the number of listed microcaps is small. For example, in the European Union in 2008, there were 20 million SMEs (defined here as enterprises with fewer than 250 employees), of which about 220,000 were medium enterprises (between 100 and 250 employees). The number of listed microcaps in the European Union in 2010 was less than 4,000, representing only about 1 percent of medium enterprises and a tiny fraction of all SMEs. Between 2007 and 2010, the number of microcaps changed at rates that were similar to the change in the number of larger listings (increasing in the Americas and declining in Europe), suggesting that the access of SMEs to stock market finance is not catching up to the access experienced by larger firms.

One reason why more SMEs do not list on stock markets is that the fixed costs of an initial public offering (IPO), as well as the costs implied by ongoing reporting requirements, can be high. In some cases, stringent regulations that are intended to safeguard the interests of investors may even debar SMEs from listing on large stock exchanges altogether (Nair and Kaicker 2009). Some countries have created secondary trading exchanges with regulations and requirements specifically adapted to smaller firms, such as AIM in London, NASDAQ in New York, and AltX in South Africa. For example, AIM was launched in 1996, and more than 3,000 firms from across the globe have since listed on the exchange. A crucial component of AIM is the use of nominated advisers (Nomads), companies that specialize in corporate finance. Each firm seeking admission to AIM must work with a Nomad throughout the period of listing on AIM. Nomads provide advice and guidance to firms. They also have a quality control function: they must periodically report information on the firm to AIM. AltX in South Africa uses a similar system. Each company that lists on the exchange needs to obtain a designated adviser who advises the company on its responsibilities during the listing process and on its duty to maintain its status once listed.

There are also instances in which SME exchanges have not been successful. The Over the Counter Exchange of India was established in 1992 as a platform where SMEs could generate equity capital, but it only had 60 listed companies as of March 31, 2012. One factor that has prevented the growth of the exchange is the lack of institutional participation (Nair and Kaicker 2009). Institutional investors, such as pension funds, hold a large fraction of shares in many stock exchanges, and they tend to invest in relatively large firms. Even AIM is dominated by institutional investors, who hold more than 60 percent of AIM-listed companies and also focus on the largest companies listed on AIM, that is, the demand of the investors for stocks

in small companies (microcaps) may be more limited than their demand for stocks in large companies (Nair and Kaicker 2009). In fact, microcaps tend to be illiquid, meaning that the number of trades per listed company is relatively small compared with larger caps. Calculations based on data of the World Federation of Exchanges suggest that enterprises with market capitalization below $200 million made up 64 percent of the world's listed companies in 2011, but accounted for only 14 percent of individual stock market trades and 4 percent of share trading volume. Similarly, a study of listed firms in China and India shows that larger firms are more likely than smaller firms to issue new equity, and the top 10 issuing firms capture a large fraction of the total amount raised through these issues (Didier and Schmukler 2013).

Overall, the extent to which stock markets can be a viable and sustained source of finance for SMEs is thus not clear. In addition, even exchanges such as AIM tend to focus on the most rapidly growing SMEs so that stock markets may not be a financing solution for a broad range of SMEs. However, stock markets can potentially have positive spillover effects on SMEs; for example, if more large firms obtain financing through stock markets, they may need less financing from banks, and banks may expand their SME lending operations.

YOUNG FIRMS: CAN FINANCE PROMOTE ENTREPRENEURSHIP?

While a good deal of policy and research attention has been directed toward the financial inclusion of SMEs, greater emphasis is needed on the financing available to young firms. There are good reasons to focus on SMEs: the evidence shows that a sizable share of the SMEs in developing countries are credit constrained; alleviating these constraints may allow these firms to grow. Policy makers are also often concerned with job creation, and SMEs have traditionally driven job creation in developed countries.[28] However, more recent empirical work, such as the research by Haltiwanger, Jarmin, and Miranda (2010), suggests that (1) start-ups and surviving young businesses are critical for job creation, and (2) there is no systematic relationship between firm size and employment growth after one controls for firm age.

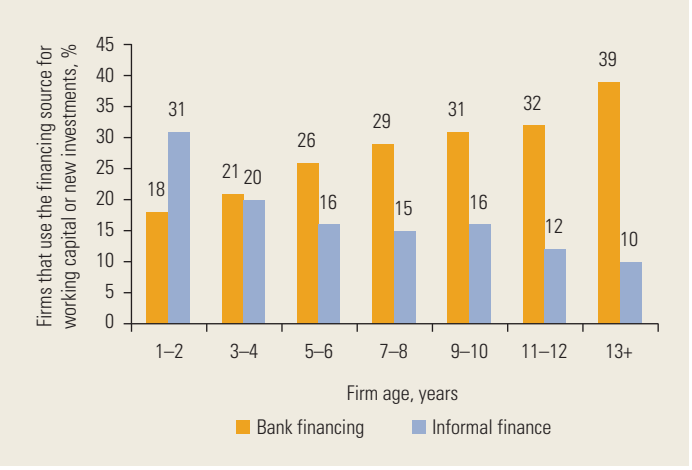
These results do not necessarily apply in developing economies, where firms, especially small ones, face many institutional constraints. Thus, research shows that firm dynamics in India and Mexico are different from the dynamics in the United States: firms grow much more slowly as they age in India and Mexico compared with firms in the United States (Hsieh and Klenow 2012). Ayyagari, Demirgüç-Kunt, and Maksimovic (2011a) study the relationships across firm size, age, and growth using data for 99 economies from the World Bank enterprise surveys. They find that SMEs and young firms exhibit higher job creation rates than large and mature firms, showing that size is still a good predictor of employment growth after they have controlled for age. However, large firms and young firms exhibit higher productivity growth. Overall, these findings suggest that it is important to focus on promoting finance among both SMEs and young firms in developing countries.[29]

The financing challenges faced by young firms

Similar to microenterprises and SMEs, young firms may be credit constrained because of principal-agent problems. Because young firms have not been in the market for long, there is little information on their performance or creditworthiness. Data from the World Bank enterprise surveys on more than 70,000 firms in more than 100 countries show that, in all countries, younger firms rely less on bank financing and more on informal financing from family and friends (figure 3.8). Only 18 percent of firms that are 1 or 2 years old used bank financing, compared with 39 percent of firms that are 13 or more years old. In contrast, 31 percent of firms that are 1 or 2 years old rely on informal sources of finance, such as family and friends, whereas only 10 percent of firms that are 13 or more years old obtain financing from informal sources

(Ayyagari, Demirgüç-Kunt, and Maksimovic 2011a). Potential problems with financing from friends and family include that it might be unreliable, untimely, or bear significant nonfinancial costs (Djankov, McLiesh, and Shleifer 2007). For example, a study of Chinese firms finds that more firms use informal credit than bank credit, but only bank credit is associated with higher growth rates (Ayyagari, Demirgüç-Kunt, and Maksimovic 2010). A study in the United States estimates the impact of formal credit on young firm survival by comparing start-ups that have received a loan from a financial institution as a result of falling slightly above a threshold in the application criteria with start-ups that fell slightly below this threshold (Fracassi and others 2013). The results show that the start-ups that have obtained a loan are 40 percentage points more likely to survive, enjoy higher revenues, and create more jobs.

FIGURE 3.8 Financing Patterns by Firm Age



Source: Chavis, Klapper, and Love 2011 based on 1999–2006 data on 170 cross-sectional surveys in 104 countries in Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.
Note: The figure shows the share of firms that use the financing source for working capital or new investment. Informal sources of finance include family and friends.

Policies and innovative approaches to support lending to young firms

Some of the interventions discussed in the section on SME financing (see above) can also be used to improve the access of young firms to bank loans. Adequate collateral laws and registries can allow young firms to leverage the assets they have to obtain credit, although they may have accumulated comparatively fewer assets than older firms. Credit information systems can document the creditworthiness of young firms and can reduce the reliance of young firms on informal finance (Chavis, Klapper, and Love 2011).

Accessing finance can be particularly challenging for entrepreneurs who have a business idea, but have not yet started their company, because they do not possess business assets that can be used as collateral, and they do not have financial statements. One potential avenue for fostering financial inclusion among these entrepreneurs is to screen them based on their personal characteristics and attitudes. Djankov and others (2006) use survey data from Brazil, China, and the Russian Federation to show that these characteristics can distinguish entrepreneurs from nonentrepreneurs. For example, entrepreneurs place a higher value on work, are happier, and perceive themselves as more successful.

The Entrepreneurial Finance Lab has developed a tool for screening entrepreneurs that can potentially help lenders provide financing to borrowers who lack financial documentation or credit histories. The tool uses questions on character, abilities, and attitude to identify high-potential, low-risk entrepreneurs. The answers to these questions are combined into a psychometric credit score. Entrepreneurs who scored in the top 30 percent of this score had a 72 percent lower default rate than entrepreneurs who scored in the middle 40 percent.[30] Those with the lowest scores had a 94 percent higher default rate than entrepreneurs in the middle range. The Entrepreneurial Finance Lab is a G-20 SME Finance Challenge winner. Its screening tool is already being introduced by some banks, for example, in Kenya and South Africa.

Venture capital and angel investors

Venture capitalists or angel investors can also provide financing for start-up activities. Ven-

ture capital firms raise funds that they invest in early stage companies. Angel investors, on the other hand, invest their personal funds, tend to operate more locally in industries where they have direct experience, and are often less visible than venture capital firms. These investors address informational asymmetries in young firms by intensively scrutinizing firms before providing capital and then monitoring them afterwards. Venture capital firms differ from banks in that they typically have more specialized skills to evaluate projects that have few assets that may act as collateral and carry significant risk. In addition, high-powered compensation structures give venture capitalists incentives to monitor firms closely. Banks sponsoring venture funds without high-powered incentives have found it difficult to retain personnel (Hall and Lerner 2010).

Research in the United States suggests that the supply of venture capital promotes firm start-ups, as well as employment and income (Samila and Sorenson 2011). Angel investors also have positive effects on the performance of the start-ups they support (Kerr, Lerner, and Schoar, forthcoming). However, some of this effect may arise because of personal involvement and advice that angel investors contribute to start-ups, in addition to funding.

Venture capital firms have been active in the United States, as well as in Canada, Israel, New Zealand, and the United Kingdom, but they tend to be less common in other countries (Hall and Lerner 2010). Among developing countries, Brazil and India boast advanced venture capital industries with several venture capital firms that are privately or government financed and that focus on innovative and high-technology industries (Zavatta 2008). A key reason why venture capital firms are particularly active in the United States may be the existence of a robust IPO market because IPOs allow venture capitalists to transfer control back to the entrepreneur (Black and Gilson 1998). Jeng and Wells (2000) examine the factors that influence venture capital funding in a sample of 21 countries and find that the strength of the IPO market is a crucial determinant of venture commitments. However, the presence of an IPO market is mainly correlated with venture capital investment in existing firms, not start-ups. The lack of an IPO market can explain why venture capital funding is not common in developed economies dominated by banks, such as Germany and Japan (Hall and Lerner 2010). In addition, cross-country evidence from 39 countries suggests that the legal framework, legal origin, and accounting standards may influence the characteristics of the venture capital industry. For example, better laws—approximated by a combination of measures of the efficiency of the judicial system, the rule of law, corruption, risk of expropriation, risk of contract repudiation, and shareholder rights—are associated with more rapid deal screening and origination (Cumming, Schmidt, and Walz 2010).

In the United States, the venture capital industry seems to have moved away from funding start-ups in recent years. Instead, venture capital firms seek to invest large sums in more well established and less-risky firms. To fill this growing gap, angel investors have played an increasingly important role in providing financing to early-stage companies (Fishback and others 2007). A growing number of angel investors have formed groups that conduct screening and due diligence, allow individual angels to diversify their holdings, collect knowledge from investors with varied industry experience, and pool capital (Shane 2005). Angel groups have also been active in other developed economies, including Canada, France, Germany, Spain, and the United Kingdom, with more than 30 angel groups each in 2009.[31] Outside Europe and North America, angel networks tend to be less developed, but in the past few years, Angel investment has become much more visible in East Asia and the Pacific, South and Southeast Asia, Israel and Latin America (OECD 2011a). IFC's *info*Dev initiative has been providing technical assistance to support the formation of angel networks in developing economies. To date, *info*Dev has assisted in the creation of angel networks in eight economies (Belarus, Chile,

BOX 3.7 Case Study: Angel Investment in the Middle East and North Africa

The IFC's *info*Dev initiative is launching a project to support the creation of angel investor networks in developing economies through cofinancing and technical assistance. *info*Dev is a global partnership program within the World Bank. Since 2002, *info*Dev has developed a network of more than 400 small-business incubators—all locally owned and operated—in more than 100 developing countries. A business incubator is a facility with a program to help small companies have a better chance of survival through the start-up phase. An incubator may offer services such as office space at a reduced rate, shared office services, entrepreneurial advice and mentoring, business planning, contacts, and networking. *info*Dev's incubator network has supported about 25,000 start-up enterprises that have reportedly created approximately 270,000 jobs.

Building on its network of incubators, *info*Dev is implementing an early-stage innovation financing facility. It will be piloted in the Middle East and North Africa, starting with the Arab Republic of Egypt, Jordan, Lebanon, Morocco, and Tunisia. The pilot version will consist of a $50 million coinvestment financing facility managed by a third-party financing facility manager and a $20 million technical assistance facility managed by *info*Dev. The coinvestment facility aims to make investments in the range of $50,000–$1 million each in about 200 start-up companies, investing jointly with angel investors who are organized around an angel network or angel syndicate. The technical assistance facility seeks to spur the creation of about eight angel networks and to strengthen the performance of about 50 incubators to ensure a steady stream of investable projects. The project also proposes to build a body of knowledge around the needs of high-growth entrepreneurs in the region and to contribute to the long-term capacity to support these needs.

Jordan, Moldova, Nigeria, Senegal, South Africa, and Trinidad). In each instance, local high-net-worth individuals have been identified, convened, and advised on global best practices. *info*Dev is now also launching an early stage innovation financing facility that will provide financing and technical assistance to support angel networks in developing economies, leveraging the *info*Dev global network of incubators (box 3.7).

In conclusion, much policy and research attention has been focused on the financial inclusion of SMEs, but young firms also face financial constraints. Relieving these constraints can potentially foster productivity growth and job creation, although more evidence is needed to document this relationship. Angel investors provide a promising source of finance for young firms. Currently, angel investor groups are less common in developing countries than in developed economies, but financial and technical assistance can help support the creation of angel investor networks.

DOES ACCESS TO FINANCE LEAD TO INNOVATION?

Recent research has studied the relationship between finance and innovation to understand the channel through which access to finance can promote economic growth. Many economists have argued that innovation is essential for economic growth and development (for example, Aghion and Durlauf 2005; Baumol 2002; Schumpeter 1934). Innovation is often defined to include not only the invention of new products, but also the adaptation of products and processes from other countries or firms; for example, see the *Oslo Manual* (OECD 2005).

Why innovative projects may be particularly difficult to finance

Firms may face especially severe financing constraints on innovative investments because of information asymmetries. Firms seeking to make new inventions through research and

development frequently have better information about the likelihood of success and the nature of the completed project than potential investors. In fact, because inventions can be easy to imitate, firms may be reluctant to disclose much information about their projects, making it difficult to find financing. Firms are thus often required to rely on internal funds to finance research and development expenditures (Hall and Lerner 2010).[32]

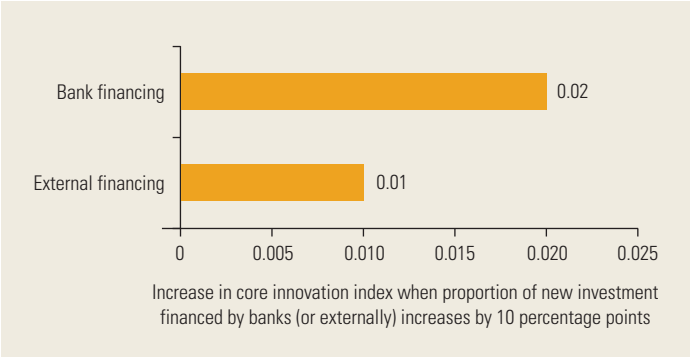
Innovation that does not involve new inventions, but involves the technological upgrading of processes may also be unattractive for lenders. Banks often prefer to use physical assets to secure loans and are reluctant to lend if a project involves knowledge investment, such as contracting business development services, rather than investment in plant and equipment. A study in Mexico found that financing constraints were a key reason why firms did not hire business consultants, although the use of consulting services had positive effects on productivity and firm growth in the longer run (Bruhn, Karlan, and Schoar 2013).

Can bank finance foster innovation?

Given the challenges, it is not clear whether policies that promote access to bank financing, as discussed in earlier sections of this chapter, are sufficient to foster innovation. They may help to some extent because firms could use bank financing for noninnovative activities and thus free up internal funds for investment in innovation. Empirical evidence indicates there is a positive relationship between bank financing and innovation. Using data from the World Bank enterprise surveys, a study examined more than 19,000 small, medium, and large firms across 47 developing economies and found that the use of external finance is associated with greater innovation by private firms (Ayyagari, Demirgüç-Kunt, and Maksimovic 2011b). In particular, bank financing is positively associated with firms that undertake core innovation, which is defined as upgrading an existing product line or introducing a new product line or new technology (figure 3.9).

Survey data on microenterprises and SMEs in Sri Lanka also show that firms are more likely to innovate if they have a bank loan (de Mel, McKenzie, and Woodruff 2009a). This relationship may not be causal, though, and could be driven by other factors. For example, more well managed firms may both be more likely to innovate and more likely to obtain a bank loan. More empirical within-country research is thus needed to shed light on the causal effects of access to bank finance on innovation.

FIGURE 3.9 The Estimated Effect of Financing Sources on Innovation



Source: Ayyagari, Demirgüç-Kunt, and Maksimovic 2011b.
Note: The core innovation index is formed by adding 1 if the firm has developed a new product line, upgraded an existing product line, or introduced a new technology. External financing comprises bank financing and all other financing that is not from internal funds or retained earnings.

Nonbank finance and government subsidies for innovation

The availability of nonbank financing, especially venture capital or angel investment, may be critical in fostering innovation. As discussed above, venture capital firms and angel investors address information asymmetry problems by intensively scrutinizing firms before providing capital, and then they monitor them afterwards. However, venture capital firms and angel investors tend to focus on high-technology sectors and a small number of firms. A broad range of firms in other sectors could potentially also benefit from technological upgrading (Bloom and others 2013; Bruhn, Karlan, and Schoar 2013). To facilitate access to business development services that can help upgrade technologies in such firms, some governments have implemented subsidy or matching grant programs.

Matching grant programs are one of the most common policy tools used by develop-

ing-country governments to foster technological upgrading and innovation. A matching grant consists of a partial subsidy to a firm for the use of business development services or similar activities. They often cover 50 percent of the cost. Despite their widespread use, there is little evidence on the effectiveness of the grants in spurring firms to undertake activities they would not have otherwise undertaken or whether the grants merely subsidize firms for actions they would have taken anyway. A randomized impact evaluation of a matching grant program in Mexico finds that subsidized business consulting services led to short-run improvements in the productivity of firms and to a long-run increase in employment among firms, that is, to firm growth (Bruhn, Karlan, and Schoar 2013). To expand the evidence base, researchers have tried to conduct impact evaluations of matching grant programs in other countries, for example, in six African countries. However, these attempts have ultimately failed in part because the programs received few applications (Campos and others 2013). This lack of demand may be caused by overly strict eligibility criteria, red tape, capture by special interest groups, or incentives facing project implementation staff and suggests that matching grant programs are difficult to implement. Several countries have experimented with encouraging innovation and job creation through business plan competitions. A recent example that has garnered much attention is Nigeria's YouWiN! competition (box 3.8).

Fiscal incentives can also be used to stimulate innovation and research and development. More and more countries are implementing these policies to incentivize firms to invest in research and development. Mulkay and Mairesse (2013) have examined the impact of the research and development tax

BOX 3.8 Case Study: Nigeria's YouWiN! Business Plan Competition

The Youth Enterprise with Innovation in Nigeria Program (YouWiN!) is a business plan competition for young entrepreneurs in Nigeria sponsored by the country's Ministry of Finance, Ministry of Communication Technology, and Ministry of Youth Development, with support from the U.K. Department for International Development and the World Bank. The program was launched on October 11, 2011, by President Goodluck Jonathan in a ceremony aired live on national television. It has the stated objective of encouraging innovation and job creation through the establishment of new businesses and the expansion of existing businesses.

The program combines training with cash grants to build business capacity and reduce financing constraints to promote business creation and growth. In response to advertisements throughout the country via television, radio, newspapers, and road shows, the program received almost 24,000 applications from youth aged 18 to 40 years. Nigeria has approximately 50 million people in this age range. The 24,000 applications therefore represent only 0.05 percent of the overall youth population.

As is typical with business plan competitions, YouWiN! does not provide access to finance on a broad scale. Instead, the program seeks to target firms and business ideas with high potential. This is reflected in the fact that the level of educational attainment is higher among applicants than among the overall population. According to data from the 2008 general household survey, among the overall youth population, 5.5 percent have a university education, compared with slightly more than 50 percent of the YouWiN! applicants.

YouWiN! applications were scored by the Enterprise Development Center of the Pan-African University, a private, nonprofit educational institution located in Nigeria's capital, Lagos. Based on these scores and geographical location, 6,000 candidates were selected to attend a four-day training session, which took place in December 2011, with 4,873 individuals participating. All applicants who attended the training were then given until late January 2012 to submit a business plan. In total, 4,510 business plan applications were received. These were scored by a joint Enterprise Development

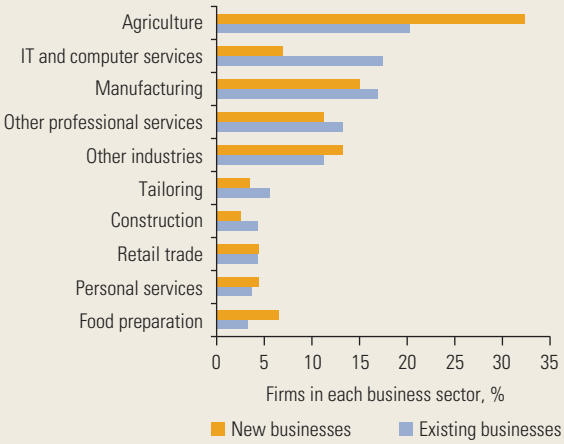
(box continued next page)

BOX 3.8 Case Study: Nigeria's YouWiN! Business Plan Competition *(continued)*

Center–PwC team, narrowing down the field, first, to 2,400 semifinalists and, then, to 1,200 winners. Figure B3.8.1 illustrates that the main sectors of the YouWiN! winners are agriculture, information technology, and computer services, manufacturing, and other professional services.

YouWiN! winners received up to $32,000 each in grants for new businesses and $64,000 for existing businesses. For the median existing business that won the competition, this is equivalent to more than six years of annual turnover. The grants can represent a large increase in access to finance. According to the IFC Enterprise Finance Gap Database, only 8 percent of Nigerian microenterprises and SMEs have a loan from a bank, with an average loan size of 18 percent of annual revenue.[a] A World Bank team is currently conducting an evaluation of YouWiN! to measure its impact on firm start-ups, firm survival (for existing businesses), employment, sales, and profits.

FIGURE B3.8.1 Business Sectors of YouWiN! Winners



Source: YouWiN! program organizers.
Note: The data are based on the self-classification of applicants at the time of the submission of their business plans. IT = information technology.

a. IFC Enterprise Finance Gap Database, SME Finance Forum, http://smefinanceforum.org.

credit on private research and development investment among French firms. They find that, in the long run, the tax relief raised research and development investment among firms by 12 percent, without taking into account spillover effects.

In summary, innovative projects are particularly difficult to finance with external funds because of information asymmetries. Governments can step in by sponsoring matching grant programs and business plan competitions. Evidence indicates that matching grants can enhance firm productivity and employment growth, but the grants are difficult to implement well. Research on the impact of business plan competitions is ongoing.

DOES GENDER MATTER IN THE ACCESS OF FIRMS TO FINANCE?

Empirical evidence suggests that woman-owned firms tend to be smaller than firms owned by men and grow at a slower rate (Bruhn 2009; GPFI 2011c). While several factors, such as type of business, managerial skills, or the regulatory environment, may be driving these differences, access to financial services may matter. This section first examines why women may face more constraints in financial markets than men. It then asks whether boosting access to finance, defined as access to credit and savings instruments, can spur the growth of woman-owned firms.

Is there a gender gap?

The gender gap in access to finance is still a relatively unexplored topic, but a growing literature documents that, relative to men, women face less favorable conditions in seeking financing. Even after controlling for a range of demographic and socioeconomic characteristics, a recent cross-country study by Demirgüç-Kunt, Klapper, and Singer (2013) finds that the ownership of bank accounts and the usage of savings and lending instru-

ments are substantially less prevalent among women. Other cross-country studies focusing on the access of entrepreneurs to credit reach similar conclusions. The findings suggest that women entrepreneurs are less likely than their men counterparts to obtain financing from formal institutions and are also more likely to pay higher interest rates or to receive less-favorable loan terms (Demirgüç-Kunt, Beck, and Honohan 2008; GPFI 2011c; Muravyev, Schäfer, and Talavera 2009). Gender gaps in the credit market have also been documented in particular settings, such as in informal loan markets in rural Mexico, where women are more likely to be credit constrained (Love and Sanchez 2009).

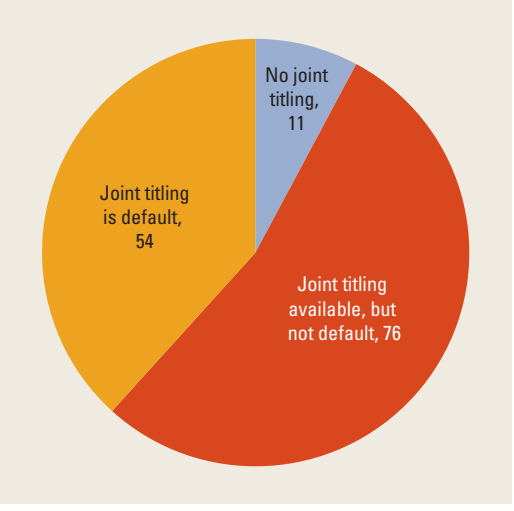
Unfavorable conditions in women's access to finance may also affect the demand among women for external financing and the business decisions of women. For instance, women may select into businesses that need less credit. However, gender gaps in access to finance are less evident in other regions. A study by Bruhn (2009) finds that women and men entrepreneurs have similar access to credit in Latin America.

Determinants of the gender gap

Gender differences in access to finance may be explained by several factors, ranging from cultural, regulatory, and legislative barriers to statistical or even taste discrimination. Identifying which factors are at play can allow policies to be tailored to help level the field for women in financial markets.

In many environments, cultural beliefs, laws, or regulatory mandates may prevent women from participating in financial arrangements. Demirgüç-Kunt, Klapper, and Singer (2013) find evidence supporting that gender norms, by law or custom, are associated with lower access and usage of financial services by women. In a recent World Bank report, Safavian and Haq (2013) document that few women in Pakistan obtain individual loans instead of group loans. One reason is that the guarantor requirements for individual loans may be prohibitive for women. Most MFIs typically require two men guarantors for a loan, only one of whom may be from the borrower's immediate family. Given women's limited mobility and the prevalent social norms, it may be difficult for women to find men guarantors who are not relatives.

FIGURE 3.10 Number of Countries with Joint Titling of Major Assets for Married Couples



Source: Calculations based on 2012 data of the Women, Business, and the Law (database), World Bank, Washington, DC, http://wbl.worldbank.org/.
Note: The sample includes 141 countries. Major assets include land or the marital home.

Another common obstacle women face in seeking credit is that they often own fewer assets than men, limiting their collateral. This can be partly caused by cultural practices that serve to give women less access to assets, as shown by Hallward-Driemeier and Hasan (2012) in the case of Africa. Lack of ownership can also be driven by laws and regulations. The Women, Business, and the Law database documents that, in 11 out of 141 countries, joint titling of major assets (such as land or the marital home) does not exist among married couples (figure 3.10). In 54 of the 130 countries where joint titling does exist, it is not the default titling procedure for marital property. Moreover, in 26 of 141 countries, sons and daughters do not have equal inheritance rights to the property of their parents, and in 25 countries women and men surviving spouses do not have equal inheritance rights.

Raising the incidence of property ownership among women may thus require changes in the law. While this may be a longer-term

endeavor, financial institutions can also take steps to increase the availability of collateral for women. A bank in Uganda, the Development Finance Company of Uganda Bank, launched the Women in Business Program in 2007 (GPFI 2011c). As part of this program, the bank has specifically designed some of its loan and savings products to address the needs of women entrepreneurs. Because collateral requirements are a major obstacle among Ugandan women who have difficulty accessing property, the bank created a land loan for women. Through this product, women are able to obtain a loan to purchase property that they can later use as collateral for a business loan.

Women's differential access to finance can be determined by gender differences in outcomes such as education, income, or business experience. These differences could, for instance, influence women's ability to keep adequate financial records that may be required to obtain a loan. Moreover, women may be more prone to default if they have less education or if they have less experience in running businesses or understanding financial contracts, which makes financial institutions less inclined to serve women clients. This type of discriminatory treatment is known as statistical discrimination. Aterido, Beck, and Iacovone (2011) find evidence of statistical gender discrimination in access to finance. In nine countries in Sub-Saharan Africa, they find that the gender gap in financial services is explained by differences in education, income, formal employment, and status as the household head. Once they control for these characteristics, the gender gap in access to finance disappears.

Gender bias or taste discrimination may also limit women's access to finance. A recent study by Beck, Behr, and Madestam (2012) argues that own-gender preferences affect both credit supply and demand. More specifically, the authors find that borrowers matched with loan officers of the opposite gender pay higher interest rates, receive lower loan amounts, and are less likely to return for a second loan. In settings in which loan officers are predominantly men, own-gender preferences could put women loan applicants at a disadvantage. For example, 90 percent of the loan officers at a large public sector bank in India are men (Cole, Kanz, and Klapper 2012). Another study in India finds that cultural proximity between loan officers and borrowers increases lending, lowers default rates, and reduces the amount of collateral required. These findings suggest that cultural proximity mitigates informational problems, which, in turn, relaxes financial constraints and improves access to finance (Fisman, Paravasini, and Vig 2012). It is not clear whether these findings easily translate to gender, but, if they do, the policy implication would be that the presence of more women loan officers could relax the financial constraints on women. In fact, there is some evidence that women make better loan officers. Beck, Behr, and Guettler (2012) examine the relationship between the gender of loan officers and loan performance. They show that loans monitored by women loan officers exhibit lower arrear probabilities than loans handled by men loan officers. This result is explained by the greater capability of women loan officers to build trust relationships with borrowers.

Does increased access to finance promote growth among woman-owned firms?

Improving access to financial services by itself may not stimulate the growth of woman-owned firms if the factors causing the differential access are not addressed. For instance, if women select to run businesses with lower capital returns relative to firms operated by men, interventions that improve access to capital will not be more effective among woman-owned firms. An impact evaluation of a program in Sri Lanka that distributed capital grants found higher profits among enterprises owned by men, but not among woman-owned enterprises. The difference in the returns to capital did not appear to be driven by differences in entrepreneurial ability or risk aversion between men and women, but by the fact that the sectors that women selected typically had lower returns to capital in the first place.

But, even in sectors in which both man- and woman-owned firms are common, woman-

owned enterprises may have lower returns to capital if women face household constraints. A study by de Mel, McKenzie, and Woodruff (2009b) finds that women have higher returns to capital if they have more decision-making power in the household or if their spouses are more cooperative with regard to the management of the enterprises.

Recent evidence suggests that financial interventions might be more effective if they were combined with business training. For instance, a study in Sri Lanka finds that capital grants can temporarily raise the profitability of woman-run subsistence enterprises if the women are provided with business training, but this impact dissipates two years after completion of the training (de Mel, McKenzie, and Woodruff 2012b).

However, in contexts in which women face household constraints, these interventions may not be as effective. In rural Pakistan, Giné and Mansuri (2012) evaluate the impact of a business training program and the offering of larger loans to microfinance clients. Their results suggest that the training enhanced the business knowledge of both men and women microentrepreneurs. However, the performance of the woman-run businesses did not improve, though the training lowered business failure rates and boosted the sales among man-run businesses. Offering larger loans had little effect on any enterprises in the sample. As in the findings of other studies, the lack of effect on women may in part be driven by household constraints (for instance, see Fletschner and Mesbah 2011). About 40 percent of women report that their spouses are responsible for most business decisions, suggesting that woman-owned enterprises show no improvement because women have little decision-making control in their own businesses. For a sample of five Sub-Saharan African countries, Aterido and Hallward-Driemeier (2011) show that, in enterprises in which women are part owners, a man is the decision maker in 77 percent of the cases. They stress the importance of looking at decision-making control and not partial ownership by women in evaluating enterprise performance.

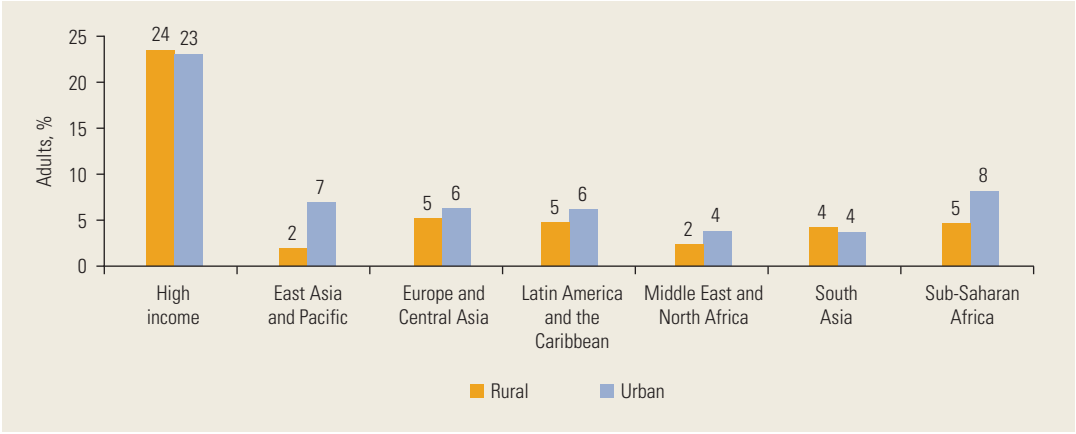
A study in Bosnia and Herzegovina reaches a different conclusion. There, business training among microfinance clients raised profits among woman-owned firms, but not among firms owned by men. One substantial benefit of the training was that it enabled women clients to obtain more favorable loan terms and explore alternative funding options (Bruhn and Zia 2013).

Overall, it appears that, if policies tackle the underlying causes of the gender gap, boosting access to finance can improve the performance of woman-owned enterprises. In settings in which gender bias or taste discrimination is relevant, policies should consider antidiscriminatory programs or competition-enhancing strategies (Beck, Behr, and Madestam 2012). If statistical discrimination is the main driver, then policies should aim at improving women's education, employment status, and income opportunities, if these are the relevant dimensions. For instance, policies promoting financial inclusion may have to be combined with business training. Depending on the local context, household constraints may prevent women from making changes in their businesses so that even the combination of credit and training may not be effective. In these types of settings, policies aimed at strengthening the position of women in society should be promoted. This may require reforming the laws and regulations pertaining to property rights and inheritance to encourage women's ownership of assets.

AGRICULTURAL FIRMS: CAN FINANCE INFLUENCE PRODUCTIVITY?

Agriculture is an important sector in most developing countries. According to the Food and Agriculture Organization of the United Nations, the agricultural sector is the main source of income and employment among 70 percent of the world's poor in rural areas. If the rural poor benefit more from growth in agriculture than from growth in other sectors, then agriculture can be a relevant vehicle for reducing extreme poverty. A recent cross-country study by Christiaensen, Demery, and Kuhl (2011) suggests that this may be the case. According to the results, poverty among the poorest of the poor is more sensitive to

FIGURE 3.11 Adults with an Account Used for Business Purposes



Source: Calculations based on the Global Financial Inclusion (Global Findex) Database, World Bank, Washington, DC, http://www.worldbank.org/globalfindex.

growth in this sector. While the results of other studies are more modest, they also indicate that agricultural growth translates into lower rural poverty rates (for instance, see Foster and Rosenzweig 2003; Ravallion and Datt 1996; Suryahadi, Suryadarma, and Sumarto 2009; World Bank 2007a).

In this respect, agricultural finance may have the potential to increase the productivity of the sector. Currently, the use of basic accounts for business purposes in rural areas remains limited, lagging far behind the situation in urban areas, particularly in developing countries (figure 3.11). In the absence of formal financial instruments, farmers and agricultural firms rely on alternative informal mechanisms (such as moneylenders, transfers across households, or informal savings arrangements) to supply their finance needs (Lim and Townsend 1998; Munshi and Rosenzweig 2005; Rosenzweig and Wolpin 1993; Townsend 1994). However, these informal arrangements may prevent farmers from adopting better technologies, purchasing agricultural inputs, or improving the efficiency of their businesses if appropriate risk mitigation products are lacking or if the available financial instruments do not match the needs of farmers.

Financial constraints are costly, particularly to the smallest farmers and agribusinesses, limiting their ability to compete and protect against a variety of risks inherent to agriculture, such as weather variability, natural hazards, and commodity price volatility (World Bank 2007a). Improving access to finance in the sector can raise the investment choices of farmers and provide farmers with more-effective tools to manage risks.

This section discusses the main constraints faced by institutions in supplying financial instruments such as savings, credit, and insurance products to the agricultural sector. It then outlines the most promising developments in the field and, finally, provides concrete policy recommendations to enhance financial inclusion within the agricultural sector.

Why have financial institutions been reluctant to serve the sector?

One relevant barrier that has historically prevented financial providers from serving the agriculture sector and its supply chain is geographical. Farmers and agricultural firms find it difficult to access banks because most of these farmers and firms are located in rural areas, where banks are discouraged from operating at a profitable scale because of low population density and large geographical dispersion. Hence, the provision of formal savings, insurance, and credit instruments to farmers and agricultural SMEs is limited.

Another major factor inhibiting financial institutions from serving the sector is the

systemic risk that characterizes agricultural activities. When natural hazards or adverse weather conditions take place, they typically affect a large number of farmers and firms simultaneously, making it more challenging for financial providers to diversify their client portfolios because, when one client fails to pay, many others will be in the same situation.

The lack of financial infrastructure poses a third challenge. Tracking the identity of clients or monitoring production outcomes is extremely difficult in rural areas. If natural hazards cannot be mapped to the production of farmers and SMEs, or if the lack of information about clients means financial providers face difficulty in tracking them, then farmers and firms might well prefer to default or underperform, especially in settings with low contract enforcement. Hence, potential lenders or insurers may be discouraged from engaging with farmers and agricultural SMEs in the first place or may be reluctant to supply certain products potentially demanded by clients, such as longer maturity loans. Financial institutions serving rural areas have actually responded by excessive credit rationing or overreliance on traditional forms of collateral, which many small and medium farmers and firms lack in the first place (Stein, Randhawa, and Bilandzic 2011).

Additionally, the lack of interest of financial providers in serving farmers and agricultural firms is aggravated by the paternalistic behavior or political motives that governments may have. Policies ranging from subsidies with no proper assessment of project feasibility to political loans to the sector or unconditional bailouts to relieve households from their debt obligations may distort firm and farmer incentives and discourage financial providers from entering the market.

Evidence from recent studies cautions that government interventions in the credit market can be costly not only in terms of political capture, but also in amplifying market distortions, thereby aggravating financial exclusion. Cole (2009) finds evidence that, during election years, the amount of agricultural credit supplied by public banks increases by 5 to 10 percentage points. The new loans are directed at districts with a political interest for the ruling state party, are less likely to be repaid, and are not associated with greater agricultural output. In line with these findings, de la Torre, Giné, and Vishwanath (2011) conclude that primary agricultural credit cooperatives in India have been used as political instruments, and the responses of borrowers have been to prioritize their debt payments from institutions other than the cooperatives because the borrowers associate the cooperatives with frequent government relief packages. Their results suggest that the greater involvement of governments in credit markets might lead to unintended consequences such as incentivizing defaults. Kanz (2012) finds that India's largest bailout program, the Debt Waiver and Debt Relief Scheme for Small and Marginal Farmers, did not alleviate problems of debt overhang among beneficiaries. Instead, program recipients augmented their reliance on informal credit and reduced their productive investment. This conclusion indicates that beneficiaries were concerned about the stigma of being identified as defaulters because of the program and the effect this may have on their future access to formal credit.

Recently, other reasons inhibiting financial institutions from serving this market have begun receiving more attention. If individuals in rural areas do not trust banks or lack financial training, they will be less likely to use financial products. Moreover, if the products that financial institutions offer do not adequately match the needs of farmers, then the products will be associated with low demand. In a study in Kenya, Dupas and others (2012) find that these factors partially explain the low usage of financial services among rural customers. The study randomly waived the cost of opening a basic savings account to unbanked individuals and found that only 18 percent of these individuals actively saved in their new accounts. The main reasons people did not save in their accounts were lack of trust in the bank, unreliable service, and high withdrawal fees. The study also provided information on credit options and the lower-

ing of loan requirements. After six months, only 3 percent of the people under study had applied for a loan. People did not borrow from the bank because they feared losing their collateral. These results suggest that not only access matters, but also the quality of the services offered.

New developments in agricultural finance

In the last two decades, new approaches have been emerging in agricultural finance. Most of these approaches are designed based on microfinance principles and adapted to fit the needs of farmers and agricultural firms. Following Kloeppinger-Todd and Sharma (2010), the most promising developments can be grouped into four thematic areas: tailoring financial services to the business reality of farmers and agribusinesses, using technology to reach out to new clients and reduce transaction costs, developing innovative risk management strategies, and bundling financial instruments with other financial or nonfinancial services to overcome the multiple constraints faced by farmers and agricultural SMEs.

Because most commercial banks operate exclusively in urban markets, they are highly inexperienced with rural settings, where the reality of business and the demand for financial products are different.[33] For instance, the reliance of commercial banks on traditional land collateral excludes from borrowing many farmers and agricultural firms that lack secure rights to land. New financing models such as warehouse receipts can help relieve this constraint. Through warehouse receipt financing, farmers can obtain finance by using nonperishable goods deposited in a warehouse as collateral for their loans. While several elements are needed to develop a well-functioning warehouse receipt financing system, including an enabling regulatory framework, licensed warehouses, and appropriate training, these instruments have been operating successfully in several countries (Höllinger, Rutten, and Kiriakov 2009). However, a rigorous assessment on how important these systems have been for farmer productivity is still needed.

Based on the system of warehouse receipt financing, different approaches have been developed to extend financial services to agribusinesses and farmers. Factoring and leasing are two examples. Through factoring, farmers can use their accounts receivables as collateral for loans (see above).[34]

Leasing is of particular relevance for the agricultural sector because it has the potential to expand the medium- and long-term finance available to agribusinesses. Through leasing, farmers can acquire machinery and farm equipment, while paying for it on a more flexible basis (IFC 2012c).

Agricultural production is being transformed into integrated market chains, linking smaller farmers to large multinational firms.[35] Value chain finance has become one of the most popular mechanisms for financing commercial agriculture in various developing countries. Value chain finance is particularly useful in helping link small farmers and agribusinesses into effective market systems (Miller and Jones 2010).[36] An innovative business model in this area in Mexico is Agrofinanzas. Agrofinanzas specializes in lending to small farmers with little experience with banks and formal financing. Its business model is based on relationships with larger firms that are connected to smaller farmers. Agrofinanzas identifies its borrowers through information obtained by large firms on their small suppliers. This information is critical to making credit risk manageable for the institution.

Another example in Mexico is FIRA (Trust Funds for Rural Development), which provides a broad range of financial products and services to banks to promote the development of the rural sector. Among other initiatives, FIRA supplies structured financing, that is, specific, tailored products based on client needs and the local business environment to help clients manage the risks involved in their everyday operations.

The use of technology to facilitate financial transactions has great potential in agricultural settings, where transaction and information costs are high. Credit and movable collateral registries, mobile banking, and correspondent

banking are examples of ways in which technology can help ease market failures in an agricultural setting. In a recent project in Malawi (see chapter 2), Giné, Goldberg, and Yang (2012) find that the use of fingerprints to identify clients makes the threat of future credit denial more credible. The incentives for clients to pay back loans are thereby increased, while simultaneously incentivizing lenders to engage in more transactions. Even though projects of this type are at the pilot stage, they show great potential for reducing the information costs of lenders or insurers. Other examples include Kenya's M-PESA (chapter 2) and initiatives to introduce registries for movable collateral (see box 3.5).

New research suggests that a major constraint on farmer investment is uninsured risk. Karlan, Osei, and others (2012) find that, when farmers in north Ghana were insured against the primary catastrophic risk, they increased expenditure on their businesses. Cai and others (2009) have evaluated a Chinese insurance program aimed at increasing the supply of pork. The insurance was found to have substantial effects on the decisions of farmers to raise pigs.

Evidence suggests that instruments such as index insurance succeed in minimizing moral hazard and adverse selection and, under some circumstances, can incentivize farmers to make riskier, but more profitable investments (Giné, Menand, and others 2010; Karlan, Osei-Akoto, and others 2012; Mobarak and Rosenzweig 2012). While index insurance represents only a small fraction of the broad range of insurance products available, its presence is growing in various countries. An example is the Kilimo Salama microinsurance scheme in Kenya, which is a weather index insurance offered, together with loans, to help farmers buy farming products. The scheme has insured 64,000 farmers across Kenya and is to be expanded to other countries in Africa, such as Rwanda.[37] Another example is CADENA, a public insurance initiative in Mexico. Through CADENA, the government purchases insurance for municipalities on behalf of residents, thereby promoting take-up at the municipal level. Coverage has been rising over the years, providing revenue to the municipalities when adverse weather events take place. Mostly, the insurance products offered in the Mexican market focus on two schemes. The first is weather index insurance, which operates based on weather indexes measured through weather stations that determine crop damage. The second is yield index insurance, in which the payment is determined when the observed yield, estimated through sampling in the risk unit, is lower than the covered yield.[38]

However, index insurance still faces challenges, including low take-up rates, the difficulties of farmers in understanding and thus valuing the complicated insurance, and the failure to dissipate a considerable part of the risks among farmers (Carter 2008; World Bank 2007a). Other studies also suggest that the lack of trust of users in the insurance products can partially explain the low take-up rates (Cai and others 2009).

Commodity exchange markets, which have a prominent history in Asia and Latin America and are now being piloted in several African countries, such as Ethiopia, can be good tools to help farmers hedge against adverse price fluctuations. In a commodity exchange market, different financial instruments can be traded, such as futures, forwards, options, derivatives, and swaps. The objective of all these instruments is to lock in the price of a product in the future. Through future contracts, for instance, the purchase or sale of a specific quantity of a commodity on a determined date in the future is agreed in advance (IFC 2012c). Many commodities, ranging from orange juice to cereals and cotton, are traded in futures markets. However, many conditions are required to develop a well-functioning exchange market, such as the availability of a large number of market participants, adequate infrastructure, and an appropriate legal framework (Rashid, Winter-Nelson, and Garcia 2010).

While financial products can contribute to risk mitigation and the promotion of more profitable investments in agriculture, bundling them with other services can help overcome various constraints affecting farmers

and agricultural SMEs. For instance, financial services should be provided with the proper financial training. For effective value chains to operate, financial instruments must be bundled with the timely availability of inputs, efficient marketing, and distribution channels for agricultural outputs.

Policy recommendations

Summing up, evidence suggests that productivity in the agricultural sector can benefit from better access to financial instruments tailored to the needs of farmers and agribusinesses. Policy makers can take a series of steps to make this happen. First, investing in rural financial infrastructure can overcome the information asymmetries that discourage financial providers from serving agricultural firms. The availability of public databases on agricultural and weather statistics would allow lenders and insurers to distinguish good clients from bad ones more precisely and monitor their actions. Governments have a comparative advantage in providing information to help lenders or insurers identify their risks and price them accordingly (World Bank 2007a).

Second, strengthening property rights and contract enforcement can open up access to important financial products to farmers and SMEs, for instance, by allowing the development of value chain finance.

Third, governments should abstain from paternalistic policies that discourage financial providers from entering the market and that distort the incentives for farmers and firms. Public subsidies directed at agriculture should be carefully considered because they provide inappropriate incentives for farmers to invest in unprofitable farming activities. While certain subsidized insurance products could be justified on the basis of achieving the higher take-up of these products and allowing users to understand their value, subsidies that do not involve proper assessments of the quality or feasibility of projects should be avoided. The gravest risks to sustainable financing in agriculture often arise from misguided government interventions such as subsidized interest rates and the lack or nonenforcement of appropriate rules and regulations (World Bank 2007a).

NOTES

1. For microenterprises and small firms, the distinction between households and enterprise finance may be blurry because firm owners may mix their personal finances with the finances of the firm. However, in contrast to chapter 2, this chapter zooms in on the role of finance in promoting business activities. It also discusses programs and interventions that are targeted specifically at firms, such as business training, risk-sharing facilities, and factoring.
2. This follows the definition used in the World Bank enterprise surveys (http://www.enterprisesurveys.org/), which is based only on the number of employees and which also defines small firms (5–19 employees) and medium firms (20–99 employees). Many countries and institutions use their own definitions of SMEs. For instance, in a survey of banks in the Middle East and North Africa, the cutoff used by the banks to distinguish small and medium firms ranged from 5 to 50 employees, and the cutoff between medium and large firms ranged from 15 to 100 employees (IFC 2010b). Some of the SME definitions are based not only on the number of employees, but also on other variables, such as sales and assets. For example, the European Union defines SMEs as firms with 10–250 employees, less than €50 million in turnover, or less than €43 million in total balance sheet (IFC 2010b), although these thresholds may be high for most developing economies. The heterogeneity in definitions of SMEs across countries and institutions can pose an obstacle to collecting accurate and comprehensive data on SMEs and to designing policies targeted at SMEs.
3. The distinction between microenterprises and SMEs based on number of employees is not absolute, and some firms with fewer than five employees may also seek funding from sources other than MFIs, particularly if they aim to grow quickly or are young firms.
4. See the SME Finance Forum website, at http://smefinanceforum.org/. The database is based on the Enterprise Surveys (database), International Finance Corporation and World Bank,

Washington, DC, http://www.enterprisesurveys.org.

5. This information is from the same IFC Enterprise Finance Gap Database through the SME Finance Forum, http://smefinanceforum.org. The data set considers as informal all microenterprises and SMEs that are not registered with the authorities and all nonemployer firms (independently of registration status).
6. For additional information on the informal surveys, see "Enterprise Surveys Data," World Bank, Washington, DC, http://www.enterprisesurveys.org/Data.
7. The evidence on the impact of these training courses is summarized in McKenzie and Woodruff (forthcoming).
8. The study measures aggregate effects, that is, increases in average income (Bruhn and Love 2013). Critics have been concerned that Banco Azteca may do more harm than good among some borrowers because of its high interest rates and diligent repossession of collateral, including household appliances, in the case of default. These issues are of particular concern with respect to individuals with low levels of financial literacy. Note, however, that a recent study examining the impact of loans with a 110 percent annual interest rate given out by the largest microlender in Mexico, Compartamos Banco, finds little support for the hypothesis that microcredit causes harm (Angelucci, Karlan, and Zinman 2013).
9. Although average returns to capital are high among microenterprises, there may be considerable variation in these returns across firms.
10. The study relies on cross-sectional data whereby firms report employment levels for multiple years so that employment growth may be calculated. The data thus do not capture firms that have closed by the time the survey was conducted. A study on the United States using repeated survey data finds that small firms display higher net employment growth than large firms (Haltiwanger, Jarmin, and Miranda 2010). However, once the authors control for firm age, there is no relationship between firm size and employment growth. See the discussion in our chapter here on young firms.
11. SMEs in developing economies face many other constraints to growth, including regulatory obstacles, missing physical infrastructure (such as roads and reliable electricity supply), and lack of skills.
12. Another potential explanation for the findings is that small firms were less productive so that they could not pay market interest rates. However, more than 95 percent of small firms had at least some credit at market interest rates. Moreover, the paper does not find that more productive firms were less affected by the drop in subsidized credit.
13. For most countries, the survey does not include comprehensive information on the share of loan applications that were rejected or on the reasons for rejection.
14. The incentives for banks to lend to SMEs can also depend on the regulatory framework, for example, on capital requirements. Regulators are currently introducing Basel III, which is a new global regulatory standard on the capital adequacy and liquidity of banks agreed by the Basel Committee on Banking Supervision in response to the deficiencies in financial regulation revealed by the global financial crisis. Basel III introduces new regulatory requirements on bank capital, liquidity, and leverage. The higher capital requirements are expected to raise the average cost of bank liabilities, which could push up the interest rates charged on loans, including to SMEs (GFPI 2011f). Also, see chapter 1 for an in-depth discussion of how banking market structure influences access to finance.
15. These numbers also reflect a merger with Fortis Bank in 2010.
16. For more information, see IFC (2012b) and the underlying IFC case study on Turkey.
17. Other products offered by IFC include lines of credit to banks in developing economies for on-lending to SMEs. There is a lack of rigorous evidence on the impact of these credit lines. More research is needed to determine how effective they are in increasing access to credit among SMEs that would not otherwise have received a loan.
18. Another type of credit guarantee helps financial institutions raise long-term funds. For example, the World Bank is providing a partial credit guarantee for up to €200 million to the Croatian Bank for Reconstruction and Development to support fundraising in financial markets for on-lending to private sector exporters and foreign currency earners.
19. Given the scale of credit guarantee schemes around the world, there is relatively little evidence on whether and how they work. More research is needed in this area to complement the few existing studies.

20. For an in-depth review, see the *Global Financial Development Report 2013* (World Bank 2012a).
21. Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.
22. See also UNCITRAL (2010) for a guidebook on efficient and effective secured transaction laws.
23. In an effort to provide more information on firms that have not previously had a loan, some credit bureaus also collect payment histories on utility bills or other services.
24. Additionally, there is a forthcoming study by the International Committee on Credit Reporting, to be released by the end of 2013, on credit reporting and SMEs, which will examine, for example, the role of trade credit and how it is captured by credit reporting systems.
25. Credit Bureau Singapore is an example of an institution that collects trade credit data on SMEs. It combines this information with credit history data from banks and with the personal credit histories of business owners and key stakeholders to quantify default risk (see GPFI 2011f for more detail).
26. Doing Business (database), International Finance Corporation and World Bank, Washington, DC, http://www.doingbusiness.org/data.
27. The website is at http://www.opic.gov/.
28. A key reason for the interest in job creation is that jobs are the main source of income for the majority of households and a key driver of poverty reduction (World Bank 2012c).
29. There is an overlap between firm age and size. According to data from the World Bank enterprise surveys, about 90 percent of young firms are SMEs, that is, they have between 5 and 100 employees, while 10 percent are large firms. See Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.
30. The Entrepreneurial Finance Lab website (http://www.eflglobal.com/) does not specify the methodology used to obtain these results. It is not clear whether borrowers took a psychometric test before obtaining a loan, and the statistics represent default rates for these borrowers, or whether borrowers took the test after they had a loan that they had either repaid or defaulted on. The second scenario could potentially lead to confounding results (reverse causality) if, for example, individuals whose businesses failed and who had to default on loans have fewer entrepreneurial attitudes because of this experience.
31. The number of angel groups operating in the United States was about 350 in 2009, and it was about 400 in all European countries combined (OECD 2011a).
32. These issues may be less severe in economies in which financial intermediaries are able to monitor firms closely or in which contracts are in place, encouraging firms to reveal profits truthfully so that investors can be fairly compensated. Monitoring is less costly in economies with ample credit information. Complex contracts rely on a sound legal system for enforcement (Cole, Greenwood, and Sanchez 2012).
33. Several World Bank initiatives, such as AgriFin, provide technical assistance to financial institutions. AgriFin supports financial institutions in Africa and Asia in the development of models of agricultural finance that reach smallholder farmers. The Centenary Bank of Uganda partnered with AgriFin to expand lending to the sector by taking several measures such as opening new branches in rural areas or investing in staff training. Over the following four years, its lending portfolio to the sector is expected to double to $34 million (World Bank 2013b).
34. NAFIN (Nacional Financiera), a Mexican development bank institution, has been providing reverse factoring services to SMEs through *cadenas productivas* (productive chains). The main feature of the program is that it links small, risky firms with large, creditworthy firms that buy from them. Through cadenas productivas, the small firms can use the receivables from their larger clients to obtain loans. While not yet exported to the agriculture sector, the program shows great potential for such future expansion (World Bank 2006a).
35. As defined in Miller and Jones (2010), agricultural value chain finance refers to any or all of the financial services, products, and support services flowing to or through a value chain to address the needs and constraints of those involved in the chain, whether a need to access finance, secure sales, procure products, reduce risk, or improve efficiency within the chain.
36. The Agricultural Finance Program of IFC provides support to financial and nonfinan-

cial institutions in practices that help mitigate and manage the risks related to lending in the sector along the entire value chain. In addition, IFC assists farmers and agribusinesses in building capacity in many areas, such as financial training and links to financial institutions.

37. See Peer Stein and Denis Salord, "Rwanda: Turning the Tide on Rural Poverty Requires Innovation," allAfrica.com, New Times, April 28, 2013, http://allafrica.com/stories/201304291357.html.
38. See Jesús Escamilla-Juárez and Luisarturo Castellanos-Hernández, "The Usage of Grids in Risk Management of Agriculture in Mexico," FARMD, Forum for Agricultural Risk Management in Development, 2012, https://www.agriskmanagementforum.org/content/usage-grids-risk-management-agriculture-mexico.

Statistical Appendixes

This section consists of three appendixes.

Appendix A presents basic country-by-country data on financial system characteristics around the world. It also presents averages of the same indicators for peer groups of countries, together with summary maps. It is an update on information from the 2013 *Global Financial Development Report*. The eight indicators in this part remain the same as those shown in the previous report, with the exception of "account at a formal financial institution (%, age 15+)," which replaces the previously shown "accounts per thousand adults, commercial banks." A key reason for this change is the higher coverage of the newly shown indicator.

Appendix B provides additional country-by-country information on key aspects of financial inclusion around the world. It is specific to the 2014 *Global Financial Development Report*.

Appendix C contains additional country-by-country information on Islamic banking and financial inclusion in Organization of Islamic Cooperation (OIC) member countries. It is also specific to the 2014 *Global Financial Development Report*.

These appendixes present only a small part of the Global Financial Development Database (GFDD), available at http://www.worldbank.org/financialdevelopment. The 2014 *Global Financial Development Report* is also accompanied by *The Little Data Book on Financial Development 2014*, which is a pocket edition of the GFDD. It presents country-by-country and also regional figures of a larger set of variables than what are shown here.

APPENDIX A
BASIC DATA ON FINANCIAL SYSTEM CHARACTERISTICS, 2009–11

TABLE A.1 Countries and Their Financial System Characteristics, Averages, 2009–11

	Financial institutions				Financial markets			
Economy	Private credit by deposit money banks to GDP (%)	Account at a formal financial institution (%, age 15+)	Bank lending-deposit spread (%)	Bank Z-score	Stock market capitalization + outstanding domestic private debt securities to GDP (%)	Market capitalization excluding top 10 companies to total market capitalization (%)	Stock market turnover ratio (%)	Stock price volatility
Afghanistan	7.8	9.0		8.8				
Albania	35.7	28.3	6.3	3.2				
Algeria	14.4	33.3	6.3	20.3				
Andorra				19.0				
Angola	18.3	39.2	10.1	12.4				
Antigua and Barbuda	77.7		7.3					
Argentina	12.7	33.1	3.0	5.2	16.7	29.4	5.1	35.1
Armenia	25.6	17.5	9.6	17.7	1.5		0.3	
Aruba	58.8		7.8	20.9				
Australia	122.4	99.1	3.1	11.7	166.3	57.0	84.2	22.0
Austria	120.9	97.1		27.4	71.6	36.8	57.8	35.5
Azerbaijan	17.0	14.9	8.3	10.2				
Bahamas, The	84.8		2.1	29.2				
Bahrain	79.4	64.5	6.1	17.9	87.2		2.5	11.6
Bangladesh	41.2	39.6	5.2	8.1	12.0		146.7	
Barbados	81.2		6.1	13.8	119.8		0.4	
Belarus	33.3	58.6	0.5	15.8				
Belgium	94.3	96.3		6.0	104.0		48.4	25.1
Belize	63.2		6.3	18.4				
Benin	22.5	10.5		17.0				
Bermuda				15.9				
Bhutan	36.4		11.1	37.1				
Bolivia	32.9	28.0	9.1	9.4	15.8		0.6	
Bosnia and Herzegovina	51.7	56.2	4.6	14.3				12.6
Botswana	25.3	30.3	6.0	14.6	32.2		3.1	7.7
Brazil	50.3	55.9	33.1	21.2	81.7	45.6	68.5	33.8
Brunei Darussalam	39.5		5.0	9.5				
Bulgaria		52.8	6.5	16.7	15.2		4.8	26.5
Burkina Faso	17.3	13.4		8.5				
Burundi	14.7	7.2		19.3				
Cambodia	25.4	3.7		9.7				
Cameroon	11.1	14.8		30.5				
Canada		95.8	2.4	20.1	142.3	70.4	78.0	25.5
Cape Verde	59.0		7.5					

TABLE A.1 Countries and Their Financial System Characteristics, Averages, 2009–11 *(continued)*

	Financial institutions				Financial markets			
Economy	Private credit by deposit money banks to GDP (%)	Account at a formal financial institution (%, age 15+)	Bank lending-deposit spread (%)	Bank Z-score	Stock market capitalization + outstanding domestic private debt securities to GDP (%)	Market capitalization excluding top 10 companies to total market capitalization (%)	Stock market turnover ratio (%)	Stock price volatility
Cayman Islands				9.0				
Central African Republic	7.6	3.3		13.7				
Chad	4.9	9.0		17.9				
Chile	64.6	42.2	4.0	15.1	145.5	53.4	18.4	19.3
China	118.1	63.8	3.1	19.4	95.2	74.5	188.9	30.9
Colombia	31.2	30.4	6.5	6.5	57.7	22.9	12.6	20.2
Comoros	15.1	21.7	5.2					
Congo, Dem. Rep.		3.7	39.8	4.2				
Congo, Rep.	5.0	9.0						
Costa Rica	46.0	50.4	12.2	28.3	4.4		2.4	
Côte d'Ivoire	17.6			19.4	28.2		2.0	
Croatia	68.6	88.4	8.3	58.1	40.5		4.6	27.7
Cuba				9.6				
Cyprus	272.7	85.2		3.8	25.9	17.9	11.9	
Czech Republic		80.7	4.7	14.7	35.0		36.0	32.5
Denmark		99.7		12.3	246.5		78.5	27.7
Djibouti	25.8	12.3	9.4	9.4				
Dominica	52.4		6.2	7.8				
Dominican Republic	20.9	38.2	8.4	18.4				
Ecuador	27.2	36.7		2.1	7.1		7.0	15.4
Egypt, Arab Rep.	33.2	9.7	4.9	39.9	38.1	56.6	45.3	33.2
El Salvador	4.6	13.8		27.1	21.2		1.0	
Equatorial Guinea	7.1			16.6				
Estonia	99.5	96.8	5.4	8.0	11.2		14.1	26.1
Ethiopia				10.4				
Fiji	48.1		2.9		13.8		1.7	
Finland	93.3	99.7		12.7	72.0		102.3	28.6
France	112.2	97.0		14.2	123.3		79.9	29.7
Gabon	8.6	18.9		13.5				
Gambia, The	13.2		13.4	5.5				
Georgia	30.8	33.0	15.5	8.1	6.3		0.3	
Germany	108.0	98.1		12.9	68.5	53.7	115.5	27.8
Ghana	13.9	29.4		9.0	9.4		3.2	
Greece	109.2	77.9		0.3	44.3	39.2	62.9	36.3
Grenada	79.5		7.6	13.6				
Guatemala	23.7	22.3	8.1	18.8				

(appendix continued next page)

TABLE A.1 Countries and Their Financial System Characteristics, Averages, 2009–11 *(continued)*

	Financial institutions				Financial markets			
Economy	Private credit by deposit money banks to GDP (%)	Account at a formal financial institution (%, age 15+)	Bank lending-deposit spread (%)	Bank Z-score	Stock market capitalization + outstanding domestic private debt securities to GDP (%)	Market capitalization excluding top 10 companies to total market capitalization (%)	Stock market turnover ratio (%)	Stock price volatility
Guinea	5.0	3.7		3.2				
Guinea-Bissau	6.7							
Guyana	33.6		12.3	18.9	14.0			
Haiti	13.2	22.0	14.8	19.5				
Honduras	48.7	20.5	9.4	30.0				
Hong Kong SAR, China	166.3	88.7	5.0	11.9	465.5	61.8	150.6	32.6
Hungary		72.7	3.3	11.7	25.6	4.1	97.9	35.2
Iceland	110.0			–2.4	84.0		17.5	
India	45.5	35.2		40.2	76.7	70.3	85.2	30.7
Indonesia	24.4	19.6	5.6	2.8	37.9	55.6	56.3	27.6
Iran, Islamic Rep.	24.6	73.7	0.1		15.3	57.4	30.7	
Iraq	5.9	10.6		21.8				
Ireland	225.0	93.9		1.6	142.9	19.0	26.9	33.7
Israel	92.7	90.5	2.9	25.5	83.0	45.6	59.9	24.8
Italy	115.7	71.0		11.6	55.5	38.1	172.8	31.6
Jamaica	26.9	71.0	13.1	3.2	49.4		2.8	12.2
Japan	105.1	96.4	1.1	13.0	107.3	65.9	111.6	28.2
Jordan	70.5	25.5	5.0	45.1	119.8	29.9	28.3	16.7
Kazakhstan	42.2	42.1		–0.8	34.9		5.2	40.4
Kenya	30.9	42.3	9.4	14.6	35.8		7.0	11.0
Korea, Rep.	100.8	93.0	1.8	10.2	154.6	67.0	200.1	26.3
Kosovo	32.3	44.3						
Kuwait	66.1	86.8	3.0	17.9	80.6		43.3	14.4
Kyrgyz Republic		3.8	26.8	23.9	1.7		34.7	
Lao PDR	17.9	26.8	20.3	4.6				
Latvia		89.7	7.3	4.1	5.7		2.4	29.6
Lebanon	67.9	37.0	2.0	52.7	30.5		9.8	17.1
Lesotho	12.5	18.5	7.8	13.2				
Liberia	16.4	18.8	10.5					
Libya	9.3		3.5	48.1				
Lithuania		73.8	4.0	4.2	12.1		6.1	25.2
Luxembourg	184.3	94.6		27.6	172.8	3.7	0.2	
Macao SAR, China	52.0		5.2	38.5				
Macedonia, FYR	43.0	73.7	2.8	14.7	7.9		6.6	22.3
Madagascar	11.0	5.5	38.0	11.9				
Malawi	14.6	16.5	20.8	26.4	26.3		2.3	

TABLE A.1 Countries and Their Financial System Characteristics, Averages, 2009–11 *(continued)*

	Financial institutions				Financial markets			
Economy	Private credit by deposit money banks to GDP (%)	Account at a formal financial institution (%, age 15+)	Bank lending-deposit spread (%)	Bank Z-score	Stock market capitalization + outstanding domestic private debt securities to GDP (%)	Market capitalization excluding top 10 companies to total market capitalization (%)	Stock market turnover ratio (%)	Stock price volatility
Malaysia	106.3	66.2	2.5	30.7	188.6	62.3	30.4	13.5
Maldives	84.2		6.3					
Mali	17.8	8.2		13.2				
Malta	126.2	95.3		14.8	40.4	6.4	1.2	
Mauritania	25.5	17.5	9.8	26.8				
Mauritius	84.0	80.1	1.0	21.1	59.0	43.2	7.0	15.8
Mexico	18.0	27.4	4.4	21.9	51.7	35.0	27.2	25.2
Micronesia, Fed. Sts.			14.0	25.9				
Moldova	33.3	18.1	7.1	10.3				
Mongolia	39.8	77.7	7.6	22.4	12.3		4.6	24.9
Montenegro	71.2	50.4		5.9	85.7		4.1	28.8
Morocco	71.8	39.1		31.4	69.3	27.7	24.2	14.4
Mozambique	22.6	39.9	6.3	2.2				
Myanmar			5.0	0.5				
Namibia	47.5		4.7	6.8	9.2		2.0	32.0
Nepal	48.9	25.3	4.8	6.2	32.0		2.8	
Netherlands	204.2	98.7		4.5	145.0		105.6	29.0
New Zealand	145.1	99.4	2.0	25.6	47.9	44.8	29.8	13.3
Nicaragua	32.1	14.2	9.0	7.7				
Niger	12.0	1.5		18.0				
Nigeria	29.9	29.7	8.8	0.1	19.5		11.4	23.7
Norway			2.0	21.5	83.1	29.1	106.6	37.0
Oman	40.6	73.6	3.4	13.3	31.4		22.6	23.2
Pakistan	21.0	10.3	6.0	13.4	17.5		52.3	22.3
Panama	79.5	24.9	4.7	41.3	30.5		1.2	10.1
Papua New Guinea	25.1		8.9	8.6	113.4		0.4	
Paraguay	32.8	21.7	25.6	11.8	1.9		3.0	
Peru	23.5	20.5	17.3	13.1	56.2	36.1	5.0	32.4
Philippines	28.7	26.6	4.5	22.8	58.5	55.9	22.9	23.8
Poland		70.2		9.6	32.2	45.5	52.7	30.3
Portugal	186.9	81.2		16.9	94.9		46.6	24.1
Qatar	41.9	65.9	3.6	26.1	79.1		22.6	27.1
Romania	38.4	44.6	6.0	11.0	16.0		8.3	36.6
Russian Federation	42.1	48.2	5.2	7.0	53.6	36.7	107.1	45.9
Rwanda		32.8	9.6	8.0				
Samoa	43.7		7.7	20.4				

(appendix continued next page)

TABLE A.1 Countries and Their Financial System Characteristics, Averages, 2009–11 *(continued)*

	Financial institutions				Financial markets			
Economy	Private credit by deposit money banks to GDP (%)	Account at a formal financial institution (%, age 15+)	Bank lending-deposit spread (%)	Bank Z-score	Stock market capitalization + outstanding domestic private debt securities to GDP (%)	Market capitalization excluding top 10 companies to total market capitalization (%)	Stock market turnover ratio (%)	Stock price volatility
San Marino				11.3				
São Tomé and Príncipe	31.6		17.2					
Saudi Arabia	44.8	46.4		14.1	69.8	40.5	88.2	27.4
Senegal	25.2	5.8		40.4				
Serbia	46.9	62.2	6.7	16.2	25.2		3.7	28.1
Seychelles	23.1		8.2	15.1				
Sierra Leone	8.5	15.3	12.2	4.2				
Singapore	99.7	98.2	5.2	27.8	153.8	71.1	85.9	23.8
Slovak Republic	47.9	79.6		19.4	10.4		4.5	23.2
Slovenia	92.0	97.1	4.5	12.1	27.1	20.0	5.9	20.6
Solomon Islands	22.3		11.1					
Somalia		31.0						
South Africa	72.4	53.6	3.3	8.9	205.4	66.8	55.9	25.1
Spain	209.6	93.3		21.7	138.9	62.5	128.8	31.3
Sri Lanka	25.3	68.5	3.8	12.9	25.4	58.4	21.1	18.8
St. Kitts and Nevis	66.2		4.4	20.5	85.8		1.0	
St. Lucia	111.5		7.2	14.5				
St. Vincent and the Grenadines	51.4		6.2					
Sudan	10.5	6.9		19.7				
Suriname	22.6		5.4	14.5				
Swaziland	23.2	28.6	6.0	16.5				
Sweden		99.0		21.6	156.2		98.7	29.2
Switzerland	165.6		2.7	7.8	223.2	36.0	78.4	22.9
Syrian Arab Republic	19.4	23.3	3.7	7.7				
Tajikistan		2.5	15.7	9.0				
Tanzania	15.0	17.3	7.7	12.9	5.6		2.6	6.5
Thailand	96.7	72.7	4.8	6.3	77.8	53.0	99.1	25.8
Timor-Leste	12.2		10.2					
Togo	21.6	10.2		4.4				
Tonga	43.9		7.4	4.3				
Trinidad and Tobago	32.8	75.9	7.6	20.8	58.7		1.5	
Tunisia	61.2	32.2		23.3	20.2		15.2	11.4
Turkey	38.5	57.6		5.8	31.6	52.4	160.1	31.0
Turkmenistan		0.4		4.3				
Uganda	12.3	20.5	10.8	19.0	20.7		0.3	
Ukraine	64.6	41.3	6.8	2.6	18.3		8.3	44.8

TABLE A.1 Countries and Their Financial System Characteristics, Averages, 2009–11 *(continued)*

	Financial institutions				Financial markets			
Economy	Private credit by deposit money banks to GDP (%)	Account at a formal financial institution (%, age 15+)	Bank lending-deposit spread (%)	Bank Z-score	Stock market capitalization + outstanding domestic private debt securities to GDP (%)	Market capitalization excluding top 10 companies to total market capitalization (%)	Stock market turnover ratio (%)	Stock price volatility
United Arab Emirates	70.4	59.7		21.2	24.8		48.3	21.4
United Kingdom	202.4	97.2		6.6	132.9	65.9	118.6	24.7
United States	55.7	88.0		26.1	209.9	72.6	240.6	28.2
Uruguay	22.1	23.5	7.4	2.7	0.4		1.6	
Uzbekistan		22.5		6.3				
Vanuatu	62.4		4.0	15.9				
Venezuela, RB	18.8	44.1	3.2	10.1	1.4		1.0	14.3
Vietnam	104.4	21.4	2.4	18.6	16.5		87.0	30.0
West Bank and Gaza		19.4		17.8				21.0
Yemen, Rep.	6.0	3.7	5.8	26.8				
Zambia	2.2	21.4	13.4	11.3	17.9		3.6	
Zimbabwe		39.7		2.3				

Source: Data from and calculations based on the Global Financial Development Database. For more information, see Čihák and others 2013.
Note: Empty cells indicate lack of data.

NOTES

Table layout: The layout of the table follows the 4x2 matrix of financial system characteristics introduced in the 2013 *Global Financial Development Report*, with four variables approximating depth, access, efficiency, and stability of financial institutions and financial markets, respectively.

Additional data: The above table presents a small fraction of observations in the Global Financial Development Database, accompanying this report. For additional variables, historical data, and detailed metadata, see the full data set at http://www.worldbank.org/financialdevelopment.

Period covered: The table shows averages for 2009–11.

Averaging: Each observation is an arithmetic average of the corresponding variable over 2009–11. When a variable is not reported or not available for a part of this period, the average is calculated for the period for which observations are available.

Visualization: To illustrate where a country's observation is in relation to the global distribution of the variable, the table includes four bars on the left of each observation. The four-bar scale is based on the location of the country in the statistical distribution of the variable in the Global Financial Development Database: values below the 25th percentile show only one full bar, values equal to or greater than the 25th and less than the 50th percentile show two full bars, values equal to or greater than the 50th and less than the 75th percentile show three full bars, and values greater than the 75th percentile show four full bars. The bars are calculated using "winsorized" and "rescaled" variables, as described in the 2013 *Global Financial Development Report*. To prepare for this, the 95th and 5th percentile for each variable for the entire pooled country-year data set are calculated, and the top and bottom 5 percent of observations are truncated. Specifically, all observations from the 5th percentile to the minimum are replaced by the value corresponding to the 5th percentile, and all observations from the 95th percentile to the maximum are replaced by the value corresponding to the 95th percentile.

To convert all the variables to a 0–100 scale, each score is rescaled by the maximum and the minimum for each indicator. The rescaled indicator can be interpreted as the percent distance between the worst (0) and the best (100) financial development outcome, defined by the 5th and 95th percentile of the original distribution (for further information see the 2013 *Global Financial Development Report*). The four bars on the left of the country name show the unweighted arithmetic average of the "winsorized" and rescaled variables (dimensions) for each country. This average is reported only for those countries where data for 2009–11 are available for at least four variables (dimensions).

Private credit by deposit money banks to GDP (%) measures the domestic private credit to the real sector by deposit money banks as a percentage of local currency GDP. Data on domestic private credit to the real sector by deposit money banks are from the International Financial Statistics (IFS), line 22D, published by the International Monetary Fund (IMF). Local currency GDP is also from IFS.

Account at a formal financial institution (%, age 15+) measures the percentage of adults with an account (self or together with someone else) at a bank, credit union, another financial institution (e.g., cooperative, microfinance institution), or the post office (if applicable), including adults who report having a debit card. The data are from the Global Financial Inclusion (Global Findex) Database (Demirgüç-Kunt and Klapper 2012).

Bank lending-deposit spread (percentage points) is lending rate minus deposit rate. Lending rate is the rate charged by banks on loans to the private sector and deposit interest rate is the rate paid by commercial or similar banks for demand, time, or savings deposits. The lending and deposit rates are from IFS lines 60P and 60L, respectively.

Bank Z-score is calculated as [ROA + (equity / assets)] / (standard deviation of ROA). To approximate the probability that a country's banking system defaults, the indicator compares the system's buffers (returns and capitalization) with the system's riskiness (volatility of returns). Return of Assets (ROA), equity, and assets are country-level aggregate figures (calculated from underlying bank-by-bank unconsolidated data from Bankscope).

Stock market capitalization + outstanding domestic private debt securities to GDP (%) measures the market capitalization plus the amount of outstanding domestic private debt securities as percentage of GDP. Market capitalization (also known as market value) is the share price times the number of shares outstanding. Listed domestic companies are the domestically incorporated companies listed on the country's stock exchanges at the end of the year. Listed companies do not include investment companies, mutual funds, or other collective investment vehicles. Data are from Standard & Poor's Global Stock Markets Factbook and supplemental Standard & Poor's data, and are compiled and reported by the *World Development Indicators*. Amount of outstanding domestic private debt securities is from table 16A (domestic debt amount) of the Securities Statistics by the Bank for International Settlements. The amount includes all issuers except governments.

Market capitalization excluding top 10 companies to total market capitalization (%) measures the ratio of market capitalization outside of the top 10 largest companies to total market capitalization. The World Federation of Exchanges (WFE) provides data on the exchange level. This variable is aggregated up to the country level by taking a simple average over exchanges.

Stock market turnover ratio (%) is the total value of shares traded during the period divided by the average market capitalization for the period. Average market capitalization is calculated as the average of the end-of-period values for the current period and the previous period. Data are from Standard & Poor's Global Stock Markets Factbook and supplemental Standard & Poor's data, and are compiled and reported by the *World Development Indicators*.

Stock price volatility is the 360-day standard deviation of the return on the national stock market index. The data are from Bloomberg.

MAP A.1 DEPTH—FINANCIAL INSTITUTIONS

To approximate financial institutions' depth, this map uses domestic private credit to the real sector by deposit money banks as a percentage of local currency GDP. Data on domestic private credit to the real sector by deposit money banks are from the International Financial Statistics (IFS), line 22D, published by the International Monetary Fund (IMF). Local currency GDP is also from IFS. The four shades of blue in the map are based on the average value of the variable in 2009–11: the darker the blue, the higher the quartile of the statistical distribution of the variable.

TABLE A.1.1 Depth—Financial Institutions

Private credit by deposit money banks to GDP (%)	Number of countries	Average	Median	Standard deviation	Minimum	Maximum	Weighted average[a]
World	163	53.8	36.9	49.1	0.0	284.6	88.6
By developed/developing economies							
Developed economies	43	107.4	96.3	59.0	6.5	284.6	100.9
Developing economies	120	34.6	26.8	25.3	0.0	121.5	64.1
By income level							
High income	43	107.4	96.3	59.0	6.5	284.6	100.9
Upper-middle income	46	48.1	43.2	28.8	7.9	121.5	72.3
Lower-middle income	49	31.2	27.8	19.9	0.0	109.1	36.9
Low income	25	17.1	14.3	10.6	3.9	51.1	26.9
By region							
High income: OECD	25	126.8	111.4	49.5	47.1	237.6	102.0
High income: non-OECD	18	79.5	64.5	60.8	6.5	284.6	77.4
East Asia & Pacific	16	51.2	41.4	34.8	11.5	121.5	105.8
Europe & Central Asia	16	40.4	37.7	13.9	16.5	83.6	41.3
Latin America & the Caribbean	28	39.8	31.4	25.0	4.4	112.6	35.5
Middle East & North Africa	12	36.3	28.1	26.3	3.3	74.5	28.6
South Asia	8	38.8	39.5	22.2	6.8	90.4	42.4
Sub-Saharan Africa	40	20.9	16.6	17.4	0.0	86.7	38.2

Source: Global Financial Development Database, 2009–11 data.
Note: OECD = Organisation for Economic Co-operation and Development.
a. Weighted average by current GDP.

MAP A.2 ACCESS—FINANCIAL INSTITUTIONS

To approximate access to financial institutions, this map uses the percentage of adults (age 15+) who reported having an account at a formal financial institution. The data are taken from the Global Financial Inclusion (Global Findex) Database. The four shades of blue in the map are based on the value of the variable in 2011: the darker the blue, the higher the quartile of the statistical distribution of the variable.

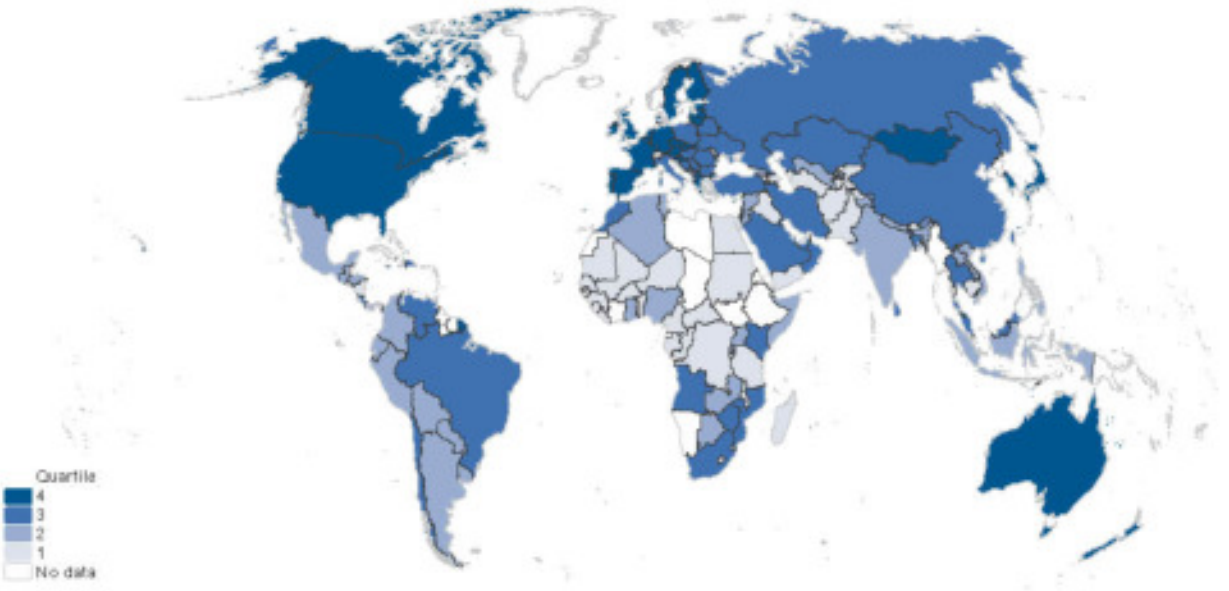


TABLE A.1.2 Access—Financial Institutions

Account at a formal financial institution (%, age 15+)	Number of countries	Average	Median	Standard deviation	Minimum	Maximum	Weighted average[a]
World	147	45.7	38.2	31.7	0.4	99.7	50.6
By developed/developing economies							
Developed economies	40	87.1	93.2	13.2	46.4	99.7	89.2
Developing economies	107	30.3	25.5	20.9	0.4	89.7	41.9
By income level							
High income	40	87.1	93.2	13.2	46.4	99.7	89.2
Upper-middle income	40	46.3	44.4	20.1	0.4	89.7	57.1
Lower-middle income	38	24.0	21.4	15.3	3.7	77.7	28.5
Low income	29	16.5	13.4	12.9	1.5	42.3	23.3
By region							
High income: OECD	28	91.2	96.1	9.5	70.2	99.7	90.5
High income: non-OECD	12	77.4	80.6	15.8	46.4	98.2	66.7
East Asia & Pacific	9	42.0	26.8	27.7	3.7	77.7	55.1
Europe & Central Asia	23	40.7	44.3	24.2	0.4	89.7	44.8
Latin America & the Caribbean	20	32.0	27.7	14.7	13.8	71.0	39.3
Middle East & North Africa	12	26.6	24.4	18.8	3.7	73.7	33.9
South Asia	6	31.3	30.3	22.1	9.0	68.5	33.1
Sub-Saharan Africa	37	21.0	17.5	16.3	1.5	80.1	23.8

Source: Global Financial Development Database, 2011 data.
Note: OECD = Organisation for Economic Co-operation and Development.
a. Weighted average by total adult population in 2011.

MAP A.3 EFFICIENCY—FINANCIAL INSTITUTIONS

To approximate efficiency of financial institutions, this map uses the spread (difference) between lending rate and deposit interest rate. Lending rate is the rate charged by banks on loans to the private sector, and deposit interest rate is the rate paid by commercial or similar banks for demand, time, or savings deposits. The lending and deposit rates are from IFS, lines 60P and 60L, respectively. The four shades of blue in the map are based on the average value of the variable in 2009–11: the darker the blue, the higher the quartile of the statistical distribution of the variable.

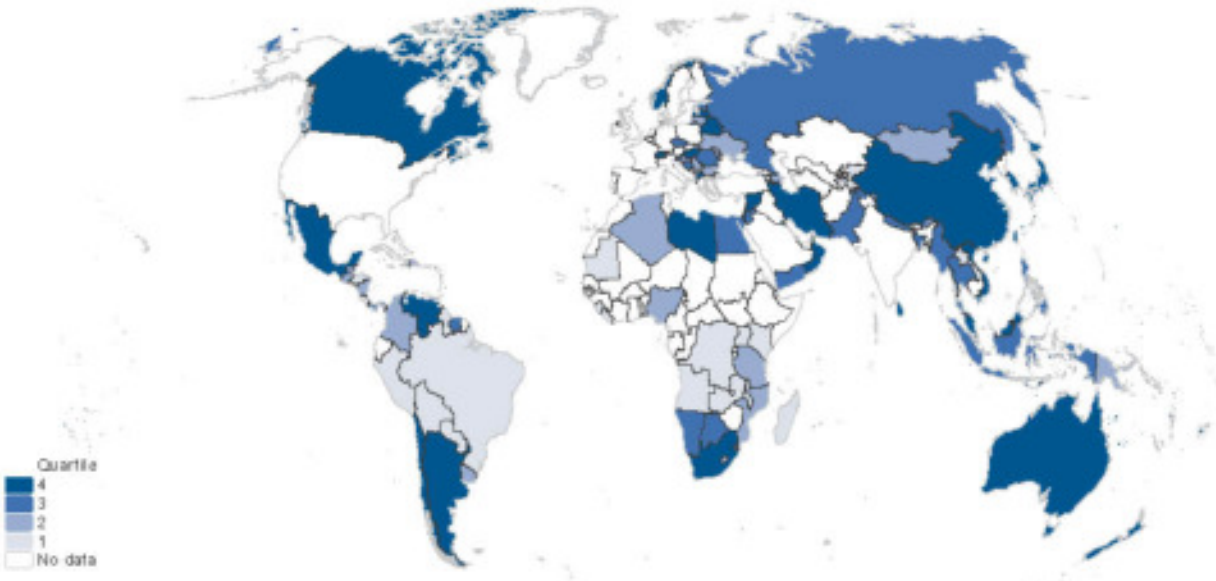


TABLE A.1.3 Efficiency—Financial Institutions

Bank lending-deposit spread (percentage points)	Number of countries	Average	Median	Standard deviation	Minimum	Maximum	Weighted average[a]
World	126	7.9	6.2	6.6	0.1	49.3	3.7
By developed/developing economies							
Developed economies	26	4.2	4.3	2.0	1.0	8.6	2.0
Developing economies	100	8.8	6.9	7.0	0.1	49.3	6.2
By income level							
High income	26	4.2	4.3	2.0	1.0	8.6	2.0
Upper-middle income	43	6.5	5.5	5.3	0.1	35.4	6.2
Lower-middle income	39	8.9	8.0	4.8	1.9	26.8	5.7
Low income	18	14.3	10.7	10.9	3.2	49.3	5.5
By region							
High income: OECD	13	3.1	2.7	1.4	1.0	6.7	1.8
High income: non-OECD	13	5.3	5.2	1.9	1.7	8.6	5.0
East Asia & Pacific	17	7.2	5.8	4.7	1.9	21.5	3.3
Europe & Central Asia	17	8.2	6.7	6.2	0.1	33.8	5.4
Latin America & the Caribbean	26	9.7	7.6	6.9	1.4	35.4	26.4
Middle East & North Africa	9	4.7	4.5	2.5	0.1	9.7	4.5
South Asia	6	6.2	5.9	2.6	3.0	12.0	5.3
Sub-Saharan Africa	25	11.5	9.1	9.4	0.5	49.3	5.0

Source: Global Financial Development Database, 2009–11 data.
Note: OECD = Organisation for Economic Co-operation and Development.
a. Weighted average by total banking assets.

MAP A.4 STABILITY—FINANCIAL INSTITUTIONS

To approximate stability of financial institutions, this map uses the Z-score for commercial banks. The indicator is estimated as follows: [ROA + (equity / assets)] / (standard deviation of ROA). Return on equity (ROA), equity, and assets are country-level aggregate figures (calculated from underlying bank-by-bank unconsolidated data from Bankscope). The indicator compares the banking system's buffers (returns and capital) with its riskiness (volatility of returns). The four shades of blue in the map are based on the average value of the variable in 2009–11: the darker the blue, the higher the quartile of the statistical distribution of the variable.

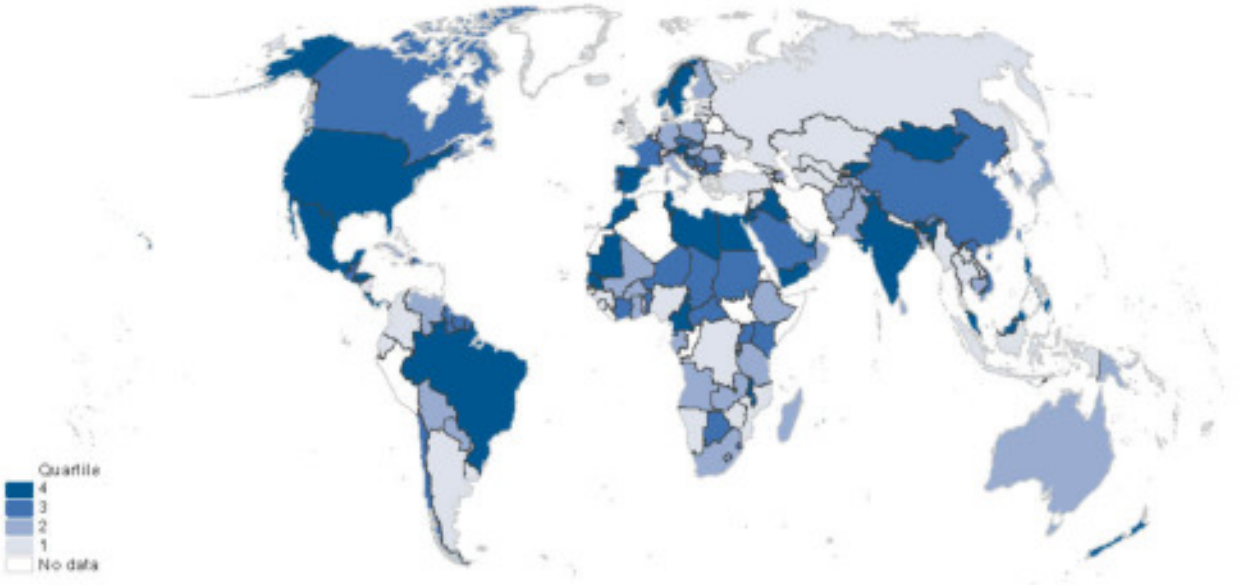


TABLE A.1.4 Stability—Financial Institutions

Bank Z-score	Number of countries	Average	Median	Standard deviation	Minimum	Maximum	Weighted average[a]
World	175	15.5	13.6	10.6	-4.5	65.3	15.8
By developed/developing economies							
Developed economies	54	16.3	14.4	10.1	-3.3	58.4	14.9
Developing economies	121	15.1	13.1	10.9	-4.5	65.3	19.2
By income level							
High income	54	16.3	14.4	10.1	-3.3	58.4	14.9
Upper-middle income	47	15.2	12.7	12.3	-4.5	65.3	18.0
Lower-middle income	45	17.6	16.8	10.7	-4.1	49.5	30.5
Low income	29	11.2	9.9	6.9	0.1	27.3	2.4
By region							
High income: OECD	32	14.2	13.0	8.2	-3.3	35.8	14.8
High income: non-OECD	22	19.6	16.7	11.7	1.0	58.4	18.4
East Asia & Pacific	15	14.6	16.4	9.3	0.1	31.8	17.9
Europe & Central Asia	22	9.6	8.5	6.2	-4.5	26.4	7.0
Latin America & the Caribbean	27	15.2	13.6	9.7	2.0	42.3	19.0
Middle East & North Africa	12	28.7	25.3	15.1	6.4	65.3	36.5
South Asia	7	18.1	13.1	14.1	3.6	49.5	37.4
Sub-Saharan Africa	38	13.7	12.7	8.5	-4.1	42.7	9.8

Source: Global Financial Development Database, 2009–11 data.
Note: OECD = Organisation for Economic Co-operation and Development.
a. Weighted average by total banking assets.

MAP A.5 DEPTH—FINANCIAL MARKETS

To approximate depth of financial markets, this map uses market capitalization plus the amount of outstanding domestic private debt securities as percentage of GDP. Market capitalization (also known as market value) is the share price times the number of shares outstanding. Listed domestic companies are the domestically incorporated companies listed on the country's stock exchanges at the end of the year. Listed companies do not include investment companies, mutual funds, or other collective investment vehicles. Data are from Standard & Poor's Global Stock Markets Factbook and supplemental S&P data, and are compiled and reported by the *World Development Indicators*. Amount of outstanding domestic private debt securities is from table 16A (domestic debt amount) of the Securities Statistics by the Bank for International Settlements. The amount includes all issuers except governments. The four shades of blue in the map are based on the average value of the variable in 2009–11: the darker the blue, the higher the quartile of the statistical distribution of the variable.

TABLE A.1.5 Depth—Financial Markets

Stock market capitalization plus outstanding domestic private debt securities to GDP (%)	Number of countries	Average	Median	Standard deviation	Minimum	Maximum	Weighted average[a]
World	107	66.5	41.5	69.2	0.4	538.5	123.0
By developed/developing economies							
Developed economies	45	101.7	82.1	80.5	9.1	538.5	144.9
Developing economies	62	39.7	24.7	43.1	0.4	229.8	71.8
By income level							
High income	45	101.7	82.1	80.5	9.1	538.5	144.9
Upper-middle income	33	50.0	32.0	51.6	0.4	229.8	77.2
Lower-middle income	22	29.8	18.7	28.4	1.4	141.1	53.2
Low Income	7	20.6	22.9	12.8	1.5	38.4	18.7
By region							
High income: OECD	32	103.1	93.3	62.2	9.1	259.4	145.7
High income: non-OECD	13	98.3	63.6	114.7	20.4	538.5	124.0
East Asia & Pacific	9	68.2	58.6	57.4	8.4	202.2	89.5
Europe & Central Asia	14	22.6	14.8	23.0	1.4	93.2	40.8
Latin America & the Caribbean	16	34.5	20.7	34.8	0.4	150.0	62.0
Middle East & North Africa	6	53.1	36.5	38.4	15.3	140.8	40.0
South Asia	5	32.7	24.7	24.6	7.6	87.9	66.8
Sub-Saharan Africa	12	41.8	25.3	55.2	5.6	229.8	108.3

Source: Global Financial Development Database, 2009–11 data.
Note: OECD = Organisation for Economic Co-operation and Development.
a. Weighted average by current GDP.

MAP A.6 ACCESS—FINANCIAL MARKETS

To approximate access to financial markets, this map uses the ratio of market capitalization excluding the top 10 largest companies to total market capitalization. The World Federation of Exchanges (WFE) provides data on the exchange level. This variable is aggregated up to the country level by taking a simple average over exchanges. The four shades of blue in the map are based on the average value of the variable in 2009–11: the darker the blue, the higher the quartile of the statistical distribution of the variable.

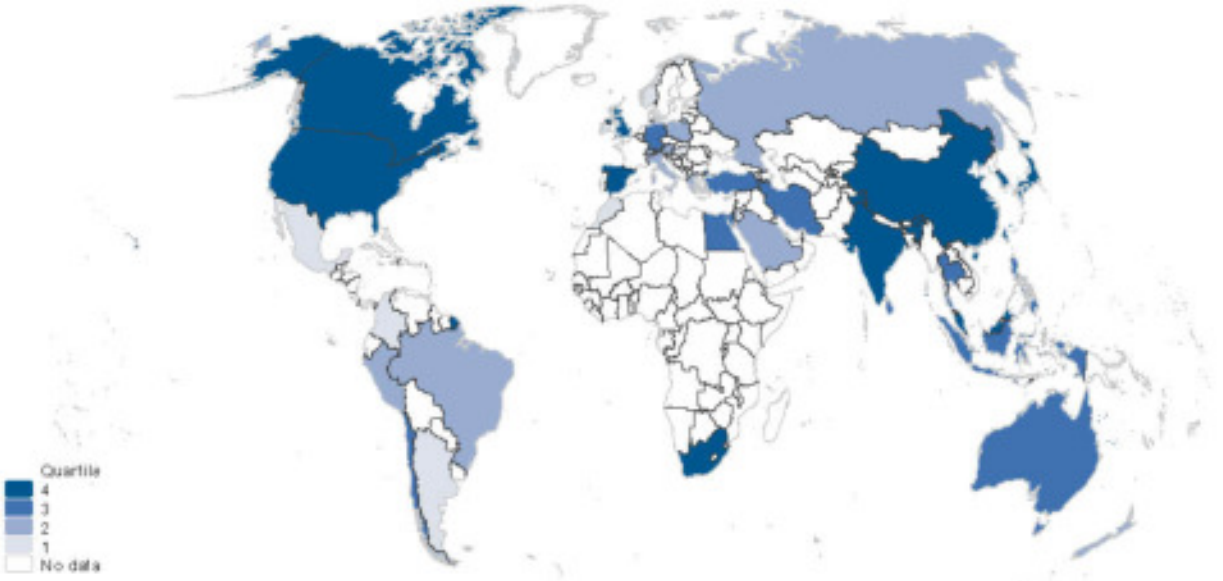


TABLE A.1.6 Access—Financial Markets

Market capitalization excluding top 10 companies (%)	Number of countries	Average	Median	Standard deviation	Minimum	Maximum	Weighted average[a]
World	46	45.7	47.4	19.4	2.8	76.7	64.9
By developed/developing economies							
Developed economies	25	43.1	43.6	22.4	2.8	76.3	66.2
Developing economies	21	48.7	51.8	15.0	20.7	76.7	61.0
By income level							
High income	25	43.1	43.6	22.4	2.8	76.3	66.2
Upper-middle income	15	46.6	46.9	15.1	20.7	76.7	60.2
Lower-middle income	6	54.1	56.4	13.5	25.7	72.4	65.1
Low income	0						
By region							
High income: OECD	20	44.0	45.2	21.6	2.8	76.3	66.5
High income: non-OECD	5	39.5	41.5	25.7	5.4	74.3	59.1
East Asia & Pacific	5	60.3	58.8	8.4	51.6	76.7	71.3
Europe & Central Asia	2	44.5	44.6	9.1	32.4	55.1	40.1
Latin America & the Caribbean	6	37.1	35.0	10.5	20.7	55.0	42.1
Middle East & North Africa	4	42.9	40.8	15.1	25.7	60.7	46.9
South Asia	2	64.3	66.0	7.2	53.9	72.4	70.4
Sub-Saharan Africa	2	55.0	49.6	15.5	39.0	74.8	65.5

Source: Global Financial Development Database, 2009–11 data.
Note: OECD = Organisation for Economic Co-operation and Development.
a. Weighted average by stock market capitalization.

MAP A.7 EFFICIENCY—FINANCIAL MARKETS

To approximate efficiency of financial markets, this map uses the total value of shares traded during the period divided by the average market capitalization for the period. Average market capitalization is calculated as the average of the end-of-period values for the current period and the previous period. Data are from Standard & Poor's Global Stock Markets Factbook and supplemental S&P data, and is compiled and reported by the *World Development Indicators*. The four shades of blue in the map are based on the average value of the variable in 2009–11: the darker the blue, the higher the quartile of the statistical distribution of the variable.

TABLE A.1.7 Efficiency—Financial Markets

Stock market turnover ratio (%)	Number of countries	Average	Median	Standard deviation	Minimum	Maximum	Weighted average[a]
World	106	43.7	17.4	54.7	0.1	347.0	150.7
By developed/developing economies							
Developed economies	45	65.5	58.0	59.2	0.1	347.0	161.6
Developing economies	61	26.7	5.9	44.1	0.2	226.5	114.5
By income level							
High income	45	65.5	58.0	59.2	0.1	347.0	161.6
Upper-middle income	33	28.8	7.0	47.5	0.4	226.5	125.2
Lower-middle income	21	21.9	6.2	32.0	0.2	144.5	67.3
Low income	7	30.7	4.1	58.9	0.3	213.9	53.0
By region							
High income: OECD	32	76.9	73.9	60.1	0.1	347.0	164.7
High income: non-OECD	13	37.2	17.4	46.7	0.3	161.9	106.8
East Asia & Pacific	9	54.6	30.0	63.1	0.2	226.5	163.3
Europe & Central Asia	14	25.7	5.2	48.6	0.2	172.3	107.2
Latin America & the Caribbean	15	11.1	3.0	18.3	0.4	76.3	47.1
Middle East & North Africa	6	24.9	17.3	16.0	4.9	59.2	32.5
South Asia	5	61.6	37.0	60.5	1.7	213.9	83.7
Sub-Saharan Africa	12	8.9	3.3	15.6	0.3	63.8	49.9

Source: Global Financial Development Database, 2009–11 data.
Note: OECD = Organisation for Economic Co-operation and Development.
a. Weighted average by stock market capitalization.

MAP A.8 STABILITY—FINANCIAL MARKETS

To approximate stability of financial markets, this map uses the 360-day standard deviation of the return on the national stock market index. Data are from Bloomberg. The four shades of blue in the map are based on the average value of the variable in 2009–11: the darker the blue, the higher the quartile of the statistical distribution of the variable.

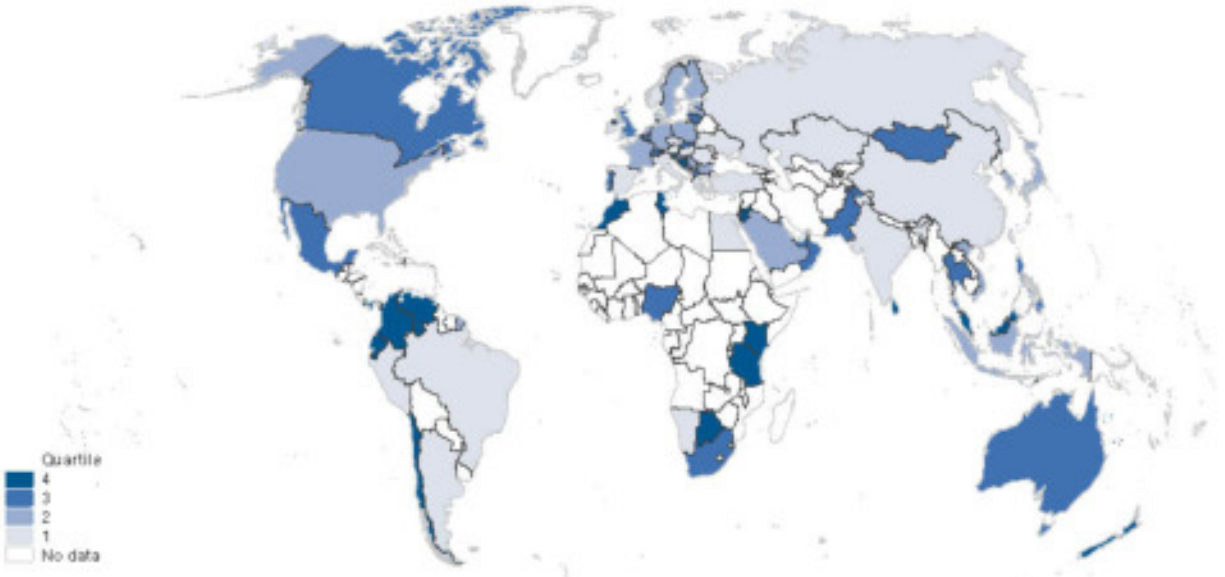


TABLE A.1.8 Stability—Financial Markets

Stock price volatility	Number of countries	Average	Median	Standard deviation	Minimum	Maximum	Weighted average[a]
World	83	25.3	24.0	10.8	2.4	68.0	29.4
By developed/developing economies							
Developed economies	38	26.8	26.3	9.3	8.8	51.1	28.9
Developing economies	45	24.0	22.6	11.8	2.4	68.0	31.5
By income level							
High income	38	26.8	26.3	9.3	8.8	51.1	28.9
Upper-middle income	31	23.9	23.6	12.1	5.8	68.0	31.6
Lower-middle income	12	26.3	24.3	9.9	9.9	52.9	31.2
Low Income	2	8.3	10.9	4.5	2.4	12.5	10.8
By region							
High income: OECD	29	27.9	27.4	8.7	8.8	51.1	28.9
High income: non-OECD	9	23.2	22.0	10.5	9.5	47.1	30.3
East Asia & Pacific	7	25.2	22.7	8.1	9.2	41.0	30.9
Europe & Central Asia	12	31.0	28.4	13.1	10.7	68.0	38.5
Latin America & the Caribbean	10	21.8	17.0	11.0	5.8	48.4	30.3
Middle East & North Africa	6	19.0	16.2	9.3	8.4	40.2	27.4
South Asia	3	23.9	20.4	9.0	15.6	43.8	32.0
Sub-Saharan Africa	7	17.7	16.5	11.0	2.4	43.1	24.9

Source: Global Financial Development Database, 2009–11 data.
Note: OECD = Organisation for Economic Co-operation and Development.
a. Weighted average by total value of stocks traded.

APPENDIX B
KEY ASPECTS OF FINANCIAL INCLUSION

TABLE B.1 Countries and Their Level of Financial Inclusion, 2011

	Individuals				Firms (formal sector)				Providers
Economy	Account at a formal financial institution (%, age 15+)	Loan from a financial institution in the past year (%, age 15+)	Electronic payments used to make payments (%, age 15+)	Debit card (%, age 15+)	Firms with a checking or savings account (%)	Firms with a bank loan/ line of credit (%)	Firms using banks to finance investments (%)	Firms using banks to finance working capital (%)	Bank branches per 100,000 adults
Afghanistan	9.0	7.4	0.2	4.7	73.1	3.4	1.4	2.5	1.9
Albania	28.3	7.5	3.2	21.1	92.4	42.2	12.4	33.3	22.2
Algeria	33.3	1.5	1.8	13.5	83.8	31.1	8.9	28.6	5.3
Angola	39.2	7.9	17.0	29.8	86.4	9.5	13.1	13.4	10.5
Antigua and Barbuda					100.0	49.2	49.4	46.3	23.4
Argentina	33.1	6.6	5.7	29.8	96.2	49.3	30.3	33.3	13.5
Armenia	17.5	18.9	2.2	5.2	89.5	44.3	31.9		18.8
Aruba									19.5
Australia	99.1	17.0	79.2	79.1					29.6
Austria	97.1	8.3	55.3	86.8					15.2
Azerbaijan	14.9	17.7	0.7	10.0	75.9	19.9	19.0		9.9
Bahamas, The					97.6	34.2	14.6	28.5	38.0
Bahrain	64.5	21.9	6.0	62.2					
Bangladesh	39.6	23.3	0.5	2.3	95.3		24.7	43.1	7.8
Barbados					97.4	58.2	45.5	38.7	19.9
Belarus	58.6	16.1	10.4	50.3	92.3	49.5	35.8		2.1
Belgium	96.3	10.5	71.1	85.8					44.0
Belize					100.0	43.9	36.7	57.0	23.2
Benin	10.5	4.2	0.6	0.7	99.2	42.8	4.2	32.9	
Bhutan					92.6	58.6	64.2	59.5	16.4
Bolivia	28.0	16.6	0.7	12.8	95.6	49.1	27.8	40.5	9.7
Bosnia and Herzegovina	56.2	13.0	6.2	34.4	99.8	65.0	59.7		31.3
Botswana	30.3	5.6	6.8	15.6	99.0	50.0	32.8	32.1	8.6
Brazil	55.9	6.3	16.6	41.2	99.4	65.3	48.4	60.0	46.2
Brunei Darussalam									23.1
Bulgaria	52.8	7.8	4.6	45.8	96.8	40.2	34.7		58.6
Burkina Faso	13.4	3.1	0.6	2.0	96.8	28.4	25.6	33.1	
Burundi	7.2	1.7	0.1	0.8	90.5	35.3	12.3	25.5	2.4
Cambodia	3.7	19.5	0.5	2.9		20.7	11.3	12.6	4.3
Cameroon	14.8	4.5	0.4	2.1	92.5	30.3	31.4	41.6	1.7
Canada	95.8	20.3	69.2	88.0					24.3
Cape Verde					96.5	41.5	35.3	49.8	30.7

(appendix continued next page)

TABLE B.1 Countries and Their Level of Financial Inclusion, 2011 *(continued)*

	Individuals				Firms (formal sector)				Providers
Economy	Account at a formal financial institution (%, age 15+)	Loan from a financial institution in the past year (%, age 15+)	Electronic payments used to make payments (%, age 15+)	Debit card (%, age 15+)	Firms with a checking or savings account (%)	Firms with a bank loan/ line of credit (%)	Firms using banks to finance investments (%)	Firms using banks to finance working capital (%)	Bank branches per 100,000 adults
Central African Republic	3.3	0.9	0.1	1.0	98.5	26.0	25.3	25.3	0.9
Chad	9.0	6.2	1.6	5.3	95.9	20.6	4.2	16.1	0.7
Chile	42.2	7.8	11.1	25.8	97.9	79.6	44.8	55.1	17.5
China	63.8	7.3	6.9	41.0					
Colombia	30.4	11.9	6.8	22.7	95.8	57.2	35.0	49.2	15.0
Comoros	21.7	7.2	0.4	5.7					
Congo, Dem. Rep.	3.7	1.5	0.3	1.7	71.3	10.7	6.7	8.8	
Congo, Rep.	9.0	2.8	2.1	3.6	86.7	12.8	7.7	9.7	2.7
Costa Rica	50.4	10.0	14.5	43.8	97.5	56.8	22.2	30.1	23.1
Côte d'Ivoire					67.4	11.5	13.9	8.3	
Croatia	88.4	14.4	17.3	74.8	99.8	67.3	60.0	63.2	34.8
Cyprus	85.2	27.0	30.2	46.4					103.9
Czech Republic	80.7	9.5	44.7	61.0	98.1	46.6	33.4		23.1
Denmark	99.7	18.8	85.6	90.1					39.0
Djibouti	12.3	4.5	1.5	7.6					
Dominica					100.0	32.8	46.2	37.9	17.7
Dominican Republic	38.2	13.9	4.4	21.3	98.4	56.9	39.1	72.4	10.7
Ecuador	36.7	10.6	4.2	17.1	100.0	48.9	17.0	42.3	
Egypt, Arab Rep.	9.7	3.7	0.4	5.1	74.3	17.4	5.6	7.5	
El Salvador	13.8	3.9	3.0	10.9	94.7	53.1	31.7	44.5	
Equatorial Guinea									4.9
Eritrea					98.2	10.9	11.9	5.7	
Estonia	96.8	7.7	74.1	92.3	97.4	50.8	41.5		18.6
Ethiopia					91.8	46.0	10.9	40.7	2.0
Fiji					96.1	37.8	37.1	50.7	11.0
Finland	99.7	23.9	88.2	89.3					15.0
France	97.0	18.6	65.1	69.2					41.6
Gabon	18.9	2.3	3.3	8.6	83.6	9.0	6.3	8.5	5.8
Gambia, The					72.8	16.6	7.6	14.3	8.9
Georgia	33.0	11.0	2.0	20.2	90.8	41.8	38.2		19.6
Germany	98.1	12.5	64.2	88.0			45.0	42.2	
Ghana	29.4	5.8	2.9	11.4	83.5	22.2	16.0	21.4	5.5
Greece	77.9	7.9	7.7	34.0			25.9	26.3	38.7
Grenada					98.7	49.0	37.3	50.3	34.5
Guatemala	22.3	13.7	2.6	13.0	61.0	49.1	26.6	26.2	37.1
Guinea	3.7	2.4	0.5	2.3	53.9	6.0	0.9	2.6	1.5
Guinea-Bissau					59.0	2.8	0.7	1.1	
Guyana					100.0	50.5	34.5	59.4	7.6

TABLE B.1 Countries and Their Level of Financial Inclusion, 2011 *(continued)*

	Individuals				Firms (formal sector)				Providers
Economy	Account at a formal financial institution (%, age 15+)	Loan from a financial institution in the past year (%, age 15+)	Electronic payments used to make payments (%, age 15+)	Debit card (%, age 15+)	Firms with a checking or savings account (%)	Firms with a bank loan/ line of credit (%)	Firms using banks to finance investments (%)	Firms using banks to finance working capital (%)	Bank branches per 100,000 adults
Haiti	22.0	8.3	2.9	2.7					2.7
Honduras	20.5	7.1	1.4	11.1	81.3	31.2	17.0	25.6	21.6
Hong Kong SAR, China	88.7	7.9	51.2	75.8					23.8
Hungary	72.7	9.4	28.7	62.4	97.7	43.0	48.7		15.7
Iceland									52.4
India	35.2	7.7	2.0	8.4			46.6	36.4	10.6
Indonesia	19.6	8.5	3.1	10.5	51.5	18.2	11.7	13.8	8.5
Iran, Islamic Rep.	73.7	30.7	32.9	58.3					29.5
Iraq	10.6	8.0	1.0	3.3	43.2	3.8	2.7	4.6	5.1
Ireland	93.9	15.7	61.5	70.5			37.4	46.1	27.7
Israel	90.5	16.7	54.4	7.5					20.4
Italy	71.0	4.6	27.8	35.2					66.3
Jamaica	71.0	7.9	7.2	41.1	99.8	27.2	44.2	53.1	6.2
Japan	96.4	6.1	44.8	13.0					34.0
Jordan	25.5	4.5	3.4	14.7	94.2	25.5	8.6	18.3	21.1
Kazakhstan	42.1	13.1	4.5	31.3	92.1	33.2	31.0		3.4
Kenya	42.3	9.7	5.4	29.9	89.1	25.4	22.9	26.0	5.2
Kiribati									4.0
Korea, Rep.	93.0	16.6	64.8	57.9			39.9	41.2	18.8
Kosovo	44.3	6.1	5.9	29.0	96.6	15.0	25.3		
Kuwait	86.8	20.8	21.9	83.9					19.4
Kyrgyz Republic	3.8	11.3	0.6	1.7	68.9	20.4	17.9		7.3
Lao PDR	26.8	18.1	0.3	6.5	91.8	18.5	0.0	10.7	
Latvia	89.7	6.8	52.7	77.8	99.5	48.5	37.3		30.0
Lebanon	37.0	11.3	2.0	21.4	86.7	69.4	23.8	51.3	31.5
Lesotho	18.5	3.0	2.7	14.5	89.7	32.2	32.7	31.9	3.2
Liberia	18.8	6.5	3.6	3.3	67.8	14.0	10.1	12.8	3.8
Lithuania	73.8	5.6	31.5	61.3	98.3	53.0	47.4		
Luxembourg	94.6	17.4	67.7	73.2					88.6
Macao SAR, China									37.2
Macedonia, FYR	73.7	10.6	14.1	36.3	96.8	61.1	47.0		24.3
Madagascar	5.5	2.3	0.1	0.9	94.1	20.6	12.2	20.2	1.4
Malawi	16.5	9.2	0.8	9.4	96.9	40.1	20.6	31.0	1.1
Malaysia	66.2	11.2	12.6	23.1	97.7	60.4	48.6	49.3	10.5
Maldives									17.2
Mali	8.2	3.7	0.1	1.8	85.6	16.6	29.3	21.4	
Malta	95.3	10.0	34.5	71.2					41.6
Marshall Islands									12.8

(appendix continued next page)

TABLE B.1 Countries and Their Level of Financial Inclusion, 2011 *(continued)*

	Individuals				Firms (formal sector)				Providers
Economy	Account at a formal financial institution (%, age 15+)	Loan from a financial institution in the past year (%, age 15+)	Electronic payments used to make payments (%, age 15+)	Debit card (%, age 15+)	Firms with a checking or savings account (%)	Firms with a bank loan/ line of credit (%)	Firms using banks to finance investments (%)	Firms using banks to finance working capital (%)	Bank branches per 100,000 adults
Mauritania	17.5	7.9	2.6	6.3	76.3	16.0	3.2	13.5	
Mauritius	80.1	14.3	7.4	50.9	97.2	47.4	37.5	39.5	21.3
Mexico	27.4	7.6	8.3	22.3	61.8	32.0	16.2	26.9	14.9
Micronesia, Fed. Sts.					98.5	43.0	7.2	19.4	14.2
Moldova	18.1	6.4	2.2	16.0	88.2	39.6	30.8		11.3
Mongolia	77.7	24.8	21.6	60.6	61.4	52.9	26.5		66.4
Montenegro	50.4	21.8	3.5	22.0	78.5	49.6	75.8		39.6
Morocco	39.1	4.3	7.4	22.4	86.8	33.4	12.3	30.2	22.3
Mozambique	39.9	5.9	17.3	37.3	75.7	14.2	10.5	8.5	3.6
Myanmar									1.7
Namibia					97.5	24.0	8.1	19.6	7.1
Nepal	25.3	10.8	0.5	3.7	73.7	39.1	17.5	32.1	6.7
Netherlands	98.7	12.6	80.2	97.6					21.5
New Zealand	99.4	26.6	83.2	93.8					34.0
Nicaragua	14.2	7.6	1.5	8.3	75.7	43.4	21.9	18.4	7.4
Niger	1.5	1.3	0.2	0.8	94.0	29.7	9.3	33.4	
Nigeria	29.7	2.1	2.4	18.6		3.8	2.7	4.3	6.4
Norway									10.9
Oman	73.6	9.2	17.5	53.0					23.6
Pakistan	10.3	1.6	0.2	2.9	64.7	8.6	9.7	4.6	8.7
Panama	24.9	9.8	3.0	11.3	69.1	20.7	1.1	9.0	23.9
Paraguay	21.7	12.9	4.2	11.3	89.7	60.2	30.1	48.0	9.5
Peru	20.5	12.7	1.9	14.1	87.4	66.8	45.9	49.9	58.7
Philippines	26.6	10.5	2.1	13.2	97.8	33.2	21.9	19.1	8.1
Poland	70.2	9.6	31.4	37.3	95.8	50.1	40.7		32.3
Portugal	81.2	8.3	48.3	68.2			24.4	20.3	64.2
Qatar	65.9	12.6	21.9	49.5					17.8
Romania	44.6	8.4	10.5	27.7	50.4	42.3	37.3		
Russian Federation	48.2	7.7	7.7	37.0	98.0	31.3	30.6		37.1
Rwanda	32.8	8.4	0.3	5.3	71.6	46.3	24.2	44.5	5.5
Samoa					97.0	51.3	48.3	68.7	18.4
São Tomé and Príncipe									23.4
Saudi Arabia	46.4	2.1	22.6	42.3					8.7
Senegal	5.8	3.5	0.5	1.8	83.4	15.3	19.8	9.6	
Serbia	62.2	12.3	9.6	43.1	100.0	67.6	42.8		9.6
Seychelles									37.2
Sierra Leone	15.3	6.1	1.1	4.0	67.8	17.4	6.9	24.6	3.0
Singapore	98.2	10.0	41.5	28.6					10.2

TABLE B.1 Countries and Their Level of Financial Inclusion, 2011 *(continued)*

	Individuals				Firms (formal sector)				Providers
Economy	Account at a formal financial institution (%, age 15+)	Loan from a financial institution in the past year (%, age 15+)	Electronic payments used to make payments (%, age 15+)	Debit card (%, age 15+)	Firms with a checking or savings account (%)	Firms with a bank loan/ line of credit (%)	Firms using banks to finance investments (%)	Firms using banks to finance working capital (%)	Bank branches per 100,000 adults
Slovak Republic	79.6	11.4	43.4	68.3	18.0	42.4	33.5		25.8
Slovenia	97.1	12.8	40.6	91.9	99.9	71.2	52.2		38.3
Solomon Islands									7.1
Somalia	31.0	1.6	21.5	15.6					
South Africa	53.6	8.9	13.1	45.3	97.9	30.1	34.8	21.1	10.7
Spain	93.3	11.4	43.4	62.2			32.6	35.8	89.7
Sri Lanka	68.5	17.7	0.5	10.0	89.4	40.4	43.6	40.6	16.7
St. Kitts and Nevis					100.0	49.3	46.4	52.0	37.7
St. Lucia					100.0	24.5	52.2	49.1	22.5
St. Vincent and the Grenadines					98.5	56.5	55.8	52.7	21.2
Sudan	6.9	1.8	2.1	3.3					2.4
Suriname					100.0	44.3	37.0	57.6	11.2
Swaziland	28.6	11.5	4.7	21.0	97.8	21.9	7.7	16.0	7.2
Sweden	99.0	23.4	84.9	95.5					
Switzerland									51.0
Syrian Arab Republic	23.3	13.1	3.1	6.2	92.7	37.4	20.7	16.0	
Taiwan, China	87.3	9.6	29.2	37.0					
Tajikistan	2.5	4.8	0.7	1.8	86.9	33.6	21.4		6.7
Tanzania	17.3	6.6	3.5	12.0	86.2	16.3	6.8	17.3	1.9
Thailand	72.7	19.4	8.6	43.1	99.6	72.5	74.4	71.9	11.3
Timor-Leste					87.8	6.9	1.6	2.6	
Togo	10.2	3.8	0.0	1.2	94.2	21.6	16.9	16.9	
Tonga					100.0	54.3	33.9	3.0	21.5
Trinidad and Tobago	75.9	8.4	9.3	64.1	99.9	53.7	36.7	63.8	
Tunisia	32.2	3.2	2.7	21.0					17.2
Turkey	57.6	4.6	11.1	56.6	90.6	56.8	51.9		18.3
Turkmenistan	0.4	0.8	0.0	0.3					
Uganda	20.5	8.9	3.1	10.3	85.8	17.2	7.7	14.0	2.4
Ukraine	41.3	8.1	6.4	33.6	90.2	31.8	32.1		1.6
United Arab Emirates	59.7	10.8	14.8	55.4					14.5
United Kingdom	97.2	11.8	65.3	87.6					
United States	88.0	20.1	64.3	71.8					35.4
Uruguay	23.5	14.8	3.2	16.4	90.8	48.6	13.7	26.4	13.7
Uzbekistan	22.5	1.5	4.3	20.4	93.8	10.5	8.2		47.7
Vanuatu					96.0	45.8	41.4	33.2	20.9
Venezuela, RB	44.1	1.7	15.0	35.1	96.5	35.4	35.3	27.1	17.1
Vietnam	21.4	16.2	2.5	14.6	89.4	49.9	21.5	47.0	3.6
West Bank and Gaza	19.4	4.1	1.7	10.7	87.8	18.0	4.2	14.2	

(appendix continued next page)

TABLE B.1 Countries and Their Level of Financial Inclusion, 2011 *(continued)*

	Individuals				Firms (formal sector)				Providers
Economy	Account at a formal financial institution (%, age 15+)	Loan from a financial institution in the past year (%, age 15+)	Electronic payments used to make payments (%, age 15+)	Debit card (%, age 15+)	Firms with a checking or savings account (%)	Firms with a bank loan/ line of credit (%)	Firms using banks to finance investments (%)	Firms using banks to finance working capital (%)	Bank branches per 100,000 adults
Yemen, Rep.	3.7	0.9	0.6	2.2	31.3	8.1	4.2	6.0	1.8
Zambia	21.4	6.1	3.3	15.7	95.0	16.0	10.2	15.0	4.4
Zimbabwe	39.7	4.9	6.9	28.3	93.5	12.5	13.1	12.8	

Source: Data on individuals are from the Global Financial Inclusion (Global Findex) Database, data on firms are from Enterprise Surveys, and data providers are from Financial Access Survey (FAS).
Note: Global Findex data pertain to 2011. Data from Enterprise Survey range from 2005 to 2011. Financial Access Survey covers 2001 through 2011. For both the Enterprise Survey and Financial Access Survey, the table shows data from 2011 or the most recent year. Empty cells indicate lack of data.

NOTES

Additional data. The above table presents a small fraction of observations in the Global Findex, the Enterprise Surveys, and Financial Access Survey. These data can be accessed at

Global Findex:	http://www.worldbank.org/globalfindex
Enterprise Survey:	http://www.enterprisesurveys.org/
Financial Access Survey:	http://fas.imf.org/

Period covered. The table shows 2011 or the most recent data for individuals, formal firms, and providers.

Account at a formal financial institution (%, age 15+): Percentage of adults with an account (self or together with someone else) at a bank, credit union, another financial institution (e.g., cooperative, microfinance institution), or the post office (if applicable) including adults who report having a debit card to total adults. The data are from Global Findex (Demirgüç-Kunt and Klapper 2012).

Loan from a financial institution in the past year (%, age 15+): Percentage of adults who report borrowing any money from a bank, credit union, microfinance institution, or another financial institution such as a cooperative in the past 12 months. The data are from Global Findex (Demirgüç-Kunt and Klapper 2012).

Electronic payments used to make payments (%, age 15+): Percentage of adults who report having made electronic payments or that are made automatically, including wire transfers or payments made online to make payments on bills or purchases using money from their account. The data are from Global Findex (Demirgüç-Kunt and Klapper 2012).

Debit card (%, age 15+): Percentage of adults who report having a debit card where a debit card is defined as a card that allows a holder to make payments, get money, or make purchases and the money is taken out of the holder's bank account right away. The data are from Global Findex (Demirgüç-Kunt and Klapper 2012).

Firms with a checking or savings account (%): Percentage of firms in the survey that report having a checking or savings account. The data are based on surveys of more than 130,000 firms spanning 2005 and 2011 and conducted by the World Banks' enterprise unit.

Firms with a bank loan/line of credit (%): Percentage of firms in the survey that report having a loan or a line of credit from a financial institution. The data are based on surveys of more than 130,000 firms spanning 2005 and 2011 and conducted by the World Banks' enterprise unit.

Firms using banks to finance investments (%): Percentage of firms in the survey that

report using banks to finance their investment. The data are based on surveys of more than 130,000 firms spanning 2005 and 2011 and conducted by the World Banks' enterprise unit.

Firms using banks to finance working capital (%): Percentage of firms in the survey that report using banks to finance their working capital. The data are based on surveys of more than 130,000 firms spanning 2005 and 2011 and conducted by the World Banks' enterprise unit.

Bank branches per 100,000 adults: Number of commercial bank branches per 100,000 adults. The data are from IMF's Financial Access Survey (FAS).

APPENDIX C
ISLAMIC BANKING AND FINANCIAL INCLUSION

TABLE C.1 Organization of Islamic Cooperation (OIC) Member Countries, Account Penetration Rates, and Islamic Financial Institutions, 2011

	Religiosity and financial inclusion				Islamic financial institutions (IFIs)			
Economy	Religiosity (%)	Account at a formal financial institution (%, age 15+)	Adults with no account due to religious reasons (%, age 15+)	Adults with no account due to religious reasons (thousands, age 15+)	Number of IFIs	Islamic assets per adult (US$)	Number of IFIs per 10 million adults	Number of IFIs per 10,000 km^2
Afghanistan	97	9.0	33.6	5,830	2		1.1	0.03
Albania	39	28.3	8.3	150	1		4.0	0.36
Algeria	95	33.3	7.6	1,330	2		0.8	0.01
Azerbaijan	50	14.9	5.8	355	1		1.4	0.12
Bahrain	94	64.5	0.0	0	32	29,194	301.6	421.05
Bangladesh	99	39.6	4.5	2,840	12	14	1.2	0.92
Benin		10.5	1.7	77	0	0	0.0	0.00
Burkina Faso		13.4	1.2	98	1		1.1	0.04
Cameroon	96	14.8	1.1	114	2		1.7	0.04
Chad	95	9.0	10.0	573	0	0	0.0	0.00
Comoros	97	21.7	5.8	20	0	0	0.0	0.00
Djibouti	98	12.3	22.8	117	0	0	0.0	0.00
Egypt, Arab Rep.	97	9.7	2.9	1,480	11	146	1.9	0.11
Gabon		18.9	1.5	12	0	0	0.0	0.00
Guinea		3.7	5.0	279	0	0	0.0	0.00
Indonesia	99	19.6	1.5	2,110	23	30	1.3	0.13
Iraq	84	10.6	25.6	4,310	14	98	7.4	0.32
Jordan		25.5	11.3	329	6	1,583	15.4	0.68
Kazakhstan	43	42.1	1.7	126	0	0	0.0	0.00
Kuwait	91	86.8	2.6	7	18	28,102	87.2	10.10
Kyrgyz Republic	72	3.8	7.3	272	0	0	0.0	0.00
Lebanon	87	37.0	7.6	155	4		12.4	3.91
Malaysia	96	66.2	0.1	8	34	4,949	16.8	1.03
Mali	95	8.2	2.8	218	0	0	0.0	0.00
Mauritania	98	17.5	17.7	312	1	76	4.7	0.01
Morocco	97	39.1	26.8	3,810	0	0	0.0	0.00
Mozambique		39.9	2.3	189	0	0	0.0	0.00
Niger	99	1.5	23.6	1,910	0	0	0.0	0.00
Nigeria	96	29.7	3.9	2,520	0	0	0.0	0.00
Oman		73.6	14.2	78	3		14.4	0.10
Pakistan	92	10.3	7.2	7,400	29	40	2.5	0.38
Qatar	95	65.9	11.6	64	14	13,851	86.5	12.08
Saudi Arabia	93	46.4	24.1	2,540	18	1,685	9.2	0.08
Senegal	96	5.8	6.0	411	0	0	0.0	0.00
Sierra Leone		15.3	9.9	287	0	0	0.0	0.00

TABLE C.1 OIC Member Countries, Account Penetration Rates, and Islamic Financial Institutions, 2011 *(continued)*

	Religiosity and financial inclusion				Islamic financial institutions (IFIs)			
Economy	Religiosity (%)	Account at a formal financial institution (%, age 15+)	Adults with no account due to religious reasons (%, age 15+)	Adults with no account due to religious reasons (thousands, age 15+)	Number of IFIs	Islamic assets per adult (US$)	Number of IFIs per 10 million adults	Number of IFIs per 10,000 km^2
Somalia		31.0	8.9	325	0	0	0.0	0.00
Sudan	93	6.9	4.5	871	29	103	14.0	0.12
Syrian Arab Republic	89	23.3	15.3	1,560	4	18	3.0	0.22
Tajikistan	85	2.5	7.6	329	0	0	0.0	0.00
Togo		10.2	1.2	40	0	0	0.0	0.00
Tunisia	93	32.2	26.8	1,490	3	72	3.7	0.19
Turkey	82	57.6	7.9	1,820	5	538	0.9	0.06
Turkmenistan	80	0.4	9.9	360	0	0	0.0	0.00
Uganda	93	20.5	3.4	485	0	0	0.0	0.00
United Arab Emirates	91	59.7	3.2	84	22	9,298	33.5	2.63
Uzbekistan	51	22.5	5.9	952	0	0	0.0	0.00
West Bank and Gaza	93	19.4	26.7	502	9	0	38.5	14.95
Yemen, Rep.	99	3.7	8.9	1,190	8	179	5.8	0.15

Sources: Calculations based on BankScope, Islamic Development Bank, Gallup Poll, and the Global Financial Inclusion (Global Findex) Database.
Note: This project is in progress; data in this table are preliminary and subject to change. OIC = Organization of Islamic Cooperation. Empty cells indicate lack of data.

Religiosity (%): Percentage of adults in a given country who responded affirmatively to the question, "Is religion an important part of your daily life?" in a 2010 Gallup poll.

Account at a formal financial institution (%, age 15+): Percentage of adults with an account (self or together with someone else) at a bank, credit union, another financial institution (such as a cooperative or microfinance institution), or the post office (if applicable) including adults who reported having a debit card to total adults. The data are from Global Findex (Demirgüç-Kunt and Klapper 2012).

Adults with no account due to religious reasons (%, age 15+): Percentage of those adults who point to a religious reason for not having an account at a formal financial institution. The data are from Global Findex (Demirgüç-Kunt and Klapper 2012).

Adults with no account due to religious reasons (thousands, age 15+): Number of adults that point to a religious reason for not having an account at a formal financial institution. The data are from Global Findex (Demirgüç-Kunt and Klapper 2012).

Number of IFIs (Islamic financial institutions): Number of banks in a country that offer Shari'a-compliant financial services to their clients. The data are compiled by the *Global Financial Development Report* team members.

Islamic assets per adult (US$): Size of the Islamic assets in the banking sector of an economy per its adult population. The size of the Islamic assets is taken from BankScope. Adult population is taken from *World Development Indicators*.

Number of Islamic financial institutions per 10 million adults: Number of banks in a country that offer Shari'a-compliant financial services to their clients per 10 million adults. The data are compiled by the *Global Financial Development Report* team members.

Number of Islamic financial institutions per 10,000 km^2: Number of banks in a country that offer Shari'a-compliant financial services to their clients per 10,000 km^2. The data are compiled by the *Global Financial Development Report* team members.

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This year's report focuses on financial inclusion—the share of individuals and firms that use financial services—and demonstrates its importance for reducing poverty and boosting shared prosperity. It also underscores that the objective is not financial inclusion for the sake of inclusion. For example, policies promoting credit for all at all costs can lead to greater financial and economic instability. The report offers practical, evidence-based advice on policies that support healthy financial inclusion.

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ISBN 978-0-8213-9985-9

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SKU 19985