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Finance and Economic Opportunity

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Abstract

An influential body of theoretical research and an emerging line of empirical work suggest that the operation of the formal financial system affects the degree to which economic opportunities are defined by talent and initiative rather than by parental wealth and social connections. This paper discusses the theory of how financial markets influence economic opportunity and reviews recent empirical work on the relation between formal financial systems and poverty, income inequality, and economic opportunity. The authors consider recent efforts to measure the ability of households and small enterprises to access financial services, the impact of this access, and the mechanisms through which finance affects poverty and inequality. The authors argue that considerably more research is needed to identify which formal financial sector policies enhance the operation of the financial system in ways that expand the economic horizons of the economically disenfranchised.

This paper—a product of the Finance and Private Sector Team, Development Research Group—is part of a larger effort in the department to understand the impact of financial sector on economic development. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at ayaptenco@worldbank.org.

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1. Introduction

In this paper, we argue that there are good conceptual and empirical reasons for dramatically intensifying the study of which formal financial sector policies affect the economic opportunities of the poor. While not conclusive, an influential body of theoretical research and an emerging strand of empirical work suggests that the operation of the formal financial system arbitrates who can start a business and who cannot, who can pay for education and who cannot, who can exploit economic opportunities and who cannot. While not the only determinant, research suggests that finance affects the degree to which economic opportunities are defined by talent and initiative or by parental wealth and social connections. In light of both the enormous welfare consequences from expanding economic opportunities and the existing evidence on the role of the financial sector in defining each individual's economic horizons, research on formal financial sector policies should play a much more prominent role in efforts to identify welfare enhancing reforms.

A corollary of our argument is that the profession has done an inadequate job of examining how formal financial systems affect the poor. We find this surprising because many of the profession's most influential theories on intergenerational income dynamics advertise the central role of financial market imperfections in shaping the economic opportunities of the poor. Researchers generally take financial market frictions as given and examine how changes in schooling, savings behavior, and fertility decisions influence poverty. Yet, these analyses, and resultant policy recommendations, are based on the erroneous treatment of financial market frictions as unchanging features of the economy. Financial market frictions are not immutable. Thus, integrating serious treatments of finance into studies of intergenerational income dynamics may also modify existing studies of the impact of schooling, savings behavior, fertility, and redistributive policies on poverty, inequality, and economic opportunities.

A considerable body of work suggests that formal financial systems affect average economic growth rates (Levine, 1997, 2005). Thus, finance might help the poor by expanding the overall economy. Or, finance might boost average income levels by disproportionately benefiting the rich without expanding the economic opportunities of the poor. In other words, financial development might increase income inequality and the inequality of economic opportunities. We believe the evidence actually points in a different direction. We find that financial development disproportionately benefits the poor; improvements in the functioning of the formal financial system exert a particularly beneficial impact on the economic opportunities of the poor.

We stress the formal financial system, which includes banks, securities markets, and the full range of institutions covered in standard finance textbooks. We do not cover micro-credit programs and informal systems, which have received considerable attention by development economists. At a conceptual level, there is no need to distinguish between formal and informal financial arrangements. Financial development includes contractual and institutional arrangements that lower transaction and information costs associated with the evaluation and monitoring of projects and the management of risk. It does not matter who provides these functions. Nevertheless, we focus on formal systems for three reasons. First, all countries have extensive laws and regulations governing formal financial systems. Second, when informal financial arrangements become economically substantive at a national level, these arrangements come under the umbrella of formal regulations. Third, there is an extensive literature on informal, micro-credit programs, which is reviewed elsewhere (see for example, Cull, Demirguc-Kunt and Morduch, 2008). We therefore choose to focus on the role of formal financial systems -- and formal financial sector policies -- in affecting poverty and the economic opportunities of the poor.

Conceptually, we define poverty in terms of economic opportunity. In theory and public policy debates, economists, politicians, and the general population frequently focus on the degree of equality of economic opportunities, not the equality of economic outcomes. People are frequently concerned with whether an individual's opportunities are severely limited by parental wealth, religion, or race. Comparatively talented and industrious individuals may face extraordinary obstacles and limitations because their parents lack resources, or the right religion, or the right pigment in their epidermis. Economic opportunity is exceptionally difficult to measure empirically. Thus, empirical work frequently focuses on changes in income inequality and the fraction of the population living below the poverty. Below, we discuss this line of work and also recent efforts to examine opportunity more directly.

In the remainder of this paper, we first discuss the theory of how financial markets influence economic opportunity in section 2. In section 3, reviews recent empirical work on the relation between formal financial systems and poverty, income inequality, and economic opportunity. Then, section 4 describes recent efforts to measure the ability of the households and small enterprises to access financial services, the impact of this access, and the mechanisms through which finance affects poverty and inequality. Section 5 concludes.

2. Theory

2.1. Introduction

Financial market imperfections are a keystone of many influential theories of persistent poverty. Financial market imperfections are necessary for sustaining a persistent class of poor dynasties. In these theories, perfect financial markets imply that individuals have access to capital to fund education, training, or business endeavors based only on individual talent and initiative, not on

parental characteristics. In these theories, perfect financial markets provide equality of opportunity and do not produce a self-perpetuating class of poor dynasties. Thus, financial development exerts a disproportionately positive influence on the poor by expanding their opportunities.

We are not arguing that this is the case for every model of poverty. We are not issuing a challenge for people to develop models in which financial market frictions are irrelevant for yielding perpetually poor dynasties. Rather, we simply observe that an influential line of research advertises that the operation is critical for the poor, as demonstrated by Becker (1957), Stiglitz (1969), Becker and Tomes (1979, 1986), Bourguignon (1981), Loury (1981), Banerjee and Newman (1993), Galor and Zeira (1993), Benabou (1996a,b), Aghion and Bolton (1997), Galor and Tsiddon (1997), and many others (as discussed in review articles by Bardhan, Bowles, and Gintis (2000), Bertola (2000), Piketty (2000)).

2.2. Basic Framework

Consider the following equation:

$$y(i,t) = h(i,t)*w(i,t) + a(i,t)*r(i,t), \qquad (1)$$

where y(i,t) is the income of dynasty i in generation t, h(i,t) is the corresponding level of human capital in dynasty i, w(i,t) is the wage rate per unit of human capital, which might be dynasty specific as we discuss below, a(i,t) is dynastic wealth in for generation t, and r(i,t) is the return on assets, which may also vary by dynasty as discussed below. From this simple framework, it is easy to see that if bequest rate, i.e., bequests as a fraction of parental wealth, increase with parental wealth then initial wealth differences will persist in the long-run. In others words, initially poor dynasties will remain perpetually poor. Since there is not strong evidence that bequests behavior in this manner, we emphasize the role of finance in affecting the evolution of other factors in equation (1) that drive dynastic income.

2.3. Human Capital Accumulation

Next, consider the accumulation of human capital as being a positive function of both ability, which we designate by the letter "b" for brains, and of schooling, designated by the letter "s."

$$h(i,t) = H\{b(i,t),s(i,t)\}, \text{ where } \partial H/\partial b > 0 \text{ and } \partial H/\partial s > 0. \qquad (2)$$

Further, assume that brains and schooling are complementary inputs into the production of human capital, so that schooling is more beneficial to those with more brains. Finally, assume that brains are not strongly persistent across generations within a dynasty, which is consistent with research suggesting that ability is mean-reverting across generations.

From equation (2), social efficiency requires that kids with lots of brains receive lots of schooling. With perfect capital markets, the economy achieves this social efficiency. People with lots of brains get schooling irrespective of parental wealth, so that schooling is simply a function of brains: An individual's economic opportunities are determined by his or her abilities.

With imperfect capital markets, however, schooling is jointly determined by brains and parental wealth, as discussed by Becker and Tomes (1979, 1986), Loury (1981), Galor and Zeira (1993), and Galor and Tsiddon (1997). Dumb rich kids get too much education. Smart poor kids get too little because their parents do not have the resources to pay for schooling and imperfect capital markets create a barrier to financing the education of the poor. This increases the cross-dynasty persistence of poverty and lowers the socially efficient allocation of resources.

2.4. Entrepreneurship

Some theories highlight the role of financial market frictions in determining who can become entrepreneurs and who cannot. In these models, individuals that become successful entrepreneurs have access to higher investment returns than individuals who do not become entrepreneurs. Individuals are endowed with different levels of entrepreneurial ability, e(i,t), and the return to opening a business depends positively on entrepreneurial ability. Finally, there is a fixed cost associated with becoming an entrepreneur.

With perfect capital markets, those with the most entrepreneurial talent have access to the required funding at the economy-wide interest rate. Entrepreneurial activity is a function of entrepreneurial ability, not familial wealth. Thus, the rate of return on savings is a function of entrepreneurial ability, not dynastic assets. Furthermore, society's resources are funneled to those with the most talent, not to those with the most assets.

With imperfect capital markets, however, capital will not simply flow to individuals with the most entrepreneurial talent. With capital market imperfections, lenders will demand large amounts of collateral before funding a business endeavor. Thus, the accumulated assets of a dynasty will influence the ability of that dynasty to attract outside funding and to open a business. Therefore, the rate of return on savings is a positive function of both entrepreneurial ability and dynastic assets. Society's resources are not funneled only to those with the most talent, which is emphasized in articles by Banerjee and Newman (1993) and Aghion and Bolton (1997). With imperfect capital markets, society's savings flow disproportionately to those with accumulated wealth. In particular, a poor person with a great idea might not be able to get the project funded, while a rich person with mediocre idea might have easier access to credit. With financial market imperfections, the initial

distribution of wealth influences which dynasties can obtain external finance and which dynasties are essentially cut-off from entrepreneurial endeavors.

2.5. Discrimination

Finally, from equation (1), consider the wage rate. It is common to think of the wage rate per unit of human capital as not varying across individuals. As Gary Becker clearly articulated in 1957, however, employers might discriminate by particular characteristics, such as race. In Becker (1957), blacks with exactly the same skills as whites might receive lower wage rates because employers are willing to lose some profits in order to satisfy their preferences for hiring only white workers. Discrimination might contribute to the intergenerational persistence of relative incomes across different groups.

As stressed by Becker (1957), discrimination is cheaper when there is little competition. When an owner is earning large rents, the marginal cost of hiring a more expensive white worker rather than an equally productive and less expensive black worker is not a very large share of the profits. With more intense competition and smaller profit margins, the cost of discrimination increases. Thus, competition reduces discrimination in wage rates and employment.

Now add financial policy to Becker's theory of competition and discrimination. Some financial sector reforms will spur financial intermediaries to expend more resources seeking out the best firms rather than simply granting credit to incumbents. For example, if a bank has a monopoly, it might lend comfortably to those with whom it has a long, multidimensional relationship. There might be other existing or potential firms with better ideas, but the bank can earn comfortable profits by lending to its friends. If this bank's monopoly position is threatened by regulatory reforms that expose the bank to more competition, however, the intensified competition might weaken longstanding bonds between the bank and firms. Competition might spur the bank to screen

borrowers more carefully. In turn, firms will compete more intensively to attract bank capital. Firms will have to demonstrate their superiority in product markets to attract bank capital. Thus, intensified competition in banking intensifies competition throughout the economy, which makes discrimination more expensive and hence expands the economic opportunities of the historically disadvantaged.

2.6. Alternative Views and Discussion

Theory does not unambiguously assert that the financial system exerts a first-order impact on the poor. Indeed, if the poor are simply excluded from access to financial services, improvements in the financial system will help only the rich as noted in Greenwood and Jovanovic (1993). Financial development might not operate at the extensive margin by providing a broader array of new and improved financial services to the poor. Does financial development operate at the extensive margin, or does it only improve financial services available to the rich? More concretely, which types of financial policy reforms reduce poverty and how do they affect other policies that societies use to combat poverty, such as welfare and other transfer payments? We need concerted and coordinated theoretical and empirical research to address these very basic questions.

3. Evidence

3.1. On the Empirics

On the evidence, we summarize the results from our research on this topic. We use our papers for two reasons. First, these papers span different conceptions of poverty, including measures of those living below a poverty line, the distribution of income, and one measure of economic opportunity. Second, we use the discussion to emphasize shortcomings with the literature

as an additional mechanism to spur research in this area. There are smaller adverse repercussions from critiquing our own work.

3.2. Cross-country Evidence

Thorsten Beck and Asli Demirguc-Kunt, and Ross Levine (2007) examine the relationship between financial development and the fraction of the population living on less than $1/day. For a cross-section of up to 68 developing economies, we use data on poverty averaged over the period 1980-2005. Thus, we use one observation per country. We average over this long time period to aggregate away any business cycle fluctuations or crises that might distort our assessment of theories that focus on the long-run relationship between the operation of the financial system and changes in the fraction of the population living below the poverty line. We look at both the relationship between finance and the level of poverty and the relationship between finance and the growth rate of poverty. The growth rate has statistical advantages because we can reduce the importance of country-specific factors. The growth rate also has conceptual advantages because then the analyses of poverty link directly with larger cross-country growth investigations. In any event, we find similar results when using the level or the growth rate of poverty. We simply present the regressions using the growth of poverty.

Figure 1 graphs the relationship between the growth rate of poverty and the level of financial development. The specification conditions on many country characteristics, including the initial level of poverty, initial income per capita, economic growth, population growth, the age distribution of the population, and measures of trade openness and inflation. Figure 1 provides the partial scatter plot, which is the two dimensional projection of the relationship between poverty growth and financial development, while conditioning on these other factors.

In defining and measuring financial development, theory focuses on what the financial system does. The financial system ameliorates informational problems before investments are made; it affects corporate governance by reducing informational problems after investment are initiated; it facilitates risk diversification and reduces liquidity risk by lowering transactions costs; and it directly affects the ease of exchange through both information and transactions costs. Obviously, some financial systems perform the functions comparatively better than other financial systems. Poorly functioning financial systems do a lousy job at reducing information and transaction costs; they do not efficiently allocation resources; and, they frequently keep credit flowing only to cronies. Other financial systems are better at providing these financial services to the economy. Differences in the ability of financial systems to identify good projects, monitor firms, diversify risk, and ease transactions are what we mean by the level of financial development.

The empirical proxies for financial development, unfortunately, do not directly measure these concepts. A common measure of financial development is the variable Private Credit, which equals the value of credit going to privately-owned firms as a fraction of a country's Gross Domestic Product (GDP). It isolates the intermediation of credit that goes to private firms, and excludes credit flowing to the state or the state-owned enterprises. Although Private Credit is not a direct measure of overcoming information or transaction costs to improve credit allocation, corporate governance, and risk management, Private Credit is a commonly used proxy.

Returning to Figure 1, the evidence is quite clear: There is a robust negative relationship between financial development and poverty alleviation that holds even when controlling for average growth, initial income, initial poverty, and the full range of country traits mentioned above. It is worth emphasizing that the negative relationship between financial development and poverty alleviation holds when controlling for average growth. We are not simply finding that finance

accelerates economic growth which helps the poor. We are finding that finance exerts a disproportionately positive influence on the poor. While illustrative, these results are suspect because of the small sample, which makes it difficult to use instrumental variables and panel procedures to control for endogeneity.

Next, consider Figure 2. This also illustrates some of the results from Beck, Demirguc-Kunt, and Levine (2007). Here we focus on the Gini coefficient of income inequality. For the Gini coefficient, we have data running from 1960 – 2005 for 72 countries. This allows us to use a dynamic panel instrumental estimator to control for potential endogeneity bias. We obtain the same results when using the panel estimator or when using a simple cross-country regression with one observation per country. Thus, we just present the partial scatter plot from the multivariate regression that controls for many country characteristics, including real per capita GDP growth, the initial value of income inequality for each country, and others.

There is a strong, negative relationship between the level of financial development and income inequality. Finance exerts an especially positive impact on those at the bottom of the distribution of income. These results are also not definitive. The measure of financial development is not closely tied to theory. The study does not examine policy; rather, it examines a proxy for overall financial development that reflects many factors. Future work that develops better measures of financial development and uses exogenous innovations in particular policy changes will substantively improve our understanding.

3.3. Deregulation across the U.S. States

Next, we examine whether a policy reform that improved the quality of banking services increased, decreased, or had no effect on the distribution of income. Thorsten Beck, Alexey Levkov, and Ross Levine (2007) (henceforth BLL) examine the impact of the same policy reform in different states of the United States on the distribution of income. The policy was implemented during different years over a twenty year period ranging from the mid-1970s to the mid-1990s. In particular, by end of this period, all states had removed regulatory prohibitions on banks opening branches within state boundaries. Past work shows that liberalizing restrictions on intra-state branching (i) increased the average size of banks through consolidation, (ii) improved bank efficiency by reducing the difference between interest income received and interest income paid by banks, and (iii) accelerated average per capita income growth. BLL examine the impact of bank deregulation on the distribution of income.

Thus, they examine the effects of a single, exogenous policy event on 50 economies within the United States. Methodologically, the deregulation of intra-state branching provides a natural setting for identifying and assessing the impact of regulatory reform on the distribution of income. Kroszner and Strahan (1999) show that national technological innovations triggered deregulation, which was exogenous to income distributional changes within individual states. The invention of automatic teller machines (ATMs), in conjunction with court rulings that ATMs are not bank branches, weakened the geographical bond between customers and banks. Checkable money market mutual funds facilitated banking by mail and telephone, which weakened local bank monopolies. Improvements in communications technology lowered the costs of using distant banks. These innovations reduced the monopoly power of local banks, and therefore weakened their ability and desire to fight deregulation. Kroszner and Strahan (1999) further show that cross-state variation in

the timing of deregulation reflects the interactions of these technological innovations with preexisting conditions. Thus, the driving forces behind deregulation and its timing were largely independent of state-level changes in income distribution. Consequently, we exploit cross-state, cross-year variation in income distribution and deregulation to assess the impact of a single policy change on different state economies.

BLL use the differences-in-differences estimation technique to assess the relationship between branch deregulation and income distribution. Specifically,

$$Y_{s,t} = \alpha_s + \beta_t + \gamma D_{s,t} + \delta X_{s,t} + \varepsilon_{s,t}, \quad s=1, \ldots, 50; \quad t=1976, \ldots, 2005. \qquad (2)$$

where $Y_{s,t}$ is a measure of income distribution in state s during year t, α and β are vectors of state and year fixed-effects, $X_{s,t}$ is a set of time-varying state-level variables and $\varepsilon_{s,t}$ is the error term. The variable of interest is D, a dummy variable that takes on the value one after a state deregulates. The year-dummy variables control for economy-wide shocks that might drive income distribution over time, such as business cycles, long-term trends in income distribution, and changes in female labor force participation. The state-dummy variables control for unobserved, time-invariant state characteristics that shape income distribution across states. The coefficient, γ, therefore indicates the impact of branch deregulation on income distribution. A positive and significant γ suggests that deregulation exerts a positive effect on the degree of income inequality, while a negative and significant γ indicates the deregulation pushed income inequality lower.

BLL's major finding is that deregulation of branching restrictions reduced income inequality. After a state deregulates restrictions on bank branching, the Gini coefficient of income inequality drops relative to its long run trend. The drop becomes statistically significant three years after deregulation. The negative impact of bank branch deregulation on income inequality is a level effect that fully materializes over the six years following deregulation. The negative relationship

between branch deregulation and inequality is robust to using different measures of income distribution, examining different components of income, controlling for many time-varying state characteristics, and conditioning on state and year fixed effects. The magnitude is consequential: Deregulation explains 60% of the variation of income inequality during the sample period relative to state and year averages. Furthermore, deregulation reduces income inequality by exerting a disproportionately positive impact on the poor, not by hurting the rich.

Again, the analysis has its limitations. This study examines the United States. Do these results hold for other countries? We study one specific regulatory reform. Do these results hold for other policy reforms that boost competition among banks? While these shortcomings should be addressed, the empirical results thus far support a class of models predicting that better functioning financial systems help the poor.

3.4. Discrimination

Levine, Levkov, and Rubinstein (2007) (henceforth LLR) have examined whether the intensification of bank competition reduces discrimination. Again, they use branch deregulation across the states of the United States to identify an exogenous increase in competition. They then trace the employment and wage behavior of hundreds of thousands of individuals across the U.S. states over the period 1976 to 2005.

LLR examine the difference between the wage rates of white males and black males after controlling for a wide array of personal characteristics. The race gap is the difference between white and black wage rates that is unaccounted for observable characteristics. As in other studies, they find a positive race gap: white wage rates are above black wage rates when holding other traits constant.

LLR show that this race gap falls after bank branch deregulation. After conditioning on

individual characteristics, as well as state and year fixed effects, the race gap drops by about 20% after a state removes restrictions on intra-state branching. More specifically, before a state deregulates, a white man with identical observable characteristics to a black man earns 14% more. After a state deregulates, the race gap falls to 11%. These findings suggest that formal financial sector reforms that improve the operation of the financial system reduce discrimination. Put differently, financial development expands the opportunities of people that have been disproportionately stuck at the bottom of the distribution of income.

4. Access to Finance

Recent empirical evidence we review above suggests that there is a strong negative relationship between financial development and poverty, inequality and discrimination. These results survive rigorous robustness checks such as use of instrumental variables and dynamic panel estimation to control for endogeneity bias. And analysis of specific policy reforms – such as bank branch deregulation - allows us to better deal with identification issues.

However, one of the areas where empirical work generally falls short is in measurement of financial development. Development theory emphasizes that one of the crucial functions of financial system is to allocate resources to most productive uses, thus boosting economic growth, improving opportunities and income distribution, and reducing poverty. Access to finance for firms with growth opportunities, entrepreneurs with ideas, or individuals for investing in their education, helps improve income distribution and promotes growth. But measures of financial development that are commonly employed in the empirical literature do not reflect this access dimension that is emphasized in theory. For example, Private Credit captures the depth of the financial system, but not necessarily how widely access is available. And one of the reasons researchers have made

extensive use of this variable to summarize financial development is because –unlike other measures – Private Credit is available for many countries over a long period of time. Indeed, while financial sector is often thought of as being particularly well documented by statistical data, systematic indicators of access to different financial services is not. Therefore, measuring access to finance, its determinants and its impact has been the focus of a recent research effort which we describe below (World Bank, 2007).

4.1. Measuring Access

What do we mean by access? Access is different than use. Figure 3 illustrates these differences. Access is more difficult to measure since it is not observed as use. It is also likely to be wider since some may have access but may not wish to use these services. Specifically, there are important distinctions among non-users. On the one hand are those who do not use financial services because they do not see any need or for cultural and religious reasons. This includes households who prefer to deal in cash or enterprises without any promising investment projects. While this group has access, it does not use financial services. On the other hand, there are the involuntarily excluded who, in spite of demanding financial services, do not have access to them. Among the involuntarily excluded, we can also distinguish between different groups. First, there is a group of households and enterprises that do not have enough income or constitute too high a lending risk for using financial services. This group can be considered un-bankable by commercially oriented financial institutions and markets. Second, there might be discrimination against certain population groups based on social, religious or ethnic grounds. Third, the contractual and informational framework might prevent financial institutions to reach out to certain population groups since it is too costly to be commercially viable. Finally, the price of financial services or the product features might not be appropriate for certain population groups. While the

first group of involuntarily excluded cannot be a target of financial sector policy, the other three groups demand different responses from policy makers.

In summary, broad access to financial services is characterized by an absence of price and non-price barriers in the use of financial services. The distinction between access and use suggests that not only it is important to collect information on the use of financial services, but also on barriers to access, in order to identify boundaries and causes of exclusion. These barriers, by excluding large parts of the population from access to finance, are likely to play an important part in perpetuating inequality and limiting economic opportunities for the poor.

4.2. Use versus Depth

An exact statistic on the number of households that use formal financial services can only be inferred from household surveys. However, only around 34 countries have household surveys containing this information and researchers have therefore turned to proxy indicators to estimate the share of population using financial services.

Beck, Demirguc-Kunt and Martinez Peria (2007a) compile loan and deposit account data through surveys of bank regulators for a cross-section of countries and document the large variation in these indicators across countries. While in Austria there are three deposit accounts for every inhabitant, there are only 14 for 1,000 inhabitants in Madagascar. While in Greece there is almost one loan account for every inhabitant, there are only four for every 1,000 inhabitants in Albania. The ratio of deposit and loan accounts per capita increases with income, although the average deposit or loan account balance relative to income per capita decreases with income, indicating that poor people and smaller enterprises are better able to make use of these services in more developed countries. Still there is great variation among developing countries. For example in Bolivia, the average loan amount is 28 times GDP per capita, while it is only a third of GDP per capita in

Poland. In Madagascar, the average deposit account balance is nine times GDP per capita, while it is only 4 percent of GDP per capita in Iran.

The authors also show that these aggregate indicators are not only interesting measures in their own right, but can be used to predict the proportion of households using bank accounts, when there are no household surveys available. Regressing share of households with deposit accounts obtained from household surveys on their aggregate indicators of deposit accounts and branch penetration, they show that predicted share of households with deposit accounts from this regression provides a reasonably accurate estimate of the actual share of households with deposit accounts obtained from household surveys. Hence using aggregate indicators, it is also possible to obtain out-of-sample estimates of the proportion of households using a bank account, although the fit is likely to be poorer. Honohan (2006) combines this data from commercial banks with data from savings banks and other socially oriented institutions that target low-income clients such as microfinance institutions, postal savings banks, credit unions etc. to estimate a headline indicator, which provides a share of households with use of financial accounts in most of the world.[1] Figure 4 illustrates that use of finance is indeed very limited around the developing world: in most countries less than half the population has an account with a financial institution and in many of the poorest, less than one in five households do. Those excluded often also include the non-poor, such as middle class and small and medium enterprises.

Comparing this indicator of use of finance with the commonly used financial depth indicator shows a positive but imperfect correlation (Figure 5). This shows that access really is a distinct dimension: financial systems can become deep without delivering access to all. Take Colombia and Lithuania as examples. Both countries have similar levels of private credit to GDP at around 20

[1] Information on microfinance institutions, postal savings banks, credit unions and state-owned agricultural and development banks comes from Christen, Rosenberg and Jayadeva (2004), and on savings banks from Peachey and Roe (2006).

percent, but in Colombia 40 percent of households have accounts, whereas this ratio is 70 percent for Lithuania. Or similarly, both in Estonia and Switzerland over 85 percent of households have accounts, but while Estonia's financial depth is again around 20 percent, Switzerland's is over 160 percent. The positive but imperfect correlations of use of financial services with economic development and financial depth raises questions regarding what drives cross-country differences in financial use and access.

4.3. Barriers to Access

It is important, however, not only to understand the actual use of financial services, but also barriers to access to be able to design policies to broaden access. Conducting a survey of up to five large banks in over 80 countries, Beck, Demirguc-Kunt and Martinez Peria (2007b) develop indicators of such barriers. They create barrier indicators for three types of banking services- deposit, loan and payments- across three dimensions – physical access, affordability and eligibility.

Barriers such as availability of locations to open accounts and make loan applications, minimum account and loan balances, account fees, fees associated with payments, documentation requirements, processing times and the like are found to vary significantly both across banks and countries. Indicators of access barriers are also found to be negatively correlated with actual use of financial services, confirming that they can exclude individuals and small firms from using bank services.

Beck, Demirguc-Kunt and Martinez Peria summarize different access barriers measured by their survey by creating two aggregate principal component indicators, one for access barriers for deposit services and another for loan services. Table 1 reports partial correlations of these barriers with different country characteristics. These relationships are not necessarily causal ones, both barriers and the country characteristics shown will have common underlying structural causes.

Nevertheless, it is striking that indicators of competition, openness and market-orientation in overall financial sector and economic policy such as the Heritage Foundation index of banking freedoms and of media freedom are strongly correlated access barriers.

As far the contractual and the informational infrastructures are concerned, better credit registries are associated with lower access barriers, but there is no evident correlation with creditor rights, suggesting a greater importance of information infrastructures compared to stronger legal enforcement. Interestingly, government ownership of banks is associated with lower barriers on the deposit side (as is foreign ownership of banks), but with higher barriers on the loan side. Indicators of the approach to regulating banking are also correlated with access barriers. Countries that rely more on empowering markets (by enforcing accurate and timely information disclosure and providing the right incentives for market participants) tend to have lower barriers to accessing loan services. To the contrary, creating all too powerful regulators (who may be subject to corruption and political and industry capture) is associated with higher access barriers, particularly for deposit services. Not too much should be read into these simple partial correlations and much more research is needed to understand them. They do, however, have important policy implications for broadening access.

4.4. Impact of Access

How does improved access to finance affect poor households and small and micro enterprises which employ majority of the work force in developing countries? It is by now well established that in more developed financial systems, deserving firms have easier access to external finance, with positive implications for their growth and performance (Demirguc-Kunt and Maksimovic, 1998). However, more recent research has also identified a distributional impact. Using industry level data for 44 countries and 36 industries and difference-in-difference approach,

Beck, Demirguc-Kunt, Laeven and Levine (2006) show that financial development boosts the growth of small firms disproportionately more. Using data from enterprise surveys for 54 countries, and direct measures of credit constraints reported by firms, Beck, Demirguc-Kunt and Maksimovic (2005) show that the growth of smaller firms is significantly more constrained by financing obstacles, particularly in countries with less developed financial systems. Furthermore, they also show that financial development is associated with a greater reduction in the financing obstacles of small firms, hence disproportionately benefiting smaller firms. Research on microenterprises also yields consistent results. For example, Del Mel, McKenzie and Woodruff (2006) find that for a randomly chosen sample of entrepreneurs in Sri Lanka, credit constraints are the main reason for entrepreneurs' inability to expand the business.

What about the impact of access to finance by households? There is an extensive literature on microfinance which addresses this issue (see, Cull, Demirguc-Kunt and Morduch, 2008). Delivering financial services to poor households can be quite challenging since issues of risk management, monitoring and transaction costs tend to make it very costly. Innovative techniques and products developed by microfinance institutions have helped overcome some of these issues and attracted significant attention of the development community. Nevertheless, despite these innovations, microfinance services are costly to deliver and they typically require extensive subsidies (Cull, Demirguc-Kunt and Morduch, 2007). Reviewing the evidence suggests that benefits of microcredit is not overwhelming, and that there is considerable skepticism about the ability of microfinance programs to lead to wide- scale reduction in poverty, inequality or promote higher growth (World Bank, 2007). Hence, further research – ideally using more real experiments- is needed to convince the skeptics who continue to question whether subsidizing microfinance programs is the best use of scarce development assistance.

While still in its early stages, research on access using better indicators and micro data on enterprises and households provide us with a glimpse into the mechanisms through which financial development is likely to affect poverty and income distribution. The strong results of the impact of access for small and micro enterprises compared to more mixed results for poor households suggest that the indirect effects of financial development on the poor – through labor and product markets – may be quite significant and direct provision of credit to the poor may not be the most important channel.

5. Concluding Remarks

We conclude with an observation about financial sector policies. For comparison purposes, consider redistributive policies. Many theories motivate redistributive policies as a mechanism for de-linking an individual's opportunities from parental wealth. One cannot simply change the distribution of income and hold everything else constant. Redistributive policies create disincentives to work and save, though researchers debate the actual economic magnitudes of these disincentive effects. These tensions between efficiency and equity, however, vanish when focusing on financial sector reforms. Financial developments that expand individual economic opportunity create positive, not negative incentive effects, and avoid the adverse repercussions associated with attempts to equalize outcomes. Financial development boosts efficiency and equity of opportunity. This observation further supports our core argument: Economists should devote considerably more resources toward assessing how formal financial sector policies affect economic opportunity and poverty.

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Figure 1: Finance and poverty

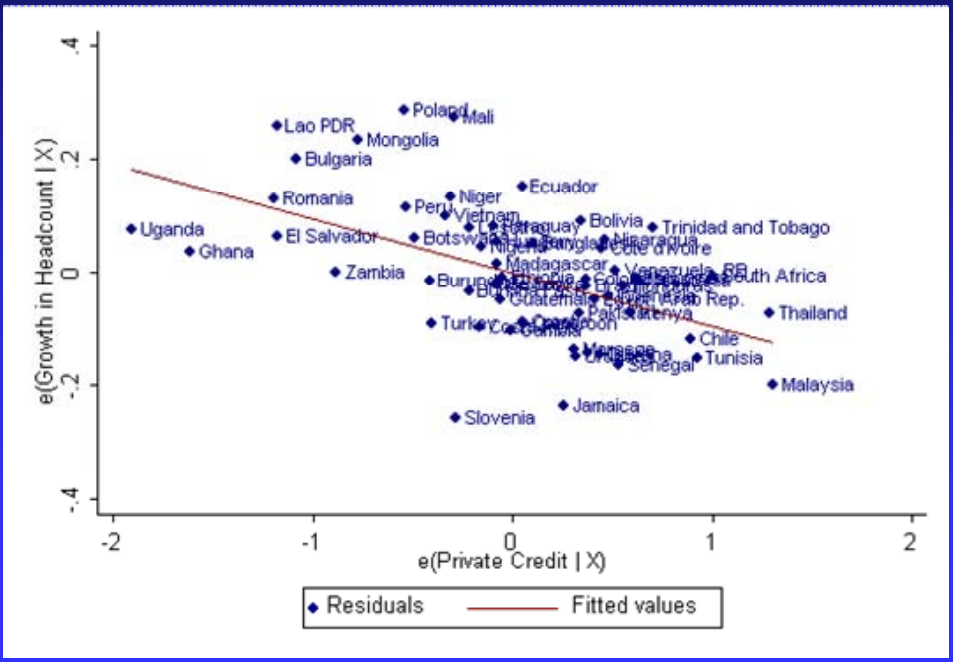


Figure 2: Finance and inequality

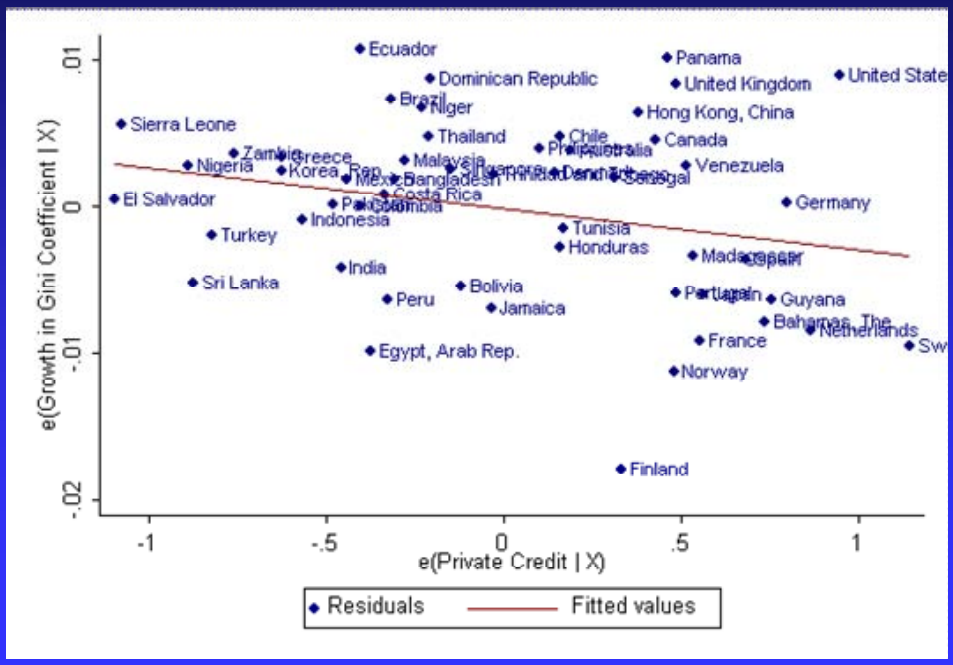
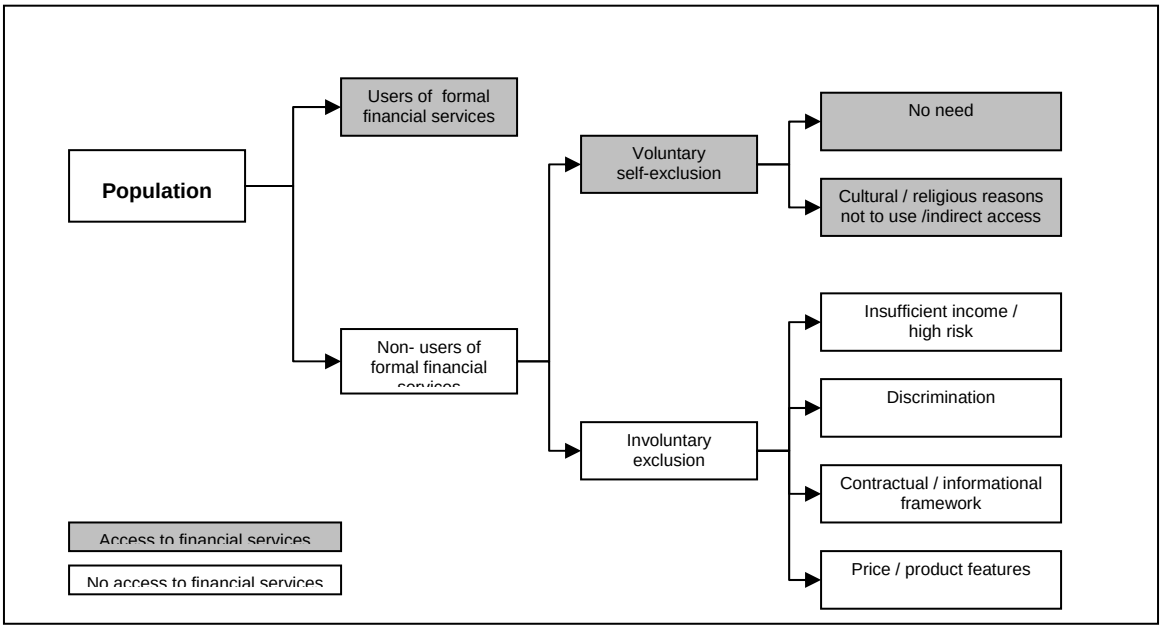
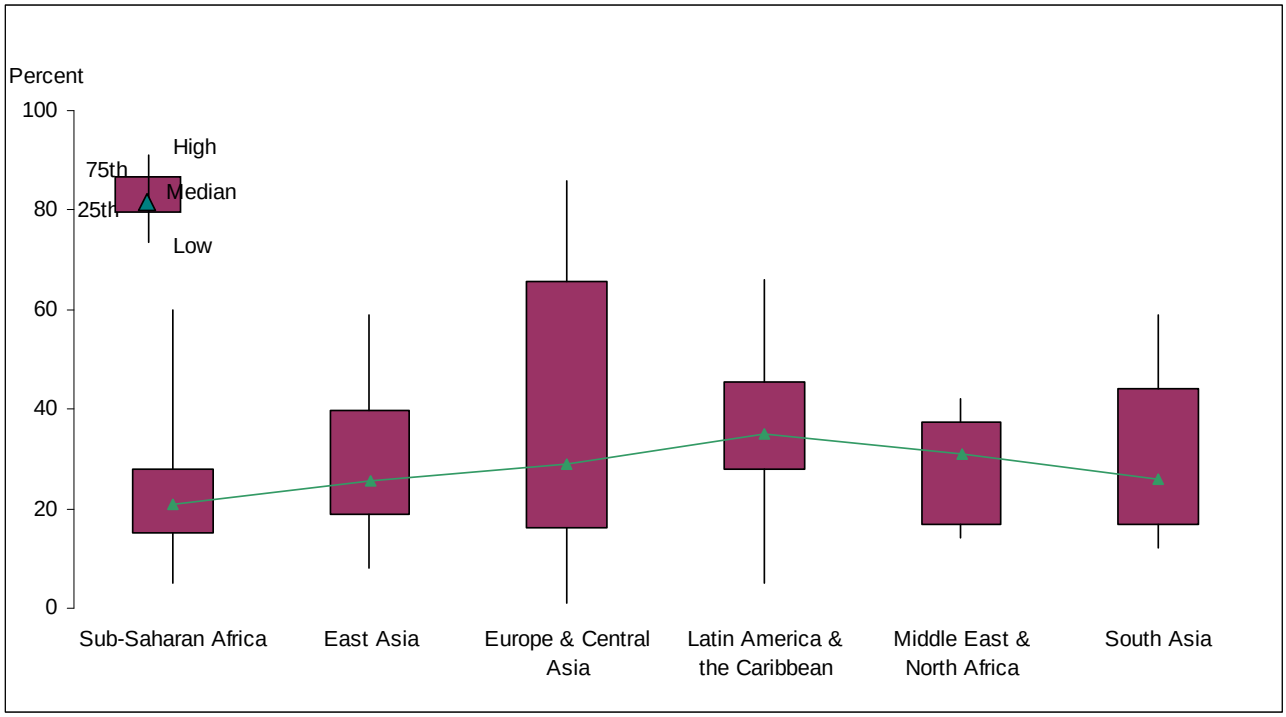


Figure 3: Access vs. Use



Source: World Bank (2007).

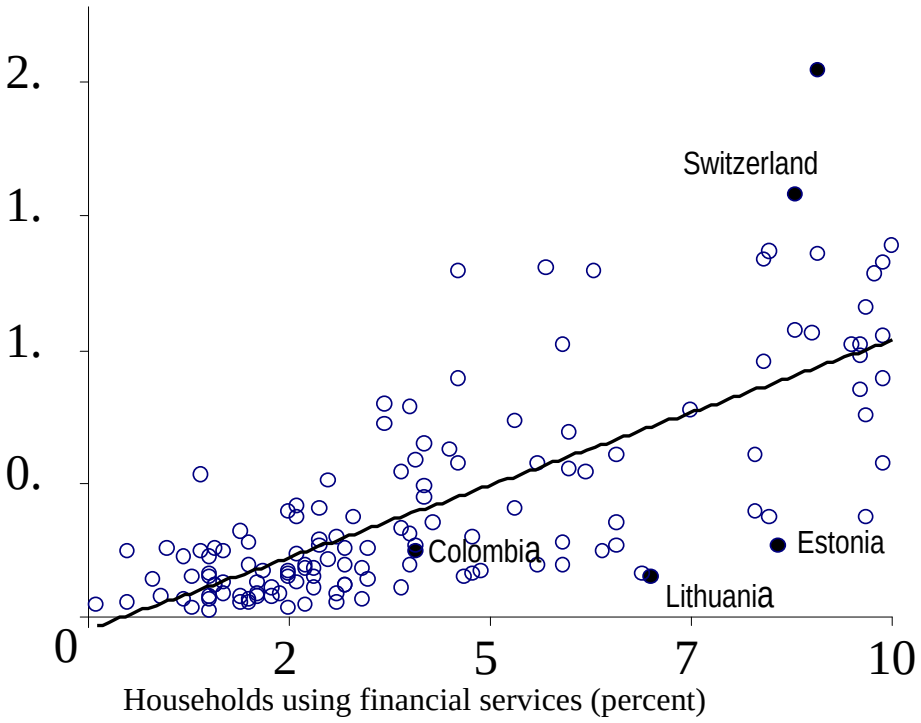
Figure 4. Use of Finance around the World



Based on proportions of households with an account in a financial institution in each country averaged over World regions.

Source: World Bank (2007).

Figure 5. Financial Depth vs. Use



Source: World Bank (2007).

Table 1. Access Barriers to Deposit and Loan Services: How Do They Vary With Country Characteristics?

	Access Barriers-Deposits	*Access Barriers-Loans*
Banking Freedoms	- 0.563***	-0.474***
Media freedom	- 0.327**	-0.425***
Credit information index	-0.302**	-0.275**
Official supervisory power	0.231**	0.071
Market-based supervision	-0.100	-0.374**
Physical infrastructure failures	0.264*	0.209
Government bank share	-0.002**	0.004***
Foreign bank share	-0.005**	-0.001
Creditor rights	-0.060	0.030

The entries in the table show the estimated impact of a one-standard deviation change in each of the country characteristics on the two aggregate access barriers. Based on bank-level regressions using a data set of 209 banks and 62 countries, regressing access to deposit or loan barriers on four bank level controls (foreign ownership, government ownership, loan to asset ratio and log of asset size) and one country level variable at a time. *,** and *** indicate significance at ten, five and one percent, respectively, based on robust standard errors. Source: Beck, Demirguc-Kunt and Martinez Peria (2007b).