

Financial Literacy around the World

An Overview of the Evidence with Practical Suggestions
for the Way Forward

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Abstract

Financial literacy programs are fast becoming a key ingredient in financial policy reform worldwide. Yet, what is financial literacy exactly and what do we know of its effectiveness? This paper collects insights from the literature thus far and summarizes global evidence

on financial literacy, its correlates, and existing and upcoming causal investigations. The authors conclude with a synthesis of policy advice and practical suggestions for the way forward in this fast growing area of research.

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Financial Literacy around the World: An Overview of the Evidence with Practical Suggestions for the Way Forward

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I. INTRODUCTION: WHAT IS FINANCIAL LITERACY?

Policymakers in both developed and developing countries are increasingly recognizing the importance of financial literacy and of investing resources in financial education programs. Comprehensive national initiatives and programs funded by the World Bank and other donors have sprung up around the world. Given the corresponding increase in the volume of research on the financial literacy and financial education, there is no better time to take stock of the evidence than now. In this paper, we provide a practitioner-oriented overview of the recent research, drawing mainly on what we've learned from surveys, impact evaluations, and other empirical work.

But what is “financial literacy”? The term can encompass concepts ranging from financial awareness and knowledge, including of financial products, institutions, and concepts; financial skills, such as the ability to calculate compound interest payments; and financial capability more generally, in terms of money management and financial planning. In practice, however, these notions frequently overlap.

They may also have different implications depending on the income level of the country. In high-income countries, for instance, financial literacy is often viewed as a complement to consumer protection. One of the primary goals of financial education is therefore to equip individuals with the capability to navigate a complex array of financial products, including pensions and mortgages, and to make sound financial decisions. The importance of doing so has been further underscored in recent years by the financial crisis and the continued shifting of retirement planning responsibilities from the public sector to individuals.

In low-income countries, however, financial outreach is much more limited, and more sophisticated consumer products are typically accessible only to a small percentage of the population. The role of financial literacy in increasing access to and take-up of financial services therefore receives more focus. Another important distinction is that people in low-income countries rely to a much greater extent on microenterprise for their livelihood. Acquiring “managerial capital”, or business skills and knowledge, is thus a more relevant component of financial capability than for the typical wage-earning worker in a developed country. For this reason, we devote separate sections to financial education for consumers (in both developed and

developing countries), and financial education for entrepreneurs (mainly in developing countries).

In the next section, we begin by surveying the evidence on financial literacy levels around the world, as well as the results of empirical studies on the relationship between financial literacy and various outcomes. The following two sections discuss what we have learned about making financial education programs more effective, drawing lessons from recent impact evaluations of programs for both consumers and entrepreneurs. Finally, our review concludes with a summary of the literature's lessons for policymakers, with the goal of improving the design and implementation of future financial education programs, and identifying gaps in our knowledge which still need to be addressed.

II. MEASURING FINANCIAL LITERACY AND ITS CORRELATES

As is the case with most policy interventions, the first step to improving financial literacy is to be measure it. After all, why do we think financial education is necessary in the first place? Surveys around the world consistently indicate that financial literacy levels are low in high-income countries. There is less data available for middle- and low-income countries, but levels in these countries appear to be even lower. Furthermore, studies indicate that low levels of financial literacy are associated with and often cause adverse financial outcomes. This section compares the available survey results for both developed and developing countries, and reviews the empirical research with an emphasis on how financial literacy correlates with demographic characteristics various financial behaviors. Such research has improved our understanding of the determinants and consequences of financial literacy, and has the potential to improve the targeting of financial education programs as well.

The measurement of financial literacy itself is a non-trivial issue. As Lusardi and Mitchell (2011a) note, “While it is important to assess how financially literate people are, in practice it is difficult to explore how people process economic information and make informed decisions about household finances.” As mentioned in the introduction, financial literacy encompasses a number of concepts, including financial awareness and knowledge, financial skills and financial capability, and it is hard to capture all of this information in a survey of reasonable length. However, a set of three questions first developed by Lusardi and Mitchell (2011a) for the American Health and Retirement Study (HRS) in 2004 are commonly used.

Shown in Figure 1, the questions test understanding of three basic financial concepts: interest rate compounding, inflation, and risk diversification. The first two questions also require basic numeracy skills, while the third question requires familiarity with the definition of stocks and mutual funds.

Although the usefulness of these questions, at least when employed on their own, has been the subject of some debate, they form a useful basis of comparison across countries.² A summary of results from nationally representative surveys is shown in Table 1. These include those used in a series of studies focusing on financial literacy and retirement, including Lusardi and Mitchell (2011b) in the U.S., Fornero and Monticone (2011) in Italy, Bucher-Koenen and Lusardi (2011) in Germany, Sekita (2011) in Japan, Crossan et al. (2011) in New Zealand, Almenberg and S  ve-S  derbergh (2011) in Sweden, Alessie et al. (2011) in the Netherlands, and Klapper and Panos (2011) in Russia. Additional surveys using these questions were conducted or analyzed by Cole et al. (2011) in Indonesia and the state of Gujarat in India, Behrman et al. (2010) in Chile, and a series of recent World Bank studies in Romania, Azerbaijan, Bulgaria, Bosnia and the West Bank and Gaza.

Even so, careful attention should be paid to differences in the wording of the questions and answer options (as noted in the footnotes to Table 1). In other cases, the spirit and wording of the questions may be very similar, but the numbers used can affect the mathematical difficulty of the required calculations. Insofar as it is possible to generalize, it appears that higher-income countries perform better than lower-income countries on average.

² Cole and Fernando (2008) note that the ability to answer these questions is highly predictive of financial decisions, while Lusardi and Mitchell (2007) find that the first question on compounding interest happens to be the most predictive of financial planning. However, Huston (2010) criticizes their relatively limited scope as “deficient to capture the breadth of human capital specifically related to personal finance.” Carpena et. al. (2011) test and propose a broader measure of financial literacy, one that encompasses both basic financial awareness and financial attitudes, in addition to numeracy skills. They find that the financial education program they evaluate only improves financial awareness and attitudes, and not numeracy skills.

Figure 1: Financial Literacy Questions (Lusardi and Mitchell, 2011)*

- 1) Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 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
- 2) Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 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
- 3) Please tell me whether this statement is 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

* Correct answers in bold.

So far, no national surveys on financial literacy have been conducted in the lowest income country grouping as defined by the World Bank, although the World Bank is planning surveys in Malawi, Zambia, and other countries. However, the nationally representative FinScope surveys, which focus mainly on financial access and behavior but also measure a few aspects of financial literacy, have been widely implemented in the Africa region as well as in Pakistan.³

Some of the findings from the most recent FinScope surveys in 14 countries are summarized in Table 2. They generally indicate low levels of financial access. For instance, even

³ The FinScope surveys are administered by the South African organization FinMark Trust and were launched with initial funding from the DfID.

in Ghana, one of the higher-income countries in the region, only 56 percent of adults use any kind of financial product. This figure rises to 81 percent in Lesotho, but falls to just 22 percent in Mozambique. It is interesting to note that Pakistan has a very similar access profile to Tanzania; both countries have high levels of financial exclusion, and use of informal products is about three times more prevalent than use of formal products. Awareness of basic financial products and concepts vary from country to country as well, but is generally also low, with many people never having heard of savings accounts. However, the financial literacy data from the FinScope surveys is limited in that it generally focuses only on awareness of financial products and providers, and not on other dimensions of financial literacy, such as numeracy or capability.

Other national financial literacy surveys have been conducted in the U.K. (Atkinson et al., 2007), Austria (Fessler et al. 2007), Australia (Worthington, 2004), Poland (Szafranska and Matysik-Pejas, 2010), Singapore (Media Research Consultants, 2005), Fiji (Sibley, 2010), and Ireland (O'Donnell and Keeney, 2009), although many of these tend to focus on broader measures of financial capability. The specific results from these surveys are not presented here due to lack of direct comparability.

The comparable surveys find that financial literacy is low everywhere, though still lower in low-income countries. Lusardi and Mitchell (2011b) find in the U.S. that only about 65 percent of respondents correctly answered the first question or the second question, while only half gave the correct response to the third question. Table 1 shows that these scores are fairly comparable to those in other high income countries. For instance, Sekita (2011) finds that slightly worse performance on the financial literacy test for individuals in Japan—the correct response rate on the first two questions is 50 percent, and 40 percent on the last question. In Sweden, Almenberg and Säre-Söderbergh (2011) find that the correct answer rate for the second two questions (60-70 percent) is higher than for the first (35 percent), but this is because a much more difficult variation of the first question is asked.

Table 1. Selected Financial Literacy Survey Results From Around the World

COUNTRY (YEAR OF SURVEY)	Q1. COMPOUND INTEREST*	Q2. INFLATION*	Q3. RISK DIVERSIFICATION*	SURVEY SAMPLE	SOURCE
High-income					
United States (2009)	65%	64%	52%	1,488	Lusardi and Mitchell (2011b)
Italy (2006)	40%	60%	45%**	3,992	Fornero and Monticone (2011)
Germany (2009)	82%	78%	62%	1,059	Bucher-Koenen and Lusardi (2011)
Sweden (2010)	35%**	60%	68%	1,302	Almenberg and S��ve-S��derbergh (2011)
Japan (2010)	71%	59%	40%	5,268	Sekita (2011)
New Zealand (2009)	86%	81%	27%**	850	Crossan et al. (2011)
Netherlands (2010)	85%	77%	52%	1,324	Alessie et al. (2011)
Upper-middle-income					
Russia (2009)	36%**	51%**	13%**	1,366	Klapper and Panos (2011)
Romania (2010)	24%**	43%	--	2,048	World Bank CPFL program
Azerbaijan (2009)	46%**	46%	--	1,207	World Bank CPFL program
Chile (2006)	2%**	26%	46%	13,054	Behrman et al. (2010)
Lower-middle-income					
Indonesia (2007)	78%	61%	28%**	3,360	Cole et al. (2010)
India (2006)§	59%	25%	31%**	1,496	Cole et al. (2010)
West Bank & Gaza (2011)	51%	64%**	--	2,022	World Bank CPFL program

*Percent answered correctly for each of the questions displayed in the box on page six. Questions are similarly worded across surveys except where noted.

****Q1:** Swedish and Chilean respondents were asked to give the exact answer in a substantially more difficult question: “Suppose you have 200 SEK in a savings account. The interest is 10 per cent per year and is paid into the same account. How much will you have in the account after two years?” Russian, Romanian, and Azerbaijani respondents were asked a slightly harder question: “Let’s assume that you deposited 100,000 rubles in a bank account for 5 years at 10% interest rate. The interest will be earned at the end of each year and will be added to the principal. How much money will you have in your account in 5 years if you do not withdraw either the principal or the interest: more than 150k rubles, exactly 150k rubles, or less than 150k rubles?”

****Q2:** In Russia and the West Bank and Gaza the following was asked: “Let’s assume that in 2010 your income is twice as now, and the 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?”

****Q3:** This result for Italy is taken from the 2008 survey (which uses a different sample), since a comparable question was not asked in 2006. New Zealanders were asked a much more difficult (and ambiguous) 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 cheque account?” Russian respondents 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 are 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.”

§Gujarat only; not nationally representative.

**Table 2. FinScope Survey Results on Access to Finance and Financial Literacy
in Sub-Saharan Africa and Pakistan**

COUNTRY (YEAR OF SURVEY)	USE FINANCIAL PRODUCTS			CURRENTLY SAVE OR PUT MONEY AWAY	BORROWED MONEY IN PAST 12 MONTHS	USE AN INSURANCE PRODUCT	AWARENESS ("HAS NEVER HEARD OF...")			
	TOTAL	FORMAL	INFORMAL				SAVINGS ACCOUNT	INTEREST ON SAVINGS	INSURANCE	LOANS
Southern Africa										
Swaziland (2011)	63%	50%	13%	66%	33%	22%†	--	--	--	--
Lesotho (2011)	81%	58%	23%	51%	66 % ("have borrowed")	61%†	--	--	--	--
South Africa (2010)	77%	63%	14%	37% ("save regularly")	33% ("have credit product")	50%†	--	--	--	--
Mozambique (2009)	22%	13%	9%	20%	8%	5%	82%	90%	88%	22%
Botswana (2009)	67%	59%	8%	--	--	--	--	--	--	--
Zambia (2009)	37%	23%	14%	46%	24%	4%	--	--	--	--
Namibia (2007)	48%	47%	1%	45% §	15% §	18% §	--	--	--	--
Malawi (2008)	45%	26%	19%	74%	22%	3%	54%	66%	--	48%
East Africa										
Kenya (2009)*	67%	41%	26%	52%	38%	7%	9% ("don't understand product")	49%	48% ("don't understand product")	--
Uganda (2009)	70%	28%	42%	67%	45% ("currently borrowing")	25%†	--	--	--	--
Rwanda (2008)	47%	21%	26%	54%	27%	82%‡	--	--	--	--
Tanzania (2006)	46%	11%	35%	--	--	--	27%	35%	25%	9%
West Africa										
Ghana (2010)	56%	41%	15%	64%	19%	5%	--	--	--	--
Nigeria (2008)**	47%	23%	24%	67%	7% ("currently borrowing")	2%	42%	36%	48%	22%
South Asia										
Pakistan (2009)***	44%	12%	32%	56%	35% (currently has a loan)	2%	--	--	--	--

* FinAccess. ** Access to Finance Survey. *** Access to Finance Study (A2FS). § Estimate for use of formal product only.

† In South Africa, this includes 45% who have funeral coverage, and 26% who use other products. In Lesotho, over a third of adults have funeral insurance. Funeral coverage is also common in Swaziland and Uganda.

‡ Reflects access to government-sponsored medical insurance. Use of other types of insurance products is 0-1%.

There are no entirely comparable survey results for low-income countries, but the results from Gujarat, while not representative of the state, indicate that respondents perform worse on calculations of compound interest, and substantially worse on question testing understanding of inflation. Meanwhile, low levels of educational attainment, low levels of awareness of financial terms, and high levels of financial exclusion would lead us to predict poor performance on these three questions in other low-income countries. As FinScope survey results indicate, a large proportion of the population in countries such as Mozambique, Malawi, and Nigeria lack of awareness of basic financial products and concepts such as savings accounts, interest on savings, insurance, and loans.

The remainder of this section will discuss findings related to the demographic breakdown of these survey results, and other correlates of financial literacy. Demographically, we find that:

- Women have lower levels of financial literacy almost everywhere
- Financial literacy follows an inverted-U shape with respect to age
- Financial literacy is associated with higher levels of income and educational attainment
- Geographic and racial/ethnic disparities in financial literacy are common

In high-income countries, surveys and studies show that:

- Financial literacy is correlated with retirement planning
- Financial literacy is associated with more sophisticated investment behavior
- Financial literacy affects debt and mortgage outcomes for individuals
- Financial literacy may even have other macroeconomic implications

In low-income countries, surveys and studies show that:

- Financial literacy is correlated with having a bank account
- Financial literacy affects insurance take-up
- Business literacy, as indicated by surveys of enterprises, may also be low
- Interest in financial education, however, appears to be widespread

Women have lower levels of financial literacy almost everywhere

Lusardi and Mitchell (2011b) find that women in the U.S. are significantly less likely to answer questions correctly, and more likely to say that they don't know the answer. (On the other hand,

women also rate their own level of financial literacy more conservatively; self-assessment of financial literacy in the overall population tends to be more inflated.) This is true across almost all countries in both the developed and developing world. One exception is Bucher-Koenen and Lusardi (2011), which finds no differences by gender in East Germany.

In Africa, the FinScope surveys likewise indicate disparities by gender in terms of access to financial services, which could also translate into disparities in levels of financial literacy.⁴ In Malawi, for instance, 17 percent of females are banked compared to 21 percent of males. A similar difference is found in many other countries, including Mozambique, South Africa, and Zambia, although the picture varies by type of service and country. When they do have access to finance, females are often more likely than males to rely on informal versus formal services. The InterMedia (2010) survey of youth in Ghana and Kenya (described in greater detail in the next section) also finds disparities between males and females in terms of access to financial services.

There are fewer surveys that focus specifically on women, particularly in developing countries. One exception in this regard is MasterCard Worldwide (2011), which reports on an index of financial literacy for women in 24 countries across Asia, the Middle East and North Africa, and Sub-Saharan Africa. The index measures knowledge of money management (weighted 50 percent), financial planning (30 percent), and investment (20 percent), and sampled approximately 10,500 women (although it is not clear how the sample was chosen). Interestingly, they find that financial literacy is not necessarily correlated with the level of income in each country; within Asia, women in Thailand scored the highest and women in Japan and Korea scored the lowest. However, women in African countries and some Middle Eastern countries generally had lower scores than those in Asia.

The gender gap in financial literacy is of particular concern as women are also more likely than men to become economically vulnerable due to longer life spans, shorter work experiences, and other factors. Fonseca et al. (2009) finds that the gap between men and women in the U.S. is explained less by differences in covariates (i.e. difference in characteristics) than in coefficients (i.e. differential effects of characteristics), with household decision-making roles allocated more by relative levels of education than by gender. Lusardi and Mitchell (2008) show

⁴ In their analysis of formal bank account ownership, however, Honohan and King (2009) find that the coefficient on gender is insignificant when they control for variables such as financial sector knowledge, education, and other demographic factors.

that older women in the U.S., whose longer life spans make them more vulnerable to old-age poverty, are less financially literate than the older population as a whole, and less likely to plan for retirement.

Financial literacy follows an inverted-U shape with respect to age

Financial literacy tends to peak among adults in the middle of the life cycle, and it is usually lowest among young people and the elderly. In the U.S., for example, those in the prime age group (25-65) tended to do about five percent better on the questions than those under 25 or over 65. Lusardi and Mitchell (2011a) note the difficulty of distinguishing between age and cohort effects in a single cross-section, but hypothesize that individuals likely accumulate knowledge over time which then decays as they age. Finke et al. (2011) likewise attribute lower financial literacy in older people to a decline in cognitive processes associated with old age, and rule out the effects of cohort and other demographic characteristics. A deeper examination of financial literacy among older Americans can be found in Lusardi and Mitchell (2009a).

However, there is a much larger literature on financial literacy and its determinants among young people, given low levels of literacy and the perceived need to equip young adults with the ability to manage their own finances. Lusardi et al. (2009b) find that less than a third of American teenagers (ages 12-17) possess basic knowledge of interest rates, inflation, and risk diversification. Women, African-Americans and Hispanics, and those with lower educational attainment are associated with lower levels of financial literacy. Mandell (2006) notes that there is even evidence that youth financial literacy has been declining since the late 1990s, based on the Jump\$tart surveys administered to high school seniors. Beal and Delpachitra (2003), a study of Australian college students, also found low levels of financial literacy.

Various factors may account for different levels of financial literacy among youths. Valentine and Khayum (2005) find that working 10-20 hours a week, having a savings account, and plans to pursue post-secondary education are associated with high levels of financial literacy for high school students. Chen et al. (1996) find that college students' knowledge of personal investment is low; business majors are more knowledgeable than non-business majors, and within business majors, finance/accounting majors are most knowledgeable. Chen and Volpe

(2002) find that female college students have been shown to have less knowledge and willingness to learn about personal finance topics than do male college students.

Although FinScope only surveys adults, financial literacy among youth in developing countries may be a potential area of concern, based on InterMedia (2010) and similar studies in other regions. InterMedia (2010) reports the results of nationally representative surveys of youths aged 15-24 in Ghana and Kenya on their access to financial information. It predictably finds that older youths (aged 20-24) have more access to financial information than younger youths (aged 15-19), make greater use of financial services, and are more likely to be the sole financial decision makers in their household. Female and low income youth are also less likely to have access to banking services.

In Kenya, they find a correlation between use of financial services (such as having a bank account) and exposure to financial information. Radio, followed by word of mouth from friends and family members, is the most common source of financial information, although urban youth also have greater access to television and other media. A higher proportion receives information on money transfers and mobile financial transactions than on borrowing, saving, or bank accounts. In Ghana, youth apparently have greater difficulty accessing financial information. Awareness of mobile financial transactions is particularly low compared to Kenya, though this is unsurprising as mobile banking was only introduced in Ghana after the survey period. The collection of similar information in other countries could help to improve the design of financial education programs targeted towards youth, some of which are discussed in the Section III.

Financial literacy is associated with higher educational attainment and income

Lusardi and Mitchell (2011b) find that those with lower educational attainment (e.g. lacking a high school degree) in the U.S. are less likely to answer questions correctly, and also more likely to say they don't know the answer. This pattern is found in all countries. At the same time, Lusardi and Mitchell (2011a) also note that education may be a weak proxy for financial literacy, as they are both statistically significant when included in regressions on retirement planning, for example.

Surveys have also found a relationship between financial literacy and income, and there are a number of studies focusing on whether financial literacy has a causal effect on wealth

accumulation. Monticone (2010) uses data from Italy to show that wealth has a small but positive effect on financial literacy. Behrman et al. (2010) use an instrumental variables regression analysis to show that financial literacy also has a causal effect on wealth accumulation in the U.S. Jappelli and Padula (2011) estimate an intertemporal model of investment in financial literacy, which it is shown that financial literacy and wealth are jointly determined and correlated over the life cycle. Meanwhile, Hastings and Mitchell (2011) provide experimental evidence from Chile to show that financial literacy is correlated with wealth, but that measures of impatience might be a more important determinant. Behrman et al. (2010) focuses on the relationship between financial literacy, education, and household wealth accumulation in Chile. Using a nationally representative data set, they find that financial literacy has even stronger effect than educational attainment on wealth.

One cross-country study of note which addresses the effects of both education and income on financial literacy is Jappelli (2010), which analyzes data from a survey of 55 countries. The study shows that economic and financial literacy (as perceived by each country's business leaders) is positively associated with human capital indicators (math and science test scores and college attendance), but negatively associated with living in a country with a generous social security system. The study hypothesizes that this is because the relative lack of opportunity for private capital accumulation decreases incentives to acquire financial literacy.

Geographic and racial/ethnic disparities in financial literacy are common

Most country surveys indicate strong regional disparities in financial literacy, as measured by awareness of financial terms and institutions, particularly between urban and rural areas. This likely mirrors the differences in access to finance, and is especially prominent in developing countries. For instance, in Ghana, 52 percent of urban adults have commercial bank accounts, versus just 21 percent of rural adults. While rural adults are more likely to use informal financial products, this usage only partially close the access gap. Given that the level of urbanization is still quite low in many African countries—in Malawi, for instance, only 16 percent of those surveyed lived in urban areas—this disparity could potentially be more important than those between gender and age groups. This may partially reflect differences

across occupations and levels of education, as wage-earners and salaried workers (most of who live in urban areas) tend to have higher rates of financial literacy than farmers in rural areas.

There are also often other regional differences in financial literacy and financial access within countries. In Malawi, for instance, the Northern and Central regions tend to have better access to financial services than the Southern region. Analogous patterns are found in high income countries as well, for instance in Italy (where the Centre-North region has a higher financial literacy rate than the South) and Germany (where the West does better than the East). Sometimes these patterns are more idiosyncratic: in the U.S., Bumcrot et al. (2011) find that South Dakota and Idaho have higher levels of financial literacy than their demographic make-up would predict, while the opposite is apparently true for Pennsylvania, New Jersey, New York, and Connecticut.

With regard to disparities by ethnicity and race, the FinScope survey in South Africa indicates that blacks (57 percent) are less likely to be banked than whites (91 percent), with coloureds (68 percent) and Asians (85 percent) falling in between. Issues of race may not be as stark in other countries, but it may be important to pay attention to similar ethnic disparities in targeting programs. Unfortunately, many of the other FinScope surveys do not provide breakdowns in this regard.

Among higher income countries, Lusardi and Mitchell (2011b) find that financial literacy scores in the U.S. are lower among Hispanics and African-Americans than among whites and Asians. Relatedly, Lusardi (2005) finds that African-American and Hispanic households in the U.S. are less likely to have checking accounts and hold high-return assets (such as stocks and business equity), and incur higher information and planning costs than the rest of the population. Crossan et al. (2011) find that financial knowledge among Maori is lower than that of the general population of New Zealand, excluding a certain Maori tribe who receive financial education courses and have a long-term savings scheme. In the Netherlands, Alessie et al. (2011) furthermore find that members of religious minorities, such as Muslims, also display lower levels of financial literacy.

Financial literacy is correlated with retirement planning

There is a large literature on the relationship between financial literacy and preparation for retirement. Most of it focuses on high-income countries, though the subject is receiving an increasing amount of focus in middle-income countries as well.

Lack of retirement related-knowledge seems to be widespread. Clark et al. (2010) find that many employees in the U.S. nearing retirement have a limited knowledge of company retirement benefits, and have misconceptions regarding their expected age of retirement, while Greenwald et al. (2010) report that knowledge regarding Social Security in the U.S. is low as well. Lusardi and Mitchell (2011a) find in the U.S. that lack of planning for retirement is widespread and correlated with financial literacy. Using high school financial education mandates as an instrument for financial literacy, their study indicates that it has a causal effect on retirement planning as well.

Other studies using instrumental variables have found similar outcomes in Italy (Fornero and Monticone, 2011), Germany (Bucher-Koenen and Lusardi, 2011), the Netherlands (Alessie et al., 2011), and Japan (Sekita, 2011). Crossan et al. (2011) do not find an effect of financial literacy on retirement planning, which they attribute to New Zealand's universal public pension, though they do not, however, attempt to control for endogeneity. Almenberg and Sävemark (2011) find an association between some measures of financial literacy and retirement planning in Sweden, but likewise do not attempt to measure causality.

Other studies have found somewhat more nuanced results in high-income countries. Hung et al. (2009) find that financial literacy is related to retirement planning in the U.S., but not to retirement preparedness. Gustman et al. (2010), however, find that pension wealth is more likely to cause pension knowledge in the U.S., rather than the other way around. Pahnke and Honekamp (2010) find that financial literacy leads to greater retirement planning for German households with above-average incomes. However, support for a causal relationship will be discussed in greater detail in the next section, with the introduction of experimental evidence.

Middle-income countries experimenting with pension privatization have also been receiving more attention in the literature. These studies indicate that the importance of financial literacy increases with the amount of responsibility individuals bear in planning for retirement.

Klapper and Panos (2011) find that financial literacy is negatively correlated with private pension planning in Russia. In Chile, Landerretche and Martinez (2011) find that pension plan literacy increases savings, as well as the probability of pension fund type switching. Skog (2006) finds that older, healthier, more educated, married male workers, as well as union members, higher income, and workers at larger companies are more informed about the Chilean pension system.

Financial literacy is associated with more sophisticated investment behavior

A variety of evidence indicates that financial literacy is correlated with investment behavior. Volpe et al. (2002) find, in a survey of online investors, that older male investors with graduate degrees have higher investment literacy. Calvet et al. (2009), analyzing Swedish households, find that financial sophistication increases with financial wealth and household size, and is positively correlated with holding risky assets. Bucher-Koenen and Ziegelmeyer (2011) find that while German investors with lower levels of financial literacy were less likely to have invested in the stock market, and thus less likely to have lost money in the financial crisis, they were also more likely to realize losses on the assets they did sell.

Several studies have moreover found causal effects of financial literacy on investment behavior. Van Rooij and Lusardi (2007), in an analysis of Dutch survey data, find a causal effect of financial literacy on stock market participation. Abreu and Mendes (2010), in a survey of Portuguese investors, find that higher levels of education and financial literacy have a positive impact on portfolio diversification, while Guiso and Jappelli (2009) find similar results for Italian investors.

Financial literacy affects debt and mortgage outcomes for individuals

The financial crisis has been blamed in part on low levels of financial literacy in the U.S., particularly among households who defaulted on their mortgages. Gerardi et al. (2010) indicates that there may be some truth to this, as the study finds a large and statistically significant correlation between mortgage defaults and delinquency and lower levels of financial literacy in the U.S.

Financial literacy may have a bearing on other decisions regarding mortgages as well. Duca and Kumar (2011) show that the financially illiterate are also more likely to engage in mortgage equity withdrawals (MEWs) via traditional first or second mortgages, some of whom may not have been aware of the risks they undertook. On the other hand, Fornero et al. (2011) find that financial literacy and interest in reverse mortgages are uncorrelated in elderly homeowners in Italy. Since reverse mortgages allow the elderly to borrow against their home equity and pass the burden of repaying on to their heirs, this finding contradicts their prior that more informed individuals would find these instruments more appealing.

The concern about the impact of financial literacy on financial behavior extends to other types of debt as well. Lusardi et al. (2009) find low levels of debt literacy in the U.S., which is shown to be correlated with a higher debt burden, incurring greater fees, and borrowing at a greater cost. Inaccurate self-assessment of creditworthiness also has negative consequences. For instance, Perry (2008) finds that about a third of consumers in the U.S. overestimate their own credit ratings, and that these same consumers tend to be less financially knowledgeable and exhibit positive financial behaviors; Benton et al. (2011) find a similar lack of knowledge as well. Courchane et al. (2008) demonstrate that inaccurate self-assessment of credit can lead to adverse financial events, including having a higher annual percentage rate on a mortgage.

Financial literacy may even have other macroeconomic implications

Several recent studies seem to indicate that financial literacy may play an important role in the formation of inflationary expectations, an important component of macroeconomic models. If so, such models will need to take into account these sources of heterogeneity in individual decision-making. For instance, Burke and Manz (2011) find that subjects in an experiment choose more relevant information and make better use of that information if they are more economically and financially literate, and that differences in literacy account for most demographic variation in inflationary expectations. They measured economic and financial literacy using 16 multiple-choice questions covering knowledge of monetary policy, personal finance, and numeracy. In a similar experiment, Bruine de Bruin et al. (2010) likewise find that higher inflationary expectations among individuals in the U.S. are correlated with lower levels of financial literacy.

In a study using survey data in Euro area, Gnan et al. (2011) find that education and income are more strongly correlated with inflation expectations than age and gender, and argue that this is consistent with the findings on financial literacy.

In lower-income countries, there is a relationship between financial literacy and having a bank account

One of the key questions that arises in developing countries is whether financial literacy and financial access are causally linked. In fact, in most countries surveyed by FinScope, the primary reason cited for not having a bank account is lack of income or the inability to maintain a minimum balance, rather than lack of knowledge. In Malawi, where only 19 percent of the population has a formal bank account, these reasons account for the overwhelming majority of responses. Less than 10 percent of respondents cite financial literacy-related reasons, such as not knowing how to apply for an account. (It is possible, however, that perceptions of minimum required balances, for instance, may be incorrect.) At the same time, almost 80 percent had either never heard of savings accounts or did not know what they were, and the figure is lower for current or checking accounts. Income-related reasons are also predominant in Rwanda, Namibia, and Tanzania, although a higher percentage of adults in Tanzania (21 percent) also said that they did not know how to open an account.

In an attempt to provide a more definitive answer, Honohan and King (2009) use data from FinScope surveys to estimate the impact of various potential determinants of having a bank account. They include a variable for financial sector knowledge (a normalized index of the number of products from a given list that a respondent claims to know), which might be regarded as a weak proxy for general financial literacy. They find this variable to be positive and significant when controlling for country fixed effects, but the sign is reversed without the fixed effects. Hence, no clear correlation can be drawn.

Regardless, while the role of financial literacy in determining bank accounts ownership is somewhat unclear, it could prove to be a greater constraint in other areas such as the take-up of insurance products, as discussed below.

Financial literacy affects insurance take-up in lower-income countries

Several studies on microinsurance suggest that knowledge of and attitudes towards insurance products play an important role in take-up. Giné et al. (2008) find that after insufficient funds, lack of understanding of the product is the second most commonly cited reason for not purchasing rainfall insurance policies in rural India. However, they find that many fewer households cite lack of understanding in a survey two years later after becoming more familiar with the product.

Similarly, Cohen and Young (2007) note that the main reason for non-renewal of insurance policies issued by the company CALUMNA in Guatemala was lack of understanding. They also observe that Ugandans who understand health insurance are much more willing to buy it, while negative attitudes, such as thinking insurance will bring “bad luck” or that it’s “only for the rich”, tend to reduce take-up. Tran and Yun (2004), an evaluation of a microinsurance project in Vietnam, find that most clients had previously been unexposed to insurance products, and generally lacked a thorough understanding of the concept of insurance and its benefits once they had enrolled in microinsurance. Some clients were subsequently unaware that they were able to make claims upon events such as death or illness.

Indeed, the FinScope surveys indicate that basic awareness of insurance is low in many low-income countries in Africa. Only four percent of Ghanaians have formal insurance, and an even smaller percentage has informal insurance. While two-thirds of those surveyed cited affordability as the main reason for not purchasing insurance, more than a quarter of individuals also reported reasons such as not knowing what insurance is, how it works, or how to buy it. In Malawi, almost 50 percent of adults “did not know that insurance products can protect you when you have a problem.” Many people rely instead on support from their family and community or loans to cover costly medical and burial expenses. Half of those surveyed in both Nigeria and Mozambique had never heard of insurance or insurance products at all.

Interestingly, around half of those in Kenya who did use insurance did not think insurance companies explained their products well, and around half also believed agents to be recruiting clients fraudulently. This suggests that consumer protection measures and other efforts to improve trust in the insurance sector may have an impact on both improving usage rates.

One partial exception to the low rate of penetration is Rwanda, where use of most insurance products is very low, but where 80 percent of adults have medical insurance through the government's *Mutuelle de Santé*. About half of adults express a need to learn more about both life and asset insurance, suggesting that lack of information is an important barrier to the take-up of other insurance products. Another exception is South Africa, where 46 percent of adults have some sort of funeral insurance coverage, and where penetration of other types of insurance (26 percent) is higher than in lower-income countries as well. The view of insurance here is more positive—three-quarters of those surveyed agree that it is “important to have insurance just in case” of threats such as death, loss of income, funerals, crimes, and so forth.

Business literacy, as indicated by surveys of enterprises, is likely low

As discussed in the introduction, improving financial literacy for entrepreneurs may be as important improving the same for consumers in the developing world. FinScope's household surveys do not contain questions related to business literacy, but they have launched a separate series of surveys of businesses which do contain relevant questions. For instance, according to a survey of businesses in Zambia in 2010, almost 73 percent of MSMEs are prevented from accessing finance because of inadequate business records. The report notes that “helping MSME owners keep business records, identify more profitable lines of business, develop business plans, and improve general business administration could allow them to increase productivity and make it easier for them to access financial services.” Access to finance is also a problem for small businesses relative to larger enterprises, and particularly for the majority of small businesses that are unregistered. On the other hand, the returns to education for enterprise owners are high—one year of additional education apparently boosts labor productivity by 10 percent. The returns to financial literacy education and other forms of capacity building might therefore be high as well.

FinScope conducted a similar survey in South Africa. Just over half of the businesses were formally registered. While most of the owners of unregistered businesses cited the size of their business as the primary reason for staying informal, 18 percent said they didn't know how to register their business, suggesting a role for a business services intervention. With regard to other measure of financial literacy, 46 percent of businesses said they kept financial records, with service providers more likely to do so than retailers. Those who kept records were most likely to do so for total sales made (64 percent), stock (53 percent), and cost of sales (51 percent). Other

records included expenses of the business (36 percent), income after expenses (34 percent), number of customers (31 percent), and debts or debtors (31 percent). For those businesses who offered credit to their customers, 71 percent kept a written record of owed payments.

Interestingly, 31 percent of small business owners said they relied solely on themselves for business information, with the most common other responses being family members, spouses, and friends. Relatively few cited other business owners or support organizations, and very few belonged to any business networking groups. Indeed, 75 percent of business owners were unaware of any organizations that gave support and advice to small business owners. In contrast, the owners of larger enterprises were more likely to seek support from such organizations, and have sophisticated business networks.

Interest in financial education, however, appears to be widespread

The FinsScope surveys give cause for optimism with regard to the take-up of financial education programs in Sub-Saharan Africa, in spite (or because) of the low levels of financial literacy. For instance, in Tanzania, most people surveyed (80-85 percent) were interested in learning more about interest rates, savings, loans, insurance, and a range of other topics, suggesting a keen interest in financial education. The level of desired financial knowledge is also high in Nigeria. In the baseline survey of South African mineworkers described in Cole et al. (2010), about 90 percent of respondents felt they would benefit from a financial education course.

In Malawi, the majority of adults are interested in learning more about how credit and interest rates work, how to save and keep money safe, how to manage budget, and how to obtain property and life insurance. A near majority are also interested in learning about technology-related financial matters, such as transferring airtime on cell phones, using cell phones for banking, using ATMs to transfer or withdraw money, or using the internet for banking. Importantly, the majority of Malawians are also interested in learning how to start a business, suggesting that business training programs might also be successfully targeted towards potential entrepreneurs as well.

On the other hand, as the discussion of the program evaluations in the next section makes clear, both financial literacy and business training programs frequently struggle with attracting sufficient take-up. A professed interest in financial education may not be enough to ensure

participation, and take-up rates may be low even when incentives such as monetary gifts and free transportation are offered. Revealed preferences may thus be more telling.

III. EVALUATING FINANCIAL EDUCATION FOR CONSUMERS

As discussed in the introduction, there are already a number of financial education programs underway around the world to address low levels of financial literacy. But what do we know about the general effectiveness of such programs? And how could we make them more effective? Until recently, evaluations of financial education programs were mostly limited to developed countries, and particularly to programs in the U.S. Fortunately, the number of impact evaluations of such programs in developing countries has been rapidly increasing with the widespread use of randomized control trials (RCTs) in development research. Although relatively few of these studies have been completed to date, many more experiments are in the pipeline, and the growing literature is beginning to furnish lessons for policymakers.

This section discusses results for consumers, while the next section focuses on results for entrepreneurs. We highlight both the recent experimental and non-experimental evidence, and discuss the application of the themes that emerge to the design of financial education programs in countries of different income levels.

Consumer-side financial education programs typically aim to increase awareness and knowledge of financial products, and influence behavior such as saving and financial planning. In developed countries, many programs emphasize preparation for retirement, the importance of saving, and the development of general financial literacy, particularly for youths. In developing countries, where the majority of the population lacks access to formal financial services, interventions target the take-up of products such as savings accounts and insurance, as well as the promotion of savings.

Promoting planning and saving for retirement

Financial education interventions designed to promote preparation for retirement are widespread in developed countries, particularly in countries where the burden of retirement planning is increasingly shifting to individuals. As mentioned in the previous section, many studies have found a relationship between financial literacy and retirement planning. Evaluations of programs

specifically targeted towards retirement planning, which often take the form of seminars, seem to indicate that they can be effective in increasing retirement savings, although there is little experimental evidence for this so far.

For instance, Bernheim and Garrett (2003) use a household survey to analyze the effect of employer-based financial education on the savings behavior of employees, both in general and for retirement. Their cross-sectional analysis finds positive correlation between education programs and savings, with sufficient controls to suggest that the relationship is causal. Lusardi (2003) likewise uses survey data to examine the impact of attending retirement seminars on savings behaviors, specifically among older households. The study finds positive effects on saving behavior, particularly for those with lower education and low initial savings. Clark et al. (2004) evaluate the impact of attending financial education seminars on desired retirement age and expected levels of retirement income, using a pre-test post-test survey. They find changes for both retirement goals and stated savings behavior, particularly for women.

Duflo and Saez (2003), one of the few randomized impact evaluations of any financial education programs in the U.S., demonstrates the importance of peer effects in retirement preparation, and perhaps in the take-up of financial products more generally. They study the effects of providing information to university employees about a benefits information fair on both fair attendance and their subsequent enrollment in a Tax Deferred Account (TDA) retirement plan. The fair attendance and TDA enrollment rates of both the treated individuals (who were also offered a small monetary reward) and their departmental colleagues significantly increased, suggesting not only treatment and motivational reward effects, but also social network effects. Their conclusion is that peer influence likely played an important role in individual's decision to obtain information about TDAs, and in conjunction with this information, potentially also on their subsequent decision to enroll in one.

Individuals planning for retirement may also be expected to be literate in investment strategies. However, the provision of investment information may or may not have impact on how they actually invest. Hung and Yoong (2010) conduct a randomized experiment to analyze the effect of the provision of financial advice on a hypothetical portfolio allocation task. They find that individuals who solicit advice improve their investment performance (despite negative

selection on financial ability), but that individuals who receive unsolicited advice do not. These results suggest that more motivated individuals are likelier to respond to advice, and that compulsory advice-giving may be ineffective. Their experiment complements non-experimental analysis of data on actual 401(k) plan participants, in which they do not find that financial advice has any effect on plan-related outcomes.

Promoting savings among low-income individuals and minorities

A number of programs are targeted towards increasing savings and usage of financial products specifically among low-income individuals and minorities. As survey evidence indicates, individuals in such communities tend to have lower levels of financial literacy and less access to financial products. The efficacy of financial education seems to vary depending upon the program. Servon and Kaestner (2008), perhaps the only randomized study of a full-fledged program, analyzes the impact of financial literacy and Internet-use training on the financial behavior of urban low- and moderate-income individuals. They find little quantitative evidence of an increase in online banking, the main objective of the program, as well as relatively few other positive effects on behavior, although implementation issues may have affected the results.

Clancy et al. (2001) examine the relationship between the amount of financial education received and savings behavior among participants in Individual Development Accounts (IDAs), which are subsidized savings accounts targeted to the poor. They find large positive effects on savings for the first zero to twelve hours of financial education, after which the effect levels off.

Such programs have also experimented with using different instructional formats and innovative media. For instance, Spader et al. (2009) provides some non-randomized experimental evidence on the impact of a Spanish-language “telenovela” designed to impart financial education to Latino immigrants in the United States. They employ propensity score matching to reduce bias in the selection of the treatment and control groups, which were recruited through different channels. The results show that the television show positively affects viewer attitudes with regard to bank account usage and preparation for homeownership, which are also corroborated by a qualitative analysis.

Tufano et al. (2010) presents preliminary results from a unique program to improve financial decision-making skills among low-income and minority adults using video games

developed by the Doorways to Dreams Fund. Preliminary testing with small samples indicated a significant increase in self-confidence and knowledge associated with financial skills.

Preventing mortgage delinquency through education

Low financial literacy among prospective homeowners is often blamed in part for causing the subprime mortgage crisis, and the subsequent global financial crisis. Financial education, which often takes the form of mortgage counseling, has thus been a major area of concern. Studies show that such programs can be effective. Agarwal et al. (2008) analyzes the impact from a natural experiment in which “high-risk” mortgage applicants in certain Illinois zip codes were required to have their loans reviewed by third-party financial counselors. The counseling mandate had the effect of reducing defaults by 30%, as well as decreasing the supply of lenders and low-quality borrowers. The results reflect the effect of external review on lenders, as well as some renegotiation of loan terms by counseled borrowers. In some cases, the mandate also nudged some borrowers into choosing less risky loans in order to avoid counseling.

Agarwal et al. (2009), on the other hand, examines the effect of a voluntary counseling program aimed at disadvantaged households. Controlling for selection into treatment, they find that the program reduces mortgage delinquency rates, particularly for the least creditworthy households. Hartarska and Gonzalez-Vega (2006) study the impact of a counseling program targeted towards low-income households, and similarly find that mortgage counseling results in lower default rates, and helps borrowers optimally exercise their option to default. Their study controls for a large number of number of borrower characteristics, noting that the control group of not-counseled borrowers is very similar to the treatment group of counseled borrowers.

Financial education for students

There has been a great deal of research on programs targeted towards students and youth, which are often administered as part of the school curriculum. However, the effects of such programs on financial knowledge and behavior are still subject to debate. Bernheim et al. (2001), a seminal paper in this area, employs a differences-in-differences approach to analyze the impact of state high school financial education mandates on savings behavior. Specifically, respondents were asked whether they took any courses dealing with “household finances, consumer education, or economics.” Those who answered yes were asked whether the courses covered the use of

“budgets, credit, savings accounts, checking accounts, and so forth.” Finally, those who answered yes to the third questions were asked whether these courses were required by his or her school. They find that mandates appear to effectively increase exposure to financial education, and have a significant subsequent effect on future savings.

Cole and Shastry (2009) replicate and extend Bernheim et al. (2001) using a much larger sample from census data that allowed for the inclusion of state fixed effects and similar controls for age and education levels. They are also able to include event-year dummies for the implementation of each mandate, an improvement over the original identification strategy. However, their results contradict the original finding that high school education impacts future savings.

The effects of other programs vary depending on the curriculum, the sample, and the methodology.⁵ McCormick (2009) provides a good overview of evaluations of youth financial education programs. Some programs start at a very early age; Grody et al. (2008) evaluate a pilot program for third-graders using age-appropriate materials that shows promising results, while Holden et al. (2009) provides a critical overview of financial education programs targeted towards pre-school children.

More innovative strategies have also been used with students. Carlin and Robinson (2010) also employ quasi-experimental design to study the effects of a financial literacy course for high school students, one which involved role-playing fictitious budget situations (Junior Achievement Finance Park). They find that students who attended training were somewhat better

⁵ Just a few of the other studies in this area include Grimes et al. (2010), another analysis of the long-term effect of high school economics and business courses. They find a positive effect on the probability of having a savings account as an adult, an attribute which was also correlated with knowledge of basic economic concepts. Borden et al. (2008) study a financial education seminar program for college students (Credit Wise Cats), a peer-taught seminar covering basic financial topics (e.g. budgeting and tracking expenses, consumer credit and financing options, and savings and insurance coverage.) On the basis of tests administered before and after the seminar, they find it to have positive results on knowledge and attitudes. Mandell (2006) finds that contrary to intuition, “just-in-time” programs targeted towards students who are about to make a real-life financial decision do not seem to be effective. Mandell and Klein (2009) use a matched sample design to analyze the impact of taking a personal financial management course in high school on financial literacy, financial decision-making (behavior regarding credit card use, debt, savings, etc.), and attitude towards saving. The courses, which were offered at three high schools, lasted a full semester covered “all aspects of personal financial management that were thought to be relevant and important to students.” They also find no effect, although their sample size is fairly small.

at certain decisions involving savings in the simulation scenarios, and made greater use of decision support. However, because of the course's emphasis on conserving cash flow, they were worse at judging a health insurance plan which had higher monthly premiums but lower out-of-pocket costs.

Walstad et al. (2010) use a quasi-experimental design to analyze the effects of a DVD-based curriculum (Financing Your Future) for high school students on financial knowledge. The five video segments cover such topics as saving, money management, banking, credit and debt, and investing, and add up to six hours of instruction. They find that students who participated in the education program showed a significant gain in financial knowledge (as measured by pre-test and post-test scores) compared to students in a matched control group.

Another important result is that financial education tends to be more effective when it is targeted to the specific needs and desires of the audience. For instance, Varcoe et al. (2005) evaluate a program (Money Talks) in which teenagers in various settings (including juvenile hall, migrant education programs, pregnancy and parenting programs, public high schools, and youth groups) were solicited with regard to topics, format, and when and where to receive financial education information. The curriculum took the form of four newsletters targeted to 13-18-year-olds which covered different topics, including savings habits, shopping tips, car costs, and money values. They find positive changes in both knowledge and behavior, although they acknowledge that self-selection and the requirement of a parent-signed permission slip may have affected the results. The apparent success of the targeting strategy behind this program, however, seems to be corroborated by Mandell and Klein (2007), which notes the importance of motivation and goal-setting to increase the relevance of financial literacy education for youth.

Improving access to finance and financial capability in lower-income countries

Unfortunately, we have little direct evidence on the efficacy of such interventions from developing countries. The only completed randomized evaluation of a financial literacy training program designed to promote savings behavior among households comes from Indonesia, by Cole et al. (2011). The study finds no effect of the training on the overall population, though it does find a small increase in the probability that individuals with low initial levels of financial literacy open bank savings accounts following the training.

More follow-up work is now underway, although the results from these studies are still pending. For instance, Cole, Shapiro, and Shastry (forthcoming) are in the process of conducting an RCT on the impact of financial training workshops on a large sample of South African mineworkers over two years. Cole and Zia (forthcoming) are testing whether financial literacy can effectively de-bias individuals from gambling and playing the lottery in South Africa. Similarly Cole and Zia (forthcoming) are studying the impact of a financial education program for burial society members in the same setting. Two studies focusing specifically on savings are Karlan and Udry (forthcoming) which evaluates the impact of brief financial literacy lessons on the uptake of labeled savings accounts for Susu customers in Ghana, and Jamison et al. (forthcoming), which evaluates the impact of providing access to a savings account and a financial education curriculum on the financial awareness and behavior of Ugandan youth.

Available results from one forthcoming study, Cai (forthcoming), indicate that attending financial education session encourages farmers in rural China to take up crop insurance, and that those who do so also become less price-sensitive to the insurance. Moreover, there is also a significant impact on take-up for farmers who didn't attend the session, but who are listed as friends by those in the treatment group. This study shows that peer effects may be just as important in developing country settings as Duflo and Saez (2003) demonstrated in the U.S. Another forthcoming study in Kenya, Giné, Karlan, and Ngatia (forthcoming), will also examine the relationship between financial literacy and the demand for insurance

The programs funded by the Financial Education Fund (FEF), a program started by DfID, are all accompanied by evaluations, although some of the programs have suffered from implementation issues. One such analysis is Donian and Eltringham (2011), which evaluates the effectiveness of the Postbank Financial Literacy Project in South Africa, which provided classroom financial literacy training to 10,500 adults, on increasing the usage of banking services. The adults were existing clients of Postbank and Wizzit, the majority of whom were unemployed and female. The training consisted of a one-day workshop on subjects such as money management, saving and borrowing, and risk management. They found that the training

had no effect on opening a bank account or use of existing bank services, although the evaluation was somewhat flawed.⁶

One potentially effective and natural way of improving financial literacy in developing countries might be through the existing educational system. A study now underway in Brazil, Bruhn and Zia (forthcoming), evaluates a three-semester long financial education program for high school students in an experiment involving almost 900 schools across several states. So far, results from the first semester show significant effect on knowledge, financial autonomy, intention to save, savings and spending behavior. Students are also more likely to talk to parents about financial matters and help with organizing household budget. The study also examines potential knowledge spillovers for parents, but has found no statistically significant impact thus far, suggesting the need for a parallel intervention for parents.

Experimenting with financial education in low-income countries

Many of the new programs in developing countries are using innovative and interactive delivery formats. For instance, Carpena, Cole, Shapiro, and Zia (forthcoming) are conducting an RCT on the impact of financial literacy training delivered through well-produced videos on the use of financial services in Gujarat, India. Similarly, Karlan and Valdivia (forthcoming) are studying households in Peru to test the effectiveness of financial literacy education delivered through video and radio. Berg and Zia (forthcoming) are testing the impact of financial literacy messages delivered through mass media and soap operas in the Gauteng region in South Africa.

A number of other development agencies, nonprofit organizations, and private sector entities have also sponsored innovative financial education programs in African countries, but it is unclear whether they are being subject to evaluation. For instance, USAID (2011) briefly describes the recent launch of financial literacy program target towards youth in Somalia. The program takes the form of a soap opera broadcast through mobile phones.

⁶ A control group was formed from the entire Postbank client base in the same regions, though there appear to be systematic differences between the two groups, as the trainees were more likely to be female. In addition, about 40 percent of observations from the treatment group had to be discarded from the analysis, due to insufficient identification data and other reasons. The program was evaluated using pre-test and post-test surveys of both the control and treatment groups, as well as in-depth interviews.

VISA (2009) briefly describes the Visa Financial Literacy Roadshow, a 35-minute traveling “industrial theatre performance” accompanied by audience Q&A sessions. Since 2005, it has been presented in South Africa, Kenya, Zambia, and Botswana to approximately 120,000 people. The performance covers budgeting, debit cards, and the security benefits of banking systems. However, evaluation was limited to post-event questionnaires handed to 1,600 audience members, which appeared to indicate high retention of the subject material.

IV. EVALUATING FINANCIAL EDUCATION FOR ENTREPRENEURS

The burgeoning body of research on business literacy training for entrepreneurs addresses a policy intervention that is increasingly recognized as being important for development. The reasons for this focus in the literature are twofold. First, as mentioned in the beginning of this paper, many more people in developing countries derive their income from small enterprises, as opposed to wage and salary jobs. Second, recent work has highlighted the importance of “managerial skills” as a key component in a firm’s production function and a driver of firm growth and productivity, apart from factors such as access to physical capital and external finance (Bruhn et al., 2010; Bloom et al., 2010). Adverse business environments and high interest rates furthermore make it difficult to use credit effectively, increasing the importance of training. Thus, business training programs have the potential not only to improve individual livelihoods, but also to boost economic growth.

The evaluations of financial education interventions for entrepreneurs discussed in this section are similar in spirit to experiments that randomize other inputs into microenterprises, such as physical capital or external finance. For instance, de Mel et al. (2008) examines the returns to capital investment in Sri Lanka by randomizing shocks to the capital stock of microenterprises. They find that provision of cash and equipment grants results in returns significantly higher than market interest rates, but that the returns vary by factors such as gender (there is little effect on female entrepreneurs). McKenzie and Woodruff (2008) find very high returns to capital in a similar experiment in Mexico. Most recently, Fafchamps et al. (2011) find in Ghana that female entrepreneurs with higher profitability can benefit from positive capital shocks, but that in-kind grants worked better than cash grants. In an experiment in the Philippines, Karlan and Zinman (2009) find somewhat heterogeneous and counterintuitive

effects from providing microcredit, with evidence of increased profits and substitution away from labor. Dupas and Robinson (2009) find that providing savings accounts to female entrepreneurs in Kenya, even at negative interest rates, results in higher levels of income.

There are questions as to the relative effectiveness of different types of programs, the relative importance of financial versus human capital constraints, and other issues. The effects of training programs also vary depending on the outcomes being measured (e.g. improved knowledge versus firm expansion, etc.), as well as across the sample (e.g. persons with low financial literacy, females, etc.).

How well do business training programs work?

The answer seems to be that “it depends.” The existing literature in this area is very small but growing, and the results we have thus far vary by context, demographics, and type of intervention. Table 2 summarizes the results of the studies of which we are aware. Overall, the evaluations in developing countries indicate a positive effect on business knowledge, especially for men, but a more variable effect on business outcomes. The best-known evaluation is Karlan and Valdivia (2011), an RCT measuring the impact of attending business training sessions over a period of one to two years on business outcomes for female microentrepreneurs in Peru. They find that business knowledge improves and client retention rates increase, but that there is no additional impact on business revenue, profits, or employment. However, it is difficult to generalize these results to other settings and demographics since their study was very focused on very poor rural women.

One study which found somewhat more positive effects is Bruhn and Zia (2011), which analyzes the effects of business training on young entrepreneurs, both male and female, running small enterprises in Bosnia-Herzegovina. The firms in the sample were a step above microenterprises in size, with about two employees on average. They find that training improves business outcomes along the intensive margin for existing businesses run by men, but not along the extensive margin with regard to business survival, or new firm entry by entrepreneurs with exploratory loans, or for enterprises run by women. Preliminary results from Calderon et al. (forthcoming), which analyzes the effects of business training for female microentrepreneurs in

rural Mexico, however, indicates a large impact, including significant effects on revenues, the number of clients, profits, and accounting practices.

A few quasi-experimental programs have found mostly positive effects. For instance, Klinger and Schündeln (2007) use a regression-discontinuity design, based on pre-training test scores, to analyze the effects of business training programs on SME outcomes in three Central American countries (Guatemala, Nicaragua, and El Salvador). The firms in their sample are larger than those in most other studies, with a mean of ten employees. They find that the provision of training has a significant impact on the probability of both starting and expanding a business. In a later stage of the intervention, in which successful participants receive business grants, they are able to provide evidence of financial constraints, which seem to be more

Table 3. Impact Evaluations of Business Literacy Training Programs for Entrepreneurs

Study	Method	Sample	Intervention(s)	Impact
Karlan and Valdivia (2011)	RCT	~3000 female microfinance clients in Peru	Weekly or bi-weekly 30- to 60-minute training sessions designed to teach basic business practices	+ Business knowledge, record keeping, and client retention <> No change in business profits, revenues, or employment
Bruhn and Zia (2011)	RCT	445 young male and female microfinance clients (18-35) in Bosnia-Herzegovina	Six comprehensive modules on basic business concepts, accounting skills, and business investment and growth strategies	+ Business practices, investments, and loan terms for surviving businesses +Business performance and sales, for those with higher ex-ante financial literacy <> No effect on business survival, or business entry by clients with exploratory loans
Berge et al. (2011)	RCT	644 male and female microfinance clients in Tanzania	Comparison between: 1) 21 weekly 45-minute sessions on entrepreneurship, management, and marketing 2) Cash business grant equivalent to 50% of average annual investment	+ Business training increased profits (via increased sales, not profit margins), for male entrepreneurs only <> No impact of business grant for either males or females <> No impact for female entrepreneurs for either treatment. Accompanying lab experiment suggests behavioral and social constraints
Drexler et al. (2010)	RCT	1, 200 micro-finance clients in the Dominican Republic	Comparison between: 1) Training with traditional accounting module 2) Training with simplified rule-of-thumb accounting module	+ Rule-of-thumb intervention significantly increased practice of separating accounts, keeping records, and calculating monthly revenue, relative to traditional intervention + Increase in sales in bad weeks
Field et al. (2010)	RCT	597 Hindu and Muslim female microfinance clients in India	Two-day training module on basic financial literacy and business skills training, encouragement to identify concrete financial goals and business aspirations	+ Increase in borrowing and business income for upper-caste Hindu women, who face more social restrictions than lower-caste women <> No impact for Muslim women, who face the most restrictions. Thus, findings may indicate non-monotonicity in impact of social restrictions
Mano et al. (2010)	RCT	167 entrepreneurs in metalwork cluster in Ghana	Three weeks of classroom training on entrepreneurship, production and quality management, and record-keeping and costing	+Positive impact on business practices and performance, but impact is highly heterogeneous

Study	Method	Sample	Intervention(s)	Impact
Mano et al. (2009)	Non-randomized experiment	115 entrepreneurs in metalwork cluster in Kenya	Similar training on entrepreneurship, production and quality management, and record-keeping and costing	+ Improved business practices + Increased value-added and producer surplus
World Bank (2011)	RCT	Four clusters of 100-180 small firms in Ethiopia, Tanzania, and Vietnam (two sites)	Tailored training on KAIZEN production management techniques, and standard classroom management training, including a module on KAIZEN	+ Positive impact on business practices in all four sites, though the specific aspects affected varied across the sites. Analysis of impact on business outcomes is forthcoming
Bali Swain and Varghese (2011)	Propensity score matching and pipelining	841 micro-finance clients belonging to self-help groups (SHGs) in India	Skill-formation training for members of SHGs, provided by NGOs or government officials, provided over an average of 2-3 weeks	+ Positive impact on assets, particularly for clients in villages with better infrastructure, and for training led by NGOs rather than government officials <> No impact on income <> Duration of training (number of weeks) has no impact
Klinger and Schündeln (2007)	Regression discontinuity, based on application scores in a business plan competition	655 male and female entrepreneurs with small firms in Guatemala, Nicaragua, and El Salvador	Two rounds: 1) Training program to refine business plan, for accepted applicants 2) Cash prize of \$6,000-\$15,000 to most successful participants in training	+ Training program has significant effect on starting a new business or expanding an existing business + Winning cash prize increases probability of starting a business much more for females than for males
Giné and Mansuri (forth-coming)	RCT	~4,000 male and female microfinance clients in rural Pakistan	2x2 comparison between: 1) Eight-day business training course 2) Loan lottery	+ Training led to improved business and household outcomes, particularly for males + Training increased demand for larger loans without affecting repayment + Weaker impact of loan lottery <> Insignificant or even negative treatment effect for females. Time allocation analysis suggests this may be because women spend significantly more time on household/family versus business activities than do men.

Study	Method	Sample	Intervention(s)	Impact
McKenzie et al. (forthcoming)	RCT	1,256 current and potential female entrepreneurs in Sri Lanka	1) Eight-day ILO course on generating and starting business idea for potential entrepreneurs; six-day course for improving business for current entrepreneurs 2) Cash grants to half, conditional on completing training	+ Training has significant impact on business practices for current entrepreneurs; training and grant together also has significant impact on profits +Training and training and grant together for potential entrepreneurs speeds up starting an enterprise, though it doesn't improve ultimate entry rate
Calderon et al. (forthcoming)	RCT	850 female micro-entrepreneurs in rural Mexico	Four hours of class for six weeks with homework	+Large impact on revenues, number of clients, profits, and formal accounting, 7-8 months after intervention

significant for female entrepreneurs. Their study, however, consists of entrepreneurs who applied for the business training program. These individuals were likely more motivated to do well than those who chose not to apply and hence the results are not generalizable to the average entrepreneur in the region.

Similarly, Bali Swain and Varghese (2010) examine the provision of business training on entrepreneurs, specifically on participants in Self-Help Group microfinance intermediaries in India. They address the issues of self-selection into both the microfinance group and the business training by using a pipeline method, in which they delay treatment (during which individuals are waiting for a bank loan), and also by propensity score matching. While these methods help reduce variance and improve power, they are only as good as the available data, and unobserved variables may still bias results. The program itself consisted of skill development and marketing training. They find significant effects for asset accumulation, but not for income.

The evidence in the Africa region is somewhat mixed as well. Bjorvatn and Tungodden (2010) and Berge et al. (2011) found an improvement in knowledge, but heterogeneous effects for business outcomes. They study a program for microfinance clients in Tanzania implemented by the University of Dar es Salaam Entrepreneurship Centre, and consisted of a total of 21 free sessions following the client's week loan meeting. Bjorvatn and Tungodden (2010) find a positive effect on business knowledge, with a greater effect for entrepreneurs with less formal education, despite their lower participation rates. Cognitive skills and higher participation increase the positive effects of training. The low participation rate for those with lower education hints at other constraints that were outside the scope of this study.

Berge et al. (2011) extends the focus to business outcomes, and also analyzes the relative importance of providing a subsidy versus financial education, similar in spirit to Cole et al. (2011). After the completion of the training, a subset of the entrepreneurs in both the treatment and the control group were randomly selected to receive a business grant. However, in contrast to the findings of Cole et al. (2011) (in which subsidies had a larger effect than financial education), they find that only the business training affects business outcomes, and only for male entrepreneurs. Male entrepreneurs who received training reported profits which were 20-30 percent higher than those in the control group, resulting from increased sales rather than

increased profit margins. This expansion seems to occur through channels such as more active employee management, increased marketing, and a movement into the more profitable commerce sector. Neither intervention impacted female entrepreneurs' profits. Further investigation of gender differences via a lab experiment seems to indicate that this may be because female entrepreneurs are less likely to engage in competitive behavior, and face greater social constraints.

A few other business training programs in Africa also find variable results. Mano et al. (2010) run a randomized experiment to evaluate the effectiveness of management training for metalworker entrepreneurs in an industrial cluster in Kumasi, Ghana. Their baseline survey indicates a low level of familiarity with standard business practices. They find that training improves business practices and performance, but that the extent of improvement varies greatly across the sample. However, one drawback of the study is its small sample size, as there are just over 50 entrepreneurs in the treatment group. Mano et al. (2009) focuses on another metalworking cluster in Nairobi, Kenya, although they do not randomize participation in the training, and the sample size is also fairly small (60 entrepreneurs). Further, they face attrition in the follow-up survey which is correlated with treatment status. Nevertheless, they find that the training leads to improved business practices, and increased value added and producer surplus.

So what might “it” depend on?

These studies demonstrate that effects on business outcomes can be quite heterogeneous. Gender, as indicated by several studies seems to play an important role. This finding is also corroborated by Giné and Mansuri (forthcoming), which evaluates a business training program in rural Pakistan. The preliminary results seem to indicate that business training improved business and household outcomes, particularly for men, and that the impact of providing loans is weaker.

It may be the case, as suggested by Klinger and Schündeln (2007), that women are in some ways more cash-constrained than knowledge-constrained. In an RCT focusing solely on women, McKenzie, de Mel, and Woodruff (forthcoming) evaluate an intervention consisting of business training and capital grants for female microentrepreneurs in Sri Lanka. They find that training alone has a significant impact on business practices, but not profits; training and grants together, however, have a significant impact on profits.

Women may also face other constraints that reduce the relative benefit of business training. One RCT that sheds light on this matter is Field et al. (2010), a study of poor self-employed women in India which finds that business and financial literacy training has a positive impact on borrowing and business outcomes for Hindu women facing greater social constraints than Hindu women who face fewer constraints, though not for Muslim women (whose social constraints are even greater).

In terms of improving business outcomes for all clients, Drexler et al. (2010) examine the effect of changing the curriculum of a business training program. The authors conduct an RCT among microentrepreneurs in the Dominican Republic, and find that simplified rule-of-thumb training produces an effect on business practices and outcomes, whereas traditional, fundamentals-based accounting training does not. This result could be particularly relevant for those entrepreneurs who are time- or effort-constrained, such as those identified in de Mel et al. (2008) in Sri Lanka who are more similar to wage workers than entrepreneurs in their ability and attitudes.

Upcoming studies

There are a number of impact evaluations of programs for entrepreneurs which are currently in progress. Upcoming studies in Africa include Karlan and Udry (forthcoming), which will evaluate the effectiveness of consulting services and capital among MSEs in Ghana. In the World Bank's Africa region, Markus Goldstein, Francisco Campos and colleagues are working on evaluations of a number of different programs, with a special focus on comparing outcomes by gender. These include:

- a financial literacy training program in rural Ghana overlapping with land titling intervention;
- a business registration intervention for SMEs in Malawi, with a complementary intervention on separating household and business accounts;
- another financial literacy intervention in Malawi, yet to be designed;

- a program in Ethiopia that provides support to financial institutions that fund SMEs and supports the women who manage them, which will measure the effect on business knowledge;
- an ICT training program on Nigeria, which will measure the impact on employment and non-employment outcomes on university students;
- a livelihood development program in South Sudan that combined food aid with complementary financial literacy training and financial services for female household heads;
- a virtual business incubator for building entrepreneurial and vocational skills for poor female entrepreneurs in Tanzania;
- an apprenticeship and training skills program for small scale entrepreneurs in Uganda; and
- a business skills training programs for informal and formal entrepreneurs in Togo.

Studies in Latin America include Bruhn et al. (forthcoming), an experiment involving SMEs in Mexico, and elsewhere in Latin America, Martinez et al. (forthcoming) study training and capital provision for microentrepreneurs in Chile. In Asia, Gunnsteinsson and Karlan (forthcoming) evaluate the impact of financial literacy and business training for microfinance clients in the Philippines. In North Africa, Crépon, Huillery, Karlan, Pariente, and Walsh (forthcoming) evaluate a business training and technical assistance program on business outcomes for small businesses in Morocco. In another related study in a developed country, Crépon, Duflo, Huillery, and Pariente (forthcoming) evaluate the effects of a business training program for youth in disadvantaged neighborhoods in France.

A few studies focus specifically on the effect of training on debt outcomes for microentrepreneurs, such as Karlan and Mullainathan (forthcoming), which evaluates the impact of financial training and debt pay-off on entrepreneurs in Chennai, India. Karlan and Mullainathan (forthcoming) conduct a similar experiment among entrepreneurs in the Philippines.

V. THE WAY FORWARD: RECOMMENDATIONS FOR POLICYMAKERS

Our review of the findings to date on financial literacy and financial education programs has suggested a number of practical implications for policymakers going forward. We conclude by highlighting some of the lessons from the literature, and also by noting gaps in our knowledge where future research is needed. We have divided the lessons into those for programs for consumers and those for entrepreneurs, though some lessons apply to both.

To improve financial education for consumers:

Start with awareness. The FinScope surveys demonstrate that lack of awareness of financial products and institutions is likely a major barrier to the take-up of financial products, particularly insurance. Moreover, Carpena et al. (2011) indicates that it may be easier to design interventions to improve financial awareness and attitudes than traditional numeracy skills.

Leverage social networks and peer effects. Financial literacy interventions have been shown to have positive spillover effects in the social networks of those who participate in the intervention. For instance, Duflo and Saez (2003) find such effects for the colleagues of employees who attended an information session on a retirement plan, and Cai (forthcoming) finds that the friends of rice farmers in rural China who attended an information session on crop insurance were also more likely to take-up the product. Promoting such spillovers would be a smart and cost-effective way of spreading the benefits of financial education. Particularly in the developing country context, related work by Conley and Udry (2010) on pineapple farmers in Ghana shows that informational networks are fairly strong, and potentially an important leveraging point for interventions such as financial education.

Identify and target vulnerable populations. Most surveys indicate that women, youth, the elderly, and those with lower incomes and educational attainment are less likely to be financially literate. Many surveys also indicate disparities between urban areas and rural areas, and geographical regions, and differences by race, ethnicity, employment status, and a variety of other factors. However, more research needs to be done on how to effectively target those with lower levels of financial literacy.

Solicit specific topics of interest. Motivation, perception of relevance, and other behavioral factors have also been shown to be an important factor in whether participants benefit from financial education or advice (Varcoe et al., 2005; Hung and Yoong, 2010). More work is needed in these areas in order make financial education programs more relevant and effective.

Be creative with the delivery format of financial education programs. Some evaluations suggest that information might be best conveyed through interactive or experiential program designs, such as actually opening up a bank account, or through computer or video games. A number of interventions convey information via a dramatic or fictional medium, such as radio or television soap operas (e.g. Spader et al., 2009). Other formats include formal courses, seminars and workshops, individual counseling, and DVD instruction. The optimal format, of course, would also depend on the type of information being delivered, and the target audience. Individuals of different geographic, socioeconomic, and cultural backgrounds may find certain formats more engaging or informative than others. More research should be done in this area as well.

Implement complementary interventions to achieve objectives. With regard to increasing financial access and take-up of financial services, such as savings accounts, financial education may not be as beneficial as other interventions, such as subsidies (Cole et al. 2011). Some have also argued that consumer protection measures may be more effective than improving individual financial literacy in preventing fraud. Other studies indicate that behavioral factors, such as impatience, may play a bigger role in financial outcomes than financial illiteracy (Hastings and Mitchell, 2011).

Consider supply-side failures. Financial education and other consumer side interventions to increase take-up may be misguided in cases where the products are fundamentally flawed. In this case, stronger regulation and consumer protection measures would be required. For instance, the FinScope survey in Kenya indicates that some individuals may mistrust insurance products for legitimate reasons, because they either believe them to be fraudulent or because they're poorly explained.

To improve business training interventions for entrepreneurs

Identify the specific gaps in business knowledge. Apart from a few FinScope studies, we have little systematic survey evidence of the business literacy needs of entrepreneurs in developing countries. Although it can be difficult to design an instrument to assess business knowledge, doing so would allow us to better tailor the curriculum of business training programs to fit the needs and abilities of local entrepreneurs.

Pay attention to the curriculum. Drexler et al. (2010) demonstrates that teaching “rule-of-thumb” accounting concepts (in this case, the separation of household and business accounts) can be more effective than teaching accounting in a more traditional way. It may be that it is easier to teach certain types of knowledge and practices than others, in which case further investigation is needed. In addition, while this study highlights the low hanging fruit of teaching financial education in simpler terms, the saturation point of such interventions likely arrives quickly, beyond which perhaps a more comprehensive intervention would be necessary. An interesting area of extending this existing study is the add-on effects of structured business training among individuals who earlier received rule-of-thumb training. Perhaps they would benefit more from formal training if they have had time to absorb lessons from the basic training and established a higher baseline level of financial knowledge.

Keep in mind that female entrepreneurs have often failed to benefit from existing interventions. This has been widely observed across a number of studies, although there are exceptions. Berge et al. (2011) and Field et al. (2010) suggest that behavioral and social constraints on women may explain why business training programs do not work as well for female entrepreneurs as they do for male entrepreneurs. Relatedly, Giné and Mansuri (forthcoming) show that women in their study in Pakistan tend to allocate far less time to their business, and more to household activities. More work needs to be done on what motivates females to enter entrepreneurship and what external constraints they face, and how if at all to alleviate them.

Take into account other sources of heterogeneity. Participants in business training programs also tend to vary in their level of education, financial literacy, sector, work experience and other

factors. Since most studies have found heterogeneous impacts based on these factors, it might be most effective, where feasible, to tailor training programs to specific groups of entrepreneurs who would benefit from different curriculums.

Remember that complementary interventions may be needed. There is mixed evidence as to whether subsidies or financial education for entrepreneurs have a greater effect on business outcomes (Klinger and Schündeln, 2007; Berge et al., 2011). However, entrepreneurs can also benefit from a mix of the two interventions (Giné and Mansuri, forthcoming).

In spite of the need for ongoing research, the survey evidence and program evaluations described in this paper should provide a useful starting point for policymakers in designing financial education programs for both consumers and entrepreneurs. Surveys have indicated certain areas of universal concern, such as lack of awareness of certain basic financial products, but also that financial literacy needs and desires vary widely across the region. In light of this diversity, it becomes especially important to tailor both the content and the format of education programs to their target audience, as well as to consider complementary interventions to reach the end goal, whether it be improving financial access or enhancing enterprise productivity.

Table 4. What We Know (and Don't Know) About Financial Literacy and Financial Education

	What we know	What we don't know
Financial literacy levels	<ul style="list-style-type: none"> ♦ National surveys have found that financial literacy tends to be associated with: <ul style="list-style-type: none"> -Gender, age (elderly/youth), level of income and education, race/ethnicity, and region (part of country, urban/rural) ♦ In Africa and Pakistan, the FinScope surveys indicate: <ul style="list-style-type: none"> -Awareness of and access to different financial products can vary greatly by country (e.g. microfinance, mobile banking, types of insurance) -Most people cite lack of income and savings as primary reason for not having a bank account -Business literacy among entrepreneurs may be somewhat lacking -Most people also seem to have a desire to obtain financial education ♦ FinScope surveys on access to finance for SMEs in Africa indicate that business literacy among entrepreneurs may be low, based on lack of record-keeping and other factors ♦ Studies in developed countries show that financial literacy are correlated with: <ul style="list-style-type: none"> -Retirement planning (found across many national studies) -Investments (participation in stock markets, portfolio diversification) -Debt and credit performance, including mortgages 	<ul style="list-style-type: none"> ♦ National surveys are still lacking for most middle-income and low-income countries ♦ Likewise, there is not enough cross-country analysis of financial literacy levels and financial knowledge ♦ In Africa, the FinScope surveys do not test financial literacy as such, and may be missing other measures of financial capability as well ♦ What is the relative importance of financial literacy? To what extent is it a proxy for other indicators? ♦ We lack more specific knowledge of gaps in business literacy

	What we know	What we don't know
Financial education programs	<ul style="list-style-type: none"> ♦ There have been many studies on financial education for students (mostly in the U.S.), but the results are mixed <ul style="list-style-type: none"> -Soliciting and targeting students' educational desires seems to be effective ♦ Mortgage counseling seems to have a positive causal effect on delinquency rates ♦ More rigorous experimental evaluations indicate that: <ul style="list-style-type: none"> -Providing information and social network effects can increase enrollment in retirement plans -The format of delivery can make a difference—video can be more effective ♦ In developing countries, we find: <ul style="list-style-type: none"> -a subsidy can be more effective than financial education in increasing demand for bank accounts -Presentation of fees in levels versus rates can affect choice of pension plan ♦ Experiments on financial literacy for entrepreneurs, including those in Africa, indicate: <ul style="list-style-type: none"> -Generally positive results for business knowledge -Mixed effects on business outcomes, such as increase profits, firm entry/exit -Effects vary by gender, and within gender, degree of social constraint (e.g. religious and cultural constraints placed on women) -Design and content of course also matters (e.g. simplified rules vs. traditional content) 	<ul style="list-style-type: none"> ♦ How does course content and design matter? ♦ Which delivery formats for financial education are most effective? <ul style="list-style-type: none"> -There are several ongoing evaluations involving mass media and narrative formats (e.g. TV and radio shows) ♦ What is the relative effectiveness of financial education, compared to: <ul style="list-style-type: none"> -Subsidies, in encouraging uptake of financial services, and improving the performance of entrepreneurs? -Behavioral factors? -Increased consumer protection measures? ♦ What is the most effective way of targeting different populations? <ul style="list-style-type: none"> For instance, certain groups (e.g. students) may be best taught using interactive methods -Financial education desires and concerns may vary widely by demographic group ♦ How can we improve the impact of financial education on business outcomes for entrepreneurs? ♦ How do we improve them for female entrepreneurs in particular?

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