

FINANCIAL INCLUSION IN THE UNITED STATES

Introduction

In a range of areas in the economy it can be expensive to be poor, with low income consumers paying more for everything from diapers to canned soup.¹ One area where these challenges are particularly prevalent is in finance. Lack of access to safe and affordable financial services—which include payment settlement, credit intermediation, and maturity transformations, provided to consumers by a range of financial institutions—is not only costly but is also significantly more common for lower-income households. These households are comprised of those referred to as “unbanked”—meaning they lack a bank account—and “underbanked”—those that have a bank account but may supplement it with reliance² on alternative financial services.³

Financial services that unbanked and underbanked households rely on include money orders, check cashing, remittances, payday loans, auto title loans, refund-anticipation loans, and pawn shop loans, with many of these products sometimes generating higher interest rates and fees than traditional banking services. The costs to those households that lack access to the mainstream financial system include the direct costs of higher transaction fees or of short-term borrowing (sometimes directly associated with these alternative services) as well as the indirect costs arising from their reduced ability to handle unexpected shocks to income or finance investments in education or small businesses. Such households also have little to no ability to build credit histories or cover emergency critical expenses

such as rent, utilities, and mobile phone bills via low cost credit.

A lack of financial inclusion has broader consequences for the macroeconomy, having the potential to hurt both equity and efficiency by reducing access to credit, which can be essential for entrepreneurship, homeownership, and economic development more broadly. Over the past several decades there have been substantial improvements in financial inclusion in the United States, narrowing somewhat the gaps in inclusion that exist along racial, regional, and income lines. More recently, a range of new technologies have emerged that have the promise to offer new, safer and more affordable financial services to a larger swath of the population. Whereas banks and credit unions have historically provided three categories of services to households—saving, borrowing, and payment—new financial technology (or fintech) companies often focus on a single service, and this development may help expand financial inclusion.

We can do more to build on this progress, further improve financial inclusion, and manage the exciting but challenging new developments in this area of the financial system. The Administration as a whole and the U.S. Department of the Treasury specifically have taken important steps in this regard, putting a focus on the need to expand access to safe and affordable financial services for all, including low- and moderate income households, pursuing initiatives such as the [Financial Inclusion Forum](#)⁴, the [Financial](#)

¹ For additional information on the difficulty that the poor face in purchasing simple necessities, consult the following [blog post](https://www.whitehouse.gov/blog/2016/03/10/diaper-divide): <https://www.whitehouse.gov/blog/2016/03/10/diaper-divide> and [news article](https://www.washingtonpost.com/news/wonk/wp/2016/03/08/why-the-poor-pay-more-for-toilet-paper-and-just-about-everything-else/): <https://www.washingtonpost.com/news/wonk/wp/2016/03/08/why-the-poor-pay-more-for-toilet-paper-and-just-about-everything-else/>

² Importantly, unbanked households also may rely on alternative financial services.

³ Despite the use of the terms “unbanked” and “underbanked” in this report—which derives in part from their use in several key data sources and reports on the

subject—the ultimate goal of efforts aimed at increasing financial inclusion is not simply a rise in the share of households that rely on services provided by banks. Rather, the aim of expanding financial inclusion is to provide more households with access to safe and affordable financial services. Although pursuing this goal has historically involved expanding households’ reliance on services provided by banks, recent financial innovation likely means that there is an important role for non-bank entities as well.

⁴ More information on discussions that occurred at the 2015 forum can be found here:

[Empowerment Innovation Fund](#), and participation in the G-20's Global Partnership for Financial Inclusion. The Administration has also proposed in its 2017 Budget pilots for new approaches that provide shorter and longer term financial assistance and savings tools, to help workers build up "rainy day" reserve funds.⁵ And in 2011, the Administration helped establish the Consumer Financial Protection Bureau (CFPB), an independent agency of the U.S. government that is responsible for consumer protection in the financial sector. Addressing the digital divide, fostering financial capability⁶, supporting community development financial institutions (CDFIs), and encouraging partnerships between fintech firms and private or public sector organizations are all ways to potentially expand access to safe and affordable financial services in the future.

Increased financial inclusion may also partly reflect the overall rise in finance over the past 40 years—which is often referred to as the "financialization" of the economy—though this trend may have also played a larger role in diversifying the financial services available to consumers who already possessed a transactional financial account. Broadly speaking, the U.S. financial sector, including securities, insurance, and credit intermediation, has grown substantially as a fraction of GDP since the 1970s. While some aspects of financialization may provide benefits to consumers, including increased access to banking, financialization also comes with its own set of problems, including the risk of macroeconomic destabilization as occurred in the recent financial crisis and the diversion of resources into less productive or even counterproductive areas. As highlighted in academic research and as indicated by data analyzed below, there appear to be decreasing gains for financial inclusion for the economy as a whole and more broadly there could even be losses from financialization. Thus, it is unlikely that further increases in financialization will lead to more financial inclusion.

<https://www.treasury.gov/connect/blog/Documents/FI%20Forum%202015%20What%20We%20Heard.pdf>

⁵ For more information, see

<https://www.whitehouse.gov/sites/default/files/omb/budget/fy2017/assets/opportunity.pdf>

⁶ Defined by the President's Advisory Council on Financial Capability as "the capacity, based on knowledge, skills, and access, to manage financial resources effectively."

⁷ This range is consistent with a Pew (2016) study that reports that the average payday loan user borrows eight

The increase in financialization and the innovative activities and products of fintech firms raise important policy questions, including how best to continue working to raise financial inclusion by combining these new products with safe and affordable methods of reaching the unbanked and underbanked.

Key Takeaways

Being unbanked or underbanked is costly—and this lack of access to safe and affordable financial services disproportionately affects households with the fewest resources.

- The unbanked pay anywhere from 1 to 5 percent in fees to cash a check (depending in part on whether it is a paycheck or a government check since the latter come with lower risk for the check-casher). At an annual salary of \$22,000 (the average for unbanked households), such fees can total over \$1,000 a year in extra costs for unbanked households. By contrast, annual fees for a checking account are typically a little over \$100, although this figure also depends on the account holder's spending habits.
- Unbanked and underbanked households also face additional costs due to their reliance on other, non-mainstream financial services, such as payday loans (used by roughly 5 percent of households in 2013) and auto title loans (used by roughly 0.6 percent of households in 2013), among other forms of so-called small dollar credit. These products' costs can be quite substantial—anywhere from \$10 to \$30 in extra costs per \$100 borrowed in the case of payday loans.⁷ While higher than the costs of traditional financial services, these costs must be weighed against the alternatives these households face in obtaining credit (for example, no credit at all or bank overdrafts).

loans of \$375 each over the course of the year, spending \$525 in total on interest, for a total of just \$17 per \$100 borrowed. According to the CFPB, the typical payday loan is generally \$500 or less and has a short term (e.g. 2 weeks). The fee described above amounts to an APR of almost 400 percent, more than 10 times that of a typical credit card. Admittedly, as will be noted later in this issue brief, the regulatory implications of these costs are not immediately clear, as these non-traditional financial products provide a service to households that would not necessarily be obtainable.

- Research suggests that financial inclusion can lead to better outcomes for both individuals and economies, including greater investment in education and businesses, better health, lower inequality, and greater entrepreneurship.

Financial inclusion has been on the rise across all demographics.

- In 2013, 93 percent of U.S. households had a bank account, up from 86 percent in 1989.
- Among households with a bank account, a full 20 percent were categorized as underbanked in 2013.
- In 2013, 79 percent of U.S. households in the bottom income quintile had a bank account, up from 56 percent in 1989.
- In 2013, 87 percent of minority U.S. households, including Hispanic and non-white households, had a bank account, up from about 65 percent in 1989.
- Financial inclusion has also increased across all geographies; while the South still lags other regions, the difference has diminished.

The financial technology, or “fintech,” industry has grown rapidly in recent years and may potentially increase access to or diversity of financial services to both households with a bank account and those without.

- Fintech is growing rapidly—there were over 2,000 U.S. fintech start-ups in February 2016, up from 800 in April 2015, and fintech venture capital funding hit an all-time high in 2015.
- Use of such platforms has been further facilitated by growth in mobile phone and smartphone adoption. In the United States, mobile phone ownership has grown from 65 percent of the population in 2004 to 92 percent of the population in 2015, and smartphone ownership has grown from 35 percent of the population in 2011 to 68 percent of the population in 2015.
- Slightly more than half (53 percent) of smartphone owners with bank accounts had used mobile banking in the last year, according to a 2015 survey conducted by the Federal Reserve Board of Governors. The same survey found that 40 percent of the unbanked had a smartphone, as did 70 percent of underbanked individuals.

- These platforms may also reduce the non-monetary costs of safe and affordable banking, preventing more of the underbanked from incurring the high monetary costs of alternative financial services – though in many cases they would need broadband or cellphone access.

The rise in financial inclusion and fintech may partly reflect the increase in financial activity as a share of total economic activity in the United States in recent decades.

- Value added by the financial sector has grown from 4.1 percent of GDP in 1970 to 7.1 percent of GDP in 2015. This is down somewhat from its high of 7.7 percent in 2001.
- Similarly, over this same time period, financial assets as a share of GDP have climbed from roughly 5 percent to more than 11 percent as of 2015. The ratio financial assets to tangible assets has approximately doubled during this 45-year period as well.
- While in a cross-section of countries, a rise in financialization seems to coincide with increased financial inclusion, returns in this area appear to be diminishing at the level of financialization in the United States, raising the importance of other ways to expand financial inclusion.

The Financial System

An effective financial system is a vital component of any economy. Financial institutions provide a variety of services, including a reliable place for households to store funds and also payment settlement—when customer accounts are either credited or debited depending on which side of the transaction they are on—and credit intermediation—when a financial institution pools together money from its depositors to lend out to borrowers. Financial institutions also engage in maturity transformation. They manage their cash flows in a way that allows them to borrow money on short time frames—for example from short term investors via certificates of deposits or demand deposits like saving and checking accounts—but then lend money to borrowers who require financing on a longer term basis—for example a homeowner needing a 30-year mortgage, or a small business needing a multi-year business loan. Financial institutions also diversify risk. The fact that they lend to many different borrowers

means that they are less exposed to problems with any one loan than, for instance, an individual making a personal loan to just one borrower.

Expanded financial markets bring potential opportunities and challenges. Economic research has linked the development of financial systems to economic growth and entrepreneurship (King and Levine 1993a, 1993b).⁸ Households gain enhanced opportunities to smooth consumption over time or buy a home. Financial institutions serve other purposes as well. Savings can be channeled more efficiently from households to businesses with productive investment opportunities. Securitization allows loan originators to pool risks and transfer them to investors with greater ability and willingness to bear those risks, allowing for diversification and a lower cost of capital to firms. Trading activities can enhance market liquidity, increase the ability of prices to convey timely information, and aid in price discovery. And these gains may be magnified when financial activity occurs across larger markets, especially a global market. But in some cases these advantages can come at the cost of increasing financial fragility—as indicated by the recent financial crisis, there can be a larger financial sector can pose greater risks to overall economic health. Similarly, while credit can sometimes help facilitate household investments, too much debt may cause households to cut back substantially on their spending following an adverse financial shock, as happened to many indebted homeowners following the financial crisis (Dynan 2012).

What Happens Without Access to Financial Services?

Households in the United States who lack access to, or choose not to use, safe and affordable financial services

(as well as those whose financial resources are tied up in more illiquid assets like cars and homes) often turn to nontraditional financial products and services to cover even basic expenses. Many of the households that fall into this category have impaired credit histories and would fall into the “subprime” category. The products and services that these individuals may obtain from both bank and non-bank providers typically include money orders, check cashing, remittances, payday loans, auto title loans, and pawn shop loans (collectively known as small-dollar credit). In the absence of safe and affordable banking services—whether by a consumer’s choice or lack of access—these alternative services can serve as a source of liquidity for so-called unbanked and underbanked households. Indeed, a recent Federal Reserve Board Survey found that approximately one quarter of individuals—regardless of credit history and banking status—would turn to these kinds of products and services to cover a hypothetical unexpected \$400 expense or would be unable to altogether (Federal Reserve Board 2016b). Without such an option, then, a sizable portion of individuals and households would lack access to any source of cash in an emergency. However, some of the costs and practices associated with these nontraditional financial services can raise important consumer protection concerns.

Not having access to financial services comes with two principal kinds of monetary costs, one involving the fees associated with check cashing and the other resulting from the additional charges incurred by using small dollar credit.⁹ We estimate the former source of costs by using the Federal Reserve’s 2013 Survey of Consumer Finances (SCF) to calculate the average check-cashing fees faced by the roughly 7 percent of households that are unbanked. According to this survey, the average household income for households without a checking

⁸ Kerr and Nanda (2009) use staggered, state-by-state adoption of bank branching deregulation across the United States in the 1980s and 1990s as a quasi-natural experiment to show that increased access to bank financing led to an increase in entrepreneurial entry. They argue that bank branching deregulation led not only to bank branches in previously unserved areas but also to more bank branches and hence competition between banks in other areas. Using the same approach, Beck, Levine, and Levkov (2010) show that bank branching deregulation led to a tightening of the income distribution, particularly by raising the incomes of households in the bottom quartile of the income

distribution. Chatterji and Seamans (2012) use state-level credit card deregulation in the 1970s and 1980s to show that increased access to credit card financing led to increased entrepreneurship, particularly among black entrepreneurs. Other research using similar types of quasi-natural experiments shows that increases in access to finance led to a decrease in rural poverty in India (Burgess and Pande 2005) and to reduction in poverty in Mexico (Bruhn and Love 2014).

⁹ Our calculations here do not even include the additional charges that come from being late on payments, discussed in more detail below.

account is \$22,000. Check cashing services are estimated to cost anywhere from 1 to 5 percent of the value of payroll and government benefits,¹⁰ amounting to between \$220 and \$1,100 in extra fees annually for the average family without a checking account that exclusively uses these services.¹¹ Alternately, research by the St. Louis Fed estimates that these extra fees would amount to as much as \$1,200 annually for a hypothetical household (Beard 2010). By contrast, households with checking accounts pay a median amount of \$104 in total fees annually, according to one estimate (Stango and Zinman 2009).¹² Another study, by the personal finance website WalletHub, estimates that the typical consumer would on average pay \$151 in checking account fees annually (Comoreanu 2015).

Small dollar credit is even more costly, even though relatively few people use these services when compared to the population of under or unbanked households. According to the 2004, 2007, 2010, and 2013 Surveys of Consumer Finance, the share of the population using non-installment auto loans (a broader category that includes auto title loans) was never higher than 0.6 percent between 2004 and 2013, while the fraction using payday loans has been around 5 percent during the same timeframe—roughly the same share of the population that access small-dollar credit of any kind in a given year (Bianchi and Levy 2013).¹³ Nevertheless, title loans often have interest rates around 300 percent when expressed as an annual percentage rate (APR) and the most common term is one month (Fritzdixon, Hawkins, and Skiba 2014)¹⁴ – similar to payday loans, which average a 18.3-day term and 339 percent APR (CFPB 2013). Fees on payday loans can range between \$10 and \$30 per \$100 borrowed.

¹⁰ The St. Louis Fed reports a range of 2.5 to 3 percent for a government benefits check and 4 to 5 percent for a payroll check, while the FDIC reports a range of 1 to 4 percent for both. (See <https://www.stlouisfed.org/Publications/Central-Banker/Winter-2010/Reaching-the-Unbanked-and-Underbanked> and https://www.fdic.gov/bank/analytical/quarterly/2009_vol3_1/AltFinServicesprimer.html.)

¹¹ Annual fees are calculated as $0.01 * \$22,000 = \220 and $0.05 * \$22,000 = \$1,100$.

¹² Total monthly checking account fees for the 50th percentile is \$8.71, according to Table 1 of Stango and Zinman (2009). Therefore, annual fees are $\$8.71 * 12 = \104 .

These unconventional financial products also raise substantial consumer protection concerns, particularly if we consider the costs that arise if households do not make their payments on time. In the case of title loans in particular, Levy and Sledge (2012) report that nearly one-third of title loan users do not repay the loans on their original terms, with an average of three refinancing events. Some portion of this behavior may arise from the low level of financial knowledge, or financial capability,¹⁵ of unbanked or underbanked households. Such a knowledge gap may be particularly important for younger individuals and households, since they are often more likely to be unbanked or underbanked. According to one survey, the 2015 National Financial Capability Survey, conducted by the Financial Industry Regulatory Authority and cited by the interagency Financial Literacy and Education Commission, only 30 percent of Millennials (ages 18-34) self-reported their financial skills as “very strong,” and just 22 percent had received formal financial education. At the same time, only 1 in 3 reported having enough savings to cover an unexpected expense (Financial Literacy and Education Commission 2015). In addition, behavioral economics research has shown that consumers can be overoptimistic about their ability to make loan payments. As a result, alternative financial products have the potential to increase households’ financial distress and reduce borrowers’ creditworthiness, further reducing their ability to obtain conventional credit, banking services, or employment in the future (Brunnermeier and Parker 2005; Fritzdixon, Hawkins, and Skiba 2014; Skiba and Tobacman 2008, Melzer and Morgan 2009, Carrell and Zinman 2014).

¹³ The total volume of such loans is also relatively low—the market for short horizon credit was at roughly \$21.4 billion in 2012 (Wolkowitz and Oh 2013), and the volume of all automobile asset-backed securities issuance totaled under \$100 billion as of 2014.

¹⁴ An exception on the APR exists for military service members. Under current Military Lending Act regulations, title loans made to service members with payment terms under six months may not have an APR above 36 percent, and the proposed regulation released last year would expand the interest rate cap and add additional consumer protections to all types of title loans.

¹⁵ Defined by the President’s Advisory Council on Financial Capability as “the capacity, based on knowledge, skills, and access, to manage financial resources effectively.”

Despite the potentially adverse impacts that arise from a reliance on unconventional sources of small dollar credit, these products provide a source of funds for households who might not otherwise be able to cover such crucial but often unanticipated expenses as emergency medical treatment, funeral and burial preparations, and urgent home or automobile repairs, or sometimes even to cover regular expenses. These types of products often take the place of conventional accounts.¹⁶ As a result, and as we explore in the next section, it makes sense to measure financial inclusion and exclusion by examining the share of households that do and do not have a transaction account.¹⁷

Moreover, some households depend on access to small-dollar credit not just for big, one-time expenditures but also for covering general, day-to-day living expenses, such as rent and utility payments. One survey found that 2 in 5 title loan users report using the borrowed funds for rent or utilities while about a quarter of borrowers used the loan for medical expenses or car repairs (Fritzdixon, Hawkins, and Skiba 2014). This pattern of usage emphasizes the need for policies, technologies, and regulations that go beyond protecting consumers from the harms of small-dollar credit to provide new ways in which more Americans can access safe and affordable financial services.

Benefits of Financial Inclusion

Economic research suggests that financial inclusion can provide economic benefits. For example, putting aside income in the form of savings accounts with safe and affordable financial services providers enables households to cover unexpected or occasional expenses when they arise as well as store income that is in excess of typical consumption levels. Households can thus be said to be “smoothing” their consumption, something that is far more difficult to do in the absence of access to financial services (e.g., Ruiz 2013). Financial inclusion can potentially lead to many other beneficial outcomes at

the individual level, including greater investment in both education and businesses (e.g., Brune, Giné, Goldberg, and Yang 2011), better health (e.g., Dupas and Robinson 2013), and female empowerment (e.g., Ashraf, Karlan, and Yin 2010). At the economy-wide level, financial inclusion also has been linked to lower inequality (e.g. Beck, Demirgüç-Kunt and Levine 2007) and greater entrepreneurship, especially for those with existing businesses that then gain access to financial services for the first time (Demirgüç-Kunt and Klapper 2013; Banerjee et al. 2010; Karlan and Zinman 2010). Financial inclusion also is correlated with economic development more broadly. Account penetration is almost double in countries with a GDP per capita of \$15,000 or higher, and national income per capita accounts for 70 percent of the variation among a country’s share of adults with a formal account (Demirgüç-Kunt and Klapper 2013).

The mechanisms through which financial inclusion leads to these benefits are less clear. Recent research has highlighted that behavioral factors are likely important. For example, when an individual has access to a product or service that facilitates savings, it serves as a commitment device to save (Thaler and Benartzi 2004; Choi, Laibson and Madrian 2011). Also, when individuals are “reminded” of saving, they pay more attention to saving, and save more (Kast, Meier and Pomeranz 2012). Karlan, Ratan and Zinman (2014) therefore question whether formal financial services are necessary to reap the benefits of financial inclusion, or whether less formal approaches will suffice. Overall, more research is needed to better understand the mechanisms through which financial inclusion affects individual outcomes, including more research replicating country-specific findings in other settings, including the United States.

Despite the many benefits to financial inclusion, there are a number of barriers. One potential barrier is the upfront cost associated with opening a bank account, including fees associated with opening an account, minimum balance requirements, and gathering the necessary documentation and proof of identity, as well

¹⁶ Levy and Sledge (2012) also find that households using small-dollar credit typically have lower levels of educational attainment and larger than average household size. The vast majority of small dollar credit users also lack credit cards, in part due to their low credit scores.

¹⁷ The phrase “transaction account” is used distinctly from “formal account” to differentiate an item reported in the

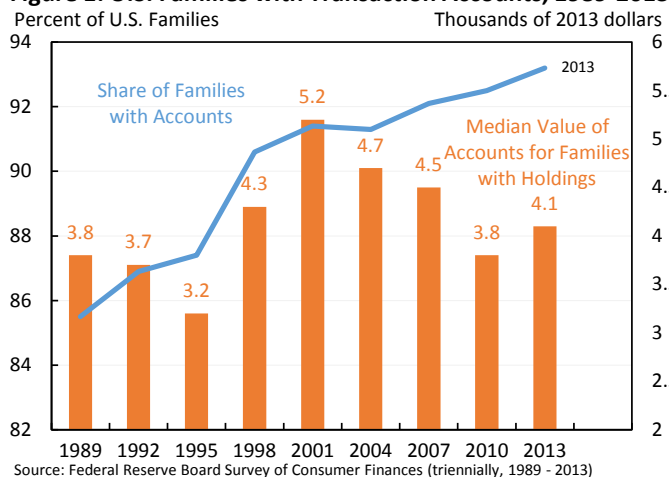
Federal Reserve Board’s Survey of Consumer Finances and collected at the household level (the former) from the World Bank’s 2014 Global Findex survey (the latter) that captures both accounts at banks/financial institutions and at mobile money providers and, representative at the individual level.

as the opportunity costs associated with opening an account or traveling to a bank branch to conduct business (Ashraf, Karlan, and Yin 2006). Other barriers potentially include distrust of banks and lack of financial capability, though the causal link between financial inclusion and these barriers is not entirely clear (Karlan, Ratan and Zinman 2014; Fernandes, Lynch and Netemeyer 2014). Again, more research is needed to better understand the extent to which the findings from these studies replicate across other settings, including the United States.

Financial Inclusion Trends in the United States

The most accurate source of data (as well as the one that covers the longest timespan) for measuring the extent of financial inclusion in the United States nationwide is the Federal Reserve’s Survey of Consumer Finances (SCF), available through 2013. One item on the SCF asks responding families whether they have a transaction account and thus represents those families who have an account (i.e. are not “unbanked”) at that point in time—that is, the households that do and do not have accounts are not stable over time. As can be seen from Figure 1, the share of families with such accounts has been on the rise since the time when data were first collected. As of 2013, 93.2 percent of families had these accounts, up from 85.5 percent in 1989. However, the median value in these accounts, adjusted for inflation has on net been flat since 1989, with a notable increase in the 2000s but then declines following the recessions of 2001 and 2007-2009.

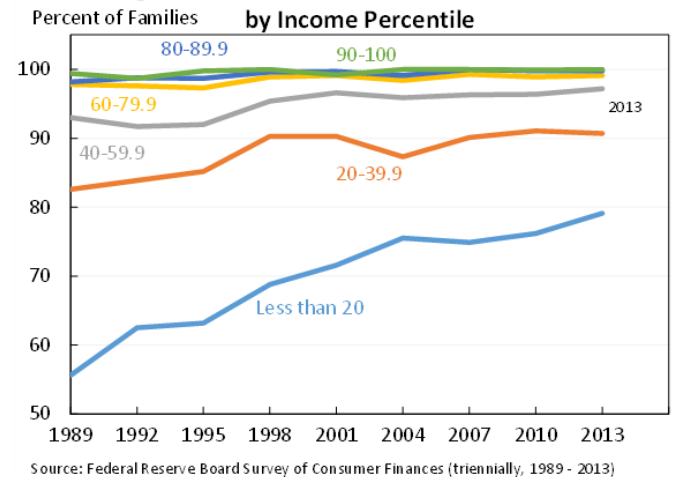
Figure 1: U.S. Families with Transaction Accounts, 1989-2013



Multiple factors likely have led to the increase in financial inclusion over time, potentially including growing financial capability, direct deposit (and increased use of direct deposit by government programs), and funds directed to community development financial institutions (CDFIs), among others. For example, direct deposit by businesses to employees typically requires employees to have a bank account. CDFIs predominantly serve low-income communities through business as well as consumer loans (Swack, Hangen, and Northrup 2014). Over the past seven years, the Obama Administration has made substantial investments in the CDFI Fund, growing its appropriations by 115 percent, increasing CDFI Program awards by 70 percent, and increasing the overall number of CDFIs by 20 percent.

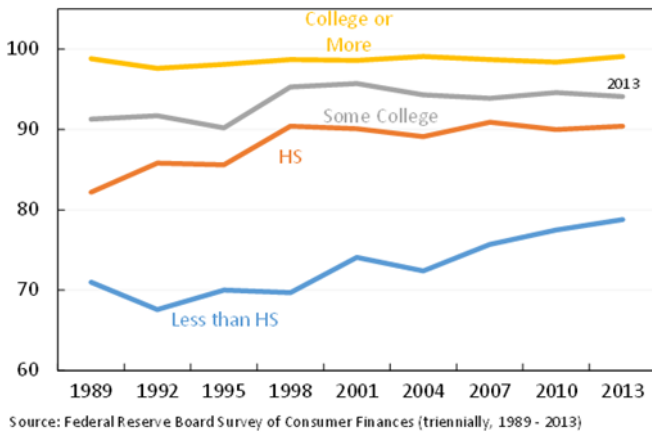
These SCF data also can be decomposed by a variety of relevant demographics, including household income and the educational attainment of the head of the household. Households towards the bottom half of the income distribution exhibit a markedly lower rate of financial inclusion—as measured by the share of the population with a transaction account—than households above the 60th percentile (Figure 2). Above the 60th percentile for household income, there is near-complete adoption of transaction accounts—and this fact has persisted since 1989. The bulk of the increase in the share of families with accounts comes at the bottom of the distribution, while households above the 60th percentile have accounts at each point in time since the late 1980s.

Figure 2: Families with Transaction Accounts



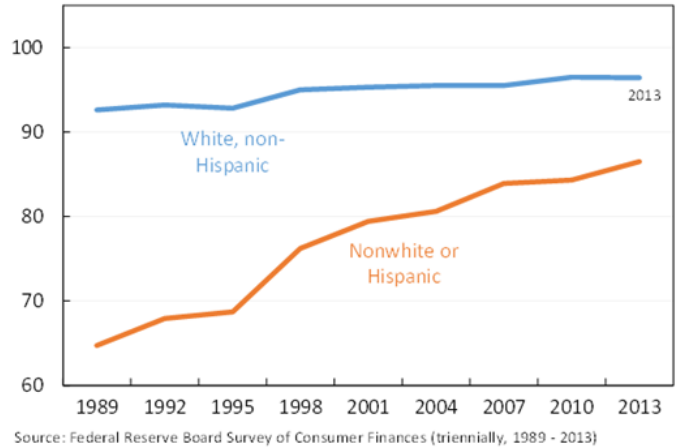
Similarly, households headed by an individual with less than a high school education possess transaction accounts at substantially lower rates (Figure 3). Additional education at the upper end of the distribution (i.e. completing college vs. attending for a couple of years) appears to be correlated with a slight increase when it comes to access to or usage of banking services. Not graduating high school appears to be particularly correlated with a low likelihood of holding a transaction account. It is important to note, however, that education is likely to be highly correlated with income, and so Figures 2 and 3 may in fact be telling similar stories about the status of financial inclusion in the United States.

Figure 3: Families with Transaction Accounts by Education of Head of Household
Percent of Families



Yet another way of decomposing ownership of transaction accounts is to do so by race. Figure 4 demonstrates how households headed by a white, non-Hispanic person possess transaction accounts at higher rates than those with nonwhite or Hispanic heads. Importantly, however, since 1989, this gap has narrowed from almost 30 percentage points to less than 10 as of 2013.

Figure 4: Families with Transaction Accounts by Race
Percent of Families



Examining ownership of transaction accounts by the four major regions of the United States (Northeast, South, Midwest, and West) reveals that there is currently not a substantial amount of variation at this level of geographic resolution (Figure 5a). Beginning in 2007, over 90 percent of households in all four of these regions hold such accounts. This distribution, however, was not always present. Families in the South in particular lagged their counterparts in other regions in terms of holding such accounts—fewer than 80 percent of southern families had transaction accounts in 1989, resulting in a gap of almost 10 percentage points compared with households in other regions. This gap had largely evaporated by the mid-2000s. When comparing not regions but instead families that live in urban areas against those in rural ones, there is little meaningful difference in the percent of households with transaction accounts in each group (Figure 5b).

Figure 5a: Families with Transaction Accounts by Region
Percent

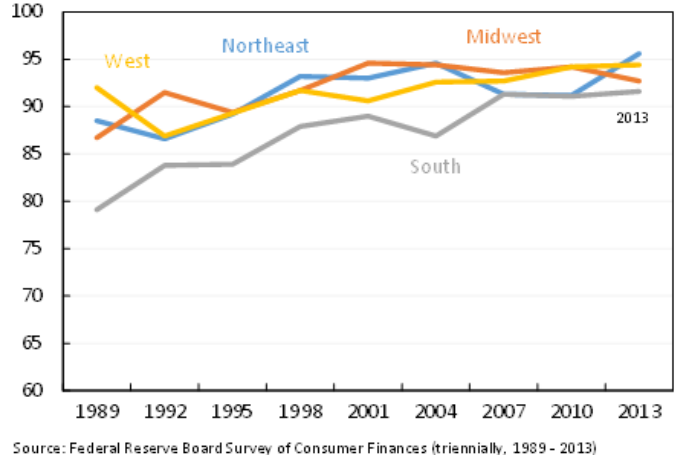
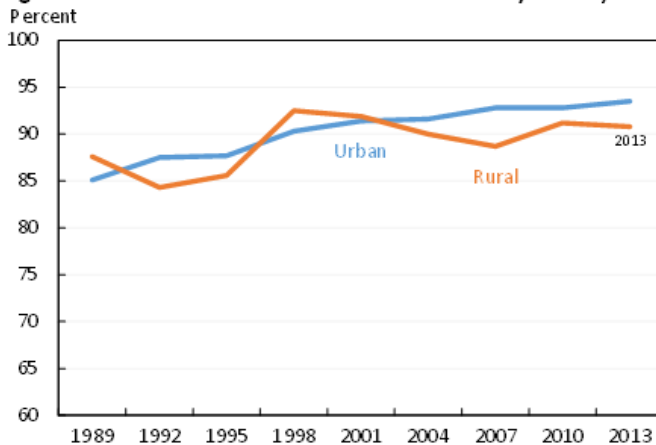


Figure 5b: Families with Transaction Accounts by Urban/Rural



Source: Federal Reserve Board Survey of Consumer Finances (triennially, 1989 - 2013)

A separate survey, conducted by the FDIC offers insight into the portion of the population that is referred to as “underbanked.” Whereas unbanked households¹⁸ are those that do not possess a bank account, underbanked households are defined by the FDIC as those that may have a bank account but whose usage of nonconventional financial products and services that fall under the broad category of small-dollar credit suggest that their ability to use conventional financial services alone is not sufficient to meet their financial needs. Data from the FDIC’s 2013 National Survey of Unbanked and Underbanked Households indicates that the absolute level and relative share of unbanked households has increased somewhat between 2009¹⁹ and 2013 (21.3 million vs. 24.8 million and 17.9 percent vs. 20.0 percent, respectively).

The trends presented in this section are notable for two reasons: (1) Although access to credit has declined somewhat since the Great Recession, access to transaction accounts has increased for lower-income Americans; and (2) households with lower educational

attainment, the lowest incomes, Hispanics, African Americans, or young Americans all experience unbanked or underbanked rates in excess of the national average.²⁰

Recent Consumer Finance Innovations

Recent technology innovations in consumer finance, including so-called “fintech” innovations, may have important implications in the near future for the financial prospects of unbanked and underbanked households. McKinsey has estimated that there were over 2000 fintech start-ups as of February 2016, up from 800 in April 2015. Much of the rapid growth in fintech startups are aimed at addressing retail customers (62 percent), and the most common product is a payment solution (Dietz et al. 2016).²¹ Also, it is notable that while much of the venture capital financing of fintech startups is focused in the United States, many interesting financial inclusion solutions are taking root in other countries (Dietz et al. 2016).

Technology-based payment approaches include digital wallets and “peer to peer” payment. Notably, most of these approaches require a customer to link to an existing bank or credit card account, and therefore do not directly address financial inclusion, but may help increase financial capability. Online lending systems connect individual lenders with individual borrowers. These platforms have seen rapid growth and reportedly have high repayment rates because of relatively low risk borrowers who use these services. For example, the average FICO score of a loan issued by one online lending system was more than 700 in 2015 which compares favorably to average U.S. FICO scores of a bit below 700 (Lobanov 2016; FICO Blog 2015). Regulators are increasing their focus on this emerging sector. In 2008 the SEC required online lenders to register their offerings

¹⁸ The SCF measure of transaction account ownership would be comparable to 100 minus the percent of households that are unbanked.

¹⁹ This time span is not ideal for a reliable time series analysis due to the Great Recession, but unfortunately, FDIC’s National Survey of Unbanked and Underbanked Households does not extend back any further than 2009.

²⁰ There is some evidence from the FDIC data that the increase in the underbanked rate in these groups is not reflective of an actual shift in the population to becoming more unbanked but may instead be due in part to a shift in how households are categorized. Households that had been categorized prior to 2011 as unbanked or banked

may have been counted as underbanked in 2013—without any change in their characteristics—as FDIC broadened its definition of underbanked to include additional non-traditional financial products, most importantly auto title loans.

²¹ For retail customer solutions, 40 percent are focused on payments, 23 percent on lending and financing, 21 percent on financial assets, and the rest on account management. For more information see McKinsey study here: <http://www.mckinsey.com/industries/financial-services/our-insights/cutting-through-the-noise-around-financial-technology>

as securities, and in 2016 the New York Department of Financial Services started an investigation into online lenders to learn more about interest rates and underwriting standards (Schonfeld 2008; Barlyn 2016).

The existence of the [digital divide](#) means that the very population that stands to benefit from financial innovation cannot necessarily do so if such innovation is only accessible online. For example, less than 50 percent of households in the bottom quintile have access to broadband at home. Recent Administration efforts to address the digital divide—such as [ConnectALL](#) which aims to connect 20 million more Americans by 2020—will indirectly help to increase financial inclusion by addressing internet affordability and digital literacy training. As highlighted by a recent Treasury report, online lending provides an opportunity to expand access to credit to traditionally underserved markets.²² The Treasury report highlights that it may be useful for CDFIs, which specialize in lending relationships with underserved consumers and businesses, to partner with fintech firms to serve traditionally underserved markets.

One promising set of financial inclusion solutions relies on mobile phone and smartphones technology to deliver payment services. While there is some international evidence to suggest that mobile phone and smartphone adoption may be beneficial for financial inclusion in developing countries, the potential for mobile phone technology to help address financial inclusion exists in the United States as well. Mobile phone ownership has grown from 65 percent of the population in 2004 to 92 percent of the population in 2015, and smartphone ownership has grown from 35 percent of the population in 2011 to 68 percent of the population in 2015 (Anderson 2015). Research by the Federal Reserve indicates that as of November 2015, 43 percent of all mobile phone users with bank accounts use mobile banking applications, while 24 percent use mobile payments. Among the underbanked with mobile phones, 55 percent had used mobile banking in the past year (Federal Reserve Board 2016a). This same survey reports that 40 percent of unbanked individuals had

smartphones, while 70 percent of the underbanked did. In addition, younger users and minorities, both of which are groups that are more likely to be unbanked or underbanked, are also more likely than their older and non-Hispanic white counterparts, respectively, to use mobile banking services (Federal Reserve Board 2016a). The Federal Reserve also reports that consumers use their smartphones to inform their financial decisions, including adjusting behavior based on mobile banking alerts or balance updates. Thus, in the United States, mobile phone and smartphone technology appears to be a useful way to address financial inclusion by offering an additional way to perform payment, as well as a way to enhance savings.

Innovations that do not rely on advanced technologies are especially important. One piece of evidence that suggests unbanked households may benefit from non-technical innovation comes from prepaid credit cards, which can serve as a vital source of liquidity for individuals who either lack bank accounts or who do not have credit histories that allow them to secure conventional credit cards. Importantly, these services make it impossible for the user to overspend his or her means.²³ Two others forms of innovation that are potentially welfare-enhancing are expansions in the remittance system, which makes it possible for individuals to send funds internationally to family members, and measures to combat fraud, such as chip-and-pin verification for credit cards. Prepaid cards and remittance services may carry hefty fees, however, but here too, fintech innovators are seeking to change the market by lowering costs and improving the customer experience.

²² Report available here: https://www.treasury.gov/connect/blog/Documents/Opportunities_and_Challenges_in_Online_Marketplace_Lending_white_paper.pdf

²³ The downside to this feature is that individuals cannot improve their credit scores by building a credit history,

which renders the phrase “credit card” a bit of a misnomer. They function more like debit cards, but without the danger of overdrafting and without the need for a checking account to be attached to the card.

The four panels of Figure 6 display data on web keyword search interest by state for each of four of the biggest prepaid debit or credit cards or the companies that provide them (y-axis) and plots it against the percent of the population that is unbanked in that state (x-axis). We obtain the former measures from Google Trends, which reports the frequency with which a state's internet users search for each of the four companies or their products as a share of all Google searches from users in that state for that company, and then is normalized by the state that has the highest such share.²⁴ We construct the unbanked measure by taking the share of the state's population that are reported as unbanked in 2013 in the FDIC's Survey of Unbanked and Underbanked Households and then normalizing it by the state that has the highest such share (Mississippi) so that it is comparable to the Google measure. We can observe a positive correlation between these two indices, as calculated at the state level. Though more investigation would admittedly be needed to discern whether there is in fact a causal relationship at work here, the figure is suggestive of a heavier reliance on prepaid debit and credit card companies by households that lack access to conventional financial services.

Similarly, another financial innovation that has benefitted consumers without requiring advanced technological skills from them is the rise of so-called automatic underwriting in lending, which uses automated processes and algorithms to determine creditworthiness. These algorithm-based systems involve high-end technology on the back end, and have the potential to make the overall lending system more efficient and more equitable in some cases. Because a human loan officer is not involved in many cases, bias against certain types of borrowers cannot as easily affect the lending decision. However, as highlighted in a recent [White House Report](#), there is potentially a danger that these algorithms could continue to generate biased results, including inadvertently. Because algorithmic systems are often proprietary "black boxes," it can be challenging to detect bias unless there are forms of technological transparency and accountability available to loan seekers. Algorithm-based systems do, however,

reduce the workload on individual loan officers, thus making the process go more quickly for borrowers and financial institutions alike and potentially lowering the costs to borrowers.

Financial System Growth and Innovation

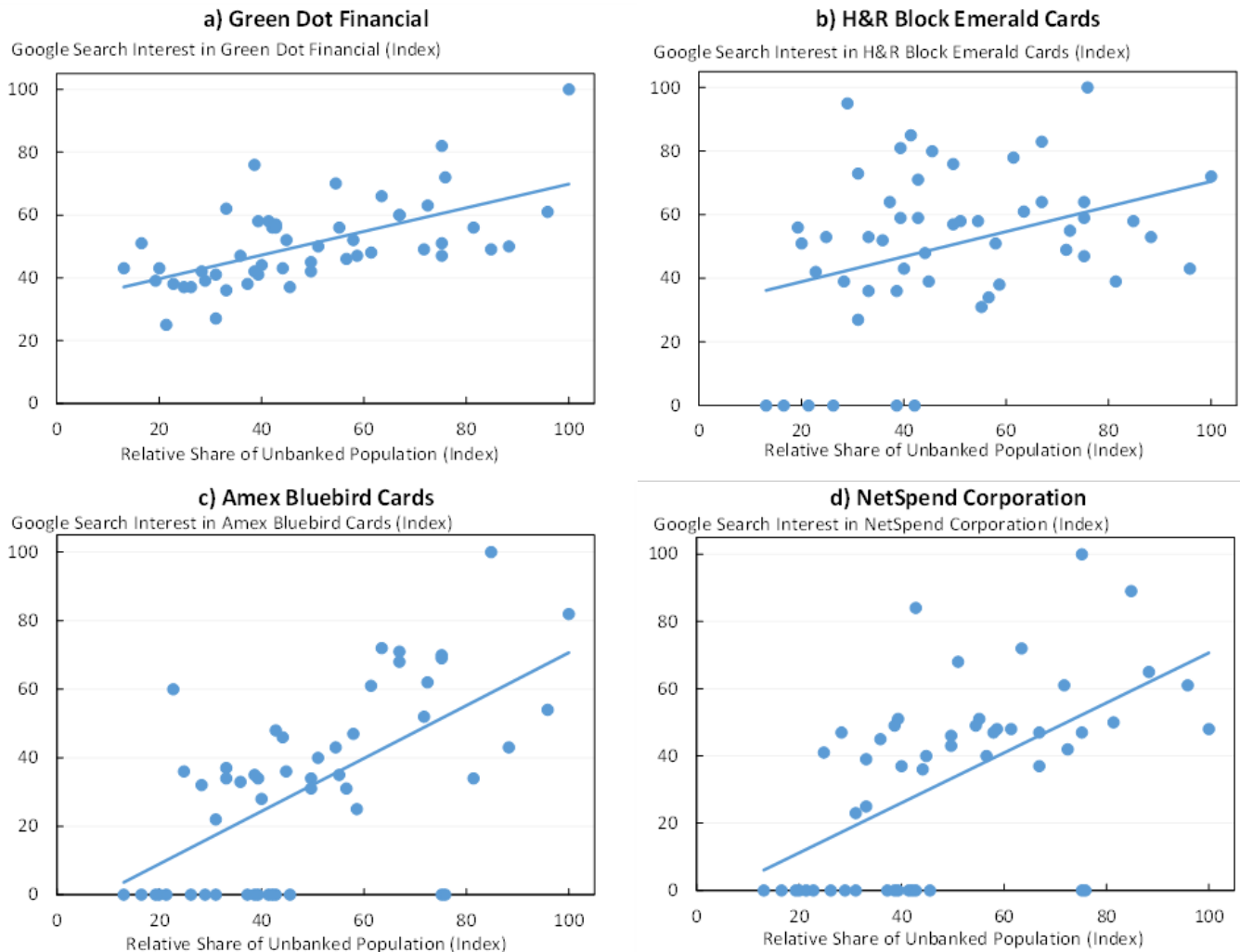
Several studies have linked rising financialization to financial inclusion, though there is little reason to expect that more financialization will help address financial inclusion in the United States. Demirgüç-Kunt and Klapper (2013) show that the relationship between a country's domestic credit as a percent of GDP has a positive, statistically significant correlation with the percent of adults that report having an account at a formal financial institution. Figure 7 below uses a similar approach as Demirgüç-Kunt and Klapper (2013) and, using data from over 120 developed and developing countries, shows that there is a positive relationship ($r=0.65$) between the ratio of domestic credit to GDP and the percent of that country's adults with a formal bank account.²⁵

²⁴ Google describes this process here: https://support.google.com/trends/answer/4365533?hl=en&ref_topic=4365599

²⁵ These data are available at the country level from the World Bank' Global Findex (Global Financial Inclusion

Database): <http://databank.worldbank.org/data/reports.aspx?source=1228>. The relevant series is "Account (% age 15+) [ts]."

Figure 6: Interest in Online Financial Services by Company vs. Unbanked Population by State, 2013



Note: Each measure plotted above is indexed to the state with the highest share of unbanked households (x-axis) and the highest frequency of Google searches for each company (y-axis)

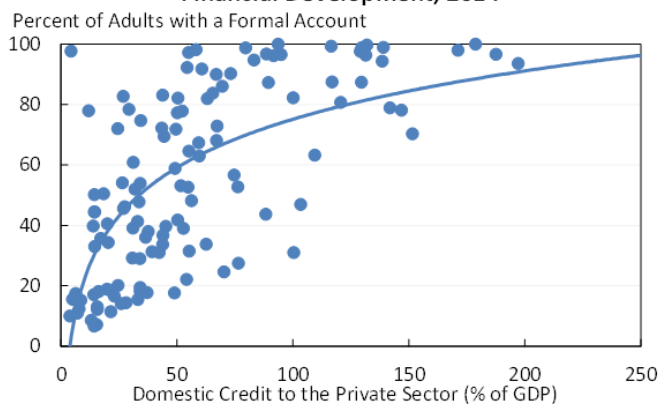
Source: Google Trends; 2013 FDIC Survey of Unbanked and Underbanked Households.

The causality in this relationship is admittedly uncertain; it could either be that having an account facilitates borrowing or that higher levels of borrowing require more accounts. However, as indicated by the curved fitted line, the relationship decreases for higher ratios of credit to GDP, that is, more credit only improves rates of account possession up to a certain point (or vice versa). Over a certain level, then, there is little correlation between financialization and inclusion.²⁶ The large size of the financial sector in the United States may play a role in the country’s relatively high level of financial inclusion

relative to other countries, but given the already large size of the financial sector, it is not clear recent or future growth in the financial sector has or would expand financial inclusion. Recent growth in financialization appears to have had a bigger influence on the type, cost, and diversity of financial products available to consumers rather than whether the marginal consumer has access to a banking account.

²⁶ Below 120 percent of GDP, the correlation between financialization and inclusion is 0.65; above 120 percent of GDP, the correlation is 0.1

Figure 7: Account Penetration and Financial Development, 2014

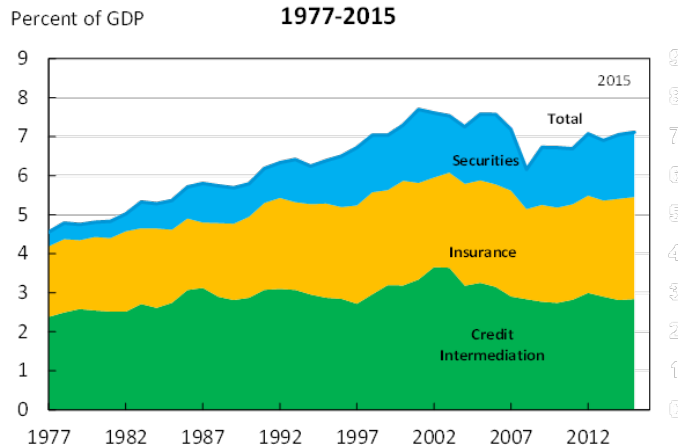


Sources: Demirgüç-Kunt and Klapper (2013); World Bank, World Development Indicators and Global Findex.

In the United States, financial deregulation and innovation, as well as advances in information technology, have together fueled an expansion of transactions and services related to credit and asset markets since at least the late 1970s. That expansion reached its peak in the early 2000s (Figure 8). The most basic measure of financial-sector size in the United States is the share of GDP contributed by financial services, comprising insurance, securities trading, and credit intermediation. This measure does not capture asset *stocks*, such as outstanding mortgage credit; rather, it gives the flow of value added from the activities of selling insurance, underwriting loans, and marketing securities, among others. Figure 8 follows and updates Greenwood and Scharfstein (2013), showing data from 1977 to 2013.²⁷

²⁷ Philippon and Reshef (2013) document similar patterns of financial sector growth relative to GDP in many other industrial countries.

Figure 8: Financial and Insurance Services Value Added, 1977-2015

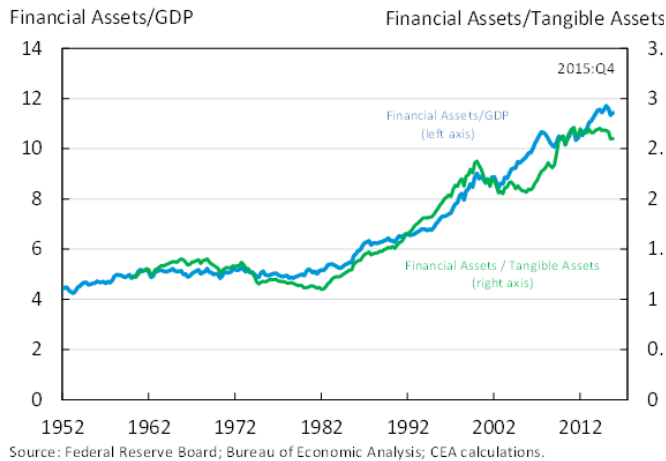


Source: Bureau of Economic Analysis, National Income and Product Accounts.

All three categories of financial services—securities, insurance, and credit intermediation—have increased since 1977. In the aggregate, financial services were about 4.5 percent of U.S. GDP in 1977, but as of 2015 stood at about 7.1 percent, having fallen from about 7.7 percent during the mid-2000s prior to the financial crisis. Credit intermediation peaked at about 3.7 percent of GDP in 2002-03, driven in part by mortgage originations, but by 2015 was only slightly (0.4 percentage point of GDP) above its 1977 level of 2.4 percent of GDP.²⁸ The securities subsector also contracted slightly as a result of the 2007-2009 financial crisis, though not as dramatically as credit intermediation. Greenwood and Scharfstein (2013) argue that the asset management subcomponent of securities has grown in importance over time and by 2007 accounted for about half of the industry's gross output. Much of this is attributable to asset management fees (traditional as well as alternative asset managers such as hedge funds), which they estimate at normally 1.1 to 1.6 percent of assets under management. These fees have grown quickly over time both because the value of assets has grown over time, and the share of these that are managed professionally has grown. Figure 9 illustrates the growth in the value of total U.S. financial assets, relative to both GDP and U.S. nonfinancial (tangible) assets. A take-off in financial asset growth (from around 5 to nearly 12 times GDP) starts in the early 1980s.

²⁸ Over a longer span of history, the financial sector contracted from 1929 through 1945, at which time it stood at about 2 percent of GDP, but then began a gradual recovery after World War II.

Figure 9: Growth in Financial Assets, 1952-2015



Asset management likely has only little impact on the ability of a household to access basic financial services. It is more likely connected to the ability of already banked households to engage in different wealth building strategies. Professional management—for example, through easily available mutual funds or employer-sponsored retirement plans—has made it easier for households to participate in securities markets and diversify their wealth. The share of households owning stock (including through retirement accounts) rose from 32 percent in 1989 to 47 percent in 2010, having peaked at 52 percent in 2001 at the height of the Internet bubble. Whether the additional services being provided—active management, advice, trading—provide better returns for consumers is questionable. Evidence indicates that on average, active mutual fund managers do worse than passive benchmark investors, even before accounting for the high fees they charge (Fama and French 2010), and that individuals who trade actively tend to mistime the market and lose money. There is also risk of substantial loss for individual consumers from high fees or low returns. In 2016, the Department of Labor took steps to protect consumers from conflicts of interest that harm the advice they receive, finalizing rules requiring retirement advisers to provide investment advice in their clients’ best interest.²⁹

While the growth implications of financial development are often phrased in terms of the ability to start businesses, much of the recent financial growth has centered on consumer access to credit. Greenwood and Scharfstein (2013, p. 20) observe that since 1980

“essentially all the growth in the credit intermediation industry has come from transactional services, largely reflected in fees associated with consumer and mortgage credit”—as opposed to traditional banking services such as business loans, which have been flat as a share of GDP. Revenue from securitization likely has contributed to the growth of credit in the United States, and has grown symbiotically with non-bank portions of the financial system—which are activities that provide bank-like functions of maturity and liquidity transformation, outside of the standard banking category. The sector includes money market mutual funds, banks’ and structured investment vehicles. The growth in these services do not seem particularly connected to financial inclusion either. They likely play a role in access to credit and the ability of households to enter the housing market, but perhaps not their ability to have a bank account or basic services.

While financialization may not be playing an important role in financial inclusion at this point, it does provide important services like access to broader financial markets and credit for housing. But, it may signal that simply expanding the financial sector may not be the best way to reach those that are still currently unbanked. As suggested by Figure 7 above, beyond a certain point there are diminishing returns to increased financialization. As the United States already has a large and well-developed financial sector, with a domestic credit to GDP ratio of nearly 200 percent, the connection between further financialization and inclusion is expected to be weak, based on the cross-country evidence.

Conclusion

Financial inclusion has increased in the United States over the past 25 years across multiple demographic and geographic categories, most notably race and income. However, many households still lack access to the financial system. The impact of a lack of access to formal finance is substantial. It can cost families anywhere from \$220 to \$1,100 in extra fees simply to cash paychecks when they lack transaction accounts—and these families often have fewer resources available. In contrast, banked households pay an average of \$104 annually, according to some estimates. In addition, unbanked households

²⁹ Text of the rule is available at: <https://www.dol.gov/ebsa/regs/conflictsofinterest.html>

face further costs to the extent that they rely on small-dollar credit products in order to meet their liquidity needs, which often come with high interest payments and late fees and can raise consumer protection concerns. Nonetheless, these non-traditional financial products do provide services and a source of credit, especially for unexpected expenses, that unbanked households and those with poor credit histories may not be able to access elsewhere.

Financial sector innovations and policies show promise for addressing financial inclusion. However, online lenders and other fintech innovations may not fit neatly into existing policymaking frameworks and could potentially benefit from greater clarity, including regulatory clarity (which need not always imply additional regulation). Regulatory clarity—whether in the form of regulations per se, other types of regulatory and policy guidance or statements of principle, or further engagement with policy makers and regulators, could help provide important additional information, especially given the trend towards disaggregation of traditional banking services. Moreover, this disaggregation suggests that, in the future, measures of financial inclusion that rely on counts of “unbanked” or “underbanked” customers may miss that many customers can receive the services they need via multiple, disaggregated providers.

However, simply expanding the financial sector may not be the best way to reach those that are still currently unbanked, and there are limits to the ways in which fintech alone can address financial inclusion. The [digital divide](#)—less than 50 percent of households in the bottom income quintile have adopted the Internet at home—limits the extent to which online payment and lending solutions will help address the needs of unbanked households in the lowest income quintile. Thus, the Administration is pursuing initiatives aimed at closing the digital divide, including [ConnectALL](#), which aims to connect 20 million more Americans by 2020.

More broadly, both technology and non-technology oriented solutions can help to address financial inclusion. Other solutions include fostering financial capability, continuing the Administration’s support of CDFIs, and encouraging partnerships between fintech firms and private or public sector organizations that focus on financial inclusion. There is also more work to be done by researchers, to better understand the mechanisms

through which financial inclusion affects individual outcomes, including replication of country-specific findings in other settings, including the United States.

References

Anderson, Monica. 2015. “Technology Device Ownership: 2015.” Pew Resesarch Center. <http://www.pewinternet.org/2015/10/29/technology-device-ownership-2015/>

Arcand, Jean-Louis, Enrico Berkes, and Ugo Panizza. “Too Much Finance?” IMF Working Paper WP/12/161, June 2012.

Ashraf, Nava, Dean Karlan, and Wesley Yin. 2006. “Deposit Collectors,” *Advances in Economic Analysis & Policy* 6: 1–22.

_____. 2010. “Female Empowerment: Impact of a Commitment Savings Product in the Philippines.” *World Development* 38(3): 333-344.

Banerjee, Abhijit, Esther Duflo, Rachel Glennerster, and Cynthia Kinnan. 2010. “The Miracle of Microfinance? Evidence from a Randomized Evaluation.” MIT Bureau for Research and Economic Analysis of Development Working Paper no. 278. Massachusetts Institute of Technology.

Barlyn, Suzanne. 2016. “Exclusive: New York financial regulator gearing up to probe online lenders.” *Reuters*. May 26. <http://www.reuters.com/article/us-lending-new-york-probe-exclusive-idUSKCN0YG31O>

Beck, Thorsten, Asli Demirgüç-Kunt, and Ross Levine. 2007. “Finance, inequality and the poor.” *Journal of Economic Growth* 12(1): 27-49.

Beard, Martha P. 2010. “In-depth: Reaching the unbanked and underbanked.” *Central Banker*. (Winter 2010). <https://www.stlouisfed.org/Publications/Central-Banker/Winter-2010/Reaching-the-Unbanked-and-Underbanked>

Beck, Thorsten, Ross Levine, and Alexey Levkov. 2010. “Big bad banks? The winners and losers from bank

- deregulation in the United States.” *The Journal of Finance* 65(5): 1637-1667.
- Bianchi, Nicholas and Rob Levy. 2013. “Know Your Borrower: The Four Need Cases of Small-Dollar Credit Consumers.” *Center for Financial Services Innovation*.
- Bradley, Christine, Susan Burhouse, Heather Gratton, and Rae-Ann Miller. 2009. “Alternative Financial Services: A Primer.” *FDIC Quarterly* 3(1): 39-47.
- Bruhn, Miriam, and Inessa Love. 2014. “The real impact of improved access to finance: Evidence from Mexico.” *The Journal of Finance* 69(3): 1347-1376.
- Brune, Lasse, Xavier Giné, Jessica Goldberg, and Dean Yang. 2011. “Commitments to save: A field experiment in rural Malawi.” *World Bank Policy Research Working Paper Series*, Vol (2011).
- Brunnermeier, Markus K. and Jonathan Parker. 2005. “Optimal Expectations.” *The American Economic Review* 95(4): 1092-1116.
- Burgess, R. and R. Pande, 2005. “Do Rural Banks Matter? Evidence from the Indian Social Banking Experiment.” *American Economic Review*, 95, 780–95.
- Carrell, Scott and Jonathan Zinman. 2014. “In Harm’s Way? Payday Loan Access and Military Personnel Performance.” *The Review of Financial Studies* 27(9): 2805-2840.
- Chatterji, Aaron K., and Robert C. Seamans. 2012. “Entrepreneurial finance, credit cards, and race.” *Journal of Financial Economics* 106(1): 182-195.
- Choi, James J., David Laibson, and Brigitte C. Madrian. 2011. “\$100 Bills on the Sidewalk: Suboptimal Investment in 401(K) Plans.” *Review of Economics and Statistics* 93(3): 748–63.
- Comoreanu, Alina. 2015. “2015 Checking Account Cost Comparison Report.” WalletHub.
- Consumer Financial Protection Bureau. 2013. “Payday Loans and Deposit Advance Products.” Consumer Financial Protection Bureau White Paper. http://files.consumerfinance.gov/f/201304_cfpb_payday-dap-whitepaper.pdf
- Demirgüç-Kunt, Asli, and Leora Klapper. 2013. “Measuring financial inclusion: Explaining variation in use of financial services across and within countries.” *Brookings Papers on Economic Activity* 2013 (1): 279-340.
- Dietz, Miklos, Somesh Khanna, Tunde Olanrewaju, and Kausik Rajgopal. 2016. “Cutting Through the FinTech Noise: Markers of Success, Imperatives For Banks.” McKinsey and Company.
- Dupas, P. and J. Robinson. 2013. “Why Don’t the Poor Save More? Evidence from Health Savings Experiments,” *American Economic Review*, 103: 1138–71.
- Dynan, Karen. 2012. “Is a household debt overhang holding back consumption?” *Brookings Papers on Economic Activity* (Spring 2012): 299-362.
- Elton, Catherine. 2015. “Opening a Nationwide Mobile Wallet.” *Bloomberg*. December 17, 2015. <http://www.bloomberg.com/news/articles/2015-12-17/peru-s-banks-push-through-a-unified-digital-payment-system>
- Fama, Eugene F. and Kenneth R. French. 2010. “Luck versus Skill in the Cross-Section of Mutual Fund Returns.” *The Journal of Finance* 65(5): 1915-1947.
- Federal Deposit Insurance Corporation. 2013. National Survey of Unbanked and Underbanked Households. <https://www.economicinclusion.gov/>
- Federal Reserve. 2013. Survey of Consumer Finances. <http://www.federalreserve.gov/econresdata/scf/scfindex.htm>
- Federal Reserve Board of Governors. 2016a. “Consumers and Mobile Financial Services 2016.” March 2016. <http://www.federalreserve.gov/econresdata/consumers-and-mobile-financial-services-report-201603.pdf>
- _____. 2016b. “Report on the Economic Well-Being of U.S. Households in 2015.” May 2016. <http://www.federalreserve.gov/2015-report-economic-well-being-us-households-201605.pdf>
- Fernandes, Daniel, John G. Lynch Jr, and Richard G. Netemeyer. 2014. “Financial literacy, financial education, and downstream financial behaviors.” *Management Science* 60(8): 1861-1883.

- FICO blog. 2015. "US Credit Quality Continues to Climb-But Will it Level Off?" August 18, 2015. <http://www.fico.com/en/blogs/risk-compliance/us-credit-quality-continues-climb-will-level/>
- Financial Literacy and Education Commission. 2015. "Strategy for Assuring Financial Empowerment (SAFE) Report."
- Fritzdixon, Kathryn, Jim Hawkins, and Paige Marta Skiba. 2014. "Dude, Where's My Car Title?: The Law, Behavior, and Economics of Title Lending Markets." *University of Illinois Law Review* 1013
- Greenwood, Robin and David Scharfstein. 2013. "The Growth of Finance." *Journal of Economic Perspectives* 27 (Spring 2013): 3-28.
- Jordà, Òscar, Moritz Schularick, and Taylor Alan. 2011. "Financial Crises, Credit Booms, and External Imbalances: 140 Years of Lessons." *International Monetary Fund Economic Review* 59 (2): 340–378.
- _____. 2013. "When Credit Bites Back." *Journal of Money, Credit and Banking* 45 (S2): 3-28.
- Karlan, Dean and Jonathan Zinman. 2010. "Expanding Credit Access: Using Randomized Supply Decisions to Estimate the Impacts." *Review of Financial Studies* 23(1): 433–64.
- Karlan, Dean, Aishwarya Lakshmi Ratan, and Jonathan Zinman. 2014. "Savings by and for the Poor: A Research Review and Agenda." *Review of Income and Wealth* 60(1): 36-78.
- Kast, Felipe, Stephan Meier, and Dina Pomeranz. 2012. "Under-savers anonymous: Evidence on self-help groups and peer pressure as a savings commitment device." National Bureau of Economic Research working paper w18417.
- Kerr, William R., and Ramana Nanda. 2009. "Democratizing entry: Banking deregulations, financing constraints, and entrepreneurship." *Journal of Financial Economics* 94(1): 124-149.
- King, Robert G., and Ross Levine. 1993a. "Finance and growth: Schumpeter might be right." *The Quarterly Journal of Economics* 108 (3): 717-737.
- King, Robert G., and Ross Levine. 1993b. "Finance, entrepreneurship and growth." *Journal of Monetary Economics* 32(3): 513-542.
- Levy, Rob and Joshua Sledge. 2012. "A Complex Portrait: An Examination of Small-Dollar Credit Consumers." Center for Financial Services Innovation.
- Lobanov, Mike. 2016. "The mercurial nature of P2P lending." *TechCrunch*. May 22, 2016. <http://techcrunch.com/2016/05/22/the-moment-of-the-second-wave-of-online-lenders-is-gone/>
- Melzer, Brian T. and Donald P. Morgan. 2009. "Competition and Adverse Selection in the Small-Dollar Loan Market: Overdraft versus Payday Credit." *Federal Reserve Bank of New York Staff Reports*, no. 391.
- Mckernan, Signe-Mary, Caroline Ratcliffe, and Caleb Quakenbush. 2015. "Small-Dollar Credit: Protecting Consumers and Fostering Innovation." Urban Institute.
- Pew Charitable Trusts. 2013. "Payday Lending in America Report 2: How Borrowers Choose and Repay Payday Loans." February 2013. http://www.pewtrusts.org/~media/assets/2013/02/payday_loans_report2overview_finalforweb.pdf
- Pew Charitable Trusts. 2016. "Fact Sheet: Payday Loan Facts and the CFPB's Impact." January 14 2016. <http://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2016/01/payday-loan-facts-and-the-cfpbs-impact>
- Philippon, Thomas and Ariell Reshef. 2013. "An International Look at the Growth of Modern Finance." *Journal of Economic Perspectives* 27 (Spring): 73-96.
- President's Council of Economic Advisers. 2016. "The Digital Divide and Economic Benefits of Broadband Access." https://www.whitehouse.gov/sites/default/files/page/files/20160308_broadband_cea_issue_brief.pdf
- Ruiz Ortega, Claudia. 2013. "From pawn shops to banks: The impact of formal credit on informal households." *World Bank policy research working paper* 6634.
- Schonfeld, Erick. 2008. "SEC Outlines Its Reasoning For Shutting Down P2P Lender Prosper." *TechCrunch*.

- November 26, 2008. <http://techcrunch.com/2008/11/26/sec-outlines-its-reasoning-for-shutting-down-p2p-lender-prosper/>
- Skiba, Paige and Jeremy Tobacman. 2008. "Payday Loans, Uncertainty, and Discounting: Explaining Patterns of Borrowing, Repayment, and Default." Vanderbilt University School of Law, Department of Law and Economics.
- Stango, Victor and Jonathan Zinman. 2009. "What do consumers really pay on their checking and credit card accounts? Explicit, implicit, and avoidable costs." *American Economic Review* 99 (2): 06-09.
- Stein, Jeremy C. "The Fire-Sales Problem and Securities Financing Transactions." Speech at the Federal Reserve Bank of New York Workshop on Fire Sales as a Driver of Systemic Risk in Triparty Repo and other Secured Funding Markets, New York, NY, October 4, 2013.
- Swack, Michael, Eric Hangen, and Jack Northrup. 2014. "CDFIs Stepping into the Breach: An Impact Evaluation-Summary Report." The Carsey School of Public Policy.
- Thaler, Richard H., and Schlomo Benartzi. 2004. "Save More Tomorrow: Using Behavioral Economics to Increase Employee Saving." *Journal of Political Economy* 112 (1): S164-87.
- United States Department of the Treasury. 2016. "Opportunities and Challenges in Online Marketplace Lending." United States Department of the Treasury White Paper. https://www.treasury.gov/connect/blog/Documents/Opportunities_and_Challenges_in_Online_Marketplace_Lending_white_paper.pdf
- United States Postal Service Office of Inspector General. 2014. "Providing Non-Bank Financial Services for the Underserved." United States Postal Service White Paper. https://www.uspsoig.gov/sites/default/files/document-library-files/2015/rarc-wp-14-007_0.pdf
- Villasenor, John, D., Darrell M. West, and Robin J. Lewis. 2015. "The 2015 Brookings Financial and Digital Inclusion Project Report: Measuring Progress on Financial Access and Usage." Brookings Institution.
- White House. 2016. "Fact Sheet: President Obama Announces ConnectALL Initiative." March 9, 2016. <https://www.whitehouse.gov/the-press-office/2016/03/09/fact-sheet-president-obama-announces-connectall-initiative>
- Wolkowitz, Eva, and Jeffrey Oh. 2013. "2012 Financially Underserved Market Size Study." Center for Financial Services Innovation.