

TERRI FRIEDLINE

UNEQUAL FINTECH LANDSCAPES

Communities' Rates of High-speed Internet
Access, Smartphone Ownership, and Online and
Mobile Banking



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The Family-Centered Social Policy program at New America investigates the role of identity in shaping social policy and develops tools to help make social policy more representative of and responsive to the families it serves. FCSP's work is primarily directed at the intersection of household economic security and public policy. We believe our approach can yield more just, equitable, and secure outcomes for Americans and our local, state, and federal government. Find out more at newamerica.org/family-centered-social-policy.

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Finally, the quality and accuracy of the research presented in this brief report are the sole responsibility of the author, and the aforementioned individuals and organizations do not necessarily agree with the report's findings or conclusions.

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OVERVIEW

An array of financial technologies—referred to by their shorthand “fintech”—are credited with the potential to solve issues of financial access. Fintech leverages online and digital technologies, and is poised to transform where, when, and how households can deposit paychecks, pay bills, send money, or retrieve credit scores—and to expand access to households and communities that have been historically excluded or marginalized. In the process of expanding access, fintech may also dilute any negative effects from communities’ lack of financial services.

At the same time, unequal fintech landscapes threaten to undermine its potential for expanding access. Communities have varying rates of high-speed internet access, and many households experience disruptions in their phone and internet service. Lower-income households could lose access to financial services and their money when their phone or internet service is disrupted. Moreover, lower-income communities tend to have lower-than-average rates of owning or using these digital and financial technologies.

This report presents data on fintech landscapes in U.S. communities, including high-speed internet access, smartphone ownership, and online and mobile banking. The descriptive findings contribute to growing conversations on the relationships between fintech, brick-and-mortar financial

services, communities’ demographics like race and poverty, and urban and rural geographies. The findings reveal whether and how fintech can expand access to financial services, under what conditions, and the communities that may benefit the most.

Key Findings

- Communities have unexpectedly low rates of high-speed internet access, smartphone ownership, and online and mobile banking, suggesting that fintech may not currently be compensating for limited access to financial services. These low rates also suggest that fintech has plenty of room to expand.
 - ◇ In the average community, 67 percent of adults have high-speed internet access in the home and 40 percent own a smartphone.
 - ◇ Far fewer adults in the average community use online and mobile banking to make financial transactions. Thirty-one percent have used online banking and only 8 percent have used mobile banking at any time in the previous year.

- Unequal fintech landscapes disadvantage poor white communities and communities of color. In other words, communities with higher percentages of poor households—especially at intersections of race and urban and rural geographies—have lower rates of accessing or using fintech.
 - ◇ Fifty-eight percent of adults in high-poverty rural communities have high-speed internet in their homes, compared to 73 percent in low-poverty rural communities.
 - ◇ Smartphone ownership has the smallest percentage point gaps between demographic groups. For example, 41 percent of adults from high-poverty Latinx communities and 46 percent from low-poverty Latinx communities own smartphones.
 - ◇ Twenty-two percent of adults from high-poverty black communities have used online banking in the previous year, compared to 39 percent of adults from low-poverty black communities.
 - ◇ While average mobile banking use is low across all demographic groups, rates are higher among low-poverty communities. Adults' mobile banking use in the preceding year ranges between 9 percent and 12 percent in low-poverty rural and urban communities, respectively.
- National trends in fintech and the concentration or density of financial services mask disparities in access that are prevalent in local communities.
 - ◇ Nationally, the density of banks and credit unions is higher in communities where fintech is lowest. This suggests that communities' financial services reflect their fintech needs, and equally serve communities of color, poor white communities, and rural communities.
 - ◇ However, the opposite is often true at local levels. For example, Chicago communities with the highest rates of high-speed internet access have a density of bank or credit union branches that is 11 times higher than communities with the lowest rates of high-speed internet.
 - ◇ Low-poverty black communities in Chicago have a density of bank or credit union branches that is 5 times higher than high-poverty black communities.

COMMUNITIES HAVE UNEQUAL ACCESS TO FINANCIAL SERVICES

Many households do not have the financial products and services they need to fully participate in today's twenty-first century economy. Compared to the average of 27 percent, nearly half of households earning annual incomes below \$15,000 either do not have any bank account or supplement the financial products and services that they do own with borrowing from high-cost alternative financial services (AFS) like payday lenders and check cashers.¹ Similarly, the percentage is also about half for households headed by Blacks, Latinx, and American Indian/Alaskan Natives.^{2 3}

Inequality in households' access is driven in part by inequality in the locations of financial services in their communities, and communities of color and lower-income white communities are particularly underserved.⁴ For example, in many metropolitan statistical areas (MSAs), "brick-and-mortar" bank and credit union branches are predominately concentrated in higher-income white communities whereas AFS are concentrated in lower-income white and black and Latinx communities).^{5 6} Residents of Native tribal communities travel an average of 12 miles to the nearest bank branch.⁷ This means that the average Native tribal community is located in a banking desert, or a geographic area where the nearest bank branch is over 10 miles away.⁸ Households living in rural areas also have

farther distances to travel than their counterparts located in more populated areas.⁹ Residents of black communities that are isolated from financial services have expressed widespread mistrust in banks, and some residents may in fact view payday lenders and check cashers more favorably.¹⁰

Households are affected by inequality in the locations of financial services in their communities.^{11 12 13 14} Growing up in communities that do not have bank branches or that are geographically isolated from financial services is associated with worse financial outcomes later in life, such as having lower credit scores.^{15 16 17} This means that inequality in the locations of financial services can undermine households' full participation in the economy and make it more difficult to experience a range of improved financial outcomes.

Bank Branch Declines May Worsen Unequal Access

Unfortunately, inequality in the locations of financial services in communities may worsen since the number of bank branches is expected to decline. Nearly 20 percent of bank branches are projected to close over the next decade as banks transition

Inequality in households' access is driven in part by inequality in the locations of financial services in their communities.

to delivering products and services via financial technologies like online and mobile banking.¹⁸ One analysis of existing bank branch location data indicates that banks are closing their branches at the fastest pace on record, suggesting that any worsening inequality may be already rapidly occurring.¹⁹

Brick-and-mortar bank branch declines can be traced to the 1990s, when banks began to pivot from primarily serving the communities in which they were located to serving larger geographic regions.^{20 21} A banking crisis—spurred by regional recessions, excessive lending risks, and financial institution closures—coincided with the start of the 1990s.²² Policymakers believed that deregulation could lessen or reverse the crisis, and they enacted deregulatory policies that allowed states to permit new bank branches to open within their borders. States modified protections to their banking markets over a 10-year period, changing market competition and causing branches to open and close.^{23 24} Since that time, banks have slowly shuttered branches as they have grown in size, served national and regional markets, and taken on more lending risks.²⁵ Branches located in communities of color and lower-income white communities have closed at higher rates, with some communities losing half their branches.^{26 27}

High-cost alternative financial services (AFS) like payday lenders and check cashers have taken advantage of the vacuums in communities that have been left by bank branch closures.²⁸ The number of AFS increased nearly five-fold between 1986 and 1994 alone and has grown at a steady annual rate of 15 percent since the mid-1990s.^{29 30} The AFS industry is estimated to earn around \$300 billion annually by charging high interest rates on products and services from borrowers who are more likely to earn lower and modest incomes and to have limited credit histories.³¹ Moreover, these high-cost services are disproportionately located in communities of color. For example, check cashers in New York City capitalized on the foreclosure crisis during the Great Recession and increased their presence dramatically in communities of color between 2006 and 2011.³² At the county level, increases in the number of payday lenders per capita is associated with increases in a county's black population.³³

FINTECH IS HERALDED AS A SOLUTION IN UNDERSERVED COMMUNITIES

The projected closure of banks' brick-and-mortar branches and the increased presence of AFS in some communities coincide with the emergence of financial technologies—digital technologies like online and mobile banking that facilitate financial transactions. An array of financial technologies—often referred to by their shorthand “fintech”—is credited with the potential to solve issues of financial access. These technologies are poised to transform where, when, and how households can deposit paychecks, pay bills, send money, or retrieve their credit scores—and to expand access to households and communities that have been excluded or marginalized. For example, smartphone applications like Revolut make it possible to transact in nearly 100 different currencies and leverage the best exchange rates.³⁴ With apps like Revolut, households are no longer confined to their country's currency and can choose to transact in currencies from other countries that have better buying power. Blockchain technology has enabled the creation of over 700 cryptocurrencies like Bitcoin, which are rising in value and becoming increasingly accepted forms of currency.

Given these innovative possibilities, fintech is also heralded as a solution to issues of financial access

in communities. Fintech has the potential to close geographic distances between households and brick-and-mortar bank branches and, in the process, dilute any negative effects from their communities' lack of financial services.³⁵ For example, new fintech companies like Azimo and Zoono are making it easier to transfer money, simplifying the process and reducing the costs for households to send remittances.³⁶ conVRse provides financial services virtually through a smartphone app and virtual reality headset to households in rural India where there are few brick-and-mortar bank branches.³⁷ In other words, without a bank branch in their community, a household can use a smartphone to make transactions, deposit paychecks, or automate bill payments. And, as bank branches continue to close, households can increasingly rely on fintech to make their necessary transactions.

Challenges Impede Fintech From Reaching its Potential

While there are many examples that demonstrate fintech's potential, especially from international communities, fintech is not without challenges—particularly for reaching communities of color and

lower-income white communities.³⁸ Importantly, access to financial services in communities remains consequential while fintech challenges persist. For example, fintech may be facilitating transactions among households that already have access, not necessarily expanding access among underserved households or communities. Based on 2015 data, 53 percent of adults who already own both a smartphone and a bank account report that they have used mobile banking in the preceding 12 months.³⁹ This percentage was 50 percent in 2012, suggesting that the yearly 1-percentage point growth in the rate of mobile banking is slow among households that already have access.

Fintech has the potential to close geographic distances between households and brick-and-mortar bank branches and dilute any negative effects from their communities' lack of financial services.

Data on the percentages of adults and households that use fintech may also be subject to sampling bias. Existing reports on fintech draw on responses to surveys that are delivered online and over the telephone and select rates of online and mobile banking from respondents that already have a smartphone and or bank account.^{40 41} In other words, the percentage of adults that use mobile banking is based on a very select sample—adults with internet access that could participate in an online survey—and does not reflect rates across the full adult population.

There are also challenges related to internet connectivity, which is required for transactions.⁴² Not every household has internet or phone service capable of transactions, since online and mobile banking cost money.⁴³ Lower-income communities of color and rural communities are vastly underserved when compared to high speed internet connectivity in communities on average.⁴⁴

⁴⁵ High speed internet connectivity and unlimited data plans cost extra, and households that meet or exceed the limits of their data plans could find themselves prohibited from making online or mobile transactions. Lower-income households cannot always afford these costs and a household could lose access to financial services and their money when their phone or internet service is disrupted.^{46 47} For example, 38 percent of lower-income households report falling behind on their utility payments and 14 percent have had their utilities disconnected—including phone and internet service.⁴⁸

Many people also regularly use cash, and cash cannot be transacted through a mobile device.⁴⁹ ⁵⁰ Cash is still the most common way that people make transactions, and one third of all transactions are made with cash.⁵¹ However, using cash is more costly for lower-income households who end up paying more in time and fees to make their transactions. In addition, going in person to brick-and-mortar branch locations is the primary way lower-income households make transactions: about 42 percent prefer to make transactions at a bank branch while 7 percent prefer to use mobile banking.⁵²

Moreover, according to recent research, computer algorithms—including those on which fintech is built—may replicate and reinforce society's racial, gender, and economic inequalities rather than resolve them.^{53 54} A study of Google advertisements reveals that searching for a person with a black-identifying name is more likely to produce advertisements suggesting that the person has a criminal record, even when this isn't true.⁵⁵ Algorithms that determine whether a person is exposed to certain housing advertisements discriminate against people from lower-income backgrounds and people of color.⁵⁶ Thus, fintech, while simultaneously attempting to expand access, also has the potential to exclude and marginalize lower-income households and households headed by people of color.

UNEQUAL FINTECH LANDSCAPES DISADVANTAGE POOR WHITE, OF COLOR, AND RURAL COMMUNITIES

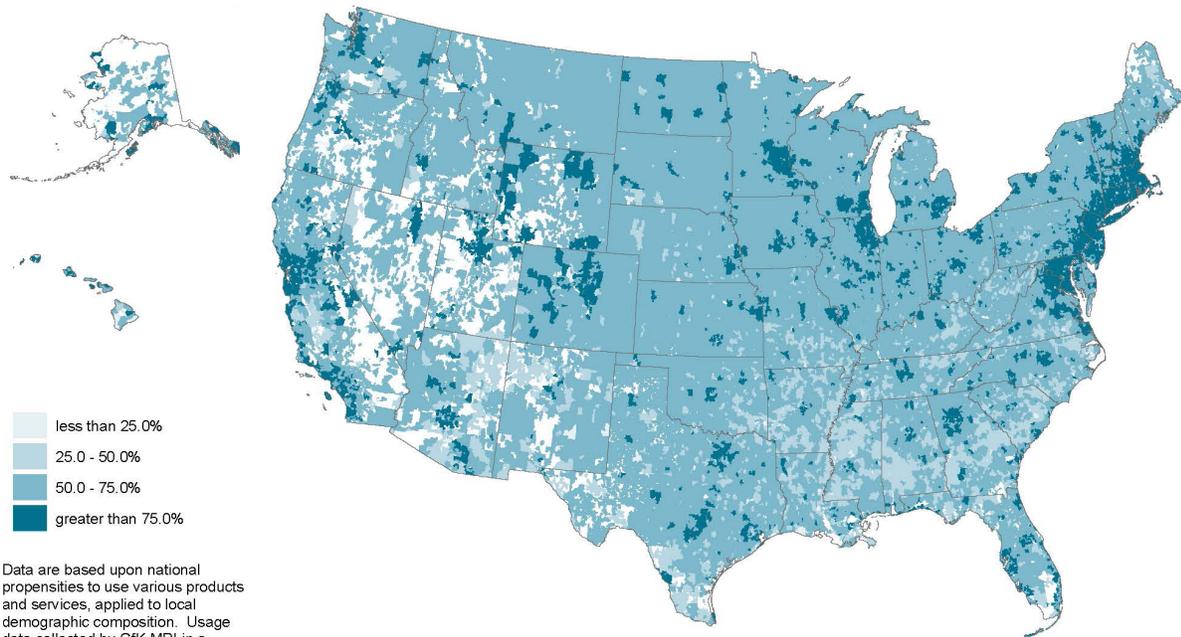
Similar to inequality in the locations of financial services, there are also unequal fintech landscapes in communities across the United States. Communities have varying rates of high-speed internet access, smartphone ownership, and online and mobile banking. Communities that have been historically financially underserved also tend to have lower-than-average rates of owning or using these digital and financial technologies. In other words, lower-income white communities, communities of color, and rural communities do not currently have access to fintech or are not using fintech to make financial transactions—at least, often not at the same rates as more advantaged communities or at rates that suggest fintech is compensating for underserved communities’ limited access to financial services.

Leveraging data from numerous sources, this brief report presents data on fintech landscapes in U.S. communities, including high-speed internet access, smartphone ownership, and online and mobile banking (please see the technical appendix for more information about the data). The descriptive findings contribute to growing policy and practice conversations on the relationships between fintech, brick-and-mortar financial services, communities’ demographics like race and poverty, and urban and rural geographies. The findings reveal whether and how fintech can expand access to financial services, under what conditions, and the communities that may benefit the most. In fact, given the sources of data used in this report, the descriptive findings likely understate the extent of disparities in fintech and financial access between communities.

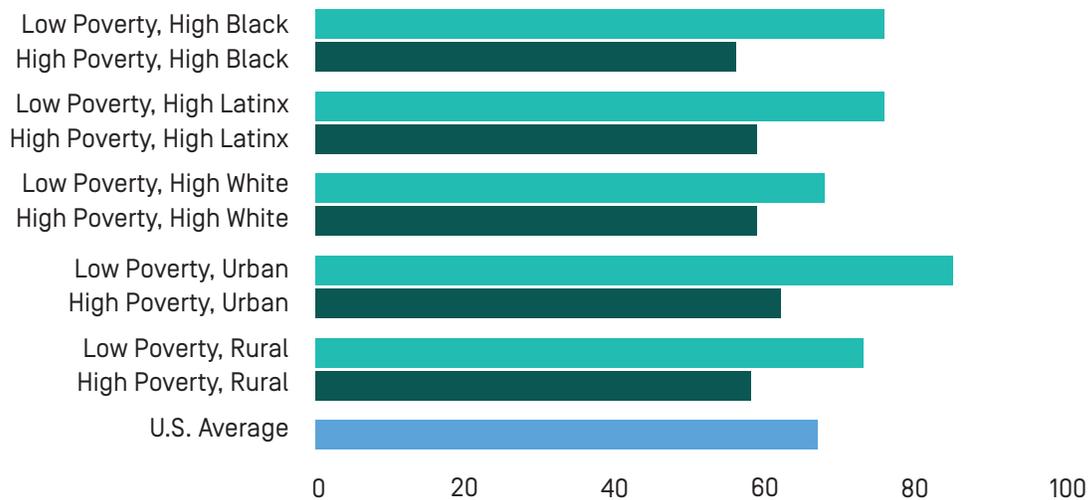
Communities that have been historically financially underserved also tend to have lower-than-average rates of owning or using these digital and financial technologies.

Figures 1 and 2 | High Speed Internet Access Varies Across the Country, and Poor Communities Have the Lowest Rates

In the average community, 67 percent of adults report that their households have high-speed internet access. One third do not have high-speed internet in their homes.



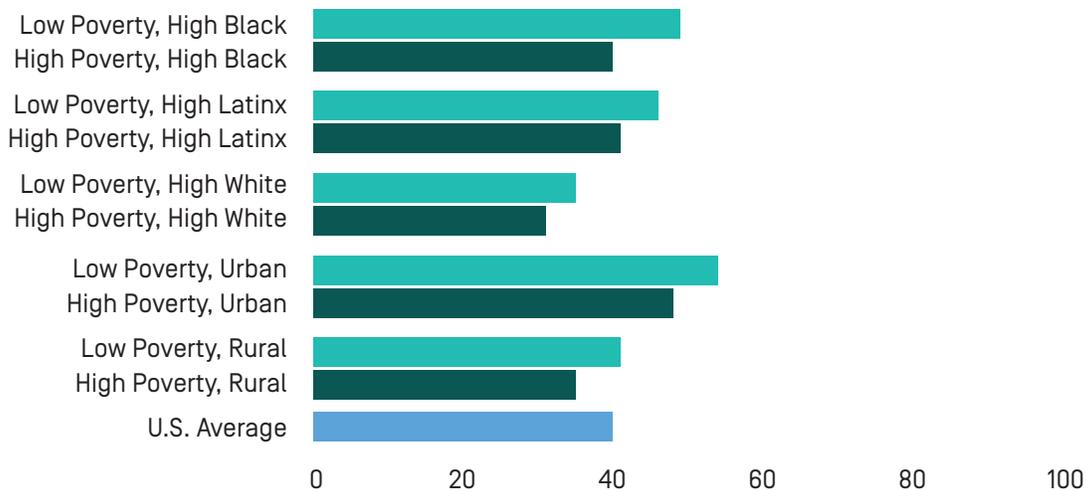
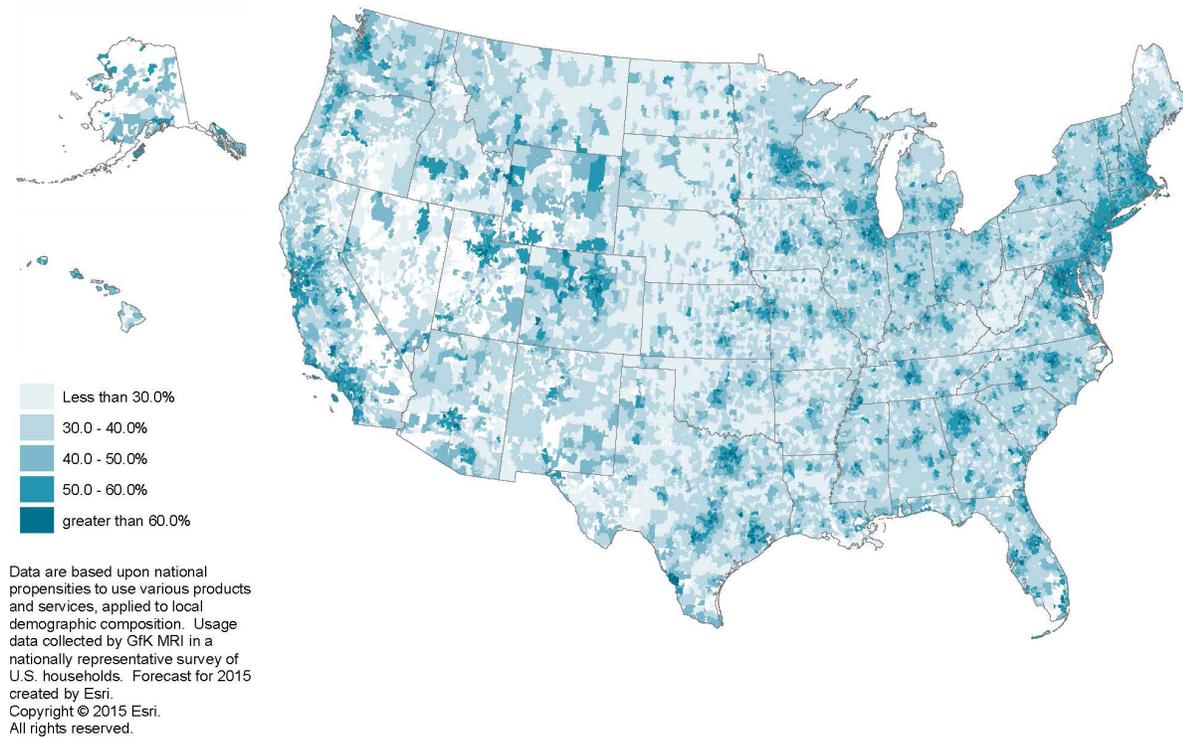
Data are based upon national propensities to use various products and services, applied to local demographic composition. Usage data collected by GfK MRI in a nationally representative survey of U.S. households. Forecast for 2015 created by Esri. Copyright © 2015 Esri. All rights reserved.



Source: Data from 2015 Esri Business Analyst Market Potential and 2010-2014 American Community Survey (ACS), adults with high-speed internet access in their homes by zip codes. Low = lowest quartile of poverty and or race in a zip code; High = highest quartile of poverty and or race in a zip code.

Figures 3 and 4 | Less than Half of Adults in the Average Community Owns a Smartphone

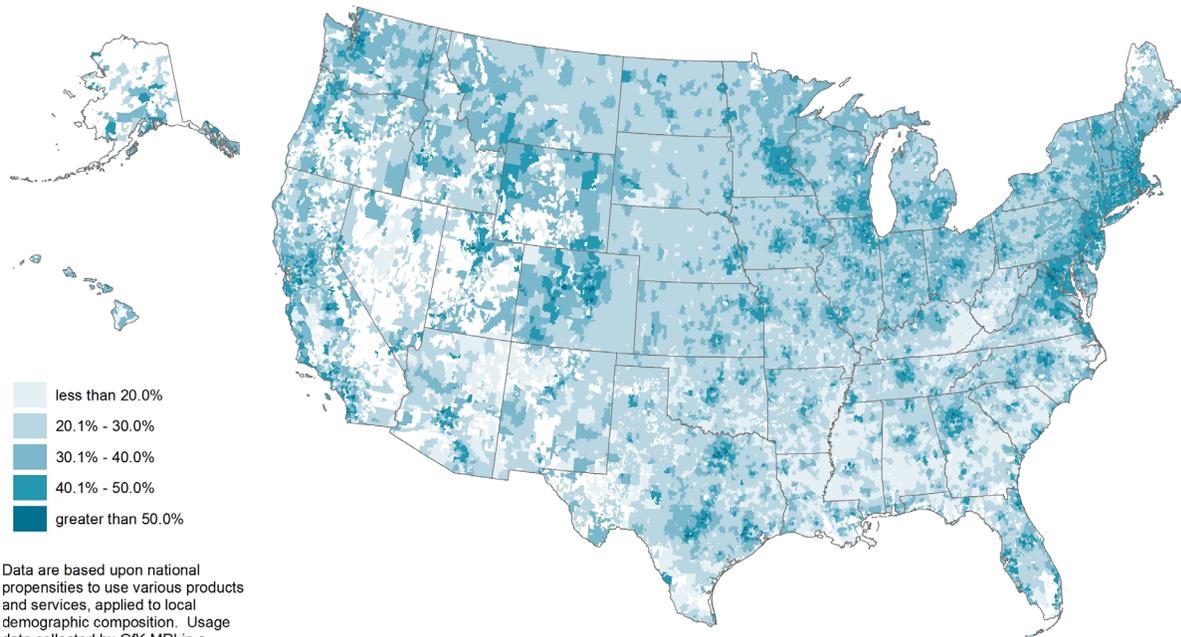
In the average community, 40 percent of adults report owning a smartphone and those from low-poverty black and/or urban communities report the highest rates.



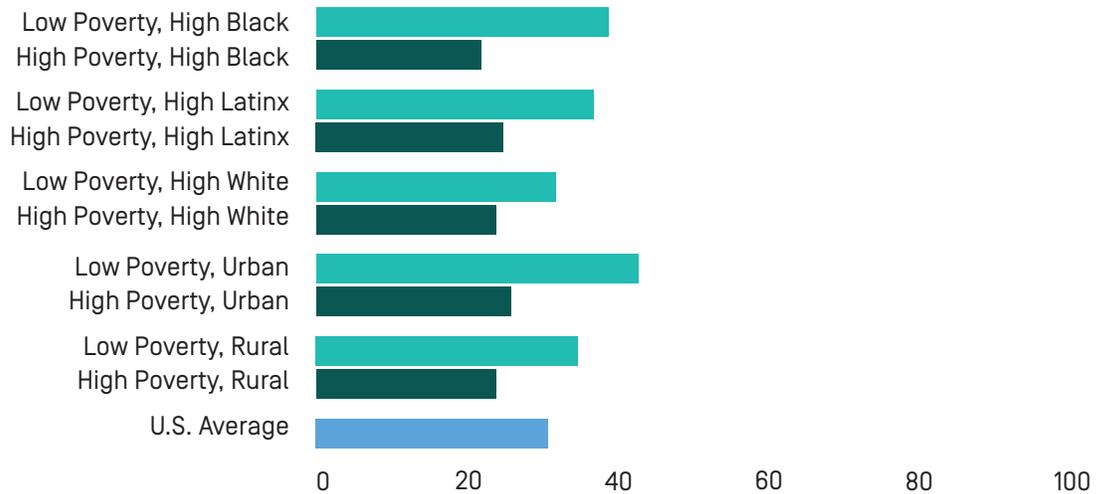
Source: Data from 2015 Esri Business Analyst Market Potential and 2010-2014 American Community Survey (ACS), adults who own smartphones by zip codes. Low = lowest quartile of poverty and or race in a zip code; High = highest quartile of poverty and or race in a zip code.

Figures 5 and 6 | Poor Communities of Color and Poor Rural Communities have Significantly Lower Rates of Online Banking than their Counterparts

In the average community, 31 percent of adults report using online banking in the previous 12 months.



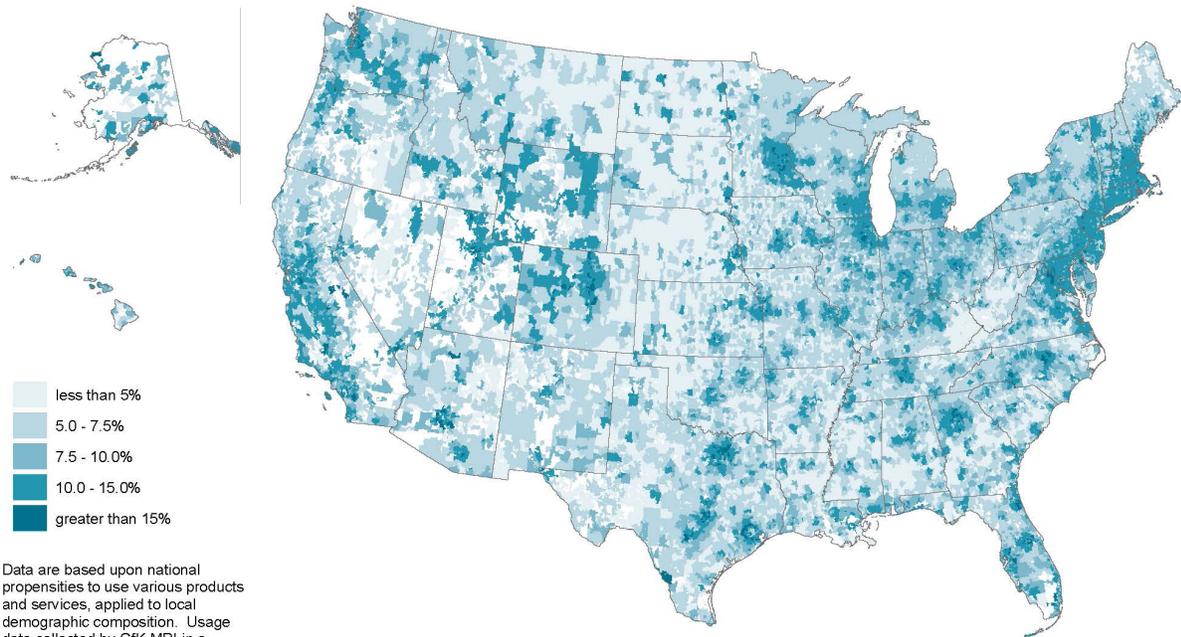
Data are based upon national propensities to use various products and services, applied to local demographic composition. Usage data collected by GfK MRI in a nationally representative survey of U.S. households. Forecast for 2015 created by Esri. Copyright © 2015 Esri. All rights reserved.



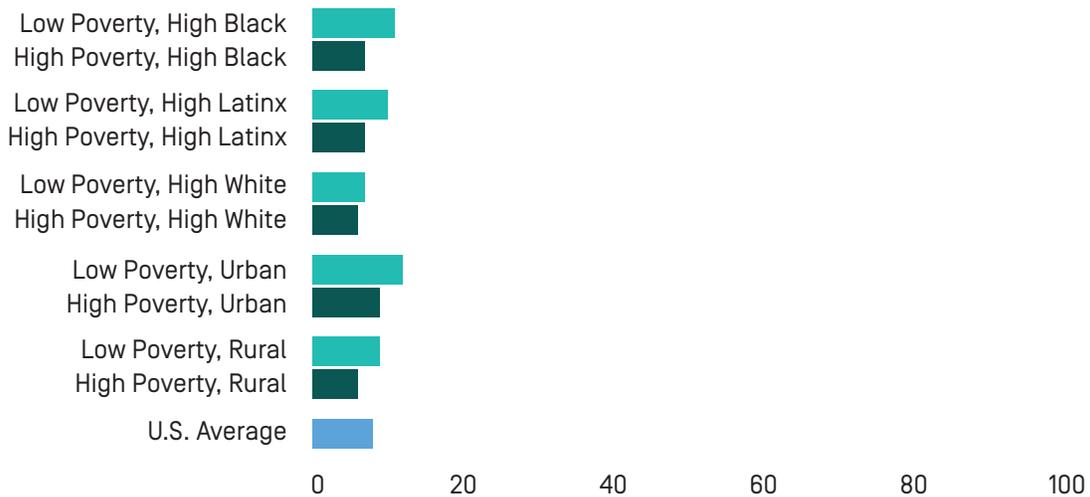
Source: Data from 2015 Esri Business Analyst Market Potential and 2010-2014 American Community Survey (ACS), adults who have used online banking within the preceding 12 months by zip codes. Low = lowest quartile of poverty and or race in a zip code; High = highest quartile of poverty and or race in a zip code

Figures 7 and 8 | In the Average Community, the Vast Majority of Adults do not Use Mobile Banking to Make Financial Transactions

In the average community, 8 percent of adults have used mobile banking in the previous 12 months. The rates are slightly higher in low-poverty communities and communities with more people of color.



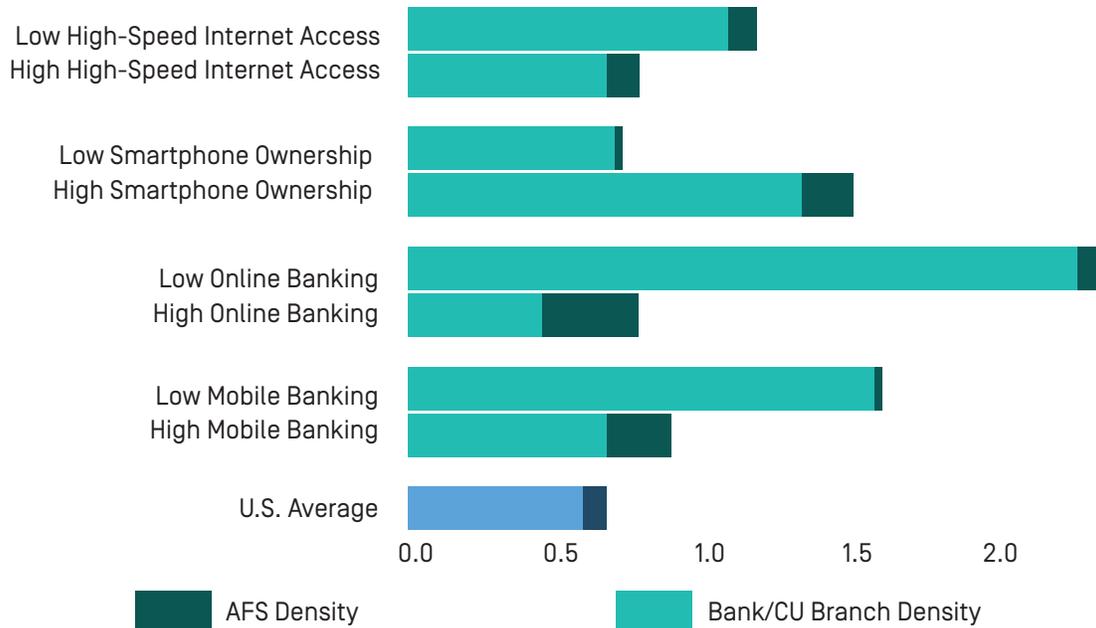
Data are based upon national propensities to use various products and services, applied to local demographic composition. Usage data collected by GfK MRI in a nationally representative survey of U.S. households. Forecast for 2015 created by Esri. Copyright © 2015 Esri. All rights reserved.



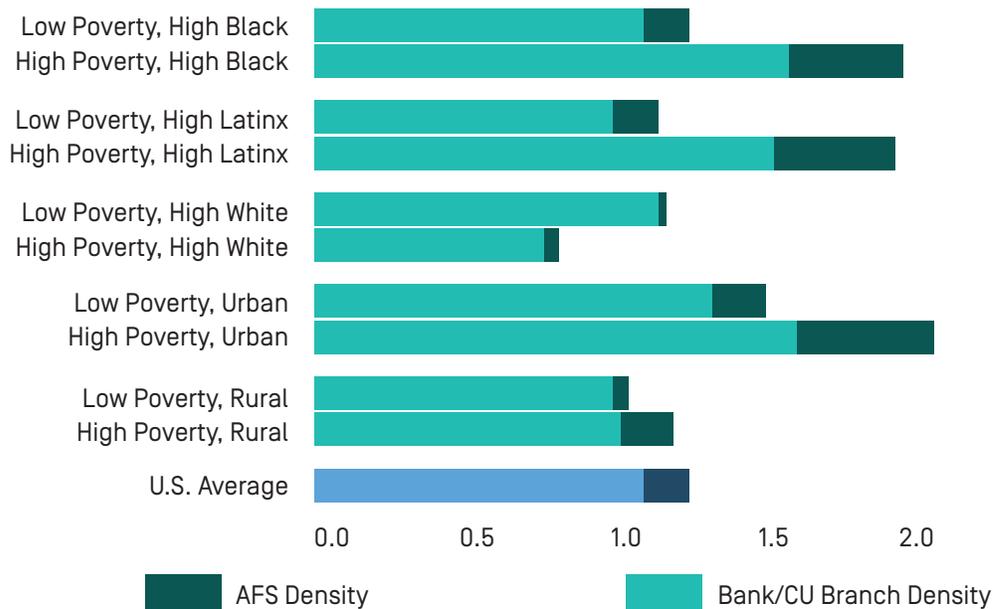
Source: Data from 2015 Esri Business Analyst Market Potential and 2010-2014 American Community Survey (ACS), adults who have used mobile banking within the preceding 12 months by zip codes. Low = lowest quartile of poverty and or race in a zip code; High = highest quartile of poverty and or race in a zip code.

Figures 9 and 10 | National Trends Indicate that the Concentration of Financial Services Reflects Communities' Fintech Needs and Equally Serves Poor, of Color, and Rural Communities

The density of banks and credit unions tends to be higher in communities where fintech is lowest, while the opposite is true for alternative financial services [AFS].



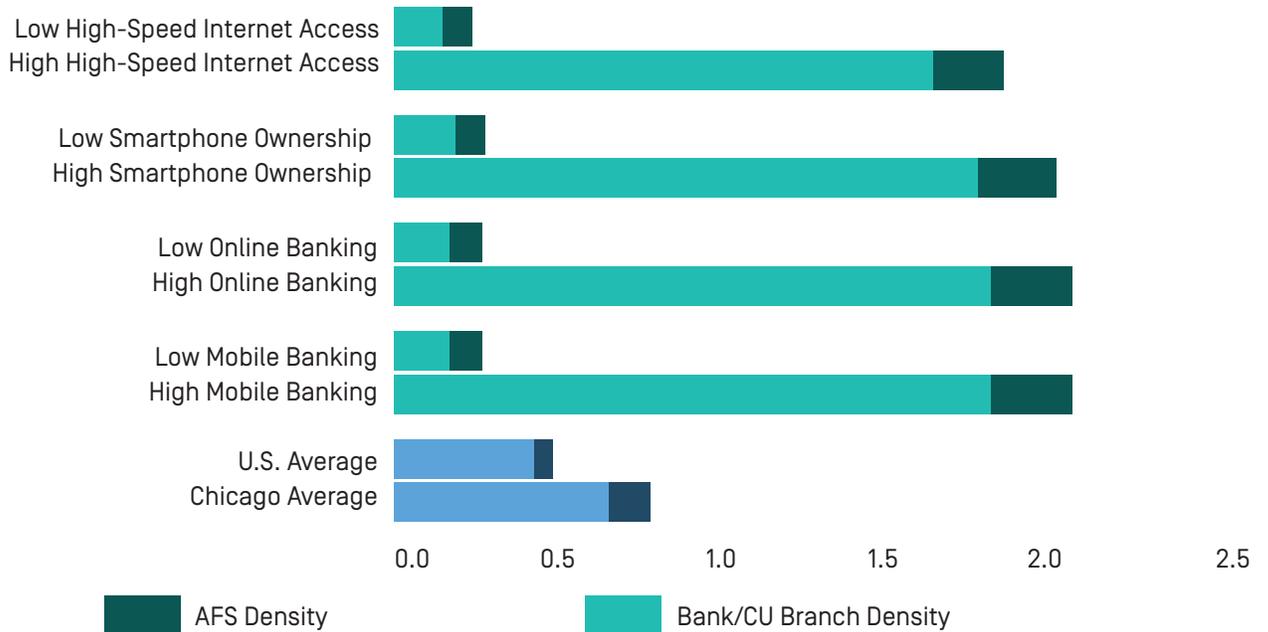
Alternative financial services [AFS] such as payday lenders and check cashers disproportionately concentrate in high-poverty communities.



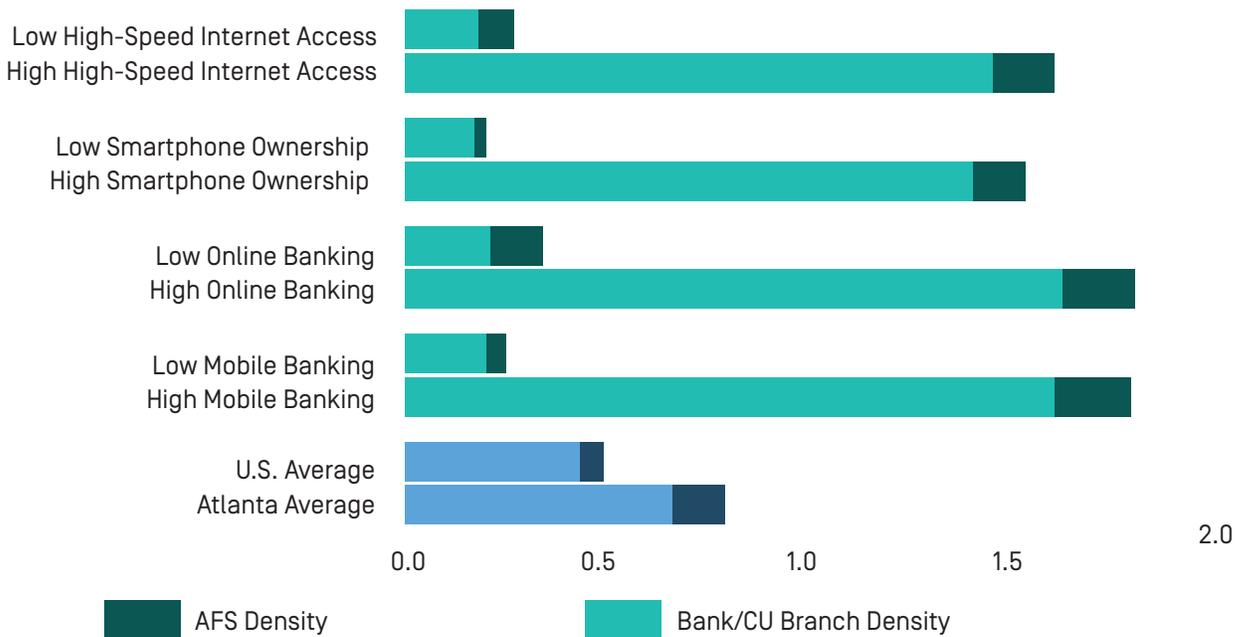
Source: Data from 2015 Esri Business Analyst Market Potential, 2014 FDIC, 2014 NCUA, 2015 InfoGroup, and 2010-2014 American Community Survey [ACS] estimates. Financial services represent number of locations per 1,000 population by zip codes. Low = lowest quartile in a zip code; High = highest quartile in a zip code.

Figures 11 and 12 | However, National Trends in Fintech and the Concentration of Financial Services do not Necessarily Reflect Local Realities

In Chicago, communities with the highest fintech rates also have the highest financial services densities. Communities with the highest rates of high-speed internet have a density of banks and credit unions that is 11 times higher than their counterparts.



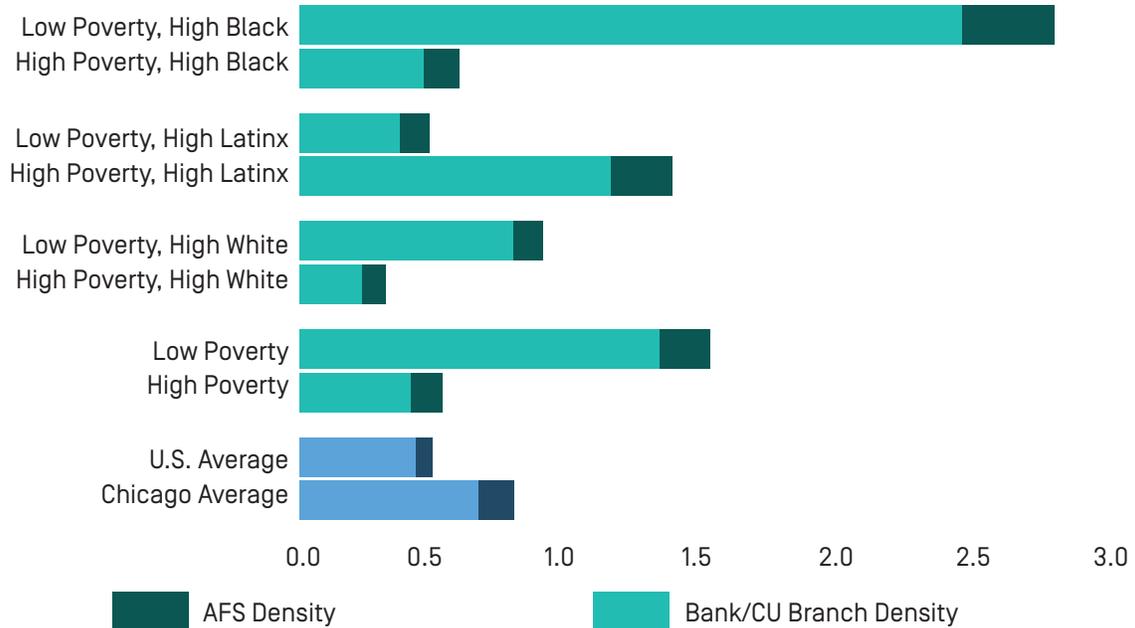
Similar patterns are visible in Atlanta, where communities with the lowest fintech rates have the lowest densities of banks and credit unions.



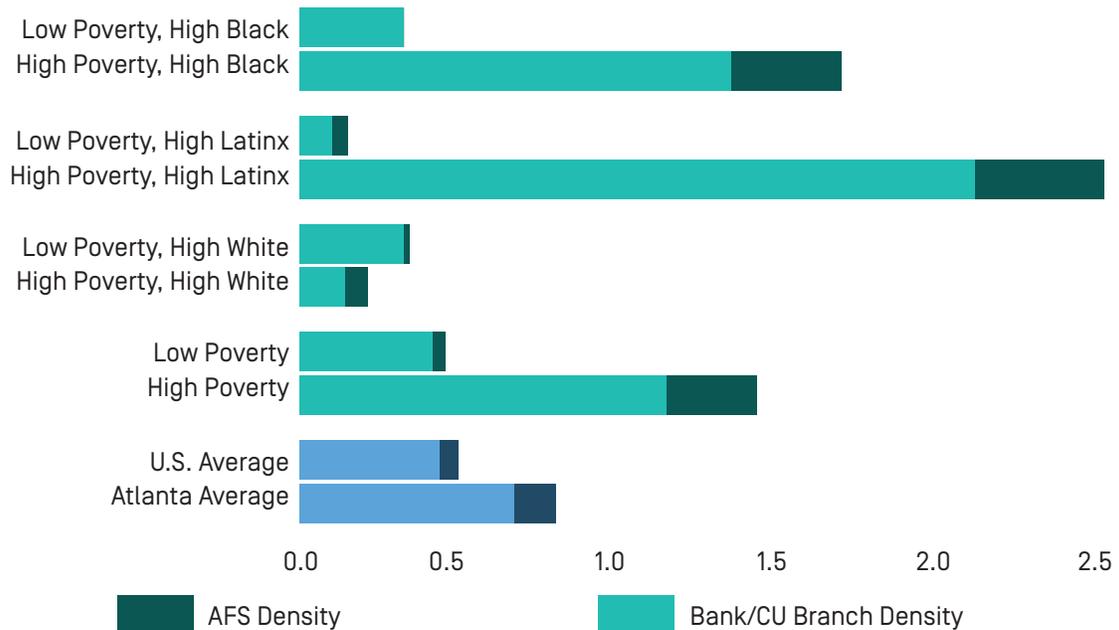
Source: Data from 2015 Esri Business Analyst Market Potential, 2014 FDIC, 2014 NCUA, 2015 InfoGroup, and 2010-2014 American Community Survey (ACS) estimates. Financial services represent number of locations per 1,000 population by zip codes. Low = lowest quartile in a zip code; High = highest quartile in a zip code.

Figures 13 and 14 | Local Communities also have Distinct Financial Services Landscapes, and Poor Communities and or Communities of Color Experience Disparities in Access

In Chicago low-poverty black communities have a density of bank or credit union branches that is 5 times higher than high-poverty black communities.



Atlanta communities that are predominantly poor and black have a disproportionately higher density of alternative financial services [AFS], even while having higher concentrations of banks and credit unions.



Source: Data from 2015 Esri Business Analyst Market Potential, 2014 FDIC, 2014 NCUA, 2015 InfoGroup, and 2010-2014 American Community Survey (ACS) estimates. Financial services represent number of locations per 1,000 population by zip codes. Low = lowest quartile in a zip code; High = highest quartile in a zip code.

POLICY SOLUTIONS CAN IMPROVE COMMUNITIES' ACCESS TO FINANCIAL SERVICES AND HELP FINTECH REACH ITS POTENTIAL

The unequal fintech landscapes across U.S. communities must be redressed in order for fintech to expand access to financial services. Policy solutions can help make sure that fintech reaches its full potential—and that underserved communities are at the forefront of the ensuing benefits. In fact, underserved communities may need more resources or investments than their counterparts in order to offset historical disadvantages. A few of these solutions include expanding affordable and reliable internet, empowering communities to identify and develop their own solutions, and learning from fintech leaders that are successfully serving communities of color and lower-income white communities.

Expand Affordable, Reliable Internet Connectivity

Expanding and scaling up internet connectivity is necessary for fintech to achieve its full potential. As financial technologies become increasingly ubiquitous and everyday economic and finance

functions depend on them, then internet access shifts from being a convenience to a right or necessity. That is, as banks and financial services scale up fintech as a primary channel for making financial transactions, then households and communities need access to this channel to fully and meaningfully participate in economic and financial life. Therefore, to the extent to which fintech can facilitate financial access, policies and programs need to ensure that households and the communities where they live have universal access to reliable and affordable internet.

Internet service costs are prohibitive for many households, making it more difficult for fintech to flourish. Households without any internet connection cite cost as a main reason for foregoing internet and/or cell phone service.^{57 58} If banks shift their customers toward online and or mobile banking, and simultaneously require a minimum balance of \$300 to \$1,500 in a basic checking or savings account then, at minimum, households could expect to allocate hundreds of dollars to their banking needs in a given month—adding in

the costs of their internet and phone bill.^{59 60 61} This amount excludes any fees or additional services, such as ATM fees or costs charged by the bank to use their online or mobile banking platforms.

Public investments or subsidies can help ensure universal access to reliable and affordable internet. One example is the Federal Communication Commission (FCC) Universal Service Fund's Lifeline program,ⁱ which is a federal program that subsidizes the costs of phone or internet service for eligible families at \$9.25 per month.ⁱⁱ The FCC adopted the Lifeline Modernization Order in 2016, adding broadband internet to the list of services that qualified for the subsidy. Unfortunately, the FCC has taken steps to dismantle the Lifeline program,ⁱⁱⁱ and it will likely exclude many of the most popular Lifeline providers from participating.^{iv} As a result of this decision, households that relied on internet or phone service through these providers will likely have to change providers in order to continue receiving the subsidy (if indeed households even have the option of switching to other Lifeline-participating internet service providers in their area, which is not guaranteed). Without public investment or subsidies through programs such as Lifeline, it will be near impossible to achieve the universal internet access that is needed for fintech to reach its potential.

In addition to dismantling the Lifeline program, the FCC recently voted to repeal its strong net neutrality rules and give greater discretion and authority to internet service providers to discriminate based on content. The potential consequences of dismantling net neutrality include undermining affordable, reliable internet access in marginalized communities and dampening fintech's expansion.⁶²

ⁱ For more information on the Lifeline program, visit here: <https://www.fcc.gov/general/lifeline-program-low-income-consumers>

ⁱⁱ There are also state-funded Lifeline programs, such as programs in Vermont and California, which are available at the following websites: <http://publicservice.vermont.gov/telecom/vusf> and <http://consumers.cpuc.ca.gov/ults/>

ⁱⁱⁱ For a description of these changes and their potential impacts, please see Wired's recent news report: <https://www.wired.com/story/ajit-pais-plan-will-take-broadband-away-from-poor-people/>

^{iv} For more information on the FCC's order, visit here: https://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db1201/FCC-17-155A1.pdf

The repeal could also lead to higher fintech prices. With no rules, ISPs can start charging banks access tolls, which may have a disproportionate impact on smaller banks, and raise fintech prices overall.

Empower Communities to Identify Their Own Solutions

Communities and their members are experts of their fintech and financial access experiences. The people living and working in communities every day often have local, historic knowledge that they can leverage for identifying the solutions that will work best for their communities. This means that community members are best positioned to assess whether, how, and for whom fintech can expand access.⁶³ They know how inclement weather and natural disasters down power lines and force bank and credit union branches to close their doors—as exemplified by Hurricane Harvey that disproportionately affected communities of color in Houston.^{64 65} Community members know how internet costs and services may vary depending on where they live, the languages spoken by residents in need of translation for mobile banking services, and whether financial services are located along common transportation routes. They have historic knowledge about their communities' experiences with financial services, such as whether communities have been exploited by financial services or knowing which financial services are trustworthy.

One option for empowering communities is to support community-owned fiber networks.⁶⁶ Community-owned fiber networks can offer fiber-to-the-home (FTTH) service and can be owned by

cities, towns, municipalities, and cooperatives.⁶⁷ Community-owned FTTH networks often offer the lowest cost entry-level broadband internet service in their communities. These networks also tend to maintain fairly consistent costs compared to private providers, which often significantly raise their prices after offering a low initial price.

Underserved communities may also need resources to enact the solutions for expanding financial access that they have already identified, as opposed to being given solutions that may not fit their needs. This is more of an approach to community empowerment than a solution to expanding financial access. Indeed, an empowering approach may include allowing communities to identify and define their financial access goals, providing communities with information about options for achieving those goals and any tradeoffs, giving communities space to move forward in the ways that they choose, and sharing any resources they need to be successful. One example comes from Offices of Financial Empowerment, which have emerged in cities around the country including Boston, Denver, New York, and San Francisco. In Richmond, Va., the city government established the Office of Community Wealth Building^v to redress poverty by removing structural barriers. One of the first offices of its kind, Richmond's Office of Community Wealth Building conducted community listening sessions and engaged local partners in order to develop their plan to address poverty—in a way that was unique to Richmond and consistent with its communities' needs.

Learn from Fintech Leaders That Are Reaching Underserved Communities

Nonprofit and community organizations are successfully leveraging fintech to serve lower-

income households and communities, and there are opportunities to learn from these efforts. For example, EARN's SaverLife^{vi} platform is expanding nationwide after a successful launch in San Francisco. SaverLife has many important, research-driven features that help lower-income households save (often lower-income households of color), and its entirely-online platform was designed specifically for households earning about \$25,000 per year. As opposed to building an online platform for the average household, SaverLife was intentionally designed for lower-income households that have the greatest need for financial access.

The National Federation of Community Development Credit Unions, in collaboration with Neighborhood Trust Financial Partners, developed a platform called Pathways.^{vii} Pathways is rolling out among credit unions in the National Federation of Community Development Credit Unions' network, which serve primarily lower-income households and communities. Through its cloud-based platform, Pathways offers its customers text-based reminders, financial counseling and coaching, and other financial transactions.

Indeed, nonprofit and community organizations can be important fintech leaders given that they are uniquely positioned to reach underserved communities.⁶⁸ Nonprofit and community organizations often know well the people and the communities that they serve. Moreover, these organizations may be trusted members of the community when other financial services like banks, credit unions, or alternative financial services are not.

^v For more information on Richmond's Office of Community Wealth Building, please visit their website: <http://www.richmondgov.com/CommunityWealthBuilding/>

^{vi} Please visit EARN's SaverLife website to learn more about the online platform: <https://www.saverlife.org/>

^{vii} Please visit the National Federation of Community Development Credit Union's website to learn more about Pathways: <http://www.cdccu.coop/initiatives/pathways-to-financial-empowerment/>

CONCLUSION

This report provides evidence of unequal fintech landscapes in U.S. communities, and demonstrates that some communities —particularly the most marginalized—are at risk of being left behind by digital and technological advancements. The

findings in this report help to explain whether and how fintech can expand access to financial services, under what conditions, and the communities that may benefit the most.

TECHNICAL APPENDIX

Data Sources

This report used several sources of data to explore the market potential or permeation of financial technologies within communities, including the 2015 Esri Business Analyst and U.S. Census Bureau’s American Community Survey (ACS).

Census tracts and zip codes served as proxies for communities. Census tracts were used to measure financial services density and distances, while zip codes were used to measure fintech. Zip codes are a limited proxy for communities given that they are units defined by the U.S. Postal Service and the use of geographic space (i.e., activity space)

is larger than smaller geographic units such as census blocks. However, given these limitations, the use of zip codes to descriptively measure fintech likely understate the extent of inequalities between communities.

Measures

Fintech

Data by zip code on market potential for high-speed internet access, smartphone ownership, and online and mobile banking were collected from 2015 Esri Business Analyst Geographic Information System (GIS). Zip codes' market potential was defined as the expected number of adults who had high-speed internet access in their homes, owned smartphones, or used online and mobile banking any time within the preceding 12 months, divided by the total number of adults. In other words, these measures represent percentages among zip codes' entire adult population as opposed to smaller, defined segments of the population (e.g., mobile banking use among adults that have both smartphones and bank accounts).

Financial Services Distances and Densities

Financial services data were collected through several sources. The Federal Deposit Insurance Corporation (FDIC) and National Credit Union Association (NCUA) provided data for bank and credit union branch locations, including their street addresses and zip codes. Bank branch locations were collected through the FDIC's summary of deposits, which provided quarterly information on all bank and bank branch locations. Credit union branch locations were collected through the NCUA call reports, which provided quarterly information on all credit union and credit union branch locations. Bank and credit union branch location data were retrieved from the first quarter in 2014.

Data by zip code on alternative financial service locations and market potential were collected from 2015 Esri Business Analyst Geographic Information

System (GIS). Twelve codes from the North American Industry Classification Systems (NAICS) were used to identify alternative financial services and included auto title loan, payday loan, check cashing, tax refund, pawn shop, and rent-to-own services.

Distance measures were calculated within census tracts. To begin, financial services were geolocated within census tracts and census tract centroids were used to calculate distances in miles to the nearest financial services.

Density measures were calculated within zip codes by aggregating the locations of bank and credit union branches and alternative financial services and calculating their total numbers of locations per 1,000 population. Zip codes with no matching density measure were considered to not have any post offices, bank and credit union branches, or alternative financial services within their communities. Densities were capped at the 99th percentile.

Community Demographics

Community demographic data were collected from the U.S. Census Bureau American Community Survey's (ACS) 2010 to 2014 five-year estimates. These data provided aggregate population estimates by zip codes and census tracts. These variables measured the percent of the population within a zip code or census tract that was living in poverty and represented different racial groups. These variables also indicated whether the zip code or census tract was in an urban area or cluster or a rural area.

Endnotes

- 1 Federal Deposit Insurance Corporation. “2015 National Survey of Unbanked and Underbanked Households,” 2016. <https://www.fdic.gov/householdsurvey/2015/2015report.pdf>
- 2 Dewees, S., and G. Mottola. “Race and Financial Capability in America: Understanding the Native American Experience.” FINRA Investor Education Foundation and First Nations Development Institute, 2017. <http://www.usfinancialcapability.org/downloads/Native-American-Experience-Fin-Cap.pdf>
- 3 Federal Deposit Insurance Corporation. “2015 National Survey of Unbanked and Underbanked Households,” 2016. <https://www.fdic.gov/householdsurvey/2015/2015report.pdf>
- 4 Despard, M., and T. Friedline. “Do Metropolitan Areas Have Equal Access to Banking? A Geographic Investigation of Financial Services Availability.” University of Kansas, Center on Assets, Education and Inclusion, 2017. https://www.newamerica.org/documents/1911/Do_Metropolitan_Areas_have_Equal_Access_to_Banking.pdf
- 5 Despard, M., and T. Friedline. “Do Metropolitan Areas Have Equal Access to Banking? A Geographic Investigation of Financial Services Availability,” 2017.
- 6 Friedline, T., and M. Despard. “Mapping Financial Opportunity.” New America, 2017. <https://www.newamerica.org/in-depth/mapping-financial-opportunity>
- 7 Jorgensen, M., and R. Akee. “Access to Capital and Credit in Native Communities: A Data Review, Digital Version.” Native Nations Institute, 2017. http://nni.arizona.edu/application/files/6514/8642/4513/Accessing_Capital_and_Credit_in_Native_Communities_A_Data_Review.pdf
- 8 Morgan, D., M. Pinkovskiy, and B. Yang. “Banking Deserts, Branch Closings, and Soft Information.” Federal Reserve Bank of New York, Liberty Street Economics., 2016. <http://libertystreeteconomics.newyorkfed.org/2016/03/banking-deserts-branch-closings-and-soft-information.html>
- 9 DeYoung, Robert, William C. Hunter, and Gregory F. Udell. “The Past, Present, and Probable Future for Community Banks.” Journal of Financial Services Research 25, no. 2/3 (April 2004): 85–133. <https://doi.org/10.1023/B:FINA.0000020656.65653.79>
- 10 Morgan State University. “Understanding Life in Financial Deserts.” Morgan State University. “Understanding Life in Financial Deserts.” Morgan State School of Community Health and Policy, Earl G. Graves School of Business and Management, 2017. https://www.masteryourcardusa.org/wp-content/uploads/2017/02/MSU-Understanding-Life-in-Financial-Deserts_digital.pdf
- 11 Friedline, T., M. Despard, R. Eastlund, and N. Schuetz. “Are Banks’ Entry-Level Checking Accounts Safe and Affordable?” University of Michigan, Center on Assets, Education and Inclusion, 2017. https://www.newamerica.org/documents/1913/Are_Banks_Entry-Level_Checking_Accounts_Safe_and_Affordable.pdf
- 12 Friedline, T., Stacia West, Nehemiah Rosell, Joyce Serido, and Soyeon Shim. “Do Community Characteristics Relate to Young Adult College Students’ Credit Card Debt? The Hypothesized Role of Collective Institutional Efficacy.” American Journal of Community Psychology 59, no. 1–2 (March 2017): 80–93. <https://doi.org/10.1002/ajcp.12116>
- 13 Friedline, T., and Nancy Kepple. “Does Community Access to Alternative Financial Services Relate to Individuals’ Use of These Services? Beyond Individual Explanations.” Journal of Consumer Policy 40, no. 1 (March 2017): 51–79. <https://doi.org/10.1007/s10603-016-9331-y>
- 14 Miriam Bruhn and Inessa Love, “The Real Impact of Improved Access to Finance: Evidence from Mexico: Impact of Access to Finance on Poverty,” The Journal of Finance 69, no. 3 (June 2014): 1347–76, <https://doi.org/10.1111/jofi.12091>
- 15 Celerier, C., and A. Matray. “Bank Branch Supply and the Unbanked Phenomenon.” Zurich, Switzerland: University of Zurich, 2016. http://www8.gsb.columbia.edu/faculty-research/sites/faculty-research/files/finance/Finance%20Seminar/Fall%202016/Unbanked_October2016.pdf
- 16 Brown, J., and J.A. Cookson. Heimer, R. “Growing up without Finance.” Iowa State University, 2016. <http://foster.uw.edu/wp-content/uploads/2016/07/summer-finance-conf-2-3-brown-cookson-and-heimer-p.pdf>

- 17 Friedline, T., Stacia West, Nehemiah Rosell, Joyce Serido, and Soyeon Shim. "Do Community Characteristics Relate to Young Adult College Students' Credit Card Debt? The Hypothesized Role of Collective Institutional Efficacy." *American Journal of Community Psychology* 59, no. 1–2 (March 2017): 80–93. <https://doi.org/10.1002/ajcp.12116>
- 18 JLL. "Bank Branches: Navigating a Sea of Industry Change," 2017. <http://www.us.jll.com/united-states/en-us/Research/US-Banking-Outlook-2017-JLL.pdf>
- 19 Ensign, R.L., C. Rexrode, and C. Jones. "Banks Shutter 1,700 Branches in Fastest Decline on Record." *The Wall Street Journal*, 2018. <https://www.wsj.com/articles/banks-double-down-on-branch-cutbacks-1517826601>
- 20 Apgar, W., and C. Herbert. "Subprime Lending and Alternative Financial Service Providers: A Literature Review and Empirical Analysis." Washington, D.C.: US Department of Housing and Urban Development, n.d. <http://www.huduser.gov/Publications/pdf/sublending.pdf>
- 21 Federal Deposit Insurance Corporation. "Alternative Financial Services: A Primer," 2009. https://www.fdic.gov/bank/analytical/quarterly/2009_vol3_1/AltFinServicesprimer.html
- 22 Federal Deposit Insurance Corporation. "Alternative Financial Services: A Primer," 2009.
- 23 Celerier, C., and A. Matray. "Bank Branch Supply and the Unbanked Phenomenon." Zurich, Switzerland: University of Zurich, 2016. http://www8.gsb.columbia.edu/faculty-research/sites/faculty-research/files/finance/Finance%20Seminar/Fall%202016/Unbanked_October2016.pdf
- 24 Federal Deposit Insurance Corporation. "An Examination of the Banking Crises of the 1980s and Early 1990s," 1997.
- 25 Hanc, G. "The Future of Banking in America: Summary and Conclusions." Washington, D.C.: Federal Deposit Insurance Corporation, 2004.
- 26 Kashian, Russell, and Robert Drago. "Minority-Owned Banks and Bank Failures After the Financial Collapse: Minority-Owned Banks and Bank Failures." *Economic Notes* 46, no. 1 (February 2017): 5–36. <https://doi.org/10.1111/ecno.12068>
- 27 Tossaint-Comeau, M., and R. Newberger. "Minority-Owned Banks and Their Primary Local Market Areas." Chicago, IL.: The Federal Reserve Bank of Chicago., 2017. <https://www.chicagofed.org/publications/economic-perspectives/2017/4>
- 28 Apgar, W., and C. Herbert. "Subprime Lending and Alternative Financial Service Providers: A Literature Review and Empirical Analysis." Washington, D.C.: US Department of Housing and Urban Development, n.d. <http://www.huduser.gov/Publications/pdf/sublending.pdf>
- 29 Caskey, J. "Fringe Banking: Check Cashing Outlets, Pawnshops, and the Poor." New York: Russell Sage Foundation, 1994.
- 30 Apgar, W., and C. Herbert. "Subprime Lending and Alternative Financial Service Providers: A Literature Review and Empirical Analysis."
- 31 Federal Deposit Insurance Corporation. "Alternative Financial Services: A Primer."
- 32 Faber, Jacob W. "Cashing in on Distress: The Expansion of Fringe Financial Institutions During the Great Recession." *Urban Affairs Review*, December 29, 2016, 107808741668403. <https://doi.org/10.1177/1078087416684037>
- 33 Fowler, Christopher S., Jane K. Cover, and Rachel Garshick Kleit. "The Geography of Fringe Banking." *Journal of Regional Science* 54, no. 4 (September 2014): 688–710. <https://doi.org/10.1111/jors.12144>
- 34 Meyer, Harriet. "The smartphone app revolutionizing foreign currency exchange." *The Guardian*. 2016. <https://www.theguardian.com/small-business-network/2016/may/12/the-smartphone-app-revolutionising-foreign-currency-exchange>
- 35 Demirgüç-Kunt, A., and L. Klapper. "Measuring Financial Inclusion: The Global Findex Database (Policy Research Working Paper No. 6025)." The World Bank, Development Research Group, 2012.
- 36 "How Financial Technology Is Changing Financial Inclusion." Washington, D.C.: Accion, 2017. <https://www.accion.org/fintech>
- 37 Kelly, Ferenzky D., and A. McGrath. "How Financial Institutions and Fintechs Are Partnering for Inclusion: Lessons from the Frontiers." Institute of

- International Finance and Accion, 2017. http://www.centerforfinancialinclusion.org/storage/CFI_IIF_FI_Fintech_Partnerships_Report_2017.07.pdf
- 38 Economist Intelligence Unit. “Global Microscope 2016: The Enabling Environment for Financial Inclusion.” Sponsored by MIF/IDB, Accion and the Metlife Foundation. EIU, 2016. http://www.centerforfinancialinclusion.org/storage/documents/EIU_Microscope_2016_English_web.pdf
- 39 Board of Governors of the Federal Reserve System “Consumers and Mobile Financial Services.” Board of Governors of the Federal Reserve System, 2016. <https://www.federalreserve.gov/econresdata/consumers-and-mobile-financial-services-report-201603.pdf>
- 40 Board of Governors of the Federal Reserve System. “Consumers and Mobile Financial Services.”
- 41 Smith, A. “US Smartphone Use in 2015.” Pew Research Center, 2015. <http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015>
- 42 World Bank Group. “Digital Dividends: World Development Report 2016.” The World Bank, International Bank for Reconstruction and Development, 2016.
- 43 Mills, G., and J. Amick. “Can Savings Help Overcome Income Instability?” The Urban Institute, 2010. http://beta.accessstofinancialsecurity.org/sites/default/files/CanSavingsHelpOvercomeIncomeInstability_UrbanInstitute_1.pdf
- 44 PolicyMap. “Availability of Residential Wired Broadband Internet Access in 2016,” 2016.
- 45 Prieger, James E., and Wei-Min Hu. “The Broadband Digital Divide and the Nexus of Race, Competition, and Quality.” *Information Economics and Policy* 20, no. 2 (June 2008): 150–67. <https://doi.org/10.1016/j.infoecopol.2008.01.001>
- 46 Gould-Werth, A., and K. Seefeldt. “Material Hardships during the Great Recession: Findings from the Michigan Recession and Recovery Study.” University of Michigan, National Poverty Center, 2012. http://www.npc.umich.edu/publications/policy_briefs/brief35/policybrief35.pdf
- 47 Heflin, Colleen, Andrew S. London, and Ellen K. Scott. “Mitigating Material Hardship: The Strategies Low-Income Families Employ to Reduce the Consequences of Poverty*.” MITIGATING MATERIAL HARDSHIP.” *Sociological Inquiry* 81, no. 2 (May 2011): 223–46. <https://doi.org/10.1111/j.1475-682X.2011.00369.x>
- 48 Gould-Werth, A., and K. Seefeldt. “Material Hardships during the Great Recession: Findings from the Michigan Recession and Recovery Study.”
- 49 Edin, Kathryn, and H. Luke Shaefer. \$2.00 a Day: Living on Almost Nothing in America, 2016.
- 50 Morduch, Jonathan, and Rachel Schneider. *The Financial Diaries: How American Families Cope in a World of Uncertainty*. Princeton, New Jersey: Princeton University Press, 2017.
- 51 Matheny, W., S. O’Brien, and C. Wang. “The State of Cash: Preliminary Findings from the 2015 Diary of Consumer Payment Choice.” Federal Reserve Bank of San Francisco, 2016. <https://www.frbsf.org/cash/publications/fed-notes/2016/november/state-of-cash-2015-diary-consumer-payment-choice>
- 52 Federal Deposit Insurance Corporation. “2015 National Survey of Unbanked and Underbanked Households,” 2016. <https://www.fdic.gov/householdsurvey/2015/2015report.pdf>
- 53 O’Neil, Cathy. *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy*. First edition. New York: Crown, 2016.
- 54 Pasquale, Frank. *The Black Box Society: The Secret Algorithms That Control Money and Information*. Cambridge: Harvard University Press, 2015.
- 55 Sweeney, Latanya. “Discrimination in Online Ad Delivery.” *Communications of the ACM* 56, no. 5 (May 1, 2013): 44. <https://doi.org/10.1145/2447976.2447990>
- 56 Chang, A. “How the Internet Keeps Poor People in Poor Neighborhoods.” *Vox*, 2016. <https://www.vox.com/2016/12/12/13867692/poor-neighborhoods-targeted-ads-internet-cartoon>
- 57 Anderson, Monica. “Digital Divide Persists Even as Lower-Income Americans Make Gains in Tech Adoption.” Washington, D.C.: Pew Charitable Trusts, Research Center., 2017. <http://www.pewresearch.org/fact-tank/2017/03/22/digital-divide-persists-even-as-lower-income-americans-make-gains-in-tech-adoption>
- 58 US Department of Commerce. “Exploring the Digital Nation: America’s Emerging Online Experience.” National

Telecommunications and Information Administration, Economics and Statistics Administration, 2013. http://www.ntia.doc.gov/files/ntia/publications/exploring_the_digital_nation_-_americas_emerging_online_experience.pdf

59 Federal Deposit Insurance Corporation. “2011 Survey of banks’ efforts to serve the unbanked and underbanked.” 2012. <https://www.fdic.gov/unbankedsurveys/>

60 Friedline, T. “Children as Potential Future Investors: Do Mainstream Banks Augment Children’s Capacity to Save?” Lawrence, KS: University of Kansas, School of Social Welfare, Center on Assets, Education and Inclusion, 2013.

61 Friedline, T., M. Despard, R. Eastlund, and N. Schuetz. “Are Banks’ Entry-Level Checking Accounts Safe and Affordable?” 2017.

62 Fung, B. “FCC Plan Would Give Internet Providers Power to Choose the Sites Customers See and Use.” The Washington Post, 2017. https://www.washingtonpost.com/news/the-switch/wp/2017/11/21/the-fcc-has-unveiled-its-plan-to-rollback-its-net-neutrality-rules/?utm_term=.a04ab16a41b5

63 Morgan State University. “Understanding Life in Financial Deserts,” 2017.

64 Misra, T. “A Catastrophe for Houston’s Most Vulnerable People.” The Atlantic, 2017. <https://www.theatlantic.com/news/archive/2017/08/a-catastrophe-for-houstons-most-vulnerable-people/538155>

65 Byrd, A. “Why Texan Communities of Color Are Particularly Vulnerable to Hurricane Harvey.” Colorlines, 2017. <https://www.colorlines.com/articles/why-texan-communities-color-are-particularly-vulnerable-hurricane-harvey>

66 Talbot, D., K. Hesekiel, and D. Kehl. “Community-Owned Fiber Networks: Value Leaders in America.” Harvard University, 2018. <https://dash.harvard.edu/handle/1/34623859>

67 Talbot, D., K. Hesekiel, and D. Kehl. “Community-Owned Fiber Networks: Value Leaders in America.” Harvard University, 2018. <https://dash.harvard.edu/handle/1/34623859>

68 Gorham, L., and J. Dorrance. “Catalyzing Inclusion: Financial Technology and the Underserved.” Center for Community Capital, 2017. <https://communitycapital.unc.edu/files/2017/10/CCC-FinTech-Report-2017-1.pdf>



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