

ECONOMIC COMMENTARY

Unbanked in America: A Review of the Literature

Paola Boel and Peter Zimmerman

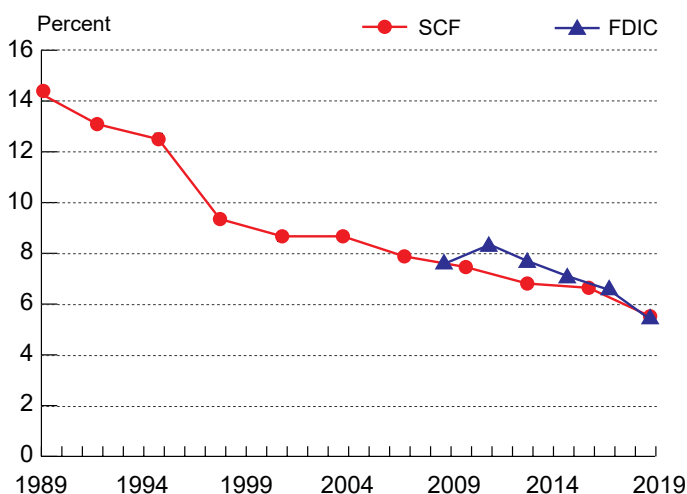
We review the recent literature on the causes and consequences of financial exclusion—that is, the lack of bank account ownership—in the United States. We examine existing work in a range of fields, including economics, finance, public policy, and sociology.

Introduction

In 2019, 5.4 percent of US households were unbanked, meaning that no one in the household had a checking or savings account at a bank or credit union (FDIC 2020).¹ The likelihood of being unbanked was even higher for some segments of the population, such as low-income and racial and ethnic minority households.² As shown in Figure 1, there has been a general improvement over time. Nonetheless, the United States still has a lower rate of access to banking services than most other developed countries (Demirgüç-Kunt et al., 2018).

Our aim in this *Commentary* is to understand the reasons for financial exclusion in the United States and its possible consequences. We do so by reviewing recent literature on access to transaction accounts in the United States. This literature, which began with the seminal work of Caskey (1994, 1997, 2002), has grown through contributions from researchers in different disciplines. Given this multidisciplinary effort, we draw from a range of fields, including economics, finance, public policy, and sociology. Much of the existing work focuses on the reasons for being unbanked, bank access for racial and ethnic minority households, and the consequences of financial exclusion on payments. We structure our *Commentary* around these same topics and use data from surveys to illustrate related issues.

Figure 1: Household Unbanked Rate in the United States by Year



Source: FDIC (2020) and Survey of Consumer Finances (SCF)

Note: The FDIC defines unbanked households as those without a checking or savings account at a bank or credit union. When using SCF data, we define unbanked households as those without a checking or savings or money market account. The SCF series for the unbanked rate goes back further in time, but the FDIC survey has a much larger sample size and is run more frequently.

Paola Boel is a senior research economist at the Federal Reserve Bank of Cleveland. Peter Zimmerman is a research economist at the Federal Reserve Bank of Cleveland. The authors thank Cornelius Johnson and Jordan Manes for excellent research assistance and Ken Isaacson and Ned Prescott for helpful comments. The views authors express in *Economic Commentary* are theirs and not necessarily those of the Federal Reserve Bank of Cleveland or the Board of Governors of the Federal Reserve System

Economic Commentary is published by the Research Department of the Federal Reserve Bank of Cleveland. *Economic Commentary* is also available on the Cleveland Fed's website at www.clevelandfed.org/research. To receive an e-mail when a new *Economic Commentary* is posted, subscribe at www.clevelandfed.org/subscribe-EC.

Reasons for Not Having a Bank Account

The 2019 Federal Deposit Insurance Corporation (FDIC) Survey of Household Use of Banking and Financial Services asks households about their reasons for not having a bank account. As shown in Table 1, the most common answers focus on the costs of maintaining a bank account, including meeting minimum balance requirements and paying fees for overdrafts and other services. Indeed, according to Pew Center on the States (2012), about one-third of overdraft users close their accounts because of high fees.³ Because most of the literature so far has examined the effects of overdraft fees, problems with previous bank accounts, and distance from bank locations, we focus on these topics. A lack of trust in banks and a desire for privacy are also commonly cited by FDIC survey respondents, but we have found less literature on these issues.

Costs of having a bank account

There is considerable literature assessing the consequences of overdraft fees for bank account ownership. However, the overall effect of overdraft charges on financial inclusion is unclear. On the one hand, overdraft fees can discourage individuals from opening and maintaining bank accounts, excluding them from the financial system. On the other hand, revenue streams from fees may make low-balance accounts more profitable and thus incentivize banks to open accounts for a wider range of customers.

Overdraft fees have not always been common in the United States. Checking account overdraft fees as a business model became prevalent only in the 1980s. Berre, Blickle, and Chakrabarti (2021) discuss how, in the late 1980s, increased computing power and growing sophistication in cost accounting made it possible for banks to categorize individual customers based on their profitability. Banks began to charge higher fees for account services and overdrafts so that even low-balance accounts would be profitable on a stand-alone basis. This approach, in turn, had implications for financial inclusion. Higher fees make it rational for some low- and moderate-income (LMI) customers to close their accounts. This effect of higher fees on account closures is likely to be stronger during economic downturns, when LMI customers may need to watch their spending more carefully.

Table 1: Reasons among the Unbanked for Not Having a Bank Account, 2019 (by percentage)

	Cited reason	Main reason
Cannot meet minimum balance requirements	48.9	29.0
Lack of trust in banks	36.3	16.1
Desire for more privacy	36.0	7.1
High bank account fees	34.2	7.3
Unpredictable bank account fees	31.3	1.6
Identification, credit, or former bank account problems	20.5	8.0
Banks do not offer needed products and services	19.6	1.9
Bank locations are inconvenient	14.1	2.2
Bank hours are inconvenient	13.0	2.4
Other reasons	17.8	13.9
No cited reason	10.4	10.4

Source: FDIC (2020)

Notes: The FDIC survey asked unbanked households about their reasons for not having a bank account. Households were asked to cite all reasons that apply and then to choose the main reason.

Servon (2017) provides an in-depth report on the banking experience for low-income individuals and families in the United States. She concludes that many find it difficult to predict when banks will charge them a fee and how much the fee might be. This lack of clarity can be costly because it makes financial planning difficult and penalizes mistakes. It can also induce people to use alternative financial services such as check cashers.⁴ Fees tend to be more transparent at check cashers than at banks, but also substantially higher. Nevertheless, Servon reports that for many lower-income families, the immediate availability of funds provided by check cashers—as well as the greater transparency and more personal service due to recurrent customer–teller interactions—can offset their higher fees. Using unique survey data, Rhine, Greene, and Toussaint-Comeau (2006) find evidence that a consumer’s decision to be unbanked is not made independently from the decision to obtain financial services from check cashers.

Many of Servon’s conclusions are supported by Barr (2012). Working with the University of Michigan, Barr designed and conducted a unique survey of more than a thousand LMI families in the Detroit area between 2005 and 2006. About 30 percent of the adults surveyed were unbanked. The study finds that LMI households face high monetary costs from using alternative financial services, including high fees and a lack of saving opportunities. They are also confronted with substantial nonpecuniary costs; for example, according to Barr, they have to wait in line to pay bills in person and may suffer strained relationships with friends and family as they ask for help with borrowing needs. Survey interviewers asked unbanked respondents about potential changes that could make them more likely to open a bank account. The most common answers were lower and less confusing fees, more convenient bank hours and locations, lower minimum balance requirements, and the ability to get faster access to new deposits.

Even though overdraft fees can be expensive for consumers, there is some evidence that they can help improve access to bank accounts. Dlugosz, Melzer, and Morgan (2021) analyze whether overdraft fee restrictions affect bank account ownership. They study the consequences of a 2001 ruling by the Office of the Comptroller of the Currency (OCC) that relaxed state-imposed overdraft fee limits for national banks. The authors identify this as a quasi-natural experiment because the fee caps varied by state and over time. This setup allows them to isolate the impact of fee caps on financial inclusion. They find evidence that when fee caps were abolished, national banks increased overdraft fees and expanded the supply of overdraft credit. Yet other costs came down; in particular, national banks lowered minimum balance requirements by at least 25 percent relative to the minimums at state banks, which were not subject to the OCC ruling. In addition, in states where national banks are exempted from overdraft fee caps, the

share of LMI households with a checking account rose by 10 percent relative to shares in other states after the fee cap exemption. This rise in inclusion persisted for several years. These results suggest that overdraft fee caps may hamper financial inclusion by making it less profitable for banks to serve LMI customers.

Customers’ overdraft fee costs can also depend on how banks order the processing of transactions. Because a bank can charge additional overdraft fees every time it processes a transaction on an already overdrawn account, it can maximize overdraft revenue by processing the largest transactions first. This is called “high-to-low reordering.”⁵ Pew Charitable Trusts (2016) examines the practices of 50 of the largest banks and finds that high-to-low reordering is widespread. The study recommends that banks should process transactions either chronologically or from low to high. However, the benefits of a mandated change in ordering are not clear because reducing banks’ revenues can make them more reluctant to provide low-balance accounts. Di Maggio, Ma, and Williams (2020) study the effect of high-to-low reordering on demand and supply for banking services. They examine a series of lawsuits that challenged the practice of high-to-low reordering at multiple US banks and find that banning it causes a permanent decline in borrowing from nonbanks such as payday lenders. They also find that affected households significantly increase their consumption of certain durable goods and of essential nondurable goods. However, the paper also finds that banks are significantly more likely to close their branches after being required to stop the practice of high-to-low reordering. Furthermore, such closures appear to be concentrated in low-income zip codes and in areas where banks already have fewer branches. Collectively, these results suggest that high-to-low reordering bans make it less likely that households borrow from payday lenders in the short run, but they can also mean less access to traditional banking services in the longer run, especially for low-income individuals.

Overall, the existing literature provides evidence that overdraft fees can be costly for low-income individuals. Prescott and Tatar (1999) argue that the costs of an account might even exceed the benefits for many unbanked households. Speedier payment settlement would likely help, as customers would then get faster access to funds rather than potentially waiting days for checks or electronic transfers to clear (Brainard 2020). Real-time payments could also make bank account management easier, since people would know instantly how much money they have available. Ultimately, however, low-balance accounts might not be profitable for banks. Indeed, the studies we reviewed show that when fees are constrained—for example, by overdraft caps or bans on high-to-low reordering—banks compensate for their lost revenue by imposing unfavorable terms for low-balance account holders, a situation which reduces access in the longer term.

Former bank account problems

Overdraft fees may not only cause households to forgo a bank account, but they can also have implications for involuntary closure of checking accounts, that is, account closures initiated by the bank. As discussed by Campbell, Martínez-Jerez, and Tufano (2012), virtually every large US bank uses data from ChexSystems, a banking reporting agency that collects information about depositors' problems with bank accounts, including unpaid overdraft fees, checks bounced at retailers, and suspected fraud. Banks use these data to assess the riskiness of a customer and, in turn, to determine when an existing account should be closed and whether an applicant can open a checking account or obtain a debit card. This means that problems reported on ChexSystems can have long-term consequences for one's ability to open a bank account.⁶ Indeed, there is strong anecdotal evidence that a customer's being reported on ChexSystems can lead banks to deny that customer a checking account or to offer that customer only high-cost or limited-service accounts (see, for example, Servon, 2017).

There is, however, little formal research on how banks use ChexSystems data to determine who should be able to open an account. Campbell, Martínez-Jerez, and Tufano (2012) study ChexSystems data to identify the characteristics of people whose bank accounts are closed involuntarily. The authors find that involuntary closures are more frequent in US counties with overall lower education levels, lower wealth levels, higher unemployment rates, and a larger fraction of single mothers. Closures are also higher in communities with high property-crime rates, low electoral participation, and a high availability of payday lending credit. Bank characteristics also matter: counties with more competitive banking markets and more multimarket banks experience higher closure rates compared to counties with less banking competition and a higher presence of local banks. This difference may arise because local banks have better customer knowledge and so are less likely to accept applications from risky customers—and more likely to show forbearance—compared to bigger banks that are less informed about the local market and have fewer vested interests in a particular community. Also, banks appear more willing to accept risky clients when they face increased local competition for customers, a situation which can, in turn, lead to higher account closure activity. The latter suggests that an increase in involuntary account closures does not necessarily imply less financial inclusion.

Location of bank branches

In recent years, concerns have been raised about the effects that bank branch closures may have on financial inclusion (see Board of Governors of the Federal Reserve System, 2019). There is, however, no consensus in the academic literature regarding whether proximity to bank branches promotes financial inclusion.

Goodstein and Rhine (2017) examine the influence of geographic proximity to a financial institution on a household's joint decision about whether to have a bank account and whether to use nonbank financial transaction services. Using 2011 data from the FDIC and US Census Bureau, they find that a household with reasonable geographic access to bank branches is more likely to have a bank account and is less likely to use nonbank financial transaction products, though the magnitudes are fairly modest. For lower-income households, the positive effect of bank branch proximity on bank account ownership is somewhat larger. However, the importance of branch proximity is less than that associated with income, education, or race.

In contrast, Célerier and Matray (2019) find that an expansion of bank branches driven by a supply shock increases financial inclusion. They study the consequences of the passage of the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994, which made bank branching across US states legal but also gave states the right to erect barriers to the entry of interstate branches. States lifted these barriers in a staggered way in the following years. Using FDIC data to identify the location of bank branches and using the Survey of Income and Program Participation (SIPP) to identify both banked and unbanked low-income households for the period 1993 to 2005, they find that the density of bank branches increases by around 20 percent in poor counties after a state fully deregulates.⁷ This increased presence of bank branches in turn leads to a 4 percent increase in the likelihood that a low-income household is financially included.

Changes in the structure of banking in recent decades may mean that physical proximity to a bank branch is less important now than in the past and that access to the internet is correspondingly more important. For example, the rise of online banking, mobile phone ownership, and new entry from fintech (financial technology) firms has made geographic proximity less important. Table 2 shows how mobile banking has grown since 2015, while physical visits to banks have fallen. Furthermore, Figure 2 demonstrates a positive association between access to the internet and to banking, suggesting the two issues are likely connected. For example, in 2019, 87 percent of banked households had access to a smartphone, compared to only 64 percent of unbanked households.

In today’s financial system, internet access may well be a bigger factor in financial inclusion than physical access to a bank branch. Friedline and Chen (2021) investigate associations between the racial makeup of communities and rates of fintech penetration, measured as rates of high-speed internet access, smartphone ownership, and online and mobile banking. Using 2015 data from high-poverty zip codes, they find that low-income communities of color have the lowest fintech adoption rates. Friedline, Narahariseti, and Weaver (2020) find similar results for rural communities: low-income rural communities of color have the lowest fintech adoption rates.

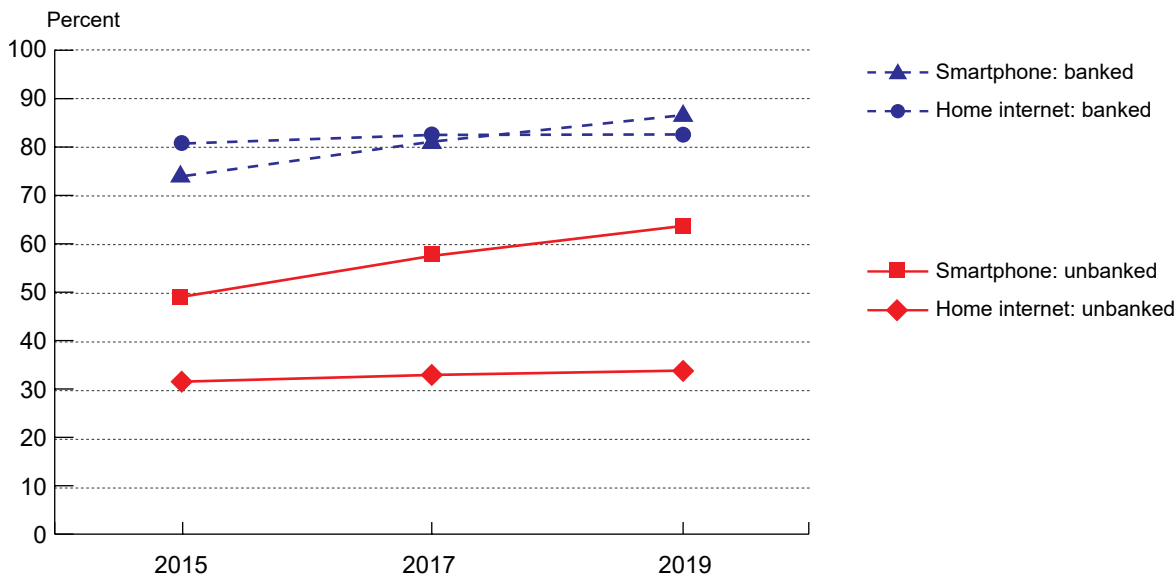
Table 2: Primary Method Used to Access Bank Account (percentage of banked households)

Year	Bank teller	ATM/Kiosk	Telephone	Online	Mobile	Other
2015	28.2	21.0	3.0	36.9	9.5	0.9
2017	24.3	19.9	2.9	36.0	15.6	0.7
2019	21.0	19.5	2.4	22.8	34.0	0.3

Source: FDIC (2020)

Notes: Data refer to the most common method used to access bank accounts in the previous 12 months: visiting a bank teller, using an ATM or bank kiosk, calling the bank on a telephone, using a computer or tablet (that is, online banking), using a mobile phone app, or using some other method.

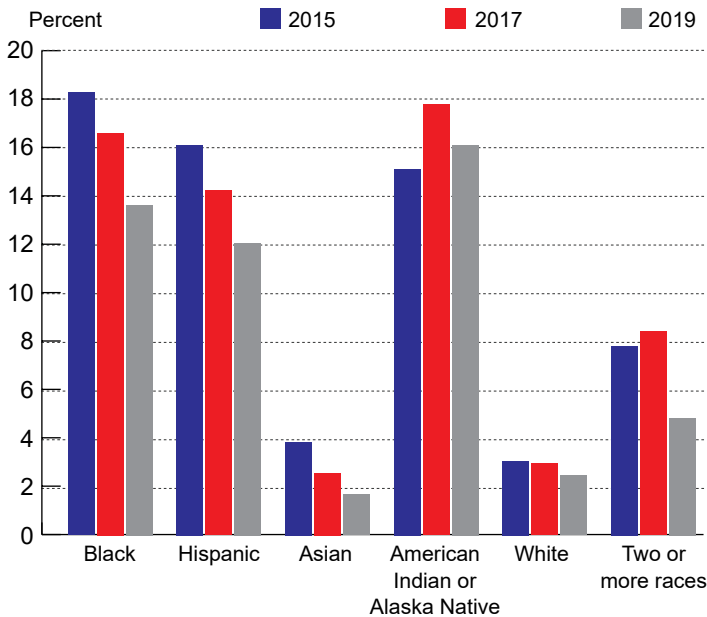
Figure 2: Smartphone and Home Internet Access by Bank Account Ownership



Source: FDIC (2020)

Note: The FDIC survey asked each household if members owned or had regular access to a smartphone and if they had internet access at home using a desktop, laptop, or tablet computer.

Figure 3: Unbanked Rate by Race or Ethnicity, Selected Groups



Source: FDIC (2020)

Note: We follow the FDIC classifications for race and ethnicity.

Access to Bank Accounts for Racial and Ethnic Minority Households

According to the FDIC (2020), US households belonging to racial and ethnic minority groups are less likely to be banked, as shown in Figure 3.⁸ Part of the recent literature has focused on this issue. For example, Faber and Friedline (2020) conducted an independent survey among 1,344 banks across the United States to investigate differences in the costs and fees of checking accounts at commercial banks. They found the costs of opening and maintaining accounts to be higher in areas with larger Black and Hispanic populations.

One problem with studying the effects of race and ethnicity on account ownership is that they are correlated with other household characteristics such as income and education. Rhine and Greene (2013) confront this problem by studying the 2004 SIPP, which is a longitudinal survey. By looking at changes in the banking status of individual households over time, they are able to identify the characteristics that explain account ownership. They find that race and ethnicity are important determinants of banking status, even after accounting for other characteristics. In contrast, Yogo, Whitten, and Cox (2021) examine a dataset of all US tax filers during 1999–2018 and find that the effect of race and ethnicity on access to bank accounts disappears once income and zip codes of households are taken into account. Rhine and Greene (2013) do not have geographic data at the zip code level, so it is possible that race and ethnicity may cease to be important determinants of financial

inclusion once geography is fully taken into account. However, there is a strong correlation between race and zip code, so it is not clear which matters more (Aliprantis, Carroll, and Young, 2019).⁹

Immigration status is another important determinant of bank account access. Rhine and Greene (2006) use data from the SIPP over 1996–2000 to study immigrants' decisions to open bank accounts. The analysis finds that immigrants as a group are significantly less likely to have bank accounts than people born in the United States, with Mexican and other Latin American immigrants displaying the highest unbanked rates. Using a probit model, Rhine and Greene (2006) find many of the same factors affect the likelihood of opening a bank account for both US-born and immigrant respondents. For example, having a higher net worth, earning a higher income, and being married all reduce the likelihood of being unbanked. Having lower levels of education, poverty-level income, or a large family all make being unbanked more likely.

Amuedo-Dorantes and Bansak (2006) examine the effect of access to banking services on immigrants to the United States and find that access to a bank is associated with larger savings. The authors examine a dataset from the Mexican Migration Project containing information on Mexican immigrants' banking and remittance behavior and their legal immigrant status at the time of migration. Since 2002, recognition by some US financial institutions of Mexico's Consular Identification Card—the *matrícula consular*—as an acceptable form of identification has increased Mexican immigrants' access to US banking services. Nonetheless, the authors find banking among Mexican immigrants remains limited, with only 9 percent of the respondents reporting having a US bank account. The authors use a tobit model to estimate the effects of banking on Mexican immigrants' money transfers to their families. They find that having a US bank account does not appear to significantly raise monthly remittances by Mexican immigrants, but it does help increase the lump-sum amount they bring back home at the end of their migration periods.

Table 3: Shares of Payment Instrument Use, by Banking Status (percentage)

Payment instrument	Unbanked	Banked
Cash	60.4	18.9
Prepaid card	19.5	2.2
Credit card	14.9	26.2
Money order	3.2	0.3
Income deduction	2.0	0.7
Debit card	0.0	34.3
Check	0.0	5.0
Other	0.0	12.3

Source: Authors' calculations from the 2020 Survey of Consumer Payment Choice (SCPC)

Notes: Income deduction denotes direct payments from income, for example, automatic deductions for an employee's portion of health insurance. In the absence of a bank account, credit card bills can be paid using money orders. Cash can also be used, either by visiting the card issuer's branch location or the issuer's automatic teller machine (ATM). Not all credit card issuers accept cash payments.

Consequences for payments

Cash use is declining in the United States. Cash was used for 40 percent of transactions in 2012 (Greene, Schuh, and Stavins, 2018), 26 percent in 2019 (Greene and Stavins, 2020) and just 21 percent in 2020 (Foster, Greene, and Stavins, 2021). However, cash transactions remain prevalent for the unbanked. As Table 3 shows, unbanked consumers used cash for 60 percent of their payments in 2020, compared to only 19 percent for banked consumers.

How do the unbanked fare in an increasingly cashless society? According to Coyle, Kim, and O'Brien (2021), only 60 percent of consumers made at least one in-person payment in the previous 30 days in August 2020 (in any payment medium), compared to 96 percent in October 2019, a reduction that suggests a smaller potential role for cash as a medium of payment during the COVID-19 pandemic. If fewer merchants accept cash and more commerce is done online, then unbanked households' dependence on cash could shut them out of some markets. One solution is to use prepaid cards to conduct electronic payments. The 2020 Survey of Consumer Payment Choice (SCPC) shows that unbanked individuals used prepaid cards for roughly 20 percent of their transactions, compared to only 2 percent for the banked ones, a difference suggesting that prepaid cards are, indeed, a partial substitute for electronic bank accounts.

Overall, however, the extent to which prepaid cards address the needs of the unbanked remains an open question. According to Pew Charitable Trusts (2015), unbanked prepaid cardholders use their cards much like a traditional checking account. Most users would like prepaid cards to offer savings options, but they are less interested in the ability to overdraw their accounts. Hayashi (2016) explains that general purpose reloadable (GPR) prepaid cards—which share the same networks, such as Visa or MasterCard, as standard cards—can be used much like regular debit cards. That is, cardholders can make purchases at any physical or online store that operates on their card's network, can withdraw cash at ATMs or merchants, and can send and receive bank payments. And, importantly, in 2016 the Consumer Financial Protection Bureau introduced additional protections for prepaid cards, making them more similar to traditional bank accounts.¹⁰ Consumers can also avoid unexpected overdraft and nonsufficient funds (NSF) fees entirely by choosing a GPR card that does not offer an overdraft capability, just like with a bank account.

Fees incurred by prepaid card holders can vary widely, as shown by Wilshusen et al. (2012) and Hayashi and Cuddy (2014). Various fees can make GPR cards costlier than traditional checking accounts, even without overdraft or NSF fees. For example, cardholders who do not receive periodic direct deposits may incur a per-purchase fee. Also, some retailers charge fees when cardholders reload their cards using cash. According to Shy (2020), respondents to the SCPC and the Diary of Consumer Payment Choice find prepaid cards to be slightly less secure and less convenient than debit cards and slightly costlier.

However, GPR cards may have some advantages over traditional bank accounts. For example, it is generally much easier to qualify for a GPR card than for a traditional bank account, since prepaid cards tend not to use ChexSystems as a reporting tool. Moreover, GPR cards typically do not have minimum balance requirements to open an account or to qualify for lower or zero monthly fees. In addition, overdraft fees on GPR cards tend to be much lower than for checking accounts; see Hayashi, Hanson, and Maniff (2015).

Conclusion

The unbanked rate has been decreasing in the United States, but it remains high compared to unbanked rates in other developed economies. Lower-income and racial and ethnic minority households are more likely to lack access to a bank account than white households with higher incomes. Fees and minimum balance requirements are important factors in the decision to be unbanked. However, several studies show that when fees are constrained, banks find low-balance accounts unprofitable, so access to bank accounts can actually decline.

It is also important to point out that many of the studies we cite, even the most recent, might not fully reflect the fast speed at which the payments landscape is evolving and the consequences of such changes for the unbanked. The move away from cash and the increasing tendency to shop remotely might increase the costs of exclusion for the unbanked. At the same time, the proliferation of fintech products could make access to a traditional bank account less essential for US households provided they have access to the internet.

The most effective way to reduce financial exclusion remains an open question. Several existing initiatives and proposals could be interesting topics of study. For example, the Cities for Financial Empowerment Fund's Bank On project promotes the use of low-cost commercial bank accounts (Federal Reserve Bank of St. Louis, 2021). Baradaran (2015) proposes reintroducing postal banking. The Board of Governors of the Federal Reserve System (2022) paper on the potential costs and benefits of a US central bank digital currency (CBDC) says, "Further study would be helpful to assess the potential for CBDC to expand financial inclusion, including cases targeted to underserved and lower income households." Finally, it is possible that private market initiatives, such as continued innovation with GPR cards, will lead to better and cheaper substitutes for bank accounts.

Endnotes

1. The Federal Deposit Insurance Corporation (FDIC) Survey of Household Use of Banking and Financial Services has become a standard reference on access to bank accounts in the United States because of the survey's large sample size and its focus on bank account ownership.
2. For example, the FDIC (2020) reports that the probability of being unbanked rises to 23.3 percent if annual household income is lower than \$15,000 and 13.8 percent if the householder was Black.
3. A typical overdraft fee at the largest banks in the United States is \$35, although some banks have recently reduced these fees. See Horowitz and Liang (2022).
4. The FDIC defines "alternative financial services" as those offered by providers that operate outside of federally insured banks and thrifts. Examples are check-cashing outlets, money transmitters, car title lenders, payday loan stores, pawnshops, and rent-to-own stores.
5. For example, suppose an individual has an account balance of \$100. In one day, she makes a payment of \$20 in the morning, \$50 in the afternoon, and \$120 in the evening. If the bank processes these in order, her bank account becomes overdrawn only when the third payment is made, and so she would pay one overdraft fee of, to use a common example, \$35. But if the bank processes the largest payment first, her bank account is overdrawn on the first transaction and thus incurs three \$35 fees upon processing the subsequent two payments, for a total of \$105 in fees.
6. ChexSystems generally keeps a closed account on its database for a period of five years from the report date. Some banks choose not to use ChexSystems or decide to apply a shorter time horizon for consideration of involuntary account closures.
7. SIPP reports data on the socioeconomic, demographic, and financial characteristics of households in the United States.
8. The FDIC survey collects data at the household, not individual, level. The race or ethnicity of a household is determined by that of the owner or renter of the home. We drop the category "Native Hawaiian or Other Pacific Islander" because the sample size in 2019 is too small to produce a precise estimate.
9. Moreover, the dataset in Yogo, Whitten, and Cox (2021) is restricted to people who are 50–59 years old, so their results might not apply beyond that age cohort.
10. These rules covered reimbursement of funds on lost or stolen cards, error resolution and investigation, upfront fee disclosures, and access to account information. See 81 FR 83934 at <https://www.consumerfinance.gov/rules-policy/final-rules/prepaid-accounts-under-electronic-fund-transfer-act-regulation-e-and-truth-lending-act-regulation-z/>.

References

- Aliprantis, Dionissi, Daniel R. Carroll, and Eric R. Young. 2019. "What Explains Neighborhood Sorting by Income and Race?" Working Paper 18-08R. Federal Reserve Bank of Cleveland. <https://doi.org/10.26509/frbc-wp-201808r>.
- Amuedo-Dorantes, Catalina, and Cynthia Bansak. 2006. "Money Transfers among Banked and Unbanked Mexican Immigrants." *Southern Economic Journal* 73 (2): 374–401. <https://doi.org/10.1002/j.2325-8012.2006.tb00777.x>.
- Baradaran, Mehrsa. 2015. *How the Other Half Banks: Exclusion, Exploitation, and the Threat to Democracy*. Harvard University Press. <https://doi.org/10.4159/9780674495425>.
- Barr, Michael S. 2012. *No Slack: The Financial Lives of Low-Income Americans*. Washington: Brookings Institution Press. <https://muse.jhu.edu/book/29038>.
- Berre, Stein, Kristian Blickle, and Rajashri Chakrabarti. 2021. "Banking the Unbanked: The Past and Future of the Free Checking Account." *Liberty Street Economics* (blog). June 30, 2021. <https://libertystreeteconomics.newyorkfed.org/2021/06/banking-the-unbanked-the-past-and-future-of-the-free-checking-account/>.
- Board of Governors of the Federal Reserve System. 2019. "Perspectives from Main Street: Bank Branch Access in Rural Communities." Board of Governors of the Federal Reserve System. <https://www.federalreserve.gov/publications/november-2019-bank-branch-access-in-rural-communities.htm>.
- . 2022. "Money and Payments: The US Dollar in the Age of Digital Transformation." Board of Governors of the Federal Reserve System. <https://www.federalreserve.gov/publications/january-2022-cbdc.htm>.
- Brainard, Lael. 2020. "The Future of Retail Payments in the United States: A Speech at the FedNow Service Webinar, Washington, D.C. (via Webcast)." Speech. Board of Governors of the Federal Reserve System. <https://ideas.repec.org/p/fip/fedgsq/88524.html>.
- Campbell, Dennis, F. Asís Martínez-Jerez, and Peter Tufano. 2012. "Bouncing out of the Banking System: An Empirical Analysis of Involuntary Bank Account Closures." *Journal of Banking & Finance* 36 (4): 1224–35. <https://doi.org/10.1016/j.jbankfin.2011.11.014>.
- Caskey, John P. 1994. *Fringe Banking: Check-Cashing Outlets, Pawnshops, and the Poor*. Russell Sage Foundation.
- . 1997. "Lower Income Americans, Higher Cost Financial Services." Report no. 22. Filene Research Institute. <https://filene.org/learn-something/reports/lower-income-americans-higher-cost-financial-services>.
- . 2002. "Bringing Unbanked Households Into the Banking System." Brookings. <https://www.brookings.edu/articles/bringing-unbanked-households-into-the-banking-system/>.
- Célerier, Claire, and Adrien Matray. 2019. "Bank-Branch Supply, Financial Inclusion, and Wealth Accumulation." *The Review of Financial Studies* 32 (12): 4767–4809. <https://doi.org/10.1093/rfs/hhz046>.
- CFPB. 2016. "Prepaid Accounts under the Electronic Fund Transfer Act (Regulation E) and the Truth In Lending Act (Regulation Z)." Consumer Financial Protection Bureau. <https://www.consumerfinance.gov/rules-policy/final-rules/prepaid-accounts-under-electronic-fund-transfer-act-regulation-e-and-truth-lending-act-regulation-z/>.
- Coyle, Kelsey, Laura Kim, and Shaun O'Brien. 2021. "Consumer Payments and the COVID-19 Pandemic: The Second Supplement to the 2020 Findings from the Diary of Consumer Payment Choice." Federal Reserve Bank of San Francisco. <https://www.frbsf.org/cash/publications/fed-notes/2021/february/consumer-payments-covid-19-pandemic-2020-diary-consumer-payment-choice-supplement-2/>.
- Demirgüç-Kunt, Asli, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. *Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. Washington, DC: World Bank. <https://doi.org/10.1596/978-1-4648-1259-0>.
- Di Maggio, Marco, Angela Ma, and Emily Williams. 2020. "In the Red: Overdrafts, Payday Lending and the Underbanked." Working paper 28242. National Bureau of Economic Research. <https://doi.org/10.3386/w28242>.
- Dlugosz, Jennifer L., Brian T. Melzer, and Donald P. Morgan. 2021. "Who Pays the Price? Overdraft Fee Ceilings and the Unbanked." Staff report 973. Federal Reserve Bank of New York. <https://fedinprint.org/item/fednsr/92830>.
- Faber, Jacob William, and Terri Friedline. 2020. "The Racialized Costs of 'Traditional' Banking in Segregated America: Evidence from Entry-Level Checking Accounts." *Race and Social Problems* 12 (4): 344–61. <https://doi.org/10.1007/s12552-020-09296-y>.
- FDIC. 2020. "How America Banks: Household Use of Banking and Financial Services, 2019 FDIC Survey." Federal Deposit Insurance Corporation. <https://www.fdic.gov/analysis/household-survey/index.html>.
- Federal Reserve Bank of St. Louis. 2021. "The Bank On National Data Hub: Findings from 2020." Federal Reserve Bank of St. Louis. <https://www.stlouisfed.org/news-releases/2021/12/22/st-louis-fed-releases-the-bank-on-national-data-hub-findings-from-2020>.
- Foster, Kevin, Claire Greene, and Joanna Stavins. 2021. "2020 Diary of Consumer Payment Choice: Summary Results." Research Data Report 21–1. Federal Reserve Bank of Atlanta. <https://doi.org/10.29338/rdr-2021-01>.
- Friedline, Terri, and Zibei Chen. 2021. "Digital Redlining and the Fintech Marketplace: Evidence from US Zip Codes." *Journal of Consumer Affairs* 55 (2): 366–88. <https://doi.org/10.1111/joca.12297>.

- Friedline, Terri, Sruthi Narahariseti, and Addie Weaver. 2020. "Digital Redlining: Poor Rural Communities' Access to Fintech and Implications for Financial Inclusion." *Journal of Poverty* 24 (5–6): 517–41. <https://doi.org/10.1080/10875549.2019.1695162>.
- Goodstein, Ryan M., and Sherrie L. W. Rhine. 2017. "The Effects of Bank and Nonbank Provider Locations on Household Use of Financial Transaction Services." *Journal of Banking & Finance* 78 (May): 91–107. <https://doi.org/10.1016/j.jbankfin.2017.01.016>.
- Greene, Claire, Scott Schuh, and Joanna Stavins. 2018. "The 2012 Diary of Consumer Payment Choice." Research Data Report 18–1. Federal Reserve Bank of Boston. <https://www.bostonfed.org/publications/research-data-report/2018/the-2012-diary-of-consumer-payment-choice.aspx>.
- Greene, Claire, and Joanna Stavins. 2020. "The 2019 Diary of Consumer Payment Choice." Research Data Report 20–4. Federal Reserve Bank of Boston. <https://doi.org/10.29338/rdr2020-04>.
- Hayashi, Fumiko. 2016. "Access to Electronic Payments Systems by Unbanked Consumers." *Economic Review*, no. Q III: 51–76. <https://ideas.repec.org/a/fip/fedker/00043.html>.
- Hayashi, Fumiko, and Emily Cuddy. 2014. "General Purpose Reloadable Prepaid Cards : Penetration, Use, Fees and Fraud Risks." Working paper RWP 14-1. Federal Reserve Bank of Kansas City. <https://www.fedinprint.org/item/fedkrw/40776/original>.
- Hayashi, Fumiko, Josh Hanson, and Jesse Leigh Maniff. 2015. "Driver of Choice? The Cost of Financial Products for Unbanked Consumers." Working paper RWP 15-15. Federal Reserve Bank of Kansas City. <https://doi.org/10.18651/RWP2015-15>.
- Horowitz, Alex, and Linlin Liang. 2022. "America's Largest Banks Make Major Overdraft Changes That Will Help Consumers." Pew Trust. February 8, 2022. <https://pew.org/34IKUQx>.
- Pew Center on the States. 2012. "Overdraft America: Confusion and Concerns About Bank Practices." Pew Charitable Trusts. <http://pew.org/2yITsN4>.
- Pew Charitable Trusts. 2015. "Banking on Prepaid: Survey of Motivations and Views of Prepaid Card Users." Pew Charitable Trusts. <https://www.pewtrusts.org/en/research-and-analysis/reports/2015/06/banking-on-prepaid>.
- . 2016. "Consumers Need Protection From Excessive Overdraft Costs." Pew Charitable Trusts. <http://pew.org/2hRWIgt>.
- Prescott, Edward Simpson, and Daniel D. Tatar. 1999. "Means of Payment, the Unbanked, and EFT '99." *Economic Quarterly* 85 (4): 49–70. https://www.richmondfed.org/publications/research/economic_quarterly/1999/fall/prescott.
- Rhine, Sherrie L. W., and William H. Greene. 2006. "The Determinants of Being Unbanked for US Immigrants." *Journal of Consumer Affairs* 40 (1): 21–40. <https://doi.org/10.1111/j.1745-6606.2006.00044.x>
- . 2013. "Factors That Contribute to Becoming Unbanked." *Journal of Consumer Affairs* 47 (1): 27–45. <https://doi.org/10.1111/j.1745-6606.2012.01244.x>.
- Rhine, Sherrie L. W., William H. Greene, and Maude Toussaint-Comeau. 2006. "The Importance of Check-Cashing Businesses to the Unbanked: Racial/Ethnic Differences." *The Review of Economics and Statistics* 88 (1): 146–57. <https://doi.org/10.1162/rest.2006.88.1.146>.
- Servon, Lisa J. 2017. *The Unbanking of America: How the New Middle Class Survives*. Houghton Mifflin Harcourt.
- Shy, Oz. 2020. "Low-Income Consumers and Payment Choice." *Research in Economics* 74 (4): 292–300. <https://doi.org/10.1016/j.rie.2020.09.001>.
- Wilshusen, Stephanie M., Robert M. Hunt, James van Opstal, and Rachel Schneider. 2012. "Consumers' Use of Prepaid Cards: A Transaction-Based Analysis." Consumer Finance Institute discussion paper 12–02. Federal Reserve Bank of Philadelphia. <https://www.philadelphiafed.org/-/media/frbp/assets/consumer-finance/discussion-papers/D-2012-August-Prepaid.pdf>.
- Yogo, Motohiro, Andrew Whitten, and Natalie Cox. 2021. "Financial Inclusion Across the United States." Working paper. <https://doi.org/10.2139/ssrn.3934498>



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/). This paper and its data are subject to revision; please visit clevelandfed.org for updates.