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# Can fintech improve health?

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## ABSTRACT

Access to electronic financial services, in particular digital money, has replaced the digital divide as an unintended yet significant barrier for low-income individuals to participate in new technologies, including those that lead to better health outcomes. This paper explores this problem in depth. It begins by describing and documenting the barriers, costs, and benefits to accessing and using digital money. Next, the paper turns to implications of the broader technological revolution on the nature of money and payment systems. This includes an examination into the structure of our banking and payment systems and their overlay into different demographic groups of Americans. The paper then explores the ramifications of disparity in access to digital money for physical health including an analysis of how the COVID-19 pandemic amplified existing problems. It concludes with a set of recommendations to ameliorate the problems identified.

The paper finds that access to digital money is an underappreciated vector by which technological innovation, both financial and non-financial, can be hindered in reaching certain populations. Accessing digital money is easy and free for those with money while for those without a lot of money, digital money is expensive. Digital money's role as a barrier to accessing new technology, particularly in an app/mobile/online economy, will likely exacerbate existing inequalities and impede adoption of some new technology for lower-income people. To the extent that these new technologies offer health benefits and require digital money, existing public health inequalities will be exacerbated. Fully realizing the potential health and wealth benefits of new technology requires a better solution to the digital payment divide than currently exists.

## KEY FINDINGS AND RECOMMENDATIONS

America's payment system is designed to segregate people by income and wealth. Access to digital payments is more expensive and difficult to obtain for lower-income households and racial minorities despite decades of continuing growth of usage of digital money. This results in barriers to adoption of new technology, which increasingly requires digital payments. The response to the COVID-19 pandemic exposed several consequences of this problem, resulting in reduced effectiveness of pandemic response and potentially greater health risks due to a lack of access to digital payments.

Linkages between income, wealth, and physical and mental health have been documented. However, prior research has not generally considered the role of payments and access to digital money as impacting either income or health. This paper argues that access to digital money has a direct impact on financial well-being and consequently should factor into determinants of health. In addition, the inability to access digital money easily and cheaply may factor into other elements that have been studied as part of the broader social determinants of health, specifically the ability to access new technologies that require digital payments.

A specific new finding in the paper is that the majority of Americans who use check cashers and the majority of checks cashed are from people with bank accounts. This challenges the notion that being "unbanked" drives use of certain "fringe financial services" such as check cashers. Issues around cost, including the value of immediate payment, drive decisions on how best to access money, whether through bank products or non-bank products.

The main policy solutions discussed center on enhancing access to digital payments through expansions of the provision of low-cost financial services. The goal is universal access to digital payments at low/no-cost, which should reduce the inequality effects of new technology. A set of policy solutions are being discussed, but more analysis is needed to ensure that proposed solutions correctly identify and address the key challenges, which are primarily centered around cost and timeliness rather than physical locations, hours of operation, or the creation of new forms of digital currency. Inaction in solving these problems intensifies inequality, hampers responses to future pandemics, and reduces the efficacy of other solutions designed to improve public health. The status quo is not static. Technology continues to develop.

Absent substantial reform of our nation's banking and payment systems that lower the cost of accessing and transacting in digital money, millions of Americans will be unable to fully benefit from technological advancement, and that is likely to have health consequences.

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## Introduction

Access to electronic financial services, in particular digital money, has replaced the digital divide as an unintended yet significant barrier for low-income individuals to participate in new technologies, including those that lead to better health outcomes. This paper explores this problem in depth. It begins by defining what money is, and is not, a fundamental definition often taken for granted and incorrectly applied. Next, the paper describes and documents the challenges, costs, and benefits of existing forms of money, with particular attention paid to the barriers to and costs of accessing and using digital money. The paper then turns to implications of the broader technological revolution on the nature of money and payment systems. This includes an examination into the structure of our banking and payment systems and their overlay into different groups of Americans.

The paper explores the ramifications of disparity in access to digital money for financial and physical health, including the COVID-19 public health crisis. The idea that new financial technology (fintech) can impact health outcomes is not obvious and is not proven in this paper. Prior research argues that a link between wealth and health exists particularly among lower wealth individuals. As one study concluded: “Health studies should include wealth as an important SES [socio-economic-status] indicator.”<sup>1</sup> It warns, “Failure to measure wealth may result in under-estimating the contribution of SES to health, such as when studying the etiology of racial/ethnic disparities.”<sup>2</sup> Other research finds that “income related health disparities appear to be growing over time,”<sup>3</sup> underscoring the importance of this relationship. If this research is correct and wealth and income are drivers of health outcomes, then new fintech that adds to, or subtracts from, wealth and income will result in changes to health outcomes.

America’s payment system is designed to segregate people by income and wealth into using different forms of money. Accessing digital money is cheap and easy the higher up the income distribution one goes, and far more expensive and difficult the further down you travel. If access to digital funds becomes too expensive or difficult, technologies that require digital money cease to be practical alternatives. To the extent those technologies can improve health outcomes, then this payment barrier will translate into greater health inequality.

The paper concludes with a set of recommendations to ameliorate the problems identified, with a focus on how to create universal access at low cost to digital money. This will particularly benefit those who currently face higher cost and less access, who are disproportionately racial minorities and lower-income.

## Show me the money

Money comes in many forms but can be broadly divided into four categories in modern society: cash, card, check, and electronic. This section first defines money and discusses how its different characteristics apply to these various forms. It then provides background on the growth and usage of each form of money to lay the foundation for the analysis that follows. It ends with an exploration of the potential of a new fifth form, digital currency. Digital currency is distinct from electronic money thanks to their different issuers. Today, electronic money comes from banks. Tomorrow, digital currency can be created by government central bank or non-government issued money through new technology, such as cryptocurrency. The term ‘digital money’ refers to all forms of money that are transacted digitally: cards, electronic, and digital currency. Cash and checks are ‘physical money’ that require a digitization process.

<sup>1</sup> Craig Evan Pollack et al. “Should health studies measure wealth? A systematic review.” *American Journal of Preventative Medicine* 33, no. 3 (2007): 250-64, 2007. <https://pubmed.ncbi.nlm.nih.gov/17826585/>, 1.

<sup>2</sup> *Ibid.*, 1.

<sup>3</sup> D. Khullar and D.A. Chokshi, “Health, Income, and Poverty: Where We Are and What Could Help.” *Robert Wood Johnson Foundation*, October 1, 2018, <https://www.rwjf.org/en/library/research/2018/10/health--income-and-poverty-where-we-are-and-what-could-help.html>.

## What is money?

To understand the various forms of money and the potentially transformative power of access to digital money, we must first answer a more foundational question: what is money?<sup>4</sup>

Money is a system of debits and credits that requires third party acceptance without prior party consent. Debits and credits can be tracked electronically by third parties like banks and credit unions, or the money itself can be held physically in the form of paper notes of liabilities, such as cash. What makes something money is not just that it is a medium of exchange. That definition, often attributed to John Locke,<sup>5</sup> is insufficient. Consider the example of two people taking turns paying for lunch. If you owe me the next lunch, that debt may be a credit on my balance sheet of life. However, I cannot take the lunch you owe me and use it to settle the lunch I may owe another person, unless both you and the third person agree. This inability to use the credit (lunch owed) without prior party consent distinguishes between something that is a medium of exchange (paying for lunch) and something that is money. It also is a feature that distinguishes money from assets.

The special feature of money, the ability to transact without the consent of prior owner or creditor of that money, gives money considerable power. It also restricts many assets from achieving the status of money. For example, considerable resources are expended ensuring that there are no prior owners of real estate before a transaction occurs, as the new owner of real estate does not want to handle a prior claimant that the property was theirs to begin with. Most homeowners have spent thousands of dollars on this verification called a title search, even paying for insurance in the extremely rare case that the search itself was insufficient (title insurance).

For money to be easily usable, another element is necessary: valuation. Many different electronic or physical assets, ranging from Beanie Babies<sup>6</sup> to baseball cards, can be a medium of exchange. They can even be credited or debited from a system of accounts and can be transacted without prior party consent. However, their valuation needs to be agreed upon by both giver and receiver. For something to be able to function as money, it needs to be easily valued with a valuation that is quickly and cheaply agreed upon between both parties. Because money must be transmittable to a third party without prior party consent, there must be an expectation that a future party will also be able to agree with the present party on valuation. This helps explain why assets that are collected, exchanged, and likely excellent stores of value (e.g. fine art) are unlikely to ever achieve the status of money.

Money does not need the ability to even be easily exchanged between parties as long as the system of debits and credits can be easily modified. Inhabitants of the remote island of Yap in Micronesia successfully used a set of large, almost immovable stones known as *fei* as money, as analyzed by the famous Milton Friedman in one of his last papers, “The Island of Stone Money.”<sup>7</sup> Friedman pointed out the similarities between Yap residents changing their system of debits and credits without moving these stones to the Federal Reserve moving gold bars between the vaults of the Banc de France and the United States. If the physical movement of the asset is not what gives it special status, then it is not hard to imagine a system of money that does not exist in physical form at all.

Today, American society, like most of the world, uses money that at its root is issued by the government. Our usage of dollars comes in four main forms: cash, cards, checks, and electronic. Two potential changes to this paradigm have captured public attention: the potential for a new digital dollar issued by the government to add a fifth form, and the creation of non-government-issued cryptocurrency to be widely used as money. Before examining future changes to money, it is important to understand the current state and dynamics of the four main forms in use today.

<sup>4</sup> Much of this conversation relies on the excellent book by Felix Martin, *Money: The Unauthorized Biography* (New York: Vintage Books, 2014).

<sup>5</sup> Locke, John. *Second Treatise of Government*, sect. 47. <https://www.gutenberg.org/files/7370/7370-h/7370-h.htm>.

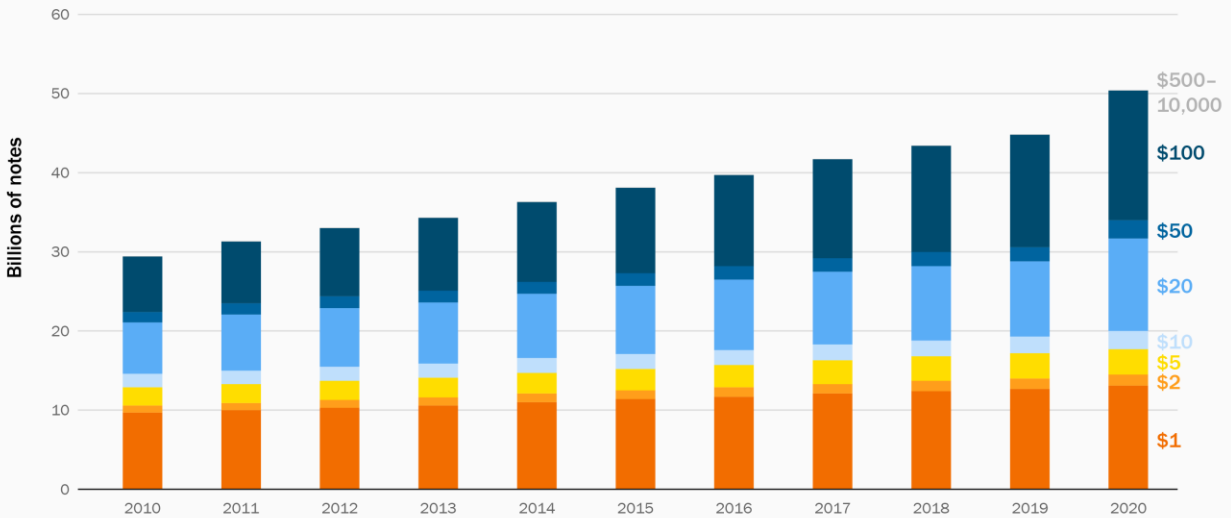
<sup>6</sup> “The Beanie Baby Boom and Bust—What Happened?” *WBUR Public Radio*, March 2, 2015, <https://www.wbur.org/hereandnow/2015/03/02/beanie-baby-bubble>.

<sup>7</sup> Milton Friedman. “The Island of Stone Money.” *Hoover Institution Working Papers in Economics* no. E-91-3 (1991). <https://miltonfriedman.hoover.org/internal/media/dispatcher/215061/full>.

## Cash: Soon to be deposited or king forever?

Despite rumors that the era of cash is over,<sup>8</sup> the actual amount of cash in circulation continues to rise. The steady rise before COVID-19 is evident from the data below, as is the sharp rise of cash in circulation in 2020 during the pandemic.<sup>9</sup>

**Figure 1. Volume of Currency in Circulation**



Source: Federal Reserve, Currency and Coin Services

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The figure above shows the total amount of each note in circulation, demonstrating that the rise in cash in use is not just being driven by large denomination notes (\$100 bills) that can be used for storage of wealth. The number of five-dollar bills rose by 40 percent from 2010-2020. This is roughly equal to the rate of growth of nominal GDP over that period,<sup>10</sup> providing evidence that the usage of cash relative to the rest of the economy is not slowing. Figures for usage of the ten-dollar bill show slightly slower growth over the entire decade, although a larger spike in 2020. Taken together the evidence argues that decline of cash is more hype than reality, so far.<sup>11</sup>

## Cards: What you use is about what you earn

Card volume has increased sharply, as card-based networks have been the biggest winner in the payment wars of the past two decades. There are three main types of card-based transactions: pre-paid, debit, and

<sup>8</sup> Eswar Prasad. "Cash Will Soon Be Obsolete. Will America Be Ready?" *New York Times*, July 22, 2021, <https://www.nytimes.com/2021/07/22/opinion/cash-digital-currency-central-bank.html>.

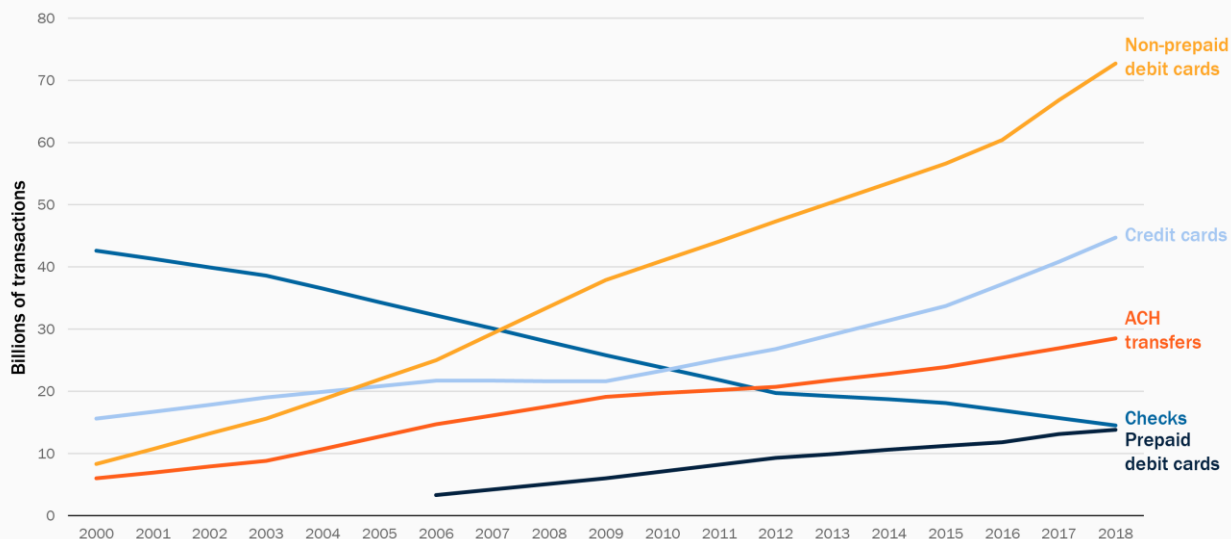
<sup>9</sup> "Data: Currency and Coin Services." Board of Governors of the Federal Reserve System, August 13, 2021, [https://www.federalreserve.gov/paymentsystems/coin\\_data.htm](https://www.federalreserve.gov/paymentsystems/coin_data.htm).

<sup>10</sup> "Gross Domestic Product [GDP], U.S. Bureau of Economic Analysis, retrieved from FRED, Federal Reserve Bank of St. Louis, <https://fred.stlouisfed.org/series/GDP> [Accessed September 16, 2021].

<sup>11</sup> The Federal Reserve figures are total amount of dollars in circulation and include foreign held currency. That is one of the reasons for focusing on smaller denomination notes as more foreign held currency is of larger denominations. However, there are some countries that use dollars for most transactions (e.g. Ecuador and El Salvador). The calculations here do not reflect those nations GDP changes, although those countries are relatively small economically compared to the US and have not materially changed over the last decade. See Mark Abadi, "More than two dozen countries and territories use the US dollar as currency." *Business Insider*, May 23, 2018, <https://www.businessinsider.com/usd-countries-use-dollars-as-currency-2018-5>.

credit. As the chart below demonstrates, all types of card-based transactions have increased over the last two decades. Particularly noteworthy is the usage of debit cards, which surpassed credit card usage in 2005 and now dominates card payments. At the turn of the century, there were 15.6 billion credit card transactions compared to only 8.3 billion debit card transactions. By 2018, there were 72.7 billion debit card transactions compared to 44.7 billion credit card transactions.<sup>12</sup>

**Figure 2. Trends in noncash payments, by number**



Source: The 2019 Federal Reserve Payment Study

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Prepaid cards deserve attention both because of their growth and their disproportionate role in providing access to digital money for lower-income/underserved Americans. The Federal Reserve did not begin collecting data on general prepaid card usage before 2006, although it did track electronic benefit cards. Prepaid cards include electronic benefit cards as well as general reloadable cards, private label cards, and other cards. Notice the big rack of gift cards visible in most supermarkets and drug stores; these cards are frequently used. In 2018, the Fed estimates consumers made 13.8 billion swipes of prepaid cards, roughly equal to the number of debit card transactions made in 2002. Another way to look at the prevalence of prepaid cards it to note that 10.5 percent of all swipes use a prepaid card, 55.5 percent use debit cards, and 34 percent use credit cards.<sup>13</sup>

### Electronic: The present and the future?

While card-based transactions have an electronic element and are ‘digital money,’ for purposes of this categorization purely electronic transactions are defined as direct authorizations from a bank account. This means that when you enter your card information on a website or use an app like Apple Pay that is linked to a card-based account, it is still a card transaction. An electronic transaction is one where the source is directly a bank account. Think about when you have to enter a bank routing number and account number, or authorize a direct debit from your bank account. These can be regular payments, including mortgage and utility payments, or single issuance authorizations.

The Federal Reserve tracks these as ACH transactions, referring to the automated clearing house (ACH) that the Fed operates. ACH transactions can occur as both direct debits or as credits. Both types have

<sup>12</sup> The 2019 Federal Reserve Payment Study. Federal Reserve, January 2020.

<https://www.federalreserve.gov/paymentsystems/2019-December-The-Federal-Reserve-Payments-Study.htm>.

<sup>13</sup> Ibid.



experienced massive growth. Combined ACH transfers rose from 6 billion in 2000 to 28.5 billion by 2018, an increase of 475 percent.<sup>14</sup>

### Checks: Bye-bye paper

Checks are the only decreasing category of payment. As the figure 2 above shows, the number of checks written in America has plummeted from 42.6 billion in 2000 to 14.5 billion in 2018. For every three checks written in 2000, only one was written in 2018.<sup>15</sup> Where did the other two go? The data indicate they migrated to other forms of payment, with the largest growth in debit card transactions, although some migrated to credit and prepaid cards, while others became purely electronic.

Consider how people used to pay their mortgage or utility bills by mailing checks. Today, many do so instead through direct electronic transfers (e.g. online banking that authorizes a pull from your bank account). Others use an electronic portal but put in an intermediate credit or debit card. Some use a prepaid card that is often reloadable, potentially by going to a bill pay kiosk (look for one at your local cell phone store).

### Digital currency: Central bank style

Digital currencies have emerged as a new form of money in the past decade. The idea of issuing a central bank digital currency (CBDC) is a hot topic, garnering attention from the Chairman of the Federal Reserve,<sup>16</sup> members of Congress,<sup>17</sup> the biggest banks,<sup>18</sup> consumer advocates,<sup>19</sup> tech enthusiasts,<sup>20</sup> academics,<sup>21</sup> and even breaking through to popular culture. While some argue that a CBDC is the way of the future,<sup>22</sup> others question whether we know what we are even talking about,<sup>23</sup> and still others assert that the CBDC conversation is emblematic of the fabled emperor and his new clothes.<sup>24</sup>

What is digital currency, and how is it different from the other forms discussed above, particularly electronic? While the Federal Reserve is debating creating a CBDC, Americans use “CBDC” every day: *commercial bank digital money*.<sup>25</sup> The plastic cards that are the most frequent payment instrument used are not transacting in money derived from Visa or MasterCard. Those are technology companies who do not create money.<sup>26</sup> The cards in your wallet are pathways to access your bank account (debit card) or a revolving line of credit from a bank (credit card). Apps like Apple Pay move that access point to your

<sup>14</sup> Ibid.

<sup>15</sup> Ibid.

<sup>16</sup> Ann Saphir, “Fed’s Powell ‘legitimately undecided’ on central bank digital currency.” *Reuters*, July 15, 2021.

<https://www.reuters.com/business/finance/feds-powell-says-hes-undecided-central-bank-digital-currency-2021-07-15/>.

<sup>17</sup> “At Hearing, Warren Delivers Remarks on Digital Currency.” Press Release, United States Senate Committee on Banking, Housing, and Urban Affairs, June 9, 2021. <https://www.banking.senate.gov/newsroom/majority/at-hearing-warren-delivers-remarks-on-digital-currency>.

<sup>18</sup> Greg Baer. “Central Bank Digital Currencies: Costs, Benefits, and Major Implications for the U.S. Economic System.” *Bank Policy Institute*, April 2021. <https://bpi.com/central-bank-digital-currencies-costs-benefits-and-major-implications-for-the-u-s-economic-system/>.

<sup>19</sup> J. Christopher Giancarlo and Daniel Gorfine. “Why a digital dollar could be just what the economy needs.” *CNBC*, Op-Ed, June 9, 2021. <https://www.cnbc.com/2021/06/09/op-ed-why-a-digital-dollar-could-be-just-what-the-economy-needs.html>.

<sup>20</sup> David Heun. “Tech vendors endorse Fed’s caution on central bank digital currency.” *American Banker*, August 25, 2021.

<https://www.americanbanker.com/news/tech-vendors-applaud-feds-caution-on-central-bank-digital-currency>.

<sup>21</sup> Michael Bordo and Andrew Levin. “Central bank digital currency and the future of monetary policy.” *VOX EU*, September 23, 2017. <https://voxeu.org/article/benefits-central-bank-digital-currency>.

<sup>22</sup> Prasad, “Cash Will Soon Be Obsolete.”

<sup>23</sup> Randal Quarles, “Parachute Pants and Central Bank Money,” Speech made at the 113<sup>th</sup> Annual Utah Bankers Association Convention, Sun Valley, Idaho, June 28, 2021, <https://www.federalreserve.gov/newsevents/speech/quarles20210628a.htm>.

<sup>24</sup> Thomas Vartanian. “No. 1 rule for central bank digital currencies: Do no harm.” *American Banker*, April 21, 2021, <https://www.americanbanker.com/opinion/no-1-rule-for-central-bank-digital-currencies-do-no-harm>.

<sup>25</sup> Credit unions play the same role as commercial banks for these purposes.

<sup>26</sup> For an excellent in-depth discussion of the role of commercial banks and the central bank in money creation see Morgan Ricks, *The Money Problem*, 2016.



phone, but generally are not providing any of the money.<sup>27</sup> To the contrary, Apple Pay takes a fee of around 15 basis points (.15%) for each credit transaction and 50 basis points for each debit transaction.<sup>28</sup> This fee is paid by credit card issuers and subtracted from the original credit card fee, which can range from one to four percent.<sup>29</sup> Electronic transactions described above are another form of commercial bank digital money, which are rapidly increasing, but not a new form of money.

Central bank digital currency differs from commercial bank digital currency because the asset is a liability of the central bank, not a commercial bank. This distinction may at first not appear significant to many since a dollar is a dollar. However, the distinction becomes far more important considering both the gatekeepers to access the currency, the cost structure around the product, and the implications for broader economic and financial stability policy.<sup>30</sup>

Today, financial institutions are the gatekeepers to accessing CBDC. A credit or debit card requires an account with a financial institution. A central bank digital dollar could be created in such a way to require a non-governmental gatekeeper (just as cash is a government-issued form of money, but you cannot store your cash with the government), but it could also create a system of government accounts (the “Fed Accounts” idea will be discussed in greater detail later on).

If the government provides direct access to its own digital currency, then it will set fees and costs for accessing those funds. The potential for the government to subsidize those services for lower-income consumers may appeal to many advocates who see the current system as unfairly costly, but doing so creates consequences for private financial institutions.

Similarly, the ability for consumers to directly hold governmental digital currency could have financial stability consequences. While the government today guarantees the first \$250,000 of deposits at a financial institution through deposit insurance, uninsured deposits do exist. Despite governmental guarantees and an excellent track record of providing rapid access to funds during bank failures, during times of financial stress people still sometimes draw money out of banks, both insured and uninsured customers. During the financial crisis of 2008, bank runs occurred at institutions like IndyMac and Wachovia, contributing to their failures.<sup>31</sup> The ability to transfer money from commercial bank to governmental status may impact financial stability.

The other side of this financial stability debate notes the instability of commercial bank currency at times and highlights how a central bank digital currency may provide greater stability. As Federal Reserve Governor Lael Brainard put it, “By introducing safe central bank money that is accessible to households and businesses in digital payments systems, a CBDC would reduce counterparty risk and the associated consumer protection and financial stability risks.”<sup>32</sup>

Additionally, it is important to note that bank deposits serve as a source of funding for the extension of credit. Banks are allowed to ‘create money’ by lending out more funds than they have available to meet all deposits. This system, called fractional reserve banking, allows commercial banks to meet consumer demands for everything from mortgages to credit cards. To the extent that a central bank digital currency takes money out of bank deposits directly into the central bank, it would impact the amount of lending in

<sup>27</sup> Even the AppleCard is an extension of credit by Goldman Sachs, not by Apple. It is similar to many other branded credit cards where there is a financial relationship between the bank issuing the credit and company branding/issuing the rewards to the consumer.

<sup>28</sup> “Inside the Apple Pay Issues Contracts.” *PYMNTS*, November 5, 2014. <https://www.pymnts.com/news/2014/new-loyalty-startup-snags-dollars-and-big-name-partnerships/>.

<sup>29</sup> Holly Johnson, “Average credit card processing fees in 2020,” *Bankrate*, September 22, 2020, <https://www.bankrate.com/finance/credit-cards/merchants-guide-to-credit-card-processing-fees/>.

<sup>30</sup> Greg Baer, “Central Bank Digital Currencies: Cost, Benefits, and Major Implications for the U.S. Economic System,” Bank Policy Institute, April 7, 2021 <https://bpi.com/central-bank-digital-currencies-costs-benefits-and-major-implications-for-the-u-s-economic-system/>

<sup>31</sup> Jonathan Rose, “Old-Fashioned Deposit Runs,” Board of Governors of the Federal Reserve System, *Finance and Economics Discussion Series* No. 2015-111. <https://www.federalreserve.gov/econresdata/feds/2015/files/2015111pap.pdf>.

<sup>32</sup> Lael Brainard, “Private Money and Central Bank Money as Payments Go Digital: An Update on CBDCs,” Speech made at the Consensus by CoinDesk 2021 Conference, Washington, D.C., May 24, 2021, <https://www.federalreserve.gov/newsevents/speech/brainard20210524a.htm>.

society absent any other changes.<sup>33</sup> The desire to mitigate this impact has been noted, again quoting Gov. Brainard: “Thus, the design of any CBDC would need to include safeguards to protect against disintermediation of banks and to preserve monetary policy transmission more broadly.”<sup>34</sup>

## Non-government digital currency: Crypto

The conversation until now has focused exclusively on money that is either created directly by the government or created by financial institutions chartered, regulated, and insured by the government. The technological innovations cryptocurrency offers have created a new threat (or opportunity) challenging the government’s monopoly of money.

Returning to the basic definition of money, a cryptocurrency is able to create a system of debits and credits with third party acceptance without prior party consent through the use of blockchain settlement.<sup>35</sup> Most major cryptocurrencies—such as Bitcoin, Ethereum, and Litecoin—use blockchain to keep records of transactions and provide proof and security to users that their asset can be transfer easily and without prior party consent. Some companies have even suggested issuing their own digital currencies: Facebook received both praise and condemnation when it announced plans to launch its own digital currency Libra (now known as Diem).<sup>36</sup> It should be noted that many private companies already issue a form of currency – frequent flier miles or hotel points. These assets (for consumers and liabilities for companies) are not money because they ultimately require the consent of the company for exchange. I cannot transfer my frequent flyer miles to you without the airline’s agreement. A key difference with the cryptocurrency proposed is the ability to operate the currency outside of corporate control.

As mentioned earlier, a commodity must have an acknowledged, relatively consistent value to be used as money. Fluctuation in valuation remains an impediment to the adoption of cryptocurrency as money. Volatility in Bitcoin<sup>37</sup> and other major cryptocurrencies<sup>38</sup> reduce their inherent ability to function as money. Expectations of volatility can cause similar problems, so that even periods of value stability may be insufficient, if perceptions of volatility remain.

Valuation problems can also occur in government-backed fiat currency as well. Hyperinflation is well-documented in many societies—such as Venezuela,<sup>39</sup> Zimbabwe,<sup>40</sup> pre-WWII Germany,<sup>41</sup> and Hungary<sup>42</sup>—and can erode and potentially destroy fiat currency from acting as money. Societies experiencing the degradation of money create money alternatives to continue to function. In the case when money fails, societies are often reduced to bartering or other forms of less efficient methods of exchange to achieve the trading of goods and services that money facilitates.

Even if volatility coincides with long-run appreciation, it impedes the ability to function as money. The problem is not unique to depreciating assets (such as paper fiat currency in periods of hyper-inflation or

<sup>33</sup> This assumes the central bank would not be making direct loans or altering the fractional reserve ratio that banks can lend to (e.g. lowering bank capital standards).

<sup>34</sup> Brainard, “Private Money.”

<sup>35</sup> Blockchain settlement is a new technique to record transactions, as opposed to single or dual entry book keeping which has been the dominant form of financial transaction record keeping for centuries.

<sup>36</sup> Ryan Browne, “Facebook-backed Diem aims to launch digital currency pilot later this year.” *CNBC*, April 20, 2021, <https://www.cnbc.com/2021/04/20/facebook-backed-diem-aims-to-launch-digital-currency-pilot-in-2021.html>.

<sup>37</sup> Charles Bovard, “Bitcoin Price Volatility Reached a 14-Month High in June.” *Forbes*, July 1, 2021, <https://www.forbes.com/sites/cbovaird/2021/07/01/bitcoin-price-volatility-reached-a-14-month-high-in-june/?sh=389899a30236>.

<sup>38</sup> Joanna Ossinger, “Crypto’s Savage Swings May Deter Big Investors From Jumping In,” *Bloomberg*, May 21, 2021, <https://www.bloomberg.com/news/articles/2021-05-21/crypto-s-savage-swings-may-deter-big-investors-from-jumping-in>.

<sup>39</sup> Gonzalo Huertas, “Hyperinflation in Venezuela: A Stabilization Handbook,” *Peterson Institute for International Economics*, September 2019, <https://www.piie.com/sites/default/files/documents/pb19-13.pdf>.

<sup>40</sup> Janet Koech, “Hyperinflation in Zimbabwe,” In: *Globalization and Monetary Policy Institute 2011 Annual Report*. Federal Reserve Bank of Dallas, 2011, <https://www.dallasfed.org/~media/documents/institute/annual/2011/annual11b.pdf>.

<sup>41</sup> Matthew Boesler, “WEIMAR: The Truth About History’s Most Infamous Hyperinflation Horror Story,” *Business Insider*, September 20, 2013, <https://www.businessinsider.com/weimar-germany-hyperinflation-explained-2013-9>.

<sup>42</sup> Bryan Taylor, “The Worst Case of Hyperinflation in History,” *Business Insider*, April 16, 2014, <https://www.businessinsider.com/hungarys-hyperinflation-story-2014-4>.

the history of airline frequent flyer miles which have been devalued over time<sup>43</sup>) or appreciating assets (such as Bitcoin over the past decade).

## Money and health

How Americans interact with money is deeply intertwined with a set of factors that also are intrinsically related to health. Chief among these are income, age, race, and geography. The next section of the paper explores the correlations between payment mechanism and each of these factors. Sometimes the interaction points to a potential health impact directly, which is mentioned. In other instances, the impact is a few steps removed.

One channel by which all payments potentially impact health is through the income effect. As demonstrated below, how money is accessed comes with a set of costs and benefits. The current system is a reverse Robin Hood scenario, in which lower-income people pay more to access money, while the wealthy are paid to use their own money. Growing income inequality is likely to exacerbate health inequity, given the relationship between health and income.<sup>44</sup> Regardless of the equity issues, the high costs paid by lower-income people to access digital money reduces other income available to afford health care services,<sup>45</sup> make healthier choices that cost more money,<sup>46</sup> and access governmental benefits designed to reduce income and healthy inequalities.

### How you pay reflects how much you earn

How one accesses money is correlated with wealth,<sup>47</sup> by design. Usage of cash, prepaid, debit, and credit cards is correlated with income, in that order. The wealthier you are, the greater the probability you are using credit cards; the lower your income, the more likely you are using cash. Much of this is built into the system itself. Credit cards, particularly high-end luxury cards, are only offered to those who qualify.<sup>48</sup> Qualification is a combination of income screening and credit scoring. Credit scoring is itself correlated with income and wealth, again by design.<sup>49</sup>

Consider two different groups of households: those that earn less than \$40,000 a year and those that earns \$75,000 or more. They comprise roughly equal shares of the population (36 and 40 percent respectively) but occupy very different places on the payment spectrum.<sup>50</sup> In 2019, about half of households at \$40,000 or less had a credit card, and only fifteen percent of their payments used credit cards. Thirty percent of payments made in these households used cash.<sup>51</sup> At the other end, credit cards were nearly universal above the \$75,000 income threshold: 93 percent of households earning over \$75,000 had a credit card. Among these households, about one out of every three transactions (32%) were

<sup>43</sup> Ethan Steinberg, "Why points and miles are a bad long-term investment," *The Points Guy*, December 31, 2020, <https://thepointsguy.com/guide/points-and-miles-bad-investment/>.

<sup>44</sup> Pollack et al., "Measure wealth?"

<sup>45</sup> Lisa Servon, "The High Cost, for the Poor, of Using a Bank," *The New Yorker*, October 9, 2013, <https://www.newyorker.com/business/currency/the-high-cost-for-the-poor-of-using-a-bank>.

<sup>46</sup> "Eating healthy vs. unhealthy diet costs about \$1.50 more per day," Press release, Harvard School of Public Health, December 5, 2013, <https://www.hsph.harvard.edu/news/press-releases/healthy-vs-unhealthy-diet-costs-1-50-more/>.

<sup>47</sup> Claire Greene, "Household Income and Consumer Payments Behavior," *Take on Payments, Federal Reserve Bank of Atlanta*, August 31, 2020, <https://www.atlantafed.org/blogs/take-on-payments/2020/08/31/household-income-and-consumer-payment-behavior>.

<sup>48</sup> Aaron Klein, "Opinion: How credit card companies reward the rich and punish the rest of us." *Los Angeles Times*, December 20, 2019, <https://www.latimes.com/opinion/story/2019-12-20/opinion-how-credit-card-companies-reward-the-rich-and-punish-the-rest-of-us>.

<sup>49</sup> Stefania Albanesi, Giacomo De Giorgi, and Jaromir Nosal, "Credit Growth and the Financial Crisis: A New Narrative," *NBER Working Paper No. 23740*, [https://www.nber.org/system/files/working\\_papers/w23740/w23740.pdf](https://www.nber.org/system/files/working_papers/w23740/w23740.pdf).

<sup>50</sup> Greene, "Household Income and Consumer Payments Behavior"

<sup>51</sup> Ibid.

made with that card. Only 16% of transactions were made with cash for this group. Interestingly, this 2:1 credit card to cash usage is the reverse of the same ratio for the lower-income group.<sup>52</sup>

The difference in payment usage translates back into household income.<sup>53</sup> Consider a wealthy family who has a credit card that returns 2.5 percent cash back. Those cash rewards are not subject to income tax, making their economic value closer to, or perhaps higher than, 4 percent on a pre-tax basis. Put another way, this family is paying on net only 96% of the price at the register, compared to a family that uses a standard, non-reward debit card or cash. The payment system has evolved into one in which the wealthy pay less for the same good.

## Age and money

The correlation between payment type and age is a main driver of many of the deviations from typical relationships. Cash usage is highest among the youngest and oldest adult groups of the population, according to detailed data recorded by the Federal Reserve Bank of San Francisco.<sup>54</sup> Adults under the age of 25 and over the age of 65 report using cash for roughly one-fourth to one-fifth of all transactions, compared to under 20 percent for those ages 25 to 44.<sup>55</sup> While the use of cash and credit cards are similar among the two ends of the age spectrum, they differ sharply in the use of checks which constitute 13 percent of payments for seniors and an insignificant share for young adults. Another key difference is the use of debit cards, which the young use for over half of transactions, more than twice the rate of seniors at 19 percent.<sup>56</sup> Interestingly, seniors are more than twice as likely to use electronic payment (13 percent vs. 5 percent),<sup>57</sup> consistent with other data that show online direct payments to be generally much larger amounts (think mortgage payments).<sup>58</sup>

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<sup>52</sup> Ibid.

<sup>53</sup> Aaron Klein, "Opinion: How credit card companies reward the rich and punish the rest of us," *Los Angeles Times*, December 20, 2019, <https://www.latimes.com/opinion/story/2019-12-20/opinion-how-credit-card-companies-reward-the-rich-and-punish-the-rest-of-us>.

<sup>54</sup> Kelsey Coyle, Laura Kim, and Shaun O'Brien. "2021 Findings from the Diary of Consumer Payment Choice." *Federal Reserve Bank of San Francisco*, May 5, 2021, <https://www.frbsf.org/cash/publications/fed-notes/2021/may/2021-findings-from-the-diary-of-consumer-payment-choice/>.

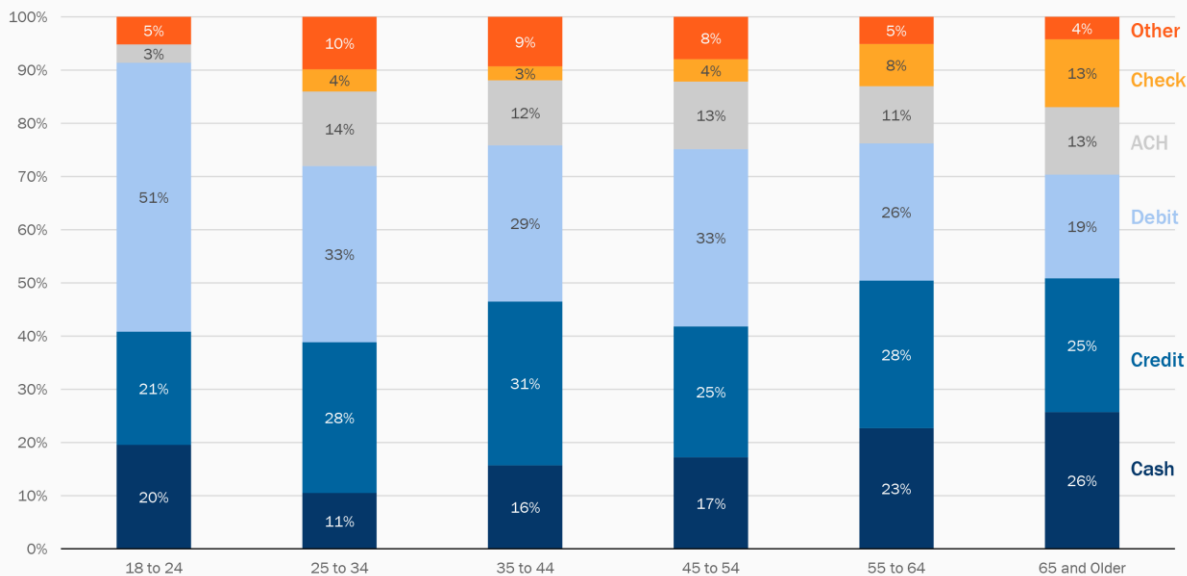
<sup>55</sup> This figure has fallen dramatically in the past two years (with some impact likely due to Covid); in 2018, both young adults and seniors used cash for one third of transactions.

<sup>56</sup> Coyle et al., "Diary of Consumer Payment Choice."

<sup>57</sup> Ibid.

<sup>58</sup> *The 2019 Federal Reserve Payment Study*. Federal Reserve, January 2020. Available at: <https://www.federalreserve.gov/paymentsystems/2019-December-The-Federal-Reserve-Payments-Study.htm>.

**Figure 3. 2020 Payment Instrument Use by Age**



Source: Federal Reserve Bank of San Francisco, 2021 Diary of Consumer Payment Choice



Age is also a large variable in how people interact with their bank. Banked customers across the board are increasingly using mobile channels as their main interactive source and decreasingly using of branches and tellers. According to the FDIC’s Survey of Household Use of Banking and Financial Services, mobile banking has jumped to the main interactive method for customers, rising from 9.5 percent of consumers’ primary mode of interaction to 34 percent in just 4 years (2015 to 2019). During the same period, bank teller interactions fell by a quarter from 28 to 21 percent. Mobile’s rise drew not only from teller interactions but also from online interactions, which fell from 37 to 23 percent. This indicates that the growth in mobile banking is a combination of a change in electronic interaction from desktop to mobile coupled with a decline of in-person interactions. Bank teller interactions are still important, at about 1 in 5 customers’ main method of interaction, roughly the same as online (non-mobile) and ATMs.<sup>59</sup>

The data on in-person usage by age tell an interesting story. As many have noted, older people are substantially more likely to use a teller than online or mobile banking. There is a significant break in behavior around age 65. For example, take the ratio of the primary method of accessing a bank account between technology (online and mobile) vs. in-person (teller) (ATMs are excluded for this metric). Those ages 35 to 44 are 6.6 times as likely to use technology banking over a teller. For ages 45-54, that ratio is 3.4; for ages 55 to 64 it falls to 1.9; and for 65 and up it is down to 0.86. However, the general trend of less in-person usage and greater online usage over time still holds for seniors. Those age 65 and up had the sharpest decline of using bank tellers as their primary interactive source of any age, falling almost 6 percentage points over just two years (between 2017 and 2019).<sup>60</sup>

Reliance on cash is a rare commonality between the young and old, linking two demographic groups who are generally on the opposite ends of the spectrums of both health and adoption of new technology.<sup>61</sup> One takeaway is that research that examines the use of cash or other payment instruments on health should try to control for age, as these two distinct groups that share an affinity for cash will likely have different

<sup>59</sup> *How America Banks: Household Use of Banking and Financial Services*, Federal Deposit Insurance Corporation, 2019, <https://www.fdic.gov/analysis/household-survey/2019report.pdf>, 22.

<sup>60</sup> *Ibid.*, 22.

<sup>61</sup> “Goal F: Understand health disparities related to aging and develop strategies to improve the health status of older adults in diverse populations.” In *The National Institute on Aging: Strategic Directions for Research, 2020-2025*, National Institutes of Health, 2020, <https://www.nia.nih.gov/about/aging-strategic-directions-research/goal-health-disparities-adults>.



health trajectories and needs. Another finding is that affinity for cash is not predictive of interactions with a financial institution. While the young and old both use cash more in their daily life, they interact very differently with financial institutions. Thus, policies and technologies that are aimed at achieving greater levels of financial inclusion need to consider the different desires to interact with financial institutions and products through differing channels. A set of policies implemented through digital channels will disproportionately target the young, while those delivered through in-person interactions at branches will more successfully target older Americans. However, even among seniors the trend is toward digitization in financial interactions.

## Race and money

Entire books have been written on the relationship between race and money, rightfully so given the continuing impacts of racial discrimination throughout financial services. This paper will not attempt to summarize all of this important scholarship – for those interested, I recommend “The color of money” by Mehrsa Baradaran.<sup>62</sup> Likewise the relationship between health and race has been extensively studied with a series of important relationships uncovered.<sup>63</sup> Race and racial discrimination continue to have a substantial impact on both health outcomes and the provision of financial services.

On the narrower topic of how race influences how people interact with money, there are several facts and relationships that can guide the conversation and illuminate potentially new and unusual differences. The first set of findings reinforce the relationship between race, wealth, and money. Black families are over 5.5 times and Latino families 4.9 times more likely to be unbanked than white families, while Asian families are even more likely than white families to have a bank account.<sup>64</sup> Black families are almost twice as likely to use prepaid cards as white families, although Latino families resemble white families in regard to prepaid card usage.<sup>65</sup> Black families are 3.3 times and Latino families 3.8 times more likely than white families to use a non-bank bill payment service (e.g. money orders).<sup>66</sup> Person-to-person (P2P) payment services (e.g. Venmo, PayPal) are more commonly used by white families than Black or Latino families. This is particularly interesting when considering the impact of age on the use of P2P services. Asian families are less likely than white families to use prepaid cards or check cashers and more likely to use P2P services, but also more likely to use a non-bank bill payment service.

International remittances are one area where new fintech, including non-government cryptocurrencies, are mentioned as having ability to provide cheaper, faster, and more secure services.<sup>67</sup> This use case is particularly important for many people of color in the United States, given the extreme racial disparities in international remittances. One in five Latino and more than one in eight Asian households reported making a remittance in 2019, compared to fewer than one in fifty white households. Black households reported levels in between, around one in every sixteen, a reminder of the diversity within the racial category of Black, between recent immigrants and families with deep roots in America.<sup>68</sup>

<sup>62</sup> Mehrsa Baradaran, *The Color of Money: Black Banks and the Racial Wealth Gap* (Cambridge, MA: Harvard University Press, 2019).

<sup>63</sup> For examples, see resources from the Harvard School of Public Health (<https://www.hsph.harvard.edu/race-and-health/>), the CDC (<https://www.cdc.gov/healthequity/racism-disparities/index.html>), and the American Public Health Association (<https://www.apha.org/topics-and-issues/health-equity/racism-and-health>).

<sup>64</sup> *How America Banks*, 13.

<sup>65</sup> *Ibid.*, 33.

<sup>66</sup> *Ibid.*, 38.

<sup>67</sup> For instance, see Wise, Inc. (formerly TransferWise, <https://wise.com/>). Some observers have also commented that Facebook’s proposed Diem (formerly Libra) will reduce remittance expenses; see Dirk Andreas Zetzsche, Ross Buckley, and Douglas W. Arner, “Regulating LIBRA: The Transformative Potential of Facebook’s Cryptocurrency and Possible Regulatory Responses,” *Oxford Journal of Legal Studies* (Forthcoming, July 11, 2019), <https://ssrn.com/abstract=3414401>.

<sup>68</sup> *How America Banks*, 37.

## Geography of money

There is a geographic element of cash and card usage that helps demonstrate the income and racial elements of payments but also adds another dimension. The five states with the highest share of card based payments according to Square, one of the largest new payment processors, are: Utah, Virginia, California, Colorado, and Washington. Merchants using Square as their cash register report roughly two-thirds of transactions on cards and one-third in cash in these high-card usage states.<sup>69</sup> While these states are all relatively wealthy, they are not the wealthiest (ranking between 7-13). They have little else in common racially, as they range from fairly racially diverse (California) to heavily white (Utah). The predominant nonwhite racial category varies from African American in Virginia to Asian in Washington. The heavy cash states are also an unusual mix: Wisconsin, Delaware, West Virginia, Hawaii, and Iowa. In these states the ratio of cash to card is roughly 50/50. State average income is more diverse in this group with Hawaii above average, Iowa, Delaware, and Wisconsin around the median, and West Virginia below average.<sup>70</sup>

There appears little correlation between the states at the dual end of the spectra of payment methods and their rank as healthy states. While there are many metrics for ranking state health, generally speaking Hawaii, Utah, and Colorado rank among the healthiest, while West Virginia is among the least healthy.<sup>71</sup> Income is generally correlated with health and card usage, so it is interesting that a state like Hawaii can be high income, high health, and also high cash.

Within a metro area, usage of payments can differ radically. In New York City's five boroughs, Manhattan and Brooklyn are heavily dominated by card payments, with more than 3 out of 4 payments made by card, in the Square data set. The Bronx and Staten Island are on the other side of the spectrum, at a 50/50 split. Queens is in the middle at a 57/43 card/cash ratio.<sup>72</sup> What does it mean when the Bronx and Staten Island, the two boroughs the farthest from each other geographically, racially, politically, and perhaps culturally use money more similarly and quite differently than Manhattan and Brooklyn?

**Table 1: Selected health metrics in the New York City boroughs<sup>a</sup>**

	Manhattan	Brooklyn	Bronx	Staten Island	Queens
Premature Death <sup>b</sup>	3,900	5,100	6,700	5,600	4,300
Obesity	15%	23%	29%	28%	23%
Low birthweight	8%	8%	9%	8%	8%
Poor mental health days <sup>c</sup>	4.0	3.8	4.1	3.9	3.5
Excessive Drinking	25%	18%	16%	19%	16%
Adult Smoking	12%	14%	16%	15%	12%
Uninsured	6%	8%	9%	5%	10%

<sup>a</sup> Source: University of Wisconsin Population Institute County Health Rankings. <sup>b</sup> Annual years of potential life lost before age 75 per 100,000 people. <sup>c</sup> Average number of mentally unhealthy days reported in the past 30 days.

<sup>69</sup> "Chapter 1: Payments, Perspectives, and Politics." In: *Making Change*, Square, Inc., 2019. Available at: <https://squareup.com/us/en/making-change/2019>.

<sup>70</sup> "Real Median Household Income by State, Annual." Federal Reserve Economic Data, Federal Reserve Bank of St. Louis. Available at: <https://fred.stlouisfed.org/release/tables?eid=259515&rid=249>.

<sup>71</sup> See, for instance: "State Rankings," *America's Health Rankings 2018*, United Health Foundation, <https://www.americashealthrankings.org/learn/reports/2018-annual-report/findings-state-rankings>. See also "Healthiest States 2021," World Population Review, <https://worldpopulationreview.com/state-rankings/healthiest-states>

<sup>72</sup> "Chapter 1: Payments, Perspectives, and Politics." In: *Making Change*, Square, Inc., 2019. Available at: <https://squareup.com/us/en/making-change/2019>.



Similarly, comparisons of health metrics between the boroughs show relatively little correlation. While Manhattan and Brooklyn score higher on some metrics of health, such as less premature death and lower rates of obesity, there is little difference compared to the Bronx and Staten Island on other important factors including share of low birthweight, poor mental health, excessive drinking or adult smoking, and share of people without health insurance.<sup>73</sup>

One key takeaway is that cash and card usage—while related to and correlated with income and race—sometimes transcend traditional racial and geographic divides. Populations that may appear to have little in common with each other using standard demographic analysis may be more similar in how they use money.

## Financial and physical health

The connections between individual, family, and group financial well-being and physical health are substantial, complex, and growing. Financial well-being impacts consumers' ability to afford health care, both preventative and acute.<sup>74</sup> But financial services are not only a means to achieve the ends of a "culture of health," a framework described by the Robert Wood Johnson Foundation as one where "everyone has access to the care they need and a fair and just opportunity to make healthier choices."<sup>75</sup> Financial well-being itself needs to be considered part of the decision on whether we have achieved a healthy outcome. Financial ill health creates direct and predictable consequences that result in reduced physical health.<sup>76</sup> Stress is one vector. Another is the inability to participate in aspects of the economy and life that results in impact on health outcomes.<sup>77</sup>

The correlation between income and health has been demonstrated in multiple studies. One by the Urban Institute showed that almost 23 percent of families earning less than \$35,000 a year self reported fair or poor health, compared to 7 percent of families earning \$75-100,000 a year and only 5.6 percent of families earning over \$100,000.<sup>78</sup> Supporting the self-assessment are data on a variety of chronic and acute disease or illness from strokes to kidney failure, diabetes to emphysema, problems with hearing, vision, and teeth, which are all correlated to income. Life expectancy, one of the greatest metrics of health, is highly correlated with income; the average life expectancy of those earning over four times the poverty level is six years longer than the average life expectancy of those earning below the poverty line.<sup>79</sup>

Mental health is another important aspect of health related to financial well-being. Feelings of sadness, hopelessness, and worthlessness were all almost monotonically related to income brackets, with negative feelings over three times as likely among those under \$35,000 as above \$75,000.<sup>80</sup> Research published a decade ago from Kahneman and Deaton<sup>81</sup> finds a correlation between income and subjective measures of well-being up to a threshold of \$75,000, again indicating that increases in income below that level would improve subjective measures of well-being, which in turn impact health.<sup>82</sup>

<sup>73</sup> "County Health Rankings and Roadmaps." University of Wisconsin Population Health Institute, 2021. Available at: <https://www.countyhealthrankings.org/>.

<sup>74</sup> Mina Addo and Lisa Servon, "Income Volatility and health care decision-making," *Brookings Institution*, May 6, 2021, <https://www.brookings.edu/research/income-volatility-and-healthcare-decision-making/>.

<sup>75</sup> *A Culture of Health*, Robert Wood Johnson Foundation, <https://www.rwjf.org/en/cultureofhealth/about.html>

<sup>76</sup> Steven H. Woolf et al., "How are Income and Wealth Linked to Health and Longevity?" *Urban Institute, Center on Society and Health*, April 2015, <http://www.urban.org/sites/default/files/publication/49116/2000178-How-are-Income-and-Wealth-Linked-to-Health-and-Longevity.pdf>.

<sup>77</sup> *Ibid.*, 5.

<sup>78</sup> *Ibid.*, 1.

<sup>79</sup> Paula Braveman, Susan Egerter, and Colleen Barclay, "Income, Wealth and Health," *Exploring the Social Determinants of Health, Robert Wood Johnson Foundation*, April 1, 2011, <https://www.rwjf.org/en/library/research/2011/04/how-social-factors-shape-health1.html>.

<sup>80</sup> Woolf et al., "Income and Wealth," 3.

<sup>81</sup> Daniel Kahneman and Angus Deaton, "High income improves evaluation of life but not emotional well-being," *Proceedings of the National Academy of Sciences* 107, no. 38 (September 2010): 16489-16493, <https://doi.org/10.1073/pnas.1011492107>.

<sup>82</sup> A careful reader will notice that the figures of \$75,000 are not from research conducted in the same year and hence are comparisons of nominal numbers over time. This is true, although for the decade in question (the 2010s) inflation was relatively low. More importantly, exact income thresholds for the effects being discussed are far from agreed upon in research. The core point

Other factors were correlated with income but also had independent impacts on both physical and mental health. Income alone is not the only factor. However, the idea that income is related to health and that being lower income in particular has negative impacts on physical and mental health is intuitive and documented.

Just as physical health comprises a set of metrics (blood pressure, heart condition, and height and weight, for instance) so too does financial health. Income is only one element of a broader set of metrics that constitute financial well-being. Income may be the most easily and frequently measured, but it tells only one part of the story of a person's or family's financial health. Better measurements of financial health may then influence policy proposals designed at achieving objectives, including creating a stronger culture of health.

How do we better measure financial health? To start with, financial health is a complex topic that has too long been analyzed under a rubric of finance with not enough attention paid to how analysis through the health framework can add value. A threshold question is to determine how many American families are financially healthy and how many are financially unhealthy.

The Financial Health Network (FHN) has attempted to answer that question. Their research indicates that about 35 percent of American households are financially healthy, while 50 percent are deemed 'coping' and 14 percent are considered 'vulnerable.'<sup>83</sup> This is based on an aggregate index measuring eight indicators of financial health along a 0-100 total spectrum. Those with a score of 80 or higher were classified as "healthy," between 40 and 80 as "coping," and 40 or less as "vulnerable."

Credit scores provide another snapshot of financial health. Forty-two percent of Americans have 'super-prime' credit scores (above a 720 on the standard FICO scoring system) while 13 percent are considered 'deep subprime' (scores below 580). An additional 22 percent of Americans are either 'credit invisible' with no score or have a 'thin or stale' score indicating too little/old information to make meaningful predictions.<sup>84</sup> These figures are somewhat similar, with a minority of Americans in the top category that is 'healthy,' a plurality with some level of unhealthy, and a sizable minority clearly in distress.

There is some endogeneity between these two metrics, as credit scores feed into parts of the observed variables used by the Financial Health Network's more holistic approach. Further, a super-prime credit score is not determinative of financial health; likewise, one could be deeply subprime and still healthy on other metrics. However, this data does corroborate the idea that fewer than half of Americans are "financially healthy."

What does it mean to not be financially healthy? To start with, it means more of your money goes to paying for financial services. FHN found that households pay \$303 billion annually in interest and fees for everyday financial services; 84 percent of that (\$255 billion) was paid by families who were financial vulnerable or coping.<sup>85</sup> Put another way, a financially healthy household pays about 1 percent of its annual income on fees and interest payments for everyday financial services, while a financially vulnerable household spend 13 percent of total income in fees and interest costs.

One of the findings of this paper is that one of the factors at play in the intersection of income and physical health is the effect of the financial and payment systems that further exacerbate income inequality as measured by household income. Because lower-income households pay more for basic financial services, they have less money available for all other expenses, including health care. Studies documenting the correlation between household income and measures of health are underestimating the

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thought, that income levels up to a threshold that appears to be at least at, if not above the national median income are correlated with outcomes of subjective well being and mental health.

<sup>83</sup> Meghan Greene et al., "The FinHealth Spend Report 2021: What Financial Coping and Vulnerable Americans Pay for Everyday Financial Services," *Financial Health Network*, June 2021, <https://finhealthnetwork.org/research/finhealth-spend-report-2021/>, 11.

<sup>84</sup> "The Consumer Credit Card Market," *Consumer Financial Protection Bureau*, August 2019, [https://files.consumerfinance.gov/f/documents/cfpb\\_consumer-credit-card-market-report\\_2019.pdf](https://files.consumerfinance.gov/f/documents/cfpb_consumer-credit-card-market-report_2019.pdf), 21.

<sup>85</sup> Greene et al., "FinHealth Spend Report 2021," 5.

level of correlation to some degree by not considering the impact of income on the cost of basic financial services. Including that data would likely show an even greater correlation on macro and micro levels.

Financial services and payments are generally not even considered as a transmission mechanism among the many broader social and economic determinants of health. For example, the Urban Institute study mentioned earlier listed nine specific community-level health factors that they suggested play a role in the income/health correlation, ranging from healthy food access to housing, transportation, school systems, jobs, environmental pollution, and societal disinvestment. Financial services access and cost was not listed. Future research should expressly consider access and cost of basic financial services, including the role of the payment system and especially digital money, as a method by which income inequality is exacerbated and access to healthier options are reduced.

## A health paradigm for fintech?

This paper has focused on the consequences of new financial technology that can either break down or reinforce existing barriers to achieving healthier outcomes. A corollary question is whether new methods of delivering healthcare can break down existing problems that preclude the achievement of more financially healthy outcomes for individuals and society. Improving financial health should result in physically healthier outcomes. Prior research has connected a series of dots between reducing poverty and improved health,<sup>86</sup> such as the correlation between financial stress and physical stress<sup>87</sup> (stress being a known factor for many health issues), the consequences of not having enough income or access to credit, and affording medical interventions that can improve health outcomes.<sup>88</sup> Thus, it is worth exploring to some degree what lessons learned from improving the provision of health services can be brought into financial services, particularly where new technology on the health or finance side may play a role.

New research from Todd Baker and Corey Stone argues that financial regulation and policy can indeed learn a substantial lesson from their health care counterparts.<sup>89</sup> The implementation of a health care framework predicated on measuring and incentivizing healthier outcomes could translate into a financial context, replacing the current regulatory framework that is based more on regulation of inputs. Financial regulation generally draws on a combination of disclosures to better inform consumers, coupled with “narrow proscriptions regarding provider practices” and “limited interventions in prices and fees.”<sup>90</sup> A regulatory system based on measuring consumer outcomes and responding accordingly would shift the paradigm to better align regulation with policy goals.

One reason existing financial regulation has been based on disclosures and provider practices, prices, and fees is that they are relatively easy to measure and monitor. Outcome based models are far more complicated. The top three drivers of personal bankruptcy are job loss, divorce, and medical expenses, which are generally not highly correlated with financial products and services.<sup>91</sup> Baker and Stone argue that the ability to measure financial health is a more recent phenomenon based on the emergence of new metrics—made possible by the creation, digitization, and standardization of financial data—which allow measurement of financial health outcomes for consumers that can guide a new regulatory regime.

<sup>86</sup> Dave A. Chokshi, “Income, Poverty, and Health Inequality.” *JAMA* 319, no. 13 (2018): 1312-1313. doi:10.1001/jama.2018.2521.

<sup>87</sup> Laura Choi, “Financial Stress and its Physical Effects on Individuals and Communities.” *Community Development Investment Review* (2009): 120-122. <https://www.frbsf.org/community-development/files/choi.pdf>.

<sup>88</sup> Malerie Lazar and Lisa Davenport, “Barriers to Health Care Access for Low Income Families: A Review of Literature.” *Journal of Community Health Nursing* 35, no. 1 (Winter 2018): 28-37. <https://pubmed.ncbi.nlm.nih.gov/29323941/>

<sup>89</sup> Todd H. Baker and Corey Stone, “Making Outcomes Matter: An Immodest Proposal for a New Consumer Financial Regulatory Paradigm,” *The Business and Finance Law Review* 4, no. 1 (November 2020), [https://qwbflr.org/wp-content/uploads/2020/11/Article-1\\_V411\\_Baker.pdf](https://qwbflr.org/wp-content/uploads/2020/11/Article-1_V411_Baker.pdf).

<sup>90</sup> *Ibid.*, 1.

<sup>91</sup> Sullivan, Warren and Westbrook (2000) as cited in [https://www.nber.org/system/files/working\\_papers/w21032/w21032.pdf](https://www.nber.org/system/files/working_papers/w21032/w21032.pdf) footnote 3. And yes that is now Senator Elizabeth Warren, then professor.

A foundation of their argument is that there is a “current misalignment between provider incentives and consumer financial health.”<sup>92</sup> In theory such a mismatch may not exist. There could be a combination of market incentives and structures with regulatory rulemaking that would align financial provider incentives with those of consumer financial health. The existence of high-cost financial products targeted to lower-income customers (check cashers, payday lenders, etc.) does not prove the authors’ assertion any more than the existence and usage of junk food prove an unhealthy diet. The trade-offs a person may make between their financial health and other benefits may tilt toward prioritization of non-financial health. This would be akin to a person choosing to eat junk food, which they know is unhealthy, because it satisfies another goal (a yummy snack). Just as there are non-linear impacts of diet on health, the overconsumption of financially costly products can and will lead to serious structural problems. However, the occasional unhealthy action does not itself result in serious consequences.

## Improving health by increasing financial access through technology

The first stage of the internet revolution was about information. The information revolution brought about by the internet and rapid digitization of knowledge had profound consequences for creating a culture of health and healthier outcomes.<sup>93</sup> The ability to disseminate and access information provides opportunities to overcome a wide range of knowledge obstacles and information asymmetries to allow for healthier choices.

The key barrier to accessing the benefits of knowledge is access to information. Concerns about internet access, cost of data, and speed of delivery dominated concerns about inequitable benefits from this knowledge revolution.<sup>94</sup> Difficulties regarding internet access and the digital divide remain. As Dr. Nicol Turner-Lee’s research has made clear, the lack of access to high-speed, broadband internet is a problem in a wide range of communities from large swath of rural America to inner-cities and many places in-between.<sup>95</sup> Access is not simply a binary question either. While unlimited data plans are the norm among those with money, roughly half of people with phone plans have limits on their data, and one in four report paying marginal costs beyond five GB per month.<sup>96</sup>

Despite the continued existence of a digital divide, widespread adoption of smart phones has facilitated a new technological revolution in which electronic and app-based commerce have unlocked an entirely new set of products for consumers and jobs for workers. This has transformed a wide range of activities. Instead of using your hand to hail a cab, you now can order an Uber through an app; instead of putting change in a parking meter, you now pay on your phone; and instead of going to the grocery store, you can now ordering delivery on Amazon. Some of those applications require only information, but others require payment. Requiring payment is in essence a requirement for digital money.

Solving the problem of how to settle financially between sellers and buyers of online services was a critical component of the e-commerce and app-based revolutions. In this role, the creation of PayPal as a method for eBay to connect buyers and sellers was a seminal system.<sup>97</sup> This differed from the prior financial technological revolution begun by acceptance by a set of restaurants in New York of a Diners Club credit card<sup>98</sup> in that the set of merchants and customers were no longer bound by an existing credit or bank

<sup>92</sup> Ibid. 36.

<sup>93</sup> Adie Tomer et al., “Digital prosperity: How broadband can deliver health and equity to all communities,” *Brookings Institution*, February 27, 2020, <https://www.brookings.edu/research/digital-prosperity-how-broadband-can-deliver-health-and-equity-to-all-communities/>.

<sup>94</sup> Ibid.

<sup>95</sup> Nicol Turner-Lee, “Enabling opportunities: 5G, the internet of things, and communities of color.” *Brookings Institution*, January 9, 2019, <https://www.brookings.edu/research/enabling-opportunities-5g-the-internet-of-things-and-communities-of-color/>.

<sup>96</sup> <https://www.statista.com/forecasts/1111440/size-of-mobile-data-plan-in-the-us>

<sup>97</sup> Brian O’Connell, “History of PayPal: Timeline and Facts,” *TheStreet*, August 26, 2019, <https://www.thestreet.com/technology/history-of-paypal-15062744>.

<sup>98</sup> “The Diners Club Legacy,” *Diners Club International*, Accessed September 17, 2021, <https://www.dinersclub.com/about-us/history>.

account system. They became able to exchange electronic funds on a different and new set of payment rails.

The assumption embedded in this solution was that access to digital currency was easy and costless. That is the case for the upper and upper middle classes. However, assumptions as to the cost structure to access digital money for all Americans is quite different. The result is a very different type of digital divide than originally anticipated: access to digital money.

## Access

One of the principles of a culture of health is that “no one is excluded.”<sup>99</sup> The financial system creates modes of exclusion. Traditional conversations in the financial services sector regarding “inclusion” focus on metrics such as the share of the population without a bank account (unbanked),<sup>100</sup> the proximity of banks and credit unions to communities (so-called financial deserts),<sup>101</sup> and the prevalence and usage of fringe financial service providers (check cashers, payday lenders, money transmitters).<sup>102</sup> Not nearly as well studied, but as important, is access to the payment system.<sup>103</sup>

Exclusion from accessing the financial system drives up costs for families, with the largest burden falling on those with the lowest incomes. Access to the financial and payment systems is highly correlated with income, by design. As shown earlier in the paper, America’s payment system has evolved in such a manner that lower-income people pay more than wealthier people, who instead of paying to access are actually receiving supplementary income from the payment system. The banking system similarly has a set of products and services that are structured in a manner that incur charges and fees for lower-income people at a far greater rate than those with higher incomes.

The impact of potential movements away from the acceptance of cash, both as part of the COVID-19 pandemic and as part of a broader structural transition to digital money, highlight what ought to be a growing concern for policymakers and those concerned about improving public health. The inability to access digital money poses significant problems and costs for those impacted. This includes the already unbanked, a group that are already disproportionately lower income and racial minorities.

Racial inequities compound these problems (like so many others), layering on an added element of inequality in accessing the financial system. Less than 3 percent of white American households are unbanked, a figure that rises to 12 percent for Latino households and 14 percent for African American families.<sup>104</sup> The racial gap exists not only for the basic question of access but also for the use of fringe financial services. Black families are more than three times more likely than white families to use money orders.<sup>105</sup>

The inability to access digital money cuts off important aspects of the digital economy as documented above. The health consequences of a failure to access the digital economy are significant, both in direct impact and indirect. Directly, a host of new technologies designed to improve health may assume immediate access to digital payments. These could include digital and online health platforms or services that are not set up through health insurance but rather are direct payment models. Even if they are run

<sup>99</sup> RWJF, *A Culture of Health*.

<sup>100</sup> Demirgüç-Kunt, Asli, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. The World Bank Group, 2018.

[https://globalfindex.worldbank.org/sites/globalfindex/files/2018-04/2017%20Findex%20full%20report\\_0.pdf](https://globalfindex.worldbank.org/sites/globalfindex/files/2018-04/2017%20Findex%20full%20report_0.pdf).

<sup>101</sup> Drew Dahl and Michelle Frank, “Banking Deserts’ Become a Concern as Branches Dry Up,” *Federal Reserve Bank of St. Louis*, July 25, 2017, <https://www.stlouisfed.org/publications/regional-economist/second-quarter-2017/banking-deserts-become-a-concern-as-branches-dry-up>.

<sup>102</sup> Federal Deposit Insurance Corporation, *2019 FDIC National Survey of Unbanked and Underbanked Households*, October 2020 <https://www.fdic.gov/news/press-releases/2020/pr20113.html>.

<sup>103</sup> Aaron Klein and Myrto Karaflos, “Universal Bank Accounts Necessary for Families to Bank on Child Tax Credit,” *Brookings Institution*, April 29, 2021, <https://www.brookings.edu/opinions/universal-bank-accounts-necessary-for-families-to-bank-on-child-tax-credit/>.

<sup>104</sup> FDIC, *Survey of Unbanked and Underbanked*, 19.

<sup>105</sup> FDIC, *How America Banks*, 37.



through insurance but require immediate digital payment (as opposed to later direct billing), they could cause problems with unequal adoption due to the digital payment divide.

The inability to access digital payments is likely to have much a larger indirect impact on health. The major transmission mechanisms include reduced overall levels of wealth and increased delays in the mismatch of income and expenses. Solving for access needs to be a top priority for policymakers. Specific proposals for greater access will be discussed later in the paper.

### Access at what cost?

Solutions for access should be judged both on success in achieving access and the cost structure for access. One could argue that while the U.S. trails many nations in banking access, it has achieved near universal banking at 95 percent of households.<sup>106</sup> This reasoning is faulty for several reasons. First, there is no reason for that figure not to be higher: over 97 percent of the UK's population has bank accounts,<sup>107</sup> and as does over 99 percent of Canada's population.<sup>108</sup>

Second, having a bank account alone does not ensure costs are the same. To the contrary, bank accounts and the payment system are structured to cost more for lower-income Americans for the same basic services. Two facts help prove this point. The first is the cost to access money, the second is the cost of running out of money. Both combine to highlight that the cost of basic banking for lower-income families must be fundamentally restructured and that doing so would increase overall family income, potentially improving health outcomes.

Consider how a person accesses money that was sent through a check. The individual has two options: depositing it in a bank account or going to a check casher. Generally bank accounts deposit checks for no direct cost, whereas check cashers charge fees that are significantly higher. However, banks can take several days to allow a consumer to access their funds, whereas check cashers provide money immediately. The adage "time is money" is especially true for people living paycheck to paycheck.

Check cashing is often termed part of the "fringe financial services" industry that focuses on the unbanked.<sup>109</sup> However, using FDIC data this paper concludes that the majority of check cashing customers and the majority of checks cashed in America are by consumers who have bank accounts. This fact helps explain the prevalence of check cashers despite the thirty percent decline in the number of unbanked families over the past decade.<sup>110</sup>

One would think the combination of the declines in checks written and those without bank accounts would spell the end of check cashing services in the U.S. This mistaken assumption is driven in part by the hidden assumption that those without bank accounts are the preponderance of check cashing customers.

There are approximately 13,000 check cashing stores in the United States, approximately 1 check casher for every six bank branches.<sup>111</sup> These stores turn 170 million checks into \$58 billion,<sup>112</sup> at a cost to

<sup>106</sup> Ibid., 1.

<sup>107</sup> Financial Conduct Authority, *The Financial Lives of Consumers Across the UK*, June 2018, <https://www.fca.org.uk/publication/research/financial-lives-consumers-across-uk.pdf>.

<sup>108</sup> Canadian Bankers Association, "Focus: Banks and Consumers," September 7, 2021, <https://cba.ca/banks-and-consumers>.

<sup>109</sup> Lyn E. Haralson, "Fringe' Lenders: Traditional Institutions Search for Alternatives," *Federal Reserve Bank of St. Louis*, January 1, 2008, <https://www.stlouisfed.org/publications/bridges/winter-20072008/fringe-lenders-traditional-institutions-search-for-alternatives>.

<sup>110</sup> FDIC, *How America Banks*; Federal Deposit Insurance Corporation, *2009 FDIC National Survey of Unbanked and Underbanked Households*, December 2009, <https://www.fdic.gov/analysis/household-survey/2009/2009report.pdf>.

<sup>111</sup> Financial Service Centers of America, "FISCA History," <https://www.fisca.org/FISCA/About/History/FISCA/Content/History.aspx?hkey=b537f994-46b6-4f46-a92a-36fbd1a29455> [Accessed September 20, 2021].

<sup>112</sup> Christine Bradley, Susan Burhouse, Heather Gratton, and Rae-Ann Miller, "Alternative Financial Services: A Primer," *FDIC Quarterly* 3, no. 1 (2009), <https://www.fdic.gov/analysis/quarterly-banking-profile/fdic-quarterly/2009-vol3-1/fdic140-quarterlyvol3no1-afs-final.pdf>, 1.

consumers of \$1.6 billion annually.<sup>113</sup> That an industry with almost as many stores as McDonalds can be considered “fringe” or “non-mainstream” says more about the expectations and experiences of the authors and researchers than about actual usage patterns.

In fact, the majority of customers who use check cashers have bank accounts. This finding comes from close analysis of the FDIC’s Survey of the Unbanked. That survey asked people who have bank accounts and those who do not whether they have used a check casher in the past twelve months (table 6.3). The results are surprising: with further calculation, they show that roughly 70 percent of people who report being a customer at a check casher also report having a bank account.<sup>114</sup>

**Table 2: Use of check cashers, by banking status**

	Share of U.S. population (%)	Share of group that uses check cashers (%)	Share of population that uses check cashers (%)	Share of checks cashed
Banked	94.6	4.0	3.8	70%
Unbanked	5.4	31.9	1.6	30%

Perhaps even more surprisingly, the majority of checks cashed at check cashers come from people with bank accounts. The same FDIC survey asks a series of questions regarding frequency of use of check cashing. People are asked to describe whether they use a check casher “often,” “sometimes,” or “rarely.” On an individual level, those without a bank account are eighteen times more likely to report using a check casher “often” than those with a bank account. However, because there are so many more households with bank accounts, on an aggregate data the relationship is reversed. Put another way, the FDIC data show that less than 1 percent of banked households “often” use a check casher, while 17.8 percent of unbanked households do the same.<sup>115</sup> However, because there are almost 19 times as many banked households as unbanked, the population of frequent check cashing customers is basically evenly split between banked and unbanked households.

Among those who report using a check casher “sometimes” the population skews heavily toward those with bank accounts. Roughly 1.4 percent of the total population has a bank account and “sometimes” uses check cashing services compared to 0.4 percent of the population who is unbanked but sometimes use check cashers. The data become even more skewed among those who “rarely” use check cashers, with banked households comprising 84 of respondents (1.6 percent compared to 0.3 percent of the total population).<sup>116</sup>

Without data on exact frequency of checks cashed, it is not possible to give specific proportions of total checks cashed by banked vs. unbanked households. The data are clear that the substantial majority of sometimes and rare users of check cashers are from households with bank accounts. Coupled with the near equal distribution between banked and unbanked populations among frequent users, it can be inferred with a very high degree of certainty that the majority of checks cashed are from households with bank accounts.

This new finding is consistent with FHN research which shows that the 13 percent of Americans who are ‘financially vulnerable’ comprise only 37.5 percent of the total amount spent on check cashing, while the relatively better off ‘coping’ households account for 50 percent and the most financially healthy households account for 12.5 percent of check cashing fees.<sup>117</sup> This analysis offers a strong challenge to the notion of what constitutes fringe financial services and makes a statement regarding the large number of Americans who need faster access to their funds than the banking system currently allows.

<sup>113</sup> Greene et al., *FinHealth Spend Report*, 23.

<sup>114</sup> FDIC, *How America Banks*, 40.

<sup>115</sup> *Ibid.*, 43.

<sup>116</sup> *Ibid.*, 43.

<sup>117</sup> Greene et al., *FinHealth Spend Report*, 23.



Why would consumers with bank accounts use higher cost check cashers? Time. Banks take several business days—which in the real world can mean two to six days depending on weekends, holidays, and the time of day the check is deposited—to make the funds available to consumers. Check cashers by contrast give consumers immediate access to their funds. The value of that time is far greater for those with less money, particularly those who are approaching the zero lower bound of their bank account and could find themselves at risk of incurring a bank overdraft fee, which is usually \$35 per overdraft.

## COVID-19, payments, and public health

COVID-19 introduced multiple issues, which could be the subject of an entire paper by themselves. This section will deal with two specific issues. The first is the pandemic response's reliance on digital payments. The second is the government's (in)ability to provide economic relief to its citizens, a central part of the federal COVID-19 response. Both highlight the central role that digital payments play in health and the concerns that inequitable access to digital money leads to inequitable health outcomes.

### Cash: The sick king

An overarching theme of the public health reaction to COVID-19 was the decline of in-person transactions, which were in turn replaced by virtual and digital transactions. Transmitting money without an in-person interaction generally requires digitization of some form, mostly card or electronic. Think of trying to use cash or check to buy items from Amazon's website.

Cash itself even became a potential vector for disease transmission.<sup>118</sup> At one point early in the pandemic, the Federal Reserve began quarantining cash as a protective method against possible COVID-19 transmission.<sup>119</sup> Cash has long been considered a potential transmission source for disease with some public health experts arguing on behalf of a cashless society.<sup>120</sup> COVID-19 brought these concerns to an entirely new level both in questions regarding the cleanliness of payment instruments and more lastingly in the desire to move more interactions into the digital space.

While it is too soon to tell what the long-lasting societal changes will be from COVID-19, it is clear that COVID-19 accelerated existing trends toward greater digitization of a wide range of goods and services and consequently payments. COVID-19 also raises potential concerns regarding future pandemics or other public health lockdowns. Technology now allows a wider range of goods and services to be provided remotely. Many of these services require some form of payment, which currently have to be done digitally. Given the existing structural relationship between digital payments, wealth, race, age, and geography described above, the importance of access to digital payments as a part of health equity rose substantially as a result of COVID-19. It may be no longer possible to achieve an equitable health outcome without addressing access to digital payments, when cash payments themselves become a source of potential infection.

Consider two people during the COVID-19 pandemic, or a future similar situation where there are significant health risks to leaving one's home, wherein one person has access to money in digital form and the other does not. Ordering food, the most basic necessity, can generally be done online with digital payments (e.g. DoorDash, GrubHub). Without access to digital money it becomes substantially harder, limited to establishments that take orders and deliver on the promise of cash payment, which itself generally requires physical contact. One of the main workarounds for people without access to digital

<sup>118</sup> Cory Stieg, "Can going cashless prevent coronavirus spread? Here's what the WHO wants you to know," *CNBC*, March 6, 2020, <https://www.cnn.com/2020/03/06/what-you-need-to-know-about-handling-cash-amid-coronavirus-spread-who.html>.

<sup>119</sup> Pete Schroeder and Anna Irrera, "Fed quarantines U.S. dollars repatriated from Asia on coronavirus caution," *Reuters*, March 6, 2020, <https://www.reuters.com/article/us-health-coronavirus-fed-dollars/fed-quarantines-u-s-dollars-repatriated-from-asia-on-coronavirus-caution-idUSKBN20T1YT>.

<sup>120</sup> Dina Fine Maron, "Dirty Money: The Public Health Case for a Cashless Society," *Scientific American*, January 3, 2017, <https://www.scientificamerican.com/article/dirty-money/>.

money was to digitize their money at a store using a prepaid card. There is a cost to those transactions: prepaid cards have fees and require pre-positioning of money, which imposes a different set of costs and constraints for those with limited resources. Money put on an app-specific pre-paid card is not available to cover other expenses (see Starbucks app description later in the paper). COVID-19 introduces a new hazard to this digitization process, the possibility that venturing outside of one's home itself is a health risk. These costs will fall upon those without cheap and easy access to digital money, highlighting another driver of health inequity resulting from the digital financial divide.

## Starbucks and digital payments

The Starbucks app is the largest mobile payment app in America, with more users than Apple or Google Pay. 28.8 million users in 2021 drive approximately 25% of Starbucks total orders through the app.<sup>1</sup> The main economic purpose for Starbucks is to reduce credit card merchant fees, by encouraging consumers to upload larger sums of money (\$50) and then slowly deplete the balance over time. One upload of \$50 could cost 50 cents in swipe fee as opposed to 10 coffee at 40 cents per swipe, which would provide a swipe fee savings of \$3.50, more than enough to offset the free cup of coffee reward given. This is the driving value for the company, which also gets some auxiliary benefits in the form of float and increased consumer loyalty. Note that this is also an opportunity available only to those who can afford to pre-position a fixed dollar amount onto the Starbucks app. This requires a consumer to have free cash flow to store online at Starbucks and not have available to meet any other expense. This may seem trivial for those who always have a fair amount of money and frequent Starbucks. However, it is a significant barrier and cost for those living paycheck to paycheck. This is illustrative of how the ability to access and store digital money for specific purposes, with financial rewards, can create a barrier for utilization by lower income consumers.

## Relief payments: Electronic medicine

When COVID-19 shut down the economy quickly and unexpectedly, millions of American families already living on the financial edge faced serious peril. As work shut down, concerns of widespread hunger rose. In April 2020, almost one in five households of mothers with children age 12 and under reported that the kids were not eating enough because the family could not afford food.<sup>121</sup> Congress acted quickly, and the first COVID-19 relief bill was signed into law March 27, before even the first monthly indicator of COVID-19's impact on employment was known (a reminder that Congress can act more quickly than automatic economic stabilizers that require lags for data reporting). This legislation authorized the first of what has so far been three rounds of direct economic impact payments (EIP, also known as stimulus payments).<sup>122</sup>

Despite Congress' quick action, the Treasury Department was unable to provide any funds for several weeks. The first EIP was sent on April 10, and those funds became available on April 15. Only 45 percent of eligible persons received money in that first wave,<sup>123</sup> largely because Uncle Sam did not know how to send money to its citizens during a pandemic.<sup>124</sup> By May 1, only 64 percent of eligible people had been sent their first round of pandemic payments.<sup>125</sup> For more than one-third of eligible Americans, it took Uncle Sam longer to figure out how to pay them than it took Congress to write, debate, and enact the first COVID-19 response legislation. In the end, the Treasury Department resorted to mailing checks to 22

<sup>121</sup> Lauren Bauer, "The COVID-19 crisis has already left too many children hungry in America," *Brookings Institution*, May 6, 2020, <https://www.brookings.edu/blog/up-front/2020/05/06/the-covid-19-crisis-has-already-left-too-many-children-hungry-in-america/>.

<sup>122</sup> Peter G. Peterson Foundation, "What to know about all three rounds of coronavirus stimulus checks," March 2021, <https://www.pgpf.org/blog/2021/03/what-to-know-about-all-three-rounds-of-coronavirus-stimulus-checks>.

<sup>123</sup> Dan Murphy, "Economic Impact Payments: Uses, payment methods, and costs to recipients," *Brookings Institution*, February 2021, [https://www.brookings.edu/wp-content/uploads/2021/02/20210216\\_Murphy\\_ImpactPayments\\_Final-4.pdf](https://www.brookings.edu/wp-content/uploads/2021/02/20210216_Murphy_ImpactPayments_Final-4.pdf).

<sup>124</sup> Aaron Klein, "How to Fix the Covid Stimulus Payment Problem: Accounts, Information, and Infrastructure," *Just Money*, August 18, 2020, <https://justmoney.org/a-klein-how-to-fix-the-covid-stimulus-payment-problem-accounts-information-and-infrastructure/>.

<sup>125</sup> Murphy, "Economic Impact Payments."

percent of the population and sending plastic debit cards in the mail to another 3 percent.<sup>126</sup> This was the state of the government's payments system when COVID-19 struck.

These delays have real impacts. Hungry children cannot be fed by promises of checks in the mail. Families living on the financial edge who are suddenly out of work cannot easily and cheaply borrow against promises of government aid. Pandemic response underscored the importance of time in reaching people with critical needs. Money is one of the most critically important instruments in modern society and COVID-19 laid bare that the federal government is not able to disburse general financial assistance to the general population quickly.

A second order effect comes from the delay inherent once the check arrives. As the paper demonstrated earlier, the lengthy delays associated with paper check clearing places considerable strain on households who need quick access to funds. It is not surprising that during the pandemic, many more families needed quick access to their funds. Research from Dan Murphy estimated that \$66 million of the first round of COVID-19 EIP relief payments went to check cashing fees as people could not afford to wait further for the check to clear.<sup>127</sup> This inefficiency further degraded the impact of the government's assistance and is more evidence that cheap access to digital money plays a critical role in pandemic response. Failure to have equitable access results in inequitable responses, such as the case of those who had to wait longer for EIP payments and those who eventually had to lose some of the benefit as part of turning the government's payment into usable money.

The government's inability to provide quick and cheap digital payments continues to hamper other parts of COVID-19 relief policy that have the potential to reduce poverty and improve health outcomes. In particular, the most recent COVID-19 relief legislation established a direct, refundable child tax credit (CTC) with monthly payments beginning in July 2021. The CTC is estimated to have kept 3 million children out of poverty in its first month, with the greatest gains for Black and Latino children.<sup>128</sup> However, the effectiveness of the CTC is once again hampered by the government's inability to execute payment. Early estimates were that up to 20 percent of eligible families did not receive the first month's payment directly deposited to their bank account.<sup>129</sup> By the second month, Treasury announced some improvement, growing the number of people who received direct deposit funding by just under 3 percent (1.6 million) compared to the first month.<sup>130</sup> That still leaves millions of eligible families waiting for money that would lift many children out of poverty.

Given the well-documented link between poverty and health, particularly for children, the health consequences of this payment failure are significant. Even if these families eventually receive the money owed, the additional time these children spent living in poverty can have a lasting impact. It is another example of how simply assuming the ability to execute quick and costless payment to those in need, ignores a significant impediment faced by millions of families. That this problem still exists after over a year of COVID-19 and three rounds of direct impact payments is testament to the inability of policymakers to solve the problem and arguably the deeper inability to focus on payments as a serious source of blockage to achieving policy objectives.

## Potential solutions and policy recommendations

Unlocking aspects of new technology's promise to achieve a more financially and physically healthy society requires altering portions of our existing banking and payment system with the goal of providing universal low/no-cost access to digital money. Achieving that goal requires at least three things: 1)

<sup>126</sup> Ibid.

<sup>127</sup> Murphy, "Economic Impact Payments."

<sup>128</sup> Columbia University Center on Poverty and Social Policy, "Child poverty drops in July with the Child Tax Credit expansion," August 20, 2021, <https://www.povertycenter.columbia.edu/news-internal/monthly-poverty-july-2021>.

<sup>129</sup> Claire Williams, "With the Child Tax Credit, the Unbanked Face Yet Another Trial in Getting Government Benefits," *Morning Consult*, May 26, 2021, <https://morningconsult.com/2021/05/26/banking-payments-government-benefits/>.

<sup>130</sup> US Department of the Treasury, "Treasury and IRS Disburse Second Month of Advance Child Tax Credit Payments," Press release, August 13, 2021, <https://home.treasury.gov/news/press-releases/jy0322>.

expanding account access to be able to hold digital money; 2) ensuring those accounts are structured in a low-to-no cost manner for usage; 3) providing access to funds in those accounts in real time. Any system that fails to accomplish at least those three objectives will fail to deliver the full benefits of new technology and impose a disproportionate burden on lower-income families.

This paper has documented how the existing system is regressive (reverse Robin Hood), creating structural barriers and elevating costs to those on the lower end of the income spectrum, while simultaneously showering benefits to those on the upper end. Technology alone is unlikely to alter this arrangement. After all, this structure is built on a combination of current policy and economic incentives. Thus, it is unlikely that existing policy and economic incentives alone will achieve the objectives of universal low/no-cost access to digital money. As evidence, note how despite trillions of dollars of COVID-19 relief, including creating a monthly direct payment program designed to attack child poverty, Congress did not allocate resources to fix the payment problem.

The Federal Reserve has failed to implement a real-time payment system, despite other nations implementing similar systems more than a decade ago.<sup>131</sup> Had the Federal Reserve implemented a real-time payment system when the Bank of England did in 2008, it would have saved lower-income consumers over \$100 billion in lower check cashing, overdraft, and payday lending fees alone.<sup>132</sup> The Fed has promised to have such a real-time payment system in operation sometime in the next two to three years.<sup>133</sup> Congress could expedite that timeline simply by requiring immediate availability of certain funds, as was proposed in legislation by Senators Van Hollen (D-MD) and Warren (D-MA)<sup>134</sup> and Representatives Pressley (D-MA) and Garcia (D-IL).<sup>135</sup> Although the Federal Reserve has regulatory authority to expedite certain funds, the Fed has so far been unwilling to exercise that authority until it creates its own system. Absent Congressional action, it appears unlikely that the Fed will act until it has its own new system in operation. As society waits, those with the least are forced to pay the most. How much of that comes at the expense of health is unclear, but given the relationships between income and health documented above and the distribution of costs of the slow payment system documented in this paper, it may be substantial.

Full participation in the digital economy requires access to digital cash. The digital economy today runs on commercial bank digital currency. The potential for a shift to central bank digital currency is unclear and beside the point. Whether the “C” in “CBDC” is commercial or central, people need to be able to access, store, and transmit digital money. The cost of access and participation should not be inversely proportional to the amount of wealth you currently have, as is the case in our current system.

Three possible ways to achieve universal low/no-cost access to digital money are presented below: accounts through private financial institutions, Federal Reserve accounts, and Postal Banking. All three aim to solve the access and cost problems, although they address different problem points in the current system, leading to different likely outcomes when considering their success at overcoming one particular goal: easy and cheap access to digital money.

## Universal accounts at private financial institutions

One way to increase access to digital money would be to require all financial institutions (banks and credit unions) to offer low/no-cost universal accounts.<sup>136</sup> These accounts would include digital access to funds

<sup>131</sup> Aaron Klein and George Selgin, “We shouldn’t have to wait for FedNow to have faster payments”, *Brookings Institution*, March 3, 2020, <https://www.brookings.edu/opinions/we-shouldnt-have-to-wait-for-fednow-to-have-faster-payments/>.

<sup>132</sup> Aaron Klein, “Real-time payments can help combat inequality,” *Brookings Institution*, March 6, 2019, <https://www.brookings.edu/opinions/real-time-payments-can-help-combat-inequality/>.

<sup>133</sup> Board of Governors of the Federal Reserve, “FedNow<sup>SM</sup> Service,” Last updated April 28, 2021, [https://www.federalreserve.gov/paymentsystems/fednow\\_about.htm](https://www.federalreserve.gov/paymentsystems/fednow_about.htm).

<sup>134</sup> *Payments Modernization Act of 2019*, S. 2243, 116<sup>th</sup> Congress, 2019. <https://www.congress.gov/bill/116th-congress/senate-bill/2243?s=1&r=7>.

<sup>135</sup> *Payments Modernization Act of 2019*, H.R. 3951, 116<sup>th</sup> Congress, 2019. <https://www.congress.gov/bill/116th-congress/house-bill/3951/text>.

<sup>136</sup> Klein, “How to fix the Covid stimulus payment problem.”

through cards, digital wallets, and online banking. They would be structured in such a way as to minimize costs for digital access (no fees for each log-in or usage). However, it is important to realize that while many enjoy unlimited data as part of their mobile phone or internet service, many others, particularly lower-income consumers, pay for additional charges. This problem is endemic regardless of who provides the account, so any holistic plan may require some sort of carve out for mobile banking data or some sort of rebate system if there are data fees charged. This point may become moot in the future if the cost of mobile data falls, if there are other subsidies provided through the mobile networks, or if alternative digital access methods are utilized that require very little data (a payment system run on QR codes could in theory eliminate data usage for many transactions).

A key element of a system reliant on private banks is that these accounts would not be sustained by fees charged when people run out of money, as is the case with the current system's overdraft fee structure.<sup>137</sup> Short term overdrafts for a flat fee would not be allowed for these accounts, although financial institutions could provide short-term small dollar loans that are treated and regulated as consumer credit products.

The basic structure of these accounts has already been worked out through the FDIC's Safe Account pilot program, which has evolved into the "Bank On" certification.<sup>138</sup> Bank On products have been successfully adopted at over 100 financial institutions that collectively host more than half of all deposits.<sup>139</sup> In 2019 alone, consumers opened two million new certified Bank On accounts.<sup>140</sup> Universal adoption is achievable through voluntary adoption by financial institutions, regulatory mandate, or legislation. The financial services industry has acknowledged these accounts as best practices, and the largest banking trade association, the American Bankers Association, has called for all banks to offer these accounts.<sup>141</sup> If all banks and credit unions were to follow this best practice, then the industry would take a large step toward solving this problem on its own.

Simply offering the account is inadequate if the branch actively promotes an alternative high fee —likely to trigger overdraft —account. These accounts should be the standard, default account for all lower-income consumers. Bank regulators can easily monitor whether this is happening by examining the share of accounts opened that meet this criteria as well as the share of bank revenue being derived from account fees charged to lower-income consumers.

Bank and credit regulators can more aggressively crack down on high cost bank accounts and practices than they do currently. Bank regulators already monitor banks for false advertising of free accounts that contain minimum balances or other 'regular service or transaction fees,'<sup>142</sup> a term that could be more broadly defined to include regular patterns of overdraft fees. Further, bank regulators have general safety and soundness authority that in practice appears to treat high fees charged to lower-income consumers as a good thing (making the bank more profitable). Several financial institutions have had overdraft revenue as their main source of profit for multiple years, while receiving regulatory approval.<sup>143</sup> At least three of these institutions have earned more than 100% of their profit on overdraft fees for two or more years in a row. Bank regulators have the authority to aggressively crack down on those institutions for running unsafe and unsound practices, with a business model designed to seek and exploit heavy overdraft

<sup>137</sup> Aaron Klein, "Overdraft Fees are Big Money for Small Banks," *Politico*, June 24, 2021,

<https://www.politico.com/news/agenda/2021/06/24/bank-overdrafts-big-business-small-banks-495688>.

<sup>138</sup> "Bank On National Account Standards (2021-2022)." Cities for Financial Empowerment Fund, 2020. Available at:

<https://2wvkof1mfraz2etgea1p8kiy-wpengine.netdna-ssl.com/wp-content/uploads/2020/10/Bank-On-National-Account-Standards-2021-2022.pdf>.

<sup>139</sup> "More Than 100 Bank On Nationally Certified Accounts, At Institutions Comprising 52% of National Deposit Market Share, Can Help Residents Receive Child Tax Credit and Other Emergency Payments." Press release, Cities for Financial Empowerment Fund, July 12, 2021. Available at: [https://2wvkof1mfraz2etgea1p8kiy-wpengine.netdna-ssl.com/wp-content/uploads/2021/07/CFE-Fund\\_-\\_2021-Bank-On-100-Accts-Press-Release.pdf](https://2wvkof1mfraz2etgea1p8kiy-wpengine.netdna-ssl.com/wp-content/uploads/2021/07/CFE-Fund_-_2021-Bank-On-100-Accts-Press-Release.pdf).

<sup>140</sup> *Ibid.*

<sup>141</sup> "ABA Urges America's Banks to Offer Bank On-Certified Accounts." Press release, American Bankers Association, October 19, 2020. Available at: <https://www.aba.com/about-us/press-room/press-releases/aba-urges-americas-banks-to-offer-bank-on-certified-accounts>.

<sup>142</sup> "Advertisement for 'No Fee' Checking Account Violates Truth in Savings Act if a Fee is Imposed when Minimum Balance is not Maintained." *Federal Deposit Insurance Corporation*, FDIC Law, Regulations, Related Acts, November 1995. Available at: <https://www.fdic.gov/regulations/laws/rules/4000-9610.html>.

<sup>143</sup> Aaron Klein, "A few small banks have become overdraft giants," *Brookings Institution*, March 1, 2021, <https://www.brookings.edu/opinions/a-few-small-banks-have-become-overdraft-giants/>.



customers. While these institutions are small banks, the three who rely on overdraft for more than 100 percent of their profit charged \$266.5 million in overdraft fees collectively in 2020, almost three times what Citibank charged. Put another way, they averaged over \$100 in overdraft fees per bank account, while Bank of America averaged under \$10.<sup>144</sup>

Going even further, bank regulators could revisit their decision to treat overdrafts as fees as opposed to loans.<sup>145</sup> Economically, an overdraft is no different than a loan. In both cases a financial institution provides money to a consumer and receives that money back plus a premium. Terming that premium a fee or an interest rate carries significant differences legally, including triggering the Truth in Lending Act, but no such difference exists economically. This is a far-reaching proposal that could impact other types of overdrafts. It is also a reminder that bank regulators have a large set of powers they have chosen not to utilize and that early decisions predicated on what at the time were small markets and new products can be legally revisited even after a large market develops (though whether there is the regulatory or political will to do so is a different question).

Another regulatory approach involves embedding the type of account offered to consumers as part of banks' Community Reinvestment Act (CRA) examination. CRA encourages banks to "help meet the credit needs of all segments of their communities, including low- and moderate-income neighborhoods and individuals. The CRA extended and clarified the long-standing expectation that banks will serve the convenience and needs of their local communities."<sup>146</sup> The ability to access digital money has evolved from a convenience into a necessity for all communities and individuals. Extending CRA compliance for financial institutions to achieve this goal by providing these types of accounts is consistent with the statutory requirement and legislative intent of the law. Bank regulators are currently engaged in revisiting CRA requirements in light of new technology, and focusing on access to digital money is a core part of this issue.<sup>147</sup>

However, CRA examination may not be the most effective path to achieving this goal. 99% of banks currently achieve a passing CRA grade,<sup>148</sup> and the penalties for CRA failure are not particularly severe compared to other regulatory actions. Credit unions are exempt from CRA, leaving no path for credit union regulators to use CRA to achieve this objective. Extending CRA requirements to credit unions would help solve an aspect of this problem and is something that could be done through regulation by the National Credit Union Administration or through legislation.

Mandating all financial institutions to provide low-cost accounts is a simple legislative solution that Congress, with the support of the president, could enact. This could have a substantial economic impact on the lives of lower-income Americans, as this report has documented the large fees and costs associated with accessing digital money consumers face today. The result of greater financial inclusion would likely be an increase in economic well-being for millions of Americans. If the connection between economic well-being and physical well-being is as strong as earlier research cited indicates, particularly for increases among lower-income individuals, then that should translate into better health outcomes as well. It would not result in any direct cost to the federal government, as it requires no additional federal spending or any change in taxes or fees collected. Canada has adopted a similar approach,<sup>149</sup> and 99

<sup>144</sup> Klein, "Overdraft giants."

<sup>145</sup> *Joint Guidance on Overdraft Protection Program*. Jointly issued by Office of the Comptroller of the Currency, Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, and National Credit Union Administration, February 18, 2005. Available at: <https://www.federalreserve.gov/boarddocs/srletters/2005/sr0503a1.pdf>.

<sup>146</sup> "Community Developments Fact Sheet: Community Reinvestment Act." Office of the Comptroller of the Currency, March 2014. Available at: <https://www.occ.gov/publications-and-resources/publications/community-affairs/community-developments-fact-sheets/pub-fact-sheet-cra-reinvestment-act-mar-2014.pdf>.

<sup>147</sup> Brainard, Lael. *Modernizing and Strengthening CRA Regulations: A Conversation with Minority Depository Institutions*. Speech made to the National Bankers Association, October 15, 2020. Available at: <https://www.federalreserve.gov/newsevents/speech/brainard20201015a.htm>.

<sup>148</sup> "At Hearing with Comptroller Otting, Waters Highlights CRA, Fraudulent Bank Activities and Fintech." Press release, U.S. House Committee on Financial Services, June 13, 2018. Available at: <https://financialservices.house.gov/news/documentsingle.aspx?DocumentID=401434>.

<sup>149</sup> "CG-2 Access to Basic Banking Services Regulations: Refusal to open an account." Guidance, Financial Consumer Agency of Canada, July 2007. Available at: <https://www.canada.ca/en/financial-consumer-agency/services/industry/commissioner-guidance/guidance-2.html>.

percent of all Canadians have a bank account.<sup>150</sup> Canada also boasts higher adoption of digital payments than the U.S. according to the World Bank.<sup>151</sup>

## Fed Accounts

Creating direct accounts for all consumers at the Federal Reserve (“Fed Accounts”), was proposed by Morgan Ricks, John Crawford, and Lev Menand.<sup>152</sup> It has been introduced by Senator Sherrod Brown, Chairman of the Senate Banking, Housing, and Urban Affairs Committee<sup>153</sup> and was included in early drafts of the COVID-19 relief package considered by Congress in 2020.<sup>154</sup> Fed Accounts may continue to gain appeal as a solution if the Federal Reserve moves forward in issuing a Central Bank Digital Currency to compete with (or possibly replace) commercial bank digital currency. It should be noted that Fed Accounts do not require a Central Bank Digital Currency that can exist as a digital token or be handled outside of the Fed Account system.<sup>155</sup> Instead, it simply requires direct consumer access to the Federal Reserve and the establishment of a consumer-oriented account with traditional payment abilities, including online banking, debit cards, and the ability to convert to physical cash at ATMs. In this way, a Fed Account is a form of a digital dollar, but not the full alternative central bank digital currency world that some are advocating for.

The Federal Reserve takes the position that allowing consumers access to Fed Accounts requires Congressional action.<sup>156</sup> The Fed is less clear as to whether it requires new legislative authority to issue a central bank digital currency. At one point, Fed Chair Powell indicated it did,<sup>157</sup> only later to revise the standard to a much a lower level of ‘consultation’ with Congress.<sup>158</sup>

Fed Accounts potentially solve the problem of access and cost to digital money for lower-income consumers. They open up a different set of concerns regarding how the existing private commercial banking system would adapt to the provision of basic banking services by an arm of the government that can effectively print its own money and has substantial independence from the executive and legislative branches.

## Postal banking

If the government were to provide direct access to digital money, the Federal Reserve is a far superior entity to do it than the United States Postal Service, who has also been promoted as a solution to this problem. Postal banking advocates have argued for the creation of a basic banking system utilizing the Post Office’s extensive network of branches.<sup>159</sup> With support in Congress,<sup>160</sup> among certain consumer

<sup>150</sup> Demirgüç-Kunt et al., *Global Findex Database*.

<sup>151</sup> Ibid.

<sup>152</sup> Ricks, Morgan, John Crawford, and Lev Menand. “FedAccounts: Digital Dollars.” *Vanderbilt Law Research Paper* 18-33, *UC Hastings Research Paper* No. 287, *George Washington Law Review*, Forthcoming. April 2020. Available at SSRN: <https://ssrn.com/abstract=3192162> or <http://dx.doi.org/10.2139/ssrn.3192162>.

<sup>153</sup> *Banking for All Act*, S. 3571, 116<sup>th</sup> Congress, 2020. Available at: <https://www.congress.gov/116/bills/s3571/BILLS-116s3571is.pdf>.

<sup>154</sup> “Fed Digital Dollars Are Part of Debate Over Coronavirus Stimulus.” *Wall Street Journal*, March 24, 2020. Available at: <https://www.wsj.com/articles/fed-digital-dollars-are-part-of-debate-over-coronavirus-stimulus-11585085518>.

<sup>155</sup> Ricks, Morgan, John Crawford, and Lev Menand. “FedAccounts: Digital Dollars.” *Just Money*, August 10, 2020. Available at: <https://justmoney.org/m-ricks-j-crawford-l-menand-fedaccounts-digital-dollars/>.

<sup>156</sup> “FAQs.” Board of Governors of the Federal Reserve System, April 15, 2021. Available at: <https://www.federalreserve.gov/faqs/does-the-federal-reserve-maintain-accounts-for-individuals-can-individuals-use-such-accounts-to-pay-bills-and-get-money.htm>.

<sup>157</sup> “Powell Says Congressional Support Likely Needed to Adopt Fully Digital Dollar.” *Wall Street Journal*, March 22, 2021. Available at: <https://www.wsj.com/articles/powell-says-congressional-support-likely-needed-to-adopt-fully-digital-dollar-11616424452>.

<sup>158</sup> “Powell says a Fed digital currency could undercut need for cryptocurrencies.” *Reuters*, July 14, 2021. Available at: <https://www.reuters.com/business/feds-powell-says-stablecoins-need-appropriate-regulatory-framework-2021-07-14/>.

<sup>159</sup> Baradaran, Mehrsa. “It’s Time for Postal Banking.” *Harvard Law Review* 127: 165-175. 2014. Available at: [https://harvardlawreview.org/wp-content/uploads/pdfs/forvol127\\_baradaran.pdf](https://harvardlawreview.org/wp-content/uploads/pdfs/forvol127_baradaran.pdf).

<sup>160</sup> *Postal Banking Act*, S. 2755, 115<sup>th</sup> Congress, 2018. Available at: <https://www.congress.gov/bill/115th-congress/senate-bill/2755>.



advocates,<sup>161</sup> and examples from other nations<sup>162</sup> (including the United Kingdom, Japan, France, and Switzerland), postal banking is having another major turn in the national spotlight.

The question to evaluate postal banking, and all of these alternatives, is whether it is an effective and efficient means to provide access to digital money. This is a very different metric than providing access to basic banking services (safe deposits, ability to build credit history, secure possible lending). The Post Office's biggest asset—supposedly easy in-person access through its large branch network—is not relevant in achieving this objective. Branches may be helpful in overcoming certain problems faced by the un/under banked, but not in accessing digital currency.

Most consumers have never interacted with PayPal or Venmo in person, but those apps have created access to digital payments and stores of digital money. Yes, the Post Office could, in theory, create a digital store of value. Starbucks has done so through its app, which stores more than \$1.6 billion in value.<sup>163</sup> But what comparative advantage does the United States Postal Service have in creating digital banking? One advantage frequently cited is USPS's high level of popularity with the general public. The problem with this argument, as Peter Conti-Brown points out, is that some of the functions of banks are inherently unpopular, and thus having the USPS become a banker could reduce its popularity for both of its functions.<sup>164</sup>

The core problem with banking the unbanked is about cost and trust/privacy, not about location and hours of operation. The number one reason unbanked people report being unbanked is that they do not have enough money to meet minimum balance requirements. The top five reasons given all have to do with either cost or trust and privacy. Bank hours and location combined are cited by fewer than 1 in 20 unbanked as the main reason they do not have a bank account.<sup>165</sup> The solution is to lower cost, not to focus on physical locations.

To the extent that seniors are most reliant on in-person interactions, the potential advantages of a government system built upon a strategy of in-person such as postal banking would make it more appealing. However, seniors are the most banked group of the population. Only 3.3 percent of seniors are unbanked, compared to 5.4 percent nationally and 8.8 percent of those age 15-24.<sup>166</sup> In addition, those with disabilities are also more likely to be unbanked (16.2 percent unbanked) another group that may be easier to reach through mobile/online versus in person.<sup>167</sup>

A final concern relates to the economics of postal banking. There are four possibilities: postal banking generates a profit for the Post Office which then subsidizes postal operations; postal banking generates a loss for the Post Office and it is subsidized by mail services; postal banking generates a loss for the Post Office and it is subsidized by taxpayers; postal banking generates neither a profit nor a loss. If postal banking is run to neither a profit nor a loss, then there would be no cross-subsidization available and postal banking customers would pay their full costs. If postal banking generates a profit, then postal banking customers would subsidize mail. If postal banking generates a loss, then either taxpayers or mail senders would subsidize postal banking customers. It is worth noting that the Post Office is considered

<sup>161</sup> For instance, the American Civil Liberties Union (<https://www.aclu.org/news/racial-justice/why-we-need-the-post-office-to-close-the-racial-wealth-gap/>), Public Citizen (<https://www.citizen.org/news/on-the-road-to-postal-banking/>), and the Public Banking Institute (<https://www.publicbankinginstitute.org/postal-banking/>). See also the Campaign for Postal Banking (<http://www.campaignforpostalbanking.org/>).

<sup>162</sup> See, respectively: <https://www.postoffice.co.uk/savings-accounts> (United Kingdom), [https://www.jp-bank.japanpost.jp/en\\_index.html](https://www.jp-bank.japanpost.jp/en_index.html) (Japan), <https://www.labanquepostale.fr/> (France), and <https://www.postfinance.ch/en/private.html> (Switzerland).

<sup>163</sup> Phillips, Tom. "Unspent stored value on Starbucks prepaid cards nears US\$1.63bn." *NFCW*, July 29, 2021. Available at: <https://www.nfcw.com/whats-new-in-payments/unspent-stored-value-on-starbucks-prepaid-cards-nears-us1-63bn/>.

<sup>164</sup> Conti-Brown, Peter. "Why the next big bank shouldn't be the USPS." Brookings Institution, May 31, 2018. Available at: <https://www.brookings.edu/research/why-the-next-big-bank-shouldnt-be-the-usps/>.

<sup>165</sup> *How America Banks: Household Use of Banking and Financial Services*. Federal Deposit Insurance Corporation, October 2020. Available at: <https://www.fdic.gov/analysis/household-survey/2019report.pdf>.

<sup>166</sup> FDIC, *How America Banks*, 13.

<sup>167</sup> *Ibid.*, 13.

deeply financially troubled as it is currently structured, meaning that any new subsidy generated to support banking efforts has to be found somewhere else.<sup>168</sup>

More clarity around which of the following assumptions are expected would be helpful in analyzing the impact of postal banking. It is worth noting that there already exists a large non-profit system designed to create access to basic financial services, including access to digital accounts: credit unions. The credit union network has grown sharply in recent decades, and today over forty percent of consumers have a relationship with a credit union.<sup>169</sup> Credit unions are regulated and generally provide federally insured deposits as well as commonly requested loans such as mortgages and auto loans. If there is no subsidy going into the postal banking system from taxpayers or other parts of the Post Office, how is that the Post Office will be able to outcompete fellow nonprofit credit unions who have a broad reach and specialization in the provision of financial services?

### Anti-money laundering: An obstacle to universal access to digital money

Anti-money laundering (AML) laws and regulations present a barrier to universal low/no-cost access to electronic money. America's AML regime has grown over time from its initial establishment in the 1960s to catch organized crime and tax evasion to a tool in the wars on drugs (1980s) and terrorism (2000s).<sup>170</sup> Today, AML reporting and regulation are significant and growing costs for financial institutions and money transmitters.<sup>171</sup> In the face of higher costs, it is logical for banks to cut back services or try to avoid engagement with less profitable customers. AML identity requirements, coupled with the establishment and growth of privately run 'do not bank lists' (e.g. CheckX) present barriers for many (one estimate is as high as over 2 million<sup>172</sup>) unbanked to receiving accounts. Some have argued that AML rules and regulations are contributing significantly to the de-risking phenomena<sup>173</sup> whereby banks stop serving certain individuals, groups, or entities, particularly immigrants and transnationals from countries currently deemed high risk.<sup>174</sup> AML rules and regulations cover cryptocurrency money transmitters, presenting a source of cost and compliance for some forms of decentralized finance.

AML costs make low-cost accounts less economically attractive, but as the BankOn experiment has shown, these barriers can be overcome. For either of the government-run systems (Fed Accounts and postal banking) these costs must either be internalized by the government operator of the system or passed on to the consumer. In addition to the costs, there is the issue of regulatory scrutiny. Currently, financial regulators serve as front-line AML compliance officers ensuring private institutions comply and relying primarily on fines to punish noncompliance. Who would enforce AML rules on the Fed or the Post Office? Who would pay the fines?

## Conclusion

Access to digital money is an underappreciated vector by which technological innovation, both financial and non-financial, can be hindered in reaching certain populations. Accessing digital money is easy and

<sup>168</sup> Ahiza García-Hodges, "The USPS funding crisis is bigger than the election, experts warn," *NBC News*, August 20, 2020, <https://www.nbcnews.com/business/economy/usps-funding-crisis-bigger-election-experts-warn-n1237579>.

<sup>169</sup> Payments Journal, "What percentage of consumers bank with a credit union?", August 16, 2019, <https://www.paymentsjournal.com/what-percentage-of-consumers-bank-with-a-credit-union/>.

<sup>170</sup> Aaron Klein and Kristofer Reading, "Acceleration in Suspicious Activity Reporting Warrants Another Look," *Bipartisan Policy Center*, September 15, 2015, <https://bipartisanpolicy.org/blog/acceleration-in-suspicious-activity-reporting-warrants-another-look/>.

<sup>171</sup> Aaron Klein, "3 steps to improve anti-money laundering regulation," *Brookings Institution*, December 9, 2020, <https://www.brookings.edu/research/3-steps-to-improve-anti-money-laundering-regulation/>.

<sup>172</sup> Chi Chi Wu and Katie Plat, "Account Screening Consumer Reporting Agencies: A Banking Access Perspective," *National Consumer Law Center and Cities for Financial Empowerment Fund*, October 2015, <https://www.nclc.org/images/pdf/pr-reports/Account-Screening-CRA-Agencies-BankingAccess101915.pdf>.

<sup>173</sup> US Department of State statement on de-risking: <https://www.state.gov/de-risking/>

<sup>174</sup> Michael Barr, Karen Gifford, and Aaron Klein, "How new technologies can enhance anti-money laundering efforts and provide financial access," *Brookings Institution*, April 17, 2018, <https://www.brookings.edu/research/how-new-technologies-can-enhance-anti-money-laundering-efforts-and-provide-financial-access/>.

free for those with money (more than free, its rewarding). For those without a lot of money, digital money is expensive. Digital money is a barrier to accessing new technology, particularly in an app/mobile/online economy. This will likely exacerbate existing inequalities and impede adoption of some new technology for lower-income people. To the extent that these new technologies offer health benefits and require digital money, existing public health inequalities will be exacerbated. Fully realizing the potential health and wealth benefits of new technology requires a better solution to the digital payment divide than currently exists.

COVID-19 demonstrated that part of a public health crisis response involves getting money to public, quickly. The government was unable to reach one out of four people's bank accounts, resorting to mailing paper checks and plastic cards long after the crisis began. Families had disparate economic outcomes from public health crisis simply due to the government's ability to use the payment system to reach them.

Policymakers need to figure out a way for all people to have low/no-cost access to digital money. Debating whether the Fed should create a digital dollar or businesses should embrace crypto misses the point. What is lacking are not forms of digital money, which are plentiful. What is lacking is cheap access for those without existing wealth. Any new system needs to fix that, or else we are ignoring the very problem many cite as the reason for new forms of digital money: financial inclusion.

Inaction in solving these problems intensifies inequality, hampers responses to future pandemics, and reduces the efficacy of other solutions designed to achieve a greater culture of health. The status quo is not static. Technology continues to develop. Absent substantial reform of our nation's banking and payment systems that lower the cost of accessing and transacting in digital money, millions of Americans will be unable to fully benefit from technological advancement, and that is likely to have health consequences.

Solutions should be judged not only on enhancing access and inclusion but on the cost structure underlying the solution. Evaluating costs must include the time it takes for consumers to have full access to their money. The adage that time is money is true for the payment system, and the existing system simply takes too long, imposing substantial burdens on lower-income Americans and incentivizing them to use more costly alternative financial service providers, such as check cashers. Having a system where people have bank accounts but rely on check cashers is a failure to create an inclusive financial system, regardless of the measure of the number of banked and unbanked households. Similarly, a new technological system that has many users but results in a regressive cost structure should qualify as a failure, not a success.

Future research should focus more specifically on the role that new financial technology can play in reducing costs and hence increasing disposable income for lower-income and underserved Americans. Crystallizing the linkage between those savings and health outcomes is particularly important as new technology creates new avenues for health consequences from these interactions. Policymakers should evaluate new proposals, ranging from the creation of new forms of money to proposals for universal banking and access to digital money, with these goals in mind.

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# B | Economic Studies

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