

Testimony of Aaron Klein, Fellow, Economic Studies, Brookings Institution
U.S. House Committee on Financial Services Task Force on Financial Technology
“Is Cash Still King? Reviewing the Rise of Mobile Payments”
January 30, 2020

Chairman Lynch, Ranking Member Emmer, members of the Task Force, thank you for the opportunity to testify on the critically important issue of the future of cash. Participation in our economy requires the ability to make safe, secure, and speedy payments. Despite their critical importance, how Americans pay for things and the associated cost of those payments are often assumed to be far less costly than they are. In reality, how American consumers and businesses send and receive payments is quite complicated, costly, and slow compared to other nations. The payment system’s gap between those with money and access to new payment technology, and those without money and access is growing. The ramifications of exclusion from the world of digital payments can be severe. The fault lines developing are a mixture of traditional ones and some new ones. Congressional inquiry into this issue is needed and I applaud the Task Force for prioritizing the issue.

My testimony will focus on five main points.

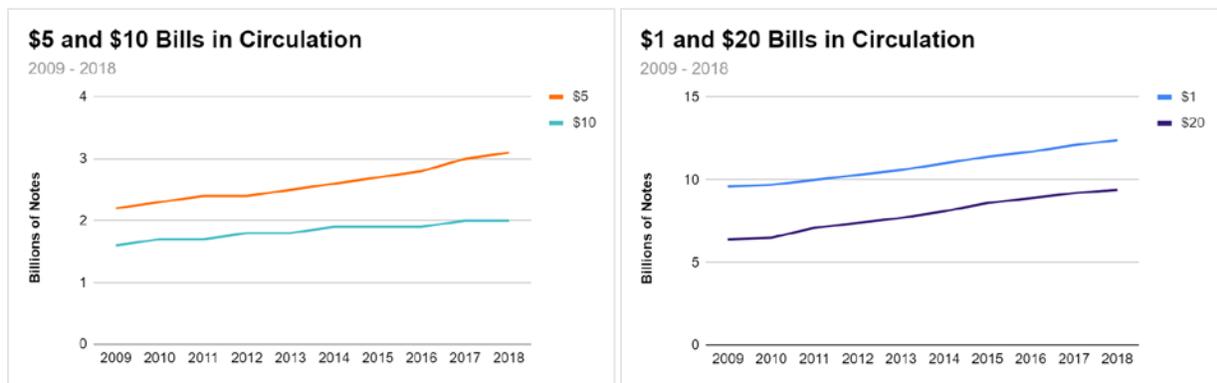
1. Cash is still king. Those who are more likely to use cash represent an unusual cross-section of Americans that defy traditional grouping such as elderly rural Americans and young African Americans.
2. America’s payment system has broadly become an engine of income inequality, charging the poor more, giving to the rich, and benefiting large businesses relative to small businesses.
3. As the economy digitizes, those without access to low cost, reliable digital payments are increasingly unable to participate and share in the benefits.
4. America’s payment system has become a global laggard in payment technology. Having invented the payment system of the past fifty years does not automatically mean we will have the system of the future.
5. Policy makers have the tools to modernize our payment system, empower consumers, small businesses, and engender equitable and broad access to mobile payments. The question is if, when, and how policymakers will use them.

From this analysis, several policy recommendations come forth. Businesses conducting in-person sales, particularly small dollar sales of core consumer goods, should as a general matter, with some exceptions, be required to accept cash. Banks and credit unions should be required to make consumer’s funds available immediately, subject to the existing anti-fraud provisions in the Expedited Funds Availability Act. Research is needed to develop comprehensive recommendations for how the future of America’s retail payment system, including how to ensure universal access to low cost, secure digital wallets.

I. Cash is King (still)

Despite rumors of its demise, the amount of cash in circulation continues to grow. Demand for small dollar notes proves cash's reign is alive, and demand for smaller dollar transactions remains. Over this decade: the number of one-dollar notes has grown by almost 30 percent, and the number of five-dollar notes has grown by over 40 percent.¹ Similar growth in ten- and twenty-dollar notes in circulation can be seen in Figure 1 below. This rate of growth is evidence of continued usage and underlying demand for cash, and decidedly unlike the penny, which is produced by the government and which, more often than not, ends up in a jar.²

Figure 1: Currency in Circulation



Data from the Federal Reserve

Data on cash transactions are difficult to come by. It is inherently harder to track cash than electronic payments. The Federal Reserve's Diary of Consumer Payment Choice³ survey asks a representative sample of Americans to track how they purchase goods in the month of October, which is then used to extrapolate annual and national trends. The survey's data has several consistent findings:

- Cash usage is inversely correlated to the size of the transaction. Cash is the most common way to pay for transactions under \$25. It is unusual to use cash for transactions over \$100 (only 6 percent of all transactions over \$100 report using cash).

¹ Data from the Federal Reserve's currency in circulation. Time frame is 12/31/2009 through 12/31/2018. "Federal Reserve Board - Currency in Circulation."

² Gadsby, J., *Future of the Penny*, Federal, United States General Accounting Office, July 1996.

³ Federal Reserve Bank of San Francisco. "2019 Findings from the Diary of Consumer Payment Choice." Accessed January 28, 2020. <https://www.frbsf.org/cash/publications/fed-notes/2019/june/2019-findings-from-the-diary-of-consumer-payment-choice/>.

- Cash is more popular among low-income households, those under 25, those over 65, and those in rural areas. This is contrary to a popular narrative that young people never use cash.⁴ Skepticism regarding anecdotal reporting regarding payment usage is recommended, given the high correlation between income and payment type.
- There has been a small decline in cash usage in the survey – falling from 31 percent of transactions in 2016 to 26 percent in 2018. This decline is driven by changes in the composition of purchases, which is related to but separate from many of the underlying reasons why cash is king. Specifically, a ten percent decline in the number of small dollar purchases (under \$25) and a five percent increase in the number of purchases over \$100 result in total reduction in cash usage. The decline of purchases not made in person (presumably made on-line) has increased by four percent, further reducing the potential for cash transactions.

Additional data sources show that African Americans are significantly more likely to use cash, and a small increase in the likelihood of cash usage among Latinx households.⁵ The case of Square, a digital payments provider, is particularly interesting. Square analyzed data for small businesses that use their cash register product and found 37 percent of all transactions were in cash, a figure higher than the Federal Reserve’s survey found as a national average for all consumer payments. This indicates that small businesses are maybe more likely to receive cash, or that the Square businesses maybe dealt in disproportionately smaller dollar transactions, or possibly both. Square found substantial variation between states, although, in every state, at least one out of three transactions used cash. The five states in which cash was used as often as cards were (50/50) Wisconsin, Delaware, Iowa, West Virginia, and Hawaii.⁶ Higher cash rates in states with large rural populations is consistent with the San Francisco Federal Reserve Bank’s finding that “Rural areas are more likely to make cash payments than urban areas. Credit card usage in urban areas is twice that of rural areas.”⁷

That said, within urban areas cash usage varies significantly. Square looked in-depth within New York City and found significant variation by borough. The Bronx and Staten Island had

⁴ Tsosie, Claire. “Millennials Checked Out on Using Cash.” NerdWallet, November 14, 2014. <https://www.nerdwallet.com/blog/credit-cards/millennials-cash-credit-mobile-banking/>.

⁵ Perrin, Andrew. “More Americans Are Making No Weekly Purchases with Cash.” Pew Research Center, December 12, 2018. <https://www.pewresearch.org/fact-tank/2018/12/12/more-americans-are-making-no-weekly-purchases-with-cash/>.

⁶ “Making Change: Payments, Perspectives, and Politics.” Accessed January 28, 2020. <https://squareup.com/us/en/making-change>.

⁷ Flannigan, Tom. “Annual Fed Report Indicates Increase in Demand for Cash despite Slight Decline in Usage by Consumers.” Federal Reserve Bank of San Francisco. Federal Reserve Bank of San Francisco, July 10, 2019. <https://www.frbsf.org/our-district/press/news-releases/2019/annual-fed-report-indicates-increase-in-demand-for-cash-despite-slight-decline-in-usage-by-consumers/>.

significantly greater usage of cash as compared to card (approaching 50/50) than Manhattan (25/75) or Brooklyn (30/70). Queens was roughly in the middle (43/57). Expanding the geographical scope, substantial payment differences within a city, between states, and between urban and rural areas indicate that multiple factors are at play determining payment usage. Additional data and research are necessary to refine our understanding of the use of cash. What is clear is that people who disproportionately use cash are an unusual coalition of the very young and old, rural and urban, and racial minorities. The usage of cash is greatest for the daily necessities of life, smaller dollar purchases, and transactions in person.

II. Payments Are a Reverse Robin Hood.

America's payment system segregates people into different means of payment. This is by design. To explore this, start at the bottom rung of the income ladder. Lower income families are more likely to use cash as documented earlier. In addition to cash, pre-paid cards have exploded in usage over the past fifteen years, accounting for over 13 billion transactions worth \$300 billion in 2017 according to the Federal Reserve.⁸ For every three credit card swipes there is roughly one prepaid card swipe.

The users of prepaid cards are more likely to be low-income, African-American and property renters (rather than property owners), according to the Pew Charitable Trusts.⁹ Pew's survey demonstrated that most pre-paid card holders have checking accounts and consequently have debit card alternatives. Prepaid card holders reported using the prepaid cards as opposed to debit cards, in part, to avoid one of the most expensive elements of the banking system for working families: overdraft fees.

Debit cards are the most common form of card payment, with over 80 billion transactions. They are the most common form of payment for the middle of the middle class. Notably with debit cards, if you always have money in your bank account they are basically free for consumers. However, if you occasionally hit the zero lower bound of your bank account, any purchase on a debit card could trigger an overdraft. Overdrafts are typically \$35 per transaction, which, for a \$3.50 cup of coffee, is the equivalent of a 1,000% immediate fee. One estimate put total overdrafts at \$34 billion in 2015.¹⁰

⁸ "The Federal Reserve Payments Study: 2018 Annual Supplement." The Federal Reserve, December 2018.

⁹ "Why Americans Use Prepaid Cards: A Survey of Cardholders' Motivations and Views." The Pew Charitable Trusts, February 2014.

¹⁰ Other estimates differ but magnitudes are all substantial. Theresa Schmall, and Eva Wolkowitz. 2016. "2016 Financially Underserved Market Size Study." Center for Financial Services Innovation. https://cfsinnovation.org/wp-content/uploads/2016/11/2016-Financially-Underserved-Market-Size-Study_Center-for-Financial-Services-Innovation.pdf.

The Consumer Financial Protection Bureau’s study of overdraft revealed that a whopping 27% of bank accounts tracked in their study year had an overdraft. Among those accounts, the average overdraft and related fees totaled \$225, with some banks having average total fees for accounts that overdraft in excess of \$400.¹¹

Overdrafts are common for a combination of reasons. First, many Americans live paycheck to paycheck. Income volatility is rising¹² particularly among lower income households.¹³ Second, America’s slow and outdated payment system disempowers people from being able to know their actual balance in real-time. Payments can be processed anytime from the same day to five to six calendar days later, depending on a myriad of factors far beyond a person’s control. Without knowing when their funds are available, consumers living on the margin are left guessing whether they have enough to cover their purchase.

Debit cards are functionally free for those who always have a cushion in their bank account. However, for those whose incomes are volatile and who occasionally or frequently approach the zero lower bound of their bank account, debit cards can become expensive payment mechanisms. Compounding the problem, the lack of real-time payments results in consumers fundamentally not knowing whether they can or cannot use their debit card without triggering an overdraft. These uncertainties explain both the rise in prepaid card usage and the continued advantages of using cash. Accessing cash is not always free, however ATM fees are required to be posted by federal law¹⁴ and while those fees can be a substantial proportion of a small dollar withdrawal and are often higher for non-bank ATMs located in lower income communities, they are substantially lower than a single overdraft.

At the top of the payment ladder are credit cards. Within credit card offerings there are substantial differences in terms. Subprime credit cards bear little resemblance in features and cost structures to high-end cards. For the purpose of this testimony and to complete the trip through the payment spectrum, it is important to focus on prime, high-end high reward cards. High rewards credit cards are designed for wealthy consumers who typically do not carry a balance but spend a lot. These cards offer substantial rewards, often two percent or more in cash or equivalent value (e.g. frequent flier miles, hotel reward points, and so on). These rewards are worth more to consumers because they are considered rebates and not income, and hence are not subject to federal, state, or local taxation. Thus, for the wealthy families they

¹¹ “CFPB Study of Overdraft Programs.” Consumer Financial Protection Bureau, June 2013.

¹² “How Income Volatility Interacts With American Families’ Financial Security.” The Pew Charitable Trusts, March 2017.

¹³ Farrell, Diana, and Fiona Greig. “Paychecks, Paydays, and the Online Platform Economy: Big Data on Income Volatility.” JP Morgan & Chase Co. Institute, February 2016.

¹⁴ Electronic Funds Transfer Act, 15 U.S. C. § 1693.

are designed for, the true value of these rewards can approach or pass five percent of pre-tax income for all purchases made.

These rewards add up, too. Consider a wealthy family that spends \$250,000 a year on a credit card with two and a half percent cash back. They receive \$6,250 in tax-free rewards, which is worth more than \$10,000 in pre-tax income.¹⁵ Meanwhile, families using cash or debit cards get nothing.

Here is where the economics of cross-subsidization are revealed. Merchants are bound by contract and consumer expectations to charge the same price to all customers. Because businesses cannot charge more to those who use high-end credit cards, even though merchants often pay higher fees on those cards, they must adjust prices. The result is that lower income workers who use cash and debit end up cross-subsidizing wealthier rewards card holders. If merchants could pass along their full cost of processing, then consumers who use more expensive cards to process, would pay higher prices.

The Supreme Court's recent decision to side with American Express over Ohio (and 16 other states) compounds this problem.¹⁶ As a result of the Court's five to four verdict, state governments are not able to enact legislation to empower merchants to decide whether to accept certain high cost cards. In effect, if you take one Visa credit card you must now take them all. This verdict is bad for most consumers and will allow high end reward cards to continue to grow, accruing more benefits to the wealthy at the expense of the middle and working class and merchants.¹⁷

This is particularly hard for smaller businesses who have less bargaining power in negotiating card fees. The growth in card usage and fees is an issue of concern for small businesses precisely because they lack the scale to either develop alternative payment forms like the Starbucks app (which, for many years, was the largest payment app in America), or negotiate lower swipe fees. Small coffee shops throughout America are at an economic disadvantage versus the big chains because they pay significantly more in swipe fees, which can often be 10 percent or more of the price of a cup of coffee. Future exploration of the impact of the payment system on small business is warranted.

III. Payments are the New Digital Divide

¹⁵ Klein, Aaron. "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>.

¹⁶ *Ohio et al. v. American Express co. et al.*, 585 U.S. (2018)

¹⁷ Klein, Aaron. "Why the Supreme Court's Decision in Ohio v. AmEx Will Fatten the Wealthy's Wallet (at the Expense of the Middle Class)." Brookings Institute, June 25, 2018.

While cash is still king, there is no denying that an increasingly large number of goods and services are moving onto digital platforms that do not accept cash. As online and mobile apps transform the economy, consumers who are dependent on cash or prepaid cards are increasingly left behind.

Prior concerns about a digital divide were incorrectly centered around questions of internet access.¹⁸ Smart phones have successfully bridged much of the divide in terms of access.¹⁹ However, access alone is insufficient. Without a means to purchase the goods or services being offered, the benefits of the app-, gig-, or online-economy fail to convey and the ability to access digital payment systems are creating a practical digital divide.

The ramifications of this divide are greater than fully appreciated. The growth in online and app-based goods and services have brought significant savings to consumers with lower costs for everything from ordering groceries to hailing a taxi. However, people cannot access those savings without access to low cost or free digital payment mechanisms. This is clearly a problem for the one in fifteen households in America that are un-banked.²⁰ Without access to a bank account, debit or credit card, there is often no way to make a digital payment. Some combination of prepaid cards can provide that for some services. However, that is not always available, can be cumbersome, requires pre-positioning scarce dollars, and is often quite expensive given high costs and fees embedded in debit products.

The problem is also evident for those who are under-banked (roughly one in six Americans) and those who live paycheck to paycheck.²¹ Regarding this latter group, some estimates characterize almost half of Americans as living paycheck to paycheck.²² The economics of many app-based digital services simply assume that the user will always have funds to cover recurring or periodic expenses and expect the ability to tap into that consumer's bank account to receive funds. Given the high cost of overdraft, income volatility, and payment delays, the result for consumers living on the razor's edge can be a far more expensive.

¹⁸ Lohr, Steve. "Digital Divide Is Wider Than We Think, Study Says." The New York Times, December 4, 2018, sec. Technology. <https://www.nytimes.com/2018/12/04/technology/digital-divide-us-fcc-microsoft.html>.

¹⁹ There remain areas where concerns about access as a barrier are significant, including rural areas, Native lands, and even in urban areas, concerns about the cost of data and data access for lower income smart phone users. However, broadly speaking the prior century's concerns about access being the primary divide have turned out not to be the case.

²⁰ FDIC National Survey of Unbanked and Underbanked Households, 2017
<https://www.fdic.gov/householdsurvey/2017/2017report.pdf>

²¹ Ibid

²² GOBankingRates. "49% of Americans Are Living Paycheck to Paycheck," August 20, 2019.
<https://www.gobankingrates.com/saving-money/budgeting/americans-living-paycheck-paycheck/>.

The impact of this payments divide extends beyond financial services. Consider the potential health benefits available to a series of new transportation applications, such as bike sharing or healthy food delivery through food- or farm-shares. These technologies hold the promise to reduce costs of some of the largest budget items a family face: food and transportation. They offer better, cheaper ways to meet existing needs that in turn provide significant opportunities to live a healthier lifestyle – eventually reducing societal healthcare costs and improving quality of life. However, neither allow for cash. Both require access to digital payment. One may have a pay as you go system, the other a recurring regular charge. Each may be cheaper than the alternative (grocery store or taxi/public transportation), but those cost savings are built around the assumption of no payment frictions. Once a single overdraft fee is charged, the entire cost savings disappear, and the application is now a money loser for the user.

For lower income consumers, in particular (importantly not just the un-banked, but the underbanked as well), to truly benefit from the digital economy, cheap and reliable digital payments are a necessity. This is a significant and growing problem. It may require government policies that provide resources and set stronger rules mandating different options and availability for Americans of all financial levels. It is a corollary to the policy requirement that cash continue to be accepted, the digital access to payments will also need to be facilitated.

IV. America Once a Global Leader Now a Global Laggard

Fifty years ago America pioneered the new payment technology that would come to dominate high end payments: magnetic striped plastic cards.²³ This technology, coupled with robust consumer protection legislation from Congress, such as the Electronic Funds Transfer Act, created the environment for this new technology to take off.²⁴ These cards, and the corresponding terminals to read them, allowed a small plastic card to replace cash and checkbooks for billions of consumers and merchants and process trillions of transactions. These cards achieved such ubiquity in the developed Western world that most consumers and international travelers take their presence for granted. They have continued to grow, providing the backbone for e-commerce and new methods of digital payments.

New methods to utilize card-based payments accounts have grown. Devices can now turn smartphones into credit card processors (such as the case of Square, mentioned above) and transactions can be securely conveyed online (such as the case of PayPal). However, the underlying payment networks in America remain a bank-based system. Do not be fooled into thinking that digital representations of magnetic striped cards, such as Apple Pay, or digital

²³ IEEE Spectrum: Technology, Engineering, and Science News. “Full Page Reload.” Accessed January 28, 2020. <https://spectrum.ieee.org/computing/hardware/the-long-life-and-imminent-death-of-the-magstripe-card>.

²⁴ Much of this section draws from my paper: Is China’s new payment system the future. Klein, Aaron. “Is China’s New Payment System the Future?” Brookings Institute, June 2019.

wallets that draw and relay funds to bank-based accounts for settlement, are themselves new payment systems. They are simply different ways to use the existing bank-based system more efficiently. In fact, it is still quite anachronistic that the main security feature for standard plastic cards is a signature after a swipe, which seems to be highly ineffective and time consuming, while accessing a phone to use a digital representation can be done with biometric data or a pin, both of which are far more secure and fraud resistant.

While America spent the past decade upgrading its bank-based magnetic striped cards with chips, China experienced a retail payment revolution. Leapfrogging the card-based system, two new payment systems have come to dominate person-to-person, retail, and many business transactions. China's new system is built on digital wallets, QR codes, and runs through their own big tech firms: Alipay running through Alibaba (China's version of Amazon) and WeChat Pay running through Tencent (China's version of Facebook). China's system largely disintermediates banks from payment transactions robbing banks of an important and long-standing source of revenue. It creates an alternative payment ecosystem with different incentives between merchants, consumers, and payment system providers. It challenges the long-standing placement of payments on the side of banking as opposed to commerce. In doing so, this system creates new incentives that could realign existing business models and relationships between merchants, banks, and technology providers.

China's new payment system exploded in under a decade, growing from inception to dominance. With over a billion users on each platform, the power of network incentives has been unleashed. The new payment system has replaced cards and cash at registers, how families give gifts, and even how beggars ask for money, with QR codes replacing tin cups. These and other indicators tell us that China's new payment system is here to stay. It will continue to grow domestically and globally, following Chinese travelers and consumers abroad. China's experience makes clear that new technology allows payment systems to move from banking to follow technology and social networking companies. Those firms have other sources of data on which to base financial decisions such as providing credit.

America legally separates banking and commerce in unique ways. The payment system has historically existed on the banking side of that divide. However, the legal separation does not require that alignment. Payments could move away from banking, in theory, in the U.S., and the incentives created by moving the payment system from banking to technology firms are substantial and potentially concerning. The potential for anti-competitive behavior and privacy concerns by tech platforms by using the payment system and data generated from it is real. It is not clear whether these concerns can and would be remedied by effective regulation. It is also not clear what the departure of the payment system would mean for the health and stability of the financial system.

I do not believe the Chinese system is likely to catch on in America. America's existing system has multiple impediments to the Chinese model, or a similar one, taking over. As discussed early, wealthier consumers benefit more from substantial rewards linked to the current

payment system. Merchants may have difficulty transitioning and generating substantial savings from a new system. Consumer behavior is sticky. America's existing regulatory systems provide substantial consumer protection through the bank-based system that may be lost in a non-bank payment system.

V. Rethinking our Payment System

The American legal and regulatory framework is not well prepared should payments move out of the banking system. As financial technology provides greater ability to underwrite and provide credit as part of payment services, our legal framework will be further tested. Financial regulators and policy makers need to revisit the consumer protection and payment laws passed twenty to fifty years ago, and regulations adopting them, to incorporate new technology.

An example of this approach was the CFPB's original prepaid card rule,²⁵ whereby the protections afforded debit cards under EFTA²⁶ were expanded to include digital wallets. This type of data driven approach to extend a legal and regulatory framework that helped debit cards become the largest electronic payment system would work well for prepaid cards and digital wallets. All financial regulators should proactively explore how their rules and regulations can be extended to incorporate new payment technology.

An example of a mistake was the Federal Reserve's failure to utilize its longstanding legal authority to require consumers to have immediate access to their own funds. Despite rapid widespread adoption of check truncation, the Fed maintains its multiday hold periods. The result is billions of dollars in unnecessary costs for millions of lower income Americans. Congress did its part in passing the Check-21 Act in 2004²⁷ to allow for digital check processing. The Fed failed to do its job to require the funds to move faster to consumers. As a result, millions of American families will get paid tomorrow, Friday January 31st, but will be unable to access their own money until Monday, February 3rd, or in some cases Wednesday, February 5th. How are those families who live paycheck to paycheck supposed to pay their bills due the first of the month, put food on the table, and make it through the three to five days when their own money is sitting in there, not accessible to them? The sad reality is that payday lenders, check cashers, and bank overdraft fees will be the costly answer. The payment system is one reason why it is very expensive to be poor.

This problem, and many others could be solved by widespread adoption of real-time payments. Americans should not have to wait to reap the benefits of real time payments until the Federal Reserve's proposed system is built and operational, which best case will be almost twenty years after similar technology was deployed in the United Kingdom, Mexico, and Brazil. Instead, the Fed can and should use their regulatory authority to require existing bank customers to have

²⁵ 12 C.F.R. § 1005.2016.

²⁶ 15 U.S.C. § 1693.

²⁷ Check Clearing for the 21st Century Act, Pub. L. No. 108-100, 117 Stat. 1177 (2003).

access to the first \$5,000 of any deposit immediately. Banks can choose to use an existing real-time payment provider or continue to clear that payment through the Fed's slow and outdated ACH system and give up the float. If the Fed will not use its regulatory authority as Congress instructed until it modernizes its own operating system, then Congress should. Doing so is one of the best levers to reduce income inequality in America without raising taxes. Creating real-time electronic funds availability would likely reduce the demand for cash. After all, one of the biggest benefits of cash as a payment form is immediate clearing.

Final Thought

In conclusion, cash continues to play a vital role in America and is likely to for many years. The existing payment system does not serve the needs of working American families very well. Instead the payment system has become a reverse Robin Hood, imposing large, direct and indirect costs, on those with less and providing growing rewards to wealthy families. The growth of financial technology, particularly cashless digital wallets, is an opportunity to fix these problems. More research and strategic thinking are necessary to ensure universal access to future payment systems. The new digital divide is increasingly not about being able to get on-line, it is about being able to pay electronically.