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Chairman Crapo, Ranking Member Brown and members of the committee, thank you for the opportunity to testify today on the topic of Examining Regulatory Frameworks for Digital Currencies and Blockchain. As a banking law scholar, I hope to provide some perspective on the cryptocurrency industry's ambitions with regard to financial inclusion for low income Americans as well as its place in the banking regulatory landscape.

Bitcoin, cryptocurrency, and the blockchain technology on which they are based began in 2008 in the aftermath of the financial crisis. The promise and appeal of bitcoin and the cryptocurrencies that followed it is to offer a stateless alternative currency to the US monetary system. The cryptocurrency industry aspires to offer a more efficient, confidential, and accessible payments system than the bank-operated payments system, which they claim is slow, outdated, inefficient and exclusionary. They claim that the banking sector has created inequalities, that it has perpetuated fraud and harmed people by their reckless risk-taking. They are frustrated by a banking sector that seems not to have their customers best interests at heart. They are absolutely right and I am grateful to them for drawing attention to the problems in the payments and finance sector. I have spent my academic career trying to illuminate and remedy these problems as well. I am especially concerned with financial inclusion and equity in banking. While I share many of the cryptocurrency industry's concerns with respect to failures of the banking industry, I do not believe cryptocurrency is the best solution to the problems of financial inclusion and equity in banking.

Specifically, one stated goal of cryptocurrencies is to establish a "public" payments system available to all.¹ In fact, such a public payments system already exists: that is the exact mission of the Federal Reserve. Congress established the Federal Reserve in 1913 to increase the integrity, efficiency and *equity* of US payments. It was a public institution by design. According to its own charter, "the Federal Reserve was established to serve the public interest."² To the extent that this system is exclusionary, it is up to our democratically elected representatives to update this mission and mandate that the Fed promote efficiency and financial inclusion to the benefit of more Americans. Money itself is a public good and its creation, supply, and stability is a function of the US Treasury in coordination with the Federal Reserve.³ If there are any problems with US Currency,

¹ "Bitcoin is open-source; its design is public, nobody owns or controls Bitcoin and everyone can take part."
<https://bitcoin.org/en/>

² https://www.federalreserve.gov/faqs/about_14986.htm

³ Ricks, Morgan and Crawford, John and Menand, Lev, A Public Option for Bank Accounts (Or Central Banking for All) (December 2, 2018). Vanderbilt Law Research Paper 18-33; UC Hastings Research Paper No. 287. Available at SSRN: <https://ssrn.com/abstract=3192162> or <http://dx.doi.org/10.2139/ssrn.3192162>. James Tobin, The Case for Preserving Regulatory Distinctions, in RESTRUCTURING THE FINANCIAL SYSTEM 167, 172 (1987) ("I think the government should make available to the public a medium with the convenience of deposits and the safety of currency,

the Constitution of the United States has authorized only this institution, Congress, to change the laws and institutions related to currency.⁴ The problems of inequality and inefficiency that bitcoin and the cryptocurrency industry has set out to solve are not problems of technology, they are problems of policy. And it is in this chamber, and not in a tech startup office or anonymous white paper, that these problems must be addressed. Access to the Federal Reserve payments system is essential to full participation in commerce. Every American not only deserves the right to participate in the economy, but also to participate democratically in the monetary policy decision-making that affects their lives. We do not need to replace the Federal Reserve or fiat currency to achieve that. In fact, our Congress must do just the opposite and ensure that our public institutions are achieving their mission.

The Payments System is a Public Good and It Should be Available to All Americans

The largest and most secure payments system in the US is operated by the Federal Reserve as per its mandate.⁵ The Federal Reserve’s own policy mandate on payments is “to bring to payments markets an overall concern for safety and soundness, promotion of operating efficiency, and equitable access.” The Fed promises that these “considerations relating to integrity, efficiency, and access to the payments system will remain at the core of the Federal Reserve’s role and responsibilities regarding the operation of the payments system.” As the Fed itself recognizes, “given the size, speed, and interdependencies of payments, this mission is, and will likely continue to be, even more important than it was when the Federal Reserve was established in 1913.”⁶

Indeed, achieving this mission today is essential. The Federal Reserve payments system is accessed by most Americans through their banks, and yet a quarter (25%) of Americans are unbanked or underbanked.⁷ These low-income families spend about 10% of their total income in fees to alternative financial service providers just to use their money.⁸ Being underbanked is

essentially currency on deposit, transferable in any amount by check or other order. ... The Federal Reserve Banks themselves could offer such deposits.”). See also Kenneth J. Arrow, *The Organization of Economic Activity: Issues Pertinent to the Choice of Market versus Non-market Allocations*, in *ANALYSIS AND EVALUATION OF PUBLIC EXPENDITURES: THE PPP SYSTEM* 48 (J. Econ. Comm. of Cong. 1969) (“The creation of money is in many respects an example of a public good.”); CHARLES P. KINDLEBERGER & ROBERT Z. ALIBER, *MANIAS, PANICS, AND CRASHES: A HISTORY OF FINANCIAL CRISES* 19 (6th ed. 2011) (“Money is a public good.”); John Cochrane, Remarks at the Federal Reserve Bank of Minneapolis, May 16, 2016 (“There’s a few things that government has a natural monopoly in: national defense, courts, property rights, and I would say money.”).

⁴ See *Legal Tender Cases*, 110 U.S. 421 (1884) (“Congress has the constitutional power to make the Treasury notes of the United States a legal tender in payment of private debts, in time of peace as well as in time of war.”). See also, 18 U.S.C. § 486 – Uttering Coins of Gold, Silver or Other Metal: “Whoever, except as authorized by law, makes or utters or passes, or attempts to utter or pass, any coins of gold or silver or other metal, or alloys of metals, intended for use as current money, whether in the resemblance of coins of the United States or of foreign countries, or of original design, shall be fined under this title or imprisoned not more than five years, or both.”

⁵ Federal Reserve System, *Payment Systems*: <https://www.federalreserve.gov/paymentsystems.htm>; Carol Coye Bensin and Scott Loftesness; *Payments Systems in the U.S.* 3rd ed. (Glenbrook Partners 2010)

⁶ https://www.federalreserve.gov/paymentsystems/pfs_frpaysys.htm

⁷ 2017 FDIC National Survey of Unbanked and Underbanked Households: <https://www.fdic.gov/householdsurvey/2017/2017report.pdf>; <https://www.cnn.com/2019/03/08/25percent-of-us-households-are-either-unbanked-or-underbanked.html>

⁸ U.S. Postal Service, *Providing Non-Bank Financial Services for the Underserved* (2014), *available at* <http://www.uspsaig.gov/sites/default/files/document-library-files/2014/rarc-wp-14-007.pdf>.

expensive and time-consuming as each financial transaction involves fees and hurdles.⁹ The unbanked must pay fees to send and receive money, cash checks, use debit cards, and otherwise engage in commercial activities that are routine and nearly free for most Americans. In the United States, we have decided that only chartered banks and their customers can access the payments systems built, maintained, and overseen by the Federal Reserve.¹⁰ Yet banks are not mandated to offer these services to all people. Banks can choose their customers and the communities in which they will operate physical branches.

Banks have abandoned certain low-profit communities and customers. Over the last several decades, deregulation, heightened market competition, and the subprime crises has led to wave after wave of bank mergers and a conglomerated banking industry. Industry consolidation has meant that many communities, especially in rural regions across the country are banking deserts where communities do not have a bank.¹¹ In these banking deserts, it is not uncommon that the only ATM in the entire area is at a gas station with fees up to \$7.50 per transaction.¹² But even where banks are physically available, there remain many barriers for low-income Americans. Banks charge excessive and onerous overdraft fees and excess activity fees—fees that are lucrative for banks and disastrous for low-income consumers.¹³ Small accounts are not profitable for banks so they avoid them—either by leaving low income areas or repelling low income customers through fees.¹⁴ Faced with seemingly random and punitive fees, low-income customers have taken their business to the fringe banking sector.¹⁵

⁹ See Mehrsa Baradaran, *How the Other Half Banks: Exclusion, Exploitation, and the Threat to Democracy*, HARVARD UNIVERSITY PRESS (Oct. 2015)

¹⁰ Structure of the Federal Reserve System: <https://www.federalreserve.gov/aboutthefed/structure-federal-reserve-system.htm>

¹¹ Bank closures are not spread out evenly—93% of bank closings are in LMI communities. NCRC Research, *Banking Deserts in America*, National Community Reinvestment Coalition (June 2017) <http://maps.ncrc.org/bankdeserts/index.html>; Frank Bass & Dakin Campbell, *Study Finds Latest Bank Branch Closing Strike Hardest in Poor Neighborhoods*, Bloomberg News (May 2, 2013) https://www.stltoday.com/business/local/study-finds-latest-bank-branch-closings-strike-hardest-in-poor/article_b33a4103-280f-5b3c-9754-3086de4b0070.html. Rural America has lost *over half* of its banks in the last few decades and 1 in 8 communities is a banking desert. Housing Assistance Council, *The Community Reinvestment Act and Mortgage Lending in Rural America* 22 (Jan. 2015) <http://www.ruralhome.org/storage/documents/publications/rrreports/rrr-cra-in-rural-america.pdf>.

¹² A Town With No Bank, *NBC News*, 2019. <https://www.nbcnews.com/news/nbcblk/how-itta-bena-mississippi-became-banking-desert-n1017686>

¹³ “Overdraft Fees: Compare What Banks Charge”:

<https://www.nerdwallet.com/blog/banking/overdraft-fees-what-banks-charge/>; “Bank overdraft fees could jump if consumer watchdog eases rule”: <https://www.cnbc.com/2019/06/25/bank-overdraft-fees-could-jump-if-consumer-watchdog-eases-rule.html>; Center for Responsible Lending, “Report: FDIC Data Shows that Banks Collected \$11.45 Billion in Overdraft Fees in 2017”: <https://www.responsiblelending.org/media/report-fdic-data-shows-banks-collected-1145-billion-overdraft-fees-2017>; Center for Responsible Lending, “Unfair Market: The State of High-Cost Overdraft Practices in 2017”: <https://www.responsiblelending.org/research-publication/unfair-market-state-high-cost-overdraft-practices-2017>

¹⁴ Most banks require balances of \$1,500 to avoid fees on their basic accounts. Lisa J. Servon, *The High Cost, for the Poor, of Using a Bank*, *New Yorker* (Oct. 9, 2013), <https://www.newyorker.com/business/currency/the-high-cost-for-the-poor-of-using-a-bank>. Abby Vesoulis, *Millions of Americans Can't Afford a Checking Account. The Post Office Could Fix That*, *Time* (Aug. 7, 2018); Government Accountability Office, *Community Reinvestment Act, Options for Treasury to Consider to Encourage Services and Small-Dollar Loans When Reviewing Framework* (Feb. 2018), <https://www.gao.gov/products/GAO-18-244>.

¹⁵ The rise of fringe banking, check-cashing, and payday lending was a direct result of the decline of community banks. See Mehrsa Baradaran, *How the Other Half Banks: Exclusion, Exploitation, and the Threat to Democracy*, HARVARD UNIVERSITY PRESS (Oct. 2015)

Those who are unbanked need a way to cross the cash/digital divide so they can engage in commerce. This problem can be fixed by offering a direct checking account to all communities through the post office.¹⁶ The United States Postal Service (USPS) operated a savings bank for much of its history and most postal services do so worldwide.¹⁷ The post office need not engage in banking or even lending, but simply offer transaction services. Post office branches already take cash from customers and offer money orders. My postal banking proposal only requires that post offices go one step further and offer a digital checking account linked to a central payment system. Once consumers have a digital account, they can begin to use mobile banking and other fintech services. Moreover, a low-cost savings account and the 10% of their income saved from payments services could diminish the need for payday lending by providing a financial buffer. My colleagues Morgan Ricks, John Crawford and Lev Menand have suggested that the Federal Reserve should offer accounts directly to all individuals and businesses through a Fed Account, which could be offered through the post office. They argue that “restricting central bank accounts to an exclusive clientele (banks) is no longer justifiable on policy grounds if indeed it ever was.”¹⁸ These accounts would not cost taxpayers any additional money, but could in fact create profits for both the Federal Reserve and the Post Office.¹⁹

Another important way that banks are not meeting the needs of low-income Americans is the delay in making funds available to customers. Payments clearing—the time between when a check is deposited and when the funds can be withdrawn as cash—can take three to five business days. For families who do not have a buffer of wealth and need to spend their paychecks for food or rent, this delay is costly and onerous. In order to avoid this time gap, families often resort to check-cashers or payday lenders. Aaron Klein of the Brookings Institute claims that real time payments could help eliminate a share of overdrafts, payday loans, and check cashing fees, and restore tens of billions a year to working families.²⁰ The Federal Reserve must update its processing to real time payments clearing so that those who need access to their hard-earned wages do not have an unnecessary delay.²¹ The Federal Reserve has stated that it is studying the issue, but the recently-introduced Payments Modernization Act seeks to speed the process along and mandate a real time payments system. The technology is readily available and the US is playing catch up as many other countries have already adopted real time payments.²²

¹⁶ Mehrsa Baradaran, *It's Time for Postal Banking*, 127 HARV. L. REV. F. 165 (2014)

¹⁷ See Mehrsa Baradaran, *How the Other Half Banks: Exclusion, Exploitation, and the Threat to Democracy*, HARVARD UNIVERSITY PRESS (Oct. 2015)

¹⁸ Ricks, Morgan and Crawford, John and Menand, Lev, A Public Option for Bank Accounts (Or Central Banking for All) (December 2, 2018). Vanderbilt Law Research Paper 18-33; UC Hastings Research Paper No. 287. Available at SSRN: <https://ssrn.com/abstract=3192162> or <http://dx.doi.org/10.2139/ssrn.3192162>

¹⁹ For revenue projections for the post office, see: USPS, Office of Inspector General, “Providing Non-Bank Financial Services for the Underserved” (January 27, 2014). White Paper Report No. RARC-WP-14-007. Available at <https://www.uspsoig.gov/sites/default/files/document-library-files/2014/rarc-wp-14-007.pdf>. As for Fed Accounts, as Ricks, Crawford and Menand explain, the FedAccounts would increase revenue. “Central banks’ asset portfolio returns typically exceed their interest payments and other expenses by a wide margin. These earnings are called “seigniorage”: fiscal revenue from money creation. The amounts are large. The Fed remitted \$98 billion, \$92 billion, and \$90 billion in earnings to the U.S. Treasury Department in 2015, 2016, and 2017, respectively. FedAccounts would

²⁰ Aaron Klein, *Real-time payments can help combat inequality*, March 6, 2019

<https://www.brookings.edu/opinions/real-time-payments-can-help-combat-inequality/>

²¹ [²² <https://www.ncr.com/company/blogs/financial/real-time-payments-what-where-and-when>](https://www.americanbanker.com/news/elizabeth-warren-other-democrats-look-to-force-feds-hand-on-faster-payments;Federal Reserve Banks, “Faster Payments Task Force,” Federal Reserve Banks, 2015 (Circle, “About,” 2016. Federal Reserve System, “Strategies for Improving the U.S. Payment System.” January 26, 2016.</p></div><div data-bbox=)

The Federal Reserve payments system has proved secure, private, and safe and is among the most reliable in the world—but it is exclusionary. And I want to be clear about why it is exclusionary: it is not that the Federal Reserve lacks the expertise or the technology or that there is anything inherently exclusionary about their payments system; rather the Federal Reserve has not prioritized the needs of the underbanked for faster processing and retail point of contact operations. The Federal Reserve has only offered its payments system to banks—who, as profit seeking institutions, avoid the least profitable consumers. This is a problem that can and must be fixed through policy rather than outsourced to technology or banking corporations to solve. The Federal Reserve states that it has “a public-interest motivation in seeking to stimulate improvements in the efficiency of the payments system.” This, according to their own mission, requires it “to provide equitable access and an adequate level of services nationwide.”²³ In order to achieve this mission, the Federal Reserve must open up its payments system to all Americans. If the Federal Reserve falters in its mission, it falls in Congress’s purview to enforce it.

Cryptocurrency is Not the Way to Achieve Financial Inclusion

Since its inception a decade ago, many in the cryptocurrency industry have promised that one of the main benefits of the distributive ledger technology is to facilitate financial inclusion of the unbanked.²⁴ In fact, this promise was repeated in every hearing that has been held before this committee on the topic, including the Libra hearing a few weeks ago.²⁵ Fintech companies have been making similar promises for just as long. Thus far, fintech has only served the population who is already banked and blockchain use is limited to the technically savvy.²⁶ There is no reason to doubt the good intention of these technology companies, but I believe there is a fundamental mismatch between the problems and barriers that the unbanked face and the technological solutions being offered. What unbanked customers need are simple and safe places to save their money, and then convenient and inexpensive ways to use it. The most popular product for low-income consumers has been a very simple, and still very expensive, prepaid debit card.²⁷ It is accepted for all purchases and resembles a no-fee debit card from a bank. While it is possible and likely that crypto and fintech

²³ https://www.federalreserve.gov/paymentsystems/pfs_frpayssys.htm

²⁴ “Unbanked to big banks: How crypto facilitates financial inclusion”:

<https://www.ibm.com/blogs/blockchain/2019/04/unbanked-to-big-banks-how-crypto-facilitates-financial-inclusion/>;

“How Blockchain is Banking the Unbanked”: <https://cointelegraph.com/news/how-blockchain-is-banking-the-unbanked>; “Blockchain and Financial Inclusion” (White Paper, March 2017):

<https://digitalchamber.org/assets/blockchain-and-financial-inclusion.pdf>

²⁵ “Our first goal is to create utility and adoption, enabling people around the world—especially the unbanked and underbanked—to take part in the financial ecosystem.” HEARING BEFORE THE UNITED STATES SENATE COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS July 16, 2019 Testimony of David Marcus Head of Calibra, Facebook. <https://www.banking.senate.gov/imo/media/doc/Marcus%20Testimony%2016-19.pdf> July 16, 2019 hearing before Committee on Banking, Housing, and Urban Affairs (Senate) – Hearing to examine Facebook proposed digital currency, known as Libra, and implications for consumers.

²⁶ See, e.g., Morgan Ricks, *Money as Infrastructure*, supra note 110, at Part III.B. MICHAEL S. BARR, HOWELL E. JACKSON & MARGARET E. TAHYAR, *FINANCIAL REGULATION: LAW AND POLICY* 796 (2016); Even committed laissez faire economists like Milton Friedman and James Buchanan recognized that money creation is inexorably linked to the government. Milton Friedman called money creation and monetary policy “an essential governmental function on a par with the provision of a stable legal framework.” MILTON FRIEDMAN, *A PROGRAM FOR MONETARY STABILITY* 8 (1960); James M. Buchanan, *The Constitutionalization of Money*, 30 *CATO J.* 251, 251 (2010) (“The market will not work effectively with monetary anarchy.”)

²⁷ Carol Coye Bensin and Scott Loftesness; *Payments Systems in the U.S.* 3rd ed. (Glenbrook Partners 2010)

²⁷ https://www.federalreserve.gov/paymentsystems/pfs_frpayssys.htm

technologies have and will help with financial inclusion efforts in countries with an underdeveloped banking system, the United States has a nationwide system of digital payments already in use.

Cryptocurrencies intend to offer the unbanked an alternative payments processing, but this only works if all employers, landlords, utilities, restaurants, stores, babysitters, dentists and every other way that people currently spend their cash, transition to using cryptocurrencies. In order for cryptocurrencies to be the solution to financial inclusion, they must be widely adopted and user-friendly—even for the least technologically savvy on both ends of a transaction. This is the policy equivalent of moving a mountain. Some might argue that total adoption of crypto currency is unnecessary to provide some measure of benefit to the underbanked, but then we are left with debating how much financial inclusion is good enough, who should be included, and still what to do about those who are left out.

Achieving a cashless commercial system is possible and I believe it to be an important policy goal. But practically speaking, it is much easier to expand the current Federal Reserve payments system to include the unbanked rather than create an entire new currency on a new technological platform, wait for wholesale adoption, and then double check to make sure the unbanked are using it.

Expanding access to already established payments systems would allow frictionless and immediate inclusion into efficient traditional financial services like the direct deposit of paychecks or writing a check, as well as newer financial services like autopay and the host of products offered by fintech providers. In the United States, all app-based mobile banking and fintech providers use traditional banks to access the Federal Reserve payments system. As a matter of policy, the most simple and direct path to financial inclusion is by upgrading the technology and opening the doors to our already established payments processing system. We do not need to wait for technological advances to reach banking deserts as unbanked populations continue to pay billions of dollars of their hard-earned wages to a fringe banking sector. And even if the problems with cryptocurrencies I have outlined can be addressed with technological solutions that are just around the corner, reserving the highly subsidized and public federal banking system for the wealthy and relegating the unbanked to the private cryptocurrency markets is undemocratic. The payments problem is a policy problem not a technological problem.

New Technologies Do Not Change the Fundamental Risks of Finance and Must Not be Exempt from Regulation

Technology has and will continue to fundamentally transform finance, but it has not and should not alter safety and soundness, privacy, or consumer protection regulations. There has yet to be an innovative new technology that has eliminated the risks and frauds and problems that financial regulation is meant to combat despite promises and hopes to the contrary. From the ATM to internet banking, fintech, mobile banking, high frequency trading, and digital payments processing—the banking sector is constantly in a state of flux and upheaval. But the core risks that regulations are designed to address have not fundamentally changed. Cryptocurrencies are either a store of value, tradable currencies, investments, and a payments system or as some have promised, they are all of these things. There is nothing about all these things being put on the blockchain that makes it any less likely that it could lead to systemic risk, fraud, insider information, criminal activity, panics, bubbles, etc.

Before the 2008 crisis, the derivatives market was deregulated because industry experts promised that the new and innovative derivatives markets offered a perfect hedge. The counterparties, regulators were promised, would absorb all the risk. The investment banks and derivatives traders warned that outdated and unnecessary regulations were “stifling innovation.” In 2000, US regulators passed the “Commodity Futures Modernization Act,” which quickly led to a practically unregulated \$600 trillion derivatives market.²⁸ As financial regulators discovered in 2008, the innovative market had not hedged its risks at all, but had merely placed many of them on the books of their counterparties, like AIG. When the risks materialized, the entire banking sector was exposed. Similar promises and assumptions were made about the new and innovative money markets in the 1980s, which also led to their deregulation.²⁹ Money markets were essentially pegged to the dollar 1:1 (similar to Libra’s strategy) and promised to be stable and liquid. It was said that they did not need to be insured by the FDIC because they were not susceptible to a run. And they were safe, until they broke the buck by three cents, threatening a potentially catastrophic run.³⁰ Only a government guarantee and heavy Federal Reserve involvement calmed the markets.³¹ The same risks were inherent in the repo and commercial paper markets in 2008, which also all suffered runs.³² So far, none of these crypto currencies have reached the level of scale where they would present a systemic threat, but if their ambitions are to be believed they will. Safety and soundness regulators and systemic risk regulators such as FSOC must make sure these markets do not present a systemic risk thread. This is especially true in the case of Libra, which is linked already with a powerful corporate monopoly.

Whether trade and investments are in tulips or South Sea stocks, CDO’s or bitcoin, asset price bubbles will create crashes and crises.³³ And with each crisis, the risks, the frauds, and the bubble is only apparent in the rearview mirror. There is no reason to believe that a new and impressive blockchain-based investment market should be exempt from bubbles, speculations, manias, panics, and other individual or systemic risks that our monetary policy and regulatory bodies have worked hard to mitigate. Many bitcoin enthusiasts are philosophically opposed to any state intervention in markets or in people’s lives and see state supervision of financial transactions and regulation of markets as a major problem of our current system.³⁴ While I understand why that philosophy might appeal to many, I struggle to imagine why this Congress—the very body distrusted by many crypto enthusiasts—would agree with them and willingly cede its and regulatory authority.

²⁸ <https://corpgov.law.harvard.edu/2009/07/21/how-deregulating-derivatives-led-to-disaster/>

²⁹ For a history of financial markets deregulation, See Simon Johnson & James Kwak, *13 Bankers*, chapter 5 (pages 120-152). The money markets were specifically deregulated in the Depository Institutions Deregulation and Monetary Control Act (DIDMCA) of 1980, Pub. L. No. 96-221, 94 Stat. 132 (codified as amended in scattered sections of 12 U.S.C.).

³⁰ <https://dealbook.nytimes.com/2008/09/17/money-market-fund-says-customers-could-lose-money/>;

³¹ James Stewart, *Eight Days: The Battle to Save the American Financial System*, THE NEW YORKER, Sept. 21, 2009; Niel Willardson & LuAnne Pederson, “Federal Reserve Liquidity Programs: An Update” (June 2010), available at http://www.minneapolisfed.org/research/pub_display.cfm?id=4451 ; Alexander Mehra, *Legal Authority in Unusual and Exigent Circumstances: The Federal Reserve and the Financial Crisis* (U. Pa. J. Bus. L. 2011 update), at [https://www.law.upenn.edu/journals/jbl/articles/volume13/issue1/Mehra13U.Pa.J.Bus.L.221\(2010\).pdf](https://www.law.upenn.edu/journals/jbl/articles/volume13/issue1/Mehra13U.Pa.J.Bus.L.221(2010).pdf) -

³² Gary Gorton, “Slapped in the Face by the Invisible Hand: Banking and the Panic of 2007.” May 9, 2009, Federal Reserve Bank of Atlanta’s 2009 Financial Markets Conference: Financial Innovation and Crisis, May 11-13, 2009. Available at http://www.frbatlanta.org/news/conferences/09-financial_markets_agenda.cfm. See also, Mehrling, Peter.: *The New Lombard Street: How The Fed Became The Dealer Of Last Resort* (Princeton Press, 2010)

³³ Charles P. Kindleberger & Robert Z. Aliber, *Manias, Panics, and Crashes: A History of Financial Crises* (6th ed. 2011)

³⁴ David Golumbia, *The Politics of Bitcoin: Software as Right-Wing Extremism* (2016).

Most of the laws that regulate banks and financial firms were created in response to a crisis or repeated crises that have harmed people. They were passed with care and thought, through democratic means, to deal with specific recurring problems. FDIC supervision of banks and federal deposit insurance, for example, was created because of the disastrous effects of constant banking runs and panics, culminating in the Great Depression.³⁵ Anti-Money Laundering, Bank Secrecy Act, Anti-terrorism, and Know Your Customer laws were created to prevent organized crime and terrorism. The Consumer Financial Protection Bureau was created because other laws had failed to protect consumers. Securities and commodities laws were designed to protect investors from fraud. There are inefficiencies and overlaps and perhaps too much regulation in parts and not enough in others. While not all of these laws are applicable to cryptocurrencies, if the crypto industry intends to compete in markets regulated by these laws, the industry should be regulated by them. These laws were not passed haphazardly. As this chamber certainly understands, our bicameral legislature makes laws difficult to pass. These laws and regulations were seen as necessary, were debated, and written and revised, and compromises were made through the democratic process. If these laws have become outdated or unnecessary, or if Congress believes that they are too cumbersome, then they should be repealed or changed for all applicable parties, not just newcomers. Technology and innovation cannot undermine public policy.

Bitcoin as Monetary Theory

While Congress and regulators should allow blockchain-based tech companies to experiment with and profit from novel uses and markets for blockchain, they must also recognize the ways in which a large portion of the ambitions of the cryptocurrency is an ideologically motivated endeavor that exists apart from the blockchain technology on which it is based. Specifically, bitcoin and bitcoin-like cryptocurrencies are based on assumptions and theories about money that are at odds with history and modern markets. The goal of many crypto-enthusiasts is to completely replace the current fiat currency system for a state-less and decentralized monetary system. It is understandable that many people would yearn for a different system of currency and banking after the 2008 crisis and the repeated failures of the banking industry to secure the public's trust, but our banking system and the fiat currency on which it is based is worth defending. Money has been inexorably linked with the state for as long as there has been modern markets.³⁶

Since Satoshi Nakamoto's white paper, the central premise and promise of cryptocurrency has been to develop a currency that is better than fiat currency and untethered from a central bank.³⁷

³⁵ Piergiorgio Alessandri & Andrew G. Haldane, "Banking on the State," November 6, 2009, based on presentation at *Federal Reserve Bank of Chicago 12th Annual International Banking Conference on "The International Financial Crisis: Have the Rules of Finance Changed?"*, September 25, 2009, 1; Richard S. Grossman, *Unsettled Account: The Evolution of Banking in the Industrialized World Since 1800* (Princeton: Princeton University Press, 2010), 29.

³⁶ See, Christine Desan, *Making Money: Coin, Currency, and the Coming of Capitalism*, (2014); Ricks, Morgan, Money as Infrastructure (March 11, 2018). *Columbia Business Law Review* (2018). Available at SSRN: <https://ssrn.com/abstract=3070270> or <http://dx.doi.org/10.2139/ssrn.3070270>. According to economists, the gold standard was the principle threat to financial stability before the United States finally availed itself of the gold standard. Golden Fetters: The Gold Standard and the Great Depression, 1919-1939, <https://ideas.repec.org/b/oxp/obooks/9780195101133.html>

³⁷ Satoshi Nakamoto, "Bitcoin: A Peer-to-Peer Electronic Cash System": <https://bitcoin.org/bitcoin.pdf>; Alex Tapscott and Don Tapscott, *Blockchain Revolution: How the Technology Behind Bitcoin Is Changing Money, Business, and the World* (2016);

The premise is that the government's ability to print fiat money is a threat to economic stability, that it is inflationary, and deprives individuals of their liberties. This extreme libertarian theory envisions the eradication of all state intervention in commerce. This is a political theory and it is based on a fundamental set of assumptions about the dangers of the Federal Reserve and its role in money creation. Though many have compared the innovation of cryptocurrencies to earlier technologies like the internet, social media or email, this analogy is not quite accurate.³⁸ Though the blockchain is neutral technology and it could potentially lead to major societal and market change, the theory of cryptocurrencies that operate using the distributive ledger is premised in opposition to state-created fiat currency. One popular book on bitcoin shows off that bitcoin is the “enemy of the state.”³⁹

The Federal Reserve was created by Congress to deal with the costly turbulence inherent to financial markets during panics. After decades of repeated banking crises, unstable credit markets, and recessions, the United States built a public payments and monetary system through democratic means with a mission to serve the public. Inspired by Walter Bagehot's analysis of sound central banking, the Federal Reserve was authorized to “avert panic” by “lend[ing] early and freely (ie without limit), to solvent firms, against good collateral, and at high rates.”⁴⁰ And yet bitcoin-like cryptocurrencies promise to “remedy” the inflationary monetary policies of the Federal Reserve.⁴¹ Many crypto enthusiasts lament the loss of a fixed gold standard and decry the Federal Reserve's ability to “print money.”⁴² Fiat currency was created, however, because gold created inequalities, constrained credit markets, and created instability in markets.⁴³ The gold standard not only led to repeated crises, but it was a boon for the wealthy who held gold and a curse for everyone else who relied on credit and wages.⁴⁴

The Federal Reserve was explicitly mandated by Congress to foster an elastic currency.⁴⁵ Our money system is an electronic debt-based fiat currency with all monetary policy powers delegated to the politically insulated Federal Reserve. The Federal Reserve can expand the money

Michael Casey and Paul Vigna, *The Age of Cryptocurrency: How Bitcoin and Digital Money Are Challenging the Global Economic Order* (2015).

³⁸ Andreas M. Antonopoulos, *The Internet of Money*, 2016.

³⁹ Dominic Fisby, *Bitcoin: the Future of Money?*

<https://www.amazon.com/Bitcoin-future-money-Dominic-Frisby/dp/1783521023>;

<https://thenextweb.com/hardfork/2019/01/02/blockchain-cryptocurrency-books-2019/>

⁴⁰ Walter Bagehot ([1873] 1897), *Lombard Street: A Description of the Money Market* (New York: Charles Scribner's Sons). See, Federal Reserve: *Bagehot's Dictum in Practice: Formulating and Implementing Policies to Combat the Financial Crisis* (2009)

<https://www.federalreserve.gov/newsevents/speech/madigan20090821a.htm>

⁴¹ <https://beincrypto.com/bitcoin-federal-reserve-centralization-inflation/>

⁴² <https://www.msn.com/en-us/news/us/winklevoss-twins-bitcoin-is-gold-20/vp-AAE84IX>; See also Nathaniel Popper, *Digital Gold: Bitcoin and the Inside Story of the Misfits and Millionaires Trying to Reinvent Money* (2015); Ben Mezrich, *Bitcoin Billionaires: A True Story of Genius, Betrayal, and Redemption* (2019). Though the Federal Reserve can engage in monetary policy, only the US Treasury can issue (“print”) new currency.

⁴³ <https://www.moneyandbanking.com/commentary/2019/7/6/protecting-the-federal-reserve>

⁴⁴ Poor farmers from the South and West opposed the gold standard because the rich Wall Street bankers held the gold and there wasn't enough of it to provide credit. William Jennings Bryant passionately decried the gold standard on behalf of the poor farmers he represented. Bryan, voicing the discontent of many during this era, which he framed as a “struggle between the idle holders of idle capital and the struggling masses who produce the wealth and pay the taxes of this country.” “Official Proceedings of the Democratic National Convention Held in Chicago, Illinois, July 7, 8, 9, 10, and 11, 1896,” in *The Annals of America, Vol. 12, 1895–1904: Populism, Imperialism, and Reform* (Chicago: Encyclopedia Britannica, Inc., 1968), 100–105.

⁴⁵ “An Act To provide for the establishment of Federal reserve banks, to furnish an elastic currency, to afford means of rediscounting commercial paper, to establish a more effective supervision of banking in the United States, and for other purposes.” The Federal Reserve Act of 1913, <https://www.federalreserve.gov/aboutthefed/officialtitle-preamble.htm>

supply as needed. The US Dollar's elasticity and the Federal Reserve's ability to expand its supply is a feature—not a bug—of the US currency regime and a result of purposeful institutional design. This is one reason the US Dollar is the world's most valued and stable currency.⁴⁶ The Federal Reserve was able to be the lender of last resort worldwide and Quantitative Easing restored the world's economy to health (with the caveat that the recovery was not spread equally).⁴⁷ The Federal Reserve enables credit to course through economic channels through its reserve balances and monetary policy.⁴⁸ To the extent that inflation is a current threat—and all evidence leads in the opposite direction—Congress has authorized the Federal Open Market Committee (FOMC) to take the appropriate actions necessary.⁴⁹

Cryptocurrencies promise to remove trust from money. They say that the ledger and the decentralized network will replace the need for a trusted intermediary, like a government, by verifying each transaction.⁵⁰ But verifying transactions is only a small part of the role played by the FDIC, the Federal Reserve, and US Treasury in lending credibility to the US currency and enabling its wide use and acceptance. Trust in money requires a strong and reliable government infrastructure—as failed historical experiments with private notes issued by banks and private deposit insurance schemes have made clear.⁵¹ Successful money creation has always been tied to governments.⁵² A healthy financial system relies on broad trust and to date, only the full faith and credit of the federal government backing its currency has been able to provide the level of stability, responsiveness and flexibility that has yielded a world-wide trust in the dollar. Our evolved combination of federal deposit insurance backed by US Treasury guarantee has been able to provide the trust and stability necessary to support modern markets.⁵³

⁴⁶ Eswar S. Prasad, *The Dollar Trap: How the U.S. Dollar Tightened Its Grip on Global Finance* (Princeton: 2014), <https://press.princeton.edu/titles/10182.html>

⁴⁷ Adam Tooze; *Crashed: How a Decade of Financial Crisis Changed The World* (2018); J. Lawrence Broz, P, *The Federal Reserve as Global Lender of Last Resort, 2007-2010, London School of Economics*, <http://eprints.lse.ac.uk/60951/1/dp-30.pdf>

⁴⁸ James Tobin, "Commercial Banks as Creators of 'Money,'" (1963). Cowles Foundation for Research in Economics, Yale University. No. 159, 6-7. McLeay, Radla, and Thomas, "Money Creation," 16.

⁴⁹ <https://www.bankofengland.co.uk/-/media/boe/files/quarterly-bulletin/2014/money-creation-in-the-modern-economy>

⁵⁰ In fact, some crypto-companies have already recognized the need for a trusted intermediary and have created a central authority. 121 See, e.g., Brian Fung, *Move Deliberately, Fix Things: How Coinbase Is Building a Cryptocurrency Empire*, WASH. POST, May 17, 2018 (describing Coinbase's role as a major cryptocurrency intermediary).

⁵¹ See James A. Kahn, "Another Look at Free Banking in the United States," *American Economic Review* 75 (1985), 881. Available at <http://www.jstor.org/discover/1821369?sid=21105644997413&uid=2&uid=2134&uid=70&uid=3739256&uid=3739616&uid=4>; Richard S. Grossman, *Unsettled Account: The Evolution of Banking in the Industrialized World Since 1800* (Princeton: Princeton University Press, 2010); Bray Hammond, *Banks and Politics in America: From the Revolution to the Civil War* (Princeton: Princeton University Press, 1991).

⁵² See, Christine Desan, *Making Money: Coin, Currency, and the Coming of Capitalism*, (2014); Ricks, Morgan, *Money as Infrastructure* (March 11, 2018). *Columbia Business Law Review* (2018). Available at SSRN: <https://ssrn.com/abstract=3070270> or <http://dx.doi.org/10.2139/ssrn.3070270>. Michael McLeay, Amar Radla, and Ryland Thomas, "Money Creation in the Modern Economy," *Quarterly Bulletin* 54 (Bank of England, 2014): 16. Available at <http://www.bankofengland.co.uk/publications/Pages/quarterlybulletin/2014/qb14q1.aspx> (last accessed Nov. 9, 2014). James Tobin, "Commercial Banks as Creators of 'Money,'" (1963). Cowles Foundation for Research in Economics, Yale University. No. 159, 6-7. McLeay, Radla, and Thomas, "Money Creation," 16.

⁵³ Alessandri and Haldane "Banking on the State," 7. When the FDIC fund dipped into the red during the financial crisis, only a promise from the US Treasury that they would guarantee all deposits could calm markets. *Crisis and Response: An FDIC History, 2008–2013*, <https://www.fdic.gov/bank/historical/crisis/overview.pdf>

Conclusion

There are inequalities and problems in the US banking system and they must be fixed, but they must be fixed through democratic means. Cryptocurrencies want to take over where our public institutions have failed. We should heed the criticism of this industry, but we should not give up on the mission and promise of our public institutions. It was Congress that charged the Federal Reserve with its mission to provide equitable access. Congress that created fiat currencies. Congress that authorized the Securities and Commodities Commissions, the FDIC, and other regulatory agencies. If Congress wants to foster financial inclusion or a different monetary system, it is the duty of Congress as the representatives of the people to authorize and charge the Federal Reserve with creating an inclusive and effective payments system or with a new monetary regime.