Bitcoin Policy Institute

August 8, 2022

U.S. Department of the Treasury
1500 Pennsylvania Avenue, NW
Washington, D.C. 20220

Re: Ensuring Responsible Development of Digital Assets; Request for Comment

The internet is changing society's relationship with money as profoundly as it has with information. To ensure sound policy, the U.S. needs rigorous research that moves past hype and cynicism alike. The Bitcoin Policy Institute (BPI) is a non-partisan, non-profit research center working to study the policy and societal implications of emerging monetary networks. Our researchers include economists, lawyers, climate scientists, philosophers, and technologists with decades of combined experience studying bitcoin and digital assets. We are pleased to submit the following report as our response to the U.S. Department of the Treasury.

BPI has conducted research on bitcoin's role in U.S. competitiveness, national security, and mining and energy. In addition, BPI has researched in great detail what we describe as "The Future of Money" — an exploration of the various ways that public and private monies interoperate, along with the tradeoffs that exist within each method of value transfer. Through that framework, this report focuses on the benefits of bitcoin as an open monetary network and highlights the role it plays in creating a more financially inclusive society. We conclude with broad recommendations for the Treasury Department to consider as it explores how to interact with bitcoin in the coming years.

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Introduction

Despite innovation in financial technology and our government's best efforts to make banking more accessible, American banking and financial services remain plagued by high fees and a fundamental lack of trust from many consumers, resulting in millions being alienated from and underserved by the existing system. Cryptocurrency broadly presents one solution to this problem, and we believe that bitcoin in particular is well-positioned to positively impact the lives of many Americans.

Bitcoin: A Revolution In Payments on the Internet

The first sentence in the original bitcoin whitepaper — released in 2008 — states, "Commerce on the Internet has come to rely almost exclusively on financial institutions serving as trusted third parties to process electronic payments." Until bitcoin, anyone making an online payment was forced to rely on the centralized intermediaries of the traditional banking system. Users could pay with their credit card or conduct a wire transfer, but there was no equivalent of physical cash in the digital world. As a result, online users have had to pay the price — literally. While digital transactions seemingly take place in real-time, the physical infrastructure underpinning these transactions adds up to billions of dollars worth of expenses that get passed on to consumers and merchants alike. Bitcoin was created to offer people an alternative to this system — one that specifically addresses the limitations of an intermediary-based financial network.

At its core, what bitcoin offers users is a peer-to-peer electronic cash system. It allows people to gain the properties of cash (durability, portability, fungibility, scarcity, divisibility, instant settlement) when transacting on the internet without having to go through third parties — saving time and money for everyone involved.

While bitcoin is only 13 years old, adoption in the US is growing quickly. In 2016, Pew Research Center conducted a survey regarding the cashless economy and how Americans are moving to different mechanisms of payment. The study showed, "Half of Americans have heard of the alternate currency bitcoin — but just 1% have actually used bitcoins themselves." In 2021, a follow-up survey from Pew Research Center found that 86% of Americans had heard of cryptocurrencies, and 16% of Americans have used cryptocurrency in some way. Other studies estimate that anywhere from 25 million to 46 million Americans own bitcoin specifically.

Individual ownership of bitcoin and other cryptocurrencies has also corresponded with a growth in adoption from merchants. The number of Bitcoin ATMs in the United States has increased from 536 to 34,219 since 2016. A 2021 survey found that almost one-third (32%) of small businesses in the US accept cryptocurrencies, with 58% saying they prefer bitcoin for crypto

payments. Many large companies, like Microsoft and AT&T, accept bitcoin for transactions as well.

Bitcoin vs. Cryptocurrency

When we talk about cryptocurrency or digital assets, we think it is critical to create a distinction between bitcoin and other projects. Bitcoin is the most decentralized, most secure, and only credibly neutral digital asset in existence. Its proof of work consensus mechanism ensures fair distribution, and its lack of a clear leader prevents one person or group from having an outsized impact on the network (i.e. bitcoin will not "rug-pull" retail investors like we've seen with many other cryptos) — this combination of characteristics makes it fundamentally different from other cryptos. Therefore, bitcoin warrants unique consideration when compared to stablecoins, utility coins, NFTs, meme coins, and other cryptocurrencies.

Further, bitcoin the asset has maintained market dominance in the cryptocurrency space since its inception. Bitcoin currently accounts for nearly 43% of the total value of all cryptocurrencies. Within the broader market, Bitcoin is treated as the foundational asset, used as the most demanded form of collateral, and the measure by which other tokens reference their relative increase or decrease in value. Bitcoin is traded 24/7 against almost every currency in the world on dozens of exchanges, and is by far the most liquid cryptocurrency market. While bitcoin is itself an emerging monetary network, it is still traditionally valued against the world's global reserve currency: the US Dollar.

Despite the distinction between bitcoin and other cryptocurrencies, much of the data that currently exists groups all cryptocurrencies together. This is an oversimplification, and it makes it difficult to determine bitcoin's exact usage rates in the US. Still, when we discuss crypto regarding the future of money and payments, we are primarily speaking about bitcoin because of its market dominance. Bitcoin as an asset class has the largest market cap, the highest trading volume, and is the most widely accepted cryptocurrency in businesses around the United States. As such, we can extrapolate trends regarding cryptocurrency usage for payments as trends for bitcoin usage as well.

Building on Bitcoin: More Than A Speculative Asset

While many people understand the ownership, trading, and spending of bitcoin, not many people understand that bitcoin is also a protocol — a system of rules that allows two or more parties to transmit information using a shared language.

In the same way that humans rely on shared language to effectively communicate, computers rely on shared languages, or protocols, to communicate with each other and interoperate. Before

the 1980s, many computers were operating with different languages; so while computers were great at performing functions within their own operating systems, they were not great at communicating with other computers because they lacked a shared protocol.

This changed in 1983, when the invention and wide adoption of TCP/IP gave birth to what we know today as the internet: a global network of computers all running on a series of shared protocols. Information could now be shared around the world, faster than ever before, and it resulted in numerous innovations in all aspects of life. Pre-internet activities evolved to become more efficient (e.g., sending an email vs. sending a letter), but the internet also gave rise to a multitude of functions that many people were not considering at the time of its creation (e.g., downloadable music, same-day e-commerce, social media, etc.).

Bitcoin can be viewed in much the same way. Bitcoin allows developers to create applications "on top" of the bitcoin network — these applications gain the benefits of the base layer of bitcoin while being able to expand upon the original functionality and add new features of their own. Just as TCP/IP revolutionized computers by giving everyone a shared language to operate from, bitcoin has changed the way we interact with money by providing the foundation for a credibly neutral, natively digital monetary network.

A great example of bitcoin's potential is a "Layer 2" application known as the Lightning Network. While the "Layer 1" bitcoin network is relatively slow (it takes an average of 10 minutes to confirm a transaction) and can only process about 7 transactions per second, the Lightning Network allows people to make instant, virtually fee-less payments on the bitcoin network — and can process up to 1 million transactions per second.

This peer-to-peer network is providing the rails for novel financial solutions like immediate, low-cost, global remittances (e.g., using Strike), streaming payments (e.g., using Breeze), social media tipping (e.g., integrated on Twitter), and many other emerging applications. It also offers businesses a higher percentage of profit on everyday transactions, as merchants pay almost no fees when they receive bitcoin over the Lightning Network. There is a reason why Visa and Mastercard are looking to interoperate with Bitcoin — applications like the Lightning Network threaten to dramatically undercut the interchange and processing fees (typically 1% - 3.5%) these companies impose on global merchants.

Use of bitcoin's Lightning Network has the potential to dramatically increase the profitability of small businesses in the United States, especially high-volume, low-margin merchants (such as grocery stores) that are disproportionately affected by the current state of transaction fees. Further, because bitcoin settlement is instantaneous (as opposed to traditional payment rails such as credit cards, which take days for the money to settle into the merchant's account and can be

disputed), it eliminates the negative impact of chargebacks for day-to-day transactions. In 2021, businesses lost an estimated 2.31% of total revenue due to chargebacks alone.

Beyond payments, novel applications such as social media anti-spam (posting Bitcoin as surety), decentralized identity (DiD), monetized internet-of-things (IoT) devices, and more are possible on the bitcoin network — the recent announcement of Web5 from Block, one of the largest financial services companies in the US and a leader in digital payments, is an example of what these new innovations might look like. In this way, bitcoin is poised to serve as a foundational network protocol for a decentralized value transfer system. Simply put, bitcoin is becoming the internet of money.

The Future of Money

While bitcoin was the first decentralized cryptocurrency, it is one of many existing options for digital payments. Now, the U.S. is considering proposals for its own “digital dollar." As digital money plays an increasingly significant role in our lives, we should consider how different options compare.

The Clearing House’s Real Time Payments (RTPs), FedNow, and Central Bank Digital Currencies (CBDCs) are examples of financial innovations outside of cryptocurrency that aim to solve issues related to speed, cost, and accessibility of financial services. After all, if the problem is simply that our current financial infrastructure is too slow, or that our money is not natively digital, it would follow logically to update our current systems and/or put the US dollar on a blockchain. While this might make sense intuitively, it fails to account for the numerous challenges that come with the implementation of each of these systems. It also fails to account for the network effect of these various protocols — at the end of the day, it doesn’t matter how “good” a technology is if people avoid using it. And one issue that each of these systems has is a lack of buy-in from the most vulnerable populations in the country.

RTPs and FedNow — while offering significant improvements over previous systems — face similar adoption challenges. They are both facilitated through financial institutions, which limits immediate benefits to those with bank accounts; and they are both far from ubiquitous, as FedNow is still awaiting its official rollout and RTPs still face low adoption outside of big banks. CBDCs have a host of other challenges as well — including extreme cybersecurity risks, high costs of network maintenance, and a lack of trust in the government that will curb adoption from the most vulnerable.

In the end, different systems boast distinct advantages and drawbacks, with each set of drawbacks exposing the need for alternatives and competition. But even if the aforementioned solutions do offer many benefits, the US financial system still faces a significant and

under-discussed problem: a fundamental lack of trust that leaves certain populations — especially those who have continually been disenfranchised by the current banking system — unable to gain the benefits of existing financial infrastructure. Bitcoin offers a useful alternative as a trustless open monetary network with a built-in protocol that treats everyone equally. Embracing innovation in this industry may allow the United States to bring valuable financial services to millions of traditionally underserved Americans.

Bitcoin vs. Banks

Since its inception, banks and financial institutions have generally shunned bitcoin because it excludes them, or rather replaces some of their core functions with computers. Instead of embracing bitcoin and other blockchains, banks have spent billions of dollars developing their own competitors (e.g., Zelle) to keep people using the same infrastructure that's already in place. While some financial institutions are looking for ways to integrate with bitcoin (as mentioned earlier with Visa and Mastercard), this can be viewed more so as a reluctant hedge against mass adoption than it is a willingness to fully support cryptocurrency as a foundation for a new age of banking.

It's important to note that bitcoin does not necessarily have to be viewed as a replacement for the existing system; if anything, it could be seen as a powerful supplement to the financial infrastructure that's already in place. Many people will continue using banks and third parties to conduct transactions because they appreciate the security and overall service that these companies provide. But there are also many people who don't need or who cannot afford the high fees associated with these services, and they should not be penalized for their situation; if they don't want to use the traditional banking system, they should be able to use bitcoin as an alternative. Optionality breeds competition — the existence and popularity of bitcoin will force institutions to innovate — and that's ultimately good for consumers.

Bitcoin: Electronic Money That Underserved Populations Can Trust

Bitcoin is one of the most accessible financial tools in the world, allowing anyone with an internet connection to participate in the network. This stands in stark contrast to many other kinds of financial services, which are often limited to certain people based on specific traits (salary, credit score, etc.). Not only is bitcoin accessible for lower-income and marginalized populations in the US, but in fact, the rate of adoption is higher in these groups than it is in higher-income, non-marginalized communities.

Consider the following: According to a study conducted by the Federal Reserve in 2021, 12% of Americans invested in or used cryptocurrencies in the prior year. Of those who used cryptocurrencies for transaction purposes, nearly 60% had an income of less than $50,000. A

recent survey found that 30% of Black Americans and 27% of Hispanic investors own crypto, compared with just 17% of Whites. And according to a 2021 study by NORC at the University of Chicago, 55% of cryptocurrency users had no college degree (compared to 51.7% of the public).

Keep in mind that bitcoin has only existed for 13 years as of 2022. Look at the internet in 1996 — another recent technological innovation, also 13 years from its creation (the "birthdate" of the internet is considered January 1, 1983) — to see the stark difference in adoption when it comes to diversity and equity: Pew Research wrote in that year, "Some 37% of online users are under the age of 30, compared to only 22% of the general public. Nearly four-in-ten (38%) make over $50,000 a year, compared to 22% of the public. And nearly twice as many were graduated from college (39% vs. 21% of the general public)." On top of this, the racial makeup of internet adoption was nearly identical to the racial makeup of the country at the time: 86% of internet users were white (compared to 85% of Americans being white) while 14% of internet users were non-white (compared to 14% of Americans being non-white).

This level of accessibility becomes especially relevant when we examine the landscape of financial services in the United States. Research from the Federal Reserve estimates that 19% of Americans are either unbanked or underbanked, with 6% of American adults having no bank account at all. Further, rates of banking access are significantly lower than average for "adults with lower income, adults with less education, and Black and Hispanic adults." Lack of access to these services negatively impacts one's ability to save money effectively, make important monthly payments, and simply participate in the digital economy that increasingly makes up the backbone of our society.

Given the ubiquity of big banks and startup finance companies, it begs the question: why is it that some American adults still do not have bank accounts? In 2009, 12.7% of unbanked Americans cited "minimum balance requirements too high" as a reason for not having a bank account. Ten years later, nearly half of unbanked consumers identified this as a reason for being unbanked, with 29% of households citing it as the main reason. More than a third of unbanked respondents cite high bank fees as a reason for not having a bank account, with 7.3% listing these fees as the main reason. Roughly a third of unbanked Americans cite not trusting banks as their reason for not having an account, the second-most cited explanation. As a result, unbanked Americans are pushed toward more costly methods of conducting financial transactions. In 2018 alone, unbanked Americans "spent $189 billion in fees and interest on financial products."

At its core, the problem that bitcoin solves for the underbanked and most vulnerable populations in the United States is that it gives people options when and where they traditionally lack them. As we've mentioned before, consumer choice (when not artificially constrained) breeds competition, which ultimately results in better options for consumers. Unfortunately, choice in this country with regards to financial services is often directly correlated with one's financial

situation and their access to a bank account. Without a bank account, many people lack the option of attaining a home mortgage, a personal loan, a credit card, etc. This is a large reason why people turn to predatory lenders and high-fee money order services to conduct transactions that a bank would traditionally help facilitate. These companies have been able to act in a harmful manner because their customers generally have few viable alternatives for their services.

The lack of quality alternatives to traditional financial services highlights a broken system — companies are not incentivized to provide good, affordable services to certain populations in the United States, so low-quality services take their place, and consumers have had no other choice but to opt into what they are given. But with bitcoin and the ecosystem that has developed around it, more affordable and higher-quality options are now available for those who need them.

For example, one trend we see in the unbanked/underbanked community is a high rate of cryptocurrency usage for payments. In 2021, around 7.75 million US adults used cryptocurrencies for payments (not including ownership as an investment), and 1 million of those adults did not have a bank account. That means around 6.5% of unbanked Americans are choosing to use cryptocurrencies as a means of digital payment, suggesting at the very least that this is a viable alternative to the options people currently use when not interfacing with the traditional banking system. As a result, predatory financial service providers will likely modify their practices to avoid losing out to digital competitors.

On top of this, the existence of bitcoin and other cryptocurrencies has spurred significant community efforts related to financial literacy and career development. One example is BTC Impact, a Black-owned female-led organization that's addressing wealth inequality in low-income housing through bitcoin mining. Their "S9S8" project is collaborating with local officials to install BTC miners into Section 8 units to help generate revenue for housing departments and tenants. The proceeds accumulated over a resident's tenure can go towards subsidizing down payments that can be used towards their first-time homeownership.

Even celebrities and billionaires are playing their part in developing this budding ecosystem. Artist Jay-Z and Block CEO Jack Dorsey together created the "Bitcoin Academy" which is available to approximately 2,300 residents living in Marcy project housing in Bedford-Stuyvesant, Brooklyn. The free 2 ½ month program provides comprehensive education on bitcoin, which includes an overview of the network's utility and a broader outline of responsible investing principles. These courses are aimed to close informational gaps in crypto, which ensures that residents are not left behind or underinformed on the technologies that are likely to shape their future. Just as important, they provide a gateway to broader financial literacy for this community, as the ideas explored through bitcoin expose people to vital concepts such as budget management, asset-building, savings goals, and more.

Recommendations

Regardless of government buy-in, the bitcoin network will continue to function as long as people find value in it: miners will continue to mine, node operators will continue to run their nodes, and people will continue to transact with bitcoin. What's important is that this innovation is not stifled in its nascency — that the government collaborates with businesses and developers in the bitcoin space to align incentives, rather than imposing arbitrary controls upon users that could potentially impact the benefits this network can bring to the United States.

As such, we encourage a light-touch approach to the regulation of the bitcoin industry. Regulatory decisions should aim to decrease policy friction for users and businesses, which will help to keep innovation in the US and provide competitive benefits by making bitcoin more accessible to everyday Americans. Policymakers should also be wary of unintended consequences that may result from actions taken for the sake of consumer protection. If a light-touch approach is not taken — if the US chooses not to embrace bitcoin for what it is but instead attempts to change and control it — then we risk pushing bitcoin and crypto companies away from the United States, ceding global leadership in the digital asset space for good.