

Written Testimony of Sarah Hammer
Managing Director of the Stevens Center for Innovation in Finance at the Wharton School
Senior Director of the Harris Alternative Investments Program at the Wharton School
Adjunct Professor of Law at the University of Pennsylvania Law School

For the Hearing Entitled “America on “FIRE”: Will the Crypto Frenzy Lead to
Financial Independence and Early Retirement or Financial Ruin?”
House Financial Services Committee
Subcommittee on Oversight and Investigations
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Background

Chair Green, Ranking Member Emmer, and members of the Subcommittee, thank you for the opportunity to testify today.

My name is Sarah Hammer. I am Managing Director of the Stevens Center for Innovation in Finance and Senior Director of the Harris Alternative Investments Program at the Wharton School of the University of Pennsylvania. I also oversee the Blockchain Laboratory within the Stevens Center at Wharton. Additionally, I am Adjunct Professor of Law at the University of Pennsylvania Law School, where I teach an upper level juris doctor course on financial regulation and the financial services sector. I have also written a paper titled “The Blockchain Ecosystem,” which discusses the dynamics of blockchain, its ongoing development, and the framework of its ecosystem.¹

I previously served as Acting Deputy Assistant Secretary for Financial Institutions and Director of the Office of Financial Institutions Policy at the U.S. Department of Treasury (Senior Executive Service). I also served as a Director of the Securities Investor Protection Corporation. I hold an MBA from the Wharton School, a Doctor of Jurisprudence from the University of Pennsylvania Law School, and a Master of Studies from Oxford University. I am also a member of the American Law Institute, where I am a consultative member of the Corporate Governance Project. My other research areas include alternative investments, financial infrastructure, and diversity, equity and inclusion in financial services.

I would like to note that the views I express here are my own, and not the views of the Wharton School or the University of Pennsylvania, nor am I offering any insight into federal agencies’ policy perspectives.

The Financial System and the Blockchain Ecosystem

The United States financial system bears a number of responsibilities, including providing investment services, capital formation, enabling payments, and facilitating saving, lending and borrowing. Over time, particular dynamics of society, technology and the economy, and the financial system itself have led to financial innovations that have impacted the way the financial sector operates and the way sector participants behave. One of these significant financial innovations is the development of blockchain technology.

¹ Hammer, Sarah, “The Blockchain Ecosystem,” November 8, 2018, *available at* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3281020.

Blockchain is a shared, immutable ledger that facilitates the recording of transactions in a network. The assets recorded on blockchain can be tangible, such as cash, gold, or real estate, or they can be intangible, such as intellectual property, copyrights, or licenses. Blockchain arose with the invention of Bitcoin in 2009, a digital currency launched by a person or persons known by the pseudonym Satoshi Nakamoto. Bitcoin was purportedly created to eliminate the need for a central monetary authority to monitor, verify, and approve transactions, by enabling a peer-to-peer network in which transactions are “mined” by individuals using software to solve mathematical puzzles.² Blockchain provides the means for recording Bitcoin transactions, and as a shared ledger, can be used to record any transaction or track the movement of other assets, not just Bitcoin.

At a high level, blockchain stores transaction data in blocks that are linked together in a chain, and thus as the number of transactions grows, so does the blockchain. Each block contains a “hash”, or digital unique identifier, a timestamped batch of recent valid transactions, and the hash of the previous block in the chain. The previous block hash links the blocks together. Blocks are added to the blockchain based on a set of rules agreed on by the network participants. Thus, each subsequent block is sometimes said to strengthen the verification of the previous block, and therefore the entire blockchain.

Today, blockchain technology infiltrates and powers a myriad of institutions, functions, and assets in the United States and globally. The use cases for blockchain are too numerous to cover in detail here, but they include enterprise blockchain, a type of permission blockchain that can be used to track supply chain goods, cybersecurity enhancements, and even use of blockchain technology to address climate change. Importantly, blockchain is now used in various aspects of financial services, including decentralized finance, or “DeFi”:

- **Stable Coins:** Digital assets where the value is pegged to a fiat currency, such as the U.S. dollar, or a basket of fiat currencies or other assets considered to be stable in value.
- **Exchanges:** Allow participants to trade one digital asset for another, such as through a decentralized order book, but do not take custody of the digital assets.
- **Derivatives:** Financial instruments where the value is based on the value of an underlying digital asset or group of assets, for example futures and options (calls and puts).
- **Asset Management:** Provides investment advice and execution services for cryptocurrency investments.
- **Lending:** Extends interest-bearing loans to holders of cryptocurrency, potentially paid in other digital assets.
- **Insurance:** Insurers write insurance policies that are designed to protect against cryptocurrency losses or theft.
- **Custody, Clearing, and Settlement:** Financial infrastructure providers perform functions such as safekeeping of financial assets, or settlement of financial transactions using blockchain.

² Bitcoin is considered by many to be an open source monetary system, that is, a system for storing and transmitting an asset (bitcoins) whose underlying computer code is fully open to the public. Bitcoin has no central corporate headquarters, shareholders or employees. Bitcoin enables financial transactions on a peer-to-peer basis without the need for a financial intermediary. Bitcoin software is free to download and can be installed by anyone. The supply of bitcoins is finite and capped at 21 million. The issuance of new bitcoins declines to zero over time. Institutional interest and adoption of Bitcoin has increased for reasons attributed to fundamental demand and fixed supply.

The subject of today's hearing is cryptocurrency. At the outset, it is worth noting that there is no official U.S. public data source for cryptocurrency prices, market size, or volatility. This lack of data is a significant problem. However, unofficial data sources have estimated that the total value of the cryptocurrency markets may exceed \$2 trillion, with Bitcoin potentially accounting for more than 50% of that market capitalization.³ In addition, cryptocurrency and its derivative products may be held in pooled investment vehicles, including private funds. Cryptocurrency instruments are often characterized by high price volatility perhaps due to sensitivity to news stories, differing perceptions over intrinsic value, trading and leverage by market participants, and the newness of the technology.

Due to the approximate market size, high levels of price volatility, and opaque nature of cryptocurrency, it is crucial to consider the risks that it poses. Chief among these are risks to investors, and the potential for systemic risk. At the same time, policymakers should balance potential benefits of blockchain and cryptocurrency, including the reduction of inefficiencies and risks in financial infrastructure such as payments, clearing, and settlement services, and the possibility that it may offer financial inclusion advantages to people who, for various reasons, currently do not have access to deposit money or traditional financial services.⁴

Investor Protection

Investors in cryptocurrency include retail investors, high net worth investors, and institutional investors, such as private funds, corporations, and endowments. Retail investment in cryptocurrency may give rise to particular concerns about investor protection, given the possibility of fraud or business failure, lack of disclosure, and high level of price volatility. As an example, one study found that more than 81% of initial coin offerings (ICOs) were scams and another 11% failed due to operational issues.⁵ With respect to price volatility, a stark example can be found in Bitcoin's price drop of more than 30% on a single day in May of this year.⁶ Moreover, some studies have found that cryptocurrencies such as Bitcoin have higher price volatility than gold, the S&P 500, and the U.S. dollar.⁷

The Securities Exchange Commission (SEC) is charged with a tripartite mission of protecting investors, maintaining fair, orderly, and efficient markets, and facilitating capital formation. In this, the SEC applies core principles of requiring sellers of securities to make material disclosures to facilitate informed decision making; placing heightened responsibilities on key market

³ "Cryptocurrency market value tops \$2 trillion for the first time as ethereum hits record high," CNBC.com, April 6, 2021, citing CoinGecko.com, *available at* <https://www.cnbc.com/2021/04/06/cryptocurrency-market-cap-tops-2-trillion-for-the-first-time.html>.

⁴ For example, blockchain can potentially be used to facilitate payments and remittances.

⁵ Satis Group, "Crypto-asset Market Coverage Initiation: Network Creation," July 11, 2018, *available at* https://research.bloomberg.com/pub/res/d28giW28tf6G7T_Wr77aU0gDgFQ.

⁶ CNN Business, "A crypto crash wiped out \$1 trillion this week. Here's what happened," May 22, 2021, *available at* <https://www.cnn.com/2021/05/22/investing/crypto-crash-bitcoin-regulation/index.html>.

⁷ Williams, Mark T., "Virtual Currencies - Bitcoin Risk," World Bank Conference Presentation, October 21, 2014, *available at* <http://www.bu.edu/questrom/files/2014/10/Wiliams-World-Bank-10-21-2014.pdf>.

participants; and using examination and enforcement resources to bolster those requirements and protect investors.⁸

At the same time, the SEC faces challenges in applying capital markets and securities regulation to cryptocurrency. Chief among these is whether the SEC has the authority to regulate a particular instrument. Currently, the SEC evaluates cryptocurrency sales through the lens of *SEC vs. Howey* (“the Howey Test”), a Supreme Court case that formulated a test to determine whether an instrument qualifies as an investment contract for the purposes of the Securities Act.

“The test is whether the scheme involves an investment of money in a common enterprise with profits to come solely from the efforts of others. If that test be satisfied, it is immaterial whether the enterprise is speculative or non-speculative or whether there is a sale of property with or without intrinsic value.”⁹

Where the instrument qualifies as an investment contract, the SEC may apply the regulatory framework that governs securities, including the Securities Act of 1933¹⁰, the Securities Exchange Act of 1934¹¹, the Investment Company Act of 1940¹², and the Investment Advisers Act of 1940¹³. Securities laws mandate that all securities offerings and sales be either registered under securities laws or qualify for an exemption from registration. In addition, pooled investment instruments that contain cryptocurrencies (such as an investment trust) would also fall under the purview of the securities laws.

While the SEC has applied securities regulation to dozens of ICOs based on the Howey Test¹⁴, there is still a lack of clarity as to whether it applies to a number of cryptocurrency transactions that currently do not comply with SEC registration and disclosure obligations.¹⁵ In addition, a number of exchanges that offer trading in cryptocurrencies (including cryptocurrencies that meet the definition of a “security”) do not register with the SEC, and therefore are not subject to the rigorous oversight provided by the SEC to national securities exchanges.¹⁶ Given this,

⁸ See <https://www.sec.gov/our-goals>.

⁹ *SEC vs. W.J. Howey Co.*, 328 U.S. 293 (1946).

¹⁰ Pub.L. 73-22.

¹¹ Pub.L. 73-291.

¹² P.L. 76-768.

¹³ 15 U.S.C. § 80b-21.

¹⁴ See [SEC.gov/ICO](https://www.sec.gov/ICO).

¹⁵ SEC Chairman Gensler has asked Congress for clear authority over cryptocurrency exchanges. SEC, Testimony Before the Subcommittee on Financial Services and General Government, U.S. House Appropriations Committee, May 26, 2021, *available at* <https://www.sec.gov/news/testimony/gensler-2021-05-26>.

¹⁶ Securities Exchange Commission, “Statement on Potentially Unlawful Online Platforms for Trading Digital Assets,” Divisions of Enforcement and Trading and Markets, March 7, 2018, *available at* <https://www.sec.gov/news/public-statement/enforcement-tm-statement-potentially-unlawful-online-platforms-trading>.

there is a strong need to establish a clear, sufficient, and appropriate regulatory framework for cryptocurrency.

Systemic Risk

As discussed, the value of the cryptocurrency market is estimated to possibly exceed \$2 trillion, and it is characterized by high levels of price volatility. As of June 25, 2021, estimates are that more than 2,000 different cryptocurrencies circulate globally.¹⁷ For context, estimates of subprime debt in June 2007 (prior to the Great Financial Crisis) hover around \$0.8 trillion.¹⁸ Moreover, since no official data source exists for cryptocurrency markets, financial regulators are at a distinct disadvantage in evaluating regulatory options. Notably, prior to the Great Financial Crisis, there was no official data source for credit default swaps, either, and there was also lack of clarity about whether they should be regulated as securities.¹⁹

Because of the infiltration of cryptocurrency into so many institutions, functions, and assets, the potential risks involved must be carefully evaluated in a coordinated fashion. Not only are cryptocurrencies held by retail, high net worth, and institutional investors, but they are also used for payments and other forms of financial infrastructure. Additionally, cryptocurrency companies have been granted national trust charters by the Office of the Comptroller of the Currency (OCC)²⁰, and nationally chartered banks are permitted to provide banking services to cryptocurrency businesses, including cryptocurrency custody.²¹ Altogether, this means that cryptocurrency risks of varying magnitude now exist throughout the financial system.

In light of the risks and considerations of cryptocurrency, a myriad of agencies and standard-setting bodies are implicated. On May 25, the Federal Reserve Vice Chair of Supervision said that the OCC, the Federal Deposit Insurance Corporation (FDIC), and the Federal Reserve Board of Governors (the Board) are engaged in a “sprint” to develop a regulatory framework, capital treatment, and operational treatment for cryptocurrency.²² While some regulatory coordination is a step forward, it is critical to remember that cryptocurrency risks fall under the ju-

¹⁷ “Cryptocurrencies: growing in number but falling in value,” Reuters, citing CoinMarketCap, as of June 25, 2021, *available at* <https://graphics.reuters.com/CRYPTO-CURRENCIES-CONFLICTS/0100818S2BW/index.html>.

¹⁸ Bank for International Settlements, “The 2008 crisis: transpacific or transatlantic,” graph 5, at 46, *available at* https://www.bis.org/publ/qtrpdf/r_qt1812f.htm.

¹⁹ See, for example, Willa E. Gibson, “Are Swap Agreements Securities or Futures? The Inadequacies of Applying the Traditional Regulatory Approach to OTC Derivatives Transactions,” 24 IOWA J. CORP. L. 379, 382 (Winter 1999).

²⁰ Office of the Comptroller of the Currency, “OCC Conditionally Approves Chartering of Paxos National Trust,” News Release 2021-49, April 23, 2021, *available at* <https://www.occ.gov/news-issuances/news-releases/2021/nr-occ-2021-49.html>.

²¹ Office of the Comptroller of the Currency, Interpretive Letter #1170, July 2020, *available at* <https://www.occ.gov/topics/charters-and-licensing/interpretations-and-actions/2020/int1170.pdf>.

²² Reuters, “Fed, OCC, FDIC in ‘sprint’ on regulation for cryptocurrency, Quarles says,” May 25, 2021, *available at* <https://www.reuters.com/technology/fed-occ-fdic-sprint-regulation-crypto-quarles-says-2021-05-25/>.

jurisdiction of other regulators as well, such as the Consumer Financial Protection Bureau (CFPB), the SEC, and the Commodity Futures Trading Commission (CFTC). Also, some states have their own cryptocurrency regimes, such as Wyoming and New York (the BitLicense).²³ In addition, cryptocurrency risks cross borders, thereby implicating foreign regulatory authorities.

Thus, a key question for cryptocurrency regulation is, how should we proceed, and in what forum? Importantly, a government authority already exists that could support the development of a clear, sufficient, and appropriate framework for regulation of cryptocurrencies. On July 21, 2010, President Obama signed into law the Dodd Frank Wall Street Reform and Consumer Protection Act (the Dodd Frank Act), and created the Financial Stability Oversight Council (the FSOC). The FSOC engages in evaluating and addressing potential systemic risks, convening and coordinating federal rule-making on issues that touch multiple agency jurisdictions, and consulting with foreign regulatory authorities. Title I, Subtitle A, of the Dodd Frank Act created the FSOC:²⁴

- To identify risks to the financial stability of the United States that could arise from the material financial distress or failure, or ongoing activities, of large, interconnected bank holding companies or nonbank financial companies, or that could arise outside the financial services marketplace,
- To promote market discipline ..., and
- To respond to emerging threats to the stability of the United States financial system.

It is useful to note that the FSOC membership includes voting members from federal agencies with existing authority over many components of the blockchain ecosystem, including:

- The Secretary of the Treasury as Chairperson of the FSOC,
- The Chairman of the Board of Governors of the Federal Reserve System,
- The Comptroller of the Currency,
- The Director of the Consumer Financial Protection Bureau,
- The Chairman of the Securities Exchange Commission,
- The Chairperson of the Federal Deposit Insurance Corporation, and
- The Chairperson of the Commodity Futures Trading Commission.

Conveniently, the Dodd Frank Act also provides the FSOC the authority to appoint technical and professional advisory committees as may be useful in carrying out its functions, including an advisory committee consisting of State regulators.²⁵ Utilizing this authority may provide a forum for the FSOC to coordinate a federal regulatory framework for cryptocurrency with state regimes. Additionally, Title I provides for international policy coordination by the FSOC, which is important where cryptocurrency issues cross borders.²⁶

It is well within the FSOC's authority to evaluate and coordinate policymaking for cryptocurrency. Although the FSOC's nonbank financial designation authority under Section 113 of the Dodd Frank Act²⁷ was heavily relied on in the post-Great Financial Crisis designation of non-

²³ See https://www.dfs.ny.gov/apps_and_licensing/virtual_currency_businesses.

²⁴ Pub.L. 111-203.

²⁵ Dodd Frank Act, Title I, Subtitle A, Sec. 111, Subpart (d).

²⁶ Dodd Frank Act, Title I, Subtitle C, Sec. 175.

²⁷ Dodd Frank Act, Title I, Subtitle A, Sec. 113.

banks such as AIG, Section 120 provides for the FSOC to issue recommendations to financial regulatory agencies to apply new or heightened standards and safeguards for a financial activity or practice by banks or nonbanks that could create or increase certain systemic risks.²⁸

Clear, Sufficient, and Appropriate Regulation

I would like to note a few additional considerations. First, as I often tell my law students, a regulatory framework should be appropriate to the business model or activity.

Banks, for example, are principal investment business models, where depositors deposit money in the bank, and the bank lends out those funds or invests them. Assets and liabilities are held on the bank balance sheet. Because depositors may demand the return of their deposits at any time, the United States provides for FDIC insurance in case the bank becomes unable to return the funds.²⁹ Since FDIC insurance implicates American taxpayer dollars, capital and liquidity requirements for banks are considered appropriate in order to protect the taxpayer dollars at risk.

Similarly, asset management is typically based on an agency-based business model, where an investment manager invests money on behalf of investors, but the assets continue to be owned by the investor and do not sit on the asset management company's balance sheet. Because the investor continues to own and make decisions about the assets, and only the investor bears the risk of loss (not the asset management company), the securities regulation regime is highly focused on disclosure and investor protection.

Business models in the cryptocurrency space may look different from traditional bank, asset management, or insurance business models. However, it remains important for regulators to evaluate the particular business model, identify the risks that it poses, and evaluate whether a regulatory framework is appropriate. Capital and liquidity requirements might be appropriate for some business models, especially where taxpayer dollars are at risk, but they may not be appropriate for others. At the same time, where two institutions are performing similar functions, e.g., banking functions, regulators may aspire to give them similar treatment.

Second, I would like to briefly acknowledge some concerns that have been expressed about the regulation of cryptocurrency. First, some argue that cryptocurrency regulation could stifle innovation. No doubt, innovation is an important consideration because it is crucial to powering the American economy. Additionally, some argue that with more than 2,000 cryptocurrencies in global circulation, it is too late to regulate. Still others have worried that inconsistencies in regulation could result in circumvention. Some also argue that stringent regulation could push criminal activity out of the United States and into other jurisdictions, where it cannot be reached. Finally, there is the need to balance the wide range of regulatory objectives, including investor protection, consumer protection, financial inclusion, safety and soundness, and financial stability.

I believe that leveraging the authorities of the FSOC to support the development of a clear, sufficient, and appropriate framework for cryptocurrencies will address many of these concerns. By harnessing the collective resources of the FSOC, its full membership, coordinating with

²⁸ Dodd Frank Act, Title I, Subtitle A, Sec. 120, Subpart (a).

²⁹ The standard FDIC deposit insurance amount is \$250,000 per depositor, per insured bank, for each account ownership category. See the Federal Deposit Insurance Corporation, "Your Insured Deposits," Updated 1/2020, *available at* <https://www.fdic.gov/resources/deposit-insurance/brochures/documents/your-insured-deposits-english.pdf>.

state regulators, and consulting with international standard-setting bodies, concerns about fostering innovation, providing consistency, establishing global reach, and balancing regulatory objectives can be addressed.

I commend the Subcommittee for addressing these issues and fostering this discussion. Thank you.

Recommendations

Establish a clear, sufficient, and appropriate framework for regulation of cryptocurrencies.

Leverage the authorities of the FSOC to coordinate federal interagency efforts, consult with state regulators, and consult with international standard-setting bodies.

Balance and adhere to a variety of important regulatory objectives, including fostering innovation, investor protection, consumer protection, financial inclusion, safety and soundness, and financial stability.