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CRYPTOCURRENCY, LEGIBILITY, AND TAXATION

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ABSTRACT

In Jarrett v. United States*, a taxpayer in Tennessee is arguing that staking cryptocurrency did not result in him earning "income" under federal income tax law. This case illustrates the fundamental challenge that cryptocurrency and blockchain technology present for tax law. Wealth creation in the crypto space is not readily legible to the state. This absence of legibility threatens tax law's reliance on placing economic activities into categories to determine how they should be taxed. Furthermore, this case highlights the harms Congress and Treasury are risking by not taking action on cryptocurrency taxation. The uncertainty and lack of guidance on the appropriate taxation of cryptocurrency is opening the door for a critical juncture in tax law to be decided via strategic litigation. This threatens a jurisprudential evasion of the democratic and administrative process in a high-stakes moment for tax law.*

INTRODUCTION

The amount at issue is only $3,793,[1] but a case pending in the Middle District of Tennessee comes at a crucial juncture for tax law. The United States must now decide how it should tax an emerging technology that is associated with billions of dollars' worth of transactions each day[2] and that many claim will revolutionize the global economy.[3] As this Essay will explain, answering this question requires grappling with whether our current

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1.   Complaint at 7, Jarrett v. United States, No. 3:21-cv-00419 (M.D. Tenn., May 26, 2021) (identifying the amount at issue as $3,793 plus statutory interest).

2.   *See* NASDAQ DATA LINK, BITCOIN ESTIMATED TRANSACTION VOLUME USD, https://data.nasdaq.com/data/BCHAIN/ETRVU-bitcoin-estimated-transaction-volume-usd [https://perma.cc/7FQR-EMEN] (showing transaction volumes for Bitcoin alone to be in the billions of dollars on average trading days).

3.   *See*, *e.g.*, ESWAR S. PRASAD, THE FUTURE OF MONEY 149 (2021) ("[T]he revolution set off by Bitcoin will eventually touch everyone, changing financial systems and, at one level, certain key aspects of society as well."); RHIAN LEWIS, THE CRYPTOCURRENCY REVOLUTION 1–2 (2020) (describing virtual currencies as a "revolution in payments" that will "change[] everything about the way we live and transact with each other").

tax system can adapt and accommodate new and rapidly changing technologies.

The plaintiff is Joshua Jarrett of Nashville, Tennessee. He is financially backed by crypto interests.[4] Mr. Jarrett owns Tezos tokens, the native tokens of the Tezos blockchain network.[5] In 2019, Mr. Jarrett "staked"[6] his Tezos tokens and received Tezos rewards tokens in exchange for that staking. Mr. Jarrett argues that these rewards tokens should not be considered "income" under federal income tax law at the time he received them.[7] They should only be considered income at the time he sells the tokens. He argues that the rewards tokens are new property created by him. Therefore, "like a baker [baking] a cake," he should not be taxed at the time the new property is created but at the time the tokens are sold for cash.[8]

Jarrett v. United States is emblematic of the problem that the economic activities surrounding cryptocurrency and blockchain technology cause for tax law.[9] At a fundamental level, tax law relies on the ability to place assets and income into categories in order to determine their tax treatment. Cryptocurrency does not fall neatly into these categories. It is not clearly legible to the state,[10] making uncertain the appropriate tax treatment of trillions of dollars of wealth being created in the crypto space.[11]

In *Jarrett* and the many future cases that industry advocates doubtlessly will bring, individual judges are being forced to choose a tax category for cryptocurrency. These judges, many without any expertise in the highly technical area of tax law, are being set up to develop piecemeal a new tax

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4.   *See* Joshua Rosenberg, *'Staking' Row Puts IRS on Hot Seat for Lack of Guidance*, LAW360 (Feb. 16, 2022), https://www.law360.com/articles/1465699 [https://perma.cc/ZD46-Q96R] (explaining that a crypto advocacy alliance as well as other anonymous backers are financially supporting the litigation).

5.   See *infra* Part I.B for a technical description of the Tezos blockchain network and its functioning.

6.   A more thorough explanation of "staking" as well as other consensus protocols employed by crypto networks is included *infra* in notes 18–24 and accompanying text.

7.   Complaint, *supra* note 1, at 4, 6–7.

8.   Complaint, *supra* note 1, at 2–3, 7.

9.   This Essay focuses on the doctrinal challenges presented by cryptocurrency and blockchain technology. These technologies also present important administrability challenges, which other academics have highlighted. *See, e.g.*, James Alm, Joyce Beebe, Michael S. Kirsch, Omri Marian & Jay A. Soled, *New Technologies and the Evolution of Tax Compliance*, 39 VA. TAX REV. 287, 328–32 (2020); Omri Marian, *Blockchain Havens and the Need for Their Internationally-Coordinated Regulation*, 23 FLA. TAX. REV. 770, 807 (2020); Manoj Viswanathan, *Tax Compliance in a Decentralizing Economy*, 34 GA. ST. U. L. REV. 283, 318–33 (2018).

10.   See further discussion of the concept of legibility *infra* Section II.B.

11.   *See* Chris Morris, *Crypto Market Cap Is Once Again Above $2 Trillion*, FORBES (Mar. 2, 2022), https://fortune.com/2022/03/02/crypto-market-cap-2-trillion/ [https://perma.cc/JB5B-KKK8] (estimating the total market capitalization for cryptocurrencies to be above $2 trillion in March 2022).

scheme for a rapidly emerging industry, with billions of dollars potentially at stake for crypto investors, participants, and the American fisc.[12]

The judiciary is also being asked to respond to a greater crisis within tax law. Can tax law continue to rely on a system of categorization in an economic environment where novel economic activities are defying categorization? The federal courts are not the right institution to address this crisis. This Essay calls for Congress and Treasury to step in and create a thorough and coordinated regime to tax cryptocurrency and blockchain. Otherwise, we risk jurisprudential evasion of the democratic and administrative process and an incoherent and unworkable system of taxing cryptocurrency and blockchain.

This Essay begins by explaining the mechanics and economics of cryptocurrency, both within the *Jarrett* case and more broadly—*how* is wealth being created within the new crypto space? It then describes tax law's reliance on categories and how crypto wealth creation is straining tax law to its limits. It concludes by emphasizing the broad implications of this case for tax law and calling for action.

I. *JARRETT V. UNITED STATES* AND THE ECONOMICS OF CRYPTOCURRENCY

The facts at issue in *Jarrett* demonstrate why and how cryptocurrency is challenging tax law. When Mr. Jarrett stakes his tokens and receives rewards tokens in exchange, what appears to be a single economic activity actually has several components. Each of these components could support different tax treatments, creating a distinct challenge for creating a coherent and workable system of taxation.

This section begins with a general overview of cryptocurrency and blockchain technology. It then digs into the facts at issue in this case, explaining the functioning of the Tezos network and how Mr. Jarrett's participation in that network created wealth for him.

A. *What Is Cryptocurrency?*

Cryptocurrency is a digital representation of value that is based on blockchain technology.[13] Blockchain is a decentralized ledger that uses

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12. *See* Zal Kumar, *How a Tiny Tennessee Court Case May Shape the Future of Digital Assets*, MAYER BROWN (Feb. 10, 2022), https://www.mayerbrown.com/en/perspectives-events/publications/2022/02/how-a-tiny-tennessee-court-case-may-shape-the-future-of-digital-assets-a-dispute-over-a-3800-tax-bill-could-have-billions-of-dollars-in-consequences [https://perma.cc/SJR2-VFRL] (estimating the fiscal impact of the *Jarrett* decision to be in the billions).

13. QUINN DUPONT, CRYPTOCURRENCIES AND BLOCKCHAIN 29 (2019). Many useful explanations of cryptocurrency and blockchain technology exist, targeted towards readers with a range of backgrounds and expertise. For helpful beginner's guides, see Kevin Roose, *The Latecomer's Guide to Crypto*, N.Y.

encryption techniques to manage the addition of units and validate transfers.[14] Blockchain technology not only fuels cryptocurrency but also enables various other innovations, such as NFTs and various Web3 applications.[15]

Blockchains can be conceptualized as a type of spreadsheet with some important distinguishing features. They are typically permanent and immutable.[16] New blocks can be added to the chain but existing blocks cannot be altered or deleted. And they are decentralized.[17] There is not a central authority, such as a bank, that maintains and administers the blockchain. Instead, the blockchain is maintained by a peer-to-peer network of computers scattered across the globe that stores copies of the blockchain, gathers and orders data into new blocks to be added to the chain, and validates transactions.

While decentralization is an essential feature and oft-touted benefit of blockchain, it also creates a major challenge. Without a central authority, like a bank, monitoring the blockchain, how can it be ensured that each transaction is valid in order to prevent fraud? To address this issue, blockchain networks use what are known as consensus protocols to validate transactions and add them to the block.[18] There are two primary categories of consensus protocols: proof-of-work and proof-of-stake.[19]

TIMES, https://www.nytimes.com/interactive/2022/03/18/ technology/cryptocurrency-crypto-guide.html [https://perma.cc/L7A7-5GG6]; *Making Sense of Bitcoin, Cryptocurrency, and Blockchain*, PwC https://www.pwc.com/us/en/industries/financial-services/fintech/bitcoin-blockchain-cryptocurrency.html [https://perma.cc/Z5BM-9YV7]. For a more detailed overview targeted towards potential investors, see BOFA GLOBAL RESEARCH, DIGITAL ASSETS PRIMER: ONLY THE FIRST INNING (Oct. 25, 2021, 1:03 PM), https://business.bofa.com/content/dam/boamlimages/documents/articlar/ID21_1498/Digital_Assets_Primer_Redaction.pdf [https://perma.cc/76A9-DZ8M]. For book-length introductions, see DUPONT, *supra* note 13; PRASAD, *supra* note 3. For a more technical overview, see Koray Caliskan, *Data Money: The Socio-Technical Infrastructure of Cryptocurrency Blockchains*, 49 ECON. & SOC'Y 540 (2020).

   14.   DUPONT, *supra* note 13.

   15.   Roose, *supra* note 13.

   16.   Zibin Zheng, Shaoan Xie, Hongning Dai, Xiangping Chen & Huaimin Wang, *An Overview of Blockchain Technology: Architecture, Consensus, and Future Trends*, 2017 IEEE 6TH INT'L CONG. BIG DATA, 557, 557.

   17.   Roose, *supra* note 13.

   18.   For a thorough technical explanation of the primary consensus protocols, see generally Shijie Zhang & Jong-Hyouk Lee, *Analysis of the Main Consensus Protocols of Blockchain*, 6 ICT EXPRESS 93 (2020). For a shorter layperson's explanation, see generally Simon Chandler, *What Is "Proof of Work" or "Proof of Stake"?*, COINBASE [hereinafter COINBASE], https://www.coinbase.com/learn/crypto-basics/what-is-proof-of-work-or-proof-of-stake [https://perma.cc/6GLH-W4LS]; Simon Chandler, *Proof of Stake vs. Proof of Work: Key Differences Between These Methods of Verifying Cryptocurrency Transactions*, BUSINESS INSIDER (Dec. 22 2021), https://www.businessinsider.com/personal-finance/proof-of-stake-vs-proof-of-work [https://perma.cc/8LMK-4HFB].

   19.   Zhang & Lee, *supra* note 18, at 94.

Proof-of-work generally involves participants on the network (often described as "miners") competing to see which participant can solve a complicated cryptographic puzzle first in order to validate transactions.[20] The winner of this computational race is able to create the new block and is rewarded with the network's native cryptocurrency.[21]

In proof-of-stake protocols, staking is used to allocate amongst network participants opportunities to gather and validate transactions, add new blocks to the chain, and earn rewards tokens.[22] Staking involves network participants "locking up" network tokens that they already own.[23] The likelihood of being selected to validate transactions and add new blocks is based on the relative amount of tokens the participant has staked.[24] This selection process can be viewed as similar to a lottery system. Once the selected participant has gathered and validated the transactions, that participant broadcasts the proposed new block to the network and other participants attest to the block's accuracy.[25] The new block is then added to the blockchain after a certain number of participants have attested to its accuracy, and all participants are rewarded with the network's native cryptocurrency.[26]

While this is the general approach of proof-of-work and proof-of-stake, the exact mechanisms of consensus protocols vary between blockchain networks.

B. *The Tezos Network: Wealth Creation in* Jarrett

This case springs from Joshua Jarrett's participation in the maintenance of the Tezos blockchain network. As a result of Mr. Jarrett's participation, he accumulated an additional 8,876 Tezos tokens in 2019, worth an

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20. Zhang & Lee, *supra* note 18, at 94.

21. Zhang & Lee, *supra* note 18, at 94; DUPONT, *supra* note 13, at 102.

22. Zhang & Lee, *supra* note 18, at 94.

23. Proof-of-stake networks will create an initial token supply upon launch (known as pre-mining) that is distributed by the founders. Persons who do not receive tokens in the initial distribution can then acquire tokens on the secondary market in order to begin staking. Brian Nibley, *Proof of Stake: A Process Used To Validate Crypto Transactions Through Staking*, BUSINESS INSIDER (July 8, 2022, 3:15 PM), https://www.businessinsider.com/personal-finance/proof-of-stake [https://perma.cc/2DSE-NDGQ]. The fairness of this initial distribution is a major hurdle cited for proof-of-stake protocols. *See* Iddo Bentov, Ariel Gabizon & Alex Mizrahi, Cryptocurrencies Without Proof of Work 2 (February 2016) (unpublished manuscript) (highlighting the issue of fair distribution of initial coin supplies); *Fair Distribution*, PEERCOIN, https://www.peercoin.net [https://perma.cc/M98M-FDKM] (describing the problem of fair distribution in proof-of-stake protocols and the solution pursued by the Peercoin blockchain protocol).

24. COINBASE, *supra* note 18.

25. *Id.*

26. *Id.*

estimated $9,407.[27] He argues that these tokens should not be considered income in 2019 because they are property newly created by him. To understand his argument, it is necessary to dig into the mechanics of the Tezos network and Mr. Jarrett's activities with respect to it.

Tezos is a blockchain network that employs a proof-of-stake protocol.[28] Like other blockchain networks, there is no central authority overseeing or maintaining the network. Instead, network participants across the globe engage in activities necessary to maintain the network. These activities include: storing current copies of the blockchain, collecting and vetting new operations, assembling valid operations into new blocks and appending those blocks to the chain, and attesting to the validity of blocks assembled and published by other participants.[29]   Maintenance activities also include providing numbers that are used to execute a lottery allocating block creation and endorsement opportunities to other participants.[30] To encourage participants to engage in these activities, which require equipment, stable internet connection, and stable power supply, participants receive "rewards" in the form of newly created Tezos tokens. Specifically, they receive rewards for creating new blocks (a process referred to in the Tezos network as "baking") and attesting to the validity of new blocks created by other participants (a process referred to on the Tezos network as "endorsing").[31] Not every Tezos token holder participates in the maintenance of the network, although the majority do.[32]

In order to have the opportunity to create and endorse new blocks (and, thereby, earn rewards tokens), participants must own Tezos tokens and stake those tokens, temporarily committing them to the network. Staking does not transfer ownership but limits the ability to use the tokens.[33] Opportunities to

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27.   Brief in Support of Taxpayer Joshua Jarrett's 1040-X Amended Return and Claim for Refund at 4, (July 31, 2020), https://www.proofofstakealliance.org/wp-content/uploads/2022/02/Brief-of-Taxpa yer-Jarrett-in-Support-of-Refund-Claim-July-31-2020.pdf [https://perma.cc/B66E-HQTQ]. This brief was submitted to the IRS along with Mr. Jarrett's Amended Form 1040 and has been made public by the Proof of Stake Alliance, a group sponsoring the litigation. *Key Issues*, PROOF OF STAKE ALLIANCE, https://www.proofofstake alliance.org/key-issues [https://perma.cc/W7EE-L464].

28.   For detailed information on the mechanics of the Tezos blockchain network, see generally its white paper, L.M. GOODMAN, TEZOS—A SELF-AMENDING CRYPTO-LEDGER WHITE PAPER (2014), https://tezos.com/whitepaper.pdf [https://perma.cc/YBV6-WXBA], and its position paper, L.M. GOODMAN, TEZOS: A SELF-AMENDING CRYPTO-LEDGER POSITION PAPER (2014), https://tezos.com/ position-paper.pdf [https://perma.cc/RJW6-YHNU]. The description of the Tezos network provided in this Essay are largely drawn from the facts of the Mr. Jarrett's brief in support of his amended return and claim for refund. *See* Brief in Support of Taxpayer, *supra* note 27, at 5–20.

29.   Brief in Support of Taxpayer, *supra* note 27, at 8.

30.   *Id.* at 8, 15–16.

31.   *Id.* at 1, 6, 16.

32.   Roughly 70 percent of Tezos tokens were staked in 2019. *Id.* at 9.

33.   *Id.* at 13.

create and endorse blocks are then divided amongst stakers based on the relative number of tokens that they have staked.[34] Put simply, the process of allocating creation and endorsement opportunities can be thought of as a lottery where the number of tickets you have is based on the number of tokens you have staked. Tezos token owners can stake tokens themselves or can delegate their stake to another account.[35]

An example of how a single block is added to the Tezos network illustrates these mechanics and how Tezos token holders are able to accrue wealth through participation in the network. The hypothetical block in this example is Block 100,001.[36] A new block is created and added to the Tezos blockchain approximately every minute.[37] These blocks are sequentially numbered and grouped into "cycles" of 4,096 blocks. Each cycle typically lasts for a little under three days. Block 100,001 is grouped into Cycle 25. Each new block contains 80 new Tezos rewards tokens—16 tokens for the creator of the block and 2 tokens for each endorser (with up to 32 endorsers for each block).

A couple of weeks before Cycle 25 begins, a record is taken of all of the participants staked on the network and their account balances. These balances are the proof-of-stake that is used to determine which participants will have opportunities to create and endorse blocks in Cycle 25. A few days after this record is taken, a lottery is performed based on the balances in this record to allocate entitlements to create and endorse blocks in Cycle 25.[38] In this lottery, Participant 1 is given the entitlement to create Block 100,001, and Participants 2 through 33 are given the entitlement to endorse Block 100,001.

Cycle 25 of the Tezos blockchain begins a couple of weeks after these entitlements are assigned. After Block 100,000 is created and broadcast to the network by another participant, Participant 1 steps in to create, or "bake," Block 100,001. To bake the block, Participant 1 collects and vets various new operations and information, such as transfers of Tezos tokens from one account to another, and assembles them into a new block. For each transfer included in the new block, Participant 1 receives a small transaction fee. The new operations collected and assembled include the endorsement attesting to the validity of Block 100,000 and the creation and addition of 2 Tezos

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34. *Id*. at 7.

35. *Id.* at 13.

36. This example follows the example in Mr. Jarrett's brief of his creation of Tezos Block 618,748 and the specific numbers represent the functioning of the Tezos network in 2019. *Cf. id.* at 17.

37. *Id.* at 12.

38. The mechanics of this lottery are complex and are detailed in Mr. Jarrett's brief. *See id.* at 14–15. These details are not relevant to the tax analysis of wealth creation on the Tezos network.

rewards tokens to the account of each endorser of Block 100,000. The operations collected in Block 100,001 also include the creation of 16 Tezos rewards tokens that are added to Participant 1's account.

Once Participant 1 finishes baking Block 100,001, they broadcast this proposed Block 100,001 out to the Tezos network. At this point, Participants 2 through 33, as endorsers, have the opportunity to verify and attest to the validity of Block 100,001 and issue an endorsement over the network. The endorsement process involves using cryptographic technology, which the plaintiff describes in his brief as a "kind of verification machine," to verify each digital signature associated with the transactions in the proposed block.[39] Those endorsements are then collected and vetted by the participant that is baking the next block—Block 100,002. These endorsements are recorded in Block 100,002, and 2 new Tezos rewards tokens are created and added to the accounts of each of Participants 2 through 33. The process then repeats.

Joshua Jarrett owned 102,708 Tezos tokens at the beginning of 2019 and purchased 98,554 over the course of the year.[40] Mr. Jarrett staked his Tezos tokens for the entire year. In the first part of the year, he delegated his staking to another party. Beginning in June, he delegated staking to himself. He kept a current copy of the Tezos blockchain on a dedicated computer and equipped himself with an internet connection, backup hard drive, and backup power supply in order to participate in network operations, including baking and endorsing blocks. Because staking requires this equipment and upkeep, it is easier for participants to delegate their stake to a third-party although that party typically charges a fee.[41]

Mr. Jarrett's stake of between approximately 100,000 to 200,000 Tezos tokens entitled him to opportunities to bake and endorse throughout the year.[42] He reports that he owned 8,876 additional Tezos tokens at the end of 2019 as rewards for his activities participating on the network.[43] But this does not disaggregate how each of those tokens came into being, instead

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39. *Id.* at 19.

40. *Id.* at 1. He also used 460 Tezos tokens to purchase goods and services in 2019. *Id.*

41. *See* Global X Research Team, *The Case for Digital Assets in a Portfolio*, NASDAQ (Jul. 11, 2022, 9:00 AM) https://www.nasdaq.com/articles/the-case-for-digital-assets-in-a-portfolio [https://perma.cc/73XM-ACS6] (recommending delegation for investors while noting the delegation fee).

42. Brief in Support of Taxpayer, *supra* note 27, at 14–19. To illustrate Mr. Jarrett's activities as a participant on the Tezos network, the brief Mr. Jarrett submitted to the IRS details his baking of block 618,748 and endorsing of block 619,022 in September and the Tezos rewards tokens he accrued as a result of those activities. *Id*. at 16–19.

43. *Id.* at 1.

lumping them together as the total amount of Tezos tokens that he "created" during 2019.[44]

But, as his account clearly demonstrates, Mr. Jarrett accrued those 8,876 Tezos tokens through *three* different means. First, 16 Tezos rewards tokens were added to his account each time he "baked" or created a new block, with the creation and addition of those tokens occurring as a result of his baking of said new block. Second, 2 Tezos rewards tokens were added to his account each time he endorsed blocks baked by other participants on the network. These rewards tokens were created and added to his account as a result of another participant's baking of the block subsequent to the one that Mr. Jarrett endorsed. Third, when Mr. Jarrett acted as the baker of new blocks, small fractions of already-existing Tezos tokens were transferred to him from other network participants as transaction fees.[45] And, in the beginning of the year, he accrued these tokens by delegating staking to a third party rather than to himself. Other participants' equipment and supplies enabled Mr. Jarrett's staking and rewards tokens accrual during this period.

Each of these means of accruing wealth in the form of Tezos tokens have distinct features that should inform the analysis of Mr. Jarrett's proper treatment under federal income tax law. Mr. Jarrett's lawyer lumps these means into one activity and employs one analogy—Mr. Jarrett is like a baker baking a cake. But the reality and, as a result, the tax analysis, is more complicated.

The following section considers the range of possible tax treatments of wealth creation via the Tezos blockchain network.[46] The discussion illuminates both the complexity of the tax analysis and how highly dependent it is on the specific mechanics of wealth creation on the Tezos blockchain network. Unfortunately, the mechanics of cryptocurrency networks are not identical, inserting nuances that further challenge tax law.[47] The most appropriate tax treatment for wealth creation on the Tezos network might not apply in the context of Bitcoin or Ethereum or Algorand.

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44.   *Id.* at 1.

45.   *Id.* at 16. Mr. Jarrett's attorney argues that these transaction fees are not separately accounted for because they are de minimis: a representative transaction fee he received amounted to 0.001637 Tezos tokens, or about 17 cents. *Id.* at 16, n.25. While the amounts received as transaction fees by individual Tezos holders like Mr. Jarrett might remain de minimis, these fees will quickly cease to be de minimis for holders of larger stakes in the Tezos network.

46.   *See infra* Section II.B.

47.   *See supra* notes 18–24 and accompanying text (describing the different mechanics of proof-of-work and proof-of-stake blockchain networks). Fahad Saleh provides a helpful summary of the different designs of various proof-of-stake consensus mechanisms. Fahad Saleh, *Blockchain Without Waste: Proof-of-Stake*, 34 REV. FIN. STUD. 1156, 1162–65 (2021).

II. Categorizing Crypto: The Legibility of a New Technology

As the previous section demonstrates, wealth creation in the crypto space is both complex and varied. This presents a challenge when trying to tax cryptocurrency wealth creation. The tax system relies on categorization, and cryptocurrency has proven extremely difficult to categorize. This section first explains tax law's reliance on categorization and establishes that the legal issue in *Jarrett* is one of categorization. It then unpacks the reasons why cryptocurrency is proving difficult to categorize. Lastly, it analyzes the possible categorizations of wealth creation in *Jarrett* to illustrate this difficulty.

A. *Tax Law's Buckets*

Categories underpin the federal income tax system. When determining how a person should be taxed, the economic activities and assets involved must first be placed into a bucket. Which bucket an item of income, or asset, or expense, or transaction falls into dictates the tax treatment of the economic activity at issue. And the impact of this categorization often reverberates out and impacts the tax treatment of related economic activities.

In their tax classes, law students are confronted with and learn through this process of categorization. Is it a sale when a man transfers appreciated stock to his future wife as part of an antenuptial agreement in which she surrenders any future rights to his estate?[48] Or is it a gift? If it is a sale, the man owes tax on the stock's appreciation at the time he transfers it to his future wife.[49] The wife has income at the time she receives the stock,[50] and she takes a basis in the stock equal to its value on the day of transfer.[51] If it is a gift, neither owe income tax at the time of the transfer.[52] The wife takes a basis in the stock equal to her husband's basis at the time of transfer. When she eventually sells the stock, she will owe tax on the appreciation that occurred when her husband held the property.[53]

When a holding company purchases additional stock in a failing subsidiary company to protect its business reputation, is that stock a capital

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48. *See, e.g.*, Farid-Es-Sultaneh v. Comm'r, 160 F.2d 812, 813 (2d Cir. 1947) (holding that property transferred to a spouse pursuant to an antenuptial agreement was not a gift).

49. I.R.C. § 1001(a) (gain recognized on sale or disposition of depreciated assets).

50. I.R.C. § 61(a) (defining gross income).

51. I.R.C. § 1012(a) (basis in property is cost unless exceptions apply).

52. I.R.C. § 102 (property acquired by gift not included in gross income).

53. I.R.C. § 1015 (donee receives carryover basis in property acquired by gift).

asset?[54] If it is a capital asset and the company subsequently sells the stock for a loss, the holding company will have a capital loss upon selling the stock. As a result, it will be subject to capital loss limitation rules and may not be able to use the loss.[55] If it is not a capital asset, the holding company will have an ordinary loss upon selling the stock and will not be subject to the same limitations.

The question in *Jarrett* is one of categorization. Which "bucket" of economic activities does Mr. Jarrett's accrual of Tezos rewards tokens via staking fall into? Is it services income? Is it interest income? Is it not income at all because the tokens are newly created property that has not yet been sold? For reasons explained below, the answer is not clear. Staking, like many other economic activities surrounding cryptocurrency and blockchain, cannot be placed easily into tax law's existing categories.

B. *Legibility and the Challenge of Cryptocurrency*

For an economic activity to be governed, it must first be legible to the state.[56] The state must impose legibility on an economic activity in order to gather and comprehend the information that is necessary to realize the state's purposes. Achieving legibility often requires simplifying very complex systems. This process of simplification can, if done improperly, lead to harms in some instances.[57]

At its heart, tax law's categorization of assets and economic activities is an exercise in achieving legibility. The state must take these assets and economic activities that each have complexities and nuances and strip them down into a simplified form that fits into tax law's existing categories. Is a transfer of property a gift or a sale? Is an asset capital or not? Only after these assets and activities are made legible can the state administer taxes.

Cryptocurrency and blockchain technology are not readily legible to the state. And this absence of legibility is what is presenting a challenge for tax law. There are many reasons that cryptocurrency and blockchain are not readily legible. Cryptography is complex and outside the scope of standard education, making it opaque to many. This opaqueness is heightened by the use of technical terms that obfuscate the nature of the technology. Talk of

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54.   *See, e.g.*, Arkansas Best Corp. v. Comm'r, 485 U.S. 212, 212 (1988) (holding that a taxpayer's motivation for purchasing an asset is irrelevant for the purposes of determining whether that asset is capital in nature).

55.   I.R.C. § 1211(a) (corporations' capital losses can only be offset to the extent of capital gains).

56.   *See* JAMES C. SCOTT, SEEING LIKE A STATE: HOW CERTAIN SCHEMES TO IMPROVE THE HUMAN CONDITION HAVE FAILED 76–83 (1998) (presenting the insight that the modern state relies on simplification of complex systems in order to achieve legibility).

57.   *See id.* at 11–22 (describing the harms to timber production caused by German scientific forestry and its efforts to turn timber into a single commodity that was easy to manage, measure, and tax).

hashes, Merkle trees, and Byzantine fault tolerance rather than plain-language explanations serve to maintain the aura of crypto as an insider's game.[58]

Blockchain technology is also fast-developing. For example, the IRS issued guidance on the treatment of virtual currencies in 2014, determining that virtual currencies are property for tax purposes.[59] At the time the guidance was issued, the predominant consensus mechanism for cryptocurrency was proof-of-work and the universe of blockchain networks was fairly small.[60] Proof-of-stake consensus protocols gained popularity beginning in 2014 and the volume of new blockchain networks launched each year grew dramatically.[61] Because the mechanisms of wealth creation in blockchain networks vary, consistent efforts by the government to understand new developments in this technology are necessary to maintain legibility.

The biggest challenge to legibility comes from the nature and mechanisms of wealth creation of blockchain technology. The economic activities within a particular blockchain network are often multifaceted,[62] and these economic activities are also not uniform across different blockchain networks.[63] Tax law cannot handle these facets and variations well because they may point to different buckets being appropriate for the associated income. Having to do a tax analysis for all of the ways that income

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58. This same concern of obfuscation through technical language has been identified by scholars in the context of algorithms. *See, e.g.*, FRANK PASQUALE, THE BLACK BOX SOCIETY: THE SECRET ALGORITHMS THAT CONTROL MONEY AND INFORMATION 8 (2015) (identifying obfuscation as one of the strategies to maintain the black box nature of big data); Jenna Burrell, *How the machine 'thinks': Understanding opacity in machine learning algorithms*, 3 BIG DATA & SOC'Y 1 (2016) (identifying one form of opacity in algorithms as being the product of intentional corporate secrecy).

59. I.R.S. Notice 2014-21, 2014-16 I.R.B. 938. The only other guidance that the IRS has issued specific to cryptocurrencies involved the treatment of hard forks on the Bitcoin network. Rev. Rul. 2019-24, 2019-44 I.R.B. 1004.

60. Felix Irresberger, Kose John, Peter C. Mueller & Fahad Saleh, *The Public Blockchain Ecosystem: An Empirical Analysis* 7 tbl.1 (NYU Stern School of Business, Apr. 18, 2021), http://dx.doi.org/10.2139/ssrn.3592849 [https://perma.cc/Y2LG-SVQX] (showing that only 29 blockchain networks were launched before 2014, 22 of which used a proof-of-work consensus protocol and none of which used proof-of-stake).

61. *See id.* (showing trend of increasing numbers of blockchain networks released each year with proof-of-stake or hybrid protocols becoming increasingly popular).

62. Mr. Jarrett's activities on the Tezos blockchain network demonstrate this multifaceted nature of crypto activities. His participation in the network involved both baking new blocks and endorsing blocks baked by others, and he participated on the network both directly and by delegating his stake to a third party. *See supra* Section I.B.

63. *See* Zhang & Lee, *supra* note 18, at 93–95 (describing various consensus protocols in blockchains); *A Comparison Between 5 Major Blockchain Protocols*, MEDIUM: EDCHAIN (May 19, 2018), https://medium.com/edchain/a-comparison-between-5-major-blockchain-protocols-b8a6a46f8b1f [https://perma.cc/PN7L-VJJN] (outlining the differences in the mechanics of five prominent blockchain protocols).

is produced in each blockchain network may not be sustainable in this complex and rapidly changing field.

The controversy in *Jarrett* is illustrative of this problem.[64] On the surface, "staking" crypto tokens looks like a single economic activity. And that economic activity appears very similar to lending. The owner of the crypto token is locking up their tokens for a period of time—not transferring ownership but foregoing the right to use them during this period. In exchange, the owner receives additional tokens and reacquires their tokens at the end of the lock-up period. The amount of additional tokens received is based on how many tokens the owner locked up to begin with.[65]

This arrangement looks very similar to an economic activity like a certificate of deposit (CD). A person agrees to deposit money for a set period of time—foregoing their right to use the money but not ownership. In exchange, the person receives additional money based on the amount of money deposited and receives the money deposited back at the end of the term. The additional money the person receives is interest income. Based on this analogy, it would appear that staking income should be placed into the "interest income" bucket and, therefore, be taxed in the same way as interest income. This resemblance to interest is particularly strong when token holders stake by delegating their stake to a third-party because they do not have to engage in any activities such as maintaining a computer connected to the network. In fact, Coinbase, the largest cryptocurrency exchange platform, describes tokens received from staking through their platform as "interest" earned.[66]

The analogy to interest income is strongest if rewards tokens are viewed as a form of currency rather than as property. If the rewards tokens are viewed as property, which is the categorization advanced by the IRS,[67] staking might appear more akin to rental income than to interest income. The token holder is giving up the right to use their property, but not their ownership of the property, for a set period of time and receives additional tokens in exchange. This is similar to an owner of machinery lending their

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64. The purpose of this discussion is not to reach a conclusion on the appropriate tax treatment of Mr. Jarrett's staking income. It instead aims to demonstrate the complexity of the question of categorization of wealth creation from cryptocurrency and blockchain technology more generally.

65. Brief in Support of Taxpayer, *supra* note 27, at 9.

66. *See* COINBASE, *How To Earn Crypto Rewards*, https://www.coinbase.com/learn/tips-and-tutorials/how-to-earn-crypto-rewards [https://perma.cc/MH2M-EMHJ] ("Via the main Coinbase app or website, eligible users can stake Tezos, Cosmos, or ETH and earn as much as 5% interest, (depending on the type of asset being staked) as of June 2021."). While the taxpayer's brief states in a section heading that "Reward Tokens Are Not Interest or Dividends," Brief in Support of Taxpayer, *supra* note 27, at 21, the brief only includes an analysis of why rewards tokens are not dividend income.

67. I.R.S. Notice 2014-21, 2014-16 I.R.B. 938 (Apr. 14, 2014).

machines for a set period of time to third-parties for their use in exchange for rental payments. The owner then receives the machines back at the end of the lease term. Based on this analogy, staking income should be placed in the "rental income" bucket.

This section's analysis thus far has considered staking as a single economic activity. But as this Essay has discussed, "staking" Tezos tokens is not a single economic activity. Mr. Jarrett and others who stake Tezos tokens accrue rewards tokens through three different means. First, they accrue Tezos tokens when they "bake" new blocks on the Tezos blockchain. The creation of new rewards tokens and addition of those tokens to their account occur as part of their own baking of new blocks. Second, newly created rewards tokens are added to participants' accounts each time they endorse blocks baked by other participants. These newly created rewards tokens are created by the baker of the block following the one that participant endorses, not by the endorsing participant. Third, when baking new blocks, participants receive pre-existing Tezos tokens as transaction fees. None of these economic activities are analogous to earning interest or rents via lending of money or property. And each requires its own separate analysis to determine which income tax bucket the associated rewards tokens should fall into.

This first means of accruing rewards tokens—as a reward for baking new blocks on the Tezos blockchain—is the means that Mr. Jarrett's attorneys focus on in their analysis.[68] They argue that the rewards tokens that Jarrett accrues as a result of baking new blocks are property newly created by him during the baking process. They are analogous to a cake baked by a baker or apples grown by a farmer. While never specifically stated in the tax code, newly created property such as this has never been considered "income" of the taxpayer until it is sold or exchanged.[69] Mr. Jarrett's attorney argues that tokens from staking should fall into this bucket. An alternative argument is that the rewards tokens that Mr. Jarrett accrues when he bakes new blocks is services income. He is providing a service that benefits all of the participants on the network and receiving compensation for that service in the form of rewards tokens added to his account. The fact that his compensation comes in the form of a rewards token he created while

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68. Based on the facts described in the brief, Mr. Jarrett accrued the majority of the additional 8,876 tokens at issue here because of endorsing other bakers' blocks, rather than baking new blocks. In representative cycle presented in the brief, Jarrett had the opportunity to create 3 blocks, which should have resulted in the addition of 48 rewards tokens to his account. Brief in Support of Taxpayer, *supra* note 27, at 16. He was also given the opportunity to endorse 41 blocks baked by other bakers, which should have resulted in the addition of 82 rewards tokens to his account. *Id.* at 18. It is unclear why the endorsement activities did not receive greater attention in their legal analysis.

69. *Id.* at 24–25.

performing these services does not necessarily negate this categorization. A bakery employee might choose to receive his compensation in the form of cupcakes that he baked. Under this analysis, the rewards tokens associated with baking new blocks would fall into the services income bucket. Each of these arguments are colorable, and the correct answer is not clear.

What is clear is that the rewards tokens Mr. Jarrett received as a result of endorsing other blocks and as transaction fees must be analyzed separately from those he received as a result of baking a block. The receipt of these rewards tokens stems from activities that are distinct from "baking." The transaction fees that Jarrett received from other participants when he collected their transactions into a newly created block appear most analogous to services income. He provided a service to the other participants— collecting and vetting their transaction and recording it on the new block added to the chain. In exchange, the participants gave Jarrett fractions of pre-existing Tezos tokens from their accounts. The rewards tokens that Jarrett received as a result of endorsing other participants' blocks is likewise arguably most analogous to services income. By validating the new block, Jarrett was performing a service for the benefit of the participant who was baking the new block and the network as a whole, ensuring the security of the network. In exchange, he received rewards tokens that were newly created not by him but by the baker of the block subsequent to the one that he endorsed. This analysis supports the rewards tokens Mr. Jarrett received from endorsements and transaction fees being placed into the services income bucket.

Choosing a single tax category for the wealth created by Mr. Jarrett's staking is not straightforward and perhaps not even possible. When viewed from a high-level, staking looks like either interest income or rental income. Once the mechanics of staking are analyzed, choosing a category for staking income becomes harder because it involves distinct activities. Tax law could handle this by requiring the taxpayer to report their staking income based on which activity it stemmed from—baking, endorsing, or transaction fees— and then conduct separate analyses on the appropriate categorization for each. Blocks are added at rapid speed on the Tezos blockchain with a new block being created approximately every minute.[70] Other protocols allow stakers to earn rewards every few seconds.[71] Given the frequency with which rewards can be earned, it could be administratively burdensome for the taxpayer, particularly those holding larger stakes, to report what could

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70.   *Id.* at 12 (identifying the time between block creation as approximately sixty seconds).

71.   Reuven S. Avi-Yonah & Mohanad Salaimi, *A New Framework for Taxing Cryptocurrencies* 27 (U. Mich. Pub. L. Research Paper, No. 22-014, Mar. 31, 2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4071391 [https://perma.cc/T834-6942].

amount to thousands and thousands of individual transactions on their tax returns.[72]

It would also be administratively burdensome for taxing authorities because the mechanics of different blockchain networks vary. Taxing authorities would have to analyze and make legible the specific activities on each network in order to appropriately categorize that wealth creation. And the analysis of all of these staking activities is complicated by the fact that token holders are often able to delegate their stake to a third party. For example, as discussed above, staking rewards received in exchange for validating a block created by another participant seem to fit best into the services income bucket. But, if a participant is not doing such validation directly, using and maintaining their own equipment, and is instead delegating that task to a third party, it is less clear that the participant is performing a service. Instead, it might be more appropriate to view the activity as lending or leasing their tokens to the third party. There is no category of income within tax law that clearly encompasses all of the wealth creation coming from cryptocurrency and blockchain.

Another reason that tax law is struggling to make cryptocurrency legible has to do with the nature of the asset itself. Individuals are using cryptocurrency in different ways, which support categorizing cryptocurrency in different asset classes. Cryptocurrency is being used as a speculative investment asset. This was prominently seen in February of this year when several cryptocurrency exchange platforms ran ads during the Super Bowl.[73] After this, three of the top cryptocurrency trading platforms saw their app downloads increase in the United States by 279%.[74] People can now invest in cryptocurrency through traditional financial institutions as well—the first Bitcoin ETF was launched by ProShares in October 2021.[75] In addition to being used as an investment asset, individuals can stake their cryptocurrency,

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72.   *See id.* at 27–28 (arguing that the rapid speed with which staking awards are earned by crypto participants makes taxing these rewards at the time they are received "impractical"). *But see* Omri Marian, *Law, Policy, and the Taxation of Block Rewards*, TAX NOTES FED., June 6, 2022, sec. III.C, https://www.taxnotes.com/featured-analysis/law-policy-and-taxation-block-rewards/2022/06/03/7dhq5# sec-3-3 [https://perma.cc/A6P8-G3L6] (questioning the impracticality of reporting rewards tokens as income upon receipt).

73.   Paul Vigna & Suzanne Vranica, *Bengals, Rams and Bitcoin: Crypto Ads Invade the Super Bowl*, WALL ST. J. (Feb. 6, 2022), https://www.wsj.com/articles/bengals-rams-and-bitcoin-crypto-ads-invade-the-super-bowl-11644159817 [https://perma.cc/ST3W-WZJP].

74.   Sarah Perez, *Super Bowl Ads Boosted Crypto App Downloads by 279%*, *Led by Coinbase*, TECHCRUNCH (Feb. 17, 2022, 2:32 PM), https://techcrunch.com/2022/02/17/super-bowl-ads-boosted-crypto-app-downloads-by-279-led-by-coinbase [https://perma.cc/9BJR-SV9P].

75.   Michael Wursthorn, *A Bitcoin ETF Is Here. What Does That Mean for Investors?*, WALL ST. J. (Oct. 19, 2021, 6:59 PM), https://www.wsj.com/articles/a-bitcoin-etf-is-almost-here-what-does-that-mean-for-investors-11634376601 [https://perma.cc/V57U-HPAT].

as Mr. Jarrett did. Another popular use of cryptocurrency is DeFi lending.[76] And cryptocurrency can be used as currency. Mr. Jarrett, in fact, spent 460 Tezos tokens in exchange for goods and services in 2019.[77] Cryptocurrency can serve these different roles simultaneously or very close in time. The nimbleness of cryptocurrency as an asset presents a major challenge for categorization. An asset whose use is multifaceted and constantly morphing is extremely difficult to place into a single tax bucket.[78]

For the reasons explained in this section, wealth creation within the crypto industry is stretching the limits of tax law's reliance on categorization of income and assets. It is pushing tax law to a potentially watershed moment. How this moment is handled will have major implications for the U.S. tax system in moving forward.

III. INSTITUTIONAL CHOICE IN A HIGH-STAKES MOMENT FOR TAX LAW

Currently the weight of this watershed moment is falling on the federal judiciary. Judge William L. Campbell of the Middle District of Tennessee has been burdened with the incredibly complicated task of making legible the novel economic activity of cryptocurrency staking and determining its appropriate tax categorization.[79] Judge Campbell has only had the opportunity to issue one opinion addressing tax law during his tenure on the federal bench.[80]

Judge Campbell is being asked to determine the appropriate taxation of staking on one particular blockchain network. In the absence of other guidance, his opinion will likely be relied upon by taxpayers staking on other

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76.   *See* Olga Kharif, *Crypto's Unregulated DeFi Boom Raises Shadow Banking Comparisons*, BLOOMBERG (Mar. 17, 2022, 12:40 PM), https://www.bloomberg.com/news/ articles/2022-03-17/crypt o-s-unregulated-defi-boom-raises-shadow-banking-comparisons#xj4y7vzkg [https://perma.cc/6R9A-QJMX] (citing the total value of assets locked in DeFi apps at approximately $120 billion).

77.   Brief in Support of Taxpayer, *supra* note 27, at 1.

78.   The IRS did, in fact, choose a bucket for cryptocurrency in Notice 2014-21, categorizing it as property, rather than currency, for tax purposes. I.R.S. Notice 2014-21, I.R.B. 2014-16. As discussed more in section III below, this categorization has had ripple effects.

79.   In tax disputes, the plaintiff has the choice of either (1) not paying the contested tax liability and filing their case in the U.S. Tax Court or (2) paying the contested liability and filing their case in either the appropriate U.S. district court or the Court of Federal Claims. MICHAEL I. SALTZMAN & LESLIE BOOK, IRS PRACTICE AND PROCEDURE paras. 1.04 & 1.05 (2022). Mr. Jarrett chose to file his case in the district court rather than the Tax Court, an institution with subject matter expertise.

80.   *See* Delek U.S. Holdings, Inc. v. United States, 515 F.Supp.3d 812, 820 (2021) (holding that an alcohol fuel mixture tax credit reduced the taxpayer's excise tax liability). Judge Campbell was nominated to the federal bench by President Trump and was confirmed by the Senate in 2018. Michael Collins, *Senate Confirms Nashville Attorney Chip Campbell as Federal Judge for Middle Tennessee*, TENNESSEAN (Jan. 9, 2018), https://www.tennessean.com/story/news/politics/ 2018/01/09/senate-confir ms-nashville-attorney-chip-campbell-federal-judge-middle-tennessee/1013974001/ [https://perma.cc/2BDY-FACX].

blockchain networks and pointed to in future litigation. But, because of the nuances within blockchain networks, this reliance may not be appropriate and could lead to incoherent results.

Judge Campbell's categorization of staking income from the Tezos network could also have unintended consequences. As discussed above, placing an asset or item of income into a tax bucket can have implications for all of the surrounding economic activities. The limited guidance that the IRS has issued on cryptocurrency demonstrates this ripple effect. In Notice 2014-24, the IRS asserted that cryptocurrency is property, not currency, for tax purposes.[81] Many ramifications stem from this guidance.[82] For example, this case would look very different if cryptocurrency were treated as currency for tax purposes. Jarrett would have a much more difficult time arguing that currency, rather than property, should not be taxed at the time of receipt. Another example involves sales tax. If cryptocurrency is property, then sales tax should be assessed on both ends of a transaction when cryptocurrency is used to purchase another item of property. Choices around categorizing novel economic activities do not exist in a vacuum.

A coordinated and coherent tax scheme needs to be created for cryptocurrency and blockchain activities. Several factors point towards Treasury and Congress being the best-suited institutions to create such a scheme. The first is the technical complexity of tax law. The Treasury Department and Joint Committee on Taxation have the necessary expertise and perspective on implications for the tax system as a whole to create a system for taxing this new industry that is both administrable and compatible with existing tax law. As institutions, Congress and Treasury also provide the opportunity for more voices and interests to be heard than if cryptocurrency taxation is developed via strategic litigation. Given the broad normative, societal, and technical implications of taxation of the cryptocurrency space, transparency and public involvement are essential. The democratic process, with public hearings and decision-making by elected officials who are accountable to their constituents, and the administrative rulemaking process, with public engagement through notice and comment, must happen.

The other reason that Treasury and Congress are the best institutions to address the taxation of cryptocurrency and blockchain is because of the fundamental challenge cryptocurrency and blockchain present for tax law and its reliance on categorization. At the end of the day, it may not be possible to place cryptocurrency and blockchain into any of tax law's

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81. I.R.S. Notice 2014-21, 2014-16 I.R.B. 938.

82. It is important to note that this guidance is non-binding and can be reversed.

existing categories in a coherent and principled way.[83] Entirely new categories may need to be created for this industry. Once these new buckets are created, many decisions would need to be made on their tax treatment. Should staking income be taxed at preferential rates, like qualified dividends? Should cryptocurrency be taxed differently in the hands of retail investors versus financial institutions? These decisions would require careful considerations of the goals and purpose of tax law, which need to be decided through the democratic process.

CONCLUSION

Strategic litigation by industry advocates is not the appropriate path forward for the taxation of cryptocurrency and blockchain. Allowing the federal judiciary to create piecemeal a system for taxing cryptocurrency will lead to a scattered, incoherent taxing scheme with unintended ramifications. But courts will be the ones making these decisions if Congress and the Biden Administration do not act quickly. It was disappointing that the Biden Administration's executive order on the responsible development of digital assets[84] did not call for an assessment of the appropriate tax treatment of cryptocurrency and blockchain activities. The bipartisan Responsible Financial Innovation Act introduced by Senators Kirsten Gillibrand and Cynthia Lummis in June could be a promising first step.[85] While it does not create a comprehensive regime for crypto taxation, the legislation does address some of the uncertainties surrounding the taxation of cryptocurrency, including the taxation of staking income,[86] and directs Treasury to provide guidance on others.[87] Congress and Treasury should build and expand upon these efforts and should do so quickly.

The United States has, thus far, not responded quickly enough to the economic upheavals that have been brought about by the digital economy and its impact on taxation. Amazon did not begin collecting sales tax

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83.   Exploring this question is a topic of my current research.

84.   White House, Press Release, Executive Order on Ensuring Responsible Development of Digital Assets (Mar. 9, 2022) https://www.whitehouse.gov/briefing-room/presidential-actions/2022/03/09/executive-order-on-ensuring-responsible-development-of-digital-assets [https://perma.cc/C65X-FT2D].

85.   Lummis-Gillibrand Responsible Financial Innovation Act, S. 4356, 117th Cong. (2022) https://www.congress.gov/bill/117th-congress/senate-bill/4356/text [https://perma.cc/L4MK-RJEE].

86.   *Id.* § 208 (amending section 451 of the Internal Revenue Code to allow for deferral of income from mining and staking).

87.   *Id.* § 206 (directing the Secretary of the Treasury to provide guidance on issues of taxation of digital assets, including the classification of airdrops and the characterization of payment stablecoins).

nationwide until 2017,[88] and the Supreme Court only confirmed that states may charge sales tax from remote sales in 2018.[89] Antiquated international tax laws inappropriate for a digital economy have been allowed to persist for decades, allowing global companies to conduct extensive business activities in countries without ever paying taxes there.[90] Almost three decades into the digital revolution, comprehensive international reforms are finally being pursued following global uproar over digital companies not paying their fair share of taxes.[91]

Whether cryptocurrency and blockchain will revolutionize the global economy in the way that Web 2.0 and other technological advances have done remains to be seen. But Congress and Treasury need to be responsive. With approximately 10,000 cryptocurrencies circulating and billions of dollars potentially at stake,[92] many more *Jarrett*s are to come.

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88.   Nick Statt, *Amazon Will Start Collecting Sales Tax Nationwide Starting April 1st*, VERGE (Mar. 24, 2017, 6:02pm), https://www.theverge.com/2017/3/24/15055662/amazon-us-sales-tax-collection-all-states [https://perma.cc/8KZV-C4H6].

89.   South Dakota v. Wayfair, Inc., 138. S. Ct. 2080, 2092 (2018) (holding that the physical presence rule was "an incorrect interpretation of the Commerce Clause").

90.   *See* Edward D. Kleinbard, *Stateless Income*, 11 FLA. TAX REV. 699, 703–05 (2011) (citing the elements of the international tax system that have allowed companies in the digital economy to create "stateless" income that is taxed nowhere).

91.   *See* Lilian V. Faulhaber, *Taxing Tech: The Future of Digital Taxation*, 39 VA. TAX REV. 145, 149, 152–53 (2019) (providing a useful overview of the conflicts over the appropriate taxation of the digital economy and various reform efforts).

92.   *See* Roose, *supra* note 13 (reporting approximately 10,000 cryptocurrencies currently circulating); Morris, *supra* note 11 (reporting the size of the cryptocurrency market capitalization moving over $2 trillion).