A WHOLE NEW WORLD: INCOME TAX CONSIDERATIONS OF THE BITCOIN ECONOMY

Benjamin W. Akins, Jennifer L. Chapman, Jason M. Gordon

A WHOLE NEW WORLD: INCOME TAX CONSIDERATIONS OF THE BITCOIN ECONOMY

Benjamin W. Akins, Jennifer L. Chapman, Jason M. Gordon[*]

I. INTRODUCTION

Bitcoin is a virtual cryptocurrency growing rapidly in influence throughout the world. Numerous characteristics associated with the bitcoin system, including low transaction costs and greater user privacy, make it appealing as a medium of electronic payment.[1] The number of users of bitcoin, including merchants accepting the currency as a form of payment, has grown considerably in recent years.[2] Estimates indicate that there are more than 60,000 active bitcoin users as of September 2012,[3] with nearly 11 million bitcoin in existence.[4] According to the latest estimates, bitcoin market capitalization is roughly $9 billion.[5] The growth of bitcoin as an accepted currency has far outpaced the creation of laws to regulate its use. This is particularly true with regard to state and federal provisions addressing the income taxation of transactions involving virtual currencies. Because bitcoin can, in some circumstances, be used to purchase goods or services with a monetary value or converted to other forms of legal tender, the proper income tax treatment of certain transactions presents important

---

[*] Benjamin W. Akins, JD, LLM, Assistant Professor of Legal Studies & Taxation; Jennifer L. Chapman, JD, CPA, Associate Professor of Legal Studies & Accounting; Jason M. Gordon, JD, MBA, LLM, Assistant Professor of Legal Studies & Management, Georgia Gwinnett College, School of Business, 1000 University Center Lane, Lawrenceville, GA 30043.

[1] Joshua J. Doguet, Comment, *The Nature of the Form: Legal and Regulatory Issues Surrounding the Bitcoin Digital Currency System*, 73 LA. L. REV. 1119, 1119 (2013).

[2] *Id.* at 1136.

[3] Derek A. Dion, *I'll Gladly Trade You Two Bits on Tuesday for a Byte Today: Bitcoin, Regulating Fraud in the E-conomy of Hacker-Cash*, 2013 U. ILL. J.L. TECH. & POL'Y 165, 169.

[4] *Id*.

[5] *Market Capitalization*, BLOCKCHAIN.INFO, http://blockchain.info/charts/market-cap (last visited Nov. 22, 2013).

---

questions for tax regulators. To date, there remains little legal or academic guidance on the use or taxation of bitcoin transactions. Given the growth of virtual economies and the proliferation of bitcoin transactions, how bitcoin transactions fit within the existing income tax system is a topic of concern.

This article explores the current state of the law as it relates to bitcoin as well as proposed methods for applying existing federal income tax laws to the virtual economy. In Part II, we explain virtual currencies and the role of bitcoin as a virtual currency, recounting its origin and how the bitcoin system functions. Then, in Part III, we review the current income tax laws and regulations that should prove generally applicable to bitcoin as well as introducing the few, relevant sources of law specifically addressing the regulation of bitcoin. Further, we analyze the possible federal income tax effects of various types of bitcoin transactions and set forth recommendations as to the proper federal tax treatment of those transactions.

II. BACKGROUND: VIRTUAL ECONOMIES AND BITCOIN

A. Virtual Currency

A virtual currency is a type of fund used and accepted in a virtual or online community.[6] The unique characteristic of a virtual currency is that an established governmental body does not issue or guarantee it.[7] Individuals unfamiliar with virtual currency often associate it with electronic fund transfers or payments; however, these two concepts are distinct. Electronic currencies are stored funds transmitted through electronic means,[8] such as interbank wire transfers. These funds have a legal basis in established, government-backed currency, such as the U.S. dollar. Virtual currencies, on the other hand, generally have no legal foundation in an established

---

[6] U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-13-516, VIRTUAL ECONOMIES AND CURRENCIES: ADDITIONAL IRS GUIDANCE COULD REDUCE TAX COMPLIANCE RISKS 3 (2013) ("Virtual currencies can be used entirely within a virtual economy, or can be used in lieu of a government-issued currency to purchase goods and services in the real economy.").

[7] *Id*. ("A virtual currency is, generally, a digital unit of exchange that is not backed by a government-issued legal tender.").

[8] *See* Kerry Lynn Macintosh, *The New Money*, 14 BERKELEY TECH. L.J. 659 (1999) (explaining the need for and use of internet currencies).

currency and are not controlled or regulated in the same manner as electronic payments.[9]

Three commonly recognized virtual currency schemes are the "closed-flow," "open-flow" and "hybrid-flow" schemes.[10] Closed-flow schemes refer to systems where the virtual currency can only be spent within the virtual environment and cannot be used to purchase goods or services outside of that environment.[11] The most common use of close-flow currency is within video gaming environments, such as World of Warcraft.[12] The hybrid-flow scheme involves the conversion of a government-based, legal currency into the virtual currency, which is used either within the virtual or real environments to purchase goods or services.[13] The defining characteristic is that the virtual currency cannot be exchanged back for a government-backed, non-virtual currency.[14] Lastly, the open-flow scheme allows for funds to be converted into virtual currency, used within the virtual or real environments, and subsequently reconverted into a government-based, legal currency.[15] Open-flow virtual

---

[9] *See* Reuben Grinberg, *Bitcoin: An Innovative Alternative Digital Currency*, 4 HASTINGS SCI. & TECH. L.J. 160, 162 (2011); *see also* William Hett, *Digital Currencies and the Financing of Terrorism*, XV RICH. J.L. & TECH. 4, 7 (2008) (describing how digital currencies generally work).

[10] U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 6, at 4, fig. 1.

[11] *See id.* at 4 ("In a 'closed-flow' virtual currency system, a virtual currency can be used only within a game or virtual environment to purchase virtual goods or services . . . [T]hey hold no value outside of the game and cannot be cashed out for dollars or other government-issued currencies.").

[12] *See* WowWiki, http://www.wowwiki.com/Currency (defining and explaining the use of digital currency within the World of Warcraft virtual environment).

[13] U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 6, at 4.

> In a "hybrid system," one or more of the flows between the virtual currency and real dollars or goods and services is closed. For example, participants can purchase virtual currency with real dollars or earn virtual currency by completing tasks, such as taking surveys, and then use the currency to purchase real or virtual goods and services. However, the virtual currency might not be exchangeable back into real dollars.

Id.; *see also id*. at 4, fig. 1 (providing a visual depiction of the various systems).

[14] *Id*. at 4.

[15] *Id*. at 5 ("In an 'open-flow' system, virtual currencies can be used to purchase both real and virtual goods and services, as well as be readily exchanged for government-issued currency, such as U.S. dollars.").

---

currencies are becoming increasingly popular.[16] One of the most well known, open-flow virtual currencies, and the focus of this article, is bitcoin.[17]

B. Bitcoin—Definition and Origin

Bitcoin is a virtual currency that, as discussed above, lacks any form of backing by a legal government or precious metal.[18] More specifically, it is a cryptocurrency[19] that exists within and is employed via a peer-to-peer, virtual network of individuals.[20] Concisely stated, a bitcoin is simply a chain of transactions between members of a virtual network that achieves, or is attributed value through or as a result of, the verification of the bitcoin's transaction history.[21] As such, the value of bitcoin is based upon the level of demand for or the willingness of members of the virtual community to accept the currency in exchange for other items of discernible value.[22]

Bitcoin, or the framework for the bitcoin system, originated in a paper entitled *Bitcoin: A Peer-to-Peer Electronic Cash System*.[23] The author or

[16] *See* Fergal Reid & Martin Harrigan, An Analysis of Anonymity in the Bitcoin System 4–5 (2013) (providing a discussion of multiple electronic currencies and systems, such as Ripple, Saito (i-WAT), Karma, PPay, and Mondex).

[17] Omri Marian, *Are Cryptocurrencies Super Tax Havens?*, 112 Mich. L. Rev. 38, 41 (2013) ("The most known, and currently the most successful example of cryptocurrency, is the Bitcoin, first introduced in 2008.").

[18] *See* Satoshi Nakamoto, Bitcoin: A Peer-to-Peer Electronic Cash System 8 (2008) (unpublished white paper), *available at* http://bitcoin.org/bitcoin.pdf (claiming that the bitcoin system does not require any backing or "trust"); *see also* Dion, *supra* note 3, at 167 (stating that bitcoin "is not regulated by a central bank or any other form of governmental authority").

[19] Marian, *supra* note 17.

[20] Dion, *supra* note 3, at 167.

[21] *See generally* Danielle Drainville, *An Analysis of the Bitcoin Electronic Cash System* (2012), *available at* https://math.uwaterloo.ca/combinatorics-and-optimization/sites/ca.combinatorics-and-optimization/files/uploads/files/Drainville,%20Danielle.pdf (last visited Nov. 22, 2013).

[22] Joshua A. Kroll et al., *The Economics of Bitcoin Mining, or Bitcoin in the Presence of Adversaries*, Twelfth Workshop on the Econ. of Info. Security (WEIS 2013), *available at* http://weis2013.econinfosec.org/papers/KrollDaveyFeltenWEIS2013.pdf (providing an overview of the economic principles driving the bitcoin economy).

[23] Nakamoto, *supra* note 18.

individual credited with the development is a computer programmer named Satoshi Nakamoto ("Nakamoto"),[24] a name many believe is a pseudonym for an individual or group who collectively developed the bitcoin system.[25] Nakamoto's system allowed for a self-regulating, electronic exchange between individuals in which members of the system determine or verify the veracity of every bitcoin transaction without relying upon third-party intermediaries, such as banks or payment processors.[26] Nakamoto's purpose was to remove third-party intermediaries who raise the cost of transactions.[27] This fundamental premise is essential to understanding how the bitcoin system functions and the challenges that arise in regulating and taxing transactions within the system.

C. Understanding the Bitcoin System

Bitcoin, like all virtual currencies, is a completely electronic or digital form of currency.[28] It exists as a computer file owned by the possessor.[29] Transferring the currency involves an electronic transfer of the file

---

[24] Satoshi Nakamoto, BITCOINWIKI, https://en.bitcoin.it/wiki/Satoshi_Nakamoto (last modified Sept. 23, 2014) (providing background information on the developer of the bitcoin system).

[25] V. Buterin, *Bitcoin: Prehistory, Predecessors and Genesis*, BITCOIN MAG., May 2012, at 14–18.

[26] Nakamoto, *supra* note 18, at 1; Doguet, *supra* note 1, at 1125–27 (describing the verification process).

[27] Nakamoto, *supra* note 18, at 1; *see also* Doguet, *supra* note 1, at 1122 ("While third parties, like central banks and financial intermediaries, often perform valuable services in regulating and transferring currency, their presence in the system increases the cost of using it.").

[28] *Frequently Asked Questions*, BITCOIN, http://bitcoin.org/about.html (last visited Nov. 2, 2013); Nikolei M. Kaplanov, *Nerdy Money: Bitcoin, The Private Digital Currency, and the Case Against Its Regulation*, 25 LOY. CONSUMER L. REV. 111, 113 (2012) ("Bitcoin is the world's first digital, private cryptocurrency that is exchanged over the Internet through the use of a peer-to-peer network."); Tom Simonite, *What Bitcoin Is, and Why It Matters*, MIT TECH. REV. (May 25, 2011), http://www.technologyreview.com/computing/37619 (explaining that the bitcoin system developed as a cryptocurrency).

[29] Nakamoto, *supra* note 18, at 2; *see also Some Bitcoin Words You Might Hear*, BITCOIN, *available at* http://bitcoin.org/en/vocabulary#bitcoin (lasted visited Nov. 2, 2013) (defining "private key" and other bitcoin-specific terms). "Your private key(s) are stored in your computer if you use a software wallet; they are stored on some remote servers if you use a web wallet. Private keys must never be revealed as they allow you to spend bitcoin for their respective Bitcoin wallet." *Id*.

---

information between the possessor and the recipient of the bitcoin.[30] In order to obtain and possess bitcoin, a user must download bitcoin management software.[31] This software connects your computer to the peer-to-peer network of connected computers on the bitcoin system,[32] referred to as "nodes."[33] Each program contains a history of every verified bitcoin transaction that has ever taken place, known as a "blockchain."[34] Each chain stems from a single original blockchain, known as the "genesis block."[35] Possessing the blockchain allows a user to verify the validity of future transactions, a critical step in the bitcoin system.[36]

The bitcoin file must be electronically transferred from the possessor to the recipient. The process begins with the bitcoin file, stored either on the possessor's computer or in an online database, which are known as "wallets."[37] One may think of the wallet as a computer-generated storage space for bitcoin. Each wallet has a pair of cryptographic keys (a public and private key) associated with it.[38] These keys are used in the transfer of the bitcoin.[39] The public key is effectively the address of the wallet when

---

[30] *See* Nakamoto, *supra* note 18, at 2 (explaining that bitcoin is "a chain of digital signatures" that transfers ownership by electronically sending file information between members of the system).

[31] *How Does Bitcoin Work?*, Bitcoin, http://bitcoin.org/en/how-it-works (lasted visited Nov. 2, 2013).

[32] Nakamoto, *supra* note 18, at 3.

[33] *Id*.

[34] *Some Bitcoin Words You Might Hear*, *supra* note 29; *How Bitcoin Works*, Bitcoin Wiki, https://en.bitcoin.it/wiki/How_bitcoin_works (last visited Nov. 2, 2013) ("This complete record of transactions is kept in the blockchain, which is a sequence of records called blocks.").

[35] Drainville, *supra* note 21, at 15 ("This is the first block in the chain and was generated on Jan. 3, 2009 by Satoshi Nakamoto.").

[36] *How Bitcoin Works?*, *supra* note 34 ("In order to preserve the integrity of the blockchain, each block in the chain confirms the integrity of the previous one, all the way back to the first one, the genesis block.").

[37] *Some Bitcoin Words You Might Hear*, *supra* note 29 ("A Bitcoin wallet is loosely the equivalent of a physical wallet on the Bitcoin network.").

[38] *Id*. ("A Bitcoin wallet is loosely the equivalent of a physical wallet on the Bitcoin network. The wallet actually contains your private key(s) which allow you to spend the bitcoin allocated to it in the blockchain"); *see also* Nakamoto, *supra* note 18, at 2 (explaining the use of the public and private keys).

[39] *How Bitcoin Works?*, *supra* note 34 ("When you send some bitcoin to someone, you create a message (transaction), attaching the new owner's public key to this amount of coins, and sign it with your private key.").

---

receiving or sending bitcoin.[40] This address allows individuals in the system to send bitcoin to this address and to trace prior bitcoin transactions transferred to or from this address. When the present holder is ready to send bitcoin, she simply adds a hash, the amount of the transfer, and the intended recipient's public key.[41] Any bitcoin contains the public key that previously sent or transferred the bitcoin to the present holder.[42] The public key, however, does not disclose any information regarding the personal identity of the owner.[43] This functionality allows for complete anonymity in the bitcoin transaction.[44] Unlike the public key, the private key is concealed and is only known by the possessor.[45] The private key is used to authorize the bitcoin transaction, both by the sending and the receiving party.[46] The transaction is signed by the sender's private key, which is not included in the public chain and remains anonymous.[47] Once authorized, it is time-stamped and cannot be changed.[48] By authorizing the transaction with her private key, the transaction is transmitted to the entire peer-to-peer network.[49] The public information and amount become a part of the

---

[40] *Introduction*, BITCOIN WIKI, https://en.bitcoin.it/wiki/Introduction (lasted visited Nov. 2, 2013) ("A Bitcoin address mathematically corresponds to a public key and looks like this: 1PC9aZC4hNX2rmmrt7uHTfYAS3hRbph4UN.").

[41] Nakamoto, *supra* note 18, at 2.

[42] Kaplanov, *supra* note 28, at 116–17.

[43] *See* REID & HARRIGAN, *supra* note 16, at 10–11 (containing a technical analysis of the anonymity of bitcoin transactions, explained via a bitcoin theft scenario).

[44] *See* Nakamoto, *supra* note 18, at 2 (explaining the privacy and anonymity associated with using the cryptographic key system).

[45] Kaplanov, *supra* note 28, at 118.

[46] *Id*. at 117 ("Essentially, the public key is like an email address—public and available to everyone—while the private key is like the password needed to authorize messages (in this case bitcoin) to go in and out.").

[47] *How Does Bitcoin Work?*, *supra* note 31.

[48] *Id*.; *see also* F. Gregory Lastowka & Dan Hunter, *The Laws of the Virtual Worlds*, 92 CALIF. L. REV. 1, 8 (2004).

[49] Nakamoto, *supra* note 18, at 3; *How Bitcoin Works*, *supra* note 34 ("When this transaction is broadcast to the bitcoin network, this lets everyone know that the new owner of these coins is the owner of the new key. Your signature on the message verifies for everyone that the message is authentic.").

transaction history (i.e., part of the blockchain).[50] Collectively, the transaction information and time stamp allows the transaction to be publicly verified, an important aspect of the bitcoin system.[51]

D. Obtaining Bitcoin

1. Overview

There are a number of ways to begin trading in bitcoin. Early in the existence of bitcoin, mining was the main method of obtaining the currency.[52] Mining remains the sole manner of introducing new bitcoin into the virtual economy.[53] A second manner of obtaining bitcoin is to provide goods or services in exchange for bitcoin.[54] A third, and less common method involves programs that award bitcoin in exchange for completing surveys, making purchases, etc.[55] A fourth, and increasingly popular option is to identify someone who is willing to sell (transfer) bitcoin to the purchaser in exchange for traditional currency.[56] This often means personal meetings to exchange cash at the conclusion of the bitcoin transfer[57] or transmitting electronic funds (e.g., via PayPal) in exchange for a subsequent bitcoin transfer.[58] Numerous websites exist that connect the individuals who wish to exchange their bitcoin for traditional currency.[59] The last, and most common, method for obtaining bitcoin is through virtual currency

---

[50] Nakamoto, *supra* note 18, at 6 ("The public can see that someone is sending an amount to someone else, but without information linking the transaction to anyone.").

[51] *Id.* at 2.

[52] *See Introduction*, *supra* note 40 (explaining the mining process).

[53] *See* Kaplanov, *supra* note 28, at 119–21 (describing the mining process and the introduction of new bitcoin into the system).

[54] *Id.* at 123.

[55] REID & HARRIGAN, *supra* note 16, at 15–16.

[56] Kaplanov, *supra* note 28, at 123.

[57] *Id.*

[58] *Id.*

[59] *See, e.g.*, BITCOIN.LOCAL, http://tradebitcoin.com/ (allowing site visitors to search for bitcoin in their geographic area that are available for purchase).

exchanges.[60] Bitcoin exchanges are private businesses that function like traditional currency exchanges in that bitcoin is exchanged for traditional currency based on the level of demand for the currency.[61] Individuals use a third-party electronic payment service to purchase bitcoin and to withdraw traditional currency when bitcoin is exchanged.[62]

2. Bitcoin Mining: The Creation of Currency

The bitcoin system, by design, functions without the need for third-party intermediaries, such as governments or banks, to maintain or police the veracity of transactions.[63] This characteristic raises the issue of trust in the bitcoin system. For example, as presently structured, there is concern that the bitcoin system may allow for bitcoin to be spent simultaneously in multiple transactions.[64] In traditional payment systems, laws preventing the counterfeiting of physical currency and regulation of electronic financial transactions prevent this occurrence.[65] Bitcoin users on the other hand, rely on the public and private cryptographic key system to avoid this issue.[66] As a recap of the cryptographic verification process, notification of all bitcoin transactions is transmitted to the entire peer-to-peer network,[67] consisting of

---

[60] For example, Bitcoin Exchanges, http://www.bitcoinexchanges.net/, Camp BX, https://campbx .com/main.php, Tradehill, https://www.tradehill.com, and Mt. Gox, https://mtgox.com/, are popular bitcoin exchanges sites. Mt. Gox—the largest exchange, which controls more than 85% of the trading volume—facilitates exchanges to/from bitcoin for 17 international currencies, http://mtgox.com.

[61] Dan Lyons, *The Web's Secret Cash*, NEWSWEEK, June 27, 2011, at 32; Daniel Roberts, *The Clock Is Ticking on Bitcoin*, CNN, http://tech.fortune.cnn.com/2011/06/17/the-clock-is-ticking-on-bitcoin/ (June 17, 2011, 12:29 PM).

[62] *See, e.g.*, Danny Schreiber, *Bitcoin: What Is It and How Is Dwolla Involved in the Marketplace?*, SILICON PRAIRIE NEWS, June 21, 2011, http://www.siliconprairienews.com/2011/06/ bitcoin-what-is-it-and-how-is-dwolla-involved-in-its-marketplace (outlining third-party electronic payment systems used to purchase or exchange bitcoin).

[63] Nakamoto, *supra* note 18, at 1.

[64] *Id*. at 2–3; *see Introduction*, *supra* note 40 (explaining how the bitcoin process prevents simultaneous spending of bitcoin).

[65] *See* L. Jean Camp et al., *Token Notational Money in Electronic Commerce*, 1995 PROCEEDINGS OF THE FIRST USENIX WORKSHOP IN ELECTRONIC COMMERCE, at 1–19.

[66] Nakamoto, *supra* note 18, at 2.

[67] Kaplanov, *supra* note 28, at 115; *see also* Barrett Sheridan, *Bitcoins: Currency of the Geeks*, BLOOMBERG BUSINESSWEEK (June 16, 2011), http://www.businessweek.com/magazine/content/11_26/ b4234041554873.htm ("Individual transactions are encrypted, logged by a decentralized network

---

all of the individual computers linked to the bitcoin system.[68] Each transaction is verified and becomes part of the bitcoin blockchain, which serves as a record of every transaction associated with every public key.[69] As such, the process of verifying transactions is critical to the functioning of the bitcoin system.

The process undertaken by the network to verify a bitcoin transaction is extremely complex.[70] Individual computers on the system (nodes) employ software that uses trial and error to match the cryptographic information of the current transaction with previous transaction information within the blockchain.[71] Solving these verification puzzles is extremely difficult and labor intensive, requiring special programs running on high-powered computers.[72] When the software accurately matches the information, the newly verified transaction information is forwarded to the entire network as part of the new blockchain.[73] The network either approves

---

running on thousands of home computers, and recorded in a public ledger. The system works similarly to peer-to-peer music-sharing networks in that files are shared among swarms of users, rather than downloaded from a central server.").

[68] Nakamoto, *supra* note 18, at 3.

[69] Danny O'Brien, *Imagine Your Computer as a Wallet Full of Bitcoins*, IRISH TIMES, Nov. 26, 2010, *available at* http://www.irishtimes.com/newspaper/finance/2010/1126/1224284180416.html.

[70] Simonite, *supra* note 28. In his blog, J.P. provides a simple explanation of hashing:

A hashing algorithm converts a message into a number called a hash value . . . . If this number is big enough, it provides a unique representation of the original . . . . [I]t is impossible to reconstruct the original on the basis of the [hash value] alone . . . [n]or is it possible to predict what the [hash value] would be for even a slightly tweaked version of the original message . . . . As a result, hashing is . . . an irreversible process.

J.P.*, Virtual Currency*, THE ECONOMIST (June 13, 2011, 8:30 PM EST), *available at* http://www .economist.com/blogs/babbage/2011/06/virtual-currency.

[71] J.P., *supra* note 70. Because many solutions to the puzzle exist, the chance of finding one is dependent upon the number of nodes searching and the amount of computing power they dedicate to the process. To ensure that solutions are found at a steady rate as these inputs change, a variable is correspondingly adjusted that makes it either easier or more difficult to find a solution. By making the task of solution discovery "prohibitively costly to . . . individual [nodes], but relatively cheap for the network as a whole," users are effectively prevented from attempting to include forged transactions into the blockchain.

[72] Grinberg, *supra* note 9, at 167 ("The problem difficulty has increased so much that most computers would now take on average a year or more to mine just 50 BTC.").

[73] Nakamoto, *supra* note 18, at 3.

---

or rejects the solution, which, if approved, is accepted as part of the blockchain.[74] This process continues each time that any amount of bitcoin is transferred.[75]

The computation and verification process is known as bitcoin "mining," as network members can create new bitcoin in the system by undertaking this process.[76] Network members who complete the difficult task of verifying a transaction receive a specific "reward."[77] The word "reward" is deceptive as it indicates that there is a transfer of existing value. This is not the case, however, as the bitcoin reward only comes into existence upon the completion of the mining process.[78] The difficulty associated with mining bitcoin has given rise to groups or collectives, known as "mining pools" that work together to mine bitcoin.[79] The reward for a block verification began at 50 bitcoin; however, this amount is halved for every 210,000 blocks verified.[80] The reward amount halved to 25 bitcoin in November of 2012.[81] The projected date for reaching the point where all bitcoin has been mined and introduced into the system is 2140.[82]

---

[74] *Id*.

[75] Sheridan, *supra* note 67.

[76] Nakamoto, *supra* note 18 ("The steady addition of a constant . . . amount of new coins is analogous to gold miners expending resources to add gold to circulation. In [the case of Bitcoin], it is CPU time and electricity that is expended.").

[77] *See, e.g.*, BITCOIN CZ MINING, http://mining.bitcoin.cz/ (noting that in order to ensure a fair distribution in the pool, the awarded bitcoin are "divided among all of the users that contributed to that round, weighted by the number of shares that they earned").

[78] Simmon Barber et al., *Bitter to Better—How to Make Bitcoin a Better Currency*, 7397 FIN. CRYPTOGRAPHY & FIN. SECURITY 399, 404 (2012).

[79] *See Pooled Mining*, BITCOIN WIKI, https://en.bitcoin.it/wiki/Pooled_mining (last visited Nov. 2, 2013) ("Pooled mining is a mining approach where multiple generating clients contribute to the generation of a block, and then split the block reward according [to] the contributed processing power.").

[80] Drainville, *supra* note 21, at 14.

[81] *Bitcoin Community Celebrates "Halving Day*,*"* PRLOG, http://www.prlog.org/12032578-bitcoin-community-celebrates-halving-day.html (last visited Nov. 2, 2013).

[82] Jeremy Clark & Aleksander Essex, *CommitCoin: Carbon Dating Commitments with Bitcoin*, 16TH INTERNATIONAL CONFERENCE ON FINANCIAL CRYPTOGRAPHY AND DATA SECURITY, LECTURE NOTES IN COMPUTER SCIENCE, 397, 390–98 (2012).

3. Primary Uses of Bitcoin

Bitcoin is steadily increasing in popularity as an accepted currency within the United States. The primary areas of bitcoin use are by individuals and merchants working in technology;[83] however, the users and uses of bitcoin are rapidly increasing.[84] A glut of vendors and marketplaces now accept bitcoin as a medium of payment.[85] This trend holds particularly true for vendors who accept micropayments,[86] such as payments for digital music downloads.[87] Such vendors value the use of bitcoin to avoid the transaction costs associated with traditional electronic payment methods.[88] Many other vendors do not accept bitcoin directly; rather, they use an intermediary to accept bitcoin payments and convert it into a standard currency.[89] In short, bitcoin has become a popular method of transacting with vendors of goods and providers of services.

Bitcoin is also a popular currency with individuals who protest the U.S. monetary system or government.[90] Further, it has become popular for use in nefarious or illegal activity.[91] This includes donations to illegitimate

---

[83] *See* Claes Bell, *Bitcoin: Virtual Money or Risky Investment?*, BANKRATE.COM (Sept. 25, 2013), *available at* http://www.bankrate.com/finance/investing/bitcoin-virtual-money-risky-investment-1.aspx (explaining that currently bitcoin are primarily accepted by online businesses).

[84] *Trade*, BITCOIN WIKI, https://en.bitcoin.it/wiki/Trade (last visited Nov. 2, 2013) (listing online and real world businesses that currently accept bitcoin).

[85] For example, BITMIT, http://bitmit.net, is an online shopping platform for individual selling goods and BITELECTRONICS, http://bitelectronics.net, sells consumer electronics for bitcoin.

[86] Grinberg, *supra* note 9, at 170.

[87] *See, e.g.*, COINDL, http://coindl.com (a digital music seller transacting in bitcoin).

[88] Nakamoto, *supra* note 18, at 1.

[89] BITPAY, http://bitpay.com (accepting bitcoin payment on behalf of vendors and converting the funds into U.S. currency to pay the vendor).

[90] Dion, *supra* note 3, at 169 (citing Ruth Whippman, *Bitcoin: The Hacker Currency That's Taking Over the Web*, GUARDIAN, June 12, 2011, *available at* http://www.guardian.co.uk/technology/2011/jun/12/bitcoin-online-currency-us-government).

[91] *See* Adrian Chen, *Underground Website Lets You Buy Any Drug Imaginable*, WIRED, June 1, 2011, http://www.wired.com/threatlevel/2011/06/silkroad/ (highlighting online drug trade where transactions in bitcoin have become increasingly common); *see also* Doguet, *supra* note 1, at 1138 ("Due to the partial anonymity that the Bitcoin system provides, many have raised the issue of its ability to facilitate a multitude of illegal activities, including money laundering, tax evasion, the sale of stolen credit cards, and the funding of online gambling in jurisdictions where it is prohibited.") (internal citations omitted).

---

organizations, such as the infamous site, Silk Road.[92] Bitcoin is also growing rapidly in the area of online gambling.[93] The growing use of bitcoin as a standard currency gives rise to a host of potential income tax and other regulatory issues.[94] Unfortunately, the current state of the law fails to lend tremendous insight as to the proper treatment of these bitcoin transactions.[95]

III. PROPOSED FEDERAL INCOME TAX TREATMENT OF BITCOIN TRANSACTIONS

Little formal guidance exists regarding the federal income tax reporting requirements associated with virtual cryptocurrencies, such as bitcoin, which leads to numerous questions regarding the treatment of bitcoin under the existing income tax regime.[96] Income taxation within the bitcoin economy is further convoluted by the characteristics of the currency and its system of exchange. For example, given the anonymity that characterizes many bitcoin transactions, income tax compliance risks are higher than in transactions involving traditional currencies.[97] Emerging research in this area highlights the potential for virtual cryptocurrencies, particularly bitcoin, to be used for tax evasion.[98] To date, no formal congressional guidance exists, due primarily to a lack of "strong evidence

---

[92] *See* Silk Road (marketplace), WIKIPEDIA, http://en.wikipedia.org/wiki/Silk_Road _(marketplace) (last modified Nov. 2, 2013) (providing a history and explanation of the Silk Road marketplace).

[93] Dariy Margaritov, *Bitcoin Gambling: An Overview of an Emerging Multimillion Dollar Industry*, BITCOIN MAG. (Sept. 9, 2013), http://www.coinfeed.net/news/lifestyle/bitcoin-gambling-an-overview-of-an-emerging-multimillion-dollar-industry.html.

[94] *See* U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 6 (reviewing cryptocurrency schemes and potential taxation issues that may arise within the systems).

[95] *See infra* Part III (outlining proper federal income tax treatment of various bitcoin transactions).

[96] *See* U.S. GOV'T ACCOUNTABILITY OFFICE; Notice 2014-21, 2014-16 I.R.B. 938-40 (discussed *infra*).

[97] U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 6, at 12–14.

[98] *See* David D. Stewart & Stephanie Soong Johnston, *Digital Currency: A New Worry for Tax Administrators?*, 68 TAX NOTES INT'L 423, 426–27 (2012) (explaining potential for tax evasion inherent in anonymous nature of online currencies, including bitcoin).

of the potential for tax non-compliance related to virtual economies."[99] Moreover, the Government Accountability Office (GAO) produced a report examining virtual currencies and their potential to facilitate tax non-compliance.[100] The report called for the IRS to develop "low-cost ways to provide information to taxpayers . . . on the basic tax reporting requirement for transaction using virtual currencies developed and used outside virtual economies."[101] The IRS indicated its acceptance of the GAO's recommendations in May 2013.[102] Specifically, the IRS agreed to provide information to taxpayers on the basic tax reporting requirements for transactions involving virtual currencies by linking to existing relevant guidance.[103]

On March 25, 2014, the IRS published its initial attempt at the promised guidance in the form of a notice.[104] The notice, composed as a series of Frequently Asked Questions, acknowledges "that 'virtual currency' may be used to pay for goods or services, or held for investment" and specifically references bitcoin by name.[105] While offering general instructions on how the IRS views the exchanging, mining and investing of virtual currencies, the notice concedes that more robust guidance may be needed to fully tie in the creation and use of virtual currencies with the existing tax law.[106] A search of the IRS' website, however, suggests that the

---

[99] U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 6, at 15.

[100] U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 6. The National Taxpayer Advocate, Nina Olson, echoed this call for agency guidance in her 2013 annual report to Congress. *See* NATIONAL TAXPAYER ADVOCATE: 2013 ANNUAL REPORT TO CONGRESS, at 249–55 (2013).

[101] *Id*. at 17.

[102] U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 6, at 19–20 (containing copy of letter of May 3, 2013 from Treasury Department to Government Accountability Office).

[103] *Id*. at 19.

[104] Notice 2014-21, 2014-16 I.R.B. 938-40.

[105] *Id*. at 938.

[106] *Id*. ("The Treasury Department and the IRS recognize that there may be other questions regarding the tax consequences of virtual currency not addressed in this notice that warrant consideration.").

agency has made no subsequent attempts at more complete or formal guidance.[107]

The above discussion demonstrates the emerging concern over the federal income taxation of bitcoin. Given the dearth of established congressional guidance and limited IRS guidance on the income taxation of bitcoin transactions, a look at a number of existing federal income tax laws proves necessary. Existing Internal Revenue Code sections, Treasury Regulations, and various IRS sources demonstrate alternative mechanisms for addressing the federal income tax consequences of various types of bitcoin transactions. These laws form the basis for the federal income tax treatment of bitcoin and are addressed below within the context of major bitcoin transactions. The authors' recommendations for the proper federal income tax treatment in each instance, including the potential need for specific tax laws applicable to bitcoin, complete the analysis.[108] We first address the creation or mining of bitcoin,[109] followed by the tax treatment of transfers and exchanges of bitcoin.[110]

A. Income from the Creation or Mining of Bitcoin

A primary issue of concern in the taxation of bitcoin is the manner in which bitcoin comes into existence. Plainly stated, bitcoin users have the potential to create new bitcoin within the system through the mining process.[111] This situation brings about a novel issue that does not exist for government-backed currencies: How, if at all, is the creation of a virtual currency taxed?[112]

---

[107] *See* IRS, http://www.irs.gov (last visited Oct. 25, 2014) (containing no references to new guidance under the following search terms: "bitcoin," "virtual currencies," or "cryptocurrencies").

[108] This article outlines various possible income tax treatment of bitcoin. The authors' recommendation may vary from the Notice and GAO guidance accepted by the IRS. U.S. Gov't Accountability Office; Notice 2014-21, 2014-16 I.R.B. 938-40.

[109] *See infra* Part III.A–III.B.

[110] *See infra* Part III.B & Part IV.

[111] *See supra* Part II.D.2 (explaining process of bitcoin mining).

[112] Whether bitcoin and related virtual systems are, legally speaking, "currency" is beyond the scope of this article. The I.R.S. has indicated, however, that a virtual currency should not be treated as a currency under existing tax law. *See* Notice 2014-15 I.R.B. 938-40.

In general, traditional currencies are authorized and then minted by an authorizing governmental body.[113] The introduction of currency to the economy is a method by which a governmental body controls and regulates economic activity within the system.[114] For example, within the U.S., new currency commonly enters the economy via a debt arrangement with the Federal Reserve Bank ("FRB").[115] The government or member bank, in effect, borrows money from the FRB and then introduces the funds into the economy via some form of loan or allocation program.[116] This system allows the FRB to track and control the amount of currency in the system.[117] Funds introduced to the public via governmental allocation, absent an applicable exemption, may be taxed in a variety of manners. For example, individuals who receive funds for services rendered or goods sold to the government report the funds as taxable income.[118] On the other hand, funds issued to a citizen as compensation for property seized by the government, such as through eminent domain, may be taxed as a capital gain to the individual.[119] Funds introduced into the system via loans to banks are not subject to taxation until some gain on those funds is both realized and recognized.[120]

Bitcoin, in contrast to traditional currencies, comes into existence through the recognition of computational work carried out by the members of the system.[121] Unlike the U.S. system, the process is completely decentralized and there is no governmental body or entity introducing or regulating the amount of bitcoin within the system.[122] This occurrence

---

[113] *See* BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM: PURPOSES & FUNCTIONS 83–101 (9th ed. 2005) (discussing the central bank's role of inserting and monitoring currency into the U.S. economy).

[114] *Id.*

[115] *Id.* at 15–50.

[116] *Id.* at 27–36.

[117] *Id.* at 83–101.

[118] I.R.C. § 61(a).

[119] *Id.* § 1221(a).

[120] *Id.* § 1001(a)–(c).

[121] *See supra* Part II.D.2.

[122] Nakamoto, *supra* note 18, at 2.

raises questions of how and when the value created through the mining process is taxed to the bitcoin miner. There are two primary ways to categorize the event, either: (1) as an accession of wealth upon receipt of a bitcoin reward, or (2) as compensation received for services rendered within the bitcoin system. Each treatment differs significantly in the character and timing of income tax realization.

As a starting point, for federal income tax purposes, transactions producing a net increase in wealth, without specific exemption, are generally taxable.[123] While the IRC makes no mention of virtual economies, virtual currencies, or bitcoin, it does set forth the foundational definition of income: "Gross income means all income from whatever source derived . . . ."[124] The definition specifically includes "[c]ompensation for services"[125] and "[g]ains derived from dealings in property."[126] The accompanying Treasury Regulations provide that "if services are paid for in property, the fair market value of the property taken in payment must be included in income as compensation."[127] This rule contains no exception for transactions in virtual currencies.[128] Whether or not bitcoin is considered equivalent to cash, the code makes clear that using it in exchange for property or to compensate for services triggers income tax implications.

1. Bitcoin Mining as an "Accession to Wealth"

Mining for bitcoin may be viewed as the creation of an intangible asset. The miner is actually creating currency within the bitcoin system.[129] In effect, the bitcoin miner eliminates the role played by the FRB within the U.S. monetary system by creating and claiming original ownership of the bitcoin.

---

[123] I.R.C. § 61(a).

[124] *Id.*

[125] *Id.*

[126] *Id.* § 61(a)(3).

[127] Treas. Reg. § 1.61-2(d)(1) (1995).

[128] Cryptocurrency Legal Advocacy Group, Inc., *Staying Between the Lines: A Survey of U.S. Income Taxation and Its Ramifications on Cryptocurrencies* (Apr. 15, 2012), http://theclag.org/CM%231001Final.pdf.

[129] *See supra* Part II.D.2.

When individuals create something of value, they have increased their net worth. Otherwise stated, they have had an "accession to wealth" as contemplated by *Commissioner v. Glenshaw Glass*.[130] In *Glenshaw*, the Supreme Court held that income includes "undeniable accessions to wealth, clearly realized, and over which the taxpayers have complete dominion."[131] Under this rule, three elements must be satisfied to trigger a taxable event: a taxpayer must experience an increase in net worth, a taxpayer must have control over the new value, and there must be a realization event.[132] Tying in the *Glenshaw* standard to operations such as bitcoin mining may be explained through a simple example that involves a traditional miner. Imagine a prospector who sets out to search for gold on a claim of land in order to produce income for himself and his family. Through hours of labor, he unearths many ounces of the valuable metal and later is able to profitably sell it. In this case, prospector experiences an accession of wealth over which he has dominion and control, and he later exchanges it for value. As such, upon sale or exchange of the gold for value, the prospector has generated taxable income.[133]

The prospector's situation is similar to the bitcoin miner's, but it is not identical. The difference is that the bitcoin miner does not uncover an asset in existence at the time of commencement of his work, as is the case of the prospector. The bitcoin system autonomously creates new value, a quality of bitcoin, upon completion of independent work product by the bitcoin miner.[134] Further, the reward of bitcoin begins a new blockchain controlled by and under the ownership of the miner.[135] Successfully mining bitcoin results in a reward of additional bitcoin to the miner,[136] increasing his net

---

[130] 348 U.S. 426 (1955).

[131] *Id*. at 431.

[132] *Id*.

[133] Crucial to this example is the fact that the prospector is not in the employ of someone else, who pays him in gold for his gold-mining services. In that scenario, the value of the gold would be treated as compensation for services. *See* I.R.C. § 61(a)(1) (2013) (including "compensation for services" in the definition of "gross income").

[134] This situation is comparable to the creation of intellectual property, such as a copyright, through publication of a creative activity.

[135] Nakamoto, *supra* note 18, at 2–4.

[136] *Id.* at 4.

worth. Bitcoin has substantial value measured by demand for the newly created bitcoin within the system.[137] Recently a single bitcoin reached a value equal to 500 U.S. dollars.[138] Further, the reward of bitcoin begins a new blockchain controlled by and under the ownership of the miner.[139] Like the gold prospector, the miner completes work that brings something of value into being through his own efforts, and, like the prospector, the bitcoin miner takes ownership over the new value. Pursuant to *Glenshaw*, the sole remaining element needed to trigger income tax implications is a realization event.[140]

In the case of the prospector, he does not experience a realization event until he disposes of or exchanges the gold. The IRS has distinguished bitcoin mining from the case of the prospector and takes the position that bitcoin mining as a trade or business gives rise to immediate income recognition.[141] While this position has merit, there is a framework in place under existing tax law that makes deferral of income until a taxpayer experiences a realization event, such as a disposition of the bitcoin in a taxable sale, a realistic interpretation. Acknowledging that the creation of value is an accession, *Glenshaw* mandates that the new value be "clearly realized," a requirement that is rooted in the IRC and corresponding regulations.[142] When such a realization event occurs, the taxpayer generally recognizes income from the sale of the asset within the ordinary course of business or she realizes capital gains upon the sale of that asset if outside of the ordinary course of business.[143]

---

[137] Kroll et al., *supra* note 22, at 1–2.

[138] Jon Southurst, *Bitcoin Price Hits $500, a 50x Increase in Just 12 Months*, COINDESK (Nov. 17, 2013), http://www.coindesk.com/bitcoin-price-hits-500-50x-increase-12-months/.

[139] Nakamoto, *supra* note 18, at 2–4.

[140] 348 U.S. at 431.

[141] *See* Notice 2014-21, 2014-16 I.R.B. 938-40 ("[When] a taxpayer successfully 'mines' virtual currency, the fair market value of the virtual currency . . . is includible in gross income.").

[142] *See* I.R.C. § 61(a)(3) (stating that income includes "gains derived from dealings in property"); *see also* Treas. Reg. § 1.61-6(a) ("Gain realized on the sale or exchange of property is included in gross income, unless excluded by law. For this purpose property includes tangible items . . . and intangible items. . . .").

[143] I.R.C. § 1221(a). *See supra* text accompanying notes 125–35 (Part III.B.1).

---

2. Bitcoin Mining as Compensation for Services

An alternative view of bitcoin mining, and the view endorsed by the I.R.S., is that mined bitcoin is compensation for services rendered by the miner.[144] The justification for such a view is that the bitcoin system depends upon the proof of work or mining services of its members.[145] Members join the system expecting the benefits offered by the system, including the lack of third-party regulation and the anonymity of the system.[146] These aspects of the system exist by virtue of the structure of the bitcoin system itself.[147] Miners, like entrepreneurs providing services to clients, provide a pre-established service to the bitcoin system. Bitcoin created by a successful miner is, in effect, compensation received for those services. However, because the system exists as a mere association of members,[148] as opposed to a business entity or customer, treating bitcoin produced through mining as compensation for services is not without uncertainties.

The treatment of mined bitcoin as compensation, rather than an accession of wealth, gives rise to distinct income tax treatment. First, when treating mined bitcoin as compensation for services rendered the value of the bitcoin created[149] is taxable income to the miner at the time of the award.[150] A taxpayer must report income in the year that his or her right to receive the income is secured and the amount of the income can be determined with reasonable certainty.[151] In contrast, where taxation of income may be delayed until the disposition of the property, the taxpayer

---

[144] Notice 2014-21, 2014-16 I.R.B. 938-40.

[145] Nakamoto, *supra* note 18, at 4; *see also* J.P., *supra* note 70.

[146] Nakamoto, *supra* note 18, at 2–4.

[147] *Id*.

[148] Sheridan, *supra* note 67.

[149] Currently, the miner is awarded 25 bitcoin per transaction verified. *See supra* text accompanying note 81.

[150] I.R.C. § 61(a)(1); Treas. Reg. § 1.61-1(a).

[151] *See* I.R.C. 83(a) (stating that when property is transferred to any person "in connection with the performance of services," the service provider must, generally, include the value of the property as gross income). Alternatively, this situation is similar to the "all events" under I.R.C. §§ 446, 451. Treas. Reg. §§ 1.446-1(c), 1.451-1(a); Schlude v. Comm'r, 372 U.S. 128 (1963); Rev. Rul. 79-195 1979-1 C.B. 177 (explaining "all events" test).

may delay the inclusion of income indefinitely by choosing not to dispose of the property.[152]

The second distinction regards the classification and tax rate of the income. Compensation is classified as ordinary income,[153] while gains from the disposition of property *may* qualify for capital-gain treatment.[154] Ordinary income tax rates are tiered based upon the total income level of the taxpayer. Capital gains, on the other hand, are generally taxed at preferential rates.[155] Long-term rates are largely capped at 15% for most taxpayers,[156] but, under current law, ordinary rates may reach 39.6% on the last dollars of income earned for some taxpayers.[157]

Lastly, when receipt of value is treated as compensation, the full amount of compensation is reportable as income.[158] In contrast, when a taxpayer creates property and later sells it for profit, the amount of income realized is the portion of value received in excess of the taxpayer's basis in the created property.[159] In the bitcoin context, the miner's basis in the bitcoin is the cost directly attributable to the creation or mining of the currency.[160] If the miner incurred no expense in creating the bitcoin she earns, the amount realized is equal to the full value received in the exchange.[161]

---

[152] Treas. Reg. § 1.61-6(a).

[153] I.R.C. § 61(a).

[154] *Id*. § 1221 (defining capital asset).

[155] *Id*. § 1(a)–(d), (h) (setting forth individual tax rates for both ordinary income and capital gains).

[156] *Id*. § 1(h).

[157] *Id*. § 1(a)–(d).

[158] *Id*. § 61(a).

[159] *Id*. § 1001(a)–(c).

[160] Costs associated with bitcoin mining vary and may include subscriptions or fees for maintaining an online bitcoin wallet, fees to be part of trading or mining pools, or central processing unit fees incurred when processing information through third-party, internet servers.

[161] *Id*.

---

3. The Better Approach

When comparing the accession of wealth and compensation views of bitcoin mining, the more logical approach appears to be treating the bitcoin earned by the miners as compensation.[162] The element of adding value or the creation of new value from existing resources is not obvious in bitcoin mining, distinguishing it from more traditional unrealized accession of wealth comparisons.[163] While it is true that the miner's efforts cause something of value to come into being, their efforts do not go into creating the actual new bitcoin. That is, like other fiat currencies,[164] the bitcoin is representative of a valuable service provided to the bitcoin system.[165] The miner's labor is targeted at verifying the authenticity of a bitcoin transaction,[166] as opposed to physically creating or adding value to the bitcoin the miner receives. The fact that the currency is created at this point is simply a result of the bitcoin economy design.[167]

Treating bitcoin as compensation to the miner more closely fits with the understanding of compensation for services rendered to a group or organization. When an individual decides to provide services to any group or organization in exchange for some form of value, the value received (regardless of the form) is treated as taxable income.[168] From the miner's perspective, they perform a task (verifying the bitcoin transaction), and they receive a wage (reward) for that task from a third-party (the bitcoin electronic system).[169] The bitcoin miner understands the amount and

---

[162] This approach is also aligned with the I.R.S.'s view of bitcoin mining. Notice 2014-21, 2014-16 I.R.B. 938-40.

[163] *See* I.R.C. § 61(a)(3) (stating that income includes "gains derived from dealings in property"); *see also* Treas. Reg. § 1.61-6(a) ("Gain realized on the sale or exchange of property is included in gross income, unless excluded by law. For this purpose property includes tangible items . . . and intangible items . . . .").

[164] *See* JOHN MAYNARD KEYNES, TREATISE OF MONEY 7 (1930) (explaining that fiat currency is "created and issued by the State, but is not convertible by law into anything other than itself, and has no fixed value in terms of an objective standard").

[165] Nakamoto, *supra* note 18, at 4.

[166] *Id*.

[167] *Id*.

[168] I.R.C. § 61(a).

[169] *See* Kaplanov, *supra* note 28, at 119–21.

---

potential value of the reward received from the system upon successful completion of his or her services.[170] The uniqueness of this situation is that the system automatically generates new currency, a representation of the value provided, and distributes that value to the bitcoin miner.[171]

B. Income from Bitcoin Transfers and Exchanges

Bitcoin is becoming increasingly popular as an accepted currency within the United States, with the number of bitcoin users growing at a rapid pace.[172] The growth in the number of businesses now accepting bitcoin as a medium of payment continues to outpace the regulation of these transactions. Early adopters were those merchants accepting micropayments, such as music providers,[173] in an attempt to avoid the high transaction costs associated with these small payments.[174] The increased acceptance by merchants continues to spur entrepreneurial ventures focused on facilitating the bitcoin payment process.[175] As discussed in Part A, bitcoin may be treated as either earned income at the time of their mining or creation or as an asset. This distinction raises the issue of whether these bitcoin then produce a taxable gain or loss upon their subsequent sale or exchange. As outlined in the paragraphs that follow, these transfers and exchanges are analogous to more traditional transactions and, thus, could be addressed under existing federal income tax laws.[176]

---

[170] *Id.*

[171] *Id.*

[172] *See generally Trade*, *supra* note 84 (listing businesses currently accepting bitcoin).

[173] *See, e.g.*, COINDL, *supra* note 87.

[174] Grinberg, *supra* note 9, at 170.

[175] *See, e.g.*, BITPAY, *supra* note 89 (accepting bitcoin payment on behalf of vendors and converting the funds into U.S. currency to pay the vendor).

[176] While existing tax laws appear adequate to address the federal income tax consequences of these transactions, given the anonymity inherent in the bitcoin system and its other unique characteristics, compliance risks and potential tax evasion remain daunting obstacles.

---

1. Potential Capital Gain on Sale or Exchange of Bitcoin

Section 1221 broadly defines the term "capital asset" to include most property held by a taxpayer other than inventory,[177] depreciable personal property and real property used in the taxpayer's trade or business,[178] accounts and notes receivable,[179] certain intellectual property,[180] supplies,[181] and certain other, less commonly encountered assets.[182] A taxable event generally occurs, for federal income tax purposes, when a taxpayer disposes of a capital asset. For this purpose, a "sale" occurs when there is a transfer of property for money or the promise to pay money, while an "exchange" involves a transfer of property for other property or services.[183] The taxpayer's basis is subtracted from the amount realized on the sale or exchange, with the resulting gain or loss producing a taxable income or potentially deductible loss. The resulting gain or loss is characterized as short term if the taxpayer held the asset for one year or less and as long term if the taxpayer held the asset for more than one year prior to the sale or exchange.[184] For individual taxpayers, the characterization of the gain or loss determines its federal income tax treatment. Net short-term capital gains are treated as ordinary income.[185] Net long-term capital gains, in contrast, are taxed at preferential rates.[186] Net-capital losses, meanwhile, may only be deducted up to $3,000 per year, with any excess net-capital loss carried forward to future tax years.[187]

---

[177] I.R.C. § 1221(a)(1).

[178] *Id*. § 1221(a)(2).

[179] *Id*. § 1221(a)(4).

[180] *Id*. § 1221(a)(3).

[181] *Id*. § 1221(a)(8).

[182] *See id*. § 1221(a)(5)–(7) (including U.S. government publications, most commodities derivative instruments held by dealers, and hedging transactions).

[183] Spalding v. Comm'r, 7 B.T.A. 588, 590 (1927).

[184] *See* I.R.C. § 1222 (defining short- and long-term capital gains and losses).

[185] *See generally id*. § 1 (outlining tax rates for individual taxpayers).

[186] *See id*. § 1(h) (explaining taxation of long-term capital gains). Currently, tax rates on long-term capital gains range from 0% to 20%, depending upon the taxpayer's ordinary income tax rate. *Id*.

[187] *Id*. § 1211(b) (limiting net capital loss deductibility to $3,000 per year for non-corporate taxpayers); § 1212(b) (providing for carry forward of capital losses not deductible in current year).

To date, there are only two judicial opinions addressing matters related to bitcoin.[188] One of these addresses the subject of securities regulation, but proves informative as to the tax treatment of bitcoin sales or exchanges.[189] In *SEC v. Shavers*, the defendant, Trendon Shavers, operated an organization called Bitcoin Savings and Trust, through which he promoted the opportunity for lenders to purchase interests in bitcoin-related investments. Shavers offered investors up to one percent interest daily.[190] The SEC charged Shavers with making misrepresentations related to these investments, which cost investors net principal losses of somewhere between $1.8 million and $23 million.[191] Shavers argued that bitcoin investments did not fall under the definition of "securities" per federal law, reasoning that bitcoin are not money and, therefore, "not part of anything regulated by the United States."[192] The SEC countered that bitcoin investments "are both investment contracts and notes, and, thus, are securities."[193]

The district court ultimately ruled that "[b]itcoin is a currency or form of money" and the bitcoin investments were "investment contracts," which qualify as securities under federal law.[194] In reaching its holding, the court utilized the three-step investment contract analysis set forth by *SEC v. W.J. Howey & Company*.[195] The court first found that the bitcoin were money; the only restriction being that bitcoin could only be used at places that

---

[188] *See* SEC v. Shavers, No. 4:13-CV-416, 2013 U.S. Dist. LEXIS 110018 (E.D. Tex. Aug. 6, 2013) (involving treatment of bitcoin as securities); Tradehill, Inc. v. Dwolla Inc., No. C-12-1082 MMC, 2012 U.S. Dist. LEXIS 65279 (N.D. Cal. May 9, 2012) (involving allegations of racketeering, intentional misrepresentation, false advertising, breach of contract, and related charges).

[189] *Shavers*, 2013 U.S. Dist. LEXIS 110018, at *1.

[190] *Id*.

[191] *Id*. The wide variance in estimated losses is attributable to the volatility seen in bitcoin valuation over time. *Id*. at *2; *see also* Southurst, *supra* note 138 (noting value of bitcoin has increased to $500, a 50-fold increase in a year).

[192] *Shavers*, 2013 LEXIS U.S. Dist. 110018, at *4. Shavers also contended that his transactions were outside the parameters of securities law due to the fact that money was never exchanged during his bitcoin transactions. *Id*.

[193] *Id*.

[194] *Id*.

[195] *Id*. (citing 328 U.S. 293, 298–99 (1964)).

accept them as currency.[196] The court found this limitation minimal due to the growing ease with which bitcoin can be exchanged for more widely accepted currencies—e.g., the U.S. dollar.[197] Second, the court found Shavers and his investors displayed the necessary interdependence to establish a "common enterprise."[198] Finally, the court determined that the investors expected profits from the efforts of a Shavers.[199] The court in *Shavers* made clear that, bitcoin, when used for purchase, is a form of money.[200] The court was less clear in indicating that bitcoin held for investment purposes could be considered a capital asset.[201] Miners of bitcoin may reasonably argue against the treatment of bitcoin as a capital asset. The value of legal currency fluctuates. Similarly, bitcoin has proven quite volatile since its inception.[202] Moreover, bitcoin can be used to "purchase" goods and services, like legal currency.[203] Taxpayers who mine bitcoin will, therefore, take the position that bitcoin earned through mining that is subsequently used to "purchase" other currency, goods, or services, should not be subject to capital gain or loss treatment. Rather, the bitcoin earned in this manner would be subject to ordinary income treatment. This position suffers from one major flaw; namely, bitcoin, while recognized as a cryptocurrency, is not a government-backed legal tender with a recognized exchange rate, and the recent IRS Notice indicates that the IRS will not recognize bitcoin as currency.[204] Because of this distinction, the possibility exists that sales or exchanges of bitcoin may be characterized as sales or exchanges of capital assets.

---

[196] *Id.* at *4–5.

[197] *Id.* at *5.

[198] *Id.*

[199] *Id.* at *5–6.

[200] *Id.* at *5.

[201] *See Shavers*, 2013 U.S. Dist. LEXIS 110018.

[202] *See* Southurst, *supra* note 138.

[203] *See, e.g.*, *Trade*, *supra* note 84.

[204] U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 6, at 1; Notice 2014-21, 2014-16 I.R.B. 938-40.

If viewed as a capital asset, any transfer of bitcoin in exchange either for legal currency (i.e., a sale) or for other property or services (*i.e.*, an exchange) would produce a gain or loss under the capital gain and loss rules. In these transactions, the resulting gain or loss could be calculated just as any other capital gain or loss, with the taxpayer's basis being subtracted from the amount realized on the sale. For taxpayers who mined bitcoin and thus paid federal income tax on the value of the bitcoin at the time of its creation, the amount of taxable compensation should set the taxpayer's basis for subsequent sales or exchanges.[205] Similarly, for taxpayers who purchase bitcoin on one of the growing bitcoin exchanges, the price paid for the bitcoin would establish the taxpayer's basis. In this way, bitcoin would be treated like any other asset.[206]

2. Bitcoin Trading as Barter Transactions

While capital gain treatment for transactions involving bitcoin has merits, it is not without its uncertainties.[207] This is particularly true where bitcoin is exchanged for goods or services instead of exchanged for currency. For federal income tax purposes, however, these transactions may well fall within the barter transaction rules.

It is by now axiomatic that a taxpayer who provides services in exchange for property or other services has engaged in a bartering transaction and must include the value of the services received in his or her gross income for federal income tax purposes.[208] Thus, where a taxpayer

---

[205] I.R.C. § 1012(a) (stating that basis for income tax purposes generally equals the property's cost).

[206] *See generally id*. §§ 1(h), 1222 (outlining basic tax rates and definitions related to federal income taxation of capital gains and losses).

[207] To date, the sole IRS guidance on taxation of bitcoin and other virtual currency remains Notice 2014-21, which outlines in question and answer format the IRS's initial position on how general tax principles apply to virtual currency transactions. Notice 2014-21, 2014-16 I.R.B. 938-40. The Notice largely defers discussion of capital gain and loss treatment but does note that bitcoin will likely be taxed under general property principles. *Id.*

[208] *See* Treas. Reg. § 1.61-2(d)(1) ("if services are paid for in property, the fair market value of the property taken in payment must be included in income as compensation. If services are paid for in exchange for other services, the fair market value of such other services taken in payment must be included in income as compensation."); Rev. Rul. 79-24, 1979-1 C.B. 60 (providing classic examples of bartering income—a lawyer who exchanges legal services in return for the painting of his residence and the landlord who exchanges use of an apartment for artwork by the tenant-painter).

---

exchanges bitcoin for property or services, the value of the property or services received could reasonably set the amount of that taxpayer's gross income on the transaction.[209] Unlike capital gain or loss treatment, the taxpayer would not be able to offset the barter income by his or her basis, but would be able to take any allowable deduction on the transaction (e.g., any available itemized deductions and ordinary and necessary business expenses).[210] The end result may or may not be as favorable as capital gain treatment, depending upon whether any such deductions exist.

In the early 1980s, the IRS issued two revenue rulings that provide welcome analogies to bitcoin transactions.[211] In the first,[212] taxpayers were members of a barter club that used "credit units" to allow its members to engage in barter transactions for goods and services provided by other members.[213] The club rules provided that each credit unit was equivalent to one U.S. dollar and that all barter transactions must be valued at the retail price of the goods or services exchanged.[214] Credit units could not be transformed back to currency by the club but could be used either for goods or services or transferred to other members of the club.[215] Under these circumstances, the IRS ruled that each member must include the dollar value of the credit units received in the year those units were credited to the taxpayer's account.[216] In the second revenue ruling,[217] the IRS likewise found that the value of barter transactions must be included in the taxpayers' gross income in the year of receipt. Here, there was no concept of "credit units." Rather, members simply contacted one another to arrange

---

[209] Notice 2014-21, 2014-16 I.R.B. 938-40, takes this position, reflecting its general position that bitcoin will be taxed as property.

[210] *See* I.R.C. § 161 (stating that only those items specified in §§ 162–199 are deductible for federal income tax purposes).

[211] Rev. Rul. 83-163, 1983-2 C.B. 26; Rev. Rul. 80-52, 1980-1 C.B. 100.

[212] Rev. Rul. 80-52, *supra* note 211, at 100.

[213] *Id*.

[214] *Id*.

[215] *Id*.

[216] *Id*. at 101.

[217] Rev. Rul. 83-163, *supra* note 211, at 26.

for barter transactions.[218] Despite the absence of "credit units" or similar internal accounting, the IRS found that members' must include the fair market value of the barter transactions they each received during a given tax year.[219]

Bitcoin transfers and exchanges conceivably could be treated similar to these barter clubs for federal income tax purposes. This is particularly true for bitcoin miners who are not engaged in mining as a trade or business, but rather as a vehicle for swapping their talents for other property or services as part of an organized mining club or group. In this instance, the value of the bitcoin mined by a given miner would be valued at an appropriate retail or market price. As in the above-discussed revenue rulings, taxpayers would need to report the full fair market value of all bitcoin received during a tax year as ordinary income. In essence, the bitcoin would be analogized to the "credit units" in Revenue Ruling 80-52, providing a basis for valuation, and would be traded for other goods or services as in a traditional bartering transaction. Further, taxpayers who received bitcoin in these transfers and exchanges would be required to report income from those transactions based on the fair market value of the transactions, as determined by the relevant market and the taxpayers themselves. However, because the transactions would be treated akin to compensation,[220] the taxpayers would receive no offset for their basis in the bitcoin, a potentially major consideration for those who have put a great deal of time, effort, and resources into their bitcoin acquisition.

While not addressed in Notice 2014-21,[221] the barter approach certainly recognizes that bitcoin can be exchanged on an even playing field for goods and services that are of an equal value. Given this ability to exchange bitcoin for goods and services, bitcoin holders rightfully could argue that no realization or recognition should occur related to their bitcoin until the bitcoin is exchanged for other goods and services. Put another way, this approach treats bitcoin more like a legal currency than does the

---

[218] *Id.*

[219] *Id.*

[220] *See supra* Part III.A.2.

[221] 2014-16 I.R.B. 938-40.

capital asset approach. As a downside, taxpayers would lose the tax savings inherent in capital asset treatment, including the preferential tax rates and the offset of the taxpayer's basis against the amount realized (i.e., the value of the goods and services received in the exchange). As such, the full fair market value of the bitcoin, as determined by the value of the goods or services for which it is exchanged, would be ordinary income.

3. The Better Approach

Ultimately, the proper income tax treatment of bitcoin sales and exchanges will, to a certain degree, hinge on the treatment of mined bitcoin.[222] If mined bitcoin give rise to income for services, and thus, are taxed as ordinary income, their exchange for other goods or services would be identical to the exchange of legal currency for the same goods or services—that is, the transaction would be a straightforward purchase, with the value of the taxpayer's compensation treated as the taxpayer's basis in the bitcoin. However, if mining for bitcoin were deemed not to produce compensation, then the subsequent transfer of bitcoin for either legal currency or goods or services would produce the sole taxable transaction. In either instance, the capital gain and loss rules, the barter transaction rules, or both would come into play.

Given that *S.E.C. v. Shavers*[223] provides our only guidance to-date as to the treatment of bitcoin under federal securities law and that we have only the abovementioned Notice as guidance from the IRS, the future of the federal income taxation of bitcoin is uncertain at best. However, given that bitcoin valuation varies over time and that value is dependent largely upon the efforts of others and the vicissitudes of the general economy, bitcoin acquired through a purchase or other exchange transaction may best be characterized as a security under federal law. As such, the subsequent sale or exchange of that bitcoin more closely mirrors the sale or exchange of existing securities than a barter transaction. The federal income tax treatment should thus follow suit. An individual taxpayer should recognize a capital gain or loss based on the difference between the amount realized on any sale or exchange of the bitcoin, just as in any other sale or exchange

---

[222] *See supra* Part III.A (explaining the production of income from bitcoin mining).

[223] SEC v. Shavers, 2013 U.S. Dist. LEXIS 110018.

---

transaction.[224] Specifically, the amount realized should be valued based upon the value of the goods, services, or legal currency received. Furthermore, the taxpayer's basis should be calculated based upon existing principles—with any taxable compensation from bitcoin mining constituting the basis of created bitcoin,[225] while the basis in bitcoin obtained through previous transfers could be set based on the purchase price, as with the purchase of more traditional capital assets.

Barter treatment appears harsher than treating bitcoin transfers or exchanges as the disposition of property, which would allow the taxpayer to avoid taxable income to the extent of his or her basis in bitcoin exchanged for another good or service. Moreover, capital gain treatment would more definitively allow a taxpayer to account for the wide variation in bitcoin values over time. Specifically, the taxpayer could establish his or her basis as of the date of the bitcoin's creation or mining. Then, any change in value would be recognized as a capital gain or loss on the bitcoin's subsequent sale or exchange. In contrast, if bitcoin transactions are subjected to barter treatment, taxpayers' federal income tax ramifications will be determined solely based upon the value of the bitcoin transferred on the date of the barter transaction without regard to the taxpayer's basis in that bitcoin. Given that bitcoin is not legal currency, this treatment seems incongruous and to not as accurately represent the substance of bitcoin transactions. As such, the better approach would be to tax bitcoin transfers and exchanges like the more traditional transactions they most closely mirror—disposition of property.[226]

IV. CONCLUSION

In closing, the virtual economy continues to grow at a rate that surpasses the law's ability to adapt. Bitcoin and other digital currencies will

---

[224] The exact income tax treatment will, of course, depend upon the purpose for which an asset is held by a given taxpayer. *See* I.R.C. § 1221(a)(1).

[225] *See supra* Part III.A.2 (discussing possibility of compensation for mining bitcoin).

[226] For those taxpayers who are classified as bitcoin brokers, the reporting rules for brokers of securities and similar assets would apply to determine the federal income taxation of their bitcoin transactions. *See* I.R.C. § 6045 (setting forth return requirements for brokers who, among other transactions, handle barter exchanges).

create a multitude of legal problems for regulators going forward. One small area of concern is the proper federal income tax treatment of transactions involving the creation or exchange of bitcoin, particularly transactions within hybrid or open systems that can result in the exchange of bitcoin for legal tender or goods and services possessing a monetary value. Existing tax laws provide a measure of guidance as to the proper reporting and tax treatment for bitcoin transactions. This article concludes that the creation and exchange of bitcoin in hybrid and open systems will and should have federal income tax consequences. Specifically, creating, or mining, bitcoin should be characterized as income for services and reported as such. At the same time, transactions involving the exchange of bitcoin for legal currency, goods, or services should be reported as a transaction involving the disposition of property. No formal congressional guidance or IRS guidance exists to address the matter with any precision, but the recent Notice issued by the IRS tends to show movement toward the approaches advocated by the authors. More importantly, these basic suppositions give rise to a host of procedural and reporting requirements that the IRS must expand on before the federal income taxation of bitcoin can become consistent. Given the explosive growth in bitcoin usage and the unique characteristics of bitcoin, regulators must act to ensure that the income tax laws, both existing and newly created, sufficiently address this modern economy.