

Blockchain and Cryptocurrency: Federal Income Tax Issues

by Mary F. Voce and Pallav Raghuvanshi

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Mary F. Voce is chair of the international tax practice and Pallav Raghuvanshi is an associate in the New York office of Greenberg Traurig LLP. The authors owe a debt of gratitude to John Kaufmann, who provided the description of blockchain technology.

In this report, Voce and Raghuvanshi offer a guide to understanding cryptocurrencies and blockchain technology, and they examine some circumstances in which transactions involving cryptocurrency may have tax consequences.

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I. Introduction

Levers, wheels, fire, stone tools, fur clothing, written language, the stirrup, the long bow, self-driving cars, and dating algorithms — the world has witnessed some truly astounding changes since the Neolithic Revolution. Newer technologies have made once-revolutionary technologies obsolete. Remember those rotary phones, typewriters, records, pagers and beepers, floppy disks, film cameras, and cassettes with sides A and B? Not long ago, we couldn't live without them, but they have since been relegated to the dustbin of emotionally significant but technologically obsolete artifacts.

Lately, there has been quite a bit of chatter about blockchain technology and cryptocurrencies. If the chatter is to be believed, blockchain technology is the 21st-century innovation most likely to transform the way businesses and governments function.¹ Despite the buzz, most tax professionals are unfamiliar with how the technology actually works. That is unfortunate because legal judgments are formed by applying the law to the facts. Without an understanding of the facts, practitioners, courts, and the IRS can't determine how transactions involving blockchain technology should be taxed.

Several useful articles that explore the proper tax treatment of blockchain technology and

¹ See, e.g., Samantha Radocchia, "How Blockchain Could Eventually Change the Way Governments Function," *Forbes*, Nov. 29, 2017; and Joichi Ito, Neha Narula, and Robleh Ali, "The Blockchain Will Do to the Financial System What the Internet Did to Media," *Harvard Bus. Rev.*, Mar. 9, 2017.

cryptocurrencies have appeared in *Tax Notes* and elsewhere in the last few years. However, there is still a need for a comprehensive “idiot’s guide” to blockchain technology for tax professionals. This report is an attempt to provide the beginning of such a guide. In writing this report, we are trying to do two things: first, to describe blockchain technology in sufficient detail to allow readers to make their own judgments when confronted with a new type of transaction;² and second, to examine a few contexts in which transactions involving cryptocurrency may have tax consequences. Unfortunately, given the state of the guidance (or lack thereof), we are not always able to answer the more vexing questions, but we at least try to identify the key issues and provide a roadmap for their analysis.

A. Blockchain Technology Generally

A blockchain token is information stored on a blockchain (discussed later) that grants a member of the blockchain network specific rights.³ Although there is no limit to what kind of rights can be granted, tokens generally fall into the following categories:

- *Equity tokens*: These tokens grant their holder ownership rights in an underlying entity, asset, or process. A holder of an equity token generally does not have access to the underlying services provided by the issuer. Typically, the holder instead has the right to dividends or to a share in the profits or assets of a specific business or legal entity.⁴ That type of equity token is similar to a share of stock or a partnership interest. However, an equity token may also grant its holder an ownership interest in a specific asset or grant a share in a pool of assets. Equity tokens like that are similar to warehouse receipts, forward contracts, or trust interests.
- *Utility tokens*: These are tokens that may be used to access specific services in a closed

ecosystem. For example, utility tokens may be used as a medium of exchange between users and service providers (for example, filecoin, storj, and basic attention token).

- *Intrinsic tokens*: These tokens are generally similar to utility tokens, except their use is not limited to closed ecosystems. An intrinsic token can be used as a medium of exchange between any two willing parties for the transfer of goods or services. Examples include bitcoin, ethereum, and litecoin. This is the oldest and best-known type of token.
- *Asset-backed tokens*: These tokens track the value of particular assets, such as gold or specified real estate.⁵

Some cryptocurrencies, such as ethereum, can be viewed as hybrid tokens that can be used as a medium of exchange for fiat currencies, other cryptocurrencies (in initial coin offerings (ICOs) or otherwise), or other property or services but also allow smart contracts or other blockchain projects to be built on their platforms.

Tokens are issued in ICOs. As in an initial public offering, tokens issued in an ICO are issued by an entity in exchange for value. Payment may be in an existing type of token or a fiat currency.

A blockchain is a series of entries in a ledger, copies of which are stored on each node of an applicable network. A node can be any electronic device that is connected to the internet and that has an internet protocol address, as long as it has sufficient storage capacity and computing power to run the applicable software and to hold a copy of the ledger. The use of that distributed ledger, plus the protocol for verification and uniformity (discussed next), allow parties who may not trust each other to transact with each other without the risk of theft and without the need for a third-party stakeholder.⁶ It’s believed that bitcoin, the first widely used blockchain token, was launched in 2009 as a response to the financial crisis of 2008. Traditionally, parties who don’t trust each other

²In describing blockchain technology, we have attempted to provide enough detail, but not too much. Any suggestions regarding factual details that we have omitted are welcome.

³For convenience, we often will refer to cryptocurrencies, coins, and tokens simply as “tokens” in this report, even though that might not always be an absolutely accurate description of the asset involved.

⁴Digix gold token is a good example of an equity token.

⁵Throughout Notice 2014-21, 2014-16 IRB 938, the IRS refers to all forms of digital tokens as “virtual currency”; we use the term “cryptocurrency” for purposes of this report, but the meaning is intended to be the same.

⁶See Satoshi Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System” (undated).

have been required to transact through a central stakeholder (a bank, a credit card company, a broker-dealer, a government, etc.). This creates the risk that the central party may not itself be trustworthy or may be vulnerable to attack by third parties. Further, the use of a stakeholder may reduce the risk of counterparty default, but the risk of stakeholder default remains. The stakeholder also generally receives a fee for its services, thus increasing the cost of the transaction.

The protocol for verification and uniformity of a distributed ledger is as follows. Each node is home to a ledger (a chain), which is a record of all transactions that have occurred on the network. Each transaction record is called a block. For example, for bitcoin, the ledger is a record of every transfer of bitcoin since day 1. Each entry, or block, in the ledger has three numbers: a hash, a nonce (“number used only once”), and the previous entry’s hash. The hash is a series of a fixed number of digits that’s generated by an algorithm when specified data are input into the algorithm. For example, using a particular hash algorithm, the hash for the string “Hi” would be:

3639EFCDD08ABB273B1619E82E78C29A7DF0
2C1051B1820E99FC395DCAA3326B8

And the hash of the string “Longtemps, je me suis couche de bonne heure” would be:

D8D219DEAE87C5E5FFFBC0A0A38986DE26
6427B2E08BE9F9D22A07B91099DBFE.⁷

There are three things to bear in mind regarding hashes:

1. The number of digits in a hash is the same, regardless of the length of the input. Therefore, the hash for the input “Hi” would be the same length as the hash for the input of the text of *War and Peace*.
2. Hashes aren’t random. If you input “Hi” into the applicable hash function, you will always get the same hash shown earlier.
3. Hashes are irreversible. This means that it’s impossible to reverse-engineer a hash’s input, even if you know the hash and the algorithm used to produce it. For example, even if you know all the digits of the first

hash printed earlier, and you know the algorithm used to produce it, the only way to produce “Hi” as an input is through guesswork.

As noted, each block in a chain includes the previous block’s hash. This marks the order of the blocks on the chain. Because each block includes its predecessor’s hash, we know that the proper order of blocks on a chain will be [AB]-[BC]-[CD], etc., rather than, say, [BC]-[CD]-[AB].

The nonce (“number only used once”) is an arbitrary number or string of numbers that, when combined with the data in a block and run through a hash function, produces a hash that may start in a single leading zero (“0”) or multiple zeros (for example, “0000”) based on the level of difficulty. In order for the nonce to be valid, the hash that is produced must be less than the target hash (that is, the hash that has the required leading zero or string of zeros). Once the nonce has been identified and used to produce the target hash value starting in leading zeros (for example, “0000”), it cannot be used again to produce the same target hash value. As such, the nonce makes the chain hack-resistant. If a block is hacked into or otherwise altered, the overwhelming probability is that the resulting data set will not produce a hash ending in “0000.” The presence of the nonce ensures this. Therefore, at any given time, a blockchain will consist of a series of blocks, each of which will consist of a nonce, a set of data, and two hashes (say, Hash #1 and Hash #2). For any given block, Hash #2 will be the same as the previous block’s Hash #1. All of the hashes will start with “0000,” as used in our example. Each node of the applicable blockchain network will have a copy of the same chain. The nonce provides security, because any change in the data in any given block will result in that block’s hash beginning with a set of digits other than the same number of leading zeros, that is, “0000.” Furthermore, since the data in each block includes the previous block’s hash, an “upstream” change in data will result in all “downstream” hashes ending in other than “0000.”

A hacker seeking to change data in a block might be able to produce a nonce that when combined with the new data would produce a hash starting in “0000.” This would be done through a process similar to mining, discussed

⁷These hashes are generated by the SHA-256 hash algorithm. Even a slight variation in hash algorithms will produce different hashes for the same input.

later. However, it would be a cumbersome and difficult process because mining itself is cumbersome and energy-intensive, and every nonce in every block downstream from the hacked block would also have to be rewritten. Moreover, even if a hacker could change a chain such that every hash in every block began with “0000,” the distributed nature of the blockchain network would prevent the chain from being accepted. This is because, as discussed earlier, an identical chain is on each node of a blockchain network. Therefore, even if a hacker altered a chain such that it had valid hash syntax, the network wouldn’t accept the chain if it differed from the version on the other nodes.⁸ For example, for bitcoin, the chain is a ledger of every transaction in bitcoin to date. The data in a given block are a record of a bitcoin transaction (for example, “A gives 100 BTC to B”). If a hacker were to try to change the information in that block (for example, to “A gives 100 BTC to C”), the hacker would run into the problems described earlier.

To include a new transaction in a blockchain, one of two protocols is used: “proof of work” or “proof of stake.” Bitcoin uses proof of work, through the process called mining, to include transactions in the bitcoin blockchain. (For the sake of clarity, the following discussion focuses on the bitcoin protocol.) If an owner of bitcoin decides to send bitcoin to another party, she will need several things: (1) the sender’s public key, (2) the recipient’s public key, (3) a digital signature to show that the transmission is really from the correct sender, and (4) the identity of the chunk of bitcoin out of which the current chunk is being sent.⁹

A participant’s public key is her bitcoin “address.” Like an email address, it’s a participant’s face to the network, and all of a participant’s transactions are associated with her

public key on the ledger. A digital signature is a sequence of digits that is produced using a participant’s private key or password. The digital signature demonstrates that the sender knows the private key associated with the sender’s public key, but it doesn’t provide enough information to reverse-engineer the sender’s private key. Therefore, it ensures that the transaction is valid, without disclosing the sender’s password. The sender includes all these items, plus information regarding the desired exchange (“Abl transfers 5 BTC to Bakr”), into a message and sends the message to another node. Each node that receives the packet forwards it to other nodes. Eventually, all nodes receive the message.

Once the message has been received by all the nodes, it must be included in the blockchain. For bitcoin, this is done through mining. As noted, to be included in a chain, a block must have a hash that starts with “0000.” This is done through the use of the nonce. Given how the hash function operates, the only way to generate a nonce for a given block is through “brute force” guesswork — that is, the mining process. Participants who solve nonce problems are called “miners.” Once a miner solves a nonce problem, she will forward the solution to the entire network for verification. Although finding an unknown nonce is difficult, computation-heavy work, it is easy to verify the validity of any specific nonce.¹⁰ Once a majority of nodes on the network verify the nonce, the block is added to the chain.

Mining is an intensive process in terms of energy and computing power. It can be performed only by powerful computers running continuously. Because the difficulty of mining problems has increased in recent years, mining is generally done by large actors, or by pools of actors, although smaller actors can invest in consortia that mine cryptocurrency. Mining rigs tend to be located where electricity is cheap and climate control is easy. For example, large mining rigs are located in eastern Washington state,

⁸This democratic method of verifying transactions leads to the “51 percent problem.” If a single actor (or a cabal of actors) were able to control 50.0000001 percent of a blockchain network, they could validate hacked transactions. To date, that has not been a practical problem.

⁹Although we’re used to thinking of money as fungible, bitcoin is not. For example, if Bob owns 10 bitcoins in the aggregate, the ledger will reflect each chunk that he has received: 2.3 bitcoins received January 2; 5.6 bitcoins received March 15; and 2.1 bitcoins received April 20. If Bob wanted to send 2 bitcoins to Charley on May 1, the transmission instructions would need to specify which of the three chunks they should be sent from. This reduces the risk that the same bitcoin could be sent twice.

¹⁰The solution of a nonce problem has been compared to picking a combination lock: If you don’t know the combination, it’s difficult to figure it out; however, it’s easy to verify a given combination — you just turn the dial on the lock to the applicable numbers. Similarly, it’s difficult for a miner to determine a nonce from scratch, but it’s easy for other nodes in the network to validate a nonce that has been found by another miner, because one need only plug the nonce into the block to see if it results in a hash that begins in “0000.”

Iceland, and Inner Mongolia. Miners who solve a nonce problem are rewarded with bitcoin (the block reward). As of this writing, the block reward is 12.5 BTC. However, that number is halved as the number of bitcoin in circulation increases. The block reward was 50 BTC on day 1 in 2009, and it is generally expected to be halved every four years. The process of diminishing returns is expected to ultimately result in a total of approximately 21 million BTC in circulation.

Another protocol to validate transactions in a blockchain is proof of stake.¹¹ Instead of requiring computing power that consumes high amounts of electricity, proof of stake is attributed to the proportion of coins held by an owner, who is generally known as a forger. A forger in proof of stake is typically required to own a stake in a particular blockchain network by depositing tokens into the blockchain network (staking). Forgers are then selected by the blockchain network typically based on either the randomized block selection method or the coinage selection method.¹² Under the randomized block selection method, forgers are selected by looking at the lowest hash value and highest size of the stake. In the coinage selection method, forgers are selected based on the duration for which the tokens have been staked in the network. Once forgers are selected, they validate blocks of transactions and receive transaction fees for the validation. In a proof of stake system, blocks are not mined; instead, they are said to be forged or minted. Also, forgers do not receive cryptocurrency as a reward; instead, they receive transaction fees.

A fork may occur in a blockchain if there's a change in the protocol for the blockchain. If this happens, some or all of the nodes in the network will adopt the change. If all the nodes adopt the change (a hard fork), the blockchain simply continues to operate, but all post-change blocks

adopt the new protocol. If some but not all of the nodes adopt the change (a soft fork), two new post-change blockchains evolve: one that continues to use the old protocol, and one that uses the new protocol.¹³ In the event of a soft fork, participants are credited with their full balance as of the fork date in both the new chain and the old chain.¹⁴

An air drop is a free distribution of tokens or cryptocurrency by a blockchain project. This may be done either as a “prime the pump” marketing strategy or in exchange for specific social media activity. Hard forks, soft forks, and air drops are discussed in more detail later.

B. Factual Twists

As every first-year law student knows, the law needs to be adapted when facts change. New technologies present new facts. Courts and legislatures adapt the law to the new facts by analogy.¹⁵ What is the policy behind the law? What are the facts? What would be an absurd result in light of the applicable policy goals? What would be a rational result? In the process of answering those questions, courts and lawmakers need to separate factual changes that are relevant to applicable policy goals from those that are incidental.

Blockchain technology poses several challenges for the application of existing law, including the following:

- How are sourcing or allocation rules applied? A token is information stored on a distributed ledger, which lives in the nodes of the applicable network — nodes that are located throughout the world.
- What is the character of mining income? Mining isn't really work, but it isn't passive investment, either. Is income from mining best treated as service income? Investment income? Royalty income?

¹³ For example, bitcoin cash was created in 2017 to make the process of adding blocks to the chain less cumbersome. This was done by increasing, in the new fork, the minimum amount of data to be included in a block from 1 MB to 8 MB.

¹⁴ For example, participants who had x BTC before the bitcoin cash fork had x BTC and x bitcoin cash after the fork.

¹⁵ See, e.g., *Olmstead v. United States*, 277 U.S. 438 (1928) (holding that there is no Fourth Amendment protection against electronic wiretapping because a wiretap doesn't constitute a physical search or seizure), overturned by *Katz v. United States*, 389 U.S. 347 (1967).

¹¹ The first cryptocurrency to adopt proof of stake was peercoin. Other examples of proof of stake cryptocurrencies are nxt, lisk, and blackcoin.

¹² Some blockchain networks use a combination of the two methods.

- What is the source of mining income? For example, if a U.S.-resident investor buys a fractional interest in a U.S. fund that mines bitcoin, and the fund buys time on a mining rig in Iceland, is the mining income U.S.-source or foreign-source?
- Given that tokens grant a variety of economic rights, as discussed earlier, how can the law promote fairness and minimize opportunities for abuse, taking into account the similarities and differences between tokens?¹⁶

Until new law or guidance is issued, the challenge for tax professionals is to map existing law onto the new facts.

II. Notice 2014-21

The only relevant formal guidance issued to date by the IRS is Notice 2014-21, 2014-16 IRB 938. Although Notice 2014-21 provides a useful baseline rule, it suffers from having been issued too early in the evolution of blockchain technology. The guidance is also somewhat vague.

The basic rule of Notice 2014-21 is that cryptocurrency is property for federal income tax purposes.¹⁷ That's important because if cryptocurrency were treated as a currency for federal tax purposes, taxpayers would be able to use bitcoin, for example, as a functional currency for purposes of section 985, and the acquisition or disposition of cryptocurrency by a taxpayer whose functional currency was *not* a cryptocurrency would be a section 988 transaction.¹⁸ If, on the other hand, cryptocurrency is property for federal tax purposes, the rules governing foreign currencies don't apply to transactions in cryptocurrencies.¹⁹

More troubling for taxpayers, however, is that if cryptocurrencies are property, every disposition of cryptocurrency is a disposition of property. That means that basis must be recorded and

tracked each time a cryptocurrency is purchased for fiat currency, and that gain or loss is recognized each time a chunk of cryptocurrency is disposed of.²⁰

One problem with Notice 2014-21 is that it appears to be limited by its terms to what we would call "cryptocurrency," rather than to utility tokens or equity tokens. Notice 2014-21 applies to any cryptocurrency that can be used to pay for goods or services or that is held for investment purposes. The notice focuses on cryptocurrency that has an equivalent value in fiat currency or that acts as a substitute for fiat currency (convertible cryptocurrency). Notice 2014-21 mentions that bitcoin is one example of a convertible cryptocurrency because it can be digitally traded between users and can be purchased for, or exchanged into, U.S. dollars, euros, and other fiat currencies, or cryptocurrencies. Some may argue that tokens issued in an ICO are generally not covered by Notice 2014-21 because their use is typically limited and not readily convertible into fiat currency. However, that is not clear; once a blockchain project that has issued tokens goes live, the tokens are property that may be used to pay for goods or services in the same way that any type of property may be bartered for goods or services. Tokens also can be held for investment purposes.

There are two possible reasons for the failure of Notice 2014-21 to clarify that point. One is that as of relatively prehistoric 2014, almost all tokens in circulation were intrinsic tokens such as bitcoin or ethereum. The number of utility tokens and equity tokens in circulation has increased significantly since then. Another possible reason is that the IRS perhaps didn't deem it necessary to clarify this point. The main conclusion of Notice 2014-21 is that virtual currencies (intrinsic tokens) are property, rather than currency, for purposes of sections 985 through 988. That clarification was needed because intrinsic tokens share some characteristics with fiat currencies. However, utility tokens and equity tokens — whose primary

¹⁶ Although uniformity of treatment of economically similar transactions is optimal, it isn't always the case under current law.

¹⁷ Q&A 2 of Notice 2014-21.

¹⁸ Section 988(c)(1).

¹⁹ The gain or loss will not be considered foreign currency gain or loss because Notice 2014-21, Q&A 2, specifies that cryptocurrency (and therefore tokens) are not foreign currency.

²⁰ This is further complicated by the fact that bitcoin generally isn't fungible. See *supra* note 8. Although Notice 2014-21 doesn't discuss the issue, it appears that this means basis must be tracked for each lot of cryptocurrency and that a simplified accounting method — such as first-in, first-out or last-in, first-out — cannot be used.

use is not as a medium of exchange — are not at first glance susceptible to that interpretation. Therefore, the IRS might have simply assumed that utility tokens and equity tokens are property, without further questioning.

Thus, the better view is that the rules of Notice 2014-21 ought to apply to equity tokens and utility tokens, as well as to cryptocurrencies proper.

The remainder of this report focuses on federal tax issues based on the assumption that tokens are property and not currency.

III. ICOs/First Token Sales

Many start-up companies are using ICOs as a way to raise funds.²¹ An ICO consists of the issuance of newly generated tokens for other cryptocurrencies like bitcoin or ethereum or — less commonly — for fiat currency (such as U.S. dollars). Many issuers offer nonfunctional tokens, and the proceeds from the ICO are then used by the company to develop its platform, product, or services.²² Once the platform or product is fully functional, token purchasers can use tokens to access the platform, product, or services developed by the issuer. Alternatively, unless token purchasers are subject to a lockup period, the tokens can be exchanged for other tokens or fiat currency.

If a token issued in an ICO is treated as equity in the issuer (for example, if purchasers have voting rights or the right to share in profits), the issuer may argue for no tax on the issuance.²³ However, unlike initial public offerings of stock, ICOs usually don't give token purchasers an ownership interest in the issuer, although those offerings do exist. Further, most issuers don't promise to repay the investment if the development fails; therefore, the tokens generally cannot be viewed as debt.

²¹ These are also sometimes referred to as first token sales or token-generating events.

²² According to a survey by Bitcoin.com, 47 percent of the ICOs in 2017 had failed by February 2018. See "ICOs Are Even Riskier Than You Think," Bitcoin.com, Oct. 15, 2018.

²³ See section 1032 (a corporation will not recognize gain or loss on the receipt of money or other property received in exchange for stock (including treasury stock) of that corporation); and section 721 (no gain or loss will be recognized by a partnership or any of its partners for a contribution of property to the partnership in exchange for an interest in the partnership).

For example, many ICOs use foreign foundations (for example, a Swiss *stiftung*) to issue tokens. Under Swiss law, contributions to those foundations are usually treated as donations, and because of the nonprofit nature of the entity, the contributions are nonrefundable.²⁴ Thus, if a project fails, the tokens issued in the ICO will be worthless, and investors will be unable to get their money back.

A. Domestic Issuers

1. In general.

A U.S. issuer's issuance of utility tokens for cash, tokens, or other property will usually be treated as a sale (or potentially as a license) of property. In other cases the issuance might be considered a promise to perform services in the future. As discussed in greater detail later, in any of these situations, a domestic issuer will typically recognize income upon the issuance of the tokens or potentially later, when the services are performed.

2. Character and source of income.

In evaluating an ICO's U.S. tax implications for the issuer, it's important to determine whether income from issuance of the tokens will be characterized as sales income, royalty income, or services income. One must also determine the source of that income (that is, the jurisdiction in which it arises for U.S. tax purposes).

Although a detailed discussion of the source and character rules is beyond the scope of this report,²⁵ a summary of some basic concepts is in order. In 1998 the IRS issued the so-called software regulations (reg. section 1.861-18), which provide a methodical framework for determining the character of income from the transfer of intangible property.²⁶ Although the regulations were issued long before blockchain technology was even contemplated and are woefully out of date considering the development of technology

²⁴ From a U.S. tax perspective, the contributions most likely will be treated not as donations but as contributions to a foreign corporation, which may have to be reported to the IRS.

²⁵ A helpful discussion of the issues can be found in David Hardesty, *Electronic Commerce: Taxation and Planning*, ch. 11B (1999, with updates through March 2018).

²⁶ The regulations are limited to transactions involving computer programs, as defined in reg. section 1.861-18(a)(3).

since 1998,²⁷ they logically can be used as a starting point for determining both the character and source of income from a cryptocurrency transaction.

Under the software regulations, income from the transfer of intangible property is classified as (1) the sale of copyright rights; (2) the license of copyright rights; (3) the sale of a copyrighted article; (4) the lease of a copyrighted article; (5) the provision of services related to a computer program; or (6) the provision of know-how related to a computer program.²⁸

A transfer involving a computer program will be treated as a transfer of copyright rights if a person acquires at least one of the following: (1) the right to make copies for purposes of distribution to the public; (2) the right to prepare derivative work; (3) the right to make a public performance of the computer program; or (4) the right to publicly display the computer program.²⁹ If all substantial rights in a copyright right are transferred, the transfer is classified as a sale, but if less than all substantial rights are transferred, it's classified as a license.³⁰

In the absence of the transfer of any of the rights in a computer program, the transaction may be classified as a transfer of a copyrighted article.³¹ For a copyrighted article, if all the benefits and burdens of ownership in the article have been transferred, the transfer will be classified as a sale, but if insufficient benefits and burdens of ownership have been transferred, the transfer will be classified as a lease that is generating rental income.³²

²⁷ The software regulations are limited to transfers of intangible property protected by copyright. Software code — the basis for blockchain and cryptocurrency — has generally been protected by copyright, although more recently, several patents have been issued for blockchain technology.

²⁸ Reg. section 1.861-18(c).

²⁹ Reg. section 1.861-18(c)(2).

³⁰ Reg. section 1.861-18(f)(1). The regulations do not define “all substantial rights.” However, they include examples illustrating transactions that constitute a sale or license. *See* reg. section 1.861-18(h), Example 5 (transfer of exclusive copyright rights in one country was a sale); and reg. section 1.861-18(h), Example 6 (transfer of nonexclusive copyright rights to reproduce and sell unlimited number of copies of program was a license).

³¹ Reg. section 1.1.861-18(c)(3).

³² Reg. section 1.861-18(f)(2).

a. Treatment of transfer of tokens as a sale.

Generally, the issuance of tokens should not result in the transfer of copyright rights because token purchasers typically don't acquire unfettered rights in the underlying blockchain technology (that is, token holders have no specific public or derivative rights regarding the blockchain technology).

Although tokens can provide the right and ability to build on a blockchain platform, that right appears to be more in the nature of a service or a license rather than a right to prepare a derivative work. For example, creating a private blockchain on an ethereum platform requires the installation of geth. Geth is a tool that allows the user to connect with the ethereum network by acting as a link between the user's computer and the rest of the ethereum nodes or network computers. Once geth is connected to the ethereum network, the user can create its own private blockchain (it can transfer funds between addresses, track transactions on a smart contract, issue tokens, etc.). What the user creates is a new asset facilitated by ethereum, but it's not a derivative of ethereum.³³

However, the issuance of tokens might be analogized to a sale of intangible property that has indicia of a copyrighted article, in that the purchaser acquires all the benefits and burdens of an asset that is separate from the underlying blockchain platform and that can be used in perpetuity.³⁴

In that case, the character of income from the sale of a token will depend on the character of the token in the hands of the transferor. It's unlikely that newly issued tokens would qualify as capital assets in the hands of the issuer. The code defines a capital asset as “property held by a taxpayer (whether or not connected with his trade or business),” with the exception of the following relevant categories:

³³ Perhaps the hard fork of ethereum classic from ethereum could be viewed as a derivative of ethereum, but creating a new blockchain based on the ethereum platform seems more like a license to use the ethereum platform or the provision of the platform as a service.

³⁴ Reg. section 1.861-18(c)(ii) (“If a person acquires a copy of a computer program but does not acquire any [copyright rights] (or only acquires a de minimis grant of such rights), and the transaction does not involve, or involves only a de minimis, provision of services . . . or of know-how . . . the transfer of the copy of the computer program is classified solely as a transfer of a copyrighted article.”).

1. stock in trade of the taxpayer or other property of a kind that would properly be included in the taxpayer's inventory if on hand at the close of the tax year, or property held by the taxpayer primarily for sale to customers in the ordinary course of the taxpayer's trade or business;
2. property, used in the taxpayer's trade or business, of a character that is subject to the allowance for depreciation provided in section 167, or real property used in the taxpayer's trade or business; or
3. a patent; an invention, model, or design (whether or not patented); a secret formula or process; a copyright; a literary, musical, or artistic composition; or similar property, held by a taxpayer whose personal efforts created that property, or acquired from such a taxpayer in a tax-free transaction.³⁵

Because newly issued tokens are created with the intention of selling them, they could be viewed as inventory. Although arguments could probably be made on both sides of whether the tokens are held for sale to customers, the better answer is probably that if the tokens are held for sale, the purchasers will most likely be considered customers.³⁶

The tokens probably would not be considered property used in a trade or business of a character that is subject to the depreciation allowance, because they would not be used in the issuer's trade or business, but rather would be sold to others.³⁷ For the same reason, the tokens would

not qualify as section 1231 property,³⁸ which can give rise to capital gain in some circumstances.

Even if the tokens are not considered inventory or held for sale to customers, in the right circumstances they could easily fall within the exclusions listed in category 3. A token is a digital representation of a cryptographic number based on software code (that is, clearly an intangible asset). Based on a token's potential use and the manner, if any, in which it's legally protected, a token could be considered a patent, an invention, a model, a design, a secret formula, a process, a copyright, or "similar property" under category 3. Even if tokens are not considered self-created by the issuer, often the issuer will have received them (or the intangible property behind the tokens) by contribution from the individual(s) who did create them.³⁹ Thus, gain or loss from the issuance of tokens that is treated as an outright sale of property most likely will not qualify as capital gain or loss and thus will generate ordinary income or ordinary loss.⁴⁰ Any such ordinary income could possibly be offset by start-up losses.

If the tokens are considered to have been produced by the issuer, the income would be sourced based on where that inventory was produced.⁴¹ However, the place of the tokens' production might not be clear. When the tokens are issued based on open-source technology, with all the actual development to come afterward, the jurisdiction of the issuer might be the place of production; however, the place where the concept was created or tested or where the programmers sit might be a more realistic alternative.

³⁵ Section 1221(a).

³⁶ Neither the code nor the regulations contain a definition of customer that's useful in this context. *Merriam-Webster Dictionary* defines a customer as "one that purchases a commodity or service." That definition, and those found in other dictionaries, appears to be broad enough to encompass the purchasers of tokens from an issuer of the tokens.

³⁷ Tokens might be considered property used in a trade or business of a character that's subject to the allowance for depreciation in the hands of a purchaser who uses the tokens to, for example, develop a program on the underlying blockchain platform. In appropriate cases, tokens might also be deductible as an ordinary and necessary business expense at the time of the acquisition or when they are used by the purchaser for its trade or business. However, those deductions would not be available for the ICO issuer.

³⁸ Section 1231 property is generally property that is used in a trade or business and held for more than one year and is depreciable under section 167, which includes an intangible amortizable under section 197. See section 197(f)(7).

³⁹ There is limited authority on self-created intangibles. The reference to "personal efforts" appears to focus the rules primarily on individuals who personally created an invention or other asset, although this is not at all clear.

⁴⁰ If the issuer is a corporation, the U.S. tax rate would be the same regardless of whether the income is capital gain or ordinary income. However, if the issuer is a partnership, the tax rate would be a maximum of 20 percent for capital gains and 37 percent for ordinary income to the extent allocable to individual investors. Section 1(h) and (j). Further, capital losses would generally be deductible by a corporate issuer only to the extent of capital gains, and by an individual only to the extent of capital gains plus \$3,000 per year. Section 1211.

⁴¹ Section 863(b).

b. Treatment as a license.

Under some circumstances, the issuance of a token could be viewed as including a license to use the issuer's blockchain platform (for example, to access content on the platform or to build a separate blockchain project keyed off the issuer's blockchain intellectual property, although this might also be viewed as a service, as discussed later).⁴² Whether the consideration paid for a token would be regarded as consideration for the token itself will depend on the specific terms and capabilities concerning the token. (Although this can most clearly be seen for an asset-backed token when the value will track some other asset, it would also be relevant when the token can be used to acquire property or services.⁴³) The same holds true regarding whether consideration paid for the token would be viewed as consideration for the right to use the issuer's platform. If the issuance is treated as a license, the amount received for the tokens would be considered a royalty, which would be ordinary income, and the source of the royalty would be determined based on where the IP is used.⁴⁴

As with sourcing the proceeds from a sale, it may not be self-evident where a token is "used" if, for example, the holder is in one jurisdiction, his wallet is in another, and the blockchain platform with which the token is affiliated is broadly dispersed throughout cyberspace. Neither the code nor the Treasury regulations specify how to determine the place of use for IP. However, revenue rulings and court decisions that have determined where IP was used based on particular facts may provide some guidance on where a token is considered to be used.⁴⁵

⁴² It's also possible that some states may take the position that if the issuance of a token is treated as a license to use "Software as a Service" or "Platform as a Service," it might be subject to sales and use tax under existing state sales tax rules (for states that tax those services).

⁴³ The issuer's obligations might also be characterized as services if, for example, its platform streams content or provides content that the issuer constantly updates. In most situations, however, it is not the issuer but rather the users of the platform (either token holders or content providers paid in tokens) who will provide those services.

⁴⁴ Section 861(a)(4).

⁴⁵ See, e.g., Rev. Rul. 68-443, 1968-2 C.B. 304 (royalties for foreign trademark); Rev. Rul. 72-232, 1972-1 C.B. 276 (royalties for books); Rev. Rul. 84-78, 1984-1 C.B. 173 (payment for the right to broadcast a live boxing match); *Sanchez v. Commissioner*, 6 T.C. 1141 (1946), *aff'd*, 162 F.2d 58 (2d Cir. 1947) (royalties for sugar refining process); and FSA 200222011 (royalty payments for software-related activities).

c. Treatment as a service.

Consideration received for the issuance of tokens might be treated as compensation for the provision of services by the issuer. That treatment could apply to pre-ICO tokens when the issuer accepts consideration from the investors subject to an obligation to use the consideration to develop the issuer's technology. In that context, the most important factor appears to be which party — the token holders or the issuer — will own the IP that's developed.⁴⁶

In most cases the issuer will own the IP, so in those situations the issuer probably couldn't be viewed as having been hired to develop the IP for the investors. On the other hand, one can imagine circumstances in which the pre-ICO investors will have an ownership interest in the IP sufficient to support treating the consideration as compensation for services. If the issuer of a token is treated as providing services, the income attributable to those services would be ordinary income and would typically be sourced to where the services are performed.⁴⁷ Services performed by individuals are usually sourced to where the individuals are when the services are performed.⁴⁸ If equipment is involved in the performance of services, the location of the equipment is also considered.⁴⁹

A blockchain platform may also provide automated services to token holders by acting as an online intermediary linking customers with providers (for example, putting service seekers in touch with service providers, or buyers with sellers), or by hosting or streaming information or content that can be accessed by token holders. Sourcing the revenue will be particularly challenging in those cases because of the decentralized nature of blockchain technology. For non-blockchain internet service providers and private blockchain networks, determining the location of equipment and personnel is usually feasible; however, for blockchain technology based on public networks (for example, bitcoin),

⁴⁶ Reg. section 1.861-18(d).

⁴⁷ Section 861(a)(3).

⁴⁸ Sections 861(a)(3) and 862(a)(3).

⁴⁹ See, e.g., *Commissioner v. Hawaiian Philippine Co.*, 100 F.2d 988 (9th Cir. 1939); and *Commissioner v. Piedras Negras Broadcasting Co.*, 43 B.T.A. 297 (1941).

the transactions center on verification by anonymous miners whose equipment could be anywhere, making traceability a serious issue.

3. Timing of the issuer's recognition of income.

Generally, income must be recognized immediately upon receipt of consideration for the transfer of property or the provision of services — that is, for an ICO, at the time of the issuance. However, in limited circumstances an accrual-basis issuer can defer taxation on at least a portion of the amount received to the next tax year if the receipt of the consideration for the tokens is treated as an advance payment for future goods or services (for example, for pre-functional tokens).

For federal income tax purposes, the inclusion in income of some advance payments (or portions thereof) may be deferred until the year after the year of receipt. Under section 451(c), added by the Tax Cuts and Jobs Act (P.L. 115-97), a payment is generally treated as an advance payment (with some exceptions) if:

- it is allowed to be included in gross income for the tax year of receipt as a permissible method of accounting for federal income tax purposes;
- it is recognized by the taxpayer (in whole or in part) in revenue in an “applicable financial statement” for a subsequent tax year;⁵⁰ and
- the payment is for (among other things) goods, services, or such other items as may be identified by the Treasury secretary.⁵¹

If a payment is treated as an advance payment for purposes of section 451, a taxpayer can elect to include the advance payment in income in the year of receipt to the extent the income is accrued for financial reporting purposes or earned in that year, and to include the remainder in the year after the year of receipt.⁵²

⁵⁰ See section 451(b)(3) (defining the term “applicable financial statement”).

⁵¹ Section 451(c). In Rev. Proc. 2004-34, 2004-1 C.B. 991 (which the TCJA essentially codified in section 451(c)), advance payments included payments for services; the sale of goods; the use of IP (including by license or lease); and the sale, lease, or license of computer software. Regulations under section 451(c) may follow that guidance.

⁵² Section 451(c).

The sale of pre-functional tokens or an agreement to sell future tokens (also known as a simple agreement for future tokens) could also be viewed as a forward contract to develop the technology and deliver the functional tokens in the future. Under the open transaction doctrine of common law, the execution of a forward contract generally will not be a taxable event until the transaction is closed. In this regard, the IRS concluded in Rev. Rul. 2003-7, 2003-1 C.B. 363, that the receipt of unrestricted consideration by a taxpayer for a promise to later deliver shares of corporate stock based on their fair market value at the time of delivery did not result in a current sale of the stock because, *inter alia*, the amount of stock to be delivered could not be determined as of the time the consideration was received and the taxpayer had the right to substitute cash of equal value instead of delivering the stock.⁵³

However, if the governing documents do not contain a refund provision triggered by the issuer's failure to deliver the tokens within a stipulated period, the amount received by the issuer would probably be considered income when received (unless it could qualify as an advance payment under section 451). Thus, if an offshore charitable foundation (for example, a Swiss *stiftung*) is used to issue tokens, contributions to that foundation might be treated as nonrefundable gifts for foreign law purposes, but they most likely would be considered income of the issuer in the year received for U.S. tax purposes. Whether that income would be taxable by the United States would depend on whether any of the U.S. anti-deferral rules, discussed later, apply.

Regardless of when the income is recognized, the issuer should be able to offset that income with operating losses (or depreciation of capitalized expenses) incurred in the year of issuance, or in prior years to the extent eligible to be carried forward. It's important to caution foreign issuers in particular that if the income that will be realized as a result of the ICO will be

⁵³ See also *Estate of McKelvey v. Commissioner*, 148 T.C. No. 13 (2017) (dicta) (variable prepaid forward contracts entered into in 2007 obligating decedent to deliver variable quantities of stock to the counterparties on specified future settlement dates in 2008 not a completed sale until closing); *rev'd on other grounds, Estate of McKelvey v. Commissioner*, 122 A.F.T.R. 2d 2018-6009 (8th Cir. 2018).

income that is effectively connected with a U.S. business, operating losses incurred in years before the year in which the income is earned may be carried forward and used to offset that income only if the issuer files timely and accurate U.S. income tax returns for the years in which the losses were incurred.⁵⁴

4. Tax consequences to issuer of use of tokens by purchasers.

Notice 2014-21 provides that a taxpayer who receives cryptocurrency (that is, tokens) as payment for goods or services must, in computing gross income, include the FMV of the tokens, measured in U.S. dollars as of the date the tokens are received. Thus, if the issuer provides a service that can be accessed by using the tokens that it had previously issued, the issuer would include in gross income or gross receipts the FMV of the tokens at the time of the use. As a result, if a token originally was issued for \$1 and at the time of its use the value has gone up to \$5, the issuer would be required to include a total of \$6, and any applicable business expenses or cost of goods sold could be claimed as a deduction or offset against that inclusion. The issuer's tax basis in the tokens received in exchange for the services would equal the FMV of the tokens at the time of their receipt — \$5 in the example. If the issuer reissues the tokens that it received, the tax implications on issuance would apply, and the gain or loss would be calculated based on the amount received for the reissuance of the tokens and their new \$5 tax basis.

B. Token Purchasers

1. Purchase of tokens.

As discussed earlier, parties typically purchase tokens in an ICO either to obtain access to software on the blockchain platform, or to hold the tokens as an investment asset (or for trading) in hopes that their value will increase based on the success of the project.

Regardless of the intended purpose, the purchase of tokens using fiat currency should not be a taxable event for the purchaser. However, if tokens are purchased using another

cryptocurrency (for example, bitcoin or ethereum), a U.S. taxpayer would recognize gain or loss for federal income tax purposes in an amount equal to the difference between the value of the tokens purchased and the tax basis in the cryptocurrency exchanged therefor as described in Section III.B.2.⁵⁵

A purchaser's basis in the tokens acquired will usually equal their purchase price in U.S. dollars (or translated into U.S. dollars at the time of purchase if purchased using another cryptocurrency).

2. Sale or use of tokens.⁵⁶

For an outright sale of the tokens or their transfer in exchange for goods or services,⁵⁷ the transaction usually will be considered a taxable exchange of the tokens for consideration and will give rise to capital gain or ordinary income, depending on the purpose for which they're held by the purchaser. The amount of the gain or loss will be the difference between the token holder's basis in the tokens and the amount of fiat currency or the FMV of property or services received for them.⁵⁸

If the tokens were held as an investment or for trading, the gain or loss typically should be capital gain or loss, and it would be short-term or long-term gain or loss depending on whether the tokens were held for more than one year.⁵⁹ If the

⁵⁵ Effective January 1, the TCJA limits the tax-free like-kind exchange treatment provided by section 1031 to exchanges of like-kind real estate. Thus, after that date, exchanges of one cryptocurrency for another are taxable. The status of pre-2018 exchanges is uncertain, although the IRS could maintain that those exchanges are ineligible for section 1031 exchange treatment on the theory that one cryptocurrency is not of "like kind" to another.

⁵⁶ For special rules for sales by foreign traders in cryptocurrency, see Section VI.

⁵⁷ Under Notice 2014-21, a taxpayer will have gain or loss on an exchange of tokens for other property. Although not explicitly stated in Notice 2014-21, this gain or loss recognition treatment should also apply to the exchange of tokens for services. Those services could include, for example, the use of utility tokens on blockchain platforms.

⁵⁸ Notice 2014-21, Q&A 5, provides that for U.S. tax purposes, transactions using virtual currency must be reported in U.S. dollars based on the FMV of the cryptocurrency as of the date of payment or receipt. However, the guidance is limited to virtual currency traded on an exchange.

⁵⁹ The excess of capital losses over capital gains may be offset against the ordinary income of an individual taxpayer, subject to an annual deduction limitation of \$3,000, and may generally be carried forward to succeeding tax years to offset capital gains and then ordinary income (subject to the U.S. \$3,000 annual limit). Capital losses of a corporate taxpayer may be offset only against capital gains, but unused capital losses may be carried back three years (subject to some limitations) and carried forward five years. Section 1211.

⁵⁴ See section 882(c); reg. section 1.882-4(a); and *Swallows Holding Ltd. v. Commissioner*, 515 F.3d 162 (3d Cir. 2008).

tokens were held by an individual as personal use property and not for investment (for example, to access media, to shop, or for comparable purposes), that property would be a capital asset, and any gain (but not loss⁶⁰) recognized on the disposition of the cryptocurrency would be treated similarly.

Theoretically, the tokens could also qualify as section 1231 property (which can also give rise to capital gain or ordinary loss), but this would likely be rare. Computer software (and by analogy, potentially the tokens) can qualify for section 1231 property treatment if it is property (other than inventory, property held for sale to customers, or a self-created intangible) that (1) is used in a trade or business, (2) is held for more than one year, and (3) meets the definition of an amortizable section 197 intangible.⁶¹ Most tokens would not satisfy these tests, although that would have to be determined on a case-by-case basis.

Further, although Notice 2014-21 is silent on the use of tokens in transactions that might otherwise result in nonrecognition, the language in Q&A 1 to the effect that “general tax principles applicable to property transactions apply to transactions using virtual currency” would presumably cover this situation. Accordingly, the contribution of tokens or cryptocurrency to a corporation in exchange for its stock or to a partnership in exchange for a partnership interest⁶² should not result in any gain or loss if a transfer of any other property would result in nonrecognition (for example, under section 351 or 721).

If the tokens are not held as capital assets or section 1231 assets (for example, if they constitute inventory) and do not qualify for tax-free treatment under a nonrecognition provision, the token purchaser would recognize ordinary gain or loss on their sale or exchange.

To date, there is no de minimis exception for small transactions, and a significant question for token holders is how to determine the basis of the particular tokens used and the value of the

property or services received in return.⁶³ If a token owner uses a token to watch a movie and the basis of the token can be determined only through complex tracing (or not at all if held on a cryptocurrency exchange) and the value of neither the movie nor the token is self-evident, how as a practical matter is the holder supposed to comply with his reporting obligations? For large transactions, it might be feasible, but your typical consumer isn’t going to have the inclination (or knowledge) to report day-to-day transactions.

IV. Hard Forks, Soft Forks, and Air Drops

As noted earlier, the term “air drop,” as used in evolving cryptocurrency jargon, means a project founder’s distribution of tokens, coins, or other digital assets to holders of existing cryptocurrency without any consideration from the token recipient. Air drops can be announced; however, most existing holders receive air-dropped tokens as a surprise. Air drops usually occur when a new blockchain project distributes free tokens to existing holders of a specific cryptocurrency, such as bitcoin or ethereum. Air drops are usually considered as a pre-ICO marketing strategy for an upcoming project. The issuer of tokens may take a snapshot of a block of a particular cryptocurrency (for example, ethereum), and anyone holding that cryptocurrency with the block on the snapshot date or earlier will receive a specified number of free tokens.

Tokens may also be distributed as the result of a hard fork. As noted earlier, a hard fork is a material change to a blockchain system protocol that creates a new version of the blockchain under which nodes running on the pre-split version are no longer accepted.⁶⁴ This results in two blockchains: the pre-split blockchain, which continues to follow the legacy rules; and the post-

⁶⁰ Individuals usually may not deduct losses concerning personal use property, except for casualty or theft. Section 165(c).

⁶¹ Section 197(f)(7).

⁶² Presumably, this could also apply if tokens are received that represent an equity interest in the corporation or partnership.

⁶³ Notice 2014-21, Q&A 13, specifies that a person who in the course of a trade or business makes a payment using virtual currency worth \$600 or more in a tax year to an independent contractor for the performance of services (based on the FMV of the virtual currency in U.S. dollars as of the date of payment) is required to report that payment to the IRS and to the payee on Form 1099-MISC.

⁶⁴ Although a hard fork usually results in a chain split, that is not always necessary. This report does not discuss the technicalities involved in different forks. Instead, it focuses on the tax implications resulting from additional cryptocurrencies received in hard forks.

split blockchain, which follows the updated rules. A holder of a pre-split cryptocurrency typically receives additional cryptocurrency that is generated by the newly created blockchain. For example, bitcoin hard forks that occurred in August and October of 2017 created a split in the existing bitcoin blockchain, and pre-split bitcoin holders received bitcoin cash and bitcoin gold, respectively.

A hard fork must be distinguished from a soft fork, and so too should the tax implications. A soft fork is a backward-compatible method of upgrading existing nodes. If a majority consensus is reached for the new rules, only the new chain is followed. Although the old chain still exists, its value becomes nearly worthless because the non-upgraded nodes can see the upgraded nodes as valid, but not vice versa.⁶⁵ The upgraded nodes, which are followed by a majority, cannot validate any transaction that's based on the non-upgraded nodes.⁶⁶ In soft forks, holders may also be required to take affirmative action to access their outdated tokens or to convert them to upgraded tokens, or else risk losing all the value in the existing tokens.

As discussed earlier, the only guidance on the U.S. tax implications of transactions involving cryptocurrency is Notice 2014-21, under which all cryptocurrencies are treated as property, not currency, for federal tax purposes. The general guidance provided by Notice 2014-21 sheds no light on the potential tax effect of developments in the blockchain world that took place after Notice 2014-21 was issued, such as receiving tokens in air drops and hard forks. Thus, many questions remain unanswered, including the amount that

must be recognized as income, the timing of that income recognition, the allocation of basis, the FMV of hard-forked or air-dropped tokens at the time of receipt, and the characterization of the income.

Generally, a U.S. taxpayer's gross income means all income from whatever source derived.⁶⁷ In *Glenshaw Glass*,⁶⁸ the Supreme Court defined gross income as an undeniable accession to wealth over which the taxpayer has complete dominion. Thus, the IRS would likely consider a taxpayer's receipt of tokens through hard forks and air drops as undeniable access to wealth and therefore taxable.⁶⁹ However, it's difficult to determine when (if ever) a taxpayer can be considered to have complete dominion over those tokens.

For example, most air drops target owners of ethereum. However, an ethereum owner will not have dominion and control over an air-dropped token unless her ethereum is kept on an ERC-20 compatible wallet that supports ethereum and provides private keys.⁷⁰ Thus, if an owner uses an exchange to hold ethereum, she will have no access to (and may even be unaware of) the air-dropped tokens, which she might otherwise be entitled to. Nonetheless, if an air drop is announced and the owner can gain unfettered access to the air-dropped tokens at any time by transferring her ethereum coins from one wallet to an ERC-20 compatible wallet, the IRS may be able to apply the constructive receipt doctrine to subject the owner to taxation.⁷¹ Similarly, at the time of the hard fork of bitcoin cash from bitcoin, each bitcoin holder was given an equal amount of bitcoin cash; however, most wallets on crypto

⁶⁷ Section 61.

⁶⁸ *Commissioner v. Glenshaw Glass*, 348 U.S. 426, 431 (1955).

⁶⁹ The IRS could also draw by analogy from other tax principles to reach this conclusion. *See, e.g.*, reg. section 1.61-14(a) and *Cesarini v. United States*, 296 F. Supp. 3d (N.D. Ohio 1969) (discovery of treasure trove constitutes income); *Hornung v. Commissioner*, 47 T.C. 428 (1967) (receipt of an award for performance in a game is income); and *Haverly v. United States*, 513 F.2d 224 (7th Cir. 1975) (receipt of unsolicited sample textbooks considered income). However, the determinative facts on which those principles are based may be distinguished from hard forks and air drops.

⁷⁰ ERC-20 (ethereum request for comment no. 20) is a technical standard for some smart contracts.

⁷¹ *See* reg. section 1.451-2(a). However, a requirement that a valuable right be surrendered or forfeited is enough of a restriction to make the constructive receipt doctrine inapplicable. Rev. Rul. 80-300, 1980-2 C.B. 165.

⁶⁵ If a token is held by a taxpayer as a security (as defined in section 165(g)(2)) and it becomes worthless during the tax year, can the taxpayer claim a deduction under section 165(g) for losses on worthless investment securities? The losses would be determined based on a hypothetical sale or exchange of the token on the last day of the tax year in which that token becomes worthless.

⁶⁶ Note that a soft fork is different from a software fork. In a software fork, the original project code is modified to create a new product code. For example, litecoin is a software fork of bitcoin. Generally, the tokens created because of a software fork are distributed without consideration. Thus, there should not be any income recognition at the time a person buys those tokens.

exchanges and many private wallets didn't support bitcoin cash immediately. Thus, a rightful owner might not be considered to have had dominion and control over the bitcoin cash until later, when their wallets were upgraded to support bitcoin cash.

Once a taxpayer is considered to have dominion and control over hard-forked or air-dropped tokens, it becomes important to determine the amount that must be recognized as income. Generally, the FMV of tokens received by a taxpayer in hard forks or air drops should be includable in her taxable income. Most air-dropped tokens will not result in any taxable income if their value at the time of the air drop is equal to zero (which is usually the case). However, tokens received in hard forks (for example, bitcoin cash) may have a significant value, which can be determined by looking at the price for which it is being traded on an exchange at the time the taxpayer acquires dominion over those tokens. Notice 2014-21 provides no guidance for determining the FMV of tokens that are not listed on an exchange. In those cases, the general rules of taxation apply, and the taxpayer must make a good-faith effort to determine the value of those tokens by considering all the relevant factors.⁷² The income, if any, of a holder on the receipt of tokens in a hard fork or an air drop should be treated as ordinary income because there is no sale or exchange of a capital asset that resulted in that accretion to wealth. The basis in the tokens received in a hard fork or an air drop should equal the FMV of the tokens at the time the taxpayer realizes gain on their receipt.

The treatment in an exchange involving a soft fork may be different because the holder of the original tokens typically must exchange those tokens for the new tokens to preserve any value. Absent guidance to the contrary, that exchange will likely be a taxable event (that is, an exchange of one property for another). Generally, gain on the exchange should qualify as capital gain if the exchanged tokens were held by the taxpayer as a personal or investment asset.

⁷² Those factors could include the utility of tokens, the value of the underlying assets (if any), the supply-demand analysis (*i.e.*, scarcity), the mining cost, transaction time, the underlying technology and the team working on it, the market cap and volume, and competition.

Would the involuntary conversion rules under section 1033 apply to that forced exchange? Under section 1033, a taxpayer doesn't recognize gain realized on an involuntary conversion — or in some circumstances, on the replacement of destroyed property with similar property or with property related in service or use. There is no authority applying these rules to soft forks of cryptocurrency, but perhaps an argument can be made that such a provision should apply. In any event, the involuntary conversion rules would not apply to hard forks because in a hard fork, a holder of a pre-split cryptocurrency automatically becomes entitled to additional cryptocurrency generated by the newly created blockchain, while the pre-split cryptocurrency does not lose its value substantially, if at all.

V. Use of a Foreign Jurisdiction for an ICO

A foreign issuer can usually escape U.S. taxation on an ICO if it avoids critical contact with the United States. However, some or all of the foreign issuer's income can be subject to U.S. tax to the extent that it's sourced to the United States or the issuer is considered to be carrying on a trade or business in the United States with which the sales proceeds are effectively connected. This will depend on the character of the income (sales, royalties, or services), where the management of the entity is located, where decisions are made, whether marketing activities or sales take place in the United States, and other factors.

As noted earlier, gain on a sale of personal property by a foreign person is usually sourced to the jurisdiction of the seller.⁷³ However, if the tokens constitute inventory in the hands of the issuer, special rules apply. If the inventory is considered to be "produced" by the issuer, the gains, profits, and income from the sale or exchange of the inventory property are allocated and apportioned between sources within and outside the United States based solely on the basis of the production activities for the property.⁷⁴ Needless to say, the location of the production activities for a token might not be readily apparent, although the location of the individuals

⁷³ Section 865(a).

⁷⁴ Section 863(b).

who conceived of the token (particularly in a situation involving pre-ICO tokens, when there has not yet been much “production”) or where the IP developers were located as they developed the token are logical places to start.

Even though a foreign issuer might avoid U.S. tax on an ICO, U.S. shareholders of the foreign issuer may not be as fortunate. First, if any of the owners of the foreign issuer are U.S. persons who were instrumental in developing the IP on which the blockchain project will be based (which appears to be a common situation), there are several code provisions that can apply to a transfer of that IP to a foreign corporation, none of which are particularly taxpayer-friendly.

Further, an ICO by a foreign issuer that’s a controlled foreign corporation could give rise to subpart F income or global intangible low-taxed income, which may be includable in the income of any direct or indirect U.S. shareholder of that CFC who directly or indirectly owns at least 10 percent of the CFC’s voting power or value (a U.S. 10 percent shareholder). Moreover, an ICO by a foreign corporation that qualifies as a passive foreign investment company could generate a roster of issues for some of its direct or indirect U.S. owners who aren’t caught by the CFC rules. Those issues are discussed in greater detail later.

A. Section 367(d) – Outbound Transfers of IP

When a U.S. person transfers IP to a foreign corporation⁷⁵ in exchange for its stock or as a capital contribution in what would otherwise be a tax-free transaction under section 351,⁷⁶ the U.S. transferor is treated as having transferred the IP in exchange for payments that are contingent on the productivity, use, or disposition of that property. Thus, the transferor must include in income for each year during the IP’s useful life a deemed royalty that represents an arm’s-length charge for the use of the IP during that tax year.⁷⁷ (These rules

are commonly referred to as the “superroyalty provisions.”) The deemed receipt of the contingent payments is treated as ordinary income to the transferor.⁷⁸

Thus, if a U.S. developer of blockchain technology contributes the technology to an offshore issuer of tokens under a section 351 transaction, the U.S. entity will be deemed to receive royalty payments over the useful life of the technology. The IRS (but not the taxpayer) can adjust the deemed royalty amount each year so that the deemed royalty is commensurate with the income earned by the IP during that year.⁷⁹ The commensurate with income standard is described in the section 482 transfer pricing regulations (discussed next), under which taxpayers are required to consider actual profits or royalties that would be earned from the exploitation of the transferred intangible in determining its value.⁸⁰

For purposes of this provision, IP is broadly defined. It includes any of the following that have substantial value independent of the services of any individual:

- patents, inventions, formulae, processes, designs, patterns, or know-how;
- copyrights and literary, musical, or artistic compositions;
- trademarks, trade names, or brand names;
- franchises, licenses, or contracts;
- methods, programs, systems, procedures, campaigns, surveys, studies, forecasts, estimates, customer lists, or technical data; and
- other similar items if the item derives its value not from its physical attributes but from its intellectual content or other intangible properties.

There is little question that if blockchain technology or other IP concerning

⁷⁵For this purpose, a foreign foundation is likely to be treated as a corporation for U.S. tax purposes.

⁷⁶Under section 351, a transfer of property to a corporation in exchange for its stock is not taxable to the transferors if they, in the aggregate, own at least 80 percent of the voting power and at least 80 percent of the nonvoting stock of the corporation immediately after the transfer. If the 80 percent ownership test is not met, the transfer usually will be a taxable transaction under general tax principles.

⁷⁷Reg. section 1.367(d)-1T(b) and (c)(3).

⁷⁸Section 367(d)(2)(C).

⁷⁹Section 367(d)(2).

⁸⁰Note that if the transfer of the IP doesn’t fall within the scope of section 351, the transfer would be a taxable transaction and the transferor would be required to include in income the difference between its basis in the IP transferred and its FMV. Also, as discussed in Section V.B, if the transferor(s) is considered to be in control of the transferee foreign corporation, the rules of section 482 would apply.

cryptocurrencies, coins, tokens, platforms, or crypto exchanges has been developed by U.S. individuals (or is owned by U.S. individuals as a result of having hired others to carry on the development activities), a transfer of that IP to a foreign corporation in a section 351 transaction would run afoul of section 367(d).

B. Section 482 – Transfer Pricing Rules

The super-royalty treatment described earlier can be avoided by having the foreign corporation purchase or license the IP from the U.S. owners for cash or other consideration; however, this still results in the transfer being a taxable transaction.⁸¹ Further, if the U.S. transferors are in control of the foreign corporation within the meaning of section 482, the sales and licenses will be subject to the U.S. transfer pricing rules.⁸² Under those rules, payments between related parties for the purchase, license, lease, or use of property must be set at arm's-length rates, which requires that the consideration received (whether as a lump sum or over time) be commensurate with the income attributable to the intangible.⁸³

The purchase price or any actual or deemed royalty paid for the IP (in either case, whether in one lump sum or over time) is subject to adjustment by the IRS (but not the taxpayer) each year so that the consideration is commensurate with the income earned by the IP (based on hindsight). Thus, the IRS has broad authority to challenge the valuation of IP transferred by sale or license if the income from the IP is disproportionate to the initial price paid or the initial royalty negotiated. If the IRS successfully challenges the purchase price or royalty paid for IP, a penalty of 20 percent or 40 percent of the

amount of tax avoided because of mispricing the IP can be imposed.⁸⁴

To mitigate the risk of penalties in the event the IRS challenges a reported value, the parties should obtain a professional transfer pricing study to determine an appropriate arm's-length price for the IP and have formal documentation prepared setting forth the factors considered and the method used in arriving at the value. Such documentation supporting a taxpayer's pricing for a tax year must be obtained before the taxpayer files its tax return for that year, and it must be provided to the IRS within 30 days of the agency's request therefor.

C. Section 7874 – The Anti-Inversion Rules

A contribution (but not a sale) of IP to a foreign corporation will constitute an inversion if:

- the foreign corporation acquires substantially all of the properties held directly or indirectly by a domestic corporation or substantially all the properties constituting a trade or business of a domestic partnership (the term "substantially all" has not been defined);⁸⁵
- the U.S. entity or its owners acquire at least 60 percent or 80 percent of the stock of the foreign corporation as a result of having owned the U.S. corporation or partnership (a 60 percent or 80 percent inversion);⁸⁶ and
- the affiliated group that includes the foreign entity does not have at least 25 percent of its assets (excluding IP), income, and personnel in the foreign country for a full year before the transfer.⁸⁷

⁸¹ Whether gain on a sale of the IP is taxable as capital gain or ordinary income will depend on the facts. As discussed earlier, IP held by an individual taxpayer whose personal efforts created the IP is excluded from the definition of a capital asset and thus will result in ordinary income, although it is unclear to what extent this rule applies to entities. Section 1221(a)(3). If the IP was purchased by the U.S. transferor(s), it might qualify as a capital asset or section 1231 asset depending on the holding period and the use to which it had been put before the transfer.

⁸² Although control is typically viewed as requiring more than 50 percent of the voting power of a corporation, reg. section 1.482-1(i)(4) defines control broadly. It provides that "any kind of control, direct or indirect, whether legally enforceable or not, and however exercisable or exercised . . . it is the reality of the control that is decisive, not its form or the mode of its exercise."

⁸³ Reg. section 1.482-4(f)(6).

⁸⁴ Section 6662.

⁸⁵ Transfers directly by an individual would not be affected by the inversion rules; however, in the case of a collaboration between at least two individuals, a partnership could be found to exist regardless of whether a partnership agreement had been entered into. But if a partnership (or deemed partnership) had not yet entered into a trade or business, the inversion rules arguably would not apply.

⁸⁶ This percentage is determined without regard to any interest in the foreign corporation owned by other persons if those persons acquired their interests as a result of a public offering or private placement of equity interests in the foreign corporation that occurred as part of a plan that included the acquisition of the U.S. property by the foreign corporation. A public offering or private placement that occurs within two years before or after that acquisition is treated as being under a plan. Section 7874(c)(3).

⁸⁷ Section 7874(a)(2)(B).

For a 60 percent inversion, (1) the transfer of assets to the foreign corporation is subject to current U.S. taxation as ordinary income; (2) some transfers or licenses of property by the transferee foreign corporation within 10 years after the inversion will be taxable by the United States; and (3) specific excise taxes will be imposed on stock-based compensation paid to insiders.

For an 80 percent inversion, the transferee foreign corporation is treated as a U.S. corporation for all U.S. tax purposes. This not only eliminates any benefits of being offshore but also creates myriad tax issues because the foreign jurisdiction in which the foreign corporation is organized will view the corporation as a local entity. If the entity is organized or managed and controlled in a jurisdiction that imposes income tax, this could easily result in double taxation with no foreign tax credit or treaty relief. Alternatively, if the transferee foreign corporation experiences losses, those losses could be deemed nondeductible by the dual consolidated loss rules.⁸⁸

D. The Anti-Deferral Rules

1. CFC rules.

a. Subpart F income.

An offshore corporate issuer will be a CFC if it is owned more than 50 percent (by vote or value) by U.S. persons each of which is a U.S. 10 percent shareholder.⁸⁹ If an offshore issuer is a CFC, any of its earnings that are classified as subpart F income or are invested by the offshore issuer in U.S. property (together, CFC inclusions) will be includable in the income of all its direct and indirect U.S. 10 percent shareholders on a current basis (even if the income isn't distributed to them). That income would be classified as ordinary income and would be subject to the highest income tax rates applicable to corporations or individuals, as the case may be.

⁸⁸ Reg. section 1.1503-0 through -8.

⁸⁹ Sections 957(a) and 951(b). The determination whether an offshore issuer is a corporate entity or a flow-through entity will be based on the organizational documents of the offshore entity and the U.S. entity classification rules. For example, some offshore foundations used for ICOs could be treated as either corporations or flow-through entities based on the activities and organizational documents of the foundation and the liability (limited versus unlimited) of its members.

Subpart F income includes (1) investment income such as dividends, interest, passive rents, passive royalties, and annuities; (2) the excess of gains over losses from the sale or exchange of property that gives rise to income described in (1) that is an interest in a trust or partnership or that does not give rise to any income; (3) the excess of gains over losses from specified transactions in commodities or foreign currency; (4) income equivalent to interest; (5) some payments in lieu of dividends and some other income from derivatives;⁹⁰ provided that the income is not effectively connected with a U.S. trade or business, as discussed later.

As noted, cryptocurrencies may be considered commodities if they're traded on a regulated exchange. Further, cryptocurrencies that do not represent debt or an equity interest in an entity or that are utility tokens could be considered property that does not give rise to any income. Thus, the excess of gains over losses from their disposition, including their issuance, could be treated as subpart F income.

Income of a CFC will be considered to be invested in U.S. property if the CFC invests in specified categories of U.S. assets, including⁹¹:

- (A) tangible property located in the United States;
- (B) stock of a related domestic corporation;
- (C) an obligation of a related U.S. person; or
- (D) any right to the use in the United States of —
 - (i) a patent or copyright;
 - (ii) an invention, model, or design — whether or not patented;
 - (iii) a secret formula or process; or
 - (iv) any other similar right, which is acquired or developed by the CFC for use in the United States.

Any of those investments would be considered distributions by the offshore issuer rather than acquisitions of property. Obviously, an offshore issuer could develop or acquire IP that will be used in the United States. Also note that a loan from the offshore issuer to its U.S. 10 percent shareholders (and some other related U.S.

⁹⁰ Section 954(c)(1).

⁹¹ Section 956.

persons) would be considered an investment in U.S. property and thus would be considered a distribution rather than a loan.

b. GILTI.

Further, a U.S. 10 percent shareholder of an offshore issuer may be required to include in income on a current basis its share of any GILTI earned by the issuer in any tax year, regardless of whether that income is actually distributed to the shareholder.

In general, GILTI consists of the net operating income of a foreign corporation that is subject to a relatively low rate of foreign tax and is not otherwise taxed to U.S. 10 percent shareholders on a current basis (for example, under the subpart F rules) to the extent that the net operating income exceeds 10 percent of the adjusted cost basis of the tangible assets of the company used in the production of that operating income. Because the offshore issuer may not have significant tangible assets, most of its income (other than subpart F income, which would be taxed to the U.S. 10 percent shareholders on a current basis, and income that is subject to a rate of foreign tax exceeding approximately 13 percent) would be taxed to the U.S. 10 percent shareholders as GILTI.

For a corporate U.S. 10 percent shareholder, that GILTI would be taxed at a rate of approximately 10.5 percent through 2025 and 13.125 percent thereafter. For an individual U.S. 10 percent shareholder, that GILTI would be taxed as ordinary income at rates graduating to a maximum of 37 percent.

2. PFIC rules.

The offshore corporate issuer would be a PFIC if at least 75 percent of its gross income is passive income or at least 50 percent of its assets are held to produce passive income.⁹² The rules for determining passive income are the same as those discussed above for determining subpart F income.⁹³ If cryptocurrencies could be considered either commodities or non-inventory property that doesn't give rise to any income, the excess of gains over losses from their disposition — including their initial issuance — could be treated

as passive income, and the cryptocurrencies themselves could be treated as passive assets.

If the offshore issuer meets the definition of a CFC as well as a PFIC, the PFIC rules would not apply to any of its direct or indirect U.S. 10 percent shareholders.⁹⁴ Those shareholders would be subject only to the CFC rules and not the PFIC rules. On the other hand, U.S. shareholders that don't qualify as U.S. 10 percent shareholders would be subject only to the PFIC rules. Further, if the offshore issuer is not a CFC but qualifies as a PFIC, all its direct and indirect U.S. shareholders would be subject to the PFIC rules, and unless they make a qualified electing fund (QEF) election⁹⁵ to report their share of income of the offshore issuer on a current basis, the following rules would apply:

- Any gain recognized on the direct or indirect disposition of shares of the offshore issuer will be ordinary income and allocated ratably over the U.S. shareholder's holding period for its interest in the offshore issuer. Tax will be calculated as if the income was received over that holding period, and an interest charge will be imposed on the tax attributable to those allocated amounts.
- Any loss recognized will be capital loss.
- If any distribution from the offshore issuer exceeds 125 percent of the average of the annual distributions during the preceding three years (or the period of the offshore issuer's existence, if shorter), that excess distribution will be subject to taxation in the same manner as gain on a sale as described above.⁹⁶

Thus, offshore ICO structures may not be advantageous for U.S. owners, particularly if the blockchain technology is developed in the United States. However, even if concerns about the anti-deferral rules are lacking (or are manageable) and an offshore structure is preferred based on a

⁹⁴ Section 1297(d).

⁹⁵ A U.S. shareholder of a PFIC may make a QEF election only if the PFIC agrees to supply that shareholder with the information it needs to make the election and to annually report its share of the PFIC's income and capital gains (determined under U.S. tax accounting principles). A U.S. holder that makes a QEF election will be subject to federal income tax on those amounts for each tax year regardless of whether those amounts are actually distributed.

⁹⁶ Section 1291(a) and (b).

⁹² Section 1297(a).

⁹³ Section 1297(b)(1).

particular set of facts, other issues must be considered to determine the U.S. tax implications attributable to activities performed in the United States, such as trading, marketing, and management activities.

VI. Trading in Cryptocurrencies

A. Investor Versus Trader

For U.S. tax purposes, a person generally will be deemed to be engaged in an active trade or business if he qualifies as a trader in cryptocurrencies. Although the dividing line is blurry, a person typically will be a trader rather than merely an investor if his trading is frequent and substantial.⁹⁷ Even if a person qualifies as a trader, he can still hold assets as an investor if those assets are adequately identified as such and held for long-term investment rather than frequent turnover.⁹⁸

A person could also hold cryptocurrency as a dealer. The standard distinction between a dealer and a trader is that the dealer's income is based on the purchase and sale of cryptocurrencies as inventory or on the services the dealer provides to customers as a merchant in buying and selling assets, while a trader's income is based on fluctuations in the market value of the assets that are bought and sold. Thus, a dealer will purchase assets as stock in trade with the expectation of reselling at a profit, not because of a rise in value during the interval between purchase and resale, but because the dealer hopes to find buyers (customers) who will purchase the assets at a price exceeding their cost. A trader, on the other hand, can be viewed as a speculator trading for his own account, gaining or losing through changes in the market value of the assets in which he trades between the time he acquires them and the time he sells them. The major distinction

between dealers and traders is that dealers provide services and have customers.⁹⁹

Nevertheless, because the cryptocurrency market is highly volatile and the price varies from one jurisdiction to another, both traders and dealers in cryptocurrency may buy and sell within a short period (usually less than 24 hours) and take advantage of cross-border price differential arbitrage. Here the distinction between traders and dealers will be whether they have customers to whom they are selling rather than simply non-customer counterparties. In any event, the line between traders and dealers may be as blurry as the line between investors and traders.

Assets held as a trader (or as an investor) will typically qualify as capital assets. Accordingly, the gain or loss generated from the sale or other disposition of cryptocurrencies by an investor or trader generally will constitute capital gain or loss, which will be short term or long term depending on whether the cryptocurrency sold or otherwise disposed of was held for more than one year. A major exception applies for a trader in securities or commodities who makes a mark-to-market election under section 475(f). If that election is made, any securities or commodities held in connection with the trade or business of being a trader are marked to market at the end of each year, and any gain or loss recognized is taxed as ordinary income or loss.¹⁰⁰ Even if a person qualifies as a trader and makes the election for his trading income, gains and losses from securities or commodities identified as held for investment will fall outside the mark-to-market rules and be treated as capital gain or loss.¹⁰¹ A dealer in cryptocurrencies will usually recognize ordinary income on his trades.

B. Source of Income

As a general rule, income from the sale of personal property (other than inventory) by a U.S. resident is sourced to the United States, and by a

⁹⁷ See, e.g., *Ball v. Commissioner*, T.C. Memo. 2000-245; *Mayer v. Commissioner*, T.C. Memo. 1994-209; *Kemon v. Commissioner*, 16 T.C. 1026 (1951); and *Holsinger v. Commissioner*, T.C. Memo. 2008-191.

⁹⁸ Section 475(f)(1)(b).

⁹⁹ See, e.g., *Bielfeldt v. Commissioner*, 231 F.3d 1035 (7th Cir. 2000); *Marrin v. IRS*, 147 F.3d 147, 151 (2d Cir. 1998); *United States v. Wood*, 943 F.2d 1048 (9th Cir. 1991); *United States v. Diamond*, 788 F.2d 1025, 1029 (4th Cir. 1986); and *Kemon*, 16 T.C. 1026.

¹⁰⁰ Section 475(d)(3).

¹⁰¹ Section 475(f)(1)(b).

nonresident is sourced outside the United States.¹⁰² Although there's a special rule for the sale of intangibles, that rule is relevant only in situations in which the consideration for the sale is contingent on the productivity, use, or disposition of the intangible (for example, when the payments depend on the future earnings or value on disposition of the intangible).¹⁰³ Although it's theoretically possible for a sale of cryptocurrency to be structured in a manner that reflects future appreciation in value, in most cases the sale will be at the market price or at an agreed price. Therefore, we assume for purposes of this report that the source of income from the sale or other disposition of non-inventory cryptocurrencies (other than by the issuer) will be determined by the residence of the seller and not by some event(s) occurring after the sale.

C. Taxation of U.S. Traders in Cryptocurrencies

U.S. taxpayers that trade in cryptocurrencies may be taxable or tax exempt (for example, IRAs or other retirement funds, and charitable organizations).¹⁰⁴

Individual U.S. taxpayers would be required to report their gains and losses from cryptocurrency trading on their federal income tax returns and would be subject to the federal income tax at rates graduating to a maximum of 37 percent for short-term capital gains and ordinary income, and 20 percent for long-term capital gains. Those individual investors may also be subject to the 3.8 percent net investment income tax on their net investment income, which is likely to include income from cryptocurrencies or a crypto fund.

U.S. taxable investors that are corporations will generally be subject to federal income tax at a flat 21 percent rate regardless of whether the

income allocated to them is capital gain or ordinary income and regardless of its source.¹⁰⁵

U.S. tax-exempt entities generally would be subject to tax on any gains from trading in cryptocurrencies only if that income is characterized as unrelated business taxable income. Although the law is not entirely clear, and even though trading in commodities and securities is usually an active trade or business for U.S. income tax purposes, gains and losses from dispositions of property are specifically excluded from UBTI unless the property is inventory held primarily for sale to customers in the ordinary course of an unrelated trade or business.¹⁰⁶ Cryptocurrency is classified as property for tax purposes. Therefore, assuming an exempt entity is a trader or invests in a fund that is a trader in cryptocurrencies and doesn't otherwise hold cryptocurrency for sale to customers, the gain on a disposition of cryptocurrency might not be treated as UBTI.¹⁰⁷ However, there would obviously be concern that the activities of the exempt entity or the fund in which it invests could slip into dealer mode if there are significant purchases and sales.

Further, any potential exclusion from UBTI would not apply to the extent that a U.S. tax-exempt entity incurs acquisition indebtedness for its investment in cryptocurrencies or a crypto fund, or the fund incurs acquisition indebtedness for its holdings.¹⁰⁸ Although the U.S. tax-exempt entities can control whether they borrow to purchase cryptocurrency or interests in a crypto fund, they may not have control over the fund's leveraging of its positions in cryptocurrencies.

D. Taxation of Foreign Traders in Cryptocurrencies

The U.S. taxation of non-U.S. traders in cryptocurrencies would depend on whether the

¹⁰² Section 865(a).

¹⁰³ Section 865(d).

¹⁰⁴ Although it's unlikely that taxpayers would actively trade in cryptocurrency through their IRAs, etc., we are aware of such entities making investments in cryptocurrencies or in funds that trade in cryptocurrency. If the fund is a partnership or other form of passthrough entity, the U.S. tax consequences will be basically the same as if they traded directly, so we have included some limited discussion regarding tax-exempt entities. However, we express no views on the appropriateness of an investment in cryptocurrency or crypto funds for tax-exempt entities.

¹⁰⁵ Generally, the U.S. investors and traders must self-report the income using a reasonable method because cryptocurrency exchanges or other intermediaries typically don't provide information forms such as Form 1099-B, although that reporting may be required in the future. Failure to report the income could result in severe tax penalties and a prison term of up to five years. Section 7201 et seq.

¹⁰⁶ Section 512(b)(5).

¹⁰⁷ Further, if an exempt organization invests in a fund that trades in cryptocurrency and is organized as a corporation, dividends received from the fund should not constitute UBTI. Section 512(b)(1).

¹⁰⁸ Section 514.

income earned from the trading activities is characterized as income that is effectively connected with a U.S. trade or business (effectively connected income), or investment income (fixed or determinable annual or periodic income).

1. ECI.

As noted above, trading in stock, securities, or commodities constitutes a trade or business for U.S. income tax purposes, and if those activities are carried on in the United States, they typically will generate ECI.

However, there is a limited exception to ECI treatment for gains and losses that qualify for the trading safe harbor under section 864(b)(2). Under that provision, foreign persons (including foreign entities) that trade in stock, securities, or commodities (and derivatives based on stock, securities, or commodities) in the United States *for their own account* will not be considered to be engaged in a U.S. trade or business. That trading can be done in the United States by the taxpayer through its own officers, managers, or employees, or through a resident broker, commission agent, custodian, or other agent, regardless of whether the employee or agent has discretionary authority to make decisions in carrying out the transactions. It's also irrelevant whether the foreign taxpayer has an office or other fixed place of business in the United States.¹⁰⁹

The principal problem for foreign traders in cryptocurrencies is that cryptocurrencies, with limited exceptions, will not qualify as stock, securities, or commodities for U.S. income tax purposes. The definition of a security for securities law purposes is very different from the definition for U.S. tax purposes, so the fact that the SEC has claimed that some ICOs of coins or tokens have violated the securities laws is not determinative of whether those coins or tokens constitute securities for U.S. tax purposes.¹¹⁰ The

¹⁰⁹ Reg. section 1.864-2(c).

¹¹⁰ The SEC and courts interpreting securities laws generally use a four-prong test based on *Securities and Exchange Commission v. W.J. Howey Co.*, 328 U.S. 293 (1946), to determine whether an instrument could be treated as a security for SEC purposes. Under the *Howey* test, an instrument will be classified as a security if (1) there is an investment of money; (2) the investment is in a common enterprise; (3) the investment is done with an expectation of profits; and (4) those profits will be derived solely from the efforts of others.

most comprehensive definition of a security for tax purposes is found in section 475(c)(2), which provides that securities include stock in a corporation; interests in widely held or publicly traded partnerships or trusts; notes, bonds, debentures, or other evidences of indebtedness; interest rate, currency, or equity notional principal contracts; evidence of an interest in, or a derivative financial instrument in any of the above or in any currency, including options, forward contracts, short positions, and any similar financial instrument in that security or currency; and hedges on such a security.

As noted, the IRS in Notice 2014-21 took the position that cryptocurrencies are property and not currency, and it appears unlikely that most types of cryptocurrency could qualify as securities under any of the other categories in the section 475(c)(2) definition. Tokens that represent an equity interest in an entity or that are the equivalent of a debt instrument logically should be able to qualify as stock or securities in the right situation. However, tokens typically do not carry indicia of equity in a corporation or partnership, and with the exception of some pre-functional tokens that are issued in a pre-ICO (or private sale) with the promise of functional tokens in a later ICO (that is, possibly a payment in kind of the original advance), tokens do not ordinarily resemble debt. Even with pre-functional tokens, it's extraordinarily rare for a sponsor to agree to repay a sum certain with an interest component that would meet the definition of debt. Unfortunately, there is not yet any meaningful guidance from the IRS on whether or in what circumstances cryptocurrency can qualify as a security for tax purposes.

Regarding whether cryptocurrencies can qualify as commodities, the regulations provide that a transaction is a "commodities transaction" if it relates to "a commodity that is customarily dealt in on an organized commodity exchange and is of a kind that is customarily consummated in such place,"¹¹¹ but the definition excludes transactions in goods or merchandise that are traded in ordinary commercial channels.¹¹²

¹¹¹ Reg. section 1.864-2(d)(2)(i).

¹¹² Reg. section 1.864-2(d)(3).

The IRS has ruled that assets traded on an exchange regulated by the Commodity Futures Trading Commission, and futures contracts and forward contracts for those assets, constitute commodities for U.S. tax purposes.¹¹³ The IRS has also issued a private letter ruling involving foreign currencies, which are also treated as property for U.S. tax purposes, in which the agency took the position that for trading in foreign currencies to qualify for the trading safe harbor, the *specific* foreign currency in which the trading occurred had to be traded on a commodities exchange.¹¹⁴ In other words, to be treated as a commodity, it was not sufficient to be any foreign currency — it had to be a foreign currency that was actually traded on a commodities exchange.

Bitcoin derivatives are traded on exchanges regulated by the CFTC (for example, the Chicago Mercantile Exchange and the Chicago Board Options Exchange). Therefore, under the premise of this ruling, trading activity in bitcoin or bitcoin derivatives may qualify for the trading safe harbor.¹¹⁵ However, trading in cryptocurrencies that are not traded on an exchange regulated by the CFTC (or the equivalent), or in derivatives on those cryptocurrencies, may not be entitled to the trading safe harbor.

Even though income from trading in cryptocurrencies may not qualify for the trading safe harbor, a trader operating from outside the United States should not be considered engaged in a U.S. trade or business.¹¹⁶ To determine whether an entity is operated from outside the United States, it may be useful to dust off the guidance that was in effect before the trading safe harbor was adopted in 1997. At that time, the regulations provided that foreign entities that traded in stocks were subject to U.S. taxation if

they failed to have all or a substantial portion of the following 10 functions (dubbed the “10 Commandments”) performed outside the United States:

- communicating with shareholders;
- communicating with the public;
- soliciting stock sales;
- accepting new stockholder subscriptions;
- maintaining the entity’s books and corporate records;
- auditing the entity’s books and records;
- disbursing payments of dividends, legal and accounting fees, and officers’ and directors’ salaries;
- publishing or furnishing the offering and redemption price of the entity’s stock;
- conducting stockholder meetings; and
- redeeming the entity’s own stock.¹¹⁷

Modification of the above rules in a reasonable manner based on the structure of a foreign entity engaged in trading in cryptocurrencies may provide some practical guidance in shaping its activities. At the very least, it would be prudent to avoid managing such an entity from the United States or undertaking its trading activities from the United States.

Assuming a foreign individual or entity is not engaged in a U.S. trade or business, gain or loss realized on the sale or exchange of cryptocurrencies in connection with a foreign trade or business should not be subject to U.S. tax. As noted earlier, that gain or loss generally should be capital gain or loss and should be sourced to the country of the seller. Accordingly, the gain or loss should be considered foreign-source gain or loss when allocated to a foreign investor or trader. However, U.S. members of the foreign entity may be subject to U.S. tax if the entity is a partnership or other form of passthrough entity, or if the U.S. anti-deferral rules apply.

2. FDAP income.

Similarly, gain or loss from the sale by a foreign individual or entity of cryptocurrency that is held as an investment and not in a trade or business should not be subject to U.S. tax. That gain or loss should also be capital gain or loss and

¹¹³ Rev. Rul. 73-158, 1973-1 C.B. 337.

¹¹⁴ LTR 8326013. A private letter ruling has no precedential value and may not be relied on by any taxpayer other than the one to whom it is issued; still, letter rulings are indicative of the position the IRS may take in a particular situation.

¹¹⁵ In *Commodities Futures Trading Commission v. McDonnell*, No. 1:18-cv-00361 (Mar. 6, 2018), a New York federal judge ruled that cryptocurrencies can be regulated by the CFTC.

¹¹⁶ Operating from outside the United States means that the individual trader (or the personnel of the trader, if it is an entity) is located outside the United States, that decisions are made outside the United States, and that trades are placed outside the United States.

¹¹⁷ Reg. section 1.864-2(c)(2)(ii).

should be sourced to the country of the foreign seller. Again, however, U.S. members of such an entity may be subject to U.S. tax if the entity is a partnership or other form of passthrough entity, or if the U.S. anti-deferral rules apply.

VII. Conclusion

The IRS has issued general guidance providing that cryptocurrency is property, and it has advised taxpayers to apply “general tax principles applicable to property transactions” to transactions involving cryptocurrency, without distinguishing between asset-backed, intrinsic, utility, or equity cryptocurrency. Unfortunately, applying those general tax principles has resulted in much speculation and many unanswered questions. To unravel the intricate tax implications of any cryptocurrency transaction, it is of utmost importance to first understand all aspects of the underlying technology itself and then consider other factors such as the FMV, tax basis, holding period, purpose (personal, investment, or trade or business) for holding cryptocurrency, and the source of income (domestic versus foreign). It is only after understanding what the underlying technology does and other relevant factors that a tax adviser can determine the classification (stock, security, commodity, debt, inventory, intangible, etc.) and its tax implications (sale, lease, license, service, etc.).

Each transaction involving cryptocurrency poses complex structuring issues with no cookie-cutter solutions. In our experience, an ICO structure that works for one entity may not work for another. Besides the analysis of an offshore versus onshore structure, it is important to select a proper jurisdiction and entity type (partnership, foundation, corporation, trust, etc.) and determine the tax implications of all the anticipated intercompany transactions, IP development activities, and the transfer of IP. Further, a tax-free transaction for an issuer — whether in an ICO, hard fork, soft fork, or air drop — may be a taxable event for a purchaser (or vice versa).

Blockchain technology can provide increased efficiency, reduced costs, reliability, and transparency in day-to-day business transactions, government operations, and any economic and

regulatory framework. However, lack of proper tax planning can become a trap for the unwary that could result in undesirable and unanticipated outcomes. ■